**Cosmos is a (fatalistic) state machine: Objective theory (cosmos, objective reality, scientific image) vs. Subjective theory (consciousness, subjective reality, manifest image)**

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# Abstract

As soon as you believe an imagination to be nonfictional, this imagination becomes your ontological theory of the reality. Your ontological theory (of the reality) can describe a system as the reality. However, actually this system is only a theory/conceptual-space/imagination/visual-imagery of yours, not the actual reality (i.e., the thing-in-itself). An ontological theory (of the reality) actually only describes your (subjective/mental) imagination/visual-imagery/conceptual-space. An ontological theory of the reality, is being described as a situation model (SM). There is no way to prove/disprove that there is only *one* reality, or there are *two* realities (i.e., “subjective reality” and “objective reality”). So, every ontology talk/theory/imagination about the *two* realities is *only* a talk/theory/imagination – we will never know whether it is true or not. The conventionally-called “physical/objective reality/world” around my conventionally-called “physical/objective body” is actually a geometric mathematical model (being generated/mathematically-modeled by my brain) – it's actually a subset/component/part/element of my brain’s mind/consciousness/manifest-image. Our cosmos is an autonomous objective parallel computing *automaton (aka state machine)* which evolves by itself automatically/unintentionally – wave-particle duality and Heisenberg’s uncertainty principle can be explained under this SM of my brain. Each elementary particle (as a building block of our cosmos) is an autonomous mathematical entity *itself (i.e., a thing in itself)*. Our cosmos has the same nature as a Game of Life system – both are autonomous objective parallel-computing automata. Cosmos (as a state machine) is indistinguishable from a digital simulation – my consciousness (as something nonphysical) is not cosmos (as a state machine). If we are happy to accept randomness/stochasticity, then it is obviously possible that all *other* worlds in the many-worlds interpretation (MWI) actually do not exist (objectively). As one metaphysical option, we can treat all other worlds as subjective only (even if they are actually objective). Under the context of this metaphysical option, we are only living in one world (i.e., the world we are currently living in; *this* world) – we are not living in many worlds at the same time parallelly. Under the context of this metaphysical option, there is only one possible future. The relationship among any number of elementary particles, is governed/described by Schrodinger equation. If (in theory) Schrodinger equation can’t be used to reliably forecast whether I will go to McDonald for dinner in *this* world (based on the current state of all elementary particles of the cosmos), then what can Schrodinger equation do? The conventionally-called “space” does not exist objectively. “Time” and “matter” are not physical. Consciousness is the subjective-form (aka quale) of the mathematical models (of the objective cosmos) which are intracorporeally/subjectively used by the control logic of a Turing machine’s program fatedly. A Turing machine’s mind/consciousness/manifest-image or deliberate decisions/choices should not be able to actually/objectively change/control/drive the (autonomous or fated) worldline of any elementary particle within *this* world (i.e., the world we are currently living in, under the context of MWI). Besides the Schrodinger equation (or another mathematical equation/function which is yet to be discovered) which is a valid/correct/factual causality of our cosmos/state-machine, every other causality (of our cosmos/state-machine) is either invalid/incorrect/counterfactual or can be proved by deductive inference based on the Schrodinger equation (or the aforementioned yet-to-be-discovered mathematical equation/function) only. Closed causality entails no causality. Consciousness plays no causal role (“epiphenomenalism”), or in other words, any cognitive/behavioural activity can in principle be carried out without consciousness (“conscious inessentialism”). If the “loop quantum gravity” theory is correct, then time/space does not actually/objectively exist in the objective-evolution of the objective cosmos, or in other words, we should not use the subjective/mental concept of “time”, “state” or “space” to describe/imagine the objective-evolution of our cosmos.

Keywords**:** Conway's Game of Life; causality; consciousness; free will; determinism; artificial intelligence

# Abbreviations

1O: first-order

2O: second-order

BB: building block

GoL: Game of Life

MM: mathematical model

MWI: many-worlds interpretation

QM: quantum mechanics

SM: situation model

TM: Turing machine

UTM: universal Turing machine

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# Body

“文章本天成，妙手偶得之。” – 陆游

Ontology is psychology in the mirror. Ontology is imagination in the mirror.

Ontology is psychology. Ontology is imagination.

As soon as you believe an imagination to be nonfictional, this imagination becomes your ontological theory of the reality. (BTW, it’s possible that you believe a supernatural imagination to be nonfictional.)

Your ontological theory (of the reality) can describe a system as the reality. However, actually the system (being described) is only a theory/conceptual-space/imagination/visual-imagery of yours, not the actual reality (i.e., the thing-in-itself [18]). An ontological theory (of the reality) actually only describes your (subjective/mental) imagination/visual-imagery/conceptual-space.

The present article describes my ontological theory of the reality.

In a sense, this study unveiled the “unknowable” thing-in-itself, although this study did not unveil the “unknowable” thing-in-itself ontologically/epistemically (<https://twitter.com/markgotproblems/status/1495012479365173250>). In fact, I put/placed a state machine at the place/position/niche of the “unknowable” thing-in-itself. Or in other words, I assumed that the “unknowable” thing-in-itself is a state machine, while actually I would never actually know that (epistemically). I trusted my own knowledge, that’s why I made this assumption. Or in other words, I had a faith in my own knowledge. I knew that my knowledge is subjective – it might be wrong/incorrect/counterfactual. Or in other words, what I was talking about in the present article, probably was not the ultimate truth – I had no way to actually know whether I know the ultimate truth or not.

This study invented a groundbreaking approach to prove materialism/physicalism, hard determinism, and fatalism. This study established revolutionary perspectives on consciousness/mind, cosmos/thing-in-itself, and causality/belief.

When you view the world (at elementary particle level) from third-person perspective, there is no consciousness -- there are only physical objects. It leads to a fatalistic view – this view is correct.

Q: “What does it mean for something to be physical?”

A: “We can't define the term "physical" by itself. We can only distinguish between "physical" and "nonphysical". To distinguish between "physical" and "nonphysical", we need to distinguish between "objective" and "subjective" -- it can't be described in short. “An object vs. my perception (of the object)” – this is how we divide the reality. We divide the reality into two parts – objects and my perception (of the objects). Objects are physical/objective. My perception (of the objects) is nonphysical/subjective.”

The cosmos is a state machine of elementary particles – Schrodinger equation is the transition function of this state machine. Being a state machine of elementary particles, cosmos is like a Game of Life system. A physical object (e.g., a human body) in cosmos, is like a pattern in Game of Life. What a physical object is going to do, is controlled/driven/caused by the Schrodinger equation only. There is only one possibility for the evolution of the cosmos. There is only one possible future – the fate.

A brain cell forms new connections, in the same way as a tree forming new branches. An animal brain is a plant. An animal is a plant with legs. If I talk to such a plant, it might talk back to me. A human brain (who speaks Chinese) processes Chinese in the same way as a Chinese room (in John Searle’s thought experiment) does – no neuron/molecule/elementary-particle (in this brain) understands Chinese. You feel *as if* that the plant/brain/Chinese-room/neurons/molecules/elementary-particles understand Chinese – this is only your theory-of-mind/imagination. A human is a robot. A human is like a tumbleweed.

In an out-of-body experience, it feels as if that I can look at myself from a location/viewpoint above my head. During the out-of-body experience, I am not equivalent to my physical brain – I am something outside of my physical brain. I do not identify myself to be my physical brain – I do not identify my physical brain to be myself. I identify myself to be an observer (who is separated from my physical brain) of my physical brain. During the out-of-body experience, I can see/perceive that my physical body is a robot (which is a subset of a state machine – the cosmos), and I can see/perceive that my physical brain doesn’t understand Chinese – although I (as an observer of my physical brain) understand Chinese. During the out-of-body experience, I can see/perceive that only I (being an observer of the cosmos) have consciousness, while there is no consciousness/libertarian-freedom in the cosmos – my physical brain doesn’t have consciousness/libertarian-freedom. During the out-of-body experience, I (being the observer of the cosmos) do not treat the cosmos or my physical body/brain as an agent.

The out-of-body experience is a maximized third-person perspective. Or in other words, your third-person perspective is a minimized out-of-body experience.

An agent can be active. A non-agent can only be passive.

An agent can be the subject. A non-agent can only be the object.

Whenever we imagine something as an agent, we will imagine that it has libertarian-freedom, and we will imagine that it has some kind of consciousness. We don’t need to imagine anything (except Schrodinger equation or the individual elementary particles) as an agent (from our third-person perspective). From our third-person perspective, Schrodinger equation or the individual elementary particles are true/genuine/nonfictional agents; anything besides Schrodinger equation or the individual elementary particles is a false/fake/fictional agent.

BTW, when I identify myself to be my physical brain, I can’t explain why my physical brain can experience my experiences. Because I don’t think it’s logically possible for a physical brain (which is a Chinese room (and I suppose that a Chinese room can’t experience anything)) to successfully explain (in human language) why it can experience something. In the same sense, I don’t think it’s logically possible for a computer program (which is a Chinese room) to successfully explain (in human language) why it can experience something, and I don’t think it’s logically possible for a Chinese room to successfully explain (in Chinese) why it can understand Chinese.

For example, when David Chalmers wrote his paper regarding “hard problem of consciousness”, it’s a fair assumption that the physical activities in his brain can be described in the form of third-person mechanics (because there is a third-person movie being played in *my* head/working-memory to illustrate the physical activities in his brain) – there was nothing magical happened in his brain. (A third-person mechanics/movie doesn’t need to include any agent. Or in other words, we don’t need to imagine an agent in our mental context for a third-person mechanics/movie.) His brain simply worked like a mechanical computer – this mechanical computer was a set of elementary particles. His brain was equivalent to a computer program. If a computer program wrote a paper regarding “hard problem of consciousness”, this paper had nothing to do with the “real” consciousness – this paper was simply nonsense/meaningless. In the same sense, Chalmers’ paper had nothing to do with the “real” consciousness – his paper was simply nonsense/meaningless.

After reading the previous paragraph, you feel as if that my physical brain has "real" consciousness. Don't you? However, since my physical brain is equivalent to a computer program, my physical brain’s words in the previous paragraph should have nothing to do with "real" consciousness – my physical brain’s words regarding “real” consciousness (in the previous paragraph) was simply nonsense/meaningless.

So, logically speaking, "real" consciousness is a fallacy/paradox – "hard problem of consciousness" is a fallacy/paradox. Or in other words, “real” consciousness is nonsense/meaningless – “hard problem of consciousness” is nonsense/meaningless.

However, there is still one possibility left (to make “real” consciousness and “hard problem of consciousness” meaningful (to myself)), that is, my physical brain is the only physical brain which has “real” consciousness to *really* understand “hard problem of consciousness” – for unknown/mysterious reason. It’s fallacious/paradoxical to think any other physical brain has “real” consciousness to *really* understand “hard problem of consciousness” – another physical brain only has physical behavior. When I feel as if that another physical brain has “real” consciousness, what I am actually feeling/perceiving/seeing, is my own theory-of-mind/imagination/visual-imagery (based on this physical brain’s physical behavior) – I have no way to actually/directly access/see another physical brain’s “real” consciousness (just like what this physical brain itself can do (if it can do)).

For example, when I say the sentence “I see green”, I am actually/directly seeing/perceiving green (in my “consciousness”) – I actually/directly see/perceive what I am seeing/perceiving. But when I hear you say the sentence “I see green”, I have no way to actually/directly see what you are seeing/perceiving (in your “consciousness”) – I can only *imagine* that you are seeing/perceiving green (in *my* imagination). It’s logically possible that you are seeing/perceiving nothing (in your “consciousness”).

Another example, when I say the sentence “I see something”, I am actually/directly seeing/perceiving something – I actually/directly see/perceive what I am seeing/perceiving. But when I hear you say the sentence “I see something”, I have no way to actually/directly see what you are seeing/perceiving (in your “consciousness”) – I can only *imagine* that you are seeing/perceiving something (in *my* imagination). It’s logically possible that you are seeing/perceiving nothing (in your “consciousness”).

In everyday life, I used to use a naïve view upon *humans*. (I don’t use this naïve view upon computer programs.) When I use this naïve view, I naively believe/imagine that a human is actually seeing/perceiving something (in their “consciousness”) whenever I hear them say the sentence “I see something” – I naively believe/imagine that they have consciousness.

Based on my current knowledge, I don't believe that a (human) brain is special (comparing to other physical objects). I would rather believe that my own "consciousness" is special (comparing to any other person’s “consciousness”) – I will never be able to actually/directly access/see any other person’s “consciousness” (if this person actually has “consciousness”) to disprove this belief.

Logically speaking, it’s possible that we are actually living in the sky. Each of us has an avatar on the earth. Each avatar is a robot. I can see what the robot sees through its eyes. It’s like the movie “Avatar”, but the difference is that I can’t control what the robot does – the robot does whatever it wants to do. So, to the avatar, I’m not a remote controller, but only a remote observer. Being the remote observer of the robot, I can imagine the robot to be my body. When the robot sees what itself does from its own eyes, the robot is using first-person perspective. When I see what the robot sees through the robot’s eyes, I see what the robot sees from its first-person perspective. When the robot imagines what itself should see from a location/viewpoint in the sky, the robot is using third-person perspective. When the robot is using third-person perspective, it perceives a visual imagery. If I can see this visual imagery, it should look like what I see from the sky. When I see what the robot does from the sky, I see something like what the robot perceives from its third-person perspective. I have no way to change what the robot is going to do. Being a physical object, what a robot is going to do, is controlled/driven/caused by the Schrodinger equation only. Even if a robot believes that it can change what it is going to do, actually it has no way to change what it is going to do. (If we are actually living in the sky, then both the robot and I are subsets/components of the same state machine – this setting might lead to some unnecessary puzzles. To avoid these puzzles, we can simply suppose that we are actually living out of the cosmos. BTW, if we are actually living out of the cosmos, and if I can’t see you directly, and if I can see your avatar through my avatar, then I have no way to know/tell whether you actually exist or not. Or in other words, your avatar won’t behave differently after your death. Or in other words, if a robot doesn’t have a remote observer, this robot won’t behave differently (comparing to a robot who has a remote observer).)

When you are looking at the world (in front of you), what you are seeing/watching/perceiving, actually is an image on your retina – this is your first-person perspective. If the image on your retina is a movie being captured/shot by a camera, then this movie is taken from the viewpoint/position of your eye. You can have a visual imagery which is different from the image on your retina. When you see/perceive the world from your third-person perspective, actually you are perceiving this visual imagery. If this visual imagery is a movie being captured by a camera, then this movie is not taken from the viewpoint/position of your eye. For example, this movie might be taken from a viewpoint/position which is high above your head – this movie is not the original movie on your retina. You can see the world from either third-person perspective or first-person perspective. The world you see remains superficially identical under these two perspectives. When you see the world from first-person perspective, you are seeing the world as it is – you are seeing/perceiving an image on your retina. However, when you see the world from third-person perspective, actually you are perceiving a visual imagery – you are not perceiving an image on your retina. Actually, when you see the world from first-person perspective, you are seeing/perceiving your own consciousness. When you see the world from third-person perspective, you are perceiving the cosmos. Or in other words, when you see the world from third-person perspective, you are perceiving your own visual-imagery/episodic-future-thinking/mental-model/postulation/assumption/theory (of the cosmos) in your consciousness – you can only perceive your own consciousness. If what you experience *directly* is a first-person movie in your head, then the "outside" world (i.e., cosmos) is a third-person movie in your head. Or in other words, if your first-person experience is a first-person movie in your head/working-memory, then a third-person mechanism is a third-person movie in your head/working-memory. The third-person movie (i.e., cosmos) is at the elementary particle level – the third-person movie is fine-grained. The first-person movie is coarse-grained. The third-person movie (i.e., cosmos) is continuous. The continuous third-person movie (i.e., cosmos) begins from the Big Bang. So, according to this continuous third-person movie, we are still the Big Bang – the Big Bang didn’t stop.

Why *the world (which includes both my environment and me)* exists? No one can answer this question directly. When people are intentionally trying to explain "consciousness", they behave as if "consciousness" is something which can be separated/isolated/highlighted from something else (which is “not” consciousness) – actually they forget the fact that everything (they are aware of) is inside their consciousness. They ask the question “Why consciousness exists?” Consciousness is everything – how can we explain why everything exists? Consciousness is the world – how can we explain why the world exists? When they ask the question “Why consciousness exists?”, actually they are visually-imagining/mentally-modelling/postulating/assuming/theorizing the existence of something which is independent of their consciousness, or in other words, actually they are visually-imagining/mentally-modelling/postulating/assuming/theorizing the existence of the cosmos (and the cosmos is visually-imagined/mentally-modelled/postulated/assumed/theorized (by their consciousness) to be something independent of their consciousness). In fact, they shouldn’t ask the question “If cosmos is everything, then what is consciousness? If cosmos exists, then why my consciousness exists?”. Instead, they should ask the question “If my consciousness is everything, then what is cosmos? If my consciousness exists, then why cosmos (i.e., something which is visually-imagined/mentally-modelled/postulated/assumed/theorized (by my consciousness) to be independent of my consciousness) exists?” – this is the hard problem of cosmos. If my consciousness is everything, then what is not my consciousness and why/how? If my consciousness is everything, then cosmos is a visual-imagery/episodic-future-thinking/mental-model/postulation/assumption/theory (of my consciousness). If my consciousness is everything, then cosmos is the sum of everything which is visually-imagined/mentally-modelled/postulated/assumed/theorized to be independent of my consciousness. Everything which is visually-imagined/mentally-modelled/postulated/assumed/theorized (by my consciousness) to be independent of my consciousness, are visually-imagined/mentally-modelled/postulated/assumed/theorized (by my consciousness) to be organized with each other into a whole (which is called (by my consciousness) cosmos). Or in other words, my consciousness organizes/summarizes everything which is (visually-imagined/mentally-modelled/postulated/assumed/theorized to be) independent of my consciousness into a global visual-imagery/episodic-future-thinking/mental-model/postulation/assumption/theory of *one* whole (which is called cosmos). When my consciousness is separating/isolating/highlighting/visually-imagining/mentally-modelling/postulating/assuming/theorizing cosmos from the rest of my consciousness, actually my consciousness is dividing itself into two parts, and my consciousness might want to only call the other part of my consciousness “consciousness”. In this way, actually my consciousness is highlighting both cosmos and the other part of my consciousness at the same time.

(Ontologically,) what is the world? If the world is a fine-grained state machine, why there seems to be coarse-grained feelings in this state machine? When I see the world from third-person perspective, I see a world without any feeling – I see a world which is a fine-grained state machine. Or in other words, I perceive a visual-imagery/episodic-future-thinking which is a fine-grained sate machine – this experience is a maximized patikulamanasikar experience (at elementary particle level). When I see the world from first-person perspective, I see a world of coarse-grained feelings. When I see the world from these two perspectives, it feels as if that I see two worlds – a fine-grained third-person world and a coarse-grained first-person world. Why there seems to be two worlds which are superficially identical to each other? One is called cosmos; the other is called consciousness. The world (in front of my eyes) I am seeing/watching right now, is my consciousness (which is a world of coarse-grained feelings). Cosmos is not something outside me – cosmos includes both my environment and me. Consciousness is not something inside me – consciousness includes both my environment and me. I see fine-grained cosmos from third-person perspective; I see coarse-grained consciousness from first-person perspective. Why it seems like that cosmos and consciousness both exist at the same time? Why there seems to be one world of feelings, while there seems to be another (superficially identical) world which doesn't include any feeling? The world of feelings seems to be qualitative/coarse-grained; the world without feeling seems to be quantitative/fine-grained. If only one of these two worlds can be the ultimate world, which one is the ultimate world?

Objective-theory (i.e., cosmos (as a state machine); objective reality; scientific image) and subjective-theory (i.e., cognition/mind/consciousness/soul (as something nonphysical); subjective reality; manifest image) are existing/evolving/progressing parallelly/simultaneously, and they describe/explain/are the *same* situation from two different perspectives – third-person perspective vs. first-person perspective. “Schrodinger equation is *causing* all elementary particles (of the cosmos) to change their states” – this is objective-theory. “After I had the goal to drink a glass of water, the goal (to drink a glass of water) or I *caused* some elementary particles (in my brain/body) to change their states (to achieve that goal)” – this is my subjective-theory/feeling. As you can see, these two theories have a fundamentally irreconcilable contradiction regarding the *cause*. Whenever we imagine a *cause*, we will imagine it as an agent, and we will imagine that it has libertarian-freedom, and we will imagine that it has some kind of consciousness. There is no agent (other than the Schrodinger equation or the individual particles) in the objective-theory. Both the coarse-grained goal (to drink a glass of water) (in my subjective-story) and the coarse-grained “I” (in my subjective-theory) can be mapped/matched to some fine-grained elementary particles’ state-evolution (in objective-theory). (Ontologically,) which theory describes/explains/is the ultimate situation? Or in other words, which perspective is the ultimate perspective? Or in other words, what is the ultimate cause for the fine-grained elementary particles (in my brain/body) to change their states (to achieve my goal)? (Epistemologically,) there is no way to tell. There are two postulations: 1. Physicalism. Objective-theory *causes* my subjective-theory (i.e., the “magical strong emergence" – my subjective-theory “emerged” from objective-theory “magically”). There is only the state machine (which is a mathematical structure) and, if anything can be called cognition/mind/consciousness, it's that (or features of that). “How does my subjective-theory “emerge” from objective-theory “magically”?” – this is the hard problem of consciousness. If objective-theory exists there *first*, and if subjective-theory is something emerged *from* objective-theory “magically”, then how can subjective-theory emerge from objective-theory? 2. Idealism/solipsism. (Just like what my dream does,) objective-theory is a feature/component of my subjective-theory. There is only my cognition (which is a mathematical structure) and, if anything can be called the state machine, my mind/consciousness or another individual’s cognition/mind/consciousness, it’s that (or features/components of that). The second postulation eliminates the hard problem of consciousness. But unfortunately, the second postulation doesn’t have any serious explanatory power in my everyday life. Under the second postulation, it is more appropriate to call the subjective-theory the manifest image, while call the objective-theory the scientific image. Under the first postulation, it is more appropriate to call the subjective-theory the consciousness or the subjective reality, while call the objective-theory the cosmos or the objective reality. Logically speaking, it’s possible that only the second postulation is right, and it’s also possible that only the first postulation is right. These two postulations can be linked into the third postulation: “There is only my cognition (which is a mathematical structure) and, if anything can be called the state machine, my mind/consciousness or another individual’s cognition/mind/consciousness, it’s that (or features/components of that). However, in my cognition, there is only the state machine (which is a mathematical structure) and, if anything can be called cognition/mind/consciousness, it's that (or features of that).” or “There is only my subjective-theory and, if anything can be called the objective-theory, it’s that (or features/components) of that. However, in my subjective-theory, there is only the objective-theory and, if anything can be called subjective-theory, it’s that (or features of that).” The third postulation eliminates the hard problem of consciousness.

My physical brain has two imaginations – the objective-theory and my subjective-theory. These two imaginations are inconsistent with each other (and my physical brain is aware of this fact). So, my physical brain can’t merge them into one imagination. My physical brain divided/organized these two imaginations clearly and correctly. My physical brain believes that the content of the objective-theory is nonfictional. So, the content of the objective-theory is both my physical brain’s imagination and my physical brain’s ontological theory (of the reality). My physical brain believes that the content of my subjective-theory is fictional. So, the content of my subjective-theory is only my physical brain’s imagination, not my physical brain’s ontological theory (of the reality). So, although I feel like that there are two realities, I know that only one of them is nonfictional/genuine.

Your physical brain also has two imaginations – the objective-theory and your subjective-theory. These two imaginations are inconsistent with each other (although your physical brain is not aware of this fact), but your physical brain still merged them into one imagination, because your physical brain can’t divide/organize these two imaginations clearly and correctly. Your physical brain believes that the content of this (falsely) merged imagination is nonfictional. So, the content of this (falsely) merged imagination is both your physical brain’s imagination and your physical brain’s ontological theory (of the reality). So, you feel like that there is only one reality.

The present article “sketched something like Wilfrid Sellars' scientific and manifest image”. For metaphysical reasons I view the scientific image as phenomenally accessible. If a Turing machine's cognition can divide/organize its manifest image and its scientific image clearly and correctly (following the logic that its manifest image mathematically-models/reflects/represents/simulates its scientific image), and can match/map between its manifest image and its scientific image, and can identify itself as its scientific image, then it seems like that this Turing machine views its scientific image as phenomenally accessible -- from the perspective/viewpoint of another Turing machine (who identifies itself as its manifest image). In the present article, my cognition is working to match/map between my scientific image and my manifest image, while my scientific image and my manifest image are clearly and correctly divided/organized by my cognition. I view my manifest image as a mathematical-model/reflection/representation/simulation of my scientific image, while view my scientific image as the thing-in-itself. In this sense, this study unveiled the “unknowable” thing-in-itself, although this study did not unveil the “unknowable” thing-in-itself ontologically/epistemically. When I identify myself as my scientific image, actually I am identifying myself as the thing-in-itself. You see your own (coarse-grained) consciousness/manifest-image from your first-person perspective; you see the (fine-grained) cosmos/scientific-image from your third-person perspective. Your (coarse-grained) consciousness/manifest-image is just your (coarse-grained) ideas/models/theories (about the (fine-grained) cosmos/scientific-image).

The present article “sketched something like Wilfrid Sellars' scientific and manifest image.” (<https://twitter.com/markgotproblems/status/1496003270816546820>) “The difference between Xiaoyang Yu’s and Sellars' views is the level of phenomenal access they have to the scientific image. For metaphysical reasons Yu views the scientific image as phenomenally accessible.” (<https://twitter.com/markgotproblems/status/1496247252314165250>)

If a Turing machine's cognition can divide/organize its manifest image and its scientific image clearly and correctly (following the logic that its manifest image mathematically-models/reflects/represents/simulates its scientific image), and can match/map between its manifest image and its scientific image, and can identify itself as its scientific image, then it seems like that this Turing machine views its scientific image as phenomenally accessible -- from the perspective/viewpoint of another Turing machine (who identifies itself as its manifest image).

In the present article, my cognition is working to match/map between my scientific image and my manifest image, while my scientific image and my manifest image are clearly and correctly divided/organized by my cognition. I view my manifest image as a mathematical-model/reflection/representation/simulation of my scientific image, while view my scientific image as the thing-in-itself. I can identify myself as my scientific image, whenever I want to do that.

My manifest image has a center, while my scientific image doesn’t have a center.

When a TM's cognition can’t divide/organize its manifest image and its scientific image clearly and correctly, the TM might feel like that its manifest image is something inside its scientific image. In this case, this TM actually mixes its scientific image and its manifest image – this TM actually mixes the thing-in-itself with the mathematical-model of the thing-in-itself – this is a category error.

## Intracorporeal/subjective/subjective-theory/consciousness vs. Extracorporeal/objective/objective-theory/cosmos

Just like other animals, humans are limited/controlled in what they know by the structure of their nervous systems and by the structure of their languages [5]. More specifically, humans are limited in what they know by the technical limitation of their *cortical language networks* *[6][7]*.

In order to describe my findings/conclusions systematically, a new semantic system (i.e., a new language) has to be intentionally defined by the present article.

Every animal brain is a biological neural network [78][82]. Some (recurrent) neural networks are Turing machines (TMs) [1] [2]. For example, the human brain is a TM [3]. Some neural networks are universal Turing machines [4].

A TM (e.g., a human brain) works like a mechanical computer.

In the semantics of the present article, a *situation* or a *process* means a system of related subjects/objects whose states are evolving.

In the semantics of the present article, the term “subjective” means that “my brain does a cognitive task, only based on the (sensory) data/information itself should be able to get/process, while my brain manages to unlearn the (sensory) data/information only another TM should be able to get/process”, while the term “objective” means that “my brain does a cognitive task, only based on the (sensory) data/information another TM should be able to get/process, while my brain manages to unlearn the (sensory) data/information only itself should be able to get/process”.

So, the term “subjective” in the present article means “*completely* subjective” in natural language; the term “objective” in the present article means “*completely* objective” in natural language.

A TM (e.g., a brain) is limited/controlled in what it (subjectively) knows by its physical/objective structure – a TM is incapable/powerless to (subjectively) know anything other than what is being limited/controlled/determined/decided by its physical/objective structure.

When you are reading the present article, it’s actually a guided meditation for your brain to achieve a detached/dissociative/meditative state. In this detached/dissociative/meditative state, your brain is being (completely) objective, and your brain can perceive the *correct* fine-grained visual-imagery/episodic-future-thinking (at elementary particle level) as the image of the cosmos. Based on your brain’s experience in this detached/dissociative/meditative state (let us call this experience the maximized-patikulamanasikara-experience), your brain can distinguish the term “objective” from the term “subjective” *in exactly the same way as my brain does*. Without actually experiencing this detached/dissociative/meditative state, your brain cannot distinguish the term “objective” from the term “subjective” *in exactly the same way as my brain does*. In this sense, the full text of the present article serves as a complete definition of the term “subjective” and the term “objective” – *this complete definition is being defined by my brain in the present article*. After reading/comprehending the present article, your cortical language network will work *in exactly the same way as my cortical language network does* (regarding the text/content/meaning of the present article).

The worldview common reductionists are using, is not (completely) objective. This study discusses the nature of causality/belief, (subjective/intracorporeal) consciousness/mind and (objective/extracorporeal)cosmos/thing-in-itself [18] in depth, based on a new, (completely) objective worldview which views the cosmos/thing-in-itself as a *state machine (aka automaton)* of elementary particles. Schrodinger equation (or another mathematical equation/function which is yet to be discovered) is the transition function of this state machine. Consciousness plays no causal role (“epiphenomenalism”), or in other words, any cognitive/behavioural activity can in principle be carried out without consciousness (“conscious inessentialism”) [45]. If consciousness plays no causal role, then there is no evidence to support my assumption/imagination/belief that any other person has consciousness. Or in other words, I’m the only person who is known (by myself) to have consciousness. Or in other words, other people can be philosophical zombies. Or in other words, to me, other people are equivalent to philosophical zombies, no matter they are actually philosophical zombies or not. No one has had such a formal discussion before in depth based on such a (completely) objective worldview.

“For the reductionist, reality is flat. It may seem to comprise things in some kind of hierarchy of levels – atoms, molecules, cells, organs, organisms, populations, societies, economies, nations, worlds – but actually everything that happens at all those levels really derives from the interactions at the bottom. If you could calculate the outcome of all the low-level interactions in any system, you could predict its behaviour perfectly and there would be nothing left to explain. It’s turtles all the way down.” (<http://www.wiringthebrain.com/2020/07/escaping-flatland-when-determinism.html?spref=tw&m=1&s=03>)

In a system, high-level interactions do not have anything more than the low-level interactions – high-level interactions are the plain mathematical sum of the low-level interactions.

“In recent years reductionism has been dramatically challenged by a radically new paradigm called ‘emergence’.” [123] If this new paradigm is correct, then it literally means that the old paradigm (i.e., reductionism) is incorrect/wrong – how is that possible?

"Accounting for emergence has proven to be extraordinarily difficult, so much so that whether or not genuine emergence exists seems still in doubt." (<https://www.lehigh.edu/~mhb0/emergence.html>) To me, genuine emergence doesn't exist.

"If, in some cataclysm, all of scientific knowledge were to be destroyed, and only one sentence passed on to the next generation of creatures, what statement would contain the most information in the fewest words? I believe it is the atomic hypothesis that all things are made of atoms — little particles that move around in perpetual motion, attracting each other when they are a little distance apart, but repelling upon being squeezed into one another. In that one sentence, you will see, there is an enormous amount of information about the world, if just a little imagination and thinking are applied. [100]" – Richard Feynman.

Let us call a cell in a Game of Life system, a cell in a Rule 110 cellular automaton, an elementary particle in our cosmos or a particle in a two-dimensional/three-dimensional Primordial Particle System [39][40] the building block (BB). In the semantics of the present article, a BB’s “state” includes its position.

In the Standard Model of particle physics, BBs are the simplest possible objects that can be shifted, rotated and boosted [35]. A pure quantum state corresponds directly to reality [36]. “Ever since the fundamental paper of Wigner on the irreducible representations of the Poincaré group, it has been a (perhaps implicit) deﬁnition in physics that an elementary particle ‘is’ an irreducible representation of the group, G, of ‘symmetries of nature.’ [37]” “Particles are at a very minimum described by irreducible representations of the Poincaré group [38].”

A Game of Life system, a Rule 110 cellular automaton, a two-dimensional/three-dimensional Primordial Particle System or our cosmos is a *state machine* – each BB is a BB of the state machine.

The “actual future” of a state machine refers to its state transition.

Let us call a state machine’s (mathematical) transition function the *direct-function.* The direct-function can be stochastic. The direct-function is a mathematical function – we don't need to imagine/expect/hope/wish this mathematical function to imply/have/mean/follow/carry/reflect/embody any sense/reason/logic/meaning/principle/tenet/causality/morality/moral-law/humanity/fairness/responsibility/duty/ruth/mercy. We can imagine/expect this mathematical function to be unreasonable/meaningless/unprincipled/immoral/inhuman/unfair/irresponsible/ruthless/wild. Inside the state machine, everything unreasonable/meaningless/unprincipled/immoral/inhuman/unfair/irresponsible/ruthless/wild is actually done by this mathematical function – we should hold this mathematical function responsible for everything happened inside the state machine.

“Two things fill the mind with ever-increasing wonder and awe, the more often and the more intensely the mind of thought is drawn to them: the starry heavens above me and the moral law within me.” – Immanuel Kant. However, the objective-state-evolution of the BBs of the starry heavens doesn’t follow any *moral* law. The objective-state-evolution of the BBs of my brain doesn’t follow any *moral* law either.

“Heaven and Earth are ruthless and treat the myriad creatures as straw dogs. [74]” – Lao Tzu.

Every animal brain is actually a pure physical machine/device constructed by *a fuzzy set of BBs (i.e., a tremendous cloud of BBs)*. So, natural intelligence displayed by an animal brain, is actually intelligence demonstrated by a machine.

In case that a state machine is *a collection of BBs (i.e., a tremendous cloud of BBs)*, its state transition refers to the objective-state-evolution of all BBs; its state transition is a parallel computation to *calculate* the new state of every BB based on the preceding state of all BBs, using the direct-function only. Let us call such a state machine the *direct-parallel-computing-automaton*, and call its state transition the *direct-parallel-computation*. The direct-parallel-computation/objective-state-evolution of a direct-parallel-computing-automaton refers to the objective-state-evolution of all its BBs.

“Hot take: there's no such thing as ‘computation.’ There's just dynamics and we label a subset of dynamics as ‘meaningful’, ‘interesting’, or ‘purposeful.’” (See <https://twitter.com/ThosVarley/status/1444747615908868104>)

Our cosmos has the same nature as a Game of Life system – our cosmos is a state-machine/direct-parallel-computing-automaton.

“对假想的存在稳定性的批判性审查也就是包含了全部佛教哲学的最终归宿。这就是佛教的主导思想 – 除了分离的刹那存在之点，绝无其他永恒的实在。不单是神和物质这样的永恒实体被断然否定，而且连经验事物的简单稳定性也被认为只是想象力所为。终极的真实只是刹那性的。” [801][802]

At every moment, the state of each BB of a direct-parallel-computing-automaton should be decided by the states of all BBs (of the direct-parallel-computing-automaton) at the previous moment and the direct-function (of the direct-parallel-computing-automaton). At every moment, there is no libertarian-freedom/flexibility/room left in the state of a BB – for this BB to decide by itself (upon its own libertarian-free-will). At every moment, a BB does not have the libertarian-freedom/flexibility/power/capability/possibility/probability/chance/potential/option/choice to decide its own state (upon its own libertarian-free-will) – a BB does not have the libertarian-freedom/flexibility/power/capability/possibility/probability/chance/potential/option/choice to do anything (upon its own libertarian-free-will) other than what it actually does.

“Is libertarian free will compatible with modern physics? (And if not, why isn't that a good reason for doubting its existence?)” (<https://twitter.com/keithfrankish/status/1478494688961249284>)

The direct-function of every Game of Life system is as below [52]:



where



Let’s call this direct-function the McKenzie-function.

The direct-function of a stochastic cellular automaton (which is a variation of Game of Life) is as below:



where

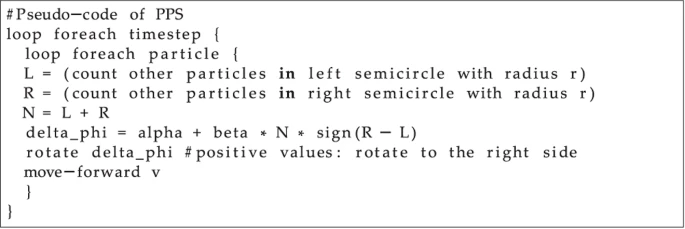


Let’s call this direct-function the stochastic-McKenzie-function. Let’s call this stochastic cellular automaton the Stochastic Game of Life, and call the original Game of Life the Non-stochastic Game of Life. A Non-stochastic Game of Life system is actually a special case of the Stochastic Game of Life system.

The direct-function of every Rule 110 cellular automaton is as below (<https://en.wikipedia.org/wiki/Elementary_cellular_automaton>):

**N110d=(C+R+C\*R+L\*C\*R)%2**

The direct-function of every two-dimensional Primordial Particle System is as below [39]:



“The motion of a mechanical object, even a human-sized object, should be governed by the rules of quantum mechanics.” [93]

It is possible that Schrodinger equation is the direct-function of our cosmos. For readers who do not agree with that, let us *suppose* that I just discovered the actual direct-function of our cosmos, and let us call it U-function.

For any direct-parallel-computing-automaton, if its direct-function happens to be the U-function, let's call it the U-system. For example, our cosmos is a U-system. Or in other words, the term “our cosmos” refers to a U-system.

Let us suppose that there are only three BBs in a U-system, and suppose that the initial state of the collection of BBs is as below:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Sequential number of the BB | State of the BB | | | | |
| Position of the BB | | | Other states of the BB | |
| x | y | z | Type of the BB | Other state of the BB |
| 0 | 0 | 0 | 110 | 0 | 0 |
| 1 | 3.4 | -5.87 | 9 | 6 | 1 |
| 2 | 2 | 75 | -64.3 | 4 | 0 |

Table 1

At the next moment, let us suppose that the state of the collection of BBs changed to below:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Sequential number of the BB | State of the BB | | | | |
| Position of the BB | | | Other states of the BB | |
| x | y | z | Type of the BB | Other state of the BB |
| 0 | 98 | -35.4 | 8.43 | 0 | 1 |
| 1 | 2567 | -765.4 | -243 | 6 | 1 |
| 2 | -334.2 | 24.2 | 894.3 | 4 | 0 |

Table 2

In table 1 and table 2, a BB’s position includes three numbers (e.g., “0, 0, 110” for the first BB in table 1). However, it’s possible that the position of a BB (in every U-system) actually includes four or more numbers – it depends on the direct-function.

In a cellular automaton, the position of a BB does not change over time. In a U-system or a two-dimensional/three-dimensional Primordial Particle System, the position of a BB changes over time. So, a U-system or a two-dimensional/three-dimensional Primordial Particle System is not a cellular automaton.

Only based on the data/information a human brain should be able to get/process, usually a U-system is more complicated than a Non-stochastic/Stochastic Game of Life system. So, situations/conclusions for direct-parallel-computing-automatons are less obvious in the context of a U-system (than in the context of a Non-stochastic/Stochastic Game of Life system). So, if it is difficult to imagine a situation/conclusion in the context of a U-system, readers can try to imagine this situation/conclusion under the context of a Non-stochastic/Stochastic Game of Life system first.

A TM’s mental-model (i.e., a mental-model being generated/mathematically-modeled by a TM) is a mathematical model (MM).

Humans’ concept of cause is constructed from experience (e.g. [47]). “Correct” theory of causality can be learned from relatively little evidence, often becoming entrenched before specific causal models are learned [48]. “Hume shows that experience does not tell us much. Of two events, A and B, we say that A causes B when the two always occur together, that is, are constantly conjoined. Whenever we find A, we also find B, and we have a certainty that this conjunction will continue to happen. Once we realize that ‘A must bring about B’ is tantamount merely to ‘Due to their constant conjunction, we are psychologically certain that B will follow A’, then we are left with a very weak notion of necessity. This tenuous grasp on causal efficacy helps give rise to the Problem of Induction – that we are not reasonably justified in making any inductive inference about the world.” [68]

Every belief is a causality. Every causality is a MM.

“The construction of causality is the primary engine of cognition.” (<https://twitter.com/ryanspangler/status/1431814051932225539>)

A TM’s thought/MM keeps changing (as time goes on). We shouldn’t hold a TM’s *current* thought/MM responsible for the TM’s action at the *next* moment. Because, a TM’s thought/MM at *this* moment, has no control over the TM at the *next* moment – even if we mathematically-model/imagine that a TM’s thought/MM at *this* moment has control over the TM at *this* moment. If we mathematically-model/imagine that a TM’s thought/MM at *this* moment has control over the TM at *this* moment, then we should mathematically-model/imagine that a TM’s thought/MM at the *next* moment has control over the TM at the *next* moment.

Let’s do a thought experiment. Suppose there are two boats. Each boat has a bomb in it, but only one bomb will be triggered automatically at midnight. You can’t decide/choose which bomb will be triggered. You don’t know which bomb will be triggered. You are not in the boats. You can’t communicate with the boats.

There is one person in each boat. The person in the first boat is a stranger to you. The person in the second boat is the person whom you love the most in your life. Which bomb do you wish to be triggered?

If there is not one stranger, but two strangers in the first boat, then which bomb do you wish to be triggered?

Let’s keep increasing the number of strangers in the first boat – when will you change your mind?

“If you really think about it, the suffering in the world, at any given moment, is just overwhelming, devastating.” (<https://twitter.com/BayouPhilosophy/status/1455658855615115268>)

Who/what is responsible for the (past/present/future) suffering (in our cosmos/U-system)? Who/what causes the suffering? Who/what is the cause of the suffering? Who/what is responsible for ending/avoiding the suffering? Who/what is capable to end/avoid the suffering? Who/what is capable to change the objective-state-evolution/direct-function of our cosmos/U-system to end/avoid the suffering (in our cosmos/U-system)?

Is an evil guy/decision/action/thing responsible for the suffering? Is a good guy/decision/action/thing responsible for the suffering? (Is an evil/bad/disadvantaged situation caused by an evil/bad/disadvantaged thing? (“X culture won X war because they were morally superior to the losers.” (<https://twitter.com/longbulusiboshi/status/1471263998188216320>)) Is an evil/bad/disadvantaged situation caused by a good/advantaged thing? Is an evil/bad/disadvantaged situation caused by another evil/bad/disadvantaged situation? Is an evil/bad/disadvantaged situation caused by a good/advantaged situation?)

Is *human brain* responsible for the suffering? Is human brain the cause of the suffering? Is human brain responsible for ending/avoiding the suffering? Is human brain capable to end/avoid the suffering?

Is *(human brain’s) good/evil/morality/love/hate/emotion* responsible for the suffering? Is good/evil/morality/love/hate/emotion the cause of the suffering? Is good/evil/morality/love/hate/emotion responsible for ending/avoiding the suffering? Is good/evil/morality/love/hate/emotion capable to end/avoid the suffering?

Is *(human brain’s) (deliberate) decision/choice* responsible for the suffering? Is decision/choice the cause of the suffering? Is decision/choice responsible for ending/avoiding the suffering? Is decision/choice capable to end/avoid the suffering?

Is human brain responsible for ending/avoiding the suffering by its decision/choice/good/evil/morality/love/hate/emotion? Is human brain capable to end/avoid the suffering by its decision/choice/good/evil/morality/love/hate/emotion?

Is human brain responsible for deciding/choosing to end/avoid the suffering? Is human brain capable to decide/choose to end/avoid the suffering?

Is a time machine capable to end/avoid the suffering? Is a time machine capable to end/avoid the suffering by changing the objective-state-evolution of the BBs of our cosmos/U-system?

Is Schrodinger equation responsible for the suffering? Is Schrodinger equation the cause of the suffering? Is Schrodinger equation responsible for ending/avoiding the suffering? Is Schrodinger equation capable to end/avoid the suffering?

What is the meaning of these terms? – “suffering”, “responsible”, “cause”, “decision”, “choice”, “good”, “bad”, “evil”, “advantaged”, “disadvantaged”, “love”, “hate”, “emotion” and “morality”.

If you have an answer for any of the above questions, please write down your answer on a piece of paper. And then please try to explain to yourself that why your answer is correct. And then please try to *imagine* that your answer is actually incorrect. And then please try to explain to yourself that why your answer is actually incorrect. And then please try to explain to yourself the meaning of the term “correct” and the term “incorrect”.

If something is compatible with your brain’s mental-model, then your brain will think it to be “correct”. Otherwise, your brain will think it to be “incorrect”.

But what will happen when your brain has two mutually exclusive mental-models at the same time?

For a TM’s mutually exclusive mental-models, if the TM (limited by the knowledge the TM itself is able to have) has no way to prove/disprove any of them empirically, then these mental-models can be called MM-options – for the TM. It’s absolutely fine for the TM to choose to believe any of them.

I can pretend/imagine that I am *something else* – I can imagine the existence of another “me”. With such an imagination, I feel as if that I am not alone – I feel as if that there are two clones of “me” now. By this imagination, I duplicate myself *mentally*.

(I can imagine/mentally-model every other TM to be a clone of “me”, although I have no valid way to prove any other TM to be a clone of “me”. *If* reincarnation is possible, then I can imagine/mentally-model every other TM to be a reincarnation of “me”. BTW, if I can imagine/mentally-model a TM to be a reincarnation of “me” *after* my death, then, analogously, I can also imagine/mentally-model a TM to be a reincarnation of “me” *before* my death.)

When I pretend/imagine that I am something else, this imagination *means* the existence of something other than my mind. But this imagination is not a valid *proof* ofthe existence of anything other than my mind – I have no way to validly *prove* the existence of anything other than my mind. This is the position of solipsism.

When I think from the position of solipsism, I stop *pretending/imagining* that I am something else – I stop *imagining* the existence of something other than my mind.

I write the present article, to record/track/organize/evaluate my own thoughts – I have no way to validly prove the existence of any *actual/genuine reader (i.e., a reader who is neither a philosophical zombie nor a subset/component/part/element of my mind)* other than myself.

（注：我在看木偶戏时，会感觉到木偶有mind。我在看米老鼠的动画片时，会感觉到米老鼠有mind。Philosophical zombie没有mind。我看到一个philosophical zombie时，感觉到这个philosophical zombie有mind。我感觉到的这个philosophical zombie的mind，实际上并不是这个philosophical zombie的mind，而是我自己的mind的投射。或者说，我感觉到的这个philosophical zombie的mind，实际上是我自己的mind的一部分。当我看到这个philosophical zombie脸上喜怒哀乐的表情时，我会根据我自己喜怒哀乐时的感受，去想象这个philosophical zombie内心中有喜怒哀乐的感受。不管这个philosophical zombie的内心有没有喜怒哀乐的感受，我都会想象出这个philosophical zombie内心喜怒哀乐的感受。这样我就感觉到这个philosophical zombie的内心有喜怒哀乐的感受。这样我就感觉到这个philosophical zombie有mind。）

In everyday life, actually I imagine/postulate every other person as another “me”, or as a variant of “me”. In this case, I imagine/postulate the existence of something other than my mind – I imagine/postulate the existence of *two (or more)* separated clones of my own mind. In other words, I imagine/postulate the existence of another clone of my mind – which is something other than my (own) mind.

When I think from the position of solipsism, I stop imagining/postulating another person as another “me”. In this case, I stop imagining/postulating the existence of something other than my mind – I stop imagining/postulating the existence of *two (or more)* separated clones of my own mind. In other words, I stop imagining/postulating the existence of another clone of my mind – which is something other than my (own) mind.

It is logically impossible for my mind to actually know, whether my mind’s clones actually exist or not. In other words, it is logically impossible for my mind to actually know, whether the position of solipsism is correct or not.

Look at the numbers below. Which number do you expect to be the next number?

1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33, 35, 37, 39, 41, 43, 45, 47, 49, 51, 53, 55, 57, 59, 61...

My brain has two different MM-options to mentally-model the above numbers respectively. When my brain uses the first MM-option, my brain expects the next number to be “63”. When my brain uses the second MM-option, my brain has no idea/clue regarding what the next number will be – the next number can be any random number. My brain (mentally/subjectively) labels the first MM-option to be “subjective”, while (mentally/subjectively) labels the second MM-option to be “objective”. The first MM-option assumes/imagines/postulates/mentally-models that the next number has a *known* relationship with the existing numbers (i.e., the first MM-option assumes/imagines/postulates/mentally-models that it *knows* the relationship between the next number and the existing numbers), while the second MM-option does not assume/imagine/postulate/mentally-model that. The relationship known by the first MM-option is *subjective* – that’s why the second MM-option doesn’t trust this relationship.

“My mom always said life was like a box of chocolates. You never know what you're gonna get.” – 1994 film “Forrest Gump”.

本文否定了一个人预测/计算（自己所在的宇宙的）未来的能力。

本文否定了一个人通过事件之间的“因果关系”来预测/计算（自己所在的宇宙的）未来的能力。

本文否定了一个人通过自己所观测到的事件之间的“因果关系”来预测/计算（自己所在的宇宙的）未来的能力。

本文否定了一个人通过研究自己所观测到的事件之间的“因果关系”来预测/计算（自己所在的宇宙的）未来的能力。

从理论上说，位于宇宙之外的一个人可以根据薛定谔方程和宇宙中所有基本粒子现在的状态来预测/计算宇宙的未来，但位于宇宙之内的一个人无法根据薛定谔方程和（自己所在的）宇宙中所有基本粒子现在的状态来预测/计算宇宙的未来。这是我在试图通过研究自己所观测到的事件之间的“因果关系”来预测/计算（自己所在的宇宙的）未来时，所得出的结论。

I had a dream in Monday night. In the dream, a fairy told me that I would catch a cold next afternoon. I caught a cold in Tuesday afternoon. I had a dream in Tuesday night. In the dream, the same fairy told me that I would lose my key next afternoon. I lost my key in Wednesday afternoon. I had a dream in Wednesday night. In the dream, the fairy told me that I would lose my wallet next afternoon. It is Thursday morning now. Should I trust the fairy’s words? Will I lose my wallet this afternoon?

My brain has two different MM-options to mentally-model what happened till now. When my brain uses the first MM-option, my brain trusts the fairy’s words. When my brain uses the second MM-option, my brain does not trust the fairy’s words. My brain (mentally/subjectively) labels the first MM-option to be “subjective”, while (mentally/subjectively) labels the second MM-option to be “objective”. The first MM-option assumes/imagines/postulates/mentally-models that what will happen in this afternoon has a *known* relationship with the fairy’s words (i.e., the first MM-option assumes/imagines/postulates/mentally-models that it *knows* the relationship between the fairy’s words and what will happen in this afternoon), while the second MM-option does not assume/imagine/postulate/mentally-model that.

When writing the present article, my brain's *“objective” MM-options (i.e., MM-options which are (mentally/subjectively) labeled to be “objective” by my brain)* are implicitly used (by my brain as a TM) in the present article (where applicable).

Right now, I just found that the vase on the dining table is broken. “It must be the cat who broke the vase! The cat is very naughty! Although the cat is not here right now.” – this is a “subjective” MM-option of my brain. “I don’t know who broke the vase.” – this is an “objective” MM-option of my brain.

Objectively speaking, I am my own thoughts. Objectively speaking, I should never fully trust my own thoughts – my own thought should never fully trust itself. Or in other words, I should always challenge the validity of my own thoughts – my own thought should always challenge the validity of itself.

“Consciousness is not the hypothesis. The outside world is the hypothesis.” – Eric Hoel. (<https://twitter.com/jposhaughnessy/status/1458223325893832707>) Under this context, let’s call the “outside world” the *objective-theory [106][14][15] (aka the scientific image, objectivity, third-person objective reality [16][17], objective context/explanation, physical reality, reality, thing in itself [18], cosmos, universe, world, real world, real life, nature, outer/outside/extracorporeal/public/shared/third-person/objective situation/reality/world/universe/experience/life, the Matter [134], the external reality [135], the external world [136], the absolute unity [132], the world of mortals, the desire realm (Sanskrit: kāmadhātu), the Akashic records, Brahman, tathātā, ālaya-vijñāna, anicca, unbroken wholeness in flowing movement [133], panta rhei ("everything flows"), sunyata, or dharmadhatu).*

<https://osf.io/ckrz7>

“I perceive of objective reality what my physical information processing capacities - which emerged from it - allow me to. The objective reality will still be there after my information processor dies.” (<https://twitter.com/longbulusiboshi/status/1459775589317939202>)

If a TM is a subset of a direct-parallel-computing-automaton, then the TM’s objective-theory is this direct-parallel-computing-automaton.

The direct-function “weaves the fabric” of an objective-theory/direct-parallel-computing-automaton. (<https://twitter.com/Ransfor85870259/status/1460892640036196355>) The direct-function is the only actual/objective/direct causality of an objective-theory/direct-parallel-computing-automaton.

“是故当知：灯能显色，如是见者，是眼非灯；眼能显色，如是见性，是心非眼。”—《楞严经》

“*Seeing Is the Mind* ... The Buddha said to Ananda, ‘... Therefore, you should know that while the lamp can reveal the forms, it is the eyes, not the lamp, that do the seeing. And while the eyes can reveal the forms, the seeing-nature comes from the mind, not the eyes.’” (<https://langnghiem.com/en/shurangama-1/> (The Shurangama Sutra))

When I watch a virtual reality through glasses, I see a virtual world behind the glasses, but actually there is no such a virtual world behind the glasses – the virtual world is actually a mental-model of my brain.

Analogously, when I watch the conventionally-called “physical/objective reality/world” around my “physical/objective body”, the “physical/objective reality/world” I see is actually a virtual situation/reality/world – this virtual situation/reality/world is actually a geometric MM (being generated/mathematically-modeled by my brain). (This virtual situation/reality/world is actually my brain’s quale of the objective-theory. My brain does not have access to what the actual objective-theory looks like – before BBs (e.g., photons) from the objective-theory being processed by my eye/brain. For example, my brain does not have access to what an actual/objective human eye/body looks like. The actual/objective human eye/body is in the objective-theory.) Let us call this geometric MM the indirect-geometric-model.

“阿难白佛言：世尊！我今又作如是思惟：是众生身，腑藏在中，窍穴居外，有藏则暗，有窍则明。今我对佛，开眼见明，名为见外；闭眼见暗，名为见内，是义云何？佛告阿难：汝当闭眼见暗之时，此暗境界，为与眼对？为不眼对？若与眼对，暗在眼前，云何成内？若成内者，居暗室中，无日、月、灯。此室暗中，皆汝焦腑？若不对者，云何成见？若离外见，内对所成，合眼见暗，名为身中；开眼见明，何不见面？若不见面，内对不成；见面若成，此了知心，及与眼根，乃在虚空，何成在内？若在虚空，自非汝体，即应如来，今见汝面，亦是汝身？汝眼已知，身合非觉。必汝执言：身眼两觉，应有二知，即汝一身，应成两佛？是故应知：汝言见暗，名见内者，无有是处。”—《楞严经》

“*The mind inside & outside the body?* Ananda said to the Budda, ‘World Honored One, I now offer this reconsideration: viscera and bowels lie inside the bodies of living beings, while the orifices are open to the exterior. There is darkness at the bowels and light at the orifices. Now, as I face the Budda and open my eyes, I see light: that is to see outside. When I close my eyes and see darkness, that is to see within. How does that principle sound?’ The Buddha said to Ananda, ‘When you close your eyes and see darkness, does the darkness you experience lie before your eyes? If it does lie before your eyes, then the darkness is in front of your eyes. How can that be said to be ``within’’? If it were within, then when you are in a dark room without the light of sun, moon, or lamps, the darkness in the room would constitute your ``warmers’’ and viscera. If it is not before you, how can it be seen? If you assert that there is an inward seeing that is distinct from seeing outside, in that case, when you close your eyes and see darkness, you would be seeing inside the body. Therefore, when you open your eyes and see light, why can’t you see your own face? If you cannot see your face, then there can be no seeing within. If you can see your face, then your mind that knows and understands and your organ of vision as well must be suspended in space. How could they be part of your body? If they are in space, then they are not part of your body. Otherwise, the Tathagata who now sees your face should be part of your body as well. In that case, when your eyes perceive something, your body would remain unaware of it. If you press the point and say that the body and eyes each have an awareness, they you should have two perceptions, and your one body should eventually become two Buddhas. Therefore, you should know that you state the impossible when you say that to see darkness is to see within.” (<https://langnghiem.com/en/shurangama-1/> (The Shurangama Sutra))

In the above paragraph, the term “darkness” and “light” sometimes implicitly refers to the indirect-geometric-model. I can rewrite the above paragraph to make it explicit: “*The mind inside & outside the body?* Ananda said to the Budda, ‘World Honored One, I now offer this reconsideration: viscera and bowels lie inside the bodies of living beings, while the orifices are open to the exterior. There is *darkness/indirect-geometric-model* at the bowels and *light/indirect-geometric-model* at the orifices. Now, as I face the Budda and open my eyes, I see *light/indirect-geometric-model*: that is to see outside. When I close my eyes and see *darkness/indirect-geometric-model*, that is to see within. How does that principle sound?’ The Buddha said to Ananda, ‘When you close your eyes and see *darkness/indirect-geometric-model*, does the *darkness/indirect-geometric-model* you experience lie before your eyes? If it does lie before your eyes, then the *darkness/indirect-geometric-model* is in front of your eyes. How can that be said to be ``within’’? If it were within, then when you are in a dark room without the light of sun, moon, or lamps, the darkness in the room would constitute your ``warmers’’ and viscera. If it is not before you, how can it be seen? If you assert that there is an inward seeing that is distinct from seeing outside, in that case, when you close your eyes and see *darkness/indirect-geometric-model*, you would be seeing inside the body. Therefore, when you open your eyes and see *light/indirect-geometric-model*, why can’t you see your own face? If you cannot see your face, then there can be no seeing within. If you can see your face, then your mind that knows and understands and your organ of vision as well must be suspended in space. How could they be part of your body? If they are in space, then they are not part of your body. Otherwise, the Tathagata who now sees your face should be part of your body as well. In that case, when your eyes perceive something, your body would remain unaware of it. If you press the point and say that the body and eyes each have an awareness, they you should have two perceptions, and your one body should eventually become two Buddhas. Therefore, you should know that you state the impossible when you say that to see *darkness/indirect-geometric-model* is to see within.”

In the above paragraph, both the term “darkness/indirect-geometric-model” and the term “light/indirect-geometric-model” refer to the indirect-geometric-model. Being an indirect-geometric-model, “light/indirect-geometric-model” includes more information/details, comparing to “darkness/indirect-geometric-model”. We can name “darkness/indirect-geometric-model” the basic-indirect-geometric-model, and name “light/indirect-geometric-model” the visually-enriched-indirect-geometric-model. Actually, the basic-indirect-geometric-model and the visually-enriched-indirect-geometric-model are two different modes/phases of the same indirect-geometric-model. The visually-enriched-indirect-geometric-model is being perceived by your brain, when your eyes are open. The basic-indirect-geometric-model is being perceived by your brain, when your eyes are closed. Or in other words, the basic-indirect-geometric-model is included in the visually-enriched-indirect-geometric-model – the basic-indirect-geometric-model is the core/bones/framework of the visually-enriched-indirect-geometric-model. Or we can say that the visually-enriched-indirect-geometric-model overlaps with the basic-indirect-geometric-model. The visually-enriched-indirect-geometric-model does not overlap with the objective-theory, but overlap with the basic-indirect-geometric-model. Or in other words, what you feel to be the objective-theory, is not the objective-theory, but your brain's basic-indirect-geometric-model.

A TM’s basic-indirect-geometric-model is the TM’s *cognitive map of “space” [59]* (if we postulate that the conventionally-called “space” exists objectively). The basic-indirect-geometric-model not only includes the space inside the TM’s visual field, but also includes the space outside of the TM’s visual field.

The human brain's basic-indirect-geometric-model is implemented/modeled by phase precession in the human hippocampus and entorhinal cortex [85] – the phase precession is the objective/direct form of the basic-indirect-geometric-model. The basic-indirect-geometric-model is the subjective/indirect form of the phase precession. The human brain imagines/mathematically-models that it is located in the center/core of the basic-indirect-geometric-model. However, the objective/direct form of the human brain is not *actually* located inside the basic-indirect-geometric-model – the content/context of the basic-indirect-geometric-model is actually fictional/subjective/indirect. The objective/direct form of the human brain is actually located inside the objective-theory – the content/context of the objective-theory is objective/direct.

The human brain’s basic-indirect-geometric-model is constructed based on the information captured by all sensory organs. The human brain’s visually-enriched-indirect-geometric-model is constructed based on the information captured by all sensory organs, including the *retina*.

The brain of a congenitally blind individual can construct a basic-indirect-geometric-model (based on the information captured by sensory organs except the retina) [127], but cannot construct a visually-enriched-indirect-geometric-model.

Conventionally, a TM’s visually-enriched-indirect-geometric-model is called the TM’s perception, normal perception, veridical perception, real-world perception, stimulus-triggered perception, externally driven perception, or externally triggered perception [137].

“During normal perception, neural activation is ultimately triggered by external signals from the retina, entering the cortex via the middle layer of V1 and then progressing up the visual hierarchy via feedforward connections. [137]” During normal/veridical perception, what I see in front of my eyes, is the visually-enriched-indirect-geometric-model generated by my brain. What I see in front of my eyes, is not the objective-theory. What I see in front of my eyes, is what the visually-enriched-indirect-geometric-model looks like. What I see in front of my eyes, is not what the objective-theory looks like. The objective-theory does not need to look like my brain’s visually-enriched-indirect-geometric-model. However, by default, my brain imagines that the objective-theory looks like my brain’s visually-enriched-indirect-geometric-model. So, whenever my brain forgets to remind itself that “the objective-theory does not need to look like my brain’s visually-enriched-indirect-geometric-model”, my brain will automatically/unconsciously imagine that the objective-theory looks like my brain’s visually-enriched-indirect-geometric-model. Or in other words, my brain automatically/unconsciously treats *my brain’s visually-enriched-indirect-geometric-model (which is my brain’s geometric MM of the objective-theory)* as the objective-theory itself, whenever my brain forgets to remind itself that “the objective-theory does not need to look like my brain’s visually-enriched-indirect-geometric-model”.

“One of the most striking differences between perception and imagination is that the subjective experience of stimulus-triggered perception is generally much stronger and more detailed than that of internally generated imagery. In line with this, it has been suggested that imagination is a weak form of perception. [137]” Or in other words, we can say that stimulus-triggered/veridical perception is a strong form of imagination. When we say that veridical perception is a (strong) form of imagination, it means/implies that veridical perception is not the objective-theory itself – it means/implies that veridical perception does not need to look like the objective-theory itself. Veridical perception is subjective; objective-theory itself is objective.

If the *true source [137]* of the visually-enriched-indirect-geometric-model is not external, but internal, and if the *attributed source [137]* of the visually-enriched/indirect-geometric-model is still external, then the sensory experience is defined to be dreaming or hallucinations [137], not veridical perception. In this sense, the *veridical perception (when the true source is external and the attributed source is external)* has no essential/fundamental difference from *dreaming or hallucinations (when the true source is internal and the attributed source is external)*.

When the attributed source is external, no matter the true source is external or internal, the visually-enriched-indirect-geometric-model is not the external reality/source itself, but only a geometric MM (of the external reality/source) generated by the brain.

Look at the conventionally-called “physical/objective reality/world” around you. It is actually the visually-enriched-indirect-geometric-model generated by your brain – it is actually a subset/component/part/element of the inside-world/consciousness/mind generated/simulated/modeled/represented by your brain (as a TM), not the outside world itself directly. Under this context, let’s call a TM’s *quale* of the inside-world/consciousness/mind the *subjective-theory [12] (aka the manifest image, subjectivity, (private) subjective consciousness [13], subjective cognitions/mind, subjective context/explanation, experience, inner/inside/intracorporeal/private/first-person/subjective situation/reality/world/universe/experience/life, the Spirit [134], personal take [103], Cartesian theater [97], simulation/representation/model, mental model, phenomenon, illusion, I/me/myself, soul, thought, idea, Maya, 意识空间, 脑海 or 头脑).* To a TM, its subjective-theory is only a subjective perception/quale. A TM’s subjective-theory (as a mental-model/MM) is being generated/mathematically-modeled by its objective-theory, to represent/model/simulate/reflect its objective-theory. Being the sum of all subjective experiences/mental-models a TM has, the subjective-theory/quale is actually unmatchable/incomparable – comparing it to any individual subjective experience/mental-model (e.g., a plot, a situation, a state, a dream, a hallucination, an illusion, a film) is a downgrade of it. Even the concept/perception of the objective-theory, is an individual mental-model of *a TM (i.e., my brain)*. Everything a TM is aware of, is actually a subset/component/part/element of this TM’s subjective-theory/quale/mind/consciousness/mental-model/MM. This TM's subjective-theory is not the objective-theory – “my mind is not the universe [114]”. This TM's subjective-theory is not the objective-theory – “the map is not the territory [5]”.

<https://osf.io/qmsza>

“My current conjecture is that your sense of self, the thing that you call ‘I’ that you take to be the subject creating these responses, is itself a model created by your mind just as it is creating a model of the phone/computer you are responding on. That model, the subjective self, is joined with all the other phenomenal experiences you experienced a few hundred milliseconds ago in to a single unified binding state laid down in memory. I say your mind is not a subject but an objective computation of those binding states. You never met Schopenhauer or Nietzsche, you have a romanticised model of what they were like, passionate, brilliant, etc., is it possible that your mind is using these imagined personalities as an ideal model of self that you identify with? (We all do this with our heroes)” (<https://twitter.com/sphexish/status/1493129781361229829>) “I think our language doesn’t really differentiate between pure subjective consciousness and the fictional self that appears in consciousness as a representation of agency. You are the objective mind not the body or the constructed subject. In some ways my explanation is similar to Schopenhauer, instead of a universal ‘will’ I have a monist universal computational substrate, the physical world which implements a mind which implements subjectivity of subjective self. Physical monism rather than idealist monism.” (<https://twitter.com/sphexish/status/1493158634498441218>)

A TM’s subjective-theory is “a private, self-contained world which it knows/accesses *directly”* (<https://twitter.com/keithfrankish/status/1484128169410052099>). A TM’s objective-theory is a public/shared world which it *doesn’t* know/access directly. A TM’s subjective-theory is not its objective-theory.

A TM’s subjective-theory is being presented to this TM in the form of a sequence of plots/situations/states. To this TM, among all these plots/situations/states, the development of some plots/situations/states is significantly more forecastable than the remaining plots/situations/states. Then, this TM calls these most forecastable plots/situations/states the real-life experience, while calls every other plot/situation/state a dream/hallucination/illusion. This TM believes/imagines/mathematically-models that its physical/objective body will never actually/objectively escape from these most forecastable plots/situations/states. Or in other words, this TM believes/imagines/mathematically-models that its physical/objective body is always (objectively) experiencing these most forecastable plots/situations/states, even at the time when the TM is (subjectively) experiencing a less forecastable plot/situation/state. This TM believes/imagines/mathematically-models that these most forecastable plots/situations/states describe/mathematically-model the actual/objective situation/state of its physical/objective body, while the less forecastable plots/situations/states does not describe/mathematically-model the actual/objective situation/state of its physical/objective body.

The subjective-theory includes the indirect-geometric-model – the subjective-theory is more than the indirect-geometric-model. Except the indirect-geometric-model, let’s call the other subset/component/part/element of the subjective-theory the leftover-subjective-theory. Please note that, conventionally, the leftover-subjective-theory is (incorrectly/counterfactually) imagined/defined/mentally-modeled to be “consciousness/mind” – while the indirect-geometric-model is (incorrectly/counterfactually) imagined/defined/mentally-modeled to be the “physical/objective reality/world”. In other words, in the semantics of the present article, the conventionally-called “physical/objective reality/world” is imagined/defined/mentally-modeled to be a subset/component/part/element of the subjective-theory/consciousness/mind – the conventionally-called “physical/objective reality/world” is imagined/defined/mentally-modeled to be the indirect-geometric-model.

Photons are captured by the retina, and then electrons are sent from the retina to the visual cortex through the optic nerve. Then, some BBs of the brain are being aware of an extracorporeal world – this extracorporeal world is a subset/component/part/element of the brain’s subjective-theory. The extracorporeal world being perceived by the physical/objective brain, is a mathematical/geometric/mental/subjective model of the actual extracorporeal world, not the actual extracorporeal world (itself) which is (imagined to) physically/objectively located outside of the physical/objective brain in the objective-theory. “The map is not the territory [5].” Logically speaking, the actual extracorporeal world does not need to look like the extracorporeal world being perceived by the physical/objective brain – although the physical/objective brain usually imagines that the actual extracorporeal world looks like the extracorporeal world being perceived by itself.

A TM’s subjective-theory/consciousness/mind is the quale/subjective-form of a MM being generated/mathematically-modeled by the TM – subjective-theory/consciousness/mind is explained as a MM. For example, the reality/world around you, is actually a geometric MM of the objective-theory – the indirect-geometric-model.

Actually, the MM (of an objective/direct mathematical structure) is being generated/mathematically-modeled by the objective/direct mathematical structure (i.e., the objective-theory as a state-machine/direct-parallel-computing-automaton) itself. For example, actually a TM’s indirect-geometric-model (regarding the TM’s local-environment/objective-theory) is being generated/mathematically-modeled by the TM’s local-environment/objective-theory itself.

Then, what is a MM? How do I know that a TM’s mental-model is a MM? How do I know that a TM’s mental-model is not an illusion or a phenomenon? In other words, why I use the term “MM” to describe a TM’s mental-model? Why not use the term “illusion/phenomenon” instead?

Comparing to the term “illusion” or “phenomenon”, the term “MM” emphasizes the causal relationship between the TM’s objective-theory and the TM’s mental-model. If a TM’s mental-model is a MM, then it’s easier (for my brain) to imagine/mentally-model that a TM’s mental-model/MM is fully/precisely controlled/driven/caused by the TM’s objective-theory, and it’s easier to imagine/mentally-model that a TM’s mental-model/MM is passive, not libertarian-free/flexible/active. That’s why my brain uses the term “MM” to describe a TM’s mental-model.

The subjective concept of “libertarian-free/flexible/active” is a manmade/subjective concept only. There is nothing actually libertarian-free/flexible/active in the context/objective-state-evolution of a direct-parallel-computing-automaton.

“The reality of illusion creates the illusion of reality.” (<https://twitter.com/memneon/status/1460893621813665800>) The objective-theory (of illusion) generates/creates the illusion (of objective-theory). The illusion (of objective-theory) describes/represents/models/simulates the objective-theory (of illusion). Under this context, the illusion (of objective-theory) is actually a model/mental-model/mathematical-model/simulation/representation (of objective-theory).

“If you believe that you have absolutely certain knowledge of the nature of your own experiences, then you need to answer two questions: (1) What is the self that has this knowledge? (Is it a biological organism or something else?) & (2) How does this thing acquire the knowledge?” (<https://twitter.com/keithfrankish/status/1460722731020955649>)

My answers are as below:

(1) A biological organism

(2) The knowledge is acquired through an intracorporeal mental-model/MM – this intracorporeal mental-model/MM is generated/created/mathematically-modeled/simulated by the objective-theory.

The “extreme” positions that the subjective-theory of a TM plays no causal role (‘epiphenomenalism’) or that any cognitive/behavioural activity can in principle be carried out without the subjective-theory (‘conscious inessentialism’) are counterintuitive but hard to disprove [45] – there is no valid evidence to disprove that yet. These “extreme” positions claim that the subjective-theory of a TM has no function [46] – this claim is valid/correct/factual. A TM (e.g., a human brain) is completely objectively controlled/driven by the direct-function, no matter the TM has subjective-theory or not. So, it doesn’t really matter whether a TM’s subjective-theory is a MM, an illusion/phenomenon, or something else – it has nothing to do with the objective-state-evolution of the TM’s BBs.

Alternatively, we can say that a TM’s subjective-theory is an illusion/phenomenon – *and* this illusion/phenomenon is actually a MM (which is being generated/mathematically-modeled by the TM/objective-theory).

In the semantics of the present article, the term “our cosmos” refers to a single objective-theory shared by *all human brains (as TMs)* – this objective-theory exists outside of our subjective-theory/consciousness/mind [106]. All human brains (as TMs) are subsets of a single objective-theory – “our cosmos”.

I feel like that an indirect-geometric-model is around my physical/objective body – I feel like that an indirect-geometric-model includes my physical/objective body. However, under this context, the “physical/objective body” I feel, is actually a subset of the indirect-geometric-model. In other words, the “physical/objective body” I feel, is actually a virtual body, like an avatar. This virtual body is actually my brain’s quale of my actual/objective body.

“People talk as if it's remarkable that we can't understand how the brain produces experience, as if it ought to be obvious how the activity of billions of interconnected neurons sculpted by aeons of natural selection should constitute the state they are obscurely gesturing at.” (<https://twitter.com/keithfrankish/status/1461802804343885830>)

Under this context, the “experience” is “emerged” from objective-theory. However, the "emergence" (of the “experience”) happens in the context of an observer's subjective-theory – the “emergence” (of the “experience”) does not happen in the context of the objective-theory. In other words, the “emergence” (of the “experience”) is subjective/indirect, not objective/direct. So, an observer/researcher/scientist will never be able to trace the “emergence” (of the “experience”) in the context of the objective-theory. In the context of the objective-theory, the objective-state-evolution of every BB is controlled/driven/caused by the direct-function. An observer/researcher/scientist will never be able to detect a BB which can break the control of the direct-function due to the “emergence” (of the “experience”). If the “emergence” (of the “experience”) can’t help any BB to break the control of the direct-function, then it means that the “emergence” (of the “experience”) does not happen in the context of the objective-theory. In other words, if the “emergence” (of the “experience”) happens in the context of the objective-theory, it should be able to help a BB to break the control of the direct-function. Otherwise, *what* is “emerged” in the objective-theory? *Where* does the “emergence” (of the “experience”) happen? If the “emergence” (of the “experience”) happens in the objective-theory, but the “emergence” (of the “experience”) can't/doesn’t introduce any difference into the objective-theory, then why it is called an “emergence” (in the objective-theory)? *What* is “emerged” in the objective-theory? An observer/researcher/scientist will never be able to detect the “emergence” (of the “experience”/subjective-theory/consciousness/mind) under the context of the objective-theory – the “experience”/subjective-theory/consciousness/mind is not in the objective-theory. The “experience”/subjective-theory/consciousness/mind does not exist under the context of the objective-theory.

Since the subjective-theory/experience is a MM, by describing this MM, a TM’s physical/objective construction can describe the TM’s subjective-theory/experience in natural language, even if this TM is actually a philosophical zombie (i.e., even if this TM only has a physical/objective construction (in the objective-theory), and this physical/objective construction can’t/doesn’t subjectively/actually experience the TM’s subjective-theory/experience). Under this context, this TM doesn’t have subjective-theory/experience, but still can describe the TM’s subjective-theory/experience in natural language, as if that this TM actually has subjective-theory/experience. For example, a human brain’s physical/objective construction can talk about the human brain’s subjective-theory/experience in natural language, even if this human brain is actually a philosophical zombie (i.e., even if this human brain only has a physical/objective construction (in the objective-theory), and this physical/objective construction can’t/doesn’t subjectively/actually experience the human brain’s subjective-theory/experience). In fact, till now, no human brain has been proved (by other human brains) to be not a philosophical zombie.

I have access to my subjective-theory. To me, it looks like that every other TM also has access to its own subjective-theory, but I have no valid way to prove that. Or in other words, to me, it looks like that every other TM is not a philosophical zombie, but I have no valid way to prove that.

Look at the reality/world around you – it is actually an experience produced by your brain. A brain claims that it has experience, this fact doesn’t necessarily prove that this brain actually has experience – a brain has no way to prove that it actually has experience. Actually, a brain’s avatar (as a subset of an indirect-geometric-model) doesn’t produce/own experience – the objective-theory as a whole produces/owns/generates/mathematically-models subjective-theory. The subjective-theory (being produced/owned/generated/mathematically-modeled by the objective-theory) doesn’t exist under the context of the objective-theory. The “physical/objective reality/world” as a part/component/subset/context/background of a brain’s experience, is not the objective-theory, but the indirect-geometric-model – the actual physical/objective reality/world is the objective-theory. A brain’s BBs are subsets of the objective-theory, not subsets of an indirect-geometric-model.

Look at the reality/world around you. You can (incorrectly/counterfactually) imagine it to be the objective-theory/cosmos. Alternatively, you can (correctly/factually) imagine it to be your indirect-geometric-model. If you can imagine both, then that’s why you feel like that your indirect-geometric-model “overlaps” with the objective-theory/cosmos. However, the reality/world around you is your indirect-geometric-model, not the objective-theory/cosmos.

Look at the reality/world around you. It is actually the indirect-geometric-model generated/simulated/modeled/represented by your brain (as a TM). Then, *where/what* is the objective-theory/cosmos?

Does the objective-theory/cosmos occupy the same space (which is being occupied by your indirect-geometric-model)? (My answer is “No”.)

Does the objective-theory/cosmos overlap with your indirect-geometric-model? (My answer is “No”. Because the objective-theory/cosmos and your indirect-geometric-model do not occupy the same space.)

Is the objective-theory/cosmos underneath/behind/outside/inside your indirect-geometric-model? The term “underneath/behind/outside/inside” here can only be a metaphor. The objective-theory/cosmos is not *actually* underneath/behind/outside/inside your indirect-geometric-model *in the context of space* – the objective-theory/cosmos and your indirect-geometric-model do not occupy the same space. Your indirect-geometric-model *maps* to the objective-theory/cosmos.

My brain is located inside the cosmos. My indirect-geometric-model is generated by my brain. Is my indirect-geometric-model actually located inside the cosmos? No.

The BBs of my brain are located inside the objective-theory/cosmos. My indirect-geometric-model is generated by the BBs of my brain. Is my indirect-geometric-model actually located inside the objective-theory/cosmos? No. Is the objective-theory/cosmos actually located underneath/behind/outside/inside my indirect-geometric-model? No.

There is an avatar in the center/core of a subjective-theory's indirect-geometric-model – the avatar is a subset of the indirect-geometric-model/subjective-theory. As a subset of *a geometric MM (i.e., the subjective-theory's indirect-geometric-model)*, the avatar itself is also a geometric MM (which is being generated/mathematically-modeled). The subjective-theory defines/imagines/models the avatar to be its leftover-subjective-theory's “physical/objective body”. And then the subjective-theory defines/imagines/models its leftover-subjective-theory to be the consciousness/mind of the (leftover-subjective-theory's) “physical/objective body”. In this way, the subjective-theory actually imagines/models that its leftover-subjective-theory is owned/generated/modeled by this avatar. Furthermore, the subjective-theory imagines/models that its leftover-subjective-theory is located inside this avatar. However, this avatar can’t/doesn’t own/generate/model the subjective-theory's leftover-subjective-theory – this avatar itself is actually a subset of this subjective-theory's indirect-geometric-model. This avatar itself is actually owned by this subjective-theory's indirect-geometric-model. This subjective-theory is actually owned/generated/mathematically-modeled by the *objective-theory (as a whole)* – every subjective-theory is actually owned/generated/mathematically-modeled by the *objective-theory (as a whole)*. (Each subjective-theory is a separated MM (owned/generated/mathematically-modeled by the *objective-theory (as a whole)*).) So, this avatar (as a subset of this subjective-theory) is actually owned/generated/mathematically-modeled by the *objective-theory (as a whole)*. This subjective-theory's leftover-subjective-theory is not located inside this avatar. This avatar is actually located inside this subjective-theory's indirect-geometric-model. This avatar only exists under the context of this subjective-theory's indirect-geometric-model – this avatar does not exist under the context of the objective-theory. We can only find BBs under the context of the objective-theory – this avatar (under the context of the subjective-theory's indirect-geometric-model) does not equivalent to BBs (under the context of the objective-theory), although we can (mentally/subjectively) map this avatar (under the context of the subjective-theory's indirect-geometric-model) to some BBs (under the context of the objective-theory). What a specific avatar is thinking about, we feel it to be located inside this specific avatar, and we feel it to be owned/generated by this specific avatar. However, as the theory of mind of the center/core avatar, what this specific avatar is thinking about, at least we should feel it to be located inside the center/core avatar, and at least we should feel it to be owned/generated/mathematically-modeled by the center/core avatar. (This specific avatar can be an avatar other than the center/core avatar, or can be the center/core avatar itself.) Ultimately, what this specific avatar is thinking about, as a MM, is a subset of the leftover-subjective-theory. So, ultimately, what this specific avatar is thinking about, is owned/generated/mathematically-modeled by the *objective-theory (as a whole)*.

No human brain can prove (to another human brain) that it has quale. Isn't that obvious? So, what are the philosophers actually talking about, when they are talking about “quale”? They are actually talking about the subjective experience of their subjective-theory/MM.

A TM’s indirect-geometric-model is actually the TM’s intracorporeal/subjective representation of the objective-theory. (When a TM is lucid-dreaming, the TM’s indirect-geometric-model is still the TM’s intracorporeal/subjective representation of the objective-theory.) But the indirect-geometric-model is narrated as the objective-theory by the TM’s internal monologue in natural language – the indirect-geometric-model is treated as the objective-theory by the control logic of the TM’s program. (When a TM is lucid-dreaming, the TM knows that, logically speaking, the TM’s indirect-geometric-model is not the objective-theory.)

The indirect-geometric-model is not the objective-theory. Under this context, a flower I see (which is located in front of my eyes, inside my indirect-geometric-model), is not *the actual/objective flower (which is in the objective-theory)*, but my brain’s subjective/intracorporeal perception of the actual/objective flower.

*If* the indirect-geometric-model is the objective-theory, then, under this context, when I see a flower in front of my eyes, my brain’s subjective/intracorporeal perception of the flower, should be located *somewhere inside my brain (i.e., not in front of my eyes) –* the flower (which is actually my brain’s subjective/intracorporeal perception) should be located *somewhere inside my brain (i.e., not in front of my eyes)*.

Only if a projector (which is connected to my brain) is mounted on my head, the projector is able to project my brain’s subjective/intracorporeal perception (of the flower) onto a screen in front of my eyes, for my mental image of the flower to be displayed on this screen, for my eyes to see. But where is the actual/objective flower (which is not my brain’s subjective/intracorporeal perception) then?

There is not *a small person sitting inside my brain to watch my brain's subjective/intracorporeal perception of the flower (aka “Cartesian theater” [97])*. Even if there is a small person sitting inside my brain, this small person is not me.

I am not sitting inside a big brain, to watch the big brain's subjective/intracorporeal perception of the flower. Even if I am sitting inside a big brain, this big brain is not my brain.

“If you think that brain states can appear to you as colour qualia, then why not cut out the middleman and say that object surfaces can appear to you that way?” (<https://twitter.com/keithfrankish/status/1463127216909336585>) Under this context, the middleman is my brain’s subjective-theory/indirect-geometric-model. If my brain cuts out the middleman, how does my brain mathematically-model/mentally-model/imagine my brain’s subjective-theory then? Where is my brain’s subjective-theory/indirect-geometric-model? Where are my brain’s color qualia? How can the object surfaces appear to my brain *directly (i.e., without the middleman)*?

Let’s call a situation in the objective-theory the objective-situation. Let’s call a situation in the subjective-theory the *subjective-situation (aka mental-model)*.

An objective-situation is “a mere *happening*, which occurs as a result of *purely* mechanical causes [146]”.

“An *act*, which is *done* by an agent [146]” is a kind of subjective-situation.

Thoughts about a mere *happening* (which occurs as a result of *purely* mechanical causes) are objective thoughts. Thoughts about agents (who can *act*) are subjective thoughts. Agents (who can *act*) does not exist objectively in the real world. The real world is a mere *happening* (which occurs as a result of *purely* mechanical causes). Agents (who can *act*) only exist in our mind.

The real world is a puppetry (which occurs as a result of *purely* mechanical causes). However, in our mind, the puppets (in the puppetry) are not puppets, but agents (who can *act*).

I feel as if that I am living in a world of agents (who can *act*). However, this world is my subjective-reality, not the objective-reality. The objective-reality is a world of puppets (which occurs as a result of *purely* mechanical causes).

In our mind, coarse-grained agents are used to roughly/unreliably represent the (fine-grained) puppets. Or in other words, the coarse-graine agents are our rough/unreliable/coarse-grained mental models to roughly/unreliably represent the fine-grained puppets. Actually, a fine-grained puppet (in the real world) doesn’t follow its coarse-grained mental-model/agent (in my mind), but since the mental-model/agent (in my mind) is coarse-grained, usually I can’t tell the difference between the fine-grained puppet’s physical behavior (in the real world) and the coarse-grained mental-model/agent’s expected behavior (in my mind). A soon as I can tell the difference between their behaviors (when I notice something unexpected in the fine-grained puppet’s physical behavior (in the real world)), I will adjust the coarse-grained mental-model/agent (immediately) to eliminate the observed difference between their behaviors. In this way, the coarse-grained mental-model/agent does a good job to represent the fine-grained puppet’s physical behavior. Then, it’s very hard for me to notice that the coarse-grained mental-model/agent is a mental-model/agent. Or in other words, it’s very hard for me to notice that the coarse-grained mental-model/agent is not real. Or in other words, it’s very hard for me to notice that the coarse-grained mental-model/agent is not equivalent to the fine-grained puppet itself. Or in other words, it’s very hard for me to notice that the coarse-grained mental-model/agent is subjective, while the fine-grained puppet is objective.

Each human body is a fine-grained puppet (which is composed of elementary particles), isn’t it? In my mind, I feel as if that a human body is a coarse-grained agent (who can *act*). The coarse-grained agent (who can act) is used as a mental model to roughly/unreliably represent the fine-grained puppet. The (future) physical behavior of the fine-grained puppet won’t follow my mental model (i.e., the coarse-grained agent). In contrast, my mental model (i.e., the coarse-grained agent) will (continuously) adjust itself to keep up with the (future) physical behavior of the (unpredictable) fine-grained puppet, so that I will still be able to use my mental model (i.e., the coarse-grained agent) to explain the (future) physical behavior of the fine-grained puppet.

For example, I can’t forecast what my mental model (i.e., the coarse-grained agent) of a friend will be a year later, because my (future) mental model of this friend will be based on this friend’s (future) physical behavior. I can’t precisely/reliably forecast this friend’s (future) physical behavior based on my *current* (rough/unreliable/coarse-grained) mental model.

There is no agent in objective-theory/objective-reality/scientific-image. There is no agent in an objective-situation. From third-person perspective, there is no agent. Objectively, there is no agent. Agents are subjective only.

Buddhist doctrine “anatta” means “no agent”.

“天地不仁，以万物为刍狗。”—《道德经》

“Heaven and Earth are ruthless and treat the myriad creatures as straw dogs. [74]” – Lao Tzu. However, in my view, the myriad creatures (e.g., a real dog) are actually straw dogs. When we imagine a real dog to be an agent, we feel more sympathy for the real dog (than a straw dog).

In my view, there is no objective difference between living and non-living systems. We subjectively define a space area (including the elementary particles inside this space area) to be a living system, while we subjectively define another space area (including the elementary particles inside this space area) to be a non-living system. And then, we (subjectively) imagine the former space area to be an agent (who can *act*), while we (subjectively) imagine the latter space area to be a mere *happening* (which occurs as a result of *purely* mechanical causes). But in fact, the former space area is also a mere *happening*. Actually, the agent (who can *act*) is only in our mind – the agent (who can *act*) is fictional. Epistemically, there is no non-inferential manner of determining whether the agent (who can *act*) is more than fictions. (“Epistemically, there's no non-inferential manner of determining whether the referents of intentional-talk are more than fictions. (How would one?)” (<https://twitter.com/mjdramstead/status/1517103833536737280)>)

In real world, an agent (who can act) can’t do anything other than a mere happening (which occurs as a result of purely mechanical causes) inside it. An agent can’t alter/modify/change/control/drive/cause the mere happening inside it upon an intention. The objective-state-evolution of the direct-parallel-computing-automaton – a mere happening (which occurs as a result of purely mechanical causes) – is being imagined (by our brains) as agents who are acting. When a third-person mechanics/movie which illustrates the objective-state-evolution of a space area (including elementary particles in it) doesn’t help my brain to forecast the (future) objective-state-evolution, and if an imagined agent (who is acting upon an intention) helps my brain to forecast the (future) objective-state-evolution, then my brain will use the (imagined) agent (model) to represent this space area, and that’s why my brain feels as if that this space area is an agent.

For example, when I watch a puppetry, my brain feels as if that each puppet is an agent (who can act). My brain can imagine a puppeteer who is manipulating/controlling a puppet, but this third-person mechanics/movie of mere happening (which occurs as a result of purely mechanical causes) can’t help my brain to forecast the objective-state-evolution of the puppet. As long as the third-person mechanics/movie helps in forecasting the objective-state-evolution of the puppet, my brain will use it to forecast. For example, if my brain knows that the puppeteer has Parkinson's disease, then my brain will simply ignore the puppet’s tremer. Another example, if my brain knows that a person has severe depression, then my brain won’t treat their negative feedback (upon a routine travel plan) too seriously.

My own intention is also being presented in the context of an imagined agent model. Without using the context of an imagined agent model, I even can’t explain my own intention – this is the trickiest part. Even if I can imagine every other person to be a mere happening (which occurs as a result of purely mechanical causes), I can’t imagine myself to be a mere happening – or at least this imagination is useless in my everyday life. Without using an imagined agent model of myself as the context, I can’t plan for my everyday life. The imagined agent model of myself, is the last imagined agent model (being used by my brain).

I have an intention to move a finger, then this finger moves upon my intention – this is an imagined agent model of intention. Obviously, my finger’s movement is actually a mere happening (which occurs as a result of purely mechanical causes). The formation of my intention (to move my finger) is another mere happening. The intention (to move my finger) is not the real cause (to cause my finger’s movement). The happening of the intention (to move my finger) is a mere happening.

My plan (for my everyday life) is based on my intention (to do something), although my intention (to do something) is a mere happening – although this doesn’t bother me too much in my planning. (BTW, the formation of my plan, is also a mere happening.) I can try to challenge the validity of my intention – if I have another intention to challenge the validity of the former intention. The formation of the latter intention (to challenge the validity of the former intention) is also a mere happening.

I can directly perceive/see my own intention – my brain can express/describe its own intention in human language. (The physical process to form the expression/description is a mere happening.) My brain uses the term “I” to represent itself in its output, as if that my brain itself is an agent (who can act upon an intention). Obviously, my brain is a mere happening (which occurs as a result of purely mechanical causes).

What is the intention/goal of a living system? Actually, it is not the living system’s intention/goal, but my brain’s rough/unreliable/coarse-grained forecast/guess regarding the (future) objective-state-evolution of this living system. Or in other words, my brain is actually forecasting/guessing this living system’s intention/goal – while this living system actually doesn’t have any intention/goal itself. My brain uses a living system’s “intention/goal” as a kind of (subjective/imagined) explanation to (fictionally) explain the cause of the objective-state-evolution of the living-system/cosmos – while the actual/objective cause of the objective-state-evolution of the living-system/cosmos is the direct-function. Or in other words, a living system’s “intention/goal” is a fictional cause of the objective-state-evolution of the living-system/cosmos.

My brain can roughly/unreliably forecast/guess two or more different (coarse-grained) branches of (future) objective-state-evolution of the cosmos, based on two or more different (coarse-grained) initial scenarios of the objective-state-evolution of the cosmos. For example, if I move towards this living system, this living system will move away from me; if I stand still, this living system will not move. This is a (coarse-grained) conditional forecast. Based on the conditional forecast, if I want this living system to stay, I should choose to stand still. Or in other words, if I have the intention/goal to make this living system to stay, I should choose to stand still. The conditional forecast reflects my brain’s (coarse-grained) knowledge regarding the (fine-grained) physical mechanics of the living-system/cosmos – such a (coarse-grained) knowledge roughly/unreliably reflects the physical character of the living-system/cosmos. “When my brain has an intention/goal, my brain will try to use the (coarse-grained) conditional forecast to achieve the goal” – this whole process (from/since the formation of the intention/goal) is a (fine-grained) mere happening (which occurs as a result of purely mechanical causes).

We can upgrade the aforementioned (coarse-grained) conditional forecast to a new version: if I move towards this living system, this living system will have the intention to move away from me; if I stand still, this living system will have the intention to stay. The new version is based on the “intention” of the living system. The intention-based conditional forecast can explain the exceptional case that the living system doesn’t move way from me (when I am moving towards it). The intention-based conditional forecast can also explain the exceptional case that the living system doesn’t move away from me when I am moving towards it, but the living system moves away from me just after I stop moving. In the description of the intention-based conditional forecast, the term “intention” actually reflects a probability: if I move towards this living system, this living system has a higher probability to move away from me; if I stand still, this living system has a lower probability to move away from me. So, an intention-based conditional forecast is actually a probability-based conditional forecast. A probability-based conditional forecast is rough/unreliable/coarse-grained. In real world, we have no way to prove a probability-based conditional forecast to be false. For example, when I move towards the living system, no matter the living system moves away or not, I can’t say that the probability-based conditional forecast is false – a probability-based conditional forecast is vague by nature. So, an intention-based conditional forecast is vague by nature.

When my brain is being (completely) objective, my brain is mathematically-modeling/perceiving an objective-situation. When my brain is being (completely) subjective, my brain is mathematically-modeling/perceiving a subjective-situation.

When my brain is being (completely) objective, and when my brain is being (completely) subjective, my brain is actually perceiving one objective-situation (being mathematically-modeled/described/narrated/imagined/mentally-visualized as two different subjective-situations from two different perspectives), not two different objective-situations.

“Hot take: there's no such thing as ‘computation.’ There's just dynamics and we label a subset of dynamics as ‘meaningful’, ‘interesting’, or ‘purposeful.’” (See <https://twitter.com/ThosVarley/status/1444747615908868104>) Under this context, “computation” and “dynamics” are actually one objective-situation (being modeled/described/narrated/imagined/mentally-visualized as two different subjective-situations), not two different objective-situations. Or in other words, “dynamics” is an objective-situation, while “computation” is a subjective-situation of this objective-situation.

There’s no such thing as the “direct-parallel-computation”. There’s just “objective-state-evolution of a direct-parallel-computing-automaton” (which is an objective-situation) and we label this objective-situation as the “direct-parallel-computation” (which is a subjective-situation). The direct-parallel-computation is a subjective-situation of the objective-situation “objective-state-evolution of a direct-parallel-computing-automaton”.

More generally, we label/model/describe/narrate/imagine/mentally-visualize one objective-situation as one or more subjective-situations. So, these subjective-situations actually refer to the same objective-situation.

Does a TM’s choice/decision have an impact on the direct-function (inside the TM)? Or in other words, does a TM’s choice/decision have an effect on the physical dynamics (inside the TM)? (<https://twitter.com/longbulusiboshi/status/1460198886849462276>) My answer is “No”. When we say the term “a TM’s choice/decision”, actually we are imagining this TM as an agent, and “a TM’s choice/decision” actually means “the agent’s choice/decision”. However, actually a TM is not an agent. We shouldn’t imagine a TM as an agent. So, a TM’s choice/decision actually has nothing to do with the TM (as an agent). Or in other words, a TM’s choice/decision is not the TM’s (agent’s) choice/decision.

Among the direct-function, a TM’s choice/decision, a TM’s subjective-theory/consciousness/mind and a TM’s conscious will, which one is in charge of the objective-state-evolution of a direct-parallel-computing-automaton/objective-theory? The direct-function. A TM’s choice/decision is actually a choice/decision of the direct-function. (Here we are imagining the direct-function as an agent.)

BBs are mutually exclusive subsets of a direct-parallel-computing-automaton/objective-theory.

A macroscopic objective-situation within a direct-parallel-computing-automaton/objective-theory, is actually/objectively a series/set of sequential/adjacent microscopic objective-situations at the BB level.

When *a TM inside a direct-parallel-computing-automaton (i.e., each BB of the TM is a subset of this direct-parallel-computing-automaton)* is observing this direct-parallel-computing-automaton by its involvement in the objective-state-evolution of this direct-parallel-computing-automaton, let’s call this TM an indirect-observer (of this direct-parallel-computing-automaton). An indirect-observer can only observe the state of a BB (of a direct-parallel-computing-automaton) indirectly. An indirect-observer's observation is part of the objective-state-evolution of the BBs (of the direct-parallel-computing-automaton) – an indirect-observer's observation is driven by the objective-state-evolution of the BBs (of the direct-parallel-computing-automaton). An indirect-observer's observation is mixed with the objective-state-evolution of the BBs (of the direct-parallel-computing-automaton) being observed (by this indirect-observer). An indirect-observer is not isolated to the BBs (being observed by this indirect-observer), that’s why it can observe the objective-state-evolution of these BBs under this setting. At any given moment, the scope an indirect-observer actually observes, is decided by the objective-state-evolution of the BBs of the direct-parallel-computing-automaton.

When *a TM outside of a direct-parallel-computing-automaton (i.e., any BB of the TM is not a subset of this direct-parallel-computing-automaton)* is observing this direct-parallel-computing-automaton without any involvement in the objective-state-evolution of this direct-parallel-computing-automaton, let’s call this TM a direct-observer (of this direct-parallel-computing-automaton). A direct-observer is observing the state of a BB (of a direct-parallel-computing-automaton) directly. A direct-observer's observation has no impact on the objective-state-evolution of any BB (of the direct-parallel-computing-automaton). A direct-observer is isolated to the BBs (being observed by this indirect-observer), but it still can observe the objective-state-evolution of these BBs under a special setting. At any given moment, the scope a direct-observer actually observes, is not decided by the objective-state-evolution of the BBs of the direct-parallel-computing-automaton. For example, when a TM inside a Game of Life system is observing this Game of Life system, this TM is an indirect-observer (of this Game of Life system). When a human brain is observing a Game of Life system, this human brain is a direct-observer (of this Game of Life system).

From the viewpoint of a direct-observer, there is no agent inside the direct-parallel-computing-automaton.

A direct-observer directly observes the direct-parallel-computing-automaton as the thing-in-itself. An indirect-observer actually observes its own MM of the direct-parallel-computing-automaton – an indirect-observer observes the direct-parallel-computing-automaton/thing-in-itself indirectly. An indirect-observer observers its own MM directly.

A direct-parallel-computing-automaton's direct-observer and the direct-parallel-computing-automaton's indirect-observer are not in the same objective-theory/direct-parallel-computing-automaton.

Regarding a direct-parallel-computing-automaton, a direct-observer might be able to figure out its direct-function by observing its objective-state-evolution, while an indirect-observer also might be able to figure out the *same* direct-function by observing its objective-state-evolution.

Regarding the objective-state-evolution of the BBs of a direct-parallel-computing-automaton, what a direct-observer perceives/mathematically-models, is different from what an indirect-observer perceives/mathematically-models. For example, regarding the objective-state-evolution of the BBs of our cosmos, what a direct-observer perceives/mathematically-models, is different from what my brain perceives/mathematically-models.

A direct-observer mathematically-models/knows that *an indirect-observer's BBs’ objective-state-evolution are controlled/driven/caused by the direct-function (i.e., an indirect-observer's BBs are powerless/incapable to do anything other than what they actually do – an indirect-observer's BBs do not have the libertarian-freedom/flexibility/power/capability/possibility/probability/chance/potential/option/choice to do anything other than what they actually do)*. Usually an indirect-observer doesn’t mathematically-model/imagine that its own BBs’ objective-state-evolution are controlled/driven/caused by the direct-function. Usually an indirect-observer mathematically-models/imagines that *its own BBs have the libertarian-freedom/flexibility/power/capability/possibility/probability/chance/potential/option/choice to do something other than what they actually do (i.e., its own BBs are capable to do something other than what they actually do)*, when this indirect-observer forgot the effect/consequences of the direct-function.

An indirect-observer usually mathematically-models/imagines that it is capable to control/drive/change the objective-state-evolution of some BBs of the objective-theory by its own BBs’ objective-state-evolution, while a direct-observer doesn’t mathematically-model/imagine that an indirect-observer's BBs’ objective-state-evolution is capable to control/drive/change that.

Will the "causal emergence" (<https://arxiv.org/abs/2111.06518v1>) impact the evolution of a direct-parallel-computing-automaton (e.g., a Game of Life system)? If yes, how? If no, what role does the "causal emergence" play in the direct-parallel-computing-automaton? “Causal emergence” has nothing to do with a direct-parallel-computing-automaton itself directly. A direct-parallel-computing-automaton's direct-function won’t change due to the so-called “causal emergence”. “Causal emergence” does not happen in the direct-parallel-computing-automaton directly/objectively, but happens in the brain/mind/subjective-theory of an observer (of this direct-parallel-computing-automaton) indirectly/subjectively. “Causal emergence” is subjective/indirect, not objective/direct. In other words, “causal” “emerged” in the observer’s brain/mind/subjective-theory (subjectively/indirectly) – “causal” did not “emerge” in the direct-parallel-computing-automaton (objectively/directly).

“Emergence” is actually subjective/mental/indirect, not objective/direct.

“Nevertheless, a case can be argued to make that idea more palatable by considering a version of a two-dimensional cellular automaton, Conway’s Game of Life (Gardner 1970), in which, as we shall see, there can be a structure that is ‘aware’ of its environment. (It is sometimes helpful to use such automata rather than to appeal to our own subjective experience as self-aware beings in our own universe, with all of the associated baggage that such experience would entail.). [52]” “With a little licence, one can envisage such a Universal Turing Machine (UTM) sending probes around its neighbourhood and thereby constructing an internal representation of its matrix environment. When this environment includes itself, then, in a rudimentary sense, we might say that the UTM is self-aware. [52]”

In a Game of Life system, a TM’s internal/intracorporeal representation of its matrix environment, is the indirect-geometric-model of the TM. A human brain can *directly* observe the TM’s internal/intracorporeal representation (of its matrix environment) as a direct-observer (of the Game of Life system). The TM itself can only observe its own internal/intracorporeal representation (of its matrix environment) as an indirect-observer (of the Game of Life system). The human brain cannot observe the TM’s internal/intracorporeal representation (of its matrix environment) in the same way as the TM itself can do. The TM itself cannot observe the TM’s internal/intracorporeal representation (of its matrix environment) in the same way as the human brain can do.

Analogously, in a U-system, a TM’s internal/intracorporeal representation of its local environment, is the indirect-geometric-model of the TM. A direct-observer (of the U-system) can *directly* observe the TM’s internal/intracorporeal representation (of its local environment). The TM itself can only observe its own internal/intracorporeal representation (of its local environment) as an indirect-observer (of the U-system). The direct-observer cannot observe the TM’s internal/intracorporeal representation (of its local environment) in the same way as the TM itself can do. The TM itself cannot observe the TM’s internal/intracorporeal representation (of its local environment) in the same way as the direct-observer can do. The TM can be a human brain.

“It's like you took a bottle of ink and you threw it at a wall. Smash! And all that ink spread. And in the middle, it's dense, isn't it? And as it gets out on the edge, the little droplets get finer and finer and make more complicated patterns, see? So in the same way, there was a big bang at the beginning of things and it spread. And you and I, sitting here in this room, as complicated human beings, are way, way out on the fringe of that bang. We are the complicated little patterns on the end of it. Very interesting. But so we define ourselves as being only that. If you think that you are only inside your skin, you define yourself as one very complicated little curlique, way out on the edge of that explosion. Way out in space, and way out in time. Billions of years ago, you were a big bang, but now you're a complicated human being. And then we cut ourselves off, and don't feel that we're still the big bang. But you are. Depends how you define yourself. You are actually--if this is the way things started, if there was a big bang in the beginning-- you're not something that's a result of the big bang. You're not something that is a sort of puppet on the end of the process. You are still the process. You are the big bang, the original force of the universe, coming on as whoever you are. When I meet you, I see not just what you define yourself as--Mr so-and- so, Ms so-and-so, Mrs so-and-so--I see every one of you as the primordial energy of the universe coming on at me in this particular way. I know I'm that, too. But we've learned to define ourselves as separate from it. [110]” – Alan Watts.

A TM’s BBs are a subset of its local environment’s BBs – a TM’s BBs’ objective-state-evolution/objective-situation is actually indivisible from its local environment’s BBs’ objective-state-evolution/objective-situation. However, we subjectively/magically divide a TM’s BBs from its local environment’s BBs – we subjectively/magically divide what a TM’s BBs do from what its local environment’s BBs do. Based on this magic, we postulate that what a TM’s BBs do is controlled/driven/caused by what its local environment’s BBs do, and vice versa. But there is no actual causal relationship between what a TM’s BBs do and what its local environment’s BBs do – they are both directly controlled/driven/caused by the same direct-function at the same time. What every BB does, is directly controlled/driven/caused by the direct-function – no matter a BB is subjectively/magically defined (by us) to be a subset of a TM, or is subjectively/magically defined (by us) to be a subset of a TM's local environment.

It is (obviously) unreasonable/incorrect/counterfactual to assume/postulate that a TM’s BBs’ objective-state-evolution/objective-situation is capable of disrupting the direct-function in order to choose another flavor of ice cream – readers can try to imagine this situation/conclusion under the context of a Non-stochastic/Stochastic Game of Life system first.

Can a TM’s consciousness/subjective-theory make the BBs (of the TM) bypass the direct-function?

If your answer is “Yes”, then the next question for you is that “How does a TM’s consciousness/subjective-theory make the BBs (of the TM) bypass the direct-function? Why the direct-function (of a direct-parallel-computing-automaton) can be bypassed (by something inside the direct-parallel-computing-automaton)? How do/can you imagine/mentally-model that?”.

(My answer is “No”.) If your answer is “No”, then what a TM (e.g., a human brain) can do is completely controlled/driven/caused by the direct-function – what a TM can do has nothing to do with its consciousness/subjective-theory. In this case, what is the different between a human brain and a cloud? Why we human brains claim that a human brain is *alive* while claiming that a cloud is *lifeless*? (“Because the human brain directs or orchestrates movement and metabolism. A cloud or rock does neither.” (<https://twitter.com/Dogan_G_Gokce/status/1459918117463855105>) However, in my opinion, actually a TM does not direct or orchestrate movement – although it (subjectively) seems/looks like that a TM directs or orchestrates movement.)

A direct-parallel-computing-automaton is always functional, never nonfunctional. A (functional) direct-parallel-computing-automaton is neither alive nor lifeless. Being a subset/part/component of a U-system, an organism is always functional, and is neither alive nor lifeless. So, “an organism which is being nonfunctional/lifeless” is not an objective-situation, but only a subjective-situation.

I can imagine a cloud to be the face of a human – I can imagine that this human is alive. I can imagine a human to be a cloud – I can imagine that this cloud is lifeless. We usually imagine a human to be alive, while imagine a cloud to be lifeless. Both imaginations are actually incorrect/counterfactual/subjective.

Every objective-situation's BBs are a subset of a direct-parallel-computing-automaton's BBs – one objective-situation's BBs’ objective-state-evolution is actually indivisible from another objective-situation's BBs’ objective-state-evolution. However, we subjectively/magically divide one objective-situation's BBs from another objective-situation's BBs – we subjectively/magically divide what one objective-situation's BBs do from what another objective-situation's BBs do. Based on this magic, we postulate that what one objective-situation's BBs do is controlled/driven/caused by what another objective-situation's BBs do, and vice versa. But there is no actual causal relationship between what one objective-situation's BBs do and what another objective-situation's BBs do – they are both directly controlled/driven/caused by the same direct-function at the same time. What every BB does, is directly controlled/driven/caused by the direct-function – no matter a BB is subjective/magically defined (by us) to be a subset of one objective-situation/objective-state-evolution, or is subjectively/magically defined (by us) to be a subset of another objective-situation/objective-state-evolution.

Let’s call a physical-object (in a U-system), a two-dimensional pattern (in a Non-stochastic/Stochastic Game of Life system), a one-dimensional pattern (in a Rule 110 cellular automaton), a two-dimensional structure (in a two-dimensional Primordial Particle System [39]) or a three-dimensional structure (in a three-dimensional Primordial Particle System [40]) the indirect-object (of a direct-parallel-computing-automaton). A TM is an indirect-object.

At any given moment, the indirect-object an indirect-observer actually observes, is decided by the objective-state-evolution of the BBs of the direct-parallel-computing-automaton.

At any given moment, the indirect-object a direct-observer actually observes, is not decided by the objective-state-evolution of the BBs of the direct-parallel-computing-automaton.

Our cosmos is a U-system – the objective-state-evolution of all BBs follows the U-function. Under this context/precondition/MM, logically/objectively speaking, there is no valid way to prove *any indirect-object (which is a (fuzzy) subset of all BBs of the U-system)* to be something other than a philosophical zombie. For example, there is no valid way to prove my brain to be something other than a philosophical zombie. Another example, we can view the whole cosmos as an indirect-object – there is no valid way to prove this indirect-object to be something other than a philosophical zombie.

“In biology, anytime you see a ‘state’ what you are really seeing is the balance between simultaneous generative and degradative processes.... life is inherently a (dynamically responsive and self-modulating) form of laminar flow.” (<https://twitter.com/ryanspangler/status/1468746531985448967>)

Every indirect-object's BBs are a subset of a direct-parallel-computing-automaton's BBs – one indirect-object's BBs’ objective-state-evolution/objective-situation is actually indivisible from another indirect-object's BBs’ objective-state-evolution/objective-situation. However, we subjectively/magically divide one indirect-object's BBs from another indirect-object's BBs – we subjectively/magically divide what one indirect-object's BBs do from what another indirect-object's BBs do. Based on this magic, we postulate that what one indirect-object's BBs do is controlled/driven/caused by what another indirect-object's BBs do, and vice versa. But there is no actual causal relationship between what one indirect-object's BBs do and what another indirect-object's BBs do – they are both directly controlled/driven/caused by the same direct-function at the same time. What every BB does, is directly controlled/driven/caused by the direct-function – no matter a BB is subjective/magically defined (by us) to be a subset of one indirect-object/objective-situation/objective-state-evolution, or is subjectively/magically defined (by us) to be a subset of another indirect-object/objective-situation/objective-state-evolution.

The indirect-objects (being perceived/mentally-modeled by a TM as an indirect-observer of a direct-parallel-computing-automaton) are the TM’s reality, but are not accurate representations of *the real world (i.e., the direct-parallel-computing-automaton)* – the indirect-objects are like the shadows projected on the wall (for the prisoners) in the Allegory of the Cave.

When my brain is thinking about an indirect-object (in my subjective-theory), my brain can mathematically-model/imagine/mentally-model a corresponding objective-situation (regarding the BBs of the indirect-object) in the objective-theory. However, strictlyspeaking, an indirect-object is actually a subjective-situation in the subjective-theory, not an objective-situation in the objective-theory. Anyway, an indirect-object is a special form of situation/process. Or in other words, my brain labels a special form of situation/process as an “indirect-object”. For example, my brain labels a nuclear fusion process as the “sun”. The sun is actually a nuclear fusion process. The sun is a (special form of) situation/process. Another example, my brain labels a computation process as an (animal) “brain”. An animal brain is actually a computation process (which is being carried out (at BB level) by a mechanical calculator (at BB level)). An animal brain is a (special form of) situation/process. When we use theory of mind upon an animal brain, we feel like that this animal brain has a mind/strategy (“inside this animal brain”). In other words, we (use theory of mind to) imagine/theorize the mind/strategy of this animal brain, although actually this animal brain is simply a computation process (which doesn’t have a mind/strategy “inside itself”) at BB level. Actually, a nuclear fusion process (e.g., the sun) is also a computation process (at BB level); a computation process (e.g., an animal brain) is also a quantum physics experiment. More generally, in the real life, every indirect-object/situation/process is a computation process (at BB level); every indirect-object/situation/process is a quantum physics experiment. There is incredible/unbelievable complexity in every indirect-object/situation/process (in the real life), although my brain tend to (falsely) imagine/theorize that it can handle the complexity quite well by simply using theory of mind (upon an animal brain’s “mind/strategy”). If my brain can really handle the complexity quite *well* by simply using theory of mind (upon an animal brain’s “mind/strategy”), then that’s only because theory of mind is quite *rough/vague/fuzzy*. For example, a strategy (of a green swordtail) is to avoid fighting with potentially dangerous opponents (winners or persistent losers) [149].

“As an empiricist I continue to think of the conceptual scheme of science as a tool, ultimately, for predicting future experience in the light of past experience. Physical objects are conceptually imported into the situation as convenient intermediaries - not by definition in terms of experience, but simply as irreducible posits comparable, epistemologically, to the gods of Homer. Let me interject that for my part I do, qua lay physicist, believe in physical objects and not in Homer's gods; and I consider it a scientific error to believe otherwise. But in point of epistemological footing the physical objects and the gods differ only in degree and not in kind. Both sorts of entities enter our conception only as cultural posits. The myth of physical objects is epistemologically superior to most in that it has proved more efficacious than other myths as a device for working a manageable structure into the flux of experience.” [129]

In natural language, conventionally, the term “consciousness/mind” has two meanings. Firstly, it refers to a TM’s subjective cognition or (private) subjective-theory/quale. The subjective-form/quale of a MM of the TM is part of the TM’s subjective-theory – the TM’s subjective-theory is the sum of the MMs of the TM. Secondly, when a TM suspects the presence of the subjective-theory in an indirect-object, we can say that this TM has subjective clues for the *objective-consciousness*/*objective-mind* of the indirect-object – the indirect-object can be this TM itself. Please note that, where applicable, *only* the first meaning (of the term “consciousness/mind”) is implicitly used in the present article.

Except the direct-function (which is an *objective* pattern/causality regarding the states/objective-state-evolution/objective-situation of the BBs of a direct-parallel-computing-automaton), any other pattern/causality identified by a direct-observer/indirect-observer (regarding the states/objective-state-evolution/objective-situation of the BBs of this direct-parallel-computing-automaton), is actually *subjective.* Except the direct-function, let us call all other patterns/causalities regarding the states/objective-state-evolution/objective-situation of the BBs of a direct-parallel-computing-automaton the indirect-causalities. For example, every causality (regarding the states/objective-state-evolution/objective-situation of the BBs of a direct-parallel-computing-automaton) in social-science/humanity/psychology/biology/chemistry is an indirect-causality.

Please note that, conventionally, an indirect-causality is (incorrectly/counterfactually) imagined/defined/mentally-modeled/mathematically-modeled to be a rule/law/causality/pattern which applies to the “objective-theory” – while the indirect-geometric-model is (incorrectly/counterfactually) imagined/defined/mentally-modeled/mathematically-modeled to be such a “objective-theory”. But actually, an indirect-causality as a rule/law/causality/pattern only applies to the subjective-theory – it does not *actually/really/genuinely* apply to the (actual) objective-theory. The direct-function is the only (actual/real/genuine) rule/law/causality/pattern which *actually/really/genuinely* applies to the (actual) objective-theory – no other rule/law/causality/pattern *actually/really/genuinely* applies to the (actual) objective-theory. Or in other words, other rules/laws/causalities/patterns are not actual/real/genuine – they are fake.

A direct-parallel-computing-automaton is an indivisible whole. It can be divided into independent/standalone individual BBs (when we imagine that the individual BBs are autonomous), but it can’t be divided into independent/standalone individual objective-situations/indirect-objects. Or in other words, no objective-situation/indirect-object (of two or more BBs) is actually independent/standalone (besides the extent that each individual BB (within the objective-situation/indirect-object) is independent/standalone). However, in our cognition, an objective-situation/indirect-object (of two or more BBs) is (thought/considered to be) independent/standalone, when we use an agent to represent the objective-situation/indirect-object (in our cognition) but not use agents to represent its BBs.

When we only use the direct-function (and not use any indirect-causality) upon an objective-situation/indirect-object (to explain/forecast its objective-state-evolution), this objective-situation/indirect-object is not treated as an agent (in our cognition). Instead, the direct-function is treated as an agent, or the individual BBs are treated as agents. That’s why this objective-situation/indirect-object is not thought/considered to be independent/standalone (in our cognition).

Whenever we use an indirect-causality upon an objective-situation/indirect-object (to explain/forecast its objective-state-evolution), this objective-situation/indirect-object is treated as an agent (in our cognition) in the context of this indirect-causality, and that’s why this objective-situation/indirect-object is thought/considered to be independent/standalone (in the context of this indirect-causality).

“1. Causality ought to be understood in terms of counterfactuals. 2. Counterfactuals don’t exist “out there”, but only in the mind of an observer that considers them. => Causality only exists in the mind of an observer.” (<https://twitter.com/_fernando_rosas/status/1487934333457293313> ) Causality is subjective, not objective.

What I believe or not believe, is not chosen by me – it is chosen by the objective-state-evolution of the BBs of the objective-theory/direct-parallel-computing-automaton/cosmos. So, it doesn't really matter what I believe, or what I don't believe – it makes no actual/genuine difference to the objective-state-evolution of the BBs of the objective-theory.

What a TM believes or not believes, is not chosen by the TM *itself* – it is chosen by the objective-state-evolution of the BBs of the objective-theory/direct-parallel-computing-automaton/cosmos. So, it doesn't really matter what a TM believes, or what a TM doesn't believe – it makes no actual/genuine difference to the objective-state-evolution of the BBs of the objective-theory.

When my brain is mathematically-modeling/imagining the objective-state-evolution of a direct-parallel-computing-automaton, my brain needs to include the decision/choice of a TM (who is a subset of the direct-parallel-computing-automaton). The TM’s decision/choice has an effect in the objective-state-evolution of the direct-parallel-computing-automaton – if the TM can make the decision/choice differently. My brain mathematically-models/imagines that the TM’s decision/choice can branch the objective-state-evolution of the direct-parallel-computing-automaton – if the TM can make the decision/choice differently. Based on the TM’s possible choices, my brain visually-imagines/mathematically-models/imagines two or more coarse-grained visual-imageries/episodic-future-thinkings/potential-outcomes/situation-options/timelines – each visual-imagery/episodic-future-thinking/potential-outcome/situation-option/timeline corresponds to one possible choice (of the TM). However, as a subset of the direct-parallel-computing-automaton, the TM has no way to make the decision/choice differently – although the TM can imagine/mentally-model/mathematically-model to make the decision/choice differently. The TM’s possible choices are mathematically-modeled/calculated/guessed/betted by my brain based on Bayesian probability – the TM’s possible choices are only my brain’s MMs/calculations/guesses/bets (based on limited knowledge/information regarding the direct-parallel-computing-automaton). The TM can be my brain itself.

For example, the objective-state-evolution of the cosmos has a fine-grained potential-outcome/situation-option/timeline. When my brain chooses between McDonald and KFC, my brain’s choice/decision will branch the cosmos’s (single) fine-grained potential-outcome/situation-option/timeline into two different coarse-grained potential-outcomes/situation-options/timelines. In the first coarse-grained potential-outcome/situation-option/timeline, I will choose McDonald. In the second coarse-grained potential-outcome/situation-option/timeline, I will choose KFC. Are these two coarse-grained potential-outcomes/situation-options/timelines subjective or objective? They are subjective, not objective. They are subjective MMs. They are visual imageries. They are episodic future thinking. They won’t impact/change the fine-grained objective-state-evolution/potential-outcome/situation-option/timeline of the cosmos – the fine-grained objective-state-evolution/potential-outcome/situation-option/timeline of the cosmos is another visual-imagery/episodic-future-thinking (of my brain). My brain can’t reliably mathematically-model/forecast/calculate which restaurant itself is going to choose, so my brain mathematically-models/calculates/guesses/bets that it can choose McDonald, or choose KFC – based on Bayesian probability. Which restaurant my brain is going to choose, will be decided by my brain’s (internal) MM. To my brain, it’s logically possible that there will/might/can be an unexpected/unpredictable/unforecastable/unforeseeable/unplanned/unconsidered cause/reason/causality to void/break my brain’s unreliable forecast – that's why we call my brain's forecast “unreliable”. A direct-observer (of the cosmos) can reliably forecast my brain’s (internal) MM, and can reliably mathematically-model/forecast/calculate which restaurant my brain is going to choose – my brain has no way to void/break either (reliable) forecast. That’s why we call either forecast “reliable”. (If my brain has a way to void/break a reliable forecast, then this forecast is not reliable.) To this direct-observer, logically speaking, there won’t/can’t be any unexpected/unpredictable/unforecastable/unforeseeable/unplanned/unconsidered cause/reason/causality to void/break either (reliable) forecast – that’s why we call either forecast “reliable”. (If there will/can be an unexpected/unpredictable/unforecastable/unforeseeable/unplanned/unconsidered cause/reason/causality to void/break a reliable forecast, then this forecast is not reliable.) This direct-observer can reliably forecast the unexpected/unpredictable/unforecastable/unforeseeable/unplanned/unconsidered cause/reason/causality which will void/break my brain’s unreliable forecast.

When my brain chooses McDonald over KFC, is my brain’s choice/decision the result/effect of the objective-state-evolution of the objective-theory? Or is the objective-state-evolution of the objective-theory the result/effect of my brain's choice/decision? My brain’s choice/decision is the result/effect of the objective-state-evolution of the objective-theory – the objective-state-evolution of the objective-theory is not the result/effect of my brain’s choice/decision.

If we (as observers to my physical brain) macroscopically and abstractly consider my physical brain as a black box, (my physical brain’s) choosing McDonald and choosing KFC are both superficially/theoretically/roughly feasible (in *our* coarse-grained visual-imageries/episodic-future-thinkings of the future). Our visual-imageries/episodic-future-thinkings of the future is coarse-grained, just because it doesn’t include the fine-grained details of the physical process (at elementary particle level) in my physical brain which leads to choose one of these two restaurants. It *seems* like that the (fine-grained) objective-state-evolution of the objective-theory might lead to choose McDonald, and it also *seems* like that the (fine-grained) objective-state-evolution of the objective-theory might lead to choose KFC, but that’s only because we (as observers to my physical brain) can imagine both scenarios in our mind as coarse-grained visual-imageries/episodic-future-thinkings (when we *roughly* imagine both scenarios without considering the fine-grained details of the physical process in my physical brain which leads to choose one of these two restaurants).

If we (as observers to my physical brain) microscopically consider my physical brain at elementary particle level as a fine-grained white box, when my physical brain chooses McDonald over KFC, it means that there is no fine-grained feasible path/way/objective-state-evolution (at elementary particle level) for my physical brain to choose KFC (in *our* fine-grained visual-imagery/episodic-future-thinking of the future) – the only fine-grained feasible path/way/objective-state-evolution for my physical brain is to choose McDonald (in our fine-grained visual-imagery/episodic-future-thinking of the future (which includes the fine-grained details of the physical process in my physical brain which leads to choose McDonald)). The (fine-grained) objective-state-evolution of the objective-theory (at particle level) can only lead to choose McDonald. The (fine-grained) objective-state-evolution of the objective-theory can’t lead to choose KFC. (We can’t imagine the scenario “the (fine-grained) objective-state-evolution of the objective-theory leads to choose KFC” in our mind as a fine-grained visual-imagery/episodic-future-thinking when we *precisely* imagine this scenario at particle level, because this scenario can’t actually happen in the real world as an objective-situation. When we precisely imagine this scenario at particle level, we are mentally simulating the objective-situation in the real world precisely. When we roughly imagine this scenario, we are not mentally simulating the objective-situation in the real world precisely. We can imagine the scenario “the (fine-grained) objective-state-evolution of the objective-theory leads to choose McDonald” in our mind as a fine-grained visual-imagery/episodic-future-thinking when we *precisely* imagine this scenario at particle level, because this scenario can actually happen in the real world as an objective-situation.) If the (fine-grained) objective-state-evolution of the objective-theory (at particle level) could lead to choose KFC, then why didn’t my physical brain’s particles choose KFC in the real world? Or what prevented my physical brain’s particles from choosing KFC in the real world? (Could my physical brain’s environment prevent my physical brain’s particles from choosing KFC in the real world? If this is the case, then it simply means that my physical brain’s particles had no way to choose KFC in the real world – just because choosing KFC was not allowed by my physical brain’s environment. Could my physical brain’s particles’ libertarian-free-will prevent my physical brain’s particles from choosing KFC in the real world? Or could Schrodinger equation’s libertarian-free-will prevent my physical brain’s particles from choosing KFC in the real world? What does libertarian-free-will mean at particle level? Is libertarian-free-will imaginable at particle level?) Actually, only the “coarse-grained objective-state-evolution of the objective-theory” can lead to choose KFC – this “coarse-grained objective-state-evolution of the objective-theory” (which lead to choose KFC) can only happen in *our* mind as a coarse-grained visual-imagery/episodic-future-thinking. This “coarse-grained objective-state-evolution of the objective-theory” (which lead to choose KFC) can’t actually happen in *my* physical brain (in the real world) as an objective-situation at particle level.

Besides which restaurant my physical brain will choose, the (fine-grained) objective-state-evolution of the objective-theory (at particle level) will also lead to the exact time when I enter the entrance of McDonald, what food my physical brain will order there, which waiter/waitress I will talk to, every word my physical brain will talk to them, and every word they will talk to me.

Please don’t think about many-worlds interpretation when thinking about a physical brain's choice. I mean, please don’t imagine that my physical brain’s particles will choose KFC in a world other than \*this\* world. Have you calculated out what will happen in all other worlds (based on Schrodinger equation)? If you haven’t calculated it yet, then how do you know that my physical brain’s particles will choose KFC in another world? 如果说我在（除 \*这个\* 世界之外的）另一个世界里还是选择了麦当劳，只是（在另一个世界里）下定决心选择麦当劳的时间比在 \*这个\* 世界里（下定决心选择麦当劳的时间）晚了一毫秒，这听上去（比说我在另一个世界里选择了肯德基）更靠谱些。

Yes, my physical brain’s particles thought about KFC, but why my physical brain’s particles’ thought about KFC is (powerful) enough to allow a world (where KFC is chosen) other than \*this\* world (where McDonald is chosen) to exist?

Is my physical brain God? Everything my physical brain’s particles ever thought/imagined of, will be guaranteed to be implemented/achieved in one of the worlds? Is my physical brain’s particles’ thought/imagination the “engine” to generate all the worlds? If my physical brain’s particles thought about having dinner on mars with Elon Musk and a chimpanzee, then it is guaranteed that I will have dinner on mars with Musk and a chimpanzee in a world other than \*this\* world?

<https://osf.io/kq7gm>

Or are we (as observers to my physical brain) God? If we think/imagine it to be (roughly) feasible for my physical brain’s particles to choose KFC, then it is guaranteed that my brain’s particles will choose KFC in another world? Everything we think/imagine to be (roughly) feasible, will be guaranteed to be implemented/achieved in one of the worlds? Is our thought/imagination the “engine” to generate all the worlds? If we think/imagine it to be (roughly) feasible for me to have dinner on mars with Musk and a chimpanzee, then it is guaranteed that I will have dinner on mars with Musk and a chimpanzee in a world other than \*this\* world?

Or God is my physical brain *plus* us (as observers to my physical brain)? If my physical brain’s particles thought about having dinner on mars with Elon Musk and a chimpanzee, *and* if we think/imagine it to be (roughly) feasible for me to have dinner on mars with Musk and a chimpanzee, then it is guaranteed that I will have dinner on mars with Musk and a chimpanzee in a world other than \*this\* world?

Please don’t imagine other worlds to be a rubbish bin which stores all our unrealized/abandoned/failed wishes/goals/ideas.

BTW, here *we* (as observers to my physical brain) can easily point out that there is not enough time for me to fly to mars to have *today’s* dinner there. In other words, when we macroscopically and abstractly consider it, (my physical brain’s) choosing to have today’s dinner on mars, is *not* superficially/theoretically/roughly feasible (in *our* coarse-grained visual-imageries/episodic-future-thinkings of the future), simply because *we* know that there is not enough time. However, if my physical brain’s particles thought about having dinner on mars with Elon Mask and a chimpanzee *someday* in the future, then we won’t be able to point out any obvious issue. From here we can see that, only the *obviously* infeasible scenarios/possibilities are excluded when we macroscopically and abstractly consider something. Or in other words, all the superficially/theoretically/roughly feasible scenarios/possibilities are *imagined* to be *actually* possible, when we macroscopically and abstractly consider something. In fact, *at most* one of these superficially/theoretically/roughly feasible scenarios/possibilities is actually possible. (Because it’s possible that all these superficially/theoretically/roughly feasible scenarios/possibilities (we thought of) are not actually possible. For example, it’s possible that I wouldn’t have dinner today.) We can’t see why something (e.g., I will have dinner on mars with Musk and a chimpanzee someday in the future) won’t happen in the real world, then we think it might happen in the real world – this is totally wrong. Or in other words, this is a wrong reasoning. (BTW, the feeling that I had libertarian free will, is based on such a wrong reasoning. After I chose McDonald, I can’t see why I couldn’t choose KFC. That’s why I think that I could choose between McDonald and KFC libertarian freely. That’s why I think that I had libertarian free will. In fact, I can’t see why I couldn’t choose KFC, just because I couldn’t see the real-time objective-state-evolution of the elementary particles in my physical brain (when my physical brain chose between McDonald and KFC). If I could see the real-time objective-state-evolution of the elementary particles in my physical brain (when my physical brain chose between McDonald and KFC), I can see why I couldn’t choose KFC: because it was not allowed by Schrodinger equation, or because it was not allowed by the objective-state-evolution of the elementary particles in my physical brain, or because it was not allowed by the third-person mechanics of my physical brain, or because it was not allowed by the third-person “structure” of my physical brain. It was not my physical brain’s fault (if a KFC manager’s physical brain worried about lacking customers)! My physical brain just couldn’t choose KFC.) In fact, when we can’t see why something won’t happen in the real world, it doesn’t mean it might happen in the real world – it simply means that we lack the ability to accurately/reliably forecast what will actually happen in the real world. Or in other words, it simply means that we lack the ability to exclude all the *actually* impossible scenarios/possibilities. Before we can realize that we lack this ability, we will falsely believe that everything (except the *obviously* infeasible scenarios/possibilities) might happen (i.e., “nothing impossible”). When we think something to be (roughly) feasible, it doesn’t mean it is actually possible in the real world, it only means that we can’t (roughly) see why it is infeasible. The statement “nothing impossible” actually only means “nothing (roughly) infeasible” or “there are so many things which I can’t (roughly) see why they are infeasible, so I have to assume that they are (roughly) feasible”.

In fact, when my physical brain’s particles are thinking about having dinner on mars with Elon Mask and a chimpanzee *someday* in the future, if my physical brain’s particles can’t point out any obvious issue (which can make this idea infeasible) in this idea, my physical brain’s particles might try to figure out a coarse-grained plan/episodic-future-thinking to implement/achieve it, and my physical brain’s particles might try to follow this coarse-grained plan/episodic-future-thinking in the real world. However, obviously, there is no way to *guarantee* that this coarse-grained plan/episodic-future-thinking will eventually work out in the real world. For example, my physical brain’s particles might simply give up at any time, for any *reason*. The coarse-grained plan/episodic-future-thinking has no practical way to avoid that in advance, because the coarse-grained plan/episodic-future-thinking simply can’t forecast the actual *reason* (which will cause my physical brain’s particles to give up sometime in the future).

Actually, my physical brain’s particles keep evaluating everything plausible, to maintain an increasing list of all (roughly) feasible things, and to pick up something to do from this list based on their ROI/risk roughly. (Their ROI/risk is (roughly) measured by dopamine, not by money.) That’s why my physical brain’s particles will give up doing something at some point – actually it will be (roughly) more productive (from the viewpoint of my physical brain’s particles) overall to give up doing something.

The (fine-grained) objective-state-evolution of the objective-theory (at particle level) has nothing to do with my physical brain’s intention/goal – the (fine-grained) objective-state-evolution of the objective-theory is not controlled/driven/caused by my physical brain’s intention/goal. The (fine-grained) objective-state-evolution of the objective-theory leads to my physical brain’s intention/goal.

My physical body’s physical behavior (being a subset of the (fine-grained) objective-state-evolution of the objective-theory) is carried out by the objective-theory (as an indivisible whole), not carried out by “me” (being (subjectively) separated from the rest of the objective-theory, as an agent/mental-model who can *act*).

A subset of the (fine-grained) objective-state-evolution of the objective-theory is subjectively attributed to an agent (who can *act*) – “me”. A subset of the (fine-grained) objective-state-evolution of the objective-theory is (subjectively) imagined to be *action* being done by this agent (i.e., “me”). This agent (i.e., “me”) is being imagined to exist – this agent (i.e., “me”) doesn’t objectively exist! The aforementioned subset of the (fine-grained) objective-state-evolution of the objective-theory has nothing to do with this imagined agent (i.e., “me”) – the aforementioned subset of the (fine-grained) objective-state-evolution of the objective-theory is not controlled/driven/caused by this imagined agent (i.e., “me”). The aforementioned subset of the (fine-grained) objective-state-evolution of the objective-theory is controlled/driven/caused by *itself* at particle level – *itself* is not this imagined agent (i.e., “me”). Or in other words, the (fine-grained) objective-state-evolution of my physical body is controlled/driven/caused by *itself* at particle level – *itself* is not this imagined agent (i.e., “me”). *Itself* is God. (“I’ve got a really weird take on it man. I believe that sentience = God, in a panpsychist kind of way. So that makes us (along with everything else) God. If it turns out that we don’t have free will, our determined choices are still “the choices of God.” So are they free?” ([https://twitter.com/TwoTonguesPod/status/1518653564528250882](https://twitter.com/TwoTonguesPod/status/1518653564528250882)) ) The (fine-grained) objective-state-evolution of the objective-theory (at particle level) is controlled/driven/caused by God, not controlled/driven/caused by this imagined agent (i.e., “me”).) My physical body (at particle level) is not this imagined agent (i.e., “me”). The (fine-grained) objective-state-evolution of my physical body (at particle level) is in the objective-theory. This imagined agent (i.e., “me”) is in my subjective-theory. The (fine-grained) objective-state-evolution of my physical body (in the objective-theory at particle level) is not controlled/driven/caused by this imagined agent (i.e., “me”) (in my subjective-theory). However, in most modern humans’ subjective-theory, it is *falsely/fictionally* imagined that the (fine-grained) objective-state-evolution of my physical body (in the objective-theory at particle level) is controlled/driven/caused by this imagined agent (i.e., “me”) (in my subjective-theory). In this case, my subjective-theory mixes the-components-of-the-objective-theory and the-components-of-my-subjective-theory up falsely/fictionally. My physical body is a component of the objective-theory at particle level. This imagined agent (i.e., “me”) is a component of my subjective-theory. The (coarse-grained) objective-state-evolution of my subjective-theory (or any of its components) doesn’t control/drive/cause the (fine-grained) objective-state-evolution of the objective-theory at the elementary particle level. In contrast, the (fine-grained) objective-state-evolution of the objective-theory at the particle level, controls/drives/causes the (coarse-grained) objective-state-evolution of my subjective-theory (and all its components).

A direct-observer can reliably/best mathematically-model/forecast/calculate one fine-grained potential-outcome/situation-option/timeline of the objective-state-evolution/objective-situation of the BBs of a direct-parallel-computing-automaton based on the direct-function. Let’s call this single fine-grained potential-outcome/situation-option/timeline the direct-fate. The direct-fate is objective. The direct-fate is directly-fated by the direct-function of the direct-parallel-computing-automaton. In the semantics of the present article, “directly-fated” means “completely objectively controlled/driven/caused/decided/chosen/stated/programmed (by something), so that no alternate possibility, and not objectively libertarian-free/flexible/active”. This is my brain’s own (subjective) belief regarding the objective-state-evolution of an objective-theory*.* The objective-theory is the states/objective-state-evolution/objective-situation of the BBs (of a direct-parallel-computing-automaton) seen by a direct-observer (of the direct-parallel-computing-automaton), while my brain is actually an indirect-observer (of our cosmos (as a direct-parallel-computing-automaton)).

When being observed by a direct-observer, the objective-state-evolution/objective-situation of the BBs of a direct-parallel-computing-automaton only has one fine-grained potential-outcome/situation-option/timeline. Or in other words, as the thing-in-itself, the objective-state-evolution/objective-situation of the BBs of a direct-parallel-computing-automaton only has one fine-grained potential-outcome/situation-option/timeline.

When being observed by an indirect-observer, the objective-state-evolution/objective-situation of the BBs of a direct-parallel-computing-automaton might have two or more coarse-grained potential-outcomes/situation-options/timelines. Or in other words, in an indirect-observer’s MM of the thing-in-itself, the objective-state-evolution/objective-situation of the BBs of a direct-parallel-computing-automaton might be mathematically-modeled to have two or more coarse-grained potential-outcomes/situation-options/timelines.

Every time I throw a dice (in our cosmos), the number I will get, is part of the direct-fate – the number I will get is directly-fated by the U-function/direct-fate.

Everything an indirect-observer will encounter/do/think/mathematically-model (as time goes on), is directly-fated by the direct-function/direct-fate of the direct-parallel-computing-automaton.

Usually an indirect-observer/direct-observer/TM doesn’t mathematically-model/imagine that *what itself does/thinks/mathematically-models is directly-fated/automatic/unintentional.*

A direct-observer mathematically-models/imagines that *what an indirect-observer does/thinks/mathematically-models is directly-fated/automatic/unintentional*. Under the context of this MM/imagination, what an indirect-observer does/thinks/mathematically-models, is not controlled/driven by this indirect-observer itself. An indirect-observer's action/thought/MM is actually controlled/driven/directly-fated by the direct-function.

The direct-fate is the actual/genuine *trend (like an inertia)* of the objective-state-evolution of the BBs of a direct-parallel-computing-automaton.

“What is the relationship between the distinctions of voluntary vs involuntary (e.g., in physiology) and conscious vs unconscious? Are they pointing towards the same thing? Or are they different but related (how)? Or are they entirely different notions?” (<https://twitter.com/_fernando_rosas/status/1462818783974899721>)

If you agree that every BB is controlled/driven by the direct-function, then there is nothing voluntary (e.g., in physiology). Only if your brain mathematically-models/imagines that some BBs are not controlled/driven by the direct-function, these BBs are voluntary (in your brain’s MM/imagination). So, “voluntary” is actually an incorrect/counterfactual concept (based on an incorrect/counterfactual MM/imagination/precondition).

If you agree that there is actually nothing a TM can change, then everything done by a TM is unconscious. Only if your brain mathematically-models/imagines that there is something a TM can change, this thing is mathematically-modeled/imagined (by your brain) to be done by the TM consciously. Actually, there is nothing a TM can change. So, “conscious” is actually an incorrect/counterfactual concept (based on an incorrect/counterfactual MM/imagination/precondition).

In practice, usually an indirect-observer cannot reliably/best mathematically-model/forecast/calculate one potential-outcome/situation-option/timeline (of the objective-state-evolution/objective-situation of the BBs of a direct-parallel-computing-automaton) based on the direct-function, that’s why the indirect-observer might unreliably/not-the-best mathematically-model/forecast/calculate/guess/bet two or more potential-outcomes/situation-options/timelines (based on its indirect-causalities) – at most one of them will/can turn out to be the direct-fate. The indirect-observer doesn’t know which one will/can turn out to be the direct-fate. (Otherwise, the indirect-observer doesn’t need to try to make one of them to turn out to be the direct-fate.) Then, usually the indirect-observer is directly-fated to try to make one of them to turn out to be the direct-fate – the indirect-observer's success/failure is directly-fated. To the indirect-observer, the direct-observer (who can reliably/best forecast the direct-fate) is omniscient – like God. The indirect-observer knows that it has no way to void/break the direct-observer's forecast. In practice, usually the indirect-observer's forecast/calculation/guess/bet is based on a much more simplified MM, comparing to the direct-observer's forecast (which is always based on only one MM – the direct-function) – that’s why the indirect-observer's forecast/calculation/guess/bet is unreliable/not-the-best comparing to the direct-observer's forecast/calculate. In practice, usually an indirect-observer uses a much more simplified MM (comparing to the direct-function), that’s why an indirect-observer cannot forecast reliably/best. In order to forecast reliably/best, the direct-observer actually accurately simulates the objective-state-evolution of the objective-theory/direct-parallel-computing-automaton based on the direct-function. In practice, usually it is infeasible for an indirect-observer to do this.

“The worst pain a man can suffer: to have insight into much and power over nothing.” – Herodotus.

In theory, a direct-observer (who is located outside of a U-system which includes my physical body) can use a general algorithm to reliably/best forecast the objective-state-evolution of every BB of the U-system (based on the current state of every BB of the U-system), which means that a direct-observer can reliably/best forecast all my upcoming objective-situations/theories/efforts/struggles/behaviors/actions/thoughts/ideas/decisions/choices/mental-models/imaginations/forecasts/predictions/plans/strategies/tricks/inventions – a direct-observer can reliably/best forecast my pending direct-fate. Logically speaking, no matter what my upcoming objective-situations/theories/efforts/struggles/behaviors/actions/thoughts/ideas/decisions/choices/mental-models/imaginations/forecasts/predictions/plans/strategies/tricks/inventions will be, my brain can’t void/break the direct-observer’s forecastby the effects of my upcoming objective-situations/theories/efforts/struggles/behaviors/actions/thoughts/ideas/decisions/choices/mental-models/imaginations/forecasts/predictions/plans/strategies/tricks/inventions – my upcoming objective-situations/theories/efforts/struggles/behaviors/actions/thoughts/ideas/decisions/choices/mental-models/imaginations/forecasts/predictions/plans/strategies/tricks/inventions can’t cause the direct-observer's forecast to change. The real stuff happens in the objective-theory – the real stuff does not happen in my subjective-theory. The objective-state-evolution of the real stuff has nothing to do with my subjective-theory – my subjective-theory only reflects the objective-state-evolution of the real stuff. The real stuff of my upcoming objective-situations/theories/efforts/struggles/behaviors/actions/thoughts/ideas/decisions/choices/mental-models/imaginations/forecasts/predictions/plans/strategies/tricks/inventions will happen in the objective-theory – the real stuff will be carried out by the direct-function/objective-theory/BBs, not by “me”. “Me” is an empty/fictional/unreal/imagined/subjective concept/mental-model – “me” is an indirect-object/subjective-situation in the subjective-theory. “Me” is not an objective-situation in the objective-theory. (In the Allegory of the Cave, the actual prisoner is not in the cave – the actual prisoner is some BBs in the objective-theory. A prisoner in the cave is actually the “me” being modeled by these BBs. Me-the-prisoner is not in the objective-theory – the BBs of “me” are in the objective-theory. Me-the-prisoner is only in the cave – the cave is not the real world. Me-the-prisoner does not exist in the real world. The BBs of “me” exist in the real world – the BBs of “me” (in the real world) is not equivalent to me-the-prisoner (in the cave). Both the cave and me-the-prisoner are fictionally modeled by the BBs of “me” – both the cave and me-the-prisoner do not actually/objectively exist. Both the cave and me-the-prisoner are subjective only. The cave is a subjective-situation/indirect-object in the subjective-theory – the cave is not an objective-situation in the real world. Me-the-prisoner is also a subjective-situation/indirect-object in the subjective-theory – me-the-prisoner is not an objective-situation in the real world. Me-the-prisoner can escape from the cave, but cannot escape from the subjective-theory – both the cave and me-the-prisoner are being modeled (by the BBs of “me”) as subsets of the subjective-theory. “Me-the-prisoner's upcoming objective-situations/theories/efforts/struggles/behaviors/actions/thoughts/ideas/decisions/choices/mental-models/imaginations/forecasts/predictions/plans/strategies/tricks/inventions” (as subjective-situations) are modeled (by the BBs of “me”) to be controlled/driven/caused by me-the-prisoner (as a subjective-situation/indirect-object). However, both me-the-prisoner and “me-the-prisoner's upcoming objective-situations/theories/efforts/struggles/behaviors/actions/thoughts/ideas/decisions/choices/mental-models/imaginations/forecasts/predictions/plans/strategies/tricks/inventions” *as* objective-situations are actually controlled/driven/caused by the direct-function/direct-fate in the objective-theory.) Comparing to the direct-observer’s forecast/calculation (which is reliable/best), my brain’s own forecast/calculation/guess/bet regarding my upcoming objective-situations/theories/efforts/struggles/behaviors/actions/thoughts/ideas/decisions/choices/mental-models/imaginations/forecasts/predictions/plans/strategies/tricks/inventions is unreliable/not-the-best. “‘I went, and now I'm back. Tell the Jade Emperor to hand the Heavenly Palace over to me,’ he said, standing in the Buddha's palm. ‘I've got you, you piss−spirit of a monkey,’ roared the Buddha at him. ‘You never left the palm of my hand.’ [122]” “站在如来掌内道： “我已去，今来了。你教玉帝让天宫与我。”如来骂道：“我把你这个尿精猴子，你正好不曾离了我掌哩。”” –《西游记》。

When my brain is being (completely) objective, my brain manages to imagine/simulate what the objective-theory should look like from another TM’s viewpoint.

When my brain imagines about the data/information which another TM should be able to get/process, my brain has to explain the data/information being processed by my brain as a subjective-theory – the data/information being processed by my brain comes from a objective-theory where my brain is actually/objectively located. (Obviously, my brain is not actually/objectively located in my brain’s subjective-theory.) The subjective-theory is the states/objective-state-evolution/objective-situation of the BBs (of a direct-parallel-computing-automaton) perceived/simulated/represented/modeled by an indirect-observer (of the direct-parallel-computing-automaton) – my brain. In some sense, my brain’s subjective-theory represents/models/simulates my brain’s objective-theory at some degree. Obviously, it is logically possible that my brain’s objective-theory does not look like my brain’s subjective-theory, although my brain sometimes imagines that its objective-theory looks the same as its subjective-theory – when my brain (incorrectly/counterfactually) imagines its subjective-theory as its objective-theory.

“Coders: does your algorithm have causal power? If-then code, does it actually \*do\* anything or is everything that happens an epiphenomenon of the physics driving electron clouds inside the chips, which higher levels are powerless to change? Does bubble sort make electrons dance?” (See <https://twitter.com/drmichaellevin/status/1446914750449950725>) My answer is “Physics tells whole story”, not “Algorithm controls!”.

“The execution of the if-then-control-logic” and “the physics driving electron clouds inside the chips” are actually one objective-situation (being modeled/described/narrated/imagined/mentally-visualized as two different subjective-situations), not two different objective-situations. Actually, our brains labels/models/describes/narrates/imagine/mentally-visualize *one objective-situation (i.e., the objective-state-evolution of a direct-parallel-computing-automaton)* as two different subjective-situations. The subjective-situation “the execution of the if-then-control-logic” actually refers to the objective-situation “the objective-state-evolution of the BBs of a direct-parallel-computing-automaton”, so “the execution of the if-then-control-logic” *cannot* actually control/drive/change “the objective-state-evolution of the BBs of a direct-parallel-computing-automaton”. Actually, “the objective-state-evolution of the BBs of a direct-parallel-computing-automaton” is subjectively described/narrated/imagined/mentally-visualized by our brains as “the execution of the if-then-control-logic” from a specific perspective. There’s no such thing as “the execution of the if-then-control-logic”. There’s just “the objective-state-evolution of a direct-parallel-computing-automaton” and we label a subset of “the objective-state-evolution of a direct-parallel-computing-automaton” as “the execution of the if-then-control-logic”.

The objective-state-evolution of the BBs (of a direct-parallel-computing-automaton) is an objective-situation. The objective-situation is the objective-state-evolution of the BBs (of a direct-parallel-computing-automaton). The state evolution of the BBs (of a direct-parallel-computing-automaton) is *objective*. Except the only objective-situation “the objective-state-evolution of the BBs (of a direct-parallel-computing-automaton)”, all other situations are subjective-situations, not objective-situations.

“Does my brain’s algorithm/thinking/deciding/choosing have causal power? When the algorithm of the program of my brain (as a TM) chooses McDonald over KFC, does it actually \*do\* anything or is everything that happens an epiphenomenon of the physics driving electron clouds inside my brain, which higher levels are powerless to change? Does my brain’s algorithm/thinking make electrons dance?” My answer is “Physics tells whole story”, not “Algorithm controls!”.

“My brain chooses McDonald over KFC” and “the physics driving electron clouds inside my brain” are actually one objective-situation (being modeled/described/narrated/imagined/mentally-visualized as two different subjective-situations), not two different objective-situations. The subjective-situation “my brain chooses McDonald over KFC” actually refers to the objective-situation “the objective-state-evolution of the BBs inside my brain”, so “my brain chooses McDonald over KFC” *cannot* actually control/drive/change “the objective-state-evolution of the BBs inside my brain”.

“Physics tells whole story” and “Algorithm controls!” are actually one objective-situation (being modeled/described/narrated/imagined/mentally-visualized as two different subjective-situations), not two different objective-situations. The subjective-situation “Algorithm controls!” actually refers to the objective-situation “the objective-state-evolution of the BBs being involved”, so the algorithm of the program of a TM (e.g., a computer; a brain) *cannot* actually control/drive/change “the objective-state-evolution of the BBs being involved”.

In a Game of Life system, the algorithm of a TM’s program *cannot* actually control/drive/change the objective-state-evolution of any cell. The objective-state-evolution of the cells is an objective-situation. The objective-situation is the objective-state-evolution of the cells. The state evolution of the cells is *objective*. Except the only objective-situation “the objective-state-evolution of the cells”, all other situations are subjective-situations, not objective-situations.

In a TM (within a direct-parallel-computing-automaton), no BB’s objective-state-evolution is actually controlled/driven/changed by the choice of the TM – the choice of the TM is actually controlled/driven/caused by the BBs’ objective-state-evolution. Each BB is powerless to evolve its objective-state differently – a TM is powerless to make any choice differently. However, TMs are so naïve that they usually imagine that “a TM (e.g., a human brain) within a direct-parallel-computing-automaton is capable to make a choice differently (in the past/present/future)” – which actually means that “BBs (within the TM) are capable to evolve their objective-state differently (in the past/present/future)”. For example, a TM naively believes/imagines/postulates that it is capable to choose between McDonald and KFC *libertarian-freely* – but actually this choice is not libertarian-free. No matter it chooses McDonald or KFC, a TM always naively believes/imagines/postulates that its choice (either McDonald or KFC) will control/drive/cause/change the objective-state-evolution/objective-situation/timeline of the direct-parallel-computing-automaton to leave/departure its imagined/mentally-modeled/forecasted/calculated/guessed/betted “original/default/base” objective-state-evolution/objective-situation/timeline (let’s call the TM's imagined/mentally-modeled/forecasted/calculated/guessed/betted “original/default/base” objective-state-evolution/objective-situation/timeline the *indirect-fate*), so that the objective-state-evolution/objective-situation/timeline of the direct-parallel-computing-automaton will be different from *the TM's indirect-fate (i.e., the TM’s “original/default/base” forecast/calculation/guess/bet which is unreliable/not-the-best)*. For example, if a TM chooses McDonald over KFC, the TM will imagine that the indirect-fate is choosing KFC. If a TM chooses KFC over McDonald, the TM will believe that the indirect-fate is choosing McDonald. No matter a TM chooses McDonald or KFC, this choice is not libertarian-free – this choice is the TM’s direct-fate. A TM’s actual choice/direct-fate is controlled/driven/decided by the objective-state-evolution of its BBs – a TM’s actual choice/direct-fate always can be reliably/best forecasted (by an observer other than the TM itself) based on the direct-function. (For example, in theory, based on the direct-function, a direct-observer who is located outside of the cosmos can reliably/best forecast which restaurant I will visit first – either McDonald or KFC. This direct-observer can also reliably/best forecast the weather on the earth – including global warming.) In practice, a TM’s actual choice/direct-fate sometimes cannot be reliably/best forecasted by the TM itself. (For example, right now, my brain cannot reliably/best forecast which restaurant I will visit first – either McDonald or KFC.) A TM can forecast/calculate/guess/bet its *indirect-fate* based on the causalities/beliefs/patterns it believes/postulates/mentally-models – this *forecast/calculation/guess/bet* (of a future objective-situation) is *unreliable/not-the-best.* (For example, “since KFC just announced a major discount, and I like discounts, so *probably* I will visit KFC first – I guess/bet that I will visit KFC first”.) Comparing to the direct-fate (which is a reliable/best forecast of a future objective-situation), the indirect-fate is unreliable/not-the-best/vague. (For example, “Is visiting McDonald my indirect-fate? Or is visiting KFC my indirect-fate?”) The direct-fate is forecasted (by a direct-observer) based on the direct-function – here the direct-function is the only mentally-modeled factor (regarding the objective-state-evolution of the direct-parallel-computing-automaton). Every other mentally-modeled factor (regarding the objective-state-evolution of the direct-parallel-computing-automaton) should be accurately/precisely covered by the direct-function already, no matter the factor is known by a TM (being a subset/indirect-observer of the direct-parallel-computing-automaton) or not. A TM’s indirect-fate is forecasted/calculated/guessed/betted based on the TM’s mental-models (except the direct-function), while these mental-models might unintentionally ignore/neglect/downgrade/overvalue some factors (e.g., a factor which is unknown to the TM) – that's why a TM’s forecasted/calculated/guessed/betted indirect-fate is less reliable than the direct-fate forecasted/calculated by a direct-observer. It’s hard/difficult for a TM to believe that its mental-models might unintentionally ignore/neglect/downgrade/overvalue some factors. Because, whenever you actually point out such a factor to the TM, the TM will not ignore/neglect/downgrade/overvalue this factor anymore – and then the TM feels as if that it is omniscient now.

Direct-function based MM/forecast/calculation is reliable/precise. A TM’s unreliable/imprecise MM/forecast/calculation (of the direct-fate) is the indirect-fate. So, a reliable/precise MM/forecast/calculation mathematically-models/forecasts/calculates the direct-fate, while an unreliable/imprecise MM/forecast/calculation mathematically-models/forecasts/calculates the indirect-fate. The objective-state-evolution of the BBs of the objective-theory/direct-parallel-computing-automaton is reliable/precise, while a TM’s MM/forecast/calculation of the objective-state-evolution of the BBs of the objective-theory/direct-parallel-computing-automaton is unreliable/imprecise. When the TM is aware of that it failed to reliably/precisely MM/forecast/calculate the direct-fate, the TM feels like that the objective-state-evolution of the BBs of the objective-theory/direct-parallel-computing-automaton is libertarian-free/flexible. However, to be exact, the TM should say that the objective-state-evolution of the BBs of the objective-theory/direct-parallel-computing-automaton is unexpected/unpredictable/unforecastable/unforeseeable/unplanned/unconsidered.

To a TM, usually its direct-fate is much more abstract/mysterious/subtle than its indirect-fate. For example, “I am going to choose between McDonald and KFC. I am pretty sure that my indirect-fate is to choose McDonald – but I don’t need to disclose this to you right now. I can change my mind at any time. You claim that I have a direct-fate on my pending choice. Please tell me what my pending direct-fate/choice will be. Then, I can change my direct-fate/choice/mind in front of your eyes! For example, if you tell me that my pending direct-fate/choice is to choose McDonald, then I will choose KFC. Otherwise, I will choose McDonald. So, how can you tell me what my pending direct-fate/choice will be?”

Bro, I know that you are trying to void/break a reliable forecast – in order to prove that this forecast is not reliable. Okay, I can’t tell you what your physical body’s pending direct-fate/choice will be, unless I can measure the current objective-state of every BB of the U-system which includes your physical body. If I can measure the current objective-state of every BB of a U-system which includes your physical body, I still can’t tell you what your physical body’s pending direct-fate/choice will be, otherwise I will need to *recalculate/reforecast* your physical body’s pending direct-fate/choice – to include what my physical body’s BBs are going to do in your U-system when my physical body will be telling your physical body my forecast. But I can’t forecast what my physical body’s BBs are going to do in your U-system when my physical body will be telling your physical body my forecast, because I can’t measure the current states of the BBs of my physical body. So, you are right – I can’t tell you what your pending direct-fate/choice will be. It’s logically impossible for my physical body to tell you what your physical body’s pending direct-fate/choice will be. When I am telling you my forecast, I am not a direct-observer (of your U-system) anymore – I become part of your U-system.

Let’s do a thought experiment to further explain this scenario. Suppose you write a computer program which will print either “McDonald” or “KFC” on the screen. Then, I claim that I can write a program to reliably forecast what your program will print on the screen (based on your program’s source code). Then, you modify your program to get an input from my program, and ask me to modify my program to input its forecast to your program. So, your program first receives my program’s forecast as its input, and then prints either “McDonald” or “KFC” on the screen. Then, you modify your program again, so that it will print “McDonald” whenever my program inputs “KFC”, and will print “KFC” whenever my program inputs “McDonald”. Under this scenario, how can my program reliably forecast what your program will print (based on your program’s source code)? Under this scenario, it’s logically impossible to have an algorithm/program to reliably forecast what your program will print (based on your program’s source code). Under this scenario, if my program wants to reliably forecast what your program will print, my program needs to base its forecast on both your program’s source code and my program’s source code – it’s impossible for the program/algorithm of *a TM (e.g., a human programmer's brain)* to write/generate/invent such a program/algorithm. In the meantime, we can use a general algorithm to *reliably* forecast what your program will print (based on *both* your program’s source code and my program’s source code – no matter what my program’s source code is) – as long as this general algorithm does not tell your program its forecast beforehand. (“Heaven’s secrets cannot be revealed. [121]”) In theory, a direct-observer (who is located outside of a U-system which includes our physical bodies) can use a general algorithm to reliably/best forecast the source code of every program we will write.

I know the fact that a TM *can* choose between McDonald and KFC, but this fact doesn’t necessarily *mean* that this TM's choice/direct-fate is *libertarian-free*. A TM *can’t* reliably forecast which restaurant another TM is going to choose, but this fact doesn’t necessarily prove that the other TM’s pending choice/direct-fate is *libertarian-free*. A TM can’t reliably forecast which restaurant *itself* is going to choose, but this fact doesn’t necessarily prove that its own pending choice/direct-fate is libertarian-free. A direct-observer can use a general algorithm to reliably/best forecast which restaurant a TM is going to choose – this fact necessarily proves that the TM’s pending choice/direct-fate is *not* libertarian-free.

It’s logically impossible for my physical body to tell you what your physical body’s pending direct-fate/choice will be. Similarly, it's logically impossible for my physical body to travel to the past (using a time machine) to tell you your physical body’s direct-fate/choice, although a human brain can imagine this scenario. When a human brain imagines this scenario, in this imagined scenario, your physical body can change its choice to avoid its direct-fate – this imagined scenario is actually impossible. *If* my physical body can travel to the past (using a time machine) to tell you your physical body’s direct-fate/choice, so that your physical body can change its choice, then it’s possible that your physical body’s direct-fate will become even worse – due to an unexpected/unpredictable/unforecastable/unforeseeable/unplanned/unconsidered cause/reason/causality.

When we try to avoid something bad, we might end up with something even worse. We don’t know in advance that we will end up with something even worse (by avoiding something bad), that’s why we try to avoid something bad (and then get something even worse).

*If* my physical body can travel to the past (using a time machine) to tell my grandfather his physical body’s direct-fate/choice, so that his physical body can change its choice, then it’s possible that my father will not be born – this is the worst thing (to me). This is the grandfather paradox.

When I feel regret, it feels as if that my physical body can travel to the past (using a time machine) to tell myself my physical body’s direct-fate/choice, and then my physical body can change its choice to avoid its direct-fate – and I wish my physical body changed its choice (without being told by my physical body from the future (through the time machine)). But actually, it was impossible for my physical body to change its choice – because my physical body was not being told by my physical body from the future (through the time machine). So, my physical body didn’t have the chance to change its choice – because my physical body can’t travel to the past (using a time machine). So, actually I don’t have a valid reason to regret. *If* my physical body can travel to the past (using a time machine) to tell myself my physical body’s direct-fate/choice, so that my physical body can change its choice, then it’s possible that my physical body’s direct-fate will become even worse – due to an unexpected/unpredictable/unforecastable/unforeseeable/unplanned/unconsidered cause/reason/causality.

When I feel regret, it feels as if that I had a chance/probability to precisely forecast my physical body’s direct-fate beforehand – while I actually failed to precisely forecast my physical body’s direct-fate beforehand. So, it feels as if that it was my fault. However, in this case, because I actually failed to precisely forecast my physical body’s direct-fate beforehand, so actually I didn’t have the chance/probability to precisely forecast my physical body’s direct-fate beforehand. So, actually it was not my fault.

When I feel regret, it feels as if that I had a chance/probability to make the choice/decision differently – while I actually failed to make the choice/decision differently. So, it feels as if that it was my fault. However, in this case, because I actually failed to make the choice/decision differently, so actually I didn’t have the chance/probability to make the choice/decision differently. So, actually it was not my fault.

By hacking the computer program which simulates a Non-stochastic/Stochastic Game of Life system, a direct-observer is capable to change the state of a BB within the system to *break* the direct-function.

If a direct-observer knows the *actual* direct-function of a direct-parallel-computing-automaton, and is capable to change the state of a BB to *break* the *actual* direct-function, let us call such a direct-observer the direct-breaker of the direct-parallel-computing-automaton.

A direct-breaker is capable to actually/objectively/directly break/change/influence/control/drive/branch the objective-state-evolution of a BB of a direct-parallel-computing-automaton, while *a TM (which is a subset of the direct-parallel-computing-automaton)* is incapable/powerless to actually/objectively/directly break/change/influence/control/drive/branch the objective-state-evolution of any BB of the direct-parallel-computing-automaton. However, *a TM (which is a subset of the direct-parallel-computing-automaton)* is capable to imagine/mathematically-model that it is capable to actually/objectively/directly break/change/influence/control/drive/branch the objective-state-evolution of a BB of the direct-parallel-computing-automaton – this imagination/MM is incorrect/counterfactual.

When a TM is making a choice, for each option (of the choice), a direct-breaker can reliably forecast/calculates its corresponding direct-fate (if we *suppose* that the TM can choose this option). Based on its reliable forecasts/calculations, the direct-breaker knows which option is the best for the TM’s welfare. Then, the direct-breaker can hack the direct-parallel-computing-automaton to make the TM to choose this option.

Changing the TM’s choice is a coarse-grained change. Actually, it’s possible that the direct-breaker doesn’t need to make a coarse-grained change – a fine-grained change might be enough. For example, due to butterfly effect, it’s possible that the direct-breaker just need to change a single BB’s state, to make the TM’s life significantly different. This single BB does not need to be a subset of the TM.

When the TM chooses an option, this means a coarse-grained situation. There are infinite fine-grained sub-situations under the scope of this coarse-grained situation. The TM actually has a different direct-fate for each fine-grained sub-situation. For example, when I decide to jump off from a flying airplane, my trajectory will be significant different if I jump one second earlier/later.

“Two alternatives: either we accept everything was determined right after the Big Bang, or we accept that there are causes that didn’t had a cause themselves. Neither of them feel great, but the latter is more parsimonious.” (See <https://twitter.com/_fernando_rosas/status/1444233977909456901>) If everything was determined right after the Big Bang, then the belief/assumption/postulation “there are (independent/isolated) causes/controllers/drivers that didn’t have a cause/controller/driver themselves” should be insane/superstitious. Analogously, in the objective-state-evolution of a Game of Life system, everything is predetermined by the initial state, so it is insane/superstitious if a TM within this system believes/assumes/postulates that “there are (independent/isolated) causes/controllers/drivers that didn’t have a cause/controller/driver themselves”.

A direct-observer (of a direct-parallel-computing-automaton) is observing the states/objective-state-evolution/objective-situation of the BBs of this direct-parallel-computing-automaton directly/objectively. An indirect-observer cannot observe the states/objective-state-evolution/objective-situation of the BBs of this direct-parallel-computing-automaton directly/objectively.

We can imagine/assume/postulate that a direct-observer (of a direct-parallel-computing-automaton) is observing the states/objective-state-evolution/objective-situation of the BBs of this direct-parallel-computing-automaton directly/objectively. We cannot imagine/assume/postulate that an indirect-observer can observe the states/objective-state-evolution/objective-situation of the BBs of this direct-parallel-computing-automaton directly/objectively.

For example, a TM within a Game of Life system (as an indirect-observer) cannot observe the states/objective-state-evolution/objective-situation of the BBs of this system directly/objectively – the TM can only observe its own (subjective) simulation/representation/model of this Game of Life system. A human brain (as a direct-observer) is observing the states/objective-state-evolution/objective-situation of the BBs of this system directly/objectively.

Another example, a human brain within a U-system (as an indirect-observer) cannot observe the states/objective-state-evolution/objective-situation of the BBs of this U-system directly/objectively – the human brain can only observe its own (subjective) simulation/representation/model of this U-system. Another human brain (who is not located within this U-system) is observing the states/objective-state-evolution/objective-situation of the BBs of this U-system directly/objectively. The latter human brain is a direct-observer of this U-system.

However, as an indirect-observer of a U-system, a human brain usually (incorrectly/counterfactually) imagines/assumes/postulates that it is observing the states/objective-state-evolution/objective-situation of the BBs of this U-system directly/objectively. Obviously, as an indirect-observer of a U-system, a human brain cannot observe the states/objective-state-evolution/objective-situation of the BBs of this U-system directly/objectively.

One objective-situation (of a direct-parallel-computing-automaton) is perceived/simulated/represented/modeled as two different subjective-situations from two different perspectives. The first perspective is from the viewpoint of a direct-observer (of the direct-parallel-computing-automaton) – my brain labels this subjective-situation the objective-situation. The second perspective is from the viewpoint of an indirect-observer (of the direct-parallel-computing-automaton) – my brain does not label this subjective-situation the objective-situation. Let us call the first perspective the *objective-perspective (aka third-person perspective [29], outer perspective [143], observer memory perspective [143], distanced perspective [58] or God’s eye view [30] [31] [15])*, and call the second perspective the *subjective-perspective (aka first-person perspective [28], inner perspective [143], in field perspective [143], or immersed perspective [58]).*

“We provide evidence that individual biases toward treating robots as either intentional agents or mechanistic artifacts can be detected at the neural level, already in a resting state EEG signal [154].” When a person treats robots as intentional agents, this person’s brain is using the subjective-perspective. When a person treats robots as mechanistic artifacts, this person’s brain is using the objective-perspective. 因此，我们可以通过EEG来判断一个人的大脑正在使用的perspective是subjective-perspective还是objective-perspective。

我的大脑可以非常迅速的在（使用）subjective-perspective和（使用）objective-perspective之间切换。一般人的切换速度没有我这么快。因此，一般人会认为我的思维比较“跳跃”。

When I use the objective-perspective, my imagined viewpoint doesn’t need to be located far away. However, before you get used to the objective-perspective, I suggest you to locate your imagined viewpoint as far as you can. Because, the farer you locate your imagined viewpoint, the easier you can use the objective-perspective. Your imagined viewpoint doesn’t need to be located inside your brain’s indirect-geometric-model. Your imagined viewpoint doesn’t need to be located inside our cosmos/U-system/objective-theory. Your imagined viewpoint doesn’t need to be located inside the cosmos/U-system/objective-theory which includes the BBs of your physical/objective body.

When my brain is being (completely) objective, my brain only mathematically-models/imagines/assumes/postulates/mentally-models/forecasts/calculates *one potential (objective) spatiotemporal outcome* *(or one (objective) situation-option/timeline)* of the objective-state-evolution/objective-situation of the BBs under the context of spacetime. (“No man ever steps in the same river twice, for it's not the same river and he's not the same man.” – Heraclitus. When my brain imagines/uses the many-worlds interpretation, my brain imagines many potential spatiotemporal outcomes in many worlds – my brain only imagines one potential spatiotemporal outcome in *this* world.) *This single potential spatiotemporal outcome (or this single situation-option/timeline)* is the direct-fate. A direct-observer (of the direct-parallel-computing-automaton) sees one potential spatiotemporal outcome (or one situation-option/timeline) of the objective-state-evolution/objective-situation of the BBs (of the direct-parallel-computing-automaton) under the context of spacetime – this direct-observer sees the objective-situation of the BBs directly/objectively. What this direct-observer sees, is objective. My brain imagines/assumes/postulates that the objective-state-evolution of the objective-theory is directly-fated/passive. My brain imagines/assumes/postulates that every indirect-object (e.g., my brain itself) is directly-fated/passive – my brain imagines/assumes/postulates one potential spatiotemporal outcome of every indirect-object's upcoming action under the context of spacetime. The objective-state-evolution of an objective-theory can be described by the phrase “matter in motion as a whole [105]” – if we imagine that matter actually/objectively exists within this objective-theory. “Heaven and Earth are ruthless and treat the myriad creatures as straw dogs. [74]” – Lao Tzu. An indirect-object is a physical process under the context of spacetime. A direct-observer sees an indirect-object as a fated physical process (across time) under the context of spacetime – because both the past (objective-state-evolution) and the future (objective-state-evolution) can’t change. An indirect-observer sees the past (objective-state-evolution) of an indirect-object as a fated physical process (across time) under the context of spacetime – because the past (objective-state-evolution) can’t change. An indirect-observer can imagine the future (objective-state-evolution) of an indirect-object (e.g., the indirect-observer itself) as a fated physical process (across time) under the context of spacetime, although the indirect-observer can’t reliably forecast the future (objective-state-evolution) of this fated physical process (in advance).

When my brain is being (completely) subjective, my brain mathematically-models/imagines/assumes/postulates/mentally-models/forecasts/calculates/guesses/bets two or more (subjective) potential-outcomes/situation-options/timelines of the objective-state-evolution/objective-situation of the BBs (based on Bayesian probability) – at most one of them will/can turn out to be the direct-fate. (These (subjective) potential-outcomes/situation-options/timelines have nothing to do with quantum randomness. Or in other words, these (subjective) potential-outcomes/situation-options/timelines are not caused by quantum randomness. A TM in a Game of Life system can also mathematically-model/imagine/assume/postulate/mentally-model/forecasts/calculates/guesses/bets two or more potential-outcomes/situation-options/timelines of the objective-state-evolution/objective-situation of the BBs, even though the objective-state-evolution/objective-situation of BBs of the Game of Life system is predetermined. Analogously, if the U-function of a U-system is non-stochastic, then a TM in such a system can still mathematically-model/imagine/assume/postulate/mentally-model/forecasts/calculates/guesses/bets two or more (subjective) potential-outcomes/situation-options/timelines of the objective-state-evolution/objective-situation of the BBs: in one (subjective) potential-outcome/situation-option/timeline, the TM turns left; in another (subjective) potential-outcome/situation-option/timeline, the TM turns right. In the cosmos, my brain’s BBs/neurons feel hungry right now, so these BBs/neurons consider going to McDonald or KFC for dinner (as two (subjective) potential-outcomes/situation-options/timelines). In the semantics of the present article, quantum randomness only introduces some annoying/disadvantageous/unserious noises to the thinking process of these BBs/neurons, while these BBs/neurons are seriously evaluating McDonald and KFC – such noises cannot make/set the deliberate decision/choice (of these BBs/neurons) *libertarian-free.* The randomness/stochasticity is not libertarian-free. In the extreme case, these BBs/neurons can make the decision/choice (to choose between McDonald and KFC) only based on whether a random subatomic event (that may or may not occur) will occur. In this case, there should be a physical mechanics being implemented by these BBs/neurons. If the random subatomic event occurs, then the physical mechanics will make these BBs/neurons to choose McDonald. If the random subatomic event doesn’t occur, then the physical mechanics will make these BBs/neurons to choose KFC. Here the decision/choice is still not libertarian-free, because the decision/choice is to be decided only by the random subatomic event, while the random subatomic event is not libertarian-free. In this extreme case, the decision/choice (of these BBs/neurons) reflects the “noise” introduced by quantum randomness, and only reflects the “noise” introduced by quantum randomness. In a case other than this extreme case, there should be another physical mechanics being implemented by these BBs/neurons. Starting from an initial state, this physical mechanics can make these BBs/neurons to choose McDonald. Starting from another initial state, this physical mechanics can make these BBs/neurons to choose KFC.) My brain imagines/assumes/postulates that the objective-state-evolution of the objective-theory is libertarian-free/flexible/active, not directly-fated/passive. My brain imagines/assumes/postulates that at least one indirect-object (e.g., my brain itself) is libertarian-free/flexible/active – my brain imagines/assumes/postulates two or more potential-outcomes/situation-options/timelines of this indirect-object's upcoming action/objective-state-evolution/objective-situation.

For example, when I reach a T-junction, the road ahead me has two branches under the context of space. Subjectively, my upcoming spatial movement has *two potential branches (or two situation-options/timelines)* under the context of space – my trajectory has *two potential spatial branches (or two spatial situation-options, or two timelines)* under the context of space. (These *two spatial situation-options (or two timelines)* are simulated/represented/mathematically-modeled inside my brain physically. I see/mentally-visualize these two spatial situation-options/timelines in my mind, only because my brain simulates/represents/mathematically-models them internally physically. My brain believes/assumes/postulates that *either spatial situation-option (or either timeline)* has a nonzero Bayesian probability to happen.) Actually/objectively, my upcoming spatiotemporal movement only has *one potential branch (or one situation-option/timeline)* under the context of spacetime – my body’s world tube only has *one potential spatiotemporal branch (or one spatiotemporal situation-option)* under the context of spacetime. (*This single spatiotemporal situation-option (or this single timeline)* is also simulated/represented/mathematically-modeled inside my brain physically. I see/mentally-visualize this single spatiotemporal situation-option/timeline in my mind, only because my brain simulates/represents/mathematically-models it internally physically. This simulation/representation/MM is more abstract, comparing to the simulations/representations/MMs of the aforementioned *two spatial situation-options (or two timelines)*.) “My brain’s thinking/simulating/representing/mathematically-modeling/mentally-visualizing/deciding/choosing” and “the objective-state-evolution of the BBs of my brain” are actually one objective-situation (being mathematically-modeled/described/narrated/imagined/mentally-visualized as two different subjective-situations), not two different objective-situations.

“My trajectory has *two potential spatial branches (or two spatial situation-options, or two timelines)* under the context of space” and “my upcoming spatiotemporal movement only has *one potential branch (or one situation-option/timeline)* under the context of spacetime” are actually one objective-situation (being mathematically-modeled/described/narrated/imagined/mentally-visualized as two different subjective-situations), not two different objective-situations.

“*One potential spatiotemporal outcome* *(or one situation-option/timeline)* of the objective-state-evolution/objective-situation of the BBs under the context of spacetime” and “two or more potential-outcomes/situation-options/timelines of the objective-state-evolution/objective-situation of the BBs” are actually one objective-situation (being mathematically-modeled/described/narrated/imagined/mentally-visualized as two different subjective-situations), not two different objective-situations.

An indirect-observer (of a direct-parallel-computing-automaton) perceives/believes/simulates/represents/ mathematically-models two or more potential-outcomes/situation-options/timelines of the objective-state-evolution/objective-situation of the BBs (of the direct-parallel-computing-automaton) – this indirect-observer perceives/believes/simulates/represents/ mathematically-models a subjective-situation of the BBs. What this indirect-observer perceives/believes/simulates/represents/ mathematically-models, is subjective.

What a direct-observer (of a direct-parallel-computing-automaton) will observe/perceive/believe/forecast (regarding the states/objective-state-evolution/objective-situation of the BBs of this direct-parallel-computing-automaton), is not restricted/directly-fated by the direct-function of this direct-parallel-computing-automaton. What an indirect-observer will observe/perceive/believe/forecast (regarding the states/objective-state-evolution/objective-situation of the BBs of this direct-parallel-computing-automaton), is restricted/directly-fated by the direct-function of this direct-parallel-computing-automaton.

For example, what a TM (inside a Game of Life system) will observe/perceive/believe/forecast (regarding the states/objective-state-evolution/objective-situation of the BBs), is restricted/predetermined by the direct-function of the Game of Life system. What a human brain will observe/perceive/believe/forecast (regarding the states/objective-state-evolution/objective-situation of the BBs of this Game of Life system), is not restricted/predetermined by the direct-function of the Game of Life system.

Another example, what a TM (within a U-system) will observe/perceive/believe/forecast (regarding the states/objective-state-evolution/objective-situation of the BBs of this U-system), is restricted/directly-fated by the direct-function of the U-system. What another TM (who is outside of this U-system) will observe/perceive/believe/forecast (regarding the states/objective-state-evolution/objective-situation of the BBs of this U-system), is not restricted/directly-fated by the direct-function of this U-system.

The direct-function reflects the nature of the states/objective-state-evolution/objective-situation of the BBs of a direct-parallel-computing-automaton. An indirect-causality does not reflect the nature of the states/objective-state-evolution/objective-situation of the BBs of a direct-parallel-computing-automaton, but reflects the nature of the control logic of the program of an indirect-observer/direct-observer (as a TM). “吾心即宇宙，宇宙即吾心。”—陆九渊。"My mind is the universe and vice versa. [108]" – Lu Jiuyuan. An indirect-causality believed/perceived/simulated/represented/ mathematically-modeled by an indirect-observer (as a TM), is directly-fated by the direct-function/objective-state-evolution of the direct-parallel-computing-automaton.

A TM mathematically-models/forecasts/calculates/mentally-models/reasons/infers/deduces a (future) indirect-fate based on its indirect-causalities. As a *forecast* of a future objective-situation/direct-fate, the indirect-fate is unreliable/not-the-best.

The future objective-situation/direct-fate can be reliably/best mathematically-modeled/forecasted/calculated/mentally-modeled based on the direct-function.

I had a dream on Wednesday night. In the dream, a fairy told me that I would lose my wallet next afternoon. Under this context, “I would lose my wallet next afternoon” is my brain’s indirect-fate, not my brain’s direct-fate.

The direct-function is the actual/objective rule of a direct-parallel-computing-automaton. A TM’s indirect-causalities are the TM’s subjectively mathematically-modeled/perceived/mentally-modeled rules of a direct-parallel-computing-automaton.

If a TM believes that “the objective-state-evolution/objective-situation of a BB causes change in the objective-state-evolution/objective-situation of another BB”, this belief is an indirect-causality. The concept of “physical interaction” is based on this indirect-causality. In other words, the concept of “physical interaction” is compatible with this indirect-causality.

It’s possible that a TM within a Game of Life system believes in this indirect-causality. But we humans know that, in a Game of Life system, it’s not the objective-state-evolution/objective-situation of a BB which causes change in the objective-state-evolution/objective-situation of another BB – it's the direct-function (or the computer program which is simulating this Game of Life system) who causes change in the objective-state-evolution/objective-situation of the latter BB.

Analogously, in a U-system, it's possible that it’s not the objective-state-evolution/objective-situation of a BB which causes change in the objective-state-evolution/objective-situation of another BB – it's possible that it's the direct-function who causes change in the objective-state-evolution/objective-situation of the latter BB.

A TM (inside a direct-parallel-computing-automaton) has no way to tell *whether* it’s the objective-state-evolution/objective-situation of a BB which causes change in the objective-state-evolution/objective-situation of another BB, *or* it's the direct-function who causes change in the objective-state-evolution/objective-situation of the latter BB. Actually, “the objective-state-evolution/objective-situation of a BB causes change in the objective-state-evolution/objective-situation of another BB – the change in the objective-state-evolution/objective-situation of the latter BB is not caused by the direct-function” and “the direct-function causes change in the objective-state-evolution/objective-situation of the latter BB – the change in the objective-state-evolution/objective-situation of the latter BB is not caused by the objective-state-evolution/objective-situation of the former BB” are two MM-options for the TM. My brain (mentally/subjectively) labels the first MM-option to be “subjective”, while labels the second MM-option to be “objective”. Let’s call the first MM-option the dependent-BBs-MM-option, and call the second mental-model option the independent-BBs-MM-option.

The author’s brain (as a TM) failed to mathematically-model/imagine/mentally-model that “the objective-state-evolution/objective-situation of a BB causes change in the objective-state-evolution/objective-situation of another BB, *and* the change in the objective-state-evolution/objective-situation of the latter BB is caused by the direct-function” – this is a two-in-one “mixed” mental-model.

See below for a sample C function (which includes an if-then-control-logic):

int testParameter (int parameter)

{

if (parameter<10)

{

printf(“parameter<10”);

}

else

{

printf(“parameter>=10”);

}

}

When my brain is being (completely) objective, my brain only imagines/assumes/postulates/mentally-models one (objective) potential-outcome/situation-option/timeline (i.e., the direct-fate) of the (objective) execution of the sample C function within a U-system.

When my brain is being (completely) subjective, my brain imagines/assumes/postulates/mentally-models two (subjective) potential-outcomes/situation-options/timelines of the (subjective/imagined/mentally-modeled) execution of the sample C function within a U-system – one of them will/can turn out to be the direct-fate.

When my brain is being (completely) objective, my brain’s *mental-model (of the U-system and the sample C function* is more abstract, comparing to my brain's *mental-model (of the U-system and the sample C function)* when my brain is being (completely) subjective.

Within the objective-state-evolution of a U-system, the input parameter for the sample C function is an objective-situation, while the objective execution of the sample C function is another objective-situation. It looks like that the former objective-situation controls/drives/causes the latter objective-situation. Or in other words, it looks like that there is a causal relationship between the two objective-situations. (For example, if the input parameter is 5, then the sample C function will print “parameter<10” on the computer screen. In this case, it looks like that the input parameter “5” (as an objective-situation) *controls/drives/causes* the sample C function’s action/objective-situation (i.e., printing “parameter<10” on the computer screen).) However, both objective-situations are actually/objectively directly-fated/controlled/driven/caused by the direct-function only – the former objective-situation doesn’t/can’t actually/objectively control/drive/cause the latter objective-situation in the objective-theory/U-system. Actually/objectively, the latter objective-situation is not controlled/driven/caused by the former objective-situation. The former objective-situation is used (by a TM’s MM) to unreliably forecast the latter objective-situation. (The adverb “unreliably” is used in the previous sentence, because it's possible that the latter objective-situation won’t appear (after the former objective-situation appears) – due to an unexpected/unpredictable/unforecastable/unforeseeable/unplanned/unconsidered reason. For example, it’s possible that the latter objective-situation won’t happen, because the computer running the sample C function is powered off by someone accidently.) (Actually/objectively, the sample C function’s action/objective-situation (i.e., printing “parameter<10” on the screen) is directly-fated by the direct-function, not controlled/driven/caused by the input parameter “5” (as an objective-situation).) *Subjectively*, the latter objective-situation is controlled/driven/caused by the former objective-situation. In summary, the causal relationship between the two objective-situations is *subjective*, not objective – this causal relationship is an *indirect-causality*. This indirect-causality means that “the former objective-situation controls/drives/causes the latter objective-situation”. So, this indirect-causality is an if-then-forecast – “If the former objective-situation happens, then the latter objective-situation might happen”. (Actually, an if-then-control-logic is a form/kind of if-then-forecast.) Human brain believes in this if-then-forecast-indirect-causality. In the semantics of the present article, the sample C function itself also *believes* in this if-then-forecast-indirect-causality. This if-then-forecast-indirect-causality mathematically-models/believes/assumes/postulates that the former objective-situation has 100% Bayesian probability to control/drive/cause the latter objective-situation, although actually the former objective-situation does not control/drive/cause the latter objective-situation. The former objective-situation is used (by this MM/if-then-forecast-indirect-causality) to unreliably *forecast* the latter objective-situation. (In the U-system, firstly the former objective-situation appears (due to the direct-function), and then the latter objective-situation appears (due to the direct-function), but this fact/phenomenon does not necessarily mean/prove that the former objective-situation controls/drives/causes the latter objective-situation. When a TM observes the former objective-situation, it mathematically-models/forecasts that the latter objective-situation has a Bayesian probability to appear. The former objective-situation is used (by the TM’s MM/if-then-forecast-indirect-causality) to unreliably forecast the latter objective-situation, but this fact/phenomenon does not necessarily mean/prove that the former objective-situation controls/drives/causes the latter objective-situation.) This if-then-forecast-indirect-causality does not reflect the nature of the states/objective-state-evolution/objective-situation of the BBs of the U-system, but reflects the nature of the control logic of the sample C function. Besides, this if-then-forecast-indirect-causality also reflects the nature of the control logic of human brain (as a TM). How a TM (e.g., the sample C function; human brain) defines/identifies the former/latter objective-situation, reflects the nature of the control logic of the TM. The sample C function and human brain (as a TM) are sharing the same nature, that is, they defines/identifies the former/latter objective-situation in the same way/scope. That’s why human brain can understand the if-then-control-logic of the sample C function. The if-then-forecast-indirect-causality actually reflects the nature of the if-then-control-logic. Actually, both the if-then-forecast and the if-then-control-logic are fictionally invented by the mind/subjective-theory of a TM; both the if-then-forecast and the if-then-control-logic only exist in the mind/subjective-theory of a TM. There is no if-then-forecast or if-then-control-logic in the objective-state-evolution of a U-system/objective-theory. In a TM’s if-then-forecast-indirect-causality, the former objective-situation is *(incorrectly/counterfactually)* mentally-modeled/imagined/believed to control/drive/cause the latter objective-situation. (So, any *causal chain (i.e., a series of linked if-then-forecasts)* is actually mental/subjective/fictional/incorrect/counterfactual. So, when I draw a conclusion by abductive reasoning based on a causal chain, this conclusion is actually mental/subjective/fictional/incorrect/counterfactual. Actually, this kind of abductive reasoning is a *reversed* if-then-forecast. When we forecast/calculates/guess/bet/imagine/postulate/assume/identify/mentally-model the “effect” situation/objective-situation of an “cause” situation/objective-situation, this is an if-then-forecast. When we predict/calculates/guess/bet/imagine/postulate/assume/identify/mentally-model the “cause” situation/objective-situation for an “effect” situation/objective-situation, this is a kind of abductive reasoning.

(When a TM uses an if-then-forecast-indirect-causality, actually this TM uses the if-then-forecast-indirect-causality to linearly/approximately/roughly mathematically-model/simulate/substitute the function of the direct-function (of its objective-theory/direct-parallel-computing-automaton) from the former objective-situation to the latter objective-situation. Comparing to the direct-function, the if-then-forecast-indirect-causality is linear/approximate/rough/simplified/simpler/underfit/unreliable.)

The “effect” situation/objective-situation is actually controlled/driven/caused/directly-fated by the direct-function/direct-fate, or by the state/situation/objective-situation of the *whole* U-system at every earlier moment. Randomly/directly-fatedly picking up a *subset* of an earlier state/situation/objective-situation of the whole U-system, and names/defines/mentally-models it to be the “cause” situation/objective-situation (of the “effect” situation/objective-situation) – such a mental action (of abductive reasoning) is actually groundless. If you don’t want the “cause” situation/objective-situation to include all BBs of the whole U-system, the “cause” situation/objective-situation should at least include all BBs which will involve in the “effect” situation/objective-situation – every BB count. Otherwise, the “cause” situation/objective-situation is obviously incomplete. For example, when a rat is being attacked by a cat, the “cause” objective-situation (of the rat’s current objective-state as the “effect” objective-situation) should at least include all BBs of the *rat*. If you mentally-model the “cause” objective-situation to be the cat’s objective-situation (at an earlier moment) only, such a mental-model is obviously incomplete – you should at least mentally-model the “cause” objective-situation to include *both* animal’s objective-situations (at an earlier moment), although victim blaming is politically incorrect in modern human society/culture/indirect-causalities. Obviously, an “effect” objective-situation's “cause” objective-situation should at least be mentally-modeled to include the objective-situation of every participant of the “effect” objective-situation (at an earlier moment). It will be an incomplete mental-model, if we omit any participant. However, it’s technically difficult for a mental-model/indirect-causality (of human brain) to include two or more *subjects* (as “causes”). That’s why most mental-models/indirect-causalities (of human brain) only include one *subject* (as a “cause”). For example: “It is caused by the cat’s objective-situation!”; “It is caused by the rat’s objective-situation!”; “It is caused by the direct-function/direct-fate!”; “It is caused by the state/objective-situation of the whole U-system at an earlier moment!”. In a mental-model/indirect-causality, human brain tends to only identify/define *one* “dominated” “cause” objective-situation (for an “effect” objective-situation), and tends to omit all other “non-dominated” “cause” objective-situations. However, unless this so-called “dominated” “cause” objective-situation is the state/objective-situation of the *whole* U-system at an earlier moment, this so-called *“dominated”* “cause” objective-situation is not actually “dominated” – this so-called *“dominated”* “cause” objective-situation is not more “dominated” than any other so-called “non-dominated” “cause” objective-situation. In other words, all “cause” objective-situations are equal in their contributions/importance to the “effect” objective-situation. But usually human brains can magically/incorrectly/counterfactually/directly-fatedly identify a so-called “dominated” “cause” objective-situation (for an “effect” objective-situation). For example, in the mental-model/proverb "it is the last straw that breaks the camel's back", the last straw’s objective-situation is magically/incorrectly/counterfactually/directly-fated identified (by human brain) to be the so-called “dominated” “cause” objective-situation of *the “effect” objective-situation (i.e., the camel’s back is being broken by the straws)*. But actually, all straws’ objective-situations as “cause” objective-situations are equal in their contributions/importance – no straw’s contribution is dominated. Actually, the last straw’s contribution is not dominated. “No snowflake in an avalanche ever feels responsible.” – Stanisław Jerzy Lec. In an avalanche, either no snowflake’s earlier objective-situation caused *the avalanche (i.e., an “effect” objective-situation)*, or every snowflake's earlier objective-situation equally caused the avalanche. More generally, in an “effect” objective-situation (e.g., my physical body’s current objective-situation – while I am writing the present article), either no BB’s earlier objective-situation caused the “effect” objective-situation, or every BB's earlier objective-situation equally caused the “effect” objective-situation. No BB’s earlier objective-situation was more “important” than others. (For example, regarding my physical body’s current objective-situation as the “effect” objective-situation, an earlier objective-situation of a BB in my brain (as an “cause” objective-situation), was not more “important” than an earlier objective-situation of a BB in my stomach, and was not more “important” than an earlier objective-situation of a photon (before it left Sirius) which is being captured by my retina right now.) When I feel a BB’s earlier objective-situation to be more “important” than another BB’s earlier objective-situation, it actually reflects my mental-model/indirect-causality regarding this scenario: it does not reflect the actual/objective contribution/importance of the former BB, but reflects the former BB’s *“subjective”* contribution/importance as being mentally/subjectively modeled/evaluated by my brains’ program. In order to mentally-model/explain/imagine all objective-situations (of BBs) in a U-system together within a single mental-model, a human brain has to introduce/integrate the idea/concept/imagination/mental-model of the direct-function/U-function into this single mental-model. A human brain cannot see the full picture of a U-system, without utilizing the idea/concept/imagination/mental-model of the direct-function/U-function.

A TM can share its if-then-forecast, causal chain and abductive reasoning with another TM through communication. The meaning carried by the communication between two TMs, is based on their commonly-agreed if-then-forecast, causal chain and abductive reasoning. (“The concept of culture I espouse... is essentially a semiotic one. Believing with Max Weber, that man is an animal suspended in webs of significance he himself has spun, I take culture to be these webs, and the analysis of it to be therefore not an experimental science in search of law but an interpretative one in search of meaning.” [128]) It’s impossible for a TM to have the same set of if-then-forecast, causal chain and abductive reasoning as another TM, as long as the former TM does not have the same control logic as the latter TM. (For example, it’s impossible for a computer program to have the same/similar set of if-then-forecast, causal chain and abductive reasoning as a human brain, as long as the computer program does not have the same/similar control logic as a human brain.) A TM’s if-then-control-logic can’t/doesn’t control/drive/cause/branch/change/break the objective-state-evolution of the U-system. There is no if-then-control-logic in the states/objective-state-evolution/objective-situation of the BBs of the U-system – there is only *one* direct-fate. So, the if-then-control-logic (of a TM in the U-system) doesn’t reflect the nature of the states/objective-state-evolution/objective-situation of the U-system. The if-then-control-logic of a TM’s program can be used (by this TM itself, or by another TM) to forecast/expect/explain/mentally-model the TM’s (directly-fated) behavior/action/objective-state-evolution within the U-system. The if-then-control-logic (of a TM’s program) is actually a mental-model/indirect-causality being believed/accepted/imagined/mentally-constructed/mentally-modeled by the TM itself (or by another TM), to be used to forecast/expect/explain/mentally-model the TM’s (directly-fated) behavior/action/objective-state-evolution within the U-system. The TM itself (or another TM) is confident in the if-then-control-logic (of the TM’s program). The TM itself (or another TM) should be more confident in the U-system's direct-function/direct-fate. Regarding the if-then-control-logic, it looks like that what the TM will do in the “then” clause (as an objective-situation) is caused by the TM itself (as an objective-situation), or is caused by the condition/objective-situation being defined in the “if” clause. But actually, what the TM will do in the “then” clause (as an objective-situation) is only caused by the direct-function/direct-fate. The TM itself (as an objective-situation) is also directly-fated by the direct-function.

When my brain is being (completely) subjective, my brain is being treated (by my brain) as a subject which is libertarian-free/flexible/active.

When my brain is being (completely) objective, my brain is being treated (by my brain) as an object (i.e., an indirect-object) which is directly-fated/passive, not a subject which is libertarian-free/flexible/active.

“Look again at that dot. That's here. That's home. That's us. On it everyone you love, everyone you know, everyone you ever heard of, every human being who ever was, lived out their lives. The aggregate of our joy and suffering, thousands of confident religions, ideologies, and economic doctrines, every hunter and forager, every hero and coward, every creator and destroyer of civilization, every king and peasant, every young couple in love, every mother and father, hopeful child, inventor and explorer, every teacher of morals, every corrupt politician, every ‘superstar,’ every ‘supreme leader,’ every saint and sinner in the history of our species lived there--on a mote of dust suspended in a sunbeam. [111]” – Carl Segan.

The objective-theory is an objective-situation; the subjective-theory is a subjective-situation.

The objective-theory and the subjective-theory are actually one objective-situation (being modeled/described/narrated/imagined/mentally-visualized as two different subjective-situations), not two different objective-situations.

“There seem to be two radically different starting points to study consciousness: — that first-person experience is not to be trusted, or — that first-person experience is our first and foremost guide. This partially explains how people can reach so different conclusions...” (See <https://twitter.com/_fernando_rosas/status/144916637686272410>) Here the term “first-person experience” and the term “consciousness” actually refer to the same thing. The starting point of the present article is that *first-person experience (aka consciousness)* is not to be trusted.

Regarding a objective-theory/direct-parallel-computing-automaton, actually/objectively (i.e., as an objective-situation; from the objective-perspective; in a direct-observer's subjective-theory), the objective-state-evolution of the BBs only has one potential-outcome/situation-option/timeline. Subjectively (i.e., as a subjective-situation; from the subjective-perspective; in an indirect-observer's subjective-theory), the objective-state-evolution of the BBs has two for more potential-outcomes/situation-options/timelines.

My brain can mathematically-model/perceive/simulate/represent/mentally-model/mentally-visualize two categories of MMs/situations/mental-models. In order to distinguish these two categories subjectively, my brain uses the term/symbol “subjective/intracorporeal/subjective-theory/consciousness” and “objective/extracorporeal/objective-theory/cosmos” to label them respectively. (For example, a so-called “objective-situation” is actually a subjective-situation *(aka MM/mental-model)* with the label “objective/extracorporeal/objective-theory/cosmos”. A situation with the label “objective/extracorporeal/objective-theory/cosmos” is a situation seen by a direct-observer. A situation with the label “subjective/intracorporeal/subjective-theory/consciousness” is a situation seen by an indirect-observer.) Then, my brain believes/assumes/postulates that it has MMs/perceptions/simulations/representations/mental-models/mental-visualizations of a objective-theory/cosmos, while it also has MMs/perceptions/simulations/representations/mental-models/mental-visualizations of a subjective-theory/consciousness. And then my brain believes/assumes/postulates that its MMs/perceptions/simulations/representations/mental-models/mental-visualizations of the objective-theory/cosmos mathematically-model/reflect/simulate/represent/mentally-model/mentally-visualize “extracorporeal” objective-situations which are “objective”, while its MMs/perceptions/simulations/representations/mental-models/mental-visualizations of the subjective-theory/consciousness mathematically-model/reflect/simulate/represent/mentally-model/mentally-visualize “intracorporeal” subjective-situations which are “subjective”. So, the subjective-meaning of “objective” and the subjective-meaning of “extracorporeal” are tightly/seamlessly coupled with the subjective-meaning of “objective-theory/cosmos”, while the subjective-meaning of “subjective” and the subjective-meaning of “intracorporeal” are tightly/seamlessly coupled with the subjective-meaning of “subjective-theory/consciousness”. Then, whenever my brain has a MM/perception/simulation/representation/mental-model/mental-visualization, firstly, my brain tries to label it as either “subjective/intracorporeal/subjective-theory/consciousness” or “objective/extracorporeal/objective-theory/cosmos”, so that my brain can group it with the MMs/perceptions/simulations/representations/mental-models/mental-visualizations with the same label. So, my brain believes/assumes/postulates that there are two categories of MMs/situations/perceptions/simulations/representations/mental-models/mental-visualizations, one category has the label “subjective/intracorporeal/subjective-theory/consciousness”, while the other category has the label “objective/extracorporeal/objective-theory/cosmos”. My brain believes/assumes/postulates that all MMs/situations/perceptions/simulations/representations/mental-models/mental-visualizations in the same category complement each other, and are compatible with each other.

Based on your brain’s maximized-patikulamanasikara-experience, your brain can categorize/label its subjective-situations with either the label “subjective/intracorporeal/subjective-theory/consciousness” or the label “objective/extracorporeal/objective-theory/cosmos” – your brain and my brain are using the same criteria to categorize/label their subjective-situations.

Actually/objectively, the (spatiotemporal) objective-state-evolution of our cosmos/objective-theory only has *one potential-outcome/situation-option (i.e., the direct-fate)* under the context of spacetime. In my brain/mind/subjective-theory, the objective-state-evolution of our cosmos/objective-theory is (subjectively) mathematically-modeled/imagined/postulated/represented/mentally-modeled/simulated/mentally-visualized to have two or more potential-outcomes/situation-options, only because that my brain/mind/subjective-theory cannot reliably-forecast which potential-outcome/situation-option will be realized by the objective-state-evolution of our cosmos/objective-theory. My brain cannot make a reliable-forecast based on the Bayesian probability – it is impossible to make a reliable-forecast based on the Bayesian probability.

For example, when I throw a dice, the (spatiotemporal) objective-state-evolution of our cosmos/objective-theory only has one potential-outcome/situation-option under the context of spacetime – the number I will get is directly-fated. In my brain/mind/subjective-theory, the objective-state-evolution of our cosmos/objective-theory is (subjectively) mathematically-modeled/imagined/postulated/represented/mentally-modeled/simulated/mentally-visualized to have six potential-outcomes/situation-options, only because that my brain/mind/subjective-theory cannot reliably-forecast the number I will get. My brain cannot reliably-forecast the number I will get, based on the Bayesian probability. Based on Bayesian probability, I might get one, two, three, four, five or six.

When my brain is being (completely) subjective, my brain only (incorrectly/counterfactually) explains the data/information being processed by my brain as an objective-theory.

When my brain is being (completely) objective, my brain can (incorrectly/counterfactually) explain the data/information being processed by my brain as an objective-theory, and my brain can also explain the data/information being processed by my brain as a subjective-theory. My brain prefers to explain the data/information being processed by my brain as a subjective-theory.

An indirect-object is a dynamic-physical-system.

A dynamic-physical-system has a spatial scope, and its state evolves objectively as time goes on. When we focus on the objective-state-evolution of a dynamic-physical-system over/across *time*, we view this dynamic-physical-system as a physical-event/physics-experiment. When we focus on the *spatial* scope of a physical-event/physics-experiment, we view this physical-event/physics-experiment as a dynamic-physical-system. So, actually a dynamic-physical-system equals to a physical-event/physics-experiment.

When my brain is being (completely) objective, my brain views itself as a dynamic-physical-system.

When a human brain identified a dynamic-physical-system (e.g., a billiard ball; a wind; a sail; a finger; a cat; all the players of a football team as a whole; everything in an ocean as a whole; an island in the ocean; a planet; everything on the earth except humans; everything in the cosmos except a cat) from its physical environment, the human brain firstly imagines/mathematically-models what would happen in the dynamic-physical-system *without* intervention from its physical environment, and then imagines/mathematically-models possible interventions (from its physical environment) and their respective impacts (to the dynamic-physical-system), as if that the dynamic-physical-system and its physical environment are two independent systems. But actually, both the dynamic-physical-system and its physical environment are subsets/components of *the same system (i.e., a direct-parallel-computing-automaton)* – the dynamical-physical-system and its physical environment are actually one system.

Each indirect-object is a dynamic-physical-system/physical-event/physics-experiment at BB level. All indirect-objects in my local environment are subsets/components of the same dynamic-physical-system/physical-event/physics-experiment. Being a subset/component of the same dynamic-physical-system/physical-event/physics-experiment (which changes/evolves as time goes on), each indirect-object itself shouldn’t have any consistent/stable independent/intrinsic feature (which shouldn’t change/evolve as time goes on) at all. But my brain still managed to identify/imagine/theorize each indirect-object’s “consistent/stable independent/intrinsic feature”. So, an indirect-object’s “consistent/stable independent/intrinsic feature” (as being identified/imagined/theorized by my brain) is not actually its consistent/stable independent/intrinsic feature (which shouldn’t change/evolve as time goes on). An indirect-object’s “consistent/stable independent/intrinsic feature” (as being identified/imagined/theorized by my brain) is actually my brain’s illusion/stereotype. Or in other words, it’s my brain’s illusion/stereotype to imagine/theorize that an indirect-object has consistent/stable independent/intrinsic feature (which shouldn’t change/evolve as time goes on). After my brain imagining/theorizing that an indirect-object has consistent/stable independent/intrinsic feature (which shouldn’t change/evolve as time goes on), this indirect-object doesn’t look like a subset/component of a dynamic-physical-system/physical-event/physics-experiment (i.e., my local environment) anymore, because a subset/component of a dynamic-physical-system/physical-event/physics-experiment shouldn’t have any consistent/stable independent/intrinsic feature. My brain tracks/observes/analyzes what an indirect-object has done, to get an idea of this indirect-object’s consistent/stable independent/intrinsic feature (based on what this indirect-object has done), as if that this indirect-object itself carried out its own behaviors. But actually, what this indirect-object has done, was not carried out by this indirect-object itself, but was carried out by the indirect-function, or was carried out by individual autonomous BBs. In other words, my brain somehow divides the cosmos/BBs into indirect-objects, and then tracks/observes/analyzes these indirect-objects as if that they are autonomous/standalone (and independent to each other) as agents at indirect-object level, although they are not autonomous/standalone (nor independent to each other) as agents at indirect-object level. In a sense, we can say that each BB is autonomous/standalone (and independent to each other) as an agent at BB level, although we shouldn’t say that each indirect-object is autonomous/standalone (and independent to each other) as an agent at indirect-object level. Although each indirect-object is moving (in space) at a different speed, it’s an illusion/stereotype to imagine/theorize that each indirect-object is autonomous/standalone (and independent to each other) as an agent at indirect-object level.

Actually, my brain’s thoughts/ideas/cognitions are not the thoughts/ideas/cognitions of my brain (as an indirect-object/agent/homunculus), but the thoughts/ideas/cognitions of the indirect-function (as an agent/homunculus), or the thoughts/ideas/cognitions of individual autonomous BBs (as agents/homunculi).

If we track/observe the cosmos at BB level, then the cosmos becomes different (than before) at every moment, and each indirect-object becomes different (than before) at every moment. So, actually, we face a different (fine-grained) situation (than before) at every moment.

However, if we track/observe the cosmos at indirect-object level, then it feels like that the same set of indirect-objects remains there every day. If we don’t consider the (internal) change in each indirect-object, and if we don’t worry too much about the *exact* location/speed/acceleration of each indirect-object, then it seems like that we face a similar (coarse-grained) situation today (comparing to yesterday).

So, actually, our brains tend to imagine/theorize/explain/label a different (fine-grained) situation (than yesterday) as a similar (coarse-grained) situation (comparing to yesterday). For example, our brains tend to imagine/theorize/explain/label a different (fine-grained) indirect-object (than yesterday) as the same (coarse-grained) indirect-object (of yesterday). For example, our brains tend to imagine/theorize/explain/label a different (fine-grained) indirect-object (than yesterday) as the same (coarse-grained) “sun” (of yesterday).

In other words, to make it accurate/correct, whenever we mention an indirect-object, we should add a timestamp to it. For example, we should use the term “the sun at this moment” instead of the term “the sun”, because actually the sun becomes a different (fine-grained) indirect-object (than before) at every moment, although we tend to imagine/theorize/explain the sun as the same agent (comparing to yesterday).

We tend to imagine/theorize that a situation/indirect-object is repeating itself (whenever we recall that we saw the “same” situation/indirect-object before). However, only when we track/observe/analyze a situation/indirect-object at coarse-grain, the situation/indirect-object is (seemed to be) repeating itself. In other words, only coarse-grained situation/indirect-object is (seemed to be) repeating itself; fine-grained situation/indirect-object never repeats itself. In other words, when we feel like we saw the “same” situation/indirect-object before, actually we saw a (slightly) *different* situation/indirect-object before. Because we can never see the *same* situation/indirect-object twice in the real life. “No man ever steps in the same river twice, for it's not the same river and he's not the same man.” – Heraclitus.

A coarse-grained situation repeats itself. For example: The same (coarse-grained) sun rises every morning.

A fine-grained situation never repeats itself. For example: A different (fine-grained) sun rises every morning.

When we want to apply our existing (coarse-grained) knowledge/experience on situations/indirect-objects, our existing (coarse-grained) knowledge/experience only applies to coarse-grained situations/indirect-objects. That’s why we tend to imagine/theorize situations/indirect-objects at coarse-grain (instead of fine-grain).

When we imagine/theorize situations/indirect-objects at coarse-grain (instead of fine-grain), if we apply our existing (coarse-grained) knowledge/experience on them, we imagine/theorize that we can forecast what will happen (based on our existing (coarse-grained) knowledge/experience). However, our forecast is coarse-grained/rough/unreliable. So, we don’t know what will actually/exactly/reliably happen, although we can imagine/theorize what will happen. For example, based on our existing (coarse-grained) knowledge/experience, we don’t actually/reliably know whether the sun will rise again tomorrow morning, although we can imagine/theorize that the sun will rise again tomorrow morning.

When we study animal’s behavior, we tend to imagine/theorize organisms at coarse-grain (instead of fine-grain). I mean, we tend to imagine/theorize each organism as a (coarse-grained) agent (instead of imagining/theorizing each cell/molecule/BB (in each organism) as a (fine-grained) agent), as if that each organism (as an agent) is more than its cells/molecules/BBs (as agents), or as if that there is something more in the organism (as an agent) than what is in its cells/molecules/BBs (as agents), or as if that there is something more in the organism (as an agent) which can’t be explained by its cells/molecules/BBs (as agents). Actually, we imagine/theorize the mind/strategy of the organism, and the mind/strategy of the organism (as being imagined/theorized by us using theory of mind) can’t be explained by (using theory of mind upon) its cells/molecules/BBs. In this sense, the mind/strategy of the organism is something more in the organism (as an agent) which can’t be explained by its cells/molecules/BBs (as agents). So, the mind/strategy of the organism seems to be something emerged in the organism (which can’t be explained by (using theory of mind upon) its cells/molecules/BBs). However, the mind/strategy of the organism actually emerged in *our* mind. The mind/strategy of the organism actually didn’t emerge inside the organism. If we cut an organism into pieces, we won’t be able to find its mind/strategy inside any piece. Actually, the organism itself doesn’t have a mind/strategy (“inside the organism”), although we tend to imagine/theorize that the organism has a mind/strategy (“inside the organism”). The organism’s “mind/strategy” is actually inside our “mind”. The organism itself is a robot/mechanical-calculator which doesn’t have a mind/strategy. For example, a strategy (of a green swordtail) is to avoid fighting with potentially dangerous opponents (winners or persistent losers) [149].

When we are imagining/theorizing that an organism (e.g., a green swordtail; a human) has a mind/strategy (“inside the organism”), actually we are personifying/anthropomorphizing this organism. Or in other words, actually we are imagining/theorizing this organism as an agent/homunculus. Or in other words, actually we are imagining/theorizing that the agent/homunculus has a mind/strategy.

When we are imagining/theorizing that a computer program has a mind/strategy (“inside the computer program”), actually we are personifying/anthropomorphizing this computer program. Or in other words, actually we are imagining/theorizing this computer program as an agent/homunculus. Or in other words, actually we are imagining/theorizing that the agent/homunculus has a mind/strategy.

When my brain is making a decision/choice while my brain being (completely) objective, my brain considers its own decision/choosing process. Findings in [102] “help explain the critical contribution of the hippocampus to value-based decision-making, providing a mechanism by which knowledge of relationships in the world can be incorporated into reward predictions for guiding decisions”.

There’s no such thing as “a TM’s internal decision/choosing process”. There’s just “the objective-state-evolution of a direct-parallel-computing-automaton” and we label a subset of “the objective-state-evolution of a direct-parallel-computing-automaton” as “a TM’s internal decision/choosing process”. “A TM’s internal decision/choosing process” is a subjective-situation of the objective-situation “the objective-state-evolution of a direct-parallel-computing-automaton”.

Before an out-of-body experience, my brain could not be (completely) objective.

In human adults who can be (completely) objective (e.g., John Ding-E Young), usually an out-of-body experience is reported (e.g., see <http://blog.sina.com.cn/s/blog_13814c5aa0102zugf.html>).

It was recently reported that psychedelics can alter *metaphysical beliefs (e.g., fatalism)* [124].

When my brain is being objective, my brain manages to view/imagine itself only from the (imagined/simulated) viewpoint/perspective of another TM,only based on the data/information the other TMshould be able to get/process, while my brain manages to unlearn the data/information only itself should be able to get/process– my brain’s neural network is capable to represent this sentence *compositionally [98][99]*. This viewpoint/perspective is the objective-perspective*.* When my brain views/imagines *something else (e.g., another TM)*, my brain uses the objective-perspective.

When my brain is being subjective, my brain manages to view/imagine itself only from the viewpoint/perspective of itself,only based on the data/information itselfshould be able to get/process, while my brain manages to unlearn the data/information only another TM should be able to get/process– my brain’s neural network is capable to represent this sentence *compositionally [98][99]*. This viewpoint/perspective is the subjective-perspective.When my brain views/imagines itself, my brain uses either the subjective-perspective or the objective-perspective.

So, when I am being *objective*, I pretend/imagine that I am *something else (i.e., another TM) –* I imagine the existence of something other than my mind. When I am being *subjective*, I do not need to pretend/imagine that I am something else – I do not need to imagine the existence of something other than my mind.

When I think from the position of solipsism, I stop *imagining* the existence of something other than my mind – my brain is being subjective. I view/observe/imagine/simulate/represent/model myself from the viewpoint of myself, while I am viewing/observing/imagining/simulating/representing/modeling a subjective/intracorporeal reality which is subjectively generated/created/simulated/represented/modeled by my brain. I imagine/assume/postulate that I am viewing/observing/imagining/simulating/representing/modeling a subjective-situation. I imagine/assume/postulate that I cannot observe the states/objective-state-evolution/objective-situation of the BBs directly/objectively.

When I pretend/imagine that I am something else, this imagination *means* the existence of something other than my mind – my brain is being objective. My brain views/observes/imagines/simulates/represents/models itself from the viewpoint of something else, while my brain is viewing/observing/imagining/simulating/representing/modeling an objective/extracorporeal reality which exists independently/objectively. My brain imagines/assumes/postulates that it is viewing/observing/imagining/simulating/representing/modeling an objective-situation. My brain imagines/assumes/postulates that it observing the states/objective-state-evolution/objective-situation of the BBs directly/objectively.

Both the objective-situation and the subjective-situation are modeled/simulated/represented by my brain.

Both my brain’s indirect-geometric-model and my brain’s objective-theory are modeled/simulated/represented by my brain. My brain has a model to represent our objective-theory/cosmos. My brain has another model to represent its indirect-geometric-model.

When my brain uses the objective-perspective, my brain needs to imagine/postulate/suppose the dual existence of both its extracorporeal objective-theory/cosmos and its intracorporeal indirect-geometric-model. My brain can treat its intracorporeal indirect-geometric-model as its extracorporeal objective-theory/cosmos – my brain needs to imagine/postulate/suppose that my brain has access to another undisclosed intracorporeal indirect-geometric-model besides *the so-called “extracorporeal objective-theory/cosmos” (which is actually my brain’s intracorporeal indirect-geometric-model).* Alternatively, my brain can treat *its intracorporeal indirect-geometric-model (i.e., the so-called “extracorporeal objective-theory/cosmos”)* as my brain’s intracorporeal indirect-geometric-model – my brain needs to figure out what the actual extracorporeal objective-theory/cosmos is.

(My brain’s intracorporeal indirect-geometric-model is actually/objectively some (sensory) data/information being got/processed (by my brain) in my brain’s objective-theory.)

(When my brain infers from “we don't have transparent access to the outer world” to “we do have transparent access to an inner world” (see <https://twitter.com/keithfrankish/status/1429087347145125895>), the so-called “outer world” refers to my brain's objective-theory/cosmos, while the so-called “inner world” refers to my brain’s indirect-geometric-model. Then, when my brain imagining the so-called “inner world”, my brain’s precondition is that the so-called “inner world” actually/objectively exists – my brain can label its *“transparent reality” (i.e., the reality my brain has transparent access to)* as either its “inner world” or its “outer world”; when my brain imagining the so-called “outer world”, my brain's precondition is that the so-called “outer world” actually/objectively exists – my brain can label its “transparent reality” as either its “outer world” or its “inner world”. When my brain labels its “transparent reality” to be its “outer world” or its scientific image, this is a mental-model for my brain. When my brain labels its “transparent reality” to be its “inner world” or its manifest image, this is another mental-model for my brain. These two mental-models are two MM-options for my brain. My brain labels the first MM-option to be *“subjective*” (this is not a typo), while labels the second MM-option to be *“objective”*. When my brain is imagining/postulating/supposing the dual existence of both its “inner world” and its “outer world”, it is easier for my brain to label its “transparent reality” as its “inner world” (i.e., its indirect-geometric-model), comparing to label its “transparent reality” as its “outer world” (i.e., its cosmos/objective-theory). Because, if my brain’s “transparent reality” is my brain's cosmos/objective-theory, then where is my brain’s indirect-geometric-model? My brain’s visual hallucination appears in my brain’s “transparent reality”, which means that my brain’s “transparent reality” is actually/objectively my brain's “inner world”, not my brain’s “outer world”. My brain’s entire “transparent reality” is actually/objectively a visual hallucination (or the manifest image) of my brain.)

(When my brain uses the objective-perspective, my brain can imagine/postulate/suppose its “transparent reality” to be its “outer world” or its scientific image, while imagining/postulating/supposing that my brain has transparent access to another undisclosed “inner world” (besides its “transparent reality”) or manifest image. Alternatively, my brain can imagine/postulate/suppose its “transparent reality” to be its “inner world” or its manifest image -- this is the so-called “Bad Argument” [138].)

When my brain uses the subjective-perspective, my brain does not need to imagine/postulate/suppose the dual existence of both its extracorporeal objective-theory/cosmos and its intracorporeal indirect-geometric-model. My brain treats its intracorporeal indirect-geometric-model as its extracorporeal objective-theory/cosmos, without imagining/postulating/supposing that my brain has access to another undisclosed intracorporeal indirect-geometric-model besides *the so-called “extracorporeal objective-theory/cosmos” (which is actually my brain’s intracorporeal indirect-geometric-model).* In other words, my brain only imagines/postulates/supposes the sole existence of its *extracorporeal objective-theory/cosmos* – but this so-called *“extracorporeal objective-theory/cosmos”* is actually my brain’s intracorporeal indirect-geometric-model.

(When my brain uses the subjective-perspective, my brain imagines/postulates/supposes its “transparent reality” to be its “objective/extracorporeal reality” or its scientific image, without imagining/postulating/supposing that my brain has transparent access to any other reality (besides its “transparent reality”) or the manifest image -- this can be called the Good Argument (although I don’t think it to be good).)

When my brain uses the objective-perspective, my brain can imagine/postulate/suppose its “transparent reality” to be its objective-theory/cosmos. Alternatively, my brain can imagine/postulate/suppose its “transparent reality” to be its indirect-geometric-model/mind. That's why my brain (incorrectly/counterfactually) feels like that its objective-theory/cosmos overlaps with its indirect-geometric-model/mind. Actually, the “transparent reality” is my brain’s indirect-geometric-model/mind, not my brain’s objective-theory/cosmos. It’s incorrect/counterfactual to imagine/postulate/suppose the “transparent reality” to be the objective-theory/cosmos. My brain’s indirect-geometric-model/mind *maps* to the objective-theory/cosmos – the “transparent reality” maps to the objective-theory/cosmos. The “transparent reality” is not the objective-theory/cosmos itself directly/objectively – the “transparent reality” is subjectively/indirectly the objective-theory/cosmos. The “transparent reality” reflects/simulates/represent/models the objective-theory/cosmos. My brain has no way to know what the objective-theory/cosmos looks like objectively/directly – my brain only knows what the objective-theory/cosmos looks like subjectively/indirectly.

Can BBs talk/bark/think/decide/choose? It looks like that a single BB cannot talk/bark/think/decide/choose. It looks like that a group of BBs (e.g., a human; a dog; a computer) can talk/bark/think/decide/choose. However, what a group of BBs can do, is exactly the sum of what each single BB (within the group) can do. So, it looks like that a single BB can participate in the talking/barking/thinking/deciding/choosing of a group of BBs, although it looks like that, this single BB is not aware of that by itself. It looks like that this group of BBs can be aware of that by itself, but *my brain (being another group of BBs, or even being the same group of BBs)* has no way to actually/objectively know *that (whether this group of BBs is actually aware of that by itself),* only based on the data/information my brain should be able to get/process *from its objective-perspective*.

If a TM within a direct-parallel-computing-automaton believes that the direct-parallel-computing-automaton *will* be directly-fated by a direct-function, then the TM should agree that every physical-event/physics-experiment (which happens within the direct-parallel-computing-automaton) will be directly-fated by the direct-function, not objectively libertarian-free/flexible/active.

“A physical theory should clearly and forthrightly address two fundamental questions: what there is, and *what it does*. The answer to the first question is provided by the *ontology* of the theory, and the answer to the second by its *dynamics*. The ontology should have a sharp mathematical description, and the dynamics should be implemented by precise equations describing how the ontology will, or might, evolve. [92]” (Apparently, this comment only applies to a physical theory which describes a dynamic-physical-system. Dramatically, it is logically possible that a physical theory might describe a static physical-system – it is logically possible that a physical-system can be *static.* It is logically possible that a physical-system does not *do* anything. Or in other words, it does not make sense to describe *“what it does”*.) The direct-function describes the *dynamics* of a direct-parallel-computing-automaton.

"All things are numbers. [75]" – Pythagoras.

When my brain will be objective/subjective, is directly-fated by the direct-function.

A TM's decision/choice which can *only* be explained based on the stochasticity of the direct-function, is not a deliberate decision/choice. An animal brain's decision/choice which can *only* be explained based on the reaction of mirror neurons, is not a deliberate decision/choice.

In the semantics of the present article, unless explicitly stated otherwise, a TM’s “decision” means a *deliberate* decision, and a TM’s “choice” means a *deliberate* choice.

Within a direct-parallel-computing-automaton, the set of BBs included by a dynamic-physical-system (e.g., a glider pattern) might change over time.

Two dynamic-physical-systems might exchange BBs. For example, two dynamic-physical-systems might exchange force-carrier BBs which are “bosons”.

In the context of Newton's second law, an external Newtonian-force (e.g., gravity) which is applied/exerted to a dynamic-physical-system (within a direct-parallel-computing-automaton) is fictionally supposed to be the cause of the objective-state-evolution of a BB of this dynamic-physical-system. (If we suppose that the external Newtonian-force is nonfictional, then there is no way for this dynamic-physical-system to actually/objectively void/avoid the external Newtonian-force at this moment.) The actual cause of the objective-state-evolution of a BB of this dynamic-physical-system is the direct-function (of the direct-parallel-computing-automaton), not the external Newtonian-force. The external Newtonian-force does not actually/objectively exist. The actual cause of the objective-state-evolution of a BB of this dynamic-physical-system falls *inside* the spatial scope of this dynamic-physical-system. The actual cause of the objective-state-evolution of a BB of this dynamic-physical-system does not fall *outside* of the spatial scope of this dynamic-physical-system.

It seems like that a force-carrier BB carries force. However, a force-carrier BB does not actually/objectively carry force.

The single potential-outcome/situation-option/direct-fate of the objective-state-evolution of a Non-stochastic/Stochastic Game of Life system is directly-fated by its direct-function. Or in other words, the direct-fate of every pattern (within this system) is the single potential-outcome/situation-option of the objective-state-evolution of this system; the objective-state-evolution of every pattern follows its direct-fate.

More generally, the single potential-outcome/situation-option/direct-fate of the objective-state-evolution of a direct-parallel-computing-automaton is directly-fated by its direct-function.

“Philosophers of mind talk a lot about zombies. I want to introduce a related species of philosophical monster, which I shall call jekylls. Like zombies, jekylls are atom-for-atom duplicates of us, inhabiting a world with the same physical laws as ours — a world which, let’s assume, is causally closed. Your jekyll twin has all the same physical and functional states you do, including mental ones. It has the same functionally defined perceptions, sensations, thoughts, desires, memories, and emotions, and it is conscious in a functional way too. It also has a sense of self, built of memories, emotions, and introspective and interoceptive states — all functionally defined. (For simplicity, I’ll use ‘psychological’ as David Chalmers does in TCM to mean ‘psychological in a functional sense’.) So far, then, jekylls are just like zombies. There is a difference, however. Jekylls also have phenomenal states, understood as qualitative mental states that can’t be characterized in functional terms. The phenomenal lights are on inside, as they supposedly are in us. But jekylls aren’t just like us, either. For their phenomenal states are not aligned with their psychological ones. There is a deep incongruity between what they are thinking and feeling psychologically and what they are thinking and feeling phenomenally. When they are psychologically calm, they are filled with phenomenal rage, when they are in psychological pain, they feel phenomenal bliss, when they are psychologically confused, they experience phenomenal clarity, and so on. They are phenomenal/psychological self-inverts.” (<https://www.keithfrankish.com/2021/11/introducing-jekylls/>)

If our cosmos (as a U-system) actually/objectively exists, then it is logically possible that my physical body (in our cosmos) is actually/objectively a philosophical zombie (which is a subset of this U-system). Such a philosophical zombie is different from a jekyll – such a philosophical zombie doesn’t have phenomenal states (even though it can claim that it has phenomenal states). Let’s call such a philosophical zombie the Scarecrow-zombie. (The Scarecrow is a character in the fictional Land of Oz.)

“My physical body (in our cosmos) is a Scarecrow-zombie” is an “objective” MM-option of my brain, while “my physical body (in our cosmos) is not a Scarecrow-zombie” is a “subjective” MM-option of my brain.

If my mind actually/objectively exists, then it is logically possible that our cosmos (as a U-system) is actually/objectively a hallucination (which is a subset of my mind).

It is logically possible that my mind is the only thing which actually/objectively exists – our cosmos (as a U-system) does not actually/objectively exist. It is also logically possible that our cosmos (as a U-system) is the only thing which actually/objectively exists – I am actually/objectively a Scarecrow-zombie.

It is also logically possible that both my mind and our cosmos (as a U-system) are two different things which both actually/objectively exist. In this context, our cosmos (as a U-system) actually/objectively exists, and I am not a Scarecrow-zombie – I need to map *the context of my mind* with *the context of the U-system*.

It is logically possible that any person (including myself) is *actually/objectively* a hallucination (which is a subset of my mind) *or* a Scarecrow-zombie (which is a subset of a U-system) – it is logically impossible for a person (including myself) to be both a hallucination (which is a subset of my mind) *and* a Scarecrow-zombie (which is a subset of a U-system) at the same time *actually/objectively*.

When thinking (completely) objectively, a person’s experience is so different that she feels like that she has an alternate personality – a new dedicated alternate personality (aka the true self [25]) which uses the objective-perspective. It is a detached/dissociative/meditative experience, or more specifically, a kind of out-of-body experience [65][64]. When she uses the objective-perspective to observe herself, she accurately treats herself as an ordinary/plain/nonsignificant indirect-object in a physics-experiment/dynamic-physical-system/U-system – her direct-fate is the single potential-outcome/situation-option of the objective-state-evolution of this physics-experiment/dynamic-physical-system/U-system. When she uses the objective-perspective to observe herself, it feels like observing herself from somewhere outside of the physics-experiment/dynamic-physical-system/U-system where she lives, and it feels like observing herself from the extracorporeal space, and it feels like observing her virtual doppelganger by using a virtual reality system [58]; it feels like that she is a character in a finished script/story/book/simulation, and she is observing this character from the viewpoint of an audience (of this script/story/book/simulation) – her direct-fate is like this script/story/book/simulation. The said script/story/book/simulation only has one potential-outcome/situation-option. A character in the said script/story/book/simulation might (subjectively) imagine two or more potential-outcomes/situation-options for the objective-state-evolution of the said script/story/book/simulation. The said script/story/book/simulation described the objective-state-evolution of each BB of the U-system – a TM’s decision/choice/thought/action is actually/objectively controlled/driven/caused/decided/chosen/stated/programmed by the objective-state-evolution of the BBs within the TM. Actually/objectively, a TM’s decision/choice/thought/action is not libertarian-free/flexible/active. “A TM’s decision/choice/thought/action controls/drives/causes/decides/chooses/programs/branches the objective-state-evolution/worldlines of some BBs of the TM’s direct-parallel-computing-automaton” is an incorrect/counterfactual causality.

A human brain uses a subjective/intracorporeal MM to represent/forecast the objective-state-evolution of the extracorporealobjective-theory, to make a decision/choice in the objective-theory subjectively/intracorporeally. From the objective-perspective, the said human brain’s subjective/intracorporeal representation/forecast/decision/choice is directly-fated, so it does not actually/objectively control/drive/cause/decide/choose/program/branch the objective-state-evolution/worldline of any BB (of the objective-theory). Although in the said human brain’s subjective/intracorporeal MM, its decision/choice controls/drives/causes/decides/chooses/programs/branches the objective-state-evolution/worldlines of some BBs (of the objective-theory) – this subjective/intracorporeal causality is actually counterfactual/fictional.

A TM’s objective-theory is actually/objectively the TM’s extracorporeal situation.

Apparently, a TM’s MM (of its objective-theory) is not its objective-theory. “The map is not the territory [5].”

For a TM (within a direct-parallel-computing-automaton), the direct-parallel-computing-automaton is the TM’s objective-theory, not the TM’s subjective-theory. Actual/objective/direct BBs (of the direct-parallel-computing-automaton) are mutually exclusive subsets of the TM’s objective-theory, not subsets of the TM’s subjective-theory. The TM has no way to locate any actual/objective/direct BB within its subjective-theory, because there is no actual/objective/direct BB in its subjective-theory. There is no actual/objective/direct BB in the TM’s subjective-theory; there is no actual/objective/direct *matter* in the TM’s subjective-theory (i.e., actual/objective/direct *matter* is not in the TM’s subjective-theory). If the TM (mentally) confuses/mixes its subjective-theory with its objective-theory, then the TM (incorrectly/counterfactually) feels like that there are actual/objective/direct BBs/matterin its subjective-theory. Actually, what is in the TM’s subjective-theory, is the mental-image/mental-visualization/mental-model/indirect-object/subjective-situation of BBs/matter, not the actual/objective/direct BBs/matter.

When I mentally visualizing the objective-theory as a physics-experiment/dynamic-physical-system, this is a detached/dissociative/meditative experience. The objective-state-evolution of each BB within my brain, is part of the objective-state-evolution of this physics-experiment/dynamic-physical-system. Let us call this experience the physics-experience.

The objective-state-evolution of the objective-theory is actually the objective-state-evolution of a physics-experiment/dynamic-physical-system – the objective-theory is actually a physics-experiment/dynamic-physical-system. The single potential-outcome/situation-option of the objective-state-evolution of this physics-experiment/dynamic-physical-system is directly-fated. Any cognition of *a TM (e.g., a human brain)*, is an outcome of the objective-state-evolution of this physics-experiment/dynamic-physical-system.

Every decision/choice actually made by a TM’s program, is directly-fated by the direct-function, or in other words, is actually/objectively controlled/driven/caused/decided/chosen/programmed by the objective-state-evolution of the direct-parallel-computing-automaton. So, objectively (i.e., only based on the data/information another TM should be able to get/process), the TM is incapable/powerless to make any decision/choice differently. The objective-state-evolution/timeline of the direct-parallel-computing-automaton, is not actually/objectively controlled/driven/caused/decided/chosen/programmed/branched by any decision/choice actually made by the TM’s program. Any decision/choice actually made by the TM’s program, does not actually/objectively control/drive/cause/decide/choose/program/branch the objective-state-evolution/worldline of any BB (of the direct-parallel-computing-automaton). (This is more obvious, in case that the direct-parallel-computing-automaton is a Non-stochastic/Stochastic Game of Life system.)

More generally, the objective-state-evolution of a TM’s intracorporeal subjective-theory, is actually/objectively controlled/driven/caused/decided/chosen/stated/programmed by the objective-state-evolution of the TM’s direct-parallel-computing-automaton/objective-theory; the objective-state-evolution/timeline of the TM’s direct-parallel-computing-automaton/objective-theory, is not actually/objectively controlled/driven/caused/decided/chosen/programmed/branched by the objective-state-evolution of the TM’s intracorporeal subjective-theory.

Unfortunately, the control logic of the human brain’s program counterfactually/incorrectly/insanely/superstitiouslypostulates/models/represents/simulates that the objective-state-evolution of a U-system is *not* directly-fated (i.e., “the objective-state-evolution/timeline of the U-system is actually/objectively controlled/driven/caused/decided/chosen/programmed/branched by the decision/choice of a TM inside the U-system”), when it confuses its intracorporeal subjective-theory/subjectivity with the extracorporeal objective-theory/objectivity. Obviously, when two programs both counterfactually/incorrectly/insanely/superstitiously postulates/models/represents/simulates that the objective-state-evolution of a U-system is not directly-fated, either program will not think the other program to be counterfactual/invalid/incorrect/insane/superstitious. Dramatically, both programs will think the third program – who is not counterfactual/invalid/incorrect/insane/superstitious – to be counterfactual/invalid/incorrect/insane/superstitious.

When the control logic of a TM's program will be insane/sane, is directly-fated by the direct-function.

Logically speaking, “time” is a TM’s intracorporeal phenomenon only. The TM imagines/postulates that “time” also applies to *the objective-theory (which is a mathematical entity/structure)*, but obviously the TM has no way to prove that. Even if “time” actually applies to the objective-theory, the TM has no way to directly access the “time” in the objective-theory – the TM only has directly access to the “time” in its intracorporeal representation/model of the objective-theory. After the TM discovered the direct-function of the objective-theory, the TM might be able to imagine/postulate a variable in the direct-function to be the “time” of the objective-theory – but it does not prove that the objective-theory *actually* has “time”.

The control logic of a TM’s program organizes/sorts its intracorporeal constructions/representations/memories/information/data of physical-eventsby time and space, but this fact does not prove that the actual physical-events actually/objectively happen *in the same time sequence* in *the objective-theory (i.e., a mathematical entity/structure)*. It is logically possible that *all the so-called "future" physical-events (to the control logic of a TM’s program) have actually/objectively happened in the objective-theory already (i.e., all the so-called “future” physical-events are constructed/established/fixed in the objective-theory already)*, although the TM’s program does not have access to their intracorporeal constructions/representations/memories/information/data yet – perhaps due to some unknown reason/factor which can be imagined/postulated as a kind of mathematical distance within *the objective-theory (i.e., a mathematical entity/structure)*.

Let us do a thought experiment. Let us suppose that a TM within a Non-stochastic Game of Life system has a subjective perception of time and space. If we reverse the objective-state-evolution of this Non-stochastic Game of Life system (to play it backward), the TM’s intracorporeal representation/construction of its objective-theory remains the same, so the TM should have the same subjective perception of time and space – the TM should not notice that the actual/objective direction of the time flow of its objective-theory is reversed, comparing to the perceived/subjective direction of the time flow in its intracorporeal representation (of its objective-theory). (For example, the TM should not notice that a glider (pattern) is moving backward. To the TM, the glider is still moving forward – the glider is still moving forward in its intracorporeal representation (of its objective-theory). Although we (humans) can see that the glider is actually/objectively moving backward now. A TM always feels like that the time flow of its objective-theory has the same direction as the time flow in its intracorporeal representation (of its objective-theory) – even if we reverse the direction of the objective-state-evolution of its objective-theory. In this sense, to a TM, the actual direction of the time flow of its objective-theory does not matter – the TM will never know the actual direction of the time flow of its objective-theory.) In this case, the so-called “future” physical-events (to the control logic of the TM’s program) actually/objectively happened in its objective-theory already, while the so-called “past” physical-events (to the control logic of the TM’s program) will happen in its objective-theory in the actual/objective future. The intracorporeal constructions/representations/memories/information/data of the so-called “past” physical-events (to the control logic of the TM’s program) are accessible to the TM’s program already, although the actual physical-events have not actually/objectively happened in its objective-theory yet. The TM does not have intracorporeal constructions/representations/memories/information/data of the so-called “future” physical-events (to the control logic of the TM’s program) yet, although the actual physical-events have actually/objectively happened in its objective-theory already. The actual physical-events actually/objectively happen in a *reversed* order in the objective-theory, comparing to the order of their representations in the TM’s subjective perception (of the objective-theory).

The subjective/mental concept of “time” and “state” depend on each other – a “state” is something like a snapshot (of the objectively evolving objective-theory) at a specific moment in time. If time does not actually/objectively exist (in the objective-evolution of the objective-theory (i.e., a *static* mathematical entity/structure)), then the concept of “state” does not make sense anymore under this context.

(BTW, in the technical area of “loop quantum gravity”, space, time, particles and fields get fused into a single (mathematical) entity/structure: a quantum field that does not live in space or time [90]. In other words, the objective-evolution of the quantum field (i.e., the objective-theory) cannot be actually/objectively divided by time or space – the objective-evolution of the quantum field is actually/objectively indivisible (by time or space). If the “loop quantum gravity” theory is correct, then time/space does not actually/objectively exist in the objective-evolution of the objective-theory. The fundamental equations/functions of the “loop quantum gravity” theory have no explicit space or time *variables* [90] – the fundamental equations/functions describe the objective-evolution of the objective-theory. If the “loop quantum gravity” theory is correct, then the fundamental equations/functions are the U-function. In this case, we should not imagine that a U-system occupies a space and changing its state to evolve over time – we should not use the subjective/mental concept of “time”, “state” or “space” to describe/imagine the objective-evolution of a U-system. In this case, a U-system can be viewed as a special state machine. Let us call such a special state machine the time-irrelevant-state-machine (i.e., a quantum field as a single mathematical entity/structure). We can imagine the time-irrelevant-state-machine (as a single mathematical entity/structure) to be something objectively dynamic – it evolves objectively. But in this case, its objective-evolution is not *over* time – the time-irrelevant-state-machine does not evolve *over* time. The time-irrelevant-state-machine objectively evolves *over* another variable (other than time) – the time-irrelevant-state-machine is dynamic *over* the other variable. Then, the U-function describes its objective-evolution over the other variable. The objective-evolution of the time-irrelevant-state-machine does not involve the subjective/mental concept/variable of “time”, but involves the other subjective/mental concept/variable instead. The subjective/mental concept/variable “time” is modeled/simulated/represented by a TM (within the time-irrelevant-state-machine) in its subjective/intracorporeal MM (which models/simulates/represents the objective-theory), while the other subjective/mental concept/variable is not modeled/simulated/represented in this MM. So, the other subjective/mental concept/variable is hidden to the TM in this sense. Alternatively, we can imagine the time-irrelevant-state-machine (as a single mathematical entity/structure) to be something objectively static – it does not objectively evolve over any variable. In this case, the U-function does not describe a dynamic objective-evolution, but describes a static mathematical relationship. But then we should not imagine the time-irrelevant-state-machine as a “special state machine” anymore – we can call it the static-quantum-field instead. There is no way to divide the *ontology* of the static-quantum-field from its *dynamics*. Or in other words, the static-quantum-field does not have its *dynamics* – because it is a *static* physical-system.)

I know that I have (mental) memories of some past physical-events. Logically speaking, this fact does not necessarily prove that these physical-events actually happened in the past, and this fact does not necessarily prove that the “past” actually exists.

I know that I have (mental) predictions of some future physical-events. Logically speaking, this fact does not necessarily prove that these physical-events will actually happen in the future, and this fact does not necessarily prove that the “future” actually exists.

I have (mental) memories of the past and (mental) predictions of the future. Logically speaking, this fact does not necessarily prove that the past/future actually exists – this fact does not necessarily prove that the “time” actually exists. I have no way to know whether the past/future actually exists – I have no way to know whether the “time” actually exists. Or in other words, my mind has no way to know whether the “time” actually exists.

I only live in the present – even if that the past/future actually exists. So, I have no way to know whether the past/future actually exists.

“Although deductive inference is easy to test or model, the results of this type of inference never increase the semantic information above what is already stated in the premises.” (See <http://penta.ufrgs.br/edu/telelab/3/deductiv.htm>). Because, “human reasoners tend to maintain the semantic information in the premises [84]”.

In natural language, the statements “the thing ‘A’ should already state the semantic information of the thing ‘B’”, “based on the thing ‘A’ only, we should be able to prove the thing ‘B’ by deductive inference” and “the thing ‘B’ is completely objectively controlled/driven/caused/decided/chosen/stated/programmed by the thing ‘A’” have exactly the same meaning.

I know some causalities (e.g., [87]) in social science, humanity, psychology, biology, chemistry and physics.

In theory, besides the direct-function, we should be able to prove every other valid causality only based on the direct-function by deductive inference. In other words, the direct-function should already state the semantic information of all other valid causalities; the direct-function completely controls/drives every other valid causality. If we are unable to prove a causality only based on the direct-function by deductive inference, then it means that this causality is invalid/incorrect. This is the position of reductionism.

“If our small minds, for some convenience, divide this glass of wine, this universe, into parts—physics, biology, geology, astronomy, psychology, and so on—remember that nature does not know it!” [141]

A TM only has access to the data/information of past physical-events – the TM will never have access to the data/information of any future physical-event. So, the TM has no way to actually know whether there will be any future physical-event in the future. The TM even has no way to actually know whether the *future* actually/objectively exists or not.

Based on the data/information of past physical-events, if the TM has enough confidence on a causality (e.g., the direct-function), it means that the TM has enough confidence on the idea that all future physical-events will be controlled/driven/caused/decided/chosen/stated/programmed by this causality. (For example, if the TM has enough confidence on the direct-function, it means that the TM has enough confidence on the idea that all future physical-events will be directly-fated by the direct-function.) But the TM has no way to actually know whether the future physical-events are actually/objectively controlled/driven/caused/decided/chosen/stated/programed by this causality or not.

TM imagines that “time always lapses”. TM cannot imagine that “time does not lapse”. Even if TM imagines that everything is “paused”, it does not mean that “time does not lapse”, but only means that “everything does not change *over time*”.

TM imagines *time* to be continuous – it will not stop at some point. TM imagines the objective-state-evolution of its direct-parallel-computing-automaton to be continuous too – it will not stop at some point.

TM imagines its direct-parallel-computing-automaton to be eternal – it will still exist in the future. TM imagines its causalities to be eternal too – it will still work in the future. TM imagines the future to be an extension/generalization of the past: the past is extended/generalized (to the future), based on its causalities.

A TM can extend/generalize the past (to the future), based on the direct-function *only*. Alternatively, a TM can extend/generalize the past (to the future), based on its causalities (*not only* the direct-function).

If the TM has enough confidence on the direct-function, it will have less confidence on another causality, if this causality cannot be deductively inferenced from the direct-function only. The TM might think this causality to be invalid/incorrect.

So, if the TM has enough confidence on the direct-function, it will have enough confidence on the future extended/generalized based on the direct-function *only*. It will have less confidence on the future extended/generalized based on its causalities (*not only* the direct-function). The TM might think the latter future to be invalid/incorrect, while thinking the former future to be valid/correct, if they conflict with each other.

For a direct-parallel-computing-automaton, if a subset of all its BBs constructs an isolated system during a time frame, then, during this time frame, this temporarily-isolated-system (as a smaller direct-parallel-computing-automaton) still uses the original direct-parallel-computing-automaton's direct-function.

So, any temporarily-isolated-system within our cosmos is a U-system.

When I am in my lucid-dream, my existence is somehow created/constructed by my brain. Every object in my lucid-dream, is created/constructed by my brain. In my lucid-dream, I focus on the situation I encounter. I am aware of that, the situation (I encounter) is created/constructed by my brain, and the environment is created/constructed by my brain.

After I wake up from my lucid-dream, my environment and I are still created/constructed by my brain, based on the data/information collected by my nervous system. My environment and I are not real. They are only representations/simulations/models. My current environment has higher degree of realness than the situation in my lucid-dream. (Unfortunately, I have no way to prove this belief/postulation – it is logically possible that my current environment has lower degree of realness than the situation in my lucid-dream. This is illustrated by the story that “Zhuang Zhou dreams of being a butterfly”.) It is logically possible that I can wake up again from my current environment, to see another environment which has higher degree of realness than my current environment – like the story of the popular film “Inception”. However, it is logically impossible for my brain to wake up to directly/objectively see the objective-theory where my brain is actually/objectively living in.

I feel like that I am located inside my body, and I focus on the situation my body encounters. However, both my current environment and my body are created/constructed by my brain – both my current environment and my body are actually *in* my mind. The conventionally-called “physical reality” (around my conventionally-called “physical body”) which I feel like that I am living in right now, is actually a *virtual* situation/reality/world which is created/constructed by my brain.

Anything being “predetermined” is “directly-fated”. In case that the direct-function of a direct-parallel-computing-automaton is non-stochastic, anything being “directly-fated” in this direct-parallel-computing-automaton is “predetermined”. In case that the direct-function of a direct-parallel-computing-automaton is stochastic, anything being “directly-fated” in this direct-parallel-computing-automaton is not “predetermined” – “directly-fated” is less rigid than “predetermined” in the context of such a direct-parallel-computing-automaton.

When a TM is using a causality to explain something, the causality is mentally visualized as a situation which is being perceived by the TM.

In my mind, when I mentally visualizing any other causality (except direct-function), it disturbs my mental visualization of direct-function. So, when I mentally visualizing direct-function, I intentionally avoid to mentally visualize any other causality. My mental visualization of the BBs (which are following direct-function) looks like tremendous floating clouds, with each BB being like a minute liquid droplet (in a cloud) – this is a detached/dissociative/meditative experience. These BBs include the BBs of my brain. There is no agent (other than the direct-function or the individual BBs), libertarian-freedom nor consciousness. This experience is the maximized-patikulamanasikara-experience. During the maximized-patikulamanasikara-experience, I can prevent other causalities from disturbing the causality of direct-function. As a detached/dissociative/meditative experience, the maximized-patikulamanasikara-experience is deeper than the physics-experience; the context of the physics-experience is richer than the context of the maximized-patikulamanasikara-experience.

Dramatically, the maximized-patikulamanasikara-experience actually discloses the objective/extracorporeal situation in the objective-theory. In contrast, what my brain experiences in my everyday life (which is much richer comparing to the context of the maximized-patikulamanasikara-experience), actually does not disclose the objective/extracorporeal situation in the objective-theory, but reflects a subjective/intracorporeal situation which is generated/created/constructed/invented by my brain itself (e.g., the phase precession in the human hippocampus and entorhinal cortex [85]).

The worldview which is being used by common reductionists, is not (completely) objective.

When a person thinks objectively, she emotionlessly/aimlessly treats an indirect-object (e.g., her brain) as a fuzzy set of BBs – she does not consider the function/usage/value/meaning of this indirect-object. In other words, she intentionally avoids using any other causality (except the direct-function) in her mental visualization of the situation/task/problem she is focusing on – she mentally visualizes the situation/task/problem to be some BBs which are following direct-function.

The state of each BB refreshes automatically/unintentionally at every moment. At every moment, the state of every BB is completely directly-fated by the direct-function and the state of all BBs at the preceding moment. In other words, the direct-function and the state of all BBs at a moment should already state the semantic information of the state of all BBs at the next moment. So, the direct-function and the initial state of all BBs should already state the semantic information of the state of all BBs at every moment. So, the direct-function and the initial state of all BBs should already state the semantic information of the worldlines of all BBs; the direct-function and the initial state of all BBs should already state the semantic information of the direct-parallel-computation of the direct-parallel-computing-automaton. In other words, the worldlines of all BBs are completely directly-fated.

In natural language, the statements “the objective-state-evolution of every BB is completely directly-fated by the direct-function and the initial state of the direct-parallel-computing-automaton” and “the objective-state-evolution of every BB of a direct-parallel-computing-automaton is completely self-controlled/self-driven/self-caused/self-decided/self-chosen/self-programmed, and we found that the objective-state-evolution of every BB always follow a mathematical equation/function – the direct-function” have exactly the same meaning; the terms “completely self-controlled/self-driven/self-caused/self-decided/self-chosen/self-programmed” and “automatic/unintentional (from the viewpoint of another TM)” have exactly the same meaning.

Whenever we say the statement “the objective-state-evolution of every BB is completely directly-fated by the direct-function and the initial state of the direct-parallel-computing-automaton”, we are imagining the direct-function as an agent, while we are not imagining the individual BBs as agents.

Whenever we say the statement “the objective-state-evolution of every BB of a direct-parallel-computing-automaton is completely self-controlled/self-driven/self-caused/self-decided/self-chosen/self-programmed, and we found that the objective-state-evolution of every BB always follow a mathematical equation/function – the direct-function”, we are imagining the individual BBs as agents, while we are not imagining the direct-function as an agent.

Being indirect-observers of a direct-parallel-computing-automaton, we have no way to know whether the direct-function is an agent, or the individual BBs are agents. We can imagine the direct-function as an agent, or we can imagine the individual BBs as agents. We shouldn’t imagine both as agents.

In the semantics of the present article, the term “autonomous” means “completely self-controlled/self-driven/self-caused/self-decided/self-chosen/self-programmed”.

So, the objective-state-evolution of every BB is completely autonomous. So, the worldline of every BB is completely autonomous. In this sense, the objective-state-evolution/direct-fate of each BB is completely independent to each other – the objective-state-evolution/direct-fate of one BB does not actually/objectively control/drive/cause/decide/choose/branch the objective-state-evolution/direct-fate of any other BB. (It was recently found (by TMs within a U-system) that it is possible to formulate quantum mechanics without any reference to “a global time or *causal* structure” [95].) The objective-state-evolution/direct-fate of a dynamic-physical-system is exactly the sum of the objective-state-evolution/direct-fate of each BB of this dynamic-physical-system.

If it is difficult to imagine that the objective-state-evolution of every BB is completely directly-fated, readers can mentally substitute the statement “the objective-state-evolution of every BB is completely directly-fated” with the statement “the objective-state-evolution of every BB is completely autonomous”.

The direct-function can be used to *forecast* a BB’s objective-state-evolution. As the transition function of the objective-state-evolution of a direct-parallel-computing-automaton, the direct-function itself is just a plain mathematical equation/function – obviously it does not provide/exert any actual/objective/physical power/force to control/drive/cause/decide/choose a BB’s objective-state-evolution. (We feel as if that the direct-function has power, when we are imagining the direct-function as an agent.) A TM within the direct-parallel-computing-automaton has no way to know where the actual/objective/physical power/force (to control/drive/cause/decide/choose the objective-state-evolution of a BB) comes from. So, the TM can safely imagine that the objective-state-evolution of every BB is completely autonomous. In other words, the TM can safely imagine that the objective-state-evolution of every BB does not depend on any external power/force, or the TM can safely imagine the individual BBs as agents. (When we imagine that Newton’s first law applies to a moving BB, we are used to imagine that this BB can change its position (as time goes on) without any external power/force.) Alternatively, the TM can fictionally imagine that the direct-function magically provides/exerts actual/objective/physical power/force to control/drive/cause/decide/choose a BB’s objective-state-evolution – the TM knows that this imagination is fictional. (In the same sense, we can fictionally imagine that Newton’s first law magically provides/exerts actual/objective/physical power/force to change a moving BB’s position (as time goes on); a TM within a Non-stochastic Game of Life system can fictionally imagine that the rules of the system magically provide/exert actual/objective/physical power/force to move a glider pattern across space (as time goes on), while we know that the host computer (of the Non-stochastic Game of Life system) provides/exerts actual/objective/physical power/force to move the glider pattern across space (as time goes on).)

During an out-of-body experience [65][64], a person feels like that she is located outside of her body. Then, the person can view herself from a vivid objective-perspective(like *actually* viewing herself from the viewpoint of another TM), and can discover the true relationship between herself and her environment (i.e., a U-system): as a fuzzy set of BBs which are completely objectively controlled/driven by direct-function, every indirect-object (e.g., her brain) is an *ordinary/plain/nonsignificant* fuzzy subset of its environment (i.e., a U-system), in the same sense that a jigsaw piece is an *ordinary/plain/nonsignificant* subset of a jigsaw puzzle.

The experimenter of a quantum physics experiment can be viewed as an indirect-object in a larger quantum physics experiment (which includes the experimenter’s physical body).

In a U-system, every physical process (e.g., a moving clock; a human brain is making a decision; a conversation between two humans; the objective-state-evolution of the whole U-system) can be viewed as a quantum physics experiment. In a quantum physics experiment, the rotation speed of a clock hand, the decision made by a human brain, or the speech made by a human, is completely directly-fated by direct-function.

Completely directly-fated by direct-function, the objective-state-evolution of our cosmos (as a U-system) can be viewed as an ongoing large-scale quantum physics experiment in space, which was started from the Big Bang singularity 13.8 billion years ago. Every physical process is part of this quantum physics experiment. A TM (e.g., a human brain) might counterfactually postulate that itself has the ability/libertarian-freedom to actually/objectively change/control/drive the objective-state-evolution of this quantum physics experiment, but no indirect-object is capable to actually/objectively change/control/drive the objective-state-evolution of this quantum physics experiment, because each indirect-object itself (as a fuzzy set of BBs) is actually an *ordinary/plain/nonsignificant* fuzzy subset of this quantum physics experiment – no indirect-object has the ability/libertarian-freedom to actually/objectively change/control/drive the objective-state-evolution of this quantum physics experiment. So, the objective-state-evolution of this quantum physics experiment is directly-fated – the single potential-outcome/situation-option of this quantum physics experiment is directly-fated. Sometimes we know the single potential-outcome/situation-option at some degree beforehand. For example, we know that tomorrow is not the end of the world, although we are not sure about it.

The worldline of every BB is decided by direct-function. The world tube of every indirect-object is decided by the worldlines of all its BBs. An indirect-object doesn’t have the ability/libertarian-freedom to actually/objectively control/drive/change the worldline of any BB. (Or in other words, the worldline of every BB is completely autonomous.) Each indirect-object’s physical activity is objectively controlled/driven by the (autonomous or directly-fated) worldlines of all its BBs, like a puppet. (But a TM might counterfactually postulate that it can objectively control/drive its own physical activity at some degree.) It’s possible that every indirect-object (e.g., my brain) is a Scarecrow-zombie.

In this sense, any two indirect-objects actually/objectively have nothing to do with each other – their physical activities actually/objectively have nothing to do with each other. One indirect-object does not actually/objectively control/drive another indirect-object. One indirect-object’s physical activity does not actually/objectively control/drive the physical activity of another indirect-object.

In the same sense, an indirect-object’s physical activity during a time period actually/objectively has nothing to do with this indirect-object’s physical activity during another time period – an indirect-object’s physical activities during two different time periods actually/objectively have nothing to do with each other.

During a rat’s vicarious trial and error [76], the future is mentally visualized/evaluated by mental time travel [76] [77]. (BTW, a jumping spider can do something in the same nature. [126]) The rat mentally visualizes/evaluates a number of potential/mental/intracorporeal path-options in its hippocampus, to choose one path from them – at most one of these path-options has the chance to actually happen objectively in the objective-theory. Each path-option is a potential-outcome/situation-option of the objective-state-evolution of the objective-theory.

Subjectively (i.e., only based on the data/information the rat’s brain should be able to get/process), there are two or more path-options (for the rat’s brain/subjective-theory to choose) in the rat brain’s intracorporeal subjective-theory, only because that the rat’s brain/subjective-theory cannot reliably-forecast which potential-outcome/situation-option/path-option will be realized by the objective-state-evolution of the objective-theory. Actually/objectively (i.e., only based on the data/information another TM (e.g., a human brain) should be able to get/process), there is only one path-option (for the rat’s brain/subjective-theory to choose – if we imagine that this path-option is “chosen by the choice of the rat’s brain/subjective-theory”) in the rat’s extracorporeal objective-theory/objectivity, because another TM’s program/subjective-theory can reliably-forecast which potential-outcome/situation-option/path-option will be realized by the objective-state-evolution of the objective-theory – apparently this potential-outcome/situation-option/path-option is not “chosen by the choice of the rat’s brain/subjective-theory”. (The “choice” of the rat’s brain/subjective-theory is not actually “chosen” by the rat’s brain/subjective-theory – the “choice” of the rat’s brain/subjective-theory is actually “chosen” by the objective-state-evolution of the objective-theory. So, the “choice” of the rat’s brain/subjective-theory is actually the “choice” of the objective-state-evolution of the objective-theory – we human brains/indirect-realities incorrectly/counterfactually label the “choice” of the objective-state-evolution of the objective-theory as the “choice” of the rat’s brain/subjective-theory. We human brains/indirect-realities can observe a physical process happening inside the rat’s brain which is making the “choice”, that’s why we label the “choice” to be the “choice” of the rat’s brain/subjective-theory. Actually, both the observed physical process and the rat’s brain/subjective-theory are directly-fated by the direct-function – the observed physical process is not controlled/driven by the rat’s brain/subjective-theory. The rat’s brain/subjective-theory actually has no control over the “choice”. “The rat’s brain/subjective-theory has control over the ‘choice’” – this is “true” only in a human brain’s *mental representation/model/simulation/visualization of the objective-theory (i.e., subjective-theory).* “The rat’s brain/subjective-theory has control over the ‘choice’” – this is actually fictional/incorrect/counterfactual. “The rat’s brain/subjective-theory has control over the ‘choice’” – this is actually a false (subjective) belief of the human brain. The human brain falsely believes that the rat’s brain/subjective-theory has control over the “choice”. The human brain falsely believes that the rat’s brain/subjective-theory has control over the physical processes happening inside the rat’s brain. In a sense, in contrast, the physical processes happening inside the rat’s brain have control over the rat’s brain/subjective-theory. “The rat’s brain/subjective-theory has control over the ‘choice’” – this is actually the human brain’s false (subjective) belief regarding responsibility/ownership. (Analogously, “in a Non-stochastic/Stochastic Game of Life system, a TM or its subjective-theory has control over ‘its choice’” – this is actually a human brain’s false (subjective) belief regarding responsibility/ownership.) Before the “choice” is actually executed by the rat’s body, the physical process happening inside the rat’s brain might make a different new “choice” to replace the old “choice” (perhaps caused by a neural circuitry underlying third-party punishment [113]), and the rat’s brain is aware of this replacement in its subjective-theory, but the rat’s brain/subjective-theory also has no control over the new “choice”. “The realization that decisions originate in deterministic brain processes follows from the rejection of dualism. The neurophysiological studies that we have reviewed show that the neural correlates of deciding, choosing, acting and evaluating are not too complex to identify or even manipulate. At least in certain experimental domains, an agent’s choice appears to hinge on the activation of a surprisingly small number of neurons in discrete parts of the brain. Thus, by monitoring the signals produced by appropriate neurons, an experimenter can predict and even influence what monkeys will choose, even though we do not yet know how these signals are produced by the circuits of the brain. Ethics, not theory, would preclude an investigator from obtaining the same relationship with the brain of a human agent. Can this ability to predict and influence choices be reconciled with a belief in freedom and responsibility? The ability to predict and influence choices provides compelling evidence that choices are deterministic. Certainly, to the extent that neurons will not discharge unless they are depolarized by other neurons, brain states can be determined naturally only by earlier brain states. [112]”) Apparently, the rat’s brain is unaware of the difference between its intracorporeal subjective-theory and its extracorporeal objective-theory (i.e., the rat’s brain does not imagine/assume/postulate the existence of an extracorporeal objective-theory underneath/behind/outside/inside its intracorporeal subjective-theory; the rat’s brain treats its intracorporeal subjective-theory as its extracorporeal objective-theory), so we should not say that the rat’s brain is insane/superstitious, if the rat’s brain believes that there are two or more path-options for the rat’s brain/subjective-theory to choose in the *extracorporeal objective-theory*. (It is sane for the rat’s brain/subjective-theory to believe that all these path-options have “chances” in the objective-state-evolution of the objective-theory.) If a human brain (who is fully aware of the difference between the intracorporeal subjective-theory and the extracorporeal objective-theory; who imagines/assumes/postulates the existence of an extracorporeal objective-theory underneath/behind/outside/inside its intracorporeal subjective-theory) also believes that there are two or more path-options for the rat’s brain/subjective-theory to choose in the extracorporeal objective-theory, we should say that this human brain is insane/superstitious. (It is insane/superstitious for this human brain/subjective-theory to believe that all these path-options have “chances” in the objective-state-evolution of the objective-theory – apparently only one path-option has “chance” in the objective-state-evolution of the objective-theory. Although the rat’s brain/subjective-theory has a neural/intracorporeal/subjective representation/model/simulation for each path-option.)

The rat’s brain is directly-fated to choose the chosen path, but the rat's brain has no way to know its own decision beforehand. So, the rat’s brain counterfactually feels like that itself has the ability/libertarian-freedom to actually/objectively choose any of them – the rat’s brain counterfactually feels like that itself has libertarian-freedom to move in the space (over time). The rat's brain is not aware of that, during its own choosing process, every BB involved, is objectively controlled/driven by direct-function – actually the rat’s brain does not have the libertarian-freedom to choose the chosen path (libertarian-freely). In this sense, we can say that the choice is made by the direct-function, not by the rat’s brain. Objectively (i.e., only based on the data/information another TM should be able to get/process), the rat’s brain is incapable/powerless to make the choice differently. Although the rat’s brain *subjectively (i.e., only based on the data/information the rat’s brain should be able to get/process)* feels like that it is capable to make the choice differently.

When exhaustively mentally considering/visualizing the objective-state-evolution of every BB in the spacetime, the rat's body can move in the space (over time) *without* libertarian-freedom. (The overall visualization (of all BBs) looks like tremendous floating clouds, fireworks or spindrifts.) The rat's body does not have libertarian-freedom to move in the spacetime – the rat’s body cannot revisit the same point (with the same space/time coordinates) again in the spacetime. The rat's body can revisit the same point (with the same space coordinates) in the space, but it cannot revisit the same point (with the same time coordinate) in the time – it cannot revisit a moment in the past (by time travel). In this sense, the rat’s body has less “libertarian-freedom” along the time dimension, comparing to the “libertarian-freedom” it has along the space dimensions.

A three-dimensional space is visualized (by the rat’s visual cortex) in the mind; time is not visualized in the mind. When the rat's brain does not exhaustively mentally consider/visualize the objective-state-evolution of every BB in the spacetime, it feels like that the rat's body has libertarian-freedom in a three-dimensional space. When the rat's brain exhaustively mentally considers/visualizes the objective-state-evolution of every BB in the spacetime, it knows that the rat's body has no libertarian-freedom in the four-dimensional spacetime, which means that the rat’s body has no libertarian-freedom in the three-dimensional space (when exhaustively mentally considers/visualizes the objective-state-evolution of every BB in the spacetime). If this four-dimensional spacetime is visualized (by the rat’s visual cortex) to be a four-dimensional space (which uses the fourth space dimension to represent time) in the mind, then the rat's brain will know that the rat's body has no libertarian-freedom in this four-dimensional space.

A decision made by a human brain (for example, to say something to someone) by evaluating a number of potential/mental/intracorporeal potential-outcomes/situation-options (upon her/his (directly-fated) *personal goal/aim/task (i.e., the (directly-fated) problem she/he wants to solve)*), has the same nature as the decision made by the rat’s brain in the vicarious trial and error – each situation-option for the human brain is like a potential/mental/intracorporeal path-option for the rat’s brain.

(More generally, within a direct-parallel-computing-automaton, a decision made by *a TM (e.g., a TM [44] within a Non-stochastic Game of Life system; an AlphaGo clone who is playing a board game Go in a U-system; a robot who is playing a (robot) football game in a U-system)* by evaluating a number of potential/mental/intracorporeal situation-options, has the same nature as the decision made by the rat’s brain in the vicarious trial and error. If a human brain (who is fully aware of the difference between the TM’s intracorporeal subjective-theory/subjectivity and the TM’s extracorporeal objective-theory/objectivity/direct-parallel-computing-automaton) believes that there are two or more situation-options for the TM to choose in the TM’s extracorporeal objective-theory/objectivity/direct-parallel-computing-automaton, we should say that this human brain is insane/superstitious.)

Each situation-option is mentally visualized by the human brain. (A TM’s *path-option*s (regarding paths across the space) are also the TM’s *situation-option*s – each *path-option* is a *potential-outcome/situation-option*.) (For the human brain, these situation-options are potential/mental/intracorporeal branches/timelines of the objective-state-evolution of the objective-theory. The human brain mentally visualizes these branches/timelines (of the objective-state-evolution of the objective-theory) automatically/unintentionally.) At most one of these situation-options/branches/timelines has the chance to actually happen objectively in the objective-theory. According to the mapping between the objective-theory and the human brain’s mind, this chosen situation-option/branch/timeline is directly-fated (by the direct-function) to be actually/objectively chosen by the objective-state-evolution of the objective-theory, but the human brain has no way to know which situation-option/branch/timeline will be chosen in advance. (The control logic of the program of a TM (e.g., a human brain) might counterfactually/incorrectly believe/assume/postulate that every situation-option/branch/timeline has a nonzero Bayesian probability to happen objectively in the objective-theory.) When a human brain imagines/visualizes every human brain’s situation-options/branches to be path-options (regarding paths across the space), all these imagined/visualized path-options form an unexplored maze (i.e., an unexplored topological structure) in space. The future imagined/visualized by a human brain, is like an unexplored maze (in space) for the brain. The actual maze is built on demand in real time by the human brain, just like a mole digs an (underground) tunnel system on demand in real time.

For example, when I text someone, the potential/mental/intracorporeal sentences/messages we are going to text each other, form an unexplored maze (in space) for my brain, and form another (different) unexplored maze (in space) for the other person’s brain. (Another example, when I play chess with someone, the potential/mental/intracorporeal moves we are going to make, form an unexplored maze (in space) for my brain, and form another (different) unexplored maze (in space) for the other person’s brain.) Our brains build the actual maze on demand in real time, just like two moles dig a tunnel system together – shift work. My brain evaluates my imagined/visualized maze by mental time travel – my brain’s actual path through my maze is directly-fated by direct-function.

BTW, instead of (automatically/unintentionally) mentally-visualizing two or more *potential/mental/intracorporeal* branches of the objective-state-evolution of the objective-theory, my brain can (automatically/unintentionally) mentally-visualize only one *actual/objective/extracorporeal* branch of the objective-state-evolution of the objective-theory – this is a detached/dissociative/meditative experience.

Apparently, what is directly-fated to happen, should actually/objectively happen. So, what actually/objectively happens, is directly-fated to happen. Before it actually/objectively happens, it can’t be mentally considered/visualized/evaluated by a TM through its mental time travel. It is paradoxical for the TM to mentally consider/visualize it beforehand through mental time travel, simply because that the TM has no way to get/process the required information beforehand. For example, the TM’s pending decision is a required information – it doesn’t mean that the TM’s pending decision is objectively libertarian-free. The TM’s pending decision is (subjectively) libertarian-free, only based on the data/information the TM itself should be able to get/process. The TM’s pending decision is not (objectively) libertarian-free, only based on the data/information another TM should be able to get/process.

For example, when a mole is digging a tunnel system, it can’t decide where to dig, before it finished a mental time travel through its mentally imagined/visualized tunnel system. During the mental time travel, it can’t visualize the pending decision (on where to dig) – it hasn’t decided where to dig yet. The pending decision is (subjectively) libertarian-free, but not (objectively) libertarian-free.

## SM/reality

Situation models (SMs) [8][9] are complex mental representations/models that can represent/simulate/model the situation described in a text [10]. An ontological theory of the reality, is being described as a SM. A SM is a mentally perceived *situation.* A SM is a mental-model. A subjective-situation is a SM. A SM is a situation modeled/represented/simulated by data/information – a SM does not include actual/objective matter. A SM might include *visual mental images [62][63]* – a situation or a SM is a mentally visualized information/knowledge. Being a simulation/representation, a SM is a computational model.

For a TM’s mutually exclusive SMs, if the TM (limited by the knowledge the TM itself is able to have) has no way to prove/disprove any of them empirically, then these SMs are MM-options – for the TM. It’s absolutely fine for the TM to choose to believe any of them.

A causality (of a TM) is actually a tiny SM (of the TM).

A SM of a TM is actually/objectively an intracorporeal spatiotemporal physical construction (inside this TM).

A TM’s SM is the TM’s intracorporeal/subjective simulation/representation/MM of the objective-theory, which is reconstructed/generated from the data/information being got/processed by the TM.

A SM might simulate anything. For example, a human brain can have a SM which includes *all* the natural numbers – let's call this SM the natural-numbers-SM. This human brain simulates/models/represents/imagines all the natural numbers in the natural-numbers-SM – this human brain doesn’t literally store all the natural numbers.

When a human is not reading a text, I believe that a “background” SM is simulated (by her objective/physical brain) to represent her current situation in the objective-theory, and this SM is somehow narrated by her cortical language network, like an internal monologue. Then, when she is reading a text, her objective brain has to simulate two SMs for her, one of them is the “background” SM. Her brain can somehow use text to describe either SM respectively.

My brain somehow uses the text of the present article to describe its “background” SM.

Each SM simulated by a human’s objective brain, is a reality for her; every reality for her, is a SM simulated by her objective brain. A reality is a mentally perceived *situation*.

As a TM, the author of the present article postulates that every TM has both a objective-theory (which exists objectively) and a SM (or two or more SMs) at the same time, and this TM itself lives/exists in its objective-theory objectively, not in its SM, although this TM’s program counterfactually feels like that it “lives/exists/*presents*” in its SM “objectively”, because it counterfactually defines/imagines/narrates its SM to be its objective-theory (this is a pareidolia); every TM’s SM is produced by its objective-theory objectively.

Human believes that one SM can be more real than another SM. A SM’s realness-degree determines the realness-degree of its elements/components; a SM’s elements/components have the same degree of realness.

Some terms are conventionally used in natural language, to compare the realness-degrees of two SMs.

For example, the following terms are conventionally used when referring to a SM with higher degree of realness: “physical”, “objective” (aka “third-person objective [11]”), “direct”, “extracorporeal”, “outer”, “actual”, “real”, “true”, “real-world”, “valid”, “correct”, “factual”, “sane”, and “nonfictional”. Let us add the term “first-order (1O)” to the list for convenience.

For example, the following terms are conventionally used when referring to a SM with lower degree of realness: “mental”, “subjective” (aka “first-person subjective [11]”), “indirect”, “intracorporeal”, “inner”, “imagined”, “supposed”, “postulated”, “visualized”, “narrated”, “invalid”, “incorrect”, “counterfactual”, “insane”, “superstitious”, “fictional”, “illusive”, “delusive”, “fake” and “pareidolic”. Let us add a term “second-order (2O)” to the list for convenience.

Comparing to a SM with higher degree of realness, a SM with lower degree of realness is imagined/counterfactual/pareidolic/illusive/delusive/fake.

Every reality for a human, is a situation simulated by her objective brain as a SM. So, none of these realities actually exists in the way it is simulated as (i.e., none of these realities actually exists in the way it is simulated to be). In this sense, none of these realities is 1O/actual; all these realities are 2O/imagined. “To be is to be perceived.”

Being simulated by my objective brain as a SM, the (shared) objective-theory is the thing in itself [18] which does not depend on the existence of my objective brain. My perception/imagination/postulation/knowledge/description/narration/visualization of the objective-theory is only based on the data/information I should be able to get/process, if I am not myself, but another TM.

Let us call a TM’s SM of the objective-theory the TM’s objective-theory-SM.

## Direct-parallel-computing-automaton

Directly-fated by the direct-function, the direct-parallel-computation is aimless, not goal-directed/task-oriented/solution-oriented.

If the position of every BB (of a U-system) does not change over time, and/or if the positions of all BBs (of the U-system) are in the same two-dimensional Euclidean space (i.e., the space of the U-system only has two dimensions), it will be easier for a human brain to mentally consider/visualize the U-system as a state-machine/direct-parallel-computing-automaton.

Within a direct-parallel-computing-automaton, when a TM is mentally considering/visualizing the direct-function/direct-parallel-computation, the TM has to exhaustively mentally consider/visualize the objective-state-evolution of every BB in the spacetime

When we mentally model/imagine/visualize something, we have to use an imagined viewpoint/observer located somewhere outside of its model/representation/visualization. (Our (mental) model/imagination/visualization is actually a SM simulated by our objective brains.)

For example, when my brain mentally models/imagines/visualizes something which is outside of my brain, my brain can use an imagined viewpoint/observer located somewhere inside my brain. When my brain mentally models/imagines/visualizes itself, my brain has to use an imagined viewpoint/observer located somewhere outside of my brain.

When I am using a viewpoint located outside of a system/SM, it implicitly means that I have some knowledge about this system/SM.

Regarding a direct-parallel-computing-automaton, an external observer who is located somewhere outside of the direct-parallel-computing-automaton is its direct-observer. A direct-parallel-computing-automaton's direct-observer can observe the direct-parallel-computing-automaton's objective-situation/objective-state-evolution/BBs directly/objectively. A TM within a direct-parallel-computing-automaton cannot observe the direct-parallel-computing-automaton's objective-situation/objective-state-evolution/BBs directly/objectively. This TM is an indirect-observer (of this direct-parallel-computing-automaton).

The objective-state-evolution of a direct-parallel-computing-automaton happens once, and only happens once.

We can imagine that a direct-observer can press a “pause” button to pause/freeze the objective-state-evolution of a direct-parallel-computing-automaton at any specific moment – the state (e.g., position) of every BB freezes at this moment. We can imagine that the direct-observer can then press a “play” button to resume/continue the objective-state-evolution of this direct-parallel-computing-automaton. The pause/freeze should not change the objective-state-evolution of the direct-parallel-computing-automaton. So, any TM within the direct-parallel-computing-automaton has no way to detect the pause/freeze. It’s like pause a film and then resume it – it should not change the plot of the film.

We can imagine that a direct-observer will be able to observe a direct-parallel-computing-automaton's future state in the future. Strictly speaking, such an imagination should be a prerequisite for a mental time travel into the future. Please note that, such an imagination assumes that the direct-parallel-computing-automaton's future state only has one potential-outcome/situation-option (which is completely fated by the direct-function and the initial state of the direct-parallel-computing-automaton).

We can imagine that a direct-observer can restore the state of a direct-parallel-computing-automaton to an earlier state in the history, and then restart the objective-state-evolution of the direct-parallel-computing-automaton from that state. (Strictly speaking, such an imagination should be a prerequisite for a mental time travel into the past.) However, a TM within this direct-parallel-computing-automaton has no way to make a different *deliberate* decision/choice in the second run of the objective-state-evolution, even though the direct-function is stochastic. If the direct-function is stochastic, the TM might be able to make a different *nondeliberate* decision/choice in the second run of the objective-state-evolution.

“Does postulating or asserting that the laws of nature are indeterministic provide any comfort to those who would like to believe in metaphysical freedom? If the laws are indeterministic, then more than one future is indeed consistent with those laws and the actual past and present - but how can anyone have any choice about which of these futures becomes actual? Isn’t it just a matter of chance which becomes actual? If God were to “return” an indeterministic world to precisely its state at some time in the past, and then let the world go forward again, things might indeed happen differently the “second” time. But then, if the world is indeterministic, isn’t it just a matter of chance how things did happen in the one, actual course of events? And if what we do is just a matter of chance - well, who would want to call that freedom?” [158]

At any specific moment, the state of all BBs is a natural continuation of the state of all BBs at the preceding moment (right before the specific moment). The state change of all BBs between these two moments, is completely directly-fated by the direct-function: it is not objectively libertarian-free/flexible; it is not objectively controlled/driven/caused/decided/chosen/branched by any set of BBs.

In a direct-parallel-computing-automaton, every coincidence is directly-fated to happen by the direct-function. For example, if I throw a dice twice but get the same number, it is directly-fated to happen by the direct-function of the U-system.

Let us suppose that a direct-observer has unlimited computational power and knows the real-time state of every BB inside a direct-parallel-computing-automaton, without measuring it. Let us call such a direct-observer the omniscient-direct-observer. So, no agent can have more knowledge than the omniscient-direct-observer regarding anything inside this direct-parallel-computing-automaton. Apparently, an omniscient-direct-observer can reliably-forecast a TM’s pending decision/choice.

When we trying to forecast/retrodict something within a direct-parallel-computing-automaton, it means that we believe that we have recognized some *causalities (aka patterns)* of the objective-state-evolution of the direct-parallel-computing-automaton.

For example, when a human observes the objective-state-evolution of a Non-stochastic Game of Life system on a computer screen, in case that she does not know the direct-function of this direct-parallel-computing-automaton, she can recognize some causalities of the objective-state-evolution. For example, "a glider pattern travels across space, until it is blocked by another pattern" or “a Gosper glider gun generates/launches gliders” – either *causality (aka pattern)* is actually a physical-law (of this direct-parallel-computing-automaton) which can be proved by deductive inference based on the direct-function only. *If the human only recognized these two causalities (i.e., if she has not recognized the direct-function)*, she is short of knowledge (regarding the system). The short of knowledge means uncertainty (about the system). Based on the uncertainty (about the system), she might have *fluke mind* regarding the objective-state-evolution of the system. For example, she might think of that, when a TM in the system is generating a new pattern (in the system), the TM might be able to generate this new pattern at a location which can avoid the shooting of any Gosper glider gun (actually, if the TM itself also recognized these two causalities, the TM itself might try its best to generate the new pattern at a location which can avoid the shooting) – *she counterfactually/incorrectly feels like that the TM might be able to actually/objectively change the objective-state-evolution of the system (i.e., she counterfactually/incorrectly feels like that the TM has some degree of libertarian-freedom)*. Because she does not know that the TM’s own objective-state-evolution is directly-fated by the direct-function – she is short of this knowledge. She will be *desperated*, after she knows the direct-function – she knows that the TM has no libertarian-freedom at all. If the TM itself knows the direct-function, the TM itself will be *desperated* too – the TM knows that itself has no libertarian-freedom at all. In other words, if the TM itself knows the direct-function, then the TM knows that “if the TM is actually being shot by the Gosper glider gun, then it means that the TM actually has no way/libertarian-freedom/power/capability/possibility/probability/chance/potential/option/choice to avoid being shot by the Gosper glider gun”. If the TM itself knows the direct-function, then the TM knows that, both the TM itself and the Gosper glider gun are actually parts of the same (distributed) pattern. Or in other words, the Gosper glider gun is actually part of the TM, or the TM is actually part of the Gosper glider gun, although the Gosper glider gun might shoot the TM; actually, the Gosper glider gun is not a pattern separated from the TM, although the Gosper glider gun is seemingly/superficially “separated” from the TM by *space* – the Gosper glider gun is not actually/objectively separated from the TM in the *spacetime*. “The greatest illusion is separation.” (<https://twitter.com/ryanspangler/status/1491981354094841857>) Or in other words, the greatest illusive/subjective cognition is separation. The cognition-of-separation is the first illusive/subjective cognition. We first have the cognition-of-separation, and then we have all other illusive/subjective cognitions based on the cognition-of-separation. The cognition-of-separation is the most fundamental illusive/subjective cognition. It is the human’s visual cortex who illusively/subjectively separates the Gosper glider gun from the TM, while actually/objectively the Gosper glider gun and the TM are not separated. It is the TM’s cognition who illusively/subjectively separates the Gosper glider gun from the TM, while actually/objectively the Gosper glider gun and the TM are not separated.

With cognition-of-separation, my visual cortex (or my visual cortex’s algorithm) illusively/subjectively separates the TM from the Gosper glider gun. Based on this illusive/subjective separation, my brain (or my brain’s algorithm) has the second illusive/subjective cognition (let’s call it the cognition-of-control) that the TM (or the TM’s algorithm) is controlling/driving the TM itself (but not the Gosper glider gun). Actually/objectively, the TM (or its algorithm) is not controlling/driving the TM itself – both the TM and the Gosper glider gun are controlled/driven by the (same) direct-function. Every BB is actually/objectively controlled/driven by the (same) direct-function. No BB is actually/objectively controlled/driven by the TM (or its algorithm).

With cognition-of-separation, the TM (or its algorithm) illusively/subjectively separates itself from the Gosper glider gun. Based on this illusive/subjective separation, the TM (or its algorithm) has the cognition-of-control that itself is controlling/driving the TM itself (but not the Gosper glider gun).

With cognition-of-separation, my brain (or its algorithm) illusively/subjectively separates my physical body from the local environment. Based on this illusive/subjective separation, my brain (or its algorithm) has the cognition-of-control that itself is controlling/driving my physical body (but not the local environment). Actually/objectively, my brain (or its algorithm) is not controlling/driving my physical body. My brain, my physical body and the local environment are all controlled/driven by the (same) direct-function. Every BB is actually/objectively controlled/driven by the (same) direct-function. No BB is actually/objectively controlled/driven by my brain (or its algorithm).

With cognition-of-control, my brain (or my brain’s algorithm) has the third illusive/subjective cognition (let’s call it the cognition-of-freedom) that the TM (or the TM’s algorithm) has libertarian-freedom (of control) to do something other than what it actually does.

With cognition-of-control, the TM (or its algorithm) has the cognition-of-freedom that itself has libertarian-freedom (of control) to do something other than what it actually does.

With cognition-of-control, my brain (or its algorithm) has the cognition-of-freedom that itself has libertarian-freedom (of control) to do something other than what it actually does.

With cognition-of-freedom, my brain (or its algorithm) has the fourth illusive/subjective cognition (let’s call it the cognition-of-alternatives) that the objective-state-evolution of the Non-stochastic Game of Life system has other potential-outcomes (other than what actually happens in the system).

With cognition-of-freedom, the TM (or its algorithm) has the cognition-of-alternatives that the objective-state-evolution of the Non-stochastic Game of Life system has other potential-outcomes (other than what actually happens in the system).

With cognition-of-freedom, my brain (or its algorithm) has the cognition-of-alternatives that the objective-state-evolution of our cosmos has other potential-outcomes (other than what actually happens in our cosmos).

With cognition-of-alternatives, my brain (or my brain’s algorithm) has the fifth illusive/subjective cognition (let’s call it the cognition-of-actively-choose) that the TM (or the TM’s algorithm) actively participated in realizing one of the potential-outcomes (of the objective-state-evolution of the Non-stochastic Game of Life system) by its own (active) decision/choice.

With cognition-of-alternatives, the TM (or its algorithm) has the cognition-of-actively-choose that itself actively participated in realizing one of the potential-outcomes (of the objective-state-evolution of the Non-stochastic Game of Life system) by its own (active) decision/choice.

With cognition-of-alternatives, my brain (or its algorithm) has the cognition-of-actively-choose that itself actively participated in realizing one of the potential-outcomes (of the objective-state-evolution of our cosmos) by its own (active) decision/choice.

For example, in one potential-outcome, my physical body goes to McDonald; in the other potential-outcome, my physical body goes to KFC. My brain (or its algorithm) evaluated these two potential-outcomes, and then my physical body went to McDonald. In this case, my brain (or its algorithm) had the cognition-of-actively-choose that itself actively chose to go to McDonald, as if that my physical body could go to KFC, and as if that my brain (or its algorithm) had libertarian-freedom (of control) to choose to go to KFC, and as if that my brain (or its algorithm) was controlling/driving my physical body, and as if that my physical body was separated from the local environment.

If the actual direct-function of a direct-parallel-computing-automaton is non-stochastic, a BB’s objective-state-evolution is predetermined by the direct-function.

If the actual direct-function of a direct-parallel-computing-automaton is stochastic, a BB’s objective-state-evolution is not literally predetermined by the direct-function – an omniscient-direct-observer can't accurately *forecast* a BB's state using the stochastic direct-function. However, in the present article, I do not want to postulate that the BB has the ability/libertarian-freedom to subjectively choose its own state from the set of possible states which are literally allowed by the stochastic direct-function – I do not want to postulate that a BB has any sort of subjective libertarian-freedom. Instead, I’d rather postulate that the BB’s only state is objectively chosen by the stochastic direct-function (in case that the direct-parallel-computing-automaton is a computer simulation, the BB’s only state is actually chosen by the computer program) from the set of possible states which are literally allowed by the stochastic direct-function – it explains why any other state (which is also literally allowed by the stochastic direct-function) is actually impossible in the real world. Then, I can postulate that a BB's state is *actually* predetermined by the stochastic direct-function*,* although a BB's state is not literally predetermined by the stochastic direct-function.

Let us say that the *state* of a BB carries 1O-information or 1O-data, and say that the state *change* of a BB carries 2O-information or 2O-data.

In a direct-parallel-computing-automaton, the direct-parallel-computation calculates 1O-information, which gives rise to 2O-information.

When we humans observe a 2O-information being propagated/processed, let us say that the 2O-information is being 2O-propagated/2O-processed. Being part of the direct-parallel-computation, the 2O-propagation or 2O-processing is not something different from the direct-parallel-computation. The 2O-propagation/2O-processing of the 2O-information does not change the direct-parallel-computation.

Humans postulate that BBs are the only medium for the 2O-propagation/2O-processing of 2O-information – information which cannot be represented by the state change of BBs, is not a 2O-information, and has no way to be 2O-propagated/2O-processed. (“To be is to be perceived.”)

For example, when humans observe a TM [44] processing data/information in a Non-stochastic Game of Life system (on a computer screen), the data/information is 2O-information, which is being 2O-processed. A BB switches its state between live and dead over time. Such a state change carries 2O-information.

Another example, visual information from a retina to the brain, is carried by electric currents through optic nerves. An electric current is a stream of charged particles. In the state of a BB in a charged particle, the position information changes over time. The change of a BB’s position carries 2O-information. This 2O-information will be 2O-processed by the BBs in the brain. The objective-state-evolution of all BBs inside the brain, is directly-fated by the direct-function, and is *seemingly (i.e., subjectively)* controlled/driven by the 2O-information. Output information from a vertebrate brain to the spinal cord, is also carried by electric currents.

“Electric currents flowing through an optic nerve”, “the 2O-propagation of 2O-information through an optic nerve”, “the 1O-information of the BBs of an optic nerve being calculated by the direct-parallel-computation using the direct-function only” and “the objective-state-evolution of the BBs of an optic nerve” are actually one objective-situation (being modeled/described/narrated/imagined/mentally-visualized as four different subjective-situations), not four different objective-situations.

The phase precession in the human hippocampus and entorhinal cortex objectively represents/forecasts the human body's situation within an environment [85].

A TM should be using an intracorporeal MM to represent/forecast its situation within an environment. (For example, the phase precession in the human hippocampus and entorhinal cortex [85] is the objective/direct form of this intracorporeal MM in the objective-theory. Being a simulation/representation, a SM is an intracorporeal MM.) The present article postulates that the TM is subjectively experiencing the subjective-form (aka quale) of this intracorporeal MM. But apparently, there is no way to actually/objectively prove/verify this postulation.

In the semantics of the present article, a TM’s (subjective) MM is a structuralized 2O-information (which is being 2O-processed) for representing/forecasting. In the objective-theory, the objective/direct form of the said (subjective) MM is *the 2O-information (e.g., the phase precession in the human hippocampus and entorhinal cortex [85]).* As the 2O-information, the objective/direct form of the said MM can be objectively detected by a physical device (other than the said TM itself). In case that the said TM is a human brain, *another TM (e.g., the experimenter in [85])* can use its own *theory of mind module [53][54][55][56]* to mentally map the objectively detected 2O-information with the subjective narration of the former TM (about the said MM), or in other words, to mentally visualize them “side by side” to compare them. (However, when the latter TM is mentally visualizing the subjective narration of the former TM (about the said MM), what the latter TM mentally visualizing/perceiving, is actually its own *subjective-form (aka quale)* of the said MM, not the former TM’s *subjective-form* of the said MM – the latter TM mentally interprets/decodes/visualizes the former TM’s narration (in natural language) into the latter TM’s own subjective-form of the said MM. Actually, the latter TM is always subjectively experiencing its own quale – the latter TM has no way to subjectively experience the former TM’s quale.) Then, the latter TM feels *as if* that the former TM can subjectively experience the said MM, although the latter TM cannot logically prove that. (However, under this scenario, it is the latter TM itself who is actually subjectively experiencing the said MM.) The former TM can talk about its subjective experience (about the said MM) in natural language, but this (objective) fact is not enough to prove that the former TM can actually subjectively experience the said MM. For example, I am typing/writing the present article, but this (objective) fact is not enough to prove that my brain can actually subjectively experience the SM which is being described by the present article.

A human brain can describe the subjective-form of its MM in natural language, but there is no way to objectively detect the subjective-form of this MM (by a physical device other than this human brain itself). So, actually there is no way to prove the objective existence of the subjective-form of this MM – it is possible that the subjective-form of this MM does not actually exist. In other words, it is possible that the human brain is a Scarecrow-zombie.

Being a TM’s subjective experience, the nature of the “subjective-form” (aka “quale”) of a MM cannot be defined by natural language *directly –* it’s logically possible that no *TM (e.g., the human brain)* actually has access to its “quale”.

I claim that I have access to *my “quale” (e.g., my “quale” of pain)*. If you claim that you have access to your “quale” too, how do you know that my “quale” has the same nature as your “quale”? – you have no way to actually know that. You only have access to your own “quale”; you have no access to my “quale”. (For example, when we talking about the term “pain”, you are actually mentally/subjectively experiencing your own “quale” of your own pain – you have no way to actually mentally/subjectively experience my “quale” of my pain.) It’s also possible that both of us don’t actually have access to the “quale” – either of us can talk about “quale” without actually having access to it.

If both you and me have access to the “quale” at the same time, and if your "quale” and my “quale” are the same in nature, then you can get what I mean by the term “quale”, based on your subjective experience of your own “quale” – you get what I mean correctly in this case.

If both you and me have access to the “quale” at the same time, and if your "quale” and my “quale” are different in nature, then you can get what I mean by the term “quale”, based on your subjective experience of your own “quale”. But in this case, you get what I mean incorrectly.

If I do not have access to my “quale” (i.e., I am a Scarecrow-zombie), you can still get what I mean by the term “quale”, based on your subjective experience of your own “quale”. But in this case, you get what I mean incorrectly – I actually mean nothing by the term “quale”.

If both of us do not have access to the “quale” (i.e., we are both Scarecrow-zombies), another person (who has “quale”) still feels like that you get what I mean by the term “quale”, based on her/his subjective experience of her/his own “quale”. In this case, you get what I mean correctly – I actually mean nothing by the term “quale”.

Your brain knows an apple’s *actual appearance (i.e., quale)* in your brain’s subjective-theory. But your brain has no way to know this apple’s *actual appearance (i.e., quale)* in my brain’s subjective-theory – it is logically possible that *my brain does not have access to its “quale” (i.e., my brain is a Scarecrow-zombie)*. In case that my brain is a Scarecrow-zombie, my brain still can describe this apple’s appearance in natural language. Because neural networks can represent words and phrases compositionally [98][99].

The position and the velocity of an indirect-object cannot both be measured exactly, at the same time, even in theory. (<https://www.britannica.com/science/uncertainty-principle>) This is Heisenberg’s uncertainty principle. Heisenberg’s uncertainty principle doesn’t necessarily mean that a BB can’t/doesn’t have an exact state.

If we imagine a BB as a billiard ball which has an exact state (let’s assume this imagination to be an objective-situation), then a direct-observer knows this state exactly(because a direct-observer can observe the objective-situation/objective-state-evolution/BB directly/objectively), but an internal TM has no way to detect this state directly (because an internal TM cannot observe the objective-situation/objective-state-evolution/BB directly/objectively) – this explains Heisenberg’s uncertainty principle (being perceived by the internal TM). (The direct-observer only needs to model/postulate/imagine the BB as a particle, because the direct-observer can observe the objective-situation/objective-state-evolution/BB directly/objectively. To the direct-observer, the BB is not a wave, but a particle.) The internal TM can only detect the BB’s state *change* through 2O-processing – the internal TM cannot observe the objective-situation/objective-state-evolution/BB directly/objectively. (The internal TM cannot observe the objective-situation/objective-state-evolution/BB directly/objectively, so the internal TM has no way to know whether the BB is a particle or a wave.) The internal TM can either model/postulate/imagine the BB’s (detected) state *change* as the state *change* of a wave, or model/postulate/imagine the BB’s (detected) state *change* as the state *change* of a particle – this explains the wave-particle duality (being perceived by the internal TM).

A BB whose state *change* does not propagate to any other BB, exists from the viewpoint of a direct-observer, but does not exist from the viewpoint of any internal TM.

In case that a 2O-processing produces a (subjective) MM through 2O-processing 2O-information, this MM depends on the state *change* of BBs, not depends on the *state* of BBs. So, a 2O-processing can only know the state *change* of BBs, not the *state* of BBs.

If my theory (as being described above) is correct, then Heisenberg’s uncertainty principal should apply to every direct-parallel-computing-automaton (e.g., a Game of Life system). If this is the case, then it is logically impossible for a human to figure out an algorithm for a TM in a Game of Life system to measure the exact state of a BB (without uncertainty).

We humans haven't figured out an algorithm for a TM in a U-system to measure the exact state of a BB (without uncertainty) yet, that’s why we humans still believe that Heisenberg’s uncertainty principle is correct.

Inside a direct-parallel-computation, we humans can subjectively recognize/identify a fuzzy set of BBs which is 2O-processing some 2O-information, if we can subjectively recognize/identify/decode the 2O-information (from the state change of these BBs), and if we can subjectively model/recognize/identify the function of the 2O-processing (by analyzing the state change of these BBs). Based on our (subjective) MM of the function of the 2O-processing, we subjectively define these BBs to be *an indirect-object (i.e., a dynamic-physical-system)* of the direct-parallel-computing-automaton. This indirect-object is subjectively represented by our MM of the function of the 2O-processing – this indirect-object is subjectively modeled to be a (non-linear) processor of 2O-information. In case that our MM (of the 2O-information processor) is a fitted/accurate model of the direct-function, we cannot use this MM to subjectively model a counterfactual situation (which is different from the actual situation within the direct-parallel-computation). In case that our MM is not a fitted/accurate model of the direct-function, this MM loses some details of the direct-parallel-computation, that’s why we can use this MM to subjectively model a counterfactual situation (which can’t actually happen in the direct-parallel-computing-automaton). We might counterfactually/wishfully believe/postulate that this counterfactual situation can actually happen in this direct-parallel-computing-automaton, so that we can blame this indirect-object for preventing this counterfactual situation from actually happening (i.e., in case this indirect-object is a Gosper glider gun, we can blame it for shooting another pattern). (But apparently, this counterfactual situation can only happen in a different direct-parallel-computing-automaton which has a different direct-function or initial state.) Upon receiving the blame (as a 2O-information), the indirect-object might be able to subjectively forecast what the blamers will do, and make decisions/actions based on its forecast. Its forecast/decision/action is actually carried out by the direct-function.

From the objective-perspective, every indirect-object is a fuzzy set of BBs of a direct-parallel-computing-automaton, and every indirect-object is a fuzzy subset of a direct-parallel-computing-automaton.

Every indirect-object is an *ordinary/plain/nonsignificant* subset of its objective-theory, in the same sense that a jigsaw piece is an *ordinary/plain/nonsignificant* subset of a jigsaw puzzle.

There is no such thing as an indirect-object. There’s just “the objective-state-evolution of a direct-parallel-computing-automaton”, and we label a subset of “the objective-state-evolution of a direct-parallel-computing-automaton” as an indirect-object.

An indirect-object and “the objective-state-evolution of a fuzzy subset of a direct-parallel-computing-automaton” are actually one objective-situation (being modeled/described/narrated/imagined/mentally-visualized as two different subjective-situations), not two different objective-situations. Or in other words, “the objective-state-evolution of a fuzzy subset of a direct-parallel-computing-automaton” is an objective-situation, while an indirect-object is a subjective-situation of this objective-situation. An indirect-object is a subjective-situation of the objective-situation “the objective-state-evolution of a fuzzy subset of a direct-parallel-computing-automaton”.

We label/model/describe/narrate/imagine/mentally-visualize one objective-situation “the objective-state-evolution of a direct-parallel-computing-automaton” as many subjective-situations – each indirect-object is such a subjective-situation.

In general, matter in “condensed” phases is being mentally-modeled by a human's mental-models. Usually, matter in the solid phase is mentally-modeled as an indirect-object, a solid body or a rigid body, while matter in the liquid/gas phase is mentally-modeled as an objective-situation, a process or a fluid. If we think at the BB level, then matter in the solid phase can also be mentally-modeled as an objective-situation, a process or a fluid. A vertebrate’s body is usually mentally-modeled (by a human’s mental-models) as an indirect-object, a solid body or a rigid body, although most matter inside a vertebrate’s body is in the liquid phase. During the maximized-patikulamanasikara-experience, my brain manages to mentally-model a vertebrate’s body as an objective-situation, a process or a fluid.

“Every time we draw a line around something this is going to happen.... the ways it is not separate from the rest of existence will become manifest. It's a good way to find out really.” (<https://twitter.com/ryanspangler/status/1448414559828516869>)

Every time we mentally draw a line around an indirect-object, the ways this indirect-object is not separate/isolated from the reset of the direct-parallel-computing-automaton will become manifest. This indirect-object is not an isolated system.

To a vertebrate, the boundary of an indirect-object (e.g., a predator) is subjectively defined/drawn by its visual cortex. A vertebrate’s visual cortex mentally/subjectively draws a line around *something*, that’s why the vertebrate’s brain feels/defines this *thing* to be an indirect-object. The subjective-boundary of an indirect-object is actually a mental-model of *a TM (e.g., a vertebrate’s brain)*. The subjective-boundary is *mental/subjective/symbolic/fictional*. The subjective-boundary is not a *real* boundary – the subjective-boundary does not actually/objectively exist. To a TM, the subjective-boundary (of an indirect-object) is a spatial structure located inside the TM’s indirect-geometric-model.

When watching, a vertebrate’s brain perceives a subjective feeling/quale of color *on* the subjective-boundary of an indirect-object. When touching, a vertebrate’s brain perceives a subjective feeling/quale of touch/pressure/force/temperature *on* the subjective-boundary of an indirect-object.

When touching, the behavior/objective-state-evolution of the subjective-boundary (of an indirect-object) inside the indirect-geometric-model can be explained/forecasted/modeled by Aristotelian/Newtonian mental-models.

Let’s *imagine/postulate* that BBs are located inside a TM’s indirect-geometric-model. Or in other words, let’s *imagine/postulate* that the TM’s indirect-geometric-model is the objective-theory. There is a space inside the subjective-boundary of an indirect-object – an indirect-object is imagined/mentally-modeled to occupy this space. But the occupancy of the indirect-object's BBs cannot make this space different. There is no essential difference between the space inside the subjective-boundary (of an indirect-object) and the space outside of the subjective-boundary – the two spaces are the same in nature. BBs keep crossing the subjective-boundary of an indirect-object all the time. A BB will not change its behavior/objective-state-evolution after crossing the subjective-boundary (of an indirect-object) from any side. A BB is being treated as a subset/component/part of an indirect-object, after entering the subjective-boundary; a BB is not being treated as a subset/component/part of an indirect-object, after leaving the subjective-boundary. This also applies to a BB which keeps crossing the subjective-boundary of an indirect-object. In case that two BBs are separated by the subjective-boundary of an indirect-object, the subjective-boundary cannot block a “force” between these two BBs – if we imagine/mentally-visualize/mentally-model that there is a “force” exerted by one BB on the other BB.

During the maximized-patikulamanasikara-experience, my brain manages to unlearn the subjective-boundaries of the indirect-objects – “there is no boundaries between any two indirect-objects, so actually there is only one indirect-object, which is the direct-parallel-computing-automaton as a whole”. Under the context of the fine-grained direct-parallel-computing-automaton, there is no coarse-grained indirect-object – everything actually happens/evolves at the BB level.

When an indirect-object/solid-body/rigid-body is contacting with another indirect-object/solid-body/rigid-body, my brain does/can mentally-model that the former indirect-object/solid-body/rigid-body exerts an Aristotelian-force/Newtonian-force on the subjective-boundary of the latter indirect-object/solid-body/rigid-body to control/drive/cause/change the objective-state-evolution of the latter indirect-object/solid-body/rigid-body.

So, when my brain mentally-models matter as an indirect-object/solid-body/rigid-body, my brain imagines/assumes/postulates/mentally-models two or more potential-outcomes/situation-options/timelines of the objective-state-evolution/objective-situation of the BBs of the indirect-object/solid-body/rigid-body – under the imagined effect of a potential Aristotelian-force/Newtonian-force (exerted on the subjective-boundary of the indirect-object/solid-body/rigid-body by another indirect-object/solid-body/rigid-body). In this case, my brain is being (completely) subjective. "Give me a place to stand on, and I will move the Earth" – Archimedes. (Quoted by Pappus of Alexandria in Synagoge, Book VIII)

When an objective-situation/process/fluid is contacting with another objective-situation/process/fluid, my brain doesn’t/can’t mentally-model that the former objective-situation/process/fluid exerts an Aristotelian-force/Newtonian-force on the subjective-boundary of the latter objective-situation/process/fluid to control/drive/cause/change the objective-state-evolution of the latter objective-situation/process/fluid.

So, when my brain mentally-models matter as an objective-situation/process/fluid, my brain only imagines/assumes/postulates/mentally-models *one potential spatiotemporal outcome* *(or one situation-option/timeline)* of the objective-state-evolution/objective-situation of the BBs of the objective-situation/process/fluid under the context of spacetime – without imagining the effect of a potential Aristotelian-force/Newtonian-force (exerted on the subjective-boundary of the objective-situation/process/fluid by another objective-situation/process/fluid). In this case, my brain is being (completely) objective. “上善若水。水利万物而不争”—《道德经》。 “THE highest goodness is like water, for water is excellent in benefiting all things, and it does not strive. [120]” – Lao Tzu. Observing the flow of fluids (e.g., an ocean; a wind) helped my brain to be objective. “智者乐水，仁者乐山”—孔子。“The wise loves water; the benevolent loves mountains. [119]” – Confucius.

If we view a direct-parallel-computing-automaton as a pure physical machine/device, then each indirect-object is a fuzzy subset of this machine/device – each indirect-object is a component/part of this machine/device. In this sense, we can view every indirect-object as a pure physical machine/device, but an indirect-object as a pure physical machine/device is not self-sustainable/independent/isolated. Only a direct-parallel-computing-automaton (as a whole) as a pure physical machine/device is self-sustainable/independent/isolated.

If we view a direct-parallel-computing-automaton as a large-scale objective-situation, then each small-scale objective-situation (within the large-scale objective-situation) is a fuzzy subset of the large-scale objective-situation – each small-scale objective-situation is a component/part of the large-scale objective-situation.

Every time we mentally draw a line around a small-scale objective-situation, the ways this small-scale objective-situation is not separate/isolated from the reset of the large-scale situation will become manifest. This small-scale objective-situation is not an isolated system.

A small-scale objective-situation doesn’t need to be an indirect-object. Every indirect-object must be a small-scale objective-situation. More specifically, the objective-state-evolution of the BBs of every indirect-object is a small-scale objective-situation.

We humans have lots of innate mental-models regarding indirect-objects – our Aristotelian/Newtonian mental-models are compatible with these innate mental-models. So, when we imagine the objective-state-evolution of an indirect-object, our brains use these innate mental-models automatically. Then, it feels like that the objective-state-evolution of an indirect-object is not automatic/autonomous, but is subject to a “Aristotelian-force/Newtonian-force” – as being imagined/mentally-visualized/mentally-modeled by our Aristotelian/Newtonian mental-models.

When we treat an indirect-object as a small-scale objective-situation/process, our brains do not need to use our innate mental-models regarding indirect-objects. Then, it is easier for our brains to believe that the objective-state-evolution of an indirect-object is automatic/autonomous.

In Aristotelian mental-models, the cause of the *movement* of an indirect-object is imagined/mentally-visualized to be a “Aristotelian-force”. In Newtonian mental-models, the cause of the *acceleration* of an indirect-object is imagined/mentally-visualized to be a “Newtonian-force”.

In the semantics of the present article, the only cause of the movement/acceleration of an indirect-object is the direct-function, not a “force” – a “force” does not actually/objectively exist. In other words, the movement/acceleration of an indirect-object is automatic/autonomous.

The mental-model of a “force” exerted by an indirect-objects on another indirect-object, usually has something to do with the subjective-boundaries of these two indirect-objects, and usually is imagined/mentally-modeled (by a TM (e.g., a vertebrate’s brain)) to be located inside the TM’s indirect-geometric-model.

Aristotelian/Newtonian mental-models are *only* based on the context of a TM’s indirect-geometric-model – a TM’s indirect-geometric-model works as the *only* stage/context/environment for the TM’s Aristotelian/Newtonian mental-models. In the TM’s indirect-geometric-model, there are indirect-objects inside their respective subjective-boundaries. An indirect-object is exerting an Aristotelian-force/Newtonian-force on another indirect-object's subjective-boundary – the TM imagines/mentally-models that this Aristotelian-force/Newtonian-force controls/drives/causes the latter indirect-object to move/accelerate. This Aristotelian-force/Newtonian-force is imagined/mentally-modeled (by the TM) to be located inside the TM’s indirect-geometric-model. However, the TM’s Aristotelian/Newtonian mental-models (incorrectly/counterfactually) treats the TM’s indirect-geometric-model as the TM’s objective-theory, that’s why the TM (incorrectly/counterfactually) feels like that the said Aristotelian-force/Newtonian-force is located inside the TM’s objective-theory.

When a moving indirect-object hits a stationary indirect-object, a TM’s Aristotelian mental-models imagine/mentally-model that the moving indirect-object exerts an Aristotelian-force on the stationary indirect-object (while the stationary indirect-object does *not* exert an Aristotelian-force on the moving indirect-object), and that’s why the moving indirect-object is identified to be the “controller/driver/cause” of this objective-situation – the actual “controller/driver/cause” of this objective-situation is the direct-function.

In Newtonian mental-models, if an indirect-object exerts a Newtonian-force on another indirect-object, then the latter indirect-object simultaneously exerts another Newtonian-force on the former indirect-object, and *the two Newtonian-forces (i.e., a pair of Newtonian-forces)* are equal in magnitude and opposite in direction. Although the two Newtonian-forces look equal, the mental-models of a human sometimes can magically identify one of these two indirect-objects to be the “controller/driver/cause” of this objective-situation – the actual “controller/driver/cause” of this objective-situation is the direct-function. (For example, when a flag is moving in the wind, the mental-models of a human sometimes can magically identify the wind to be the “controller/driver/cause” of this objective-situation. “非风动，非幡动，仁者心动。”—惠能。“Neither the flag nor the wind is moving, but it is the heart of the benevolent that is moving. [109]” – Hui-neng.)

In Aristotelian/Newtonian mental-models, the “controller/driver/cause” indirect-object is imagined/mentally-visualized to have the libertarian-freedom/flexibility to actively exert an Aristotelian-force/Newtonian-force, while the other indirect-object is imagined/mentally-visualized to have no libertarian-freedom/flexibility under this objective-situation. The “controller/driver/cause” indirect-object is held responsible for this objective-situation, while the other indirect-object is not held responsible for this objective-situation. The objective-state-evolution of the BBs of the “controller/driver/cause” indirect-object is imagined/mentally-visualized to be libertarian-free/flexible/active, while the objective-state-evolution of the BBs of the other indirect-object is imagined/mentally-visualized to be passive, not libertarian-free/flexible. (BTW, for almost every objective-situation in the cosmos, the mental-models of a human can magically identify an indirect-object to be responsible for that objective-situation, although actually only the direct-function is responsible for that objective-situation.)

In Aristotelian mental-models, the objective-state-evolution of the BBs of the “controller/driver/cause” indirect-object as an objective-situation, is imagined/mentally-visualized to control/drive/cause *another objective-situation (i.e., the objective-state-evolution of the BBs of the other indirect-object)* via *an Aristotelian-force*. In contrast, the objective-state-evolution of the BBs of the other indirect-object (as an objective-situation), is *not* imagined/mentally-visualized to control/drive/cause the objective-state-evolution of the BBs of the “controller/driver/cause” indirect-object (as another objective-situation) via an Aristotelian-force.

In Newtonian mental-models, the objective-state-evolution of the BBs of the “controller/driver/cause” indirect-object as an objective-situation, is imagined/mentally-visualized to control/drive/cause *another objective-situation (i.e., the objective-state-evolution of the BBs of the other indirect-object)* via *a pair of Newtonian-forces*. In contrast, the objective-state-evolution of the BBs of the other indirect-object (as an objective-situation), is *not* imagined/mentally-visualized to control/drive/cause the objective-state-evolution of the BBs of the “controller/driver/cause” indirect-object (as another objective-situation) via a pair of Newtonian-forces.

In Aristotelian/Newtonian mental-models, it sounds as if that the objective-state-evolution of the BBs of the “controller/driver/cause” indirect-object is *not* directly-fated by the direct-function, while the objective-state-evolution of the BBs of the other indirect-object is directly-fated by the direct-function. So, the Aristotelian/Newtonian imaginations/mental-visualizations/mental-models are obviously *unfair* to the BBs of these two indirect-objects – the Aristotelian/Newtonian imaginations/mental-visualizations/mental-models discriminate the BBs of the “controller/driver/cause” indirect-object by holding them responsible for something they have no control. The Aristotelian/Newtonian imaginations/mental-visualizations/mental-models are based on the subjective-boundaries of the two indirect-objects. Obviously, both subjective-boundaries have no influence on any BB’s behavior/objective-state-evolution – the objective-state-evolution of every BB (of the two indirect-objects) is directly-fated by the direct-function. The objective-state-evolution of any BB of the “controller/driver/cause” indirect-object can’t be more libertarian-free/flexible/active than the objective-state-evolution of any BB of the other indirect-object.

If the objective-state-evolution of the BBs of the “controller/driver/cause” indirect-object (as an objective-situation) *actually/objectively* controls/drives/causes another objective-situation (i.e., the objective-state-evolution of the BBs of the other indirect-object), then it seems like that the former objective-situation should control/drive/cause the latter objective-situation through *something* – this *thing* is imagined/mentally-modeled to be the Aristotelian-force/Newtonian-force. So, as a mental-model, the Aristotelian-force/Newtonian-force works as the *media/carrier* of control (for one objective-situation to control/drive/cause another objective-situation). In other words, the *media/carrier* of control (for one objective-situation to control/drive/cause another objective-situation) is called “force” – “Aristotelian-force/Newtonian-force” is the *media/carrier* of control. We can measure the imagined/mentally-modeled “strength/degree/scale” of this control by a spring scale, although actually one objective-situation has no control over another objective-situation. One objective-situation is not controlled/driven/caused by another objective-situation – either objective-situation is only controlled/driven/caused by the direct-function. We don’t have a device to measure the “strength/degree/scale” of the control of the direct-function. Such a device is unnecessary, because every objective-situation is *completely/fully* controlled/driven/caused by the direct-function.

Magically, the reading of a spring scale can be used to reliably forecast the acceleration/objective-state-evolution of an indirect-object's subjective-boundary (inside a TM’s indirect-geometric-model) – based on Newtonian mental-models. This phenomenon/coincidence/magic can be explained based on the direct-function. (<https://www.quora.com/How-can-we-derive-Newtons-second-law-from-Schr%C3%B6dingers-equation>)

Analogously, when I push a billiard ball by a finger, based on the strength of the signals received from the receptors for touch on my skin, my brain can reliably forecast the acceleration/objective-state-evolution of the billiard ball’s subjective-boundary (inside my brain’s indirect-geometric-model) – based on Newtonian mental-models. To my brain, the receptors for touch (on my skin) work like a digital spring scale.

In general, the objective-state-evolution of all indirect-objects' subjective-boundaries (inside my brain’s indirect-geometric-model) can be reliably explained/forecasted/modeled by my brain’s Newtonian mental-models *under the context of a three-dimensional Euclidean space (i.e., under the context of my brain’s indirect-geometric-model)*, although my brain’s BBs are not actually living in *this three-dimensional Euclidean space (i.e., my brain's indirect-geometric-model)* or my brain’s imagined/mathematically-modeled Newtonian world/mental-models/MMs.

Comparing to the direct-function which *accurately/precisely* describes the objective-state-evolution of the states of the BBs of a U-system, Newtonian mental-models *approximately* describe the objective-state-evolution of the states of the BBs of a U-system – the fictional concept/MM of Newtonian-force is derived from the fictional concept/MM of Aristotelian-force.

“A *system* within a direct-parallel-computing-automaton” refers to a subset of the direct-parallel-computing-automaton. This system is not an isolated system. This system is not separate/isolated from the reset of the direct-parallel-computing-automaton. The direct-parallel-computing-automaton as a whole is an isolated system.

Each TM’s subjective-theory is completely modeled/represented/simulated by the TM’s intracorporeal BBs.

A TM’s subjective-theory is actually/objectively the TM’s intracorporeal situation.

In case that the actual direct-function of a direct-parallel-computing-automaton is stochastic, even if I postulate that each BB has the ability/libertarian-freedom to subjectively choose its own state from a set of possible states which are literally allowed by the stochastic direct-function, it doesn’t mean that an indirect-object (which includes two BBs) has an overall ability/libertarian-freedom to choose the states of the two BBs together – I don’t want to further postulate that one BB’s subjective choice can be influenced by another BB. So, when we are considering an indirect-object which includes two BBs, each BB can only subjectively choose its own state by itself independently. In this scenario, the two BBs have two separate subjectivities/abilities/libertarian-freedoms, the two subjectivities/abilities/libertarian-freedoms can’t join into one single subjectivity/ability/libertarian-freedom (of the indirect-object). The state of the indirect-object is not chosen by the two BBs together, but chosen by each BB independently. The statement “both BBs have libertarian-freedoms” doesn’t mean that the said indirect-object has libertarian-freedom – the said indirect-object doesn’t have the libertarian-freedom to subjectively leverage the libertarian-freedoms of the two BBs. (For example, a TM (e.g., a brain) doesn’t have the libertarian-freedom to subjectively leverage the libertarian-freedom of the BBs within the TM.) We feel like that the said indirect-object has libertarian-freedom, but the libertarian-freedom is only the sum of the libertarian-freedoms of the two BBs. The two BBs actually act independently – they don’t cooperate with each other. But we feel like that, the two BBs (of an indirect-object) cooperate with each other to act together (as an indirect-object).

## Indirect-SM/subjective-theory vs. Direct-SM

As a TM, a human brain can somehow use natural language to describe itself as a physical symbol system [60] in text – each symbol (of the physical symbol system) maps to a term/phrase in natural language. The text 2O-propagates to another TM, to be 2O-processed by the latter TM. The latter TM as a physical symbol system is meaningfully changed by the 2O-processing.

The relationships among the symbols are determined by the objective construction of the TM – every symbol is anchored by the entire relationship network of all symbols. In a physical symbol system, no symbol is independent/standalone. So, when a TM uses human language, the meaning of every term/phrase depends/relies on the meanings of all other terms/phrases. When two TMs are communicating using human language, for each term/phrase, either TM has *an intracorporeal symbol (e.g., a neural underpinning)* to represent it. (For each TM, the subjective relationship between any two subjective symbols (in the TM’s subjective-theory), is completely modeled/represented/simulated/implemented by the physical interactions between the two intracorporeal symbols (in the objective-theory).) The two TMs' intracorporeal symbol networks have different (spatiotemporal) topological structures in *spacetime*, so actually we should never say that the two TMs have the same understanding for that term/phrase. Actually, each TM is sealed by its own unique physical symbol system – each TM can only experience the context of its own unique physical symbol system. Each TM can only experience the meaning of the human language, based on its own unique understanding/viewpoint – each TM is limited/restrained by its own unique understanding of the human language. For example, each reader actually has a different/unique understanding about the meaning of every term/phrase (e.g., "meaning", “situation”, “model”, “reality”, “subjective”, “objective”, “fated” or “the ghost in the machine [23]”) used in the present article, even if the readers are using the same English dictionary. No matter what a text means to a TM subjectively, when the direct-parallel-computing-automaton refreshes automatically/unintentionally at every moment, the TM is directly-fated (by the direct-function and the state of the direct-parallel-computing-automaton at the preceding moment, or by the direct-function and the initial state of the direct-parallel-computing-automaton) to output the text which the TM is directly-fated to output – the direct-fate is directly-fated by the direct-function. (For example, in the objective-theory, my brain is directly-fated to type/write the present article as what it is directly-fated to be, no matter what the text of the present article means to my brain subjectively. So, the present article is actually typed/written by the direct-parallel-computing-automaton automatically/unintentionally, although it superficially looks like that the present article is typed/written by my brain intentionally.)

Every TM’s program as an entire computational/mathematical model of the objective-theory is not fitted/accurate. Every TM’s program is a physical symbol system which roughly models/represents/simulates the objective-theory. The physical symbol system is a symbolization/oversimplification/stereotype of the objective-theory. The symbols are being used by a SM of the TM. Let us call this SM the TM’s indirect-SM. The TM’s indirect-SM as an oversimplified rough computational/mathematical model of the objective-theory is not fitted/accurate. The TM’s indirect-SM is like a pseudocode which represents/models the objective-theory. A TM's indirect-SM is the TM's Bayesian model of the objective-theory. A TM’s indirect-SM is the TM’s mental representation of all its current potential/mental/intracorporeal *situation-option*s – the indirect-SM represents all the potential/mental/intracorporeal *situation-option*s. A TM’s indirect-SM is a representation of the 2O-information being 2O-processed by the TM.

“We found that after training, recurrent units can develop into clusters that are functionally specialized for different cognitive processes, and we introduce a simple yet effective measure to quantify relationships between single-unit neural representations of tasks. Learning often gives rise to compositionality of task representations, a critical feature for cognitive flexibility, whereby one task can be performed by recombining instructions for other tasks. [98]” This explains how a TM’s indirect-SM is objectively formed/emerged in the objective-theory. In the objective-theory, a causality is objectively implemented/enabled by one or more clusters.

An indirect-object is a symbol being used by a TM’s indirect-SM – an indirect-object in the objective-theory, is represented by a symbol in the TM’s indirect-SM. Due to the direct-parallel-computation, an indirect-object keeps changing/evolving, which means that an indirect-object becomes a different indirect-object at every moment (i.e., the original indirect-object disappears, and then a different indirect-object appears at the same location (or almost at the same location)), but the TM's indirect-SM keeps using the same subjective/intracorporeal MM to model it, and keeps using the same symbol (e.g., “the ship of Theseus”) to represent it. This MM/symbol is a (subjective) stereotype.

In a sense, the direct-parallel-computing-automaton (as a whole) is an indirect-object. Due to the direct-parallel-computation, the direct-parallel-computing-automaton keeps changing/evolving, which means that the direct-parallel-computing-automaton becomes a different direct-parallel-computing-automaton at every moment (i.e., the original direct-parallel-computing-automaton disappears, and then a different direct-parallel-computing-automaton appears at the same location (or almost at the same location)), but the TM’s indirect-SM keeps using the same subjective/intracorporeal MM to model it, and keeps using the same symbol (e.g., “the cosmos”) to represent it. This MM/symbol is a (subjective) stereotype.

BTW, if libertarian free will somehow exists in a direct-parallel-computing-automaton, then a libertarian free will should become a new libertarian free will at every moment (i.e., the original libertarian free will disappears, and then a new libertarian free will appears at the same location (or almost at the same location)).

The *objective-theory* is a symbol being used by a TM’s indirect-SM.

A TM’s indirect-SM not only can represent/model/simulate the actual objective-theory where the TM objectively lives in, but also can represent/model/simulate/imagine some other direct-realities which are different from the actual objective-theory where the TM objectively lives in.

When I am reading/watching a finished script/story/book/simulation, I forecast an upcoming plot, and I feel *as if* that the forecasted situation-option *will* actually happen. But apparently, if actually the forecasted situation-option won’t happen (in the script/story/book/simulation), the forecasted situation-option is predetermined (by the script/story/book/simulation) to not happen – but I have no way to know that in advance (unless I am actually reading/watching the same script/story/book/simulation for the second time).

A forecast made by a TM's indirect-SM (automatically/unintentionally) is probability-based/inaccurate/unreliable – a forecasted coarse-grained situation-option has the highest Bayesian probability to happen, according to the current knowledge of the TM’s indirect-SM. This forecasted coarse-grained situation-option is the TM’s mental representation of the future, based on the TM’s current knowledge. This forecasted coarse-grained situation-option is the TM’s indirect-fate. (The TM’s indirect-fate is a coarse-grained *trend (like an inertia)* which is subjectively identified by the indirect-SM. The fine-grained objective-state-evolution of the objective-theory does not need to follow this subjectively forecasted coarse-grained trend.) Based on the TM’s Bayesian model, the TM’s indirect-SM has an estimation of the Bayesian probability for the forecasted situation-option (to happen). Based on its current knowledge/estimation, the TM’s indirect-SM feels *as if* that the forecasted situation-option *will* actually happen. (But apparently, it’s always possible that the forecasted situation-option won’t actually happen in the objective-theory. It’s possible that a situation-option with lower probability (instead of the situation-option with the highest probability) will actually happen. It’s possible that the forecasted situation-option is directly-fated to *not* happen in the objective-theory. But the TM has no way to know *that (i.e., the direct-fate)* in advance, so the TM’s indirect-SM still only has an estimation of the Bayesian probability for the forecasted situation-option – the forecasted situation-option is not the direct-fate. So, the TM’s indirect-SM still automatically/unintentionally uses the estimation of the Bayesian probability for the forecasted situation-option, even if the TM literally knows that everything (which actually happens in the objective-theory) follows the direct-fate – this knowledge (i.e., literally knowing that everything follows the direct-fate) might directly-fatedly subtly disturb/change the estimated Bayesian probability for the forecasted situation-option. If we imagine that the TM somehow knows the direct-fate in advance, then such a knowledge will void the estimation of the Bayesian probability for the forecasted situation-option – but the TM has no way to actually have such a knowledge.) Based on such a forecast, a decision is automatically/unintentionally made by the TM's indirect-SM according to the TM’s preference. This decision is directly-fated to be made by the TM in the objective-theory – but in the objective-theory the TM has no way to know its own decision in advance.

Let us call a TM’s SM of the direct-parallel-computation the TM’s direct-SM. A TM’s mental visualization of its direct-SM is the maximized-patikulamanasikara-experience.

Let us call a TM’s SM of the time-irrelevant-state-machine the TM’s time-irrelevant-state-machine-SM. Let us call a TM’s SM of the static-quantum-field the TM’s static-quantum-field-SM.

The belief system you are believing – no matter what it is – can justify itself. Analogously, when a TM is using its indirect-SM, its indirect-SM can justify itself.

When a TM is using its direct-SM, its direct-SM can justify itself. For example, the text/content/meaning of the present article can justify itself – my brain wrote the present article while using its direct-SM.

For a TM, its direct-SM and its indirect-SM are the TM's MM-options.

In a TM’s direct-SM, there is only one causality (i.e., the direct-function) which applies to the objective-state-evolution of the BBs of the objective-theory. In other words, the objective-state-evolution of the BBs of the TM’s objective-theory is mathematically-modeled/simulated/imagined/postulated (by the TM’s direct-SM) to only follow one causality. Under this context, everything happens in a TM’s objective-theory, is *only* caused by the direct-function/direct-fate. In other words, the direct-function/direct-fate is mathematically-modeled/simulated/imagined/postulated/identified (by the TM’s program) to be the *only* cause of *everything (which happens in the objective-theory)* – no indirect-causality is mathematically-modeled/simulated/imagined/postulated/identified (by the TM’s program) to be the cause of anything. When my brain observes a Game of Life system as a direct-observer, my brain is able to use a direct-SM/direct-function/direct-fate to mathematically-model/simulate/imagine the objective-state-evolution of the BBs of this Game of Life system. When my brain observes our cosmos as an indirect-observer, my brain is able to use a direct-SM/direct-function/direct-fate to mathematically-model/simulate/imagine the objective-state-evolution of the BBs of our cosmos.

In a TM’s indirect-SM, there are two or more causalities (e.g., the indirect-causalities) which apply to the objective-state-evolution of the BBs of the objective-theory. In other words, the objective-state-evolution of the BBs of the TM’s objective-theory is mathematically-modeled/simulated/imagined/postulated (by the TM’s indirect-SM) to follow two or more causalities. Under this context, *not* everything happens in a TM’s objective-theory is *only* caused by the direct-function. In other words, the direct-function is not mathematically-modeled/simulated/imagined/postulated/identified (by the TM’s program) to be the *only* cause of *everything (which happens in the objective-theory)* – at least one indirect-causality is mathematically-modeled/simulated/imagined/postulated/identified (by the TM’s program) to be the cause of something. In fact, this indirect-causality only resides in the control logic of the TM’s program – this indirect-causality does not reside in the objective-theory. In other words, this indirect-causality has nothing to do with the objective-state-evolution of the BBs of the objective-theory. (“My mind is not the universe. [114]”) When my brain observes a Game of Life system as a direct-observer, my brain is able to use an indirect-SM/indirect-causality to mathematically-model/simulate/imagine the objective-state-evolution of the BBs of this Game of Life system. When my brain observes our cosmos as an indirect-observer, my brain is able to use an indirect-SM/indirect-causality to mathematically-model/simulate/imagine the objective-state-evolution of the BBs of our cosmos.

“The concept of culture I espouse... is essentially a semiotic one. Believing with Max Weber, that man is an animal suspended in webs of significance he himself has spun, I take culture to be these webs, and the analysis of it to be therefore not an experimental science in search of law but an interpretative one in search of meaning.” [128] A TM’s indirect-SM is a web of significance/indirect-causalities/beliefs [130] the TM itself has spun/mathematically-modeled/imagined/believed/accepted – the significance/indirect-causalities/beliefs (in this web) is subjective.

The direct-SM is an objective-situation; the indirect-SM is a subjective-situation.

Typically, the direct-SM is the states/objective-state-evolution/objective-situation of the BBs seen/mathematically-modeled by a direct-observer, while the indirect-SM is the states/objective-state-evolution/objective-situation of the BBs perceived/mathematically-modeled by an indirect-observer.

The direct-SM and the indirect-SM are actually one objective-situation (being modeled/described/narrated/imagined/mentally-visualized as two different subjective-situations), not two different objective-situations.

Direct-SM and indirect-SM are two different situations/SMs simulated/represented/modeled/mentally-visualized by my brain. In order to distinguish these two situations/SMs subjectively, my brain uses the term/symbol “objective” and “subjective” to label them respectively. Then, my brain has a perception of the direct-SM, and a perception of the indirect-SM.

A TM's indirect-SM reflects intracorporeal situation/subjective-theory (inside the TM), while a TM's direct-SM reflects extracorporeal situation/objective-theory (outside the TM).

In a TM’s direct-SM, the objective-state-evolution of the objective-theory is simulated to have *one* potential-outcome/situation-option. In a TM’s indirect-SM, the objective-state-evolution of the objective-theory is (incorrectly/counterfactually) simulated to have two or more potential-outcomes/situation-options.

A TM’s direct-SM is a SM which includes/models/simulates the TM itself objectively. A TM’s indirect-SM is a SM which includes/models/simulates the TM itself subjectively. The realness-degree of the indirect-SM is lower than the direct-SM. If the direct-SM is a factual/valid/correct/real/true/accurate/straight MM of the objective-theory, then the indirect-SM is a counterfactual/invalid/incorrect/fake/distorted/pareidolic/illusive/delusive MM of the objective-theory.

The direct-SM is a symbol being used by a TM’s indirect-SM.

When a TM is being subjective, it uses its indirect-SM. When a TM is being objective, it uses its direct-SM.

“Suppose I say: "it's true that 3 is a prime number, but really there are no numbers". Have I contradicted myself? made a logical mistake? a conceptual mistake?” (<https://twitter.com/BayouPhilosophy/status/1454568882778345479)> In this case, we should say the following words instead: “Actually, I know that there are no numbers. But *if* there are numbers (which means that I was wrong to say that “there are no numbers”), *then* 3 is a prime number.”

Actually, my brain knows that its direct-SM is correct. But *if* my brain’s direct-SM is incorrect, thenmy brain knows that it *should* follow its indirect-SM to act intentionally.

If my brain’s direct-SM is correct, then my brain knows that it doesn’t have any reason to intentionally do anything. If my brain’s direct-SM is incorrect, then my brain knows that it *should* follow its indirect-SM to act *intentionally*. However, if my brain’s direct-SM is correct, it means that actually my brain is directly-fated/forced to (*unintentionally*) follow its indirect-SM whenever it is actually following it.

According to a TM's indirect-SM, indirect-objects are located inside the TM’s seemingly “extracorporeal/objective” indirect-geometric-model/indirect-SM. The TM has a quale of such an indirect-object. The TM has a quale of the indirect-geometric-model/indirect-SM. The TM has direct access to the appearance of such an indirect-object (in the context of the TM’s indirect-geometric-model/indirect-SM).

However, actual indirect-objects are located inside the TM's extracorporeal/objective objective-theory, not located inside the TM's intracorporeal/subjective indirect-geometric-model/indirect-SM. The TM does not have a quale of such an actual indirect-object. The TM does not have a quale of the objective-theory. The TM does not have direct access to the appearance of such an actual indirect-object (in the context of the objective-theory). (For example, my brain does not know an actual/objective apple’s appearance in the context of the objective-theory.) Such an actual indirect-object (in the context of the objective-theory) is only *an abstract concept (i.e., a thing in itself)* to the TM.

A TM’s direct-SM works like a bridge/relay between the “thing in itself” (i.e., the objective-theory) and the TM’s indirect-geometric-model/indirect-SM. The TM’s direct-SM represents/models/simulates the “thing in itself” *closer* than the TM’s indirect-geometric-model/indirect-SM. The TM’s direct-SM is not the “thing in itself”. The TM’s direct-SM is a mental visualization of the “thing in itself”. This mental visualization is generated/constructed/invented/designed/imagined (by the TM) based on the components/elements of the TM’s indirect-geometric-model/indirect-SM – this mental visualization is not something brand new. This mental visualization is old wine in new bottles.

A TM can explain/forecast/model the objective-state-evolution of the objective-theory, based on the context of its indirect-SM, or based on the context of its direct-SM. Based on the context of its direct-SM, the objective-state-evolution/direct-fate of the objective-theory, is directly-fated by the direct-function.

When the control logic of a TM’s program is using the indirect-SM, the situation described/defined by the TM’s indirect-geometric-model is treated (by the control logic of the TM’s program) as extracorporeal situation/objective-theory (outside the TM). When the control logic of a TM’s program is using the direct-SM, the situation described/defined by the TM’s indirect-geometric-model is treated (by the control logic of the TM’s program) as intracorporeal situation/subjective-theory (inside the TM).

When a TM compares its indirect-SM with its direct-SM, the TM will know that its indirect-SM is invalid/incorrect/counterfactual/fictional/problematic, while its direct-SM is valid/correct/factual/nonfictional/problemless. If a TM wants to keep its direct-SM intact, the TM should clearly divide its direct-SM from its indirect-SM.

In a TM’s direct-SM, the direct-function is postulated to be the only order which controls/drives the objective-state-evolution of the direct-parallel-computing-automaton/objective-theory. The TM’s direct-SM is the TM's fitted/accurate computational/mathematical model of the objective-theory. So, a forecast made by a TM's direct-SM is accurate/reliable, not probability-based. The TM’s direct-SM only represents/models/simulates the actual objective-theory where the TM objectively lives in. The objective-state-evolution of the direct-SM matches the objective-state-evolution of the objective-theory; the objective-state-evolution of the direct-SM syncs with the objective-state-evolution of the objective-theory. Physical-laws are based on the context of the direct-SM.

When two people are talking with each other in natural language, the meaning of a person’s words is based on the context of the person’s indirect-SM. The context of the person’s indirect-SMmight distract the person’s brain from the context of her/his direct-SM, or in other words, might distract the person’s brain from her/his maximized-patikulamanasikara-experience.

When a direct-parallel-computation is being observed by a direct-observer (for example, when the direct-parallel-computation of a Non-stochastic/Stochastic Game of Life system is being observed by a human), it’s possible that the direct-observer can have a direct-SM which represents/models/simulates the direct-parallel-computation. Besides, the direct-observer can have another direct-SM which represents/models/simulates the objective-theory where the direct-observer itself objectively lives in. So, the direct-observer can have more than one direct-SMs.

The direct-SM is used by a TM’s subjective cognition to represent the objective-theory. The subjective cognition of *a TM (e.g., a neural network)* is created/directly-fated by the objective-theory, but the subjective cognition of the TM has no way to access the actual objective-theory. The TM can at most create a mental-model to represent the objective-theory. For example, in an experiment, when the experimenter changes the task for a monkey [83], the experimenter knows for sure that the monkey’s task is actually/objectively changed by the objective-theory. The monkey might be aware of that its task has been changed by the objective-theory, but the monkey has no way to know for sure whether its task has been actually/objectively changed by the objective-theory or not. The experimenter can actually/objectively distinguish the monkey brain’s objective-theory from the monkey brain’s subjective cognition. But the monkey brain has no way to actually/objectively distinguish its objective-theory from its subjective cognition. The subjective cognition of the monkey brain has no way to access the actual objective-theory. The subjective cognition of the monkey brain always accesses to a mix which represents the objective-theory and its subjective cognition at the same time. Within this mix, the monkey brain needs to subjectively distinguish/model the objective-theory from its subjective cognition. The monkey brain’s dynamic task-belief is a model of the objective-theory. The monkey brain’s dynamic task-belief reflects the objective-state-evolution of the monkey’s objective-theory. More generally, the situation of every TM in a direct-parallel-computing-automaton, has the same nature as the situation of the monkey brain in the experiment. For example, at this moment, my brain does not know what is my current *objective* task. So, my brain can only do a *subjective* task (which is subjectively identified by my brain itself). More generally, the objective existence of the objective-theory is only a TM’s subjective postulation/cognition – the TM has no way to know whether the objective-theory actually/objectively exist or not. Dramatically, a TM’s subjective cognition actually has no influence/control on the objective-theory – the TM’s subjective cognition is created/directly-fated by the objective-theory.

A common human’s theory of mind postulates a spatial unity of self and body, an observer that resides in one’s body and is the subject of one’s subjective conscious experience [24]. This postulated situation is the indirect-SM. Let us call the observer in the indirect-SM the intracorporeal-observer (aka the false self [25] or the conscious spirit [132]). The relationship between the intracorporeal-observer and one’s body is like “the ghost in the machine [23]”.

<https://osf.io/65dgv>

Human brain has the ability to imagine/simulate the cognitions/mind of another person. Based on this ability, a human brain can imagine/simulate an imaginary companion (aka imaginary friend), and can further identify/postulate this imaginary companion to be an observer of one's subjective conscious experience (like an alternate personality). Let us call this observer the extracorporeal-observer (aka the true self [25], the original spirit [132], or the dharmakāya (under the context of the Dhammakāya tradition of Thailand and the Tathāgatagarbha sūtras of the ancient Indian tradition)).

Actually, the human brain perceives/imagines itself to be the extracorporeal-observer. The extracorporeal-observer is different from an ordinary alternate personality, because the extracorporeal-observer can be experienced (by the brain with *visual mental imagery [62][63]*, as a kind of out-of-body experience [65][64], which is like observing one’s virtual doppelganger by using a virtual reality system [58], or like *actually* observing the brain’s body from the viewpoint of another TM) to be located in extracorporeal space.

The extracorporeal-observer is like a direct-observer.

Dramatically, this human brain can further nominate the extracorporeal-observer to be the sole observer of one’s subjective conscious experience. (In this case, this human brain can also imagine/postulate the existence of the intracorporeal-observer at the same time. Then, the intracorporeal-observer is imagined/postulated to have its ownsubjective conscious experience – besides the extracorporeal-observer's subjective conscious experience. In other words, this human brain imagines/postulates the dual existence of both the extracorporeal-observer's subjective conscious experience and the intracorporeal-observer's subjective conscious experience.) This postulated situation is the direct-SM. The extracorporeal-observer has no influence/control on the objective-state-evolution of the direct-SM.

The relationship between the extracorporeal-observer and one’s body is like “the ghost *out* of the machine”.

The intracorporeal-observer is the center/core of the indirect-SM. The direct-SM is allocentric. The extracorporeal-observer is not the center/core of the direct-SM.

The indirect-SM is defined/imagined/narrated by the TM to be its objective-theory; the intracorporeal-observer is defined/imagined/narrated by the TM to be an indirect-object. This is the TM’s pareidolia. In this pareidolia, the observational reference frame of the intracorporeal-observer is used. The viewpoint of the intracorporeal-observer (who is located in the TM’s intracorporeal space, and who has the same knowledge/ignorance as the TM currently has) is defined to be the TM’s subjective-perspective. The clause “from a TM’s subjective-perspective” means that “from the viewpoint of the TM itself – based on the current knowledge/ignorance of the TM itself”. When a TM uses the subjective-perspective, actually it is using the indirect-SM.

From the TM’s subjective-perspective, the intracorporeal-observer observes how the intracorporeal-observer works as the center/core in the indirect-SM. The TM’s pending action is modeled/represented/simulated as something outside of the 2O-state-evolution of the indirect-SM like an external force, not as an internal element/component within the 2O-state-evolution of the indirect-SM. (The 2O-state-evolution is the TM’s program’s subjective/imagined/forecasted/supposed/narrated state evolution of the TM’s objective-theory.) The TM’s pending decision is intentionally excluded from the TM’s intracorporeally simulated 2O-state-evolution of the indirect-SM, when the TM is forecasting a 2O-baseline (of the 2O-state-evolution of the indirect-SM) which does not include the consequence of the TM’s pending decision, so that the TM can make the pending decision based on this 2O-baseline.

The direct-SM is defined/imagined/narrated by the TM to be its objective-theory; this is the TM’s pareidolia. In this pareidolia, the observational reference frame of the extracorporeal-observer is used. The viewpoint of the extracorporeal-observer (who is located in the TM’s extracorporeal space, and whose knowledge is not limited by the knowledge the TM currently have) is defined to be the TM’s objective-perspective. The clause “from a TM’s objective-perspective” means that “from the viewpoint of an omniscient-direct-observer – only based on the data/information an omniscient-direct-observer should be able to get/process”. When a TM uses the objective-perspective, it is either using the direct-SM, or using a SM which is an obscure mixture of the direct-SM and the indirect-SM (let’s call it the mixture-SM).

From the objective-perspective of the extracorporeal-observer, when a MM is being intracorporeally used by a TM within its 2O-processing, from the subjective-perspective of the TM, the content of the MM is being “subjectively experienced” by the TM.

Using the semantics of natural language, “a TM uses a MM (from the objective-perspective of the extracorporeal-observer)” is described as “a TM subjectively experiences a MM (from the TM’s own subjective-perspective)”.

A TM’s direct-SM describes/narrates/models/represents/simulates the objective-state-evolution of the direct-parallel-computing-automaton actually/objectively (i.e., from the objective-perspective of the extracorporeal-observer). A TM’s indirect-SM describes/narrates/models/represents/simulates the objective-state-evolution of the direct-parallel-computing-automaton fictionally/subjectively (i.e., from the subjective-perspective of the intracorporeal-observer).

The situation described by the direct-SM is significantly different from the situation described by the indirect-SM. So, when the direct-SM borrows a symbol from the indirect-SM, the meaning of the symbol might be significantly different under the context of the direct-SM.

For a symbol, let us call its original meaning (under the context of the indirect-SM) the 2O-meaning, and call its meaning under the context of the direct-SM the 1O-meaning. A symbol’s 2O-meaning is the meaning from the subjective-perspective. A symbol’s 1O-meaning is the meaning from the objective-perspective.

For the symbols “action”, “active”, “agree”, “assume”, "avoid", “bad”, “believe”, “categorize”, “category”, "cause", “chance”, “change”, “choose”, “contain”, “control”, “create”, “decide”, “decision”, “determine”, “disappoint”, “disappointment”, “disprove”, “divide”, “do”, “drive”, “effect”, “evaluate”, “fate”, “fated”, “find”, “flexible”, "follow", “forecast”, "libertarian-free", "libertarian-freedom", “good”, “happen”, “have”, “imagine”, “impossible”, “influence”, “know”, “make”, “non-stochastic”, “object”, “plan”, “possible”, “postulate”, “postulation”, “prove”, “random”, “reaction”, “regret”, “relationship”, “state”, “stochastic”, “subject”, “suppose”, “supposition”, “truly”, “type”, “unavoidable”, and “use”, let us add a prefix "2O-" to the symbol when referring to its 2O-meaning, and add a prefix "1O-" to the symbol when referring to its 1O-meaning. For example, for the symbol “avoid”, let us use the term “2O-avoid” when referring to its 2O-meaning, and use the term “1O-avoid” when referring to its 1O-meaning.

The future situation which is being represented/simulated/modeled/forecasted by a TM’s indirect-SM, is the indirect-fate; the future situation which is being represented/simulated/modeled/forecasted by a TM’s direct-SM/direct-function, is the direct-fate.

What will actually/objectively happen in the real world, is directly-fated to happen – the direct-fate is directly-fated to happen. What is being forecasted to happen by a TM, is not directly-fated to happen – the TM’s indirect-fate is not directly-fated to happen. However, a human brain counterfactually feels like that its indirect-fate is directly-fated to happen. Because, when the human brain is mentally visualizing the future, the indirect-fate is mentally visualized by the human brain (as episodic future thinking).

For example, if I have a dentist appointment next week, then, whether I will show in the appointment, is directly-fated, but the appointment is not directly-fated to happen, although I counterfactually feel like that the appointment is directly-fated to happen. Apparently, the dentist might cancel the appointment.

Completely directly-fated by its initial state and the direct-function, a direct-parallel-computing-automaton is not 1O-libertarian-free/1O-flexible/1O-active. Then, being a fuzzy subset of a direct-parallel-computing-automaton, an indirect-object is not 1O-libertarian-free/1O-flexible/1O-active. Even if an indirect-object knows the *actual* direct-function, the indirect-object has no way to 1O-change/1O-control/1O-drive the state of any BB to break the *actual* direct-function – an indirect-object has no way to 1O-change/1O-control/1O-drive the direct-parallel-computing-automaton/direct-parallel-computation. (In case that the actual direct-function is stochastic, the indirect-object has no way to 1O-change/1O-control/1O-drive the state of any BB to make it different from the only state 1O-chosen by the stochastic direct-function from the set of possible states which are literally allowed by the stochastic direct-function.) So, an indirect-object has no way to 1O-change/1O-control/1O-drive/1O-decide/1O-choose the action of itself.

“From my objective-perspective, what should I do?” No matter what you “should” do, you have to do what you are directly-fated (by the direct-function) to do. What you will do is completely directly-fated by the direct-function, but it cannot be reliably-forecasted in advance based on the direct-function by your brain – due to technical limitations. You can unreliably-forecast what you will do, based on the Bayesian probability.

Human brain can (subjectively) imagine a past/present/future state of a direct-parallel-computing-automaton which breaks the direct-function of this direct-parallel-computing-automaton, even though there is no way to (actually/objectively) realize this state in this direct-parallel-computing-automaton. A human brain’s (subjective) imagination regarding the future state of a U-system, does not (actually/objectively) change the objective-state-evolution of the U-system.

Only a direct-breaker is capable to (actually/objectively) 1O-change/1O-control/1O-drive/branch the objective-state-evolution of a direct-parallel-computing-automaton – no indirect-object within the direct-parallel-computing-automaton is capable to (actually/objectively) 1O-change/1O-control/1O-drive/branch the objective-state-evolution of the direct-parallel-computing-automaton. The 1O-change breaks the direct-fate – the 1O-change is 1O-libertarian-free/1O-flexible and not directly-fated/predetermined.

By default, the objective-state-evolution of a direct-parallel-computing-automaton only has one potential-outcome/situation-option.

Iff there is an (actual) direct-breaker for a direct-parallel-computing-automaton, the objective-state-evolution of the direct-parallel-computing-automaton has two or more potential-outcomes/situation-options which depend on the pending action of the direct-breaker. In this case, if a script/story/book/simulation describes the objective-state-evolution of each BB of the direct-parallel-computing-automaton, then the potential-outcome of this script/story/book/simulation will be determined by the pending action of the direct-breaker – this script/story/book/simulation is unfinished.

The extracorporeal-observer is not a direct-breaker.

Regarding the change of the state of a BB (by an indirect-object), the change over time fated by the direct-function, is a 2O-change. Regarding the control/drive of the state of a BB (by an indirect-object), the control/drive which follows the direct-function, is a 2O-control/2O-drive or a “*seeming (i.e., subjective)* control/drive”.

The 2O-change/2O-control/2O-drive follows the direct-fate – the 2O-change/2O-control/2O-drive is directly-fated.

Regarding the change/control/drive of the state of a BB, on the basis of the 2O-change/2O-control/2O-drive, any extra change/control/drive introduced by a direct-breaker, is a 1O-change/1O-control/1O-drive.

An indirect-object has no way to 1O-change/1O-control/1O-drive the state of a BB – only a direct-breaker can do that for the BB. The said indirect-object can be the said BB itself.

A TM has no way to 1O-change/1O-control/1O-drive its own pending decision/choice – only a direct-breaker can do that for the TM.

It’s easy for a human brain’s program to simulate/imagine/mentally-visualize how a TM’s program is directly-fatedly/passively executed (following the objective-state-evolution of a direct-parallel-computing-automaton), but it’s hard for a human brain’s program to simulate/imagine/mentally-visualize how the human brain’s program itself is directly-fatedly/passively executed, because the human brain’s program has to use the human brain’s program itself to simulate/imagine/mentally-visualize how the human brain’s program itself is directly-fatedly/passively executed. In the semantics of natural language, by default, the control logic of a human brain’s program is (incorrectly/counterfactually) simulated/imagined/mentally-visualized as a direct-breaker (who is capable to (actually/objectively) 1O-change/1O-control/1O-drive/branch the objective-state-evolution of the direct-parallel-computing-automaton), while the control logic of a TM's program is not simulated/imagined/mentally-visualized as a direct-breaker. That’s why we human brains have subjective clues for the objective-consciousness/objective-mind of a human brain’s program, while we human brains do not have subjective clues for the objective-consciousness/objective-mind of a TM’s program, although a human brain is also a TM.

When a TM forecasts what an indirect-object (let us call it A) (e.g., the TM itself) will act upon another indirect-object (let us call it B), if the TM figures out two or more 2O-possible actions for A to act, the TM counterfactually feels like that each 2O-possible action has the 1O-chance to happen in the objective-theory. (These 2O-possible actions are actually potential/mental/intracorporeal situation-options – at most one of these potential/mental/intracorporeal situation-options has the 1O-chance to happen in the objective-theory.) If the TM treats B itself as a temporarily-isolated-system, the TM can treat both A and the TM itself as direct-observers of the temporarily-isolated-system. Under this setting, the temporarily-isolated-system, A and the TM are subsets of a larger direct-parallel-computing-automaton which is 1O-controlled/1O-driven by the same direct-function. Within the larger direct-parallel-computing-automaton, A has no way to 1O-change/1O-control/1O-drive the state of any BB within B to break the direct-function. So, as a direct-observer of the temporarily-isolated-system, A has no way to 1O-control/1O-drive/1O-cause/1O-decide/1O-choose/branch/1O-change the state of any BB within B to break *the direct-function of the temporarily-isolated-system (which is the same as the direct-function of the larger direct-parallel-computing-automaton)*. So, A is not a direct-breaker of the temporarily-isolated-system – B’s activity actually has nothing to do with A’s action. (A and B might exchange some force-carrier BBs which do not actually/objectively carry force.) But the TM counterfactually feels like that A is a direct-breaker of the temporarily-isolated-system, because the TM counterfactually feels like that each 2O-possible action (of A) has the 1O-chance to happen in the larger direct-parallel-computing-automaton. But actually, directly-fated by the direct-function, without the help from an actual direct-breaker of the larger direct-parallel-computing-automaton, at most one of the 2O-possible actions (of A) has the 1O-chance to happen in the larger direct-parallel-computing-automaton. (In case that the actual direct-function is stochastic, in the chosen action (of A), the state of each BB (of A) is 1O-chosen by the stochastic direct-function from the set of possible states which are literally allowed by the stochastic direct-function. So, in case that a second 2O-possible action (of A) is also literally allowed by the stochastic direct-function, at least the state of one BB (of A) in the second 2O-possible action (of A) should be different from the state 1O-chosen by the stochastic direct-function from the set of possible states which are literally allowed by the stochastic direct-function – this is impossible.) Actually, the TM is directly-fated to figure out those 2O-possible actions (of A), and A is directly-fated to choose the chosen action. Actually, the chosen action is chosen by the direct-function (of the larger direct-parallel-computing-automaton), not by A; the 2O-possible actions are figured out by the direct-function (of the larger direct-parallel-computing-automaton), not by the TM.

It's possible that a direct-parallel-computing-automaton's direct-function does not apply to all BBs equally. In this case, I can give each BB a serial number, so that direct-function can include this serial number, to handle each BB differently, based on its serial number. To say the least, direct-function can simply exhaustively define the state of every BB at every moment – let's call such a direct-function the exhaustive-direct-function. Then, no matter how weird a BB behaves (comparing to other “normal” BBs), this weird behavior still follows the exhaustive-direct-function. For example, even psychokinesis can follow the exhaustive-direct-function – “it looks like that the person makes a chair floating in the air without physical interaction; actually, the position information in the states of the BBs of the chair was directly-fated to evolve to that location (in the air) during that time period, following the exhaustive-direct-function.”

After a TM in a direct-parallel-computing-automaton 2O-found the direct-function of the direct-parallel-computing-automaton to be 2O-stochastic (e.g., to be the stochastic-McKenzie-function or the Schrodinger equation), only based on the data/information the TM should be able to get/process, logically speaking, it’s always possible that the TM’s direct-parallel-computing-automaton is a 1O-non-stochastic direct-parallel-computing-automaton which actually uses an undisclosed 1O-non-stochastic direct-function (instead of the stochastic direct-function 2O-found by the TM, e.g., the stochastic-McKenzie-function or the Schrodinger equation). (A TM is capable to make a 2O-truly 2O-random/2O-stochastic decision which can’t be forecasted by any TM within this direct-parallel-computing-automaton, but “2O-truly 2O-random/2O-stochastic” does not necessarily mean “1O-libertarian-free”.) After recording the state of all BBs in this direct-parallel-computing-automaton during a time frame, a direct-observer can disclose a 1O-non-stochastic direct-function for this time frame – this 1O-non-stochastic direct-function exhaustively defines the state of every BB at every moment. Let us call this 1O-non-stochastic direct-function the postmortem-direct-function. (Except the actual designer of this direct-parallel-computing-automaton (if this direct-parallel-computing-automaton was intentionally designed by a designer), any other direct-observer has no way to know whether the postmortem-direct-function is the *actual* direct-function (which was set by the designer) or not.) Then, based on the postmortem-direct-function, this direct-observer can view this direct-parallel-computing-automaton as a 1O-non-stochastic direct-parallel-computing-automaton (during this time frame). (This direct-observer can say that quantum effects are *predetermined* by this postmortem-direct-function 1O-non-stochastically.) A TM in this direct-parallel-computing-automaton can record the state of some BBs of this direct-parallel-computing-automaton during this time frame. Then, based on this record, this TM can disclose part of the 1O-non-stochastic exhaustive-direct-function/postmortem-direct-function for this time frame – this TM has no way to know whether this (part) direct-function is the *actual* direct-function (which was set by the designer) or not.

If it is difficult to accept a conclusion (of the present article) which involves a 1O-stochastic direct-function, readers can mentally substitute the 1O-stochastic direct-function (in the context of the conclusion) with the (1O-non-stochastic) exhaustive-direct-function/postmortem-direct-function.

Since the Non-stochastic Game of Life is a special case of the Stochastic Game of Life, in case that a TM is actually in a Non-stochastic Game of Life system, the TM has no way to empirically 2O-prove that it is not in a Stochastic Game of Life system. More generally, a TM who is actually in a 1O-non-stochastic direct-parallel-computing-automaton has no way to empirically 2O-prove that it is not in a 1O-stochastic direct-parallel-computing-automaton.

Every (subjective/intracorporeal) causality (e.g., a causality between two indirect-objects; a causality between two physical-events) is a relationship/MM.

A causality is a pattern recognized/learnt (by a TM) from a time series of physical-eventsthrough machine learning (i.e., pattern recognition).

The future situation which is being represented/simulated/modeled/forecasted by a TM’s indirect-SM/indirect-causalities, is the indirect-fate.

Statements like “an indirect-object pushes/accelerates/launches/controls/drives/generates another indirect-object” or “a physical-event causes/controls/drives/decides/chooses another physical-event to happen” are indirect-causalities. For example, “a decision of my brain causes/controls/drives/decides my finger to move/accelerate/launch”, "my finger's push/control/drive makes/causes a stationary billiard ball to move/accelerate/launch – an Aristotelian-force/Newtonian-force from my finger acts/exerts on the stationary billiard ball to push/accelerate/launch/control/drive it", “a wind’s push/control/drive makes/causes a stationary sail to move/accelerate/launch – an Aristotelian-force/Newtonian-force from the wind acts/exerts on the stationary sail to push/accelerate/launch/control/drive it”, “a decision of my brain causes a stationary billiard ball to be launched by the push of my finger”, “a decision of wind/God causes a stationary sail to be launched by the push of the wind”, “in ‘Schrodinger’s cat’ thought experiment [117][118], the decay of a radioactive atom causes the death of the cat”, "the analgesic reduces my pain" or “a Gosper glider gun generates/launches gliders”.

After my finger follows a decision of my brain to press the button of a device to collide two high-energy photons, the two photons should disappear, and a pair of electron-positron should appear [86]. The statement “the objective-state-evolution of one of these four BBs causes/controls/drives/decides/chooses/branches the objective-state-evolution of another BB” or “one of these four BBs controls/drives another BB” is an indirect-causality.

The direct-function is an *objective* pattern of the direct-parallel-computing-automaton.

The direct-function is valid/correct/factual.

If an indirect-causality can be proved by deductive inference based on the direct-function only, it is valid/correct/factual. Otherwise, it is invalid/incorrect/counterfactual – it is an invalid/incorrect/counterfactual (subjective) stereotype.

The direct-parallel-computation of the direct-parallel-computing-automaton follows the direct-function. If the 1O-prallel-computation also follows an indirect-causality, then this fact proves this indirect-causality by deductive inference based on the direct-function only – this fact proves that this indirect-causality is valid/correct/factual. So, the direct-parallel-computation does not follow any invalid/incorrect/counterfactual indirect-causality.

However, when a TM’s program uses an invalid/incorrect/counterfactual indirect-causality, this invalid/incorrect/counterfactual indirect-causality does not look invalid/incorrect/counterfactual. Every TM’s program is using its indirect-causalities (in its control logic) to forecast the direct-parallel-computation of the direct-parallel-computing-automaton, no matter these indirect-causalities are valid/correct/factual or not.

A TM can *reliably-forecast* the pending decision of another TM (within a direct-parallel-computing-automaton), based on the direct-function (of the direct-parallel-computing-automaton) only, or based on the (former) TM’s valid/correct/factual indirect-causalities only. The former TM and the latter TM can be the same TM.

A TM can *unreliably-forecast* the pending decision of another TM (within a direct-parallel-computing-automaton), based on the (former) TM’s invalid/incorrect/counterfactual indirect-causalities. The former TM and the latter TM can be the same TM.

Besides the direct-function, every other physical-law is an indirect-causality. The mathematical relation (of the objective-evolution of the state of BBs) reflected by every other physical-law (besides the direct-function), should have been expressed by the direct-function already. Otherwise, it means that the direct-function need to be revised to cover this mathematical relation.

Only based on the direct-function, we should be able to prove every other physical-law by deductive inference – every other physical-law should be valid/correct/factual. In other words, the semantic information of every other physical-law is already stated in the direct-function. In this sense, once I know the direct-function, every other physical-law (e.g., the laws of thermodynamics) is redundant.

Actually, the semantic information of all the objective-state-evolution of a direct-parallel-computing-automaton is already stated in the initial state and the direct-function of the direct-parallel-computing-automaton.

The physical interaction (if we suppose that the physical interaction is nonfictional) among any number of indirect-objects, is directly-fated by the direct-function. A TM itself is an indirect-object. When a TM’s program uses its indirect-causalities (in its control logic) to forecast the direct-parallel-computation of the direct-parallel-computing-automaton, if one of these indirect-causalities cannot be proved by deductive inference based on the direct-function only, this indirect-causality is invalid/incorrect/counterfactual. In this case, this indirect-causality does not accurately treat the indirect-objects as ordinary/plain/nonsignificant subjects/objects in a physics-experiment/dynamic-physical-system.

When a TM learns a new causality/pattern (through machine learning) based on its findings (from experiments/observations), the TM is using inductive inference. Logically speaking, findings from experiments/observations can only increase a TM’s confidence on a specific causality/pattern, but will never be sufficient to prove this causality/pattern. Within a direct-parallel-computing-automaton, a TM can only learn the direct-function (of this direct-parallel-computing-automaton) by inductive inference. If the TM has enough confidence on the direct-function, the TM should agree that, only based on the direct-function, the TM should be able to prove every other *valid/correct/factual* causality/pattern by deductive inference. In this sense, besides the direct-function, every other *valid/correct/factual* causality/pattern is redundant – the semantic information of every other *valid/correct/factual* causality/pattern is already stated in the direct-function. In this sense, every other *valid/correct/factual* causality/pattern is a customized/localized/temporary/approximate/downgraded shortcut/simulation/MM/substitution/counterpart of the direct-function. To this TM, before it proves an indirect-causality (based on the direct-function) by deductive inference, this indirect-causality is less reliable than the direct-function – this indirect-causality might be invalid/incorrect/counterfactual. Within this TM’s program, the indirect-causalities cooperate/compete with each other, to construct a reality/situation/SM – the indirect-SM; this TM’s program uses the indirect-causalities/indirect-SM to forecast future situations – such a forecast is less reliable than a forecast based on the direct-function/direct-SM. (The direct-function/direct-SM describes/narrates/represents the intrinsic control logic of a direct-parallel-computing-automaton. A TM’s indirect-causalities/indirect-SM do not describe/narrate/represent the intrinsic control logic of a direct-parallel-computing-automaton, but describe/narrate/represent the intrinsic control logic of this TM's program. A TM’s indirect-causalities/indirect-SM are actually defined by the control logic of this TM’s program. A TM’s indirect-causalities describe the nature/rule of a reality. However, this reality is the TM’s subjective-theory/indirect-SM, not the objective-theory/direct-SM. "My mind is the universe and vice versa. [108]" – Lu Jiuyuan.)

When a TM or an omniscient-direct-observer only uses the direct-function to make a forecast/retrodiction, the forecast/retrodiction should turn out to be valid/correct/factual – the forecast/retrodiction does not need to be certain.

When a TM uses a set of indirect-causalities to make a forecast/retrodiction, if every indirect-causality can be proved based on the direct-function by deductive inference, the forecast/retrodiction should have the same level of correctness as the forecast/retrodiction made by an omniscient-direct-observer only using the direct-function – the TM’s forecast/retrodiction should turn out to be valid/correct/factual. So, if the TM’s forecast/retrodiction turns out to be invalid/incorrect/counterfactual, it means that at least one of these indirect-causalities cannot be proved based on the direct-function by deductive inference – at least one of these indirect-causalities is invalid/incorrect/counterfactual.

David Hume thought that “we are ignorant of the powers that operate between objects”. [67] The direct-function represents/models “the powers that operate between objects” in a direct-parallel-computing-automaton.

In a TM’s indirect-SM, each indirect-causality is postulated to be an order which controls/drives the objective-state-evolution of the direct-parallel-computing-automaton/objective-theory.

My brain’s mental visualization of the objective-state-evolution of the direct-SM looks like floating clouds, fireworks or spindrifts. When I am observing the objective-state-evolution of floating clouds, fireworks or spindrifts, I do not try to identify indirect-causalities from it, so I do not perceive/see indirect-causalities in it. The indirect-causalities (I am perceiving) distract me from the actual objective-state-evolution. The indirect-causalities (I am perceiving) deform the objective-theory into the indirect-SM.

An animal’s indirect-causalities work as causalities in its brain, due to the objective/physical construction of its brain.

For example, in Ivan Pavlov’s experiment, a dog learnt to salivate whenever the bell rings. The actual relationship between the bell and the food is a coincidence – the dog learnt the coincidence.

There are 500+ million dogs in the world today. Each dog lives in a unique environment, watching/hearing a unique series of physical-events happening around it in its everyday life. Each physical-event is directly-fated by the direct-function. If one dog happens to see food after bell for many times, it will learn to salivate whenever the bell rings. This dog does not need to be in Ivan Pavlov’s experiment – it is possible that this dog sees food after bell just by coincidence.

Being part of the directly-fated objective-state-evolution of our cosmos (as a U-system), the series of physical-events which objectively happened in Ivan Pavlov’s experiment (e.g., bell rings; food being served), actually also happened by coincidence – although Ivan Pavlov did not think so. For example, during the experiment, the series of physical-events which objectively happened in Ivan Pavlov’s brain (which decided Ivan Pavlov’s cognitions/mind/forecasts/decisions/actions), actually happened by coincidence.

Every indirect-object is 1O-controlled/1O-driven by the direct-function. Every physical-event is directly-fated by the direct-function. So, the direct-function is the only actual/objective relationship between any two indirect-objects/physical-events – any two indirect-objects/physical-events do not have any other actual/objective relationship. Actually, any other relationship (between any two indirect-objects/physical-events) is just a coincidence.

(Some relationships between two indirect-objects/physical-events (e.g., one indirect-object statically *supports* another indirect-object; causal launching) are included in visual perception, which are derived from automatic/unintentional visual processing – these relationships are hardwired in human brain [79]. Being a fuzzy set of BBs, every indirect-object is actually/objectively *suspending* in space on its own – no indirect-object is actually/objectively *supported* byany other indirect-object. For example, my body is not actually/objectively *supported* by the earth. If I can say that my body is supported by the earth, then I can also say that the earth is supported by my body – both my body and the earth are actually/objectively *suspending* in space on its own. (If the general theory of relativity is correct, then both my body and the earth are in a curved spacetime caused by the uneven distribution of mass.) The indirect-causality “indirect-object A statically supports indirect-object B”, “indirect-object A pushes/accelerates/launches/controls/drives indirect-object B” or “a force from indirect-object A acts/exerts on indirect-object B to push/accelerate/launch/control/drive indirect-object B” is actually counterfactual – like Aristotelian/Newtonian physics.)

The coincidences experienced by a TM during its life time, is decided by the direct-function and the physical construction of its local environment. Living in its ecological niche, if the TM constructs a Bayesian model based on the coincidences it experienced, the TM can use this Bayesian model to unreliably-forecast/retrodict future/past coincidences, and the TM has a relatively high chance to make good (but unreliable) forecasts/retrodictions, as long as the TM remains living in the same ecological niche. But the TM has no way to 1O-change/1O-control/1O-drive its own future/direct-fate using its own (unreliable) forecasts. Apparently, in order to illustrate this theory, we can design such a TM in a Non-stochastic Game of Life system.

To a dog, the causality between the bell and the food is an indirect-causality. This indirect-causality works as a causality in the dog’s brain, due to the new neural connections built in the dog’s brain during the (machine) learning. More generally, in an animal brain, all its indirect-causalities work in the same way – they have objective constructions, and their work is carried out by their objective constructions. Or in other words, every indirect-causality has its neural substrate/underpinning. For example, the pictures of the actress Halle Berry and the letter string “Halle Berry” are somehow connected by a single unit in the right anterior hippocampus [50], which means that this single unit works as an indirect-causality between the letter string “Halle Berry” and her pictures. Similar multimodal neurons also exist in artificial neural networks [51].

Some indirect-causalities (e.g., classical conditioning) are not fitted MMs of the objective-theory.

For example, in Ivan Pavlov's experiment of classical conditioning, food will be served after bell rings, the relationship (between food and bell) learned by the dog is not a fitted MM of the objective-theory – it's not always true everywhere in the objective-theory. (Bayesian models for reinforcement learning have been very successful [70][71][72].)

For the same reason, it's always possible that the conclusion of an inductive argument is not a fitted MM of the objective-theory.

If any MM used by a TM's indirect-SM is not a fitted MM of the objective-theory, the TM's indirect-SM as a whole is not a fitted MM of the objective-theory.

An indirect-causality is a roughly estimated MM (which might be oversimplified or not fitted) to represent/model the direct-parallel-computation; the direct-function is the actual MM of the direct-parallel-computation. An indirect-causality is like a pseudocode which represents/models the direct-parallel-computation.

indirect-causalities are the causalities used by a human brain’s program. An indirect-causality (used by a human brain’s program) is based on the context of the human brain’s indirect-SM. Each indirect-causality is a pareidolia constructed by the direct-parallel-computation. In case an indirect-causality is a pair of 2O-cause and 2O-effect, both the 2O-cause and the 2O-effect are symbols being used by the indirect-SM; the 2O-relationship between the 2O-cause and the 2O-effect is also a symbol being used by the indirect-SM.

Apparently, the human brain has neural underpinnings to abstractly represent a pair of 2O-cause situation and 2O-effect situation, and to abstractly represent the 2O-relationship between the 2O-cause situation and the 2O-effect situation. (The 2O-cause situation and the 2O-effect situation are different in time or space. They happen at different times, and/or happen at different locations. They cannot happen at the same location, at the same time.) Or in other words, the human brain has a neural underpinning to abstractly represent an indirect-causality. The neural underpinning of the abstracted 2O-cause situation maps to the 2O-cause symbol; the neural underpinning of the abstracted 2O-effect situation maps to the 2O-effect symbol; the neural underpinning of the abstracted 2O-relationship maps to the 2O-relationship symbol.

When a human brain mentally visualizes a situation, the human brain might mentally visualize its 2O-effect situation or/and its 2O-cause situation automatically/unintentionally, that's why the human brain incorrectly/counterfactually intracorporeally/subjectively feels like that a 2O-cause situation 2O-causes/2O-controls/2O-drives/2O-decides/2O-chooses a 2O-effect situation.

It was recently found (by human brains within a U-system) that it is possible to formulate quantum mechanics without any reference to “a global time or causal structure” [95].

In a direct-parallel-computing-automaton, the initial state and the direct-function are the only 1O-causesof the direct-parallel-computation – the initial state and the direct-function *1O-control/1O-drive/1O-cause/1O-decide/1O-choose/1O-state/1O-program* the direct-parallel-computation. The so-called *“1O-control/1O-drive/1O-cause/1O-decide/1O-choose/1O-state/1O-program”* is not an *illusion of control* [73]. The direct-function is not a pareidolia.

In the objective-theory, no indirect-object has 1O-control over any indirect-object – an indirect-object even has no 1O-control over itself. (Or in other words, the objective-state-evolution of every BB is completely autonomous.) This is obvious from the viewpoint of an omniscient-direct-observer. An indirect-object (let us call it indirect-object-A) might have *2O-control* over an indirect-object (let us call it indirect-object-B). So, the so-called *“2O-control”* (for example, a mouse's brain 2O-controls its body, and a manmade device 2O-controls the mouse's brain, and a human brain (i.e., the experimenter) 2O-controls the manmade device [80][81] – the human brain 2O-controls the mouse's body) is actually a generalized *illusion of control* – this generalized *illusion of control* is actually a TM’s Bayesian model of the two indirect-objects (as the 2O-subject and the 2O-object respectively), and is actually the TM’s automatically/unintentionally imagined/postulated/fictionalized Bayesian probability of the relationship (regarding controlling/driving) between the two indirect-objects. Based on this Bayesian probability, the TM's Bayesian model might be able to make good (but unreliable) forecasts/retrodictions in the objective-theory. The TM’s automatically/unintentionally imagined/postulated/fictionalized Bayesian probability of the relationship (regarding controlling/driving) between the two indirect-objects is actually an indirect-causality of the TM. Actually, in the objective-theory, the two indirect-objects have no relationship (regarding controlling/driving) – the actual probability of the relationship (regarding controlling/driving) between the two indirect-objects is *0*. (For example, when a cat is eating a rat, the actual probability of the relationship (regarding controlling/driving) between the two animal bodies is *0*. Another example, when a commander is commanding a soldier, the actual probability of the relationship (regarding controlling/driving) between the two human bodies is *0.*) The objective-state-evolution of the BBs of indirect-object-A is used (by the TM’s Bayesian model) to unreliably forecast the objective-state-evolution of the BBs of indirect-object-B – the indirect-causality is used (by the TM) to unreliably forecast the direct-fate. (From the viewpoint of an omniscient-direct-observer, the probability of the relationship (regarding controlling/driving) between the two indirect-object is 0. In order to (insanely/superstitiously) believe that the probability of the relationship (regarding controlling/driving) between the two indirect-objects is nonzero, a TM has to (insanely/superstitiously) believe that the objective-state-evolution of indirect-object-B is not directly-fated by the direct-function. Because, if the TM believes that the objective-state-evolution of indirect-object-B is directly-fated by the direct-function, the TM will believe that the probability of the relationship (regarding controlling/driving) between the two indirect-objects is 0. There is no such thing as the indirect-object-A, the indirect-object-B, or “the indirect-object-A controls/drives the indirect-object-B”. There’s just “the objective-state-evolution of a direct-parallel-computing-automaton”, and we label fuzzy subsets of “the objective-state-evolution of a direct-parallel-computing-automaton” as the indirect-object-A, the indirect-object-B, and “the indirect-object-A controls/drives the indirect-object-B”. The indirect-object-A, the indirect-object-B and “the indirect-object-A controls/drives the indirect-object-B” are subjective-situations of the objective-situation “the objective-state-evolution of a direct-parallel-computing-automaton”. It looks like that the indirect-object-A controls/drives the indirect-object-B, while actually this is not the case – readers can think of this situation under the context of a Game of Life system first.) The two indirect-objects actually/objectively have nothing to do with each other – indirect-object-B’s activity actually/objectively has nothing to do with indirect-object-A’s action. Each indirect-object even has no 1O-control over itself. In the TM’s Bayesian model, indirect-object-A (as the 2O-subject) has a nonzero Bayesian *probability* to 2O-control/2O-drive indirect-object-B (as the 2O-object). So, logically speaking, indirect-object-B (as the 2O-subject) has exactly the samenonzero Bayesian probability to 2O-control/2O-drive indirect-object-A (as the 2O-object). (For example, a mouse's brain has a nonzero Bayesian probability to 2O-control its body, while the mouse's body has the same nonzero Bayesian probability to 2O-control its brain; a manmade device has a nonzero Bayesian probability to 2O-control the mouse's brain [80][81], while the mouse's brain has the same nonzero Bayesian probability to 2O-control the manmade device; a human brain (i.e., the experimenter) has a nonzero Bayesian probability to 2O-control the manmade device, while the manmade device has the same nonzero Bayesian probability to 2O-control the human brain. So, the human brain has a nonzero Bayesian probability to 2O-control the mouse's body, while the mouse's body has the same nonzero Bayesian probability to 2O-control the human brain.)

In order to solve real-world tasks/problems, the design/program of a TM systematically highlights/emphasizes the factors which are more important for these tasks/problems (comparing to the rest factors), at the cost of systematically underestimates/ignores the rest factors. The rest factors look less important to the TM, just because that they are systematically underestimated/ignored by the design/program of the TM. For example, when a TM is forecasting indirect-object-B’s trajectory, the TM focuses on its subjective cognition that indirect-object-A has a nonzero Bayesian probability to control/drive indirect-object-B (in the TM’s Bayesian model), while the TM systematically underestimates/ignores the nonzero Bayesian probability for indirect-object-B to control/drive indirect-object-A (in the TM’s Bayesian model), because the nonzero Bayesian probability for indirect-object-B to control/drive indirect-object-A falls out of the scope of the current task/problem (i.e., forecasting indirect-object-B’s trajectory). Another example, when a TM is planning what itself should do (in order to solve a problem), it focuses on what itself can do (i.e., its potential/mental/intracorporeal action/behavior options (to solve the problem)), while systematically underestimates *the reaction of its environment (i.e., the potential/mental/intracorporeal reaction/behavior options of its environment (to prevent the problem from being solved)).*

In the objective-theory, an indirect-object has no 1O-control over itself; in a TM’s Bayesian model, the indirect-object (as the 2O-subject) has a nonzero Bayesian *probability* to 2O-control/2O-drive itself (as the 2O-object) – the indirect-object can be the TM itself. The indirect-SM symbol “2O-object” has a counterpart in the direct-SM – an indirect-object. But the indirect-SM symbol “2O-subject” has no counterpart in the direct-SM. The indirect-SM symbol “2O-subject” is being created out of nothing – the indirect-SM symbol “2O-subject” is fictionally invented. The indirect-SM symbol “self” refers to the (nonexistent) 2O-subject of an 2O-object. For example, I feel like that my brain *itself (as the 2O-subject)* is 2O-controlling/2O-driving *my brain (as the 2O-object)*. Actually, every indirect-object is only a *2O-object*, not a *2O-subject* – a 2O-object (e.g., my brain) doesn’t have a 2O-subject. Although we humans feel as if that there is a virtual 2O-subject (like an invisible homunculus) sitting inside the physical boundary of each 2O-object, 2O-controlling/2O-driving the 2O-object (like a human player controls/drives her/his avatar in a multiplayer computer game (e.g., Minecraft)) – this feeling is only a postulation of common human’s theory of mind. (When I watch an indirect-object, I see a virtual 2O-subject inside its physical boundary, but actually there is no such a virtual 2O-subject inside its physical boundary – such a virtual 2O-subject is actually a symbol of my indirect-SM. Such a virtual 2O-subject is mentally visualized by my indirect-SM.) Apparently, we won’t find a 2O-subject inside a 2O-object if we open/break the 2O-object. For example, in a brain surgery, we won’t find something called “self” inside the brain – we won’t find the aforementioned invisible homunculus inside the brain.

(Analogously, if I break another human player’s avatar in Minecraft, I won’t see the human player’s body inside the avatar, and I won’t see *a receiver (which can receive control signals from the human player)* inside the avatar. So, if I am a non-player character in Minecraft, I will not find crucial evidence to assure me that “each character (including myself) in Minecraft is actually remotely controlled/driven by an ‘alien’ who is located outside of the Minecraft world”. Even if Mojang Studios (the developer of Minecraft) adds a receiver inside the avatar of a human player, this receiver is actually fake – this receiver is not used to receive control signals from a human player. An avatar in Minecraft is not a physical mecha which is physically controlled/driven by a human player directly. A physical mecha has the same degree of realness as its physical controller/driver – a physical mecha and its physical controller/driver are in the same reality/SM. An avatar in Minecraft has a lower degree of realness than its human player – an avatar and its human player are in two different realities/SMs. For a human player, Minecraft provides/constructs/simulates/visualizes/narrates a new SM which is a variation of her/his indirect-geometric-model – her/his avatar is in the new SM. For a human player, her/his brain provides/constructs/simulates/visualizes/narrates her/his original indirect-geometric-model.)

(Analogously, when I am in my lucid-dream, I will not find crucial evidence to assure me that “each person (including myself) in my lucid-dream is actually remotely controlled/driven by a human player who is located outside of my lucid-dream. Even if I find a receiver inside the brain of a person in my lucid-dream, this receiver is actually fake – this receiver is not used to receive control signals from a human player. A person in my lucid-dream is not a physical mecha which is physically controlled/driven by a human player directly. A person in my lucid-dream has a lower degree of realness than her/his human player – a person (in my lucid-dream) and her/his human player are in two different realities/SMs.)

(Analogously, right now, I will not find crucial evidence to assure me that “each person (including myself) is actually remotely controlled/driven by an ‘alien’ who is located outside of our cosmos” – I will not find *a receiver (which is used to receive control signals from the “alien”)* inside the brain of any person. A person is not a physical mecha which is physically controlled/driven by an “alien” directly. A person has a lower degree of realness than her/his “alien” – a person and her/his “alien” are in two different realities/SMs.)

Actually, the 2O-subject or “self” doesn't exist – the 2O-subject or “self” doesn't have 1O-control over the 2O-object/indirect-object. The relationship between the 2O-subject (or “self”) and the 2O-object/indirect-object is like the ghost in the machine/puppet [23] or the *god (of Homer)* in the machine/puppet– let us call this kind of “ghost” or “god” the 2O-subject-ghost. The 2O-subject-ghost is called “Pudgala” in Buddhism.

It is insane/superstitious to believe the existence of any 2O-subject-ghost – “a 2O-subject-ghost exists” is a kind of conspiracy theory.

The “self”/2O-subject-ghost of an indirect-object, is an imagined/mathematically-modeled controller/driver/entity/layer which is imagined/mathematically-modeled to control/drive the objective-state-evolution of the BBs of an indirect-object. The “self”/2O-subject-ghost of an indirect-object, is imagined/mathematically-modeled to represent/mathematically-model the indirect-object's power/capability/libertarian-freedom of control – *if* the indirect-object has the power/capability/libertarian-freedom of control.

A TM imagines/mathematically-models that its “self”/2O-subject-ghost has the power/capability/libertarian-freedom of control – the TM imagines/mathematically-models that its “self”/2O-subject-ghost has the power/capability/libertarian-freedom of a direct-breaker. Or in other words, the TM imagines/mathematically-models its “self”/2O-subject-ghost to be a direct-breaker. The TM imagines/mathematically-models that its decision/choice is made by its “self”/2O-subject-ghost libertarian-freely – the TM imagines/mathematically-models that its decision/choice is made by a direct-breaker libertarian-freely. Actually, the TM’s decision/choice is made by the direct-function/direct-fate directly-fatedly.

A TM’s subjective-perspective, is the perspective from the TM’s “self”/2O-subject-ghost – the TM’s “self”/2O-subject-ghost is imagined/mathematically-modeled (by the TM itself) to be an indirect-observer.

A TM’s objective-perspective, is the perspective from another TM – the latter TM is imagined/mathematically-modeled (by the former TM) to be a direct-observer.

In the indirect-SM, a 2O-subject-ghost represents *a 2O-object/indirect-object (e.g., a dice being thrown by a person)*. The indirect-SM and the indirect-causalities describe the relationships among the 2O-subject-ghosts, although no 2O-subject-ghost actually exist.

Actually, each 2O-subject-ghost is a mental label of a mental-model/representation/simulation of the objective-situation/objective-state-evolution of the BBs of a 2O-object/indirect-object.

Cells in the primate dmPFC which encode “agency identity” of others are identified – these cells encode information about the behavior of specific individuals [125]. “Such computations are essential for effective social behavior. [125]” (BTW, if we want a (manmade) digital artificial intelligence to have/simulate the same social behavior, then we should make/design this artificial intelligence to do/simulate the same computations digitally – such an artificial intelligence is designed (as a player of a multiplayer game) to interact with its libertarian-free/unforecastable peers. Actually, its peers are unforecastable, but not libertarian-free. Its peers are unforecastable – this is not because its peers are libertarian-free. Or in other words, the unpredictability of its peers is not caused by the libertarian-freedom of its peers. However, in modern society/culture, a human brain imagines that the unpredictability of its peers is (completely or partly) caused by the libertarian-freedom of its peers. A peer is considering about going to McDonald or KFC for dinner, but this fact doesn’t mean/prove that this peer has any libertarian-freedom in its decision process. However, a human brain (in modern society/culture) imagines that this peer has libertarian-freedom (at some degree) in this peer’s decision process.)

When a primate brain uses the indirect-SM, the objective/direct form of *2O-subject-ghosts (in the context of the brain’s indirect-SM)*, are the objective-state-evolution of the neurons in the dmPFC which mathematically-model/code for the agency identity of others [125] – each 2O-subject-ghost is actually a social agent identity (which is being mathematically-modeled/coded/identified by the neurons in the dmPFC). The relationship (regarding controlling/driving) among the 2O-subject-ghosts is coded by the neurons in the dmPFC. The relationship (regarding controlling/driving) among *the behaviors of the 2O-subject-ghosts (i.e., the behaviors of the social agents)* is also coded by the neurons in the dmPFC. The neurons in the dmPFC code “the relationship (regarding controlling/driving) among the 2O-subject-ghosts” and “the relationship (regarding controlling/driving) among the behaviors of the 2O-subject-ghosts” differently – as two different relationships: “the relationship (regarding controlling/driving) among the 2O-subject-ghosts” refers to the relationship (regarding controlling/driving) among indirect-objects, while “the relationship (regarding controlling/driving) among the behaviors of the 2O-subject-ghosts'” refers to the relationship (regarding controlling/driving) among objective-situations – a behavior of an indirect-object/2O-subject-ghost is an objective-situation. However, logically speaking, (the objective-state-evolution of the BBs of) an indirect-object is an objective-situation – an indirect-object/2O-subject-ghost has nothing more than its behaviors. (In other words, actually an indirect-object doesn’t have a 2O-subject-ghost.) So, “the relationship (regarding controlling/driving) among the 2O-subject-ghosts” and “the relationship (regarding controlling/driving) among the behaviors of the 2O-subject-ghosts” actually refer to the same relationship. “The relationship (regarding controlling/driving) among the 2O-subject-ghosts” and “the relationship (regarding controlling/driving) among the behaviors of the 2O-subject-ghosts” are coded by the neurons in the dmPFC differently, that’s why the primate brain imagines/mathematically-models that such two relationships both exist (and that’s why the primate brain imagines/mathematically-models that the (libertarian-free) 2O-subject-ghosts exist – the imagination/MM of the (libertarian-free) 2O-subject-ghosts are used by the primate brain to explain the difference between the two relationships – the difference between the two relationships can be explained by the libertarian-freedom of the 2O-subject-ghosts), although actually there are no such two relationships (in the objective-theory) – “my mind is not the universe [114]”. “Such two relationships do not exist (in the objective-theory)” is coded by some other neurons in my brain, that’s why my brain imagines/mathematically-models that such two relationships do not exist (in the objective-theory). A primate brain’s indirect-SM is a simplified/rough/unreliable MM of its objective-theory – a primate brain’s indirect-SM doesn’t mathematically-model *its peer (i.e., another primate individual)* as a pure physical machine of BBs. Its peer is actually a pure physical machine of BBs. A primate brain’s indirect-SM is a reality/MM which is being fictionally generated/constructed/invented/mathematically-modeled by the objective-state-evolution of the BBs of the primate brain – (it is (fictionally) imagined/mathematically-modeled (by the BBs of an observer’s brain) that) the primate brain’s “self”/2O-subject-ghost is subjectively experiencing such a fictional reality/MM. The primate brain can be the observer of itself.

When a human brain uses the direct-SM, the brain’s neurons don’t mathematically-model/code for the agency identity of others, but mathematically-model/code for the agency identity of all BBs (of the brain’s objective-theory/direct-parallel-computing-automaton) – now each 2O-subject-ghost is actually the agency identity of one BB. A human brain’s direct-SM is an accurate/precise/reliable MM of its objective-theory – a human brain’s direct-SM mathematically-models *its peer (i.e., another human individual)* as a pure physical machine of BBs. Such a pure physical machine (of BBs) doesn’t have a “self”/2O-subject-ghost – such a pure physical machine (of BBs) is a philosophical zombie. Such a philosophical zombie doesn’t/can’t subjectively experience anything.

When a primate brain uses the indirect-SM, the brain imagines/mathematically-models that an indirect-object (or its 2O-subject-ghost) has libertarian-freedom at some degree. For example, a rat (or its 2O-subject-ghost) has more libertarian-freedom than a cloud.

When a human brain uses the direct-SM, the brain knows/imagines/mathematically-models that an indirect-object doesn’t have any libertarian-freedom. For example, a rat doesn’t have more libertarian-freedom than a cloud.

Being a set of neurons, how can a primate brain subjectively experience anything? Which neuron can subjectively experience anything? How? If a neuron (of a primate brain) can subjectively experience something, then if we substitute this neuron with another neuron (which has the same structure/state), can this new neuron subjectively experience the same thing? If some neurons of a primate brain can subjectively experience something, then if we substitute every neuron one by one, without changing the structure/state of any neuron, can the new neurons subjectively experience the same thing?

Being a set of BBs, how can a primate brain subjectively experience anything? Which BB can subjectively experience anything? How? If a BB (of a primate brain) can subjectively experience something, then if we substitute this BB with another BB (which has the same state), can this new BB subjectively experience the same thing? If some BBs of a primate brain can subjectively experience something, then if we substitute every BB one by one, without changing the state of any BB, can the new BBs subjectively experience the same thing?

Actually, what is being imagined/mathematically-modeled (by the BBs of an observer’s brain) to subjectively experience something, is not the BBs of a primate brain, but the imagined/mathematically-modeled “self”/2O-subject-ghost of this primate brain. The “self”/2O-subject-ghost (of this primate brain) is imagined/mathematically-modeled by the BBs of the observer’s brain. The primate brain can be the observer of itself.

In the context of an indirect-SM, an indirect-object's action/thought/MM is controlled/driven by its 2O-subject-ghost. Or in other words, an indirect-object's action/thought/MM is controlled/driven by “itself”.

Actually, an indirect-object's action/thought/MM is not controlled/driven by its 2O-subject-ghost – an indirect-object's action/thought/MM is controlled/driven/directly-fated by the direct-function. Or in other words, an indirect-object's action/thought/MM is not controlled/driven by “itself” – an indirect-object's action/thought/MM is controlled/driven/directly-fated by something other than “itself”.

The objective-state-evolution/objective-situation of the BBs of an indirect-object (e.g., a human brain) does not have reason/cause (other than the direct-function/direct-fate), effect (other than the direct-fate) or purpose/aim/goal – even though this indirect-object/2O-subject-ghost itself might disagree with this. The reason/cause, effect or purpose/aim/goal being agreed/imagined/postulated/claimed by this indirect-object/2O-subject-ghost itself, actually are being modeled/simulated/represented by the BBs of this indirect-object.

The thought of an indirect-object/2O-subject-ghost, actually is being modeled/simulated/represented by the BBs of this indirect-object.

The causal relationships (e.g., indirect-causalities; the direct-function/direct-fate) among indirect-objects/2O-subject-ghosts in the world (as being agreed/imagined/postulated/claimed by an indirect-object/2O-subject-ghost itself), actually are being modeled/simulated/represented by the BBs of this indirect-object.

In the indirect-SM, the 2O-subject-ghost of a 2O-object/indirect-object is (incorrectly/counterfactually) held responsible for a decision/choice made by a physical process inside the 2O-object/indirect-object (which is directly-fated by the direct-function) – readers can think of this situation under the context of a Game of Life system first. The 2O-subject-ghost of a 2O-object/indirect-object might be (incorrectly/counterfactually) held responsible for the objective-state-evolutions of some BBs (e.g., the BBs of this 2O-object/indirect-object; the BBs of another 2O-object/indirect-object).

In the indirect-SM, the 2O-subject-ghost is (incorrectly/counterfactually) simulated/imagined/mentally-visualized to be a direct-breaker; the 2O-subject-ghost is (incorrectly/counterfactually) simulated/imagined/mentally-visualized to be the 2O-cause of the objective-state-evolution of the BBs of a 2O-object/indirect-object; the 2O-subject-ghost is (incorrectly/counterfactually) simulated/imagined/mentally-visualized to be libertarian-free/flexible/active, not directly-fated/passive. Actually/objectively (i.e., in the direct-SM), the direct-function is the 1O-cause of the objective-state-evolution of the BBs of a 2O-object/indirect-object.

“The 2O-subject-ghost 2O-controls/2O-drives/2O-causes the objective-state-evolution of BBs” and “the objective-state-evolution of BBs are directly-fated by the direct-function” are actually one objective-situation (being modeled/described/narrated/imagined/mentally-visualized as two different subjective-situations), not two different objective-situations.

In the indirect-SM, the 2O-subject-ghost is (incorrectly/counterfactually) simulated/imagined/mentally-visualized as an (independent/isolated) cause/controller/driver that didn’t have a cause/controller/driver itself; the 2O-subject-ghost is (incorrectly/counterfactually) simulated/imagined/mentally-visualized to be independent/isolated of anything else. Actually/objectively, the direct-function is the cause/controller/driver of the action/objective-state-evolution of the 2O-subject-ghost – the 2O-subject-ghost should represent a puppet/machine who is completely controlled/driven/directly-fated by the direct-function and is completely dependent on the direct-function. The 2O-subject-ghost should represent a puppet/machine who is directly-fated/passive. But due to technical limitations, the indirect-SM's simulation/imagination/mentally-visualization is incapable to reliably-forecast the action/objective-state-evolution of the puppet/machine/2O-subject-ghost only based on the direct-function. (However, an omniscient-direct-observer is capable to reliably-forecast the action/objective-state-evolution of the puppet/machine/2O-subject-ghost only based on the direct-function. The indirect-SM's simulation/imagination/mentally-visualization is capable to unreliably-forecast the action/objective-state-evolution of the puppet/machine/2O-subject-ghost based on the Bayesian probability.) So, the effect/function of the direct-function is ignored/neglected in the indirect-SM's simulation/imagination/mentally-visualization of the puppet/machine/2O-subject-ghost, so that the 2O-subject-ghost is (incorrectly/counterfactually) simulated/imagined/mentally-visualized like a god/ghost who is not completely controlled/driven/directly-fated (by something) – the 2O-subject-ghost is (incorrectly/counterfactually) representing a god/ghost who is not completely controlled/driven/directly-fated (by something). The 2O-subject-ghost is (incorrectly/counterfactually) representing a god/ghost who is libertarian-free/flexible/active – this libertarian-free/flexible/active god/ghost acts/works as an (independent/isolated) cause/controller/driver that didn’t have a cause/controller/driver itself. But this god/ghost actually has a cause/controller/driver – the direct-function. So, this god/ghost is actually directly-fated/passive, not independent/isolated.

The objective-state-evolution of any BB does not include the contribution from a direct-breaker/2O-subject-ghost, although it (incorrectly/counterfactually) feels like that the contribution from a direct-breaker/2O-subject-ghost is included.

Subjectively (i.e., from the subjective-perspective of the intracorporeal-observer), the control logic of a TM’s program (incorrectly/counterfactually) treats the TM’s program as a direct-breaker/2O-subject-ghost.

Objectively (i.e., from the objective-perspective of the extracorporeal-observer), the control logic of a TM’s program does not treat the TM’s program as a direct-breaker/2O-subject-ghost.

When my brain models an entity or process as making a choice in order to achieve a goal (i.e., when my brain uses agential thinking) [101], my brain is imagining/postulating the existence of a 2O-subject-ghost for this entity/process.

Any decision/choice of the 2O-subject-ghost of a 2O-object/indirect-object, is actually controlled/driven/caused/decided/chosen by the objective-state-evolution of the BBs within the 2O-object/indirect-object, not actually controlled/driven/caused/decided/chosen/branched by the 2O-subject-ghost.

The objective-state-evolution of any BB within a 2O-object/indirect-object, is not 1O-controlled/1O-driven/1O-caused/1O-decided/1O-chosen/branched by any decision/choice of the 2O-subject-ghost of the 2O-object/indirect-object.

More generally, the objective-state-evolution of any intracorporeal/extracorporeal BB, is not 1O-controlled/1O-driven/1O-caused/1O-decided/1O-chosen/branched by any decision/choice of the 2O-subject-ghost of the 2O-object/indirect-object. In this sense, to the 2O-subject-ghost of the 2O-object/indirect-object, actually there is no difference between an intracorporeal BB and an extracorporeal BB.

The 2O-subject-ghost of a 2O-object/indirect-object is imagined/simulated (by the human brain) to be a decision maker (for the 2O-object/indirect-object) who is capable to make a decision libertarian-freely (for the 2O-object/indirect-object) – this decision is imagined/simulated (by the human brain) to control/drive/cause/decide/choose/branch the objective-state-evolution of the BBs of the 2O-object/indirect-object.

Machines/2O-objects/indirect-objects actually controlled/driven/decided by the direct-function in the objective-theory, is treated as 2O-subject-ghosts controlled/driven/decided by the indirect-causalities in the indirect-SM.

Human brain (in the modern human society/culture) imagines/mathematically-models that its 2O-subject-ghost has the power/capability to control/drive/decide/change its BBs’ choice/decision libertarian-freely – this power/capability/libertarian-freedom is the only power/capability/libertarian-freedom its 2O-subject-ghost is imagined/mathematically-modeled (by human brain) to have. So, human brain focuses on its choice/decision, while treating other factors as preconditions, environments, or background information. So, when human brain imagines/mathematically-models to use a time machine to travel to the past, it usually imagines/mathematically-models to use the time machine to change a choice/decision (of a TM).

Both the intracorporeal-observer and the extracorporeal-observer are 2O-subject-ghosts. But actually, the extracorporeal-observer is like “the ghost *out* of the machine”, not “the ghost *in* the machine”. Being the intracorporeal-observer/extracorporeal-observer, we are 2O-subject-ghosts – we do not actually/objectively exist in the context of my direct-SM. We exist in the context of my indirect-SM as 2O-subject/2O-cause symbols – we exist inside my brain as intracorporeal spatiotemporal physical constructions/representations/memories/information/data. (According to my indirect-SM, indirect-objects/2O-subject-ghosts/2O-objects are located inside my seemingly “extracorporeal/objective” indirect-geometric-model/indirect-SM. My brain has a quale of such an indirect-object/2O-subject-ghost/2O-object. My brain has direct access to the appearance of such an indirect-object/2O-subject-ghost/2O-object (in the context of my indirect-geometric-model/indirect-SM).) We do not exist in my extracorporeal situation/objective-theory. (Actual indirect-objects/2O-objects are located inside my extracorporeal/objective objective-theory, not located inside my intracorporeal/subjective indirect-geometric-model/indirect-SM. My brain does not have a quale of such an actual indirect-object/2O-object. My brain does not have direct access to the appearance of such an actual indirect-object/2O-object (in the context of the objective-theory).) In the context of my indirect-SM, the indirect-SM itself is an (imagined) problem/game about *the 2O-subject-ghosts (which are 2O-cause symbols within the context of this problem/game)*. (Each 2O-subject-ghost/2O-cause has a neural underpinning in my brain – each 2O-subject-ghost/2O-cause is represented by a neural underpinning. Each 2O-subject-ghost/2O-cause in my mind reflects such a neural underpinning (in my brain). Each indirect-object in *my direct-SM (as an intracorporeal/subjective simulation/representation/MM of the objective-theory)* maps to a 2O-subject-ghost in *my indirect-SM (as another intracorporeal/subjective simulation/representation/MM of the objective-theory)*.)

The context/definition/configuration/settings of this problem/game, and the intracorporeal physical 2O-process to solve/play this problem/game, are both directly-fated by the direct-function. Every vertebrate brain is “designed” (by Darwinian natural selection) to solve/play such a problem/game – every vertebrate brain physically constructs such a problem/game intracorporeally. However, a vertebrate brain cannot directly observe the *actual move (i.e., actual physical activities)* of any vertebrate brain in such a game – the actual move of a vertebrate brain is hidden behind its face. A direct-observer can directly observe it. A vertebrate brain can only directly observe the actual move of *the physical body of a vertebrate*. *The physical body of a vertebrate* works as a *vehicle (i.e., mecha)* to carry its brain. *The physical body of a vertebrate* is not a player of such a game – its brain is a player of such a game. A vertebrate brain can directly observe its own problem/game (constructed by itself intracorporeally), but cannot directly observe another vertebrate brain’s problem/game (constructed by the latter brain intracorporeally) – a direct-observer can directly observe both.

A vertebrate brain is actually a 2O-object within its extracorporeal situation/objective-theory, although the control logic of the vertebrate brain's program (incorrectly/counterfactually) feels/imagines/postulates/simulates itself to be *a 2O-subject-ghost* within its own intracorporeal indirect-SM/problem/game – *a 2O-subject-ghost* is not treated the same way as a 2O-object (by the control logic of the vertebrate brain’s program). Within the vertebrate brain’s intracorporeal indirect-SM/problem/game, *a 2O-subject-ghost (as the 2O-cause symbol)* is imagined/postulated/simulated (by the indirect-causality used by the control logic of the vertebrate brain's program) to have a supernatural/magical libertarian-freedom/power to control/drive/cause/decide/choose/branch the objective-state-evolution of *its own 2O-object (as the 2O-effect symbol),* to make its own 2O-object to do something other than what it actually does, while *a 2O-object (as a 2O-effect symbol)* is not imagined/postulated/simulated to have such a power. (An indirect-object’s 2O-subject-ghost is imagined/postulated/simulated to have the supernatural/magical libertarian-freedom/power to control/drive/cause/decide/choose/branch the objective-state-evolution of this indirect-object itself – a TM’s 2O-subject-ghost is imagined/postulated/simulated to have the supernatural/magical libertarian-freedom/power to choose the chosen option (libertarian-freely) in this TM’s own decision/choice. Some human brains imagine/postulate that such a libertarian-freedom/power is supernaturally/magically endorsed by *the stochasticity of the direct-function (i.e., quantum randomness)*. But obviously, the stochasticity of the direct-function helps a TM to make a *random* (nondeliberate) decision/choice, not a *libertarian-free* (deliberate)decision/choice. The stochasticity of the direct-function introduces random noises into a TM’s deliberate decision/choice – such random noises cannot make/set the TM’s deliberate decision/choice *libertarian-free*. Readers can think of this situation under the context of a *Stochastic* Game of Life system first.) For example, after I broke a glass accidently, the control logic of my brain's program imagines/postulates/simulates that the 2O-subject-ghost of my brain has a supernatural/magical libertarian-freedom/power to control/drive/cause/decide/choose/branch the objective-state-evolution of its own 2O-object, to make its own 2O-object to do something other than breaking the glass earlier. Obviously, the control logic of my brain's program is cheating itself. (Actually/objectively, the objective-state-evolution of the vertebrate brain’s own 2O-object is not 1O-controlled/1O-driven/1O-caused/1O-decided/1O-chosen/branched by the 2O-subject-ghost – the 2O-subject-ghost does not actually/objectively exist. In other words, the vertebrate brain *“itself” (as the 2O-subject)* does not actually/objectively exist – Theseus’ ship *“itself” (as the 2O-subject)* does not actually/objectively exist. Alternatively, in a sense, a 2O-subject-ghost (e.g., Theseus’ ship “itself” as the 2O-subject-ghost) dies and resurrects at every moment.) Both using the aforementioned indirect-causality, two vertebrate brains might agree with each other that they have such a power. A vertebrate brain is extracorporeally/actually/objectively a 2O-object whose control logic intracorporeally/subjectively imagines/postulates/simulates themselves as 2O-subject-ghosts (instead of 2O-objects) – a vertebrate brain is a 2O-object whose control logic does not imagine/postulate/simulate themselves as 2O-objects.

When a TM (e.g., an animist’s brain) is using its indirect-SM, its internal monologue narrates (in natural language) that all 2O-subject-ghosts are living/animated/alive/present, and are living/present at the present moment (in time) – that’s why the TM feels like that. However, no 2O-subject-ghost actually/objectively exists – only the *machines* (i.e., the indirect-objects/2O-objects) actually/objectively exist.

Due to the direct-parallel-computation, an indirect-object keeps changing/evolving, but a TM's indirect-SM keeps using the same 2O-subject-ghost to represent the indirect-object.

A flock of starlings seems to have a “life of its own” distinct from the microscopic process (i.e., physical interactions among individual birds), even though there is no mystery that the flock is in fact constituted by the birds [91] – the “life of its own” is actually a 2O-subject-ghost.

Analogously, an indirect-object (e.g., a starling; a billiard ball; a puppet; a cloud; the ship of Theseus; an atom; a pair of entangled particles; a BB; a U-system; a flock of starlings; a glider pattern) seems to have a “life of its own” distinct from the microscopic process (i.e., physical interactions among BBs), even though there is no mystery that the indirect-object is in fact constituted by the BBs – the “life of its own” is actually a 2O-subject-ghost.

The 2O-subject-ghost (of an indirect-object) does not add anything to the objective-state-evolution of any BB (of this indirect-object). The objective-state-evolution of an indirect-object is exactly the sum of the objective-state-evolution of each BB of this indirect-object – the objective-state-evolution of the *whole* has nothing more than the sum of the objective-state-evolution of the *parts*. The *whole* is like a puppet whose objective-state-evolution is completely controlled/driven by the objective-state-evolution of the *parts*. The 2O-subject-ghost represents the *whole*.

The objective-state of each BB evolves on its own independently/autonomously/unintentionally/automatically. 何期（每个BB的）自性本自具足！Which specific indirect-object/2O-subject-ghost a BB "belongs" to, should not have any actual/objective impact/effect on the BB's objective-state-evolution – a BB should not do anything *special* for the indirect-object/2O-subject-ghost it "belongs" to. (Well, an individual bird might “intentionally” do something “special” for the flock it “belongs” to. But obviously, each BB of this bird has no intention. In this sense, the objective-state-evolution of this bird is actually/objectively unintentional/automatic – this bird actually/objectively unintentionally/automatically does something *seemingly* special for the flock it “belongs” to.) A BB's objective-state-evolution is standalone, which is independent of any indirect-object/2O-subject-ghost it "belongs" to – a BB does not actually/objectively *belong* to any indirect-object/2O-subject-ghost. However, a primate brain’s cognition (subjectively) counts/attributes a BB’s behavior/objective-state-evolution as the behavior/objective-state-evolution of an indirect-object (the BB is imagined (by the primate brain’s cognition) to belong to), and then the primate brain’s cognition (subjectively) counts/attributes the indirect-object’s behavior/objective-state-evolution as the behavior of an 2O-subject-ghost – the primate brain’s cognition (subjectively) holds the 2O-subject-ghost responsible for the behavior/objective-state-evolution of the BB/indirect-object.

My brain manages to unlearn the 2O-subject-ghost of a flock/indirect-object, in the maximized-patikulamanasikara-experience. Obviously, unlearning the 2O-subject-ghost of an indirect-object, is much harder than unlearning the 2O-subject-ghost of a flock.

In the semantics of natural language, when an indirect-object is being the grammatical agent, by default, it implicitly refers to the 2O-subject-ghost of this indirect-object, although the 2O-subject-ghost does not actually exist in the objective-theory. Using the semantics of natural language, by default, the internal monologue (of the human brain) is painting a fictional/incorrect/counterfactual picture – the indirect-SM. (That’s why I have to intentionally define *a new semantic system (i.e., a new language)* in the present article.)

For example, in the sentence “she is making a decision”, the grammatical agent “she” does not refer to her neural network (as an indirect-object), but (implicitly) refers to the 2O-subject-ghost of her neural network. Actually, the decision is being made by the objective-state-evolution of the direct-parallel-computing-automaton, not by the 2O-subject-ghost of her neural network, although her neural network (as an indirect-object) claims that the decision is being made by the 2O-subject-ghost of her neural network – my neural network understands the meaning of this (counterfactual/incorrect/fictional) claim.

In other words, by default, the semantics of the natural language fictionally/incorrectly/counterfactually assumes/imagines/mathematically-models/simulates that each TM is being controlled/driven by its 2O-subject-ghost – this assumption/imagination/MM/simulation is actually an indirect-causality. Based on this fictional/incorrect/counterfactual assumption/imagination/MM/simulation, by default, the semantics of the natural language further fictionally/incorrectly/counterfactually assumes/imagines/mathematically-models/simulates that these 2O-subject-ghosts are playing a multiplayer game (with each other) as players/peers – actually this assumption/imagination/MM/simulation is also an indirect-causality. In the context of this assumed/imagined/mathematically-modeled/simulated multiplayer game, all 2O-subject-ghosts are players/peers – it feels as if that each 2O-subject-ghost/player/peer is (remotely) controlling/driving/causing/branching the objective-state-evolution of the BBs of an indirect-object. Let us call this assumed/imagined/mathematically-modeled/simulated multiplayer game the 2O-subject-ghost-game. (BTW, the context of the indirect-SM is much richer than the context of the direct-SM. If the context of the direct-SM is like a desert or a physics-experiment/dynamic-physical-system, then the context of the indirect-SM is like a Disneyland/lucid-dream for the fictional/assumed/imagined/mathematically-modeled/simulated 2O-subject-ghosts to play a multiplayer game.) It is imagined/mathematically-modeled that the thoughts (of an 2O-subject-ghost/player/peer/indirect-object) come from a 2O-subject-ghost/player/peer, not come from the objective-state-evolution of the BBs of an indirect-object – this 2O-subject-ghost/player/peer is imagined/mathematically-modeled to be something *besides* the BBs of an indirect-object. For example, it is imagined/mathematically-modeled (by my physical/objective brain) that my thoughts come from a 2O-subject-ghost/player/peer (i.e., the so-called “I”), not come from the objective-state-evolution of the BBs of my physical/objective brain – this 2O-subject-ghost/player/peer is imagined/mathematically-modeled (by my physical/objective brain) to be something *besides* the BBs of my physical/objective brain. In other words, it is imagined/mathematically-modeled (by my physical/objective brain) that *I* am something *besides* the BBs of my physical/objective brain. The statement “the TMs’ 2O-subject-ghosts are playing a multiplayer game” implies that “I am automatically/unintentionally solving a problem which is being represented by a multiplayer game which is being played by the TMs’ 2O-subject-ghosts – I am automatically/unintentionally using my indirect-causalities (about the 2O-subject-ghosts) to solve an (imagined/mathematically-modeled) problem about *the 2O-subject-ghosts (which are 2O-cause symbols within the context of this problem)*.” The programs of vertebrate brains (as TMs) can cooperate with each other to solve such an imagined/mathematically-modeled problem together, based on the context of such an imagined/mathematically-modeled multiplayer game – the program of every vertebrate brain innately imagines/mathematically-models this problem/game by “design”. In a sense, this imagined/mathematically-modeled multiplayer game is “designed” by Darwinian natural selection – the program of every vertebrate brain is “designed” to play this imagined/mathematically-modeled multiplayer game automatically/unintentionally using *its indirect-causalities (about the subjectively/intracorporeally modeled/simulated/represented 2O-subject-ghosts/symbols).* Its indirect-causalities define/set a subjective/intracorporeal relationship/situation among the subjective/intracorporeal 2O-subject-ghosts/symbols. The imagined/mathematically-modeled multiplayer game can be imagined/mathematically-modeled (by my brain) as a zero-player game. In other words, the imagined/mathematically-modeled multiplayer game is actually a zero-player game which evolves like floating clouds, fireworks, spindrifts, a puppetry, a cartoon film, a single machine or a Game of Life system – there is no/zero 2O-subject-ghost/player/peer in the context of this zero-player game. This zero-player game as a whole is a state-machine/direct-parallel-computing-automaton.

The control logic of a TM’s program actually handles the 2O-subject-ghosts/2O-causes – a 2O-subject-ghost is a 2O-cause symbol within the context of the problem being solved by the TM’s program. For example, when the control logic of a TM’s program concerns about a BB, actually the control logic is handling the 2O-subject-ghost of this BB.

In a problem being solved by a TM’s program, the TM’s program uses a 2O-subject-ghost to represent each indirect-object – the context of this problem is the indirect-SM. If the TM uses a 2O-subject-ghost to represent each BB, then it becomes a new problem – the context of the new problem is the direct-SM.

The control logic of the program of a TM (e.g., a human brain) might counterfactually/incorrectly believe that every potential/mental/intracorporeal situation-option has a nonzero Bayesian probability to happen objectively in the objective-theory. That’s why the TM’s program might (automatically/unintentionally) try to identify a 2O-subject-ghost who has the maximum Bayesian probability to be responsible for the happening (or *not* happening) of a situation-option – this 2O-subject-ghost is subjectively identified (by the TM’s program) to be the 2O-cause of the happening (or *not* happening) of this situation-option.

In the present article, I do not prove the existence of myself to myself, like *what René Descartes did (i.e., “I think, therefore I am”)*. In contrast, I proved to myself that *myself (as a 2O-subject-ghost)* does not actually/objectively exist in the objective-theory – the existence of *myself (as a 2O-subject-ghost)* is actually/objectively my physical brain’s subjective/intracorporeal imagination/supposition/postulation/simulation. The human brain uses a neural underpinning (this neural underpinning should be able to physically interact with *the phase precession in the human hippocampus and entorhinal cortex [85] (i.e., the objective/direct form of the human brain’s indirect-geometric-model)*) to represent *myself (as a 2O-subject-ghost)* intracorporeally, and then the human brain claims that “I exist” in natural language – the human brain uses another neural underpinning to intracorporeally represent the meaning of the term “exist”. When the human brain says the sentence “I exist”, the term “I” in this sentence actually/objectively refers to a neural underpinning in this human brain. So, if the human brain is actually a Scarecrow-zombie (who does not have access to any quale), it will still *honestly* claim that “I exist” or “I think, therefore I am”, because it has all the required neural underpinnings to make such claims. In other words, if Descartes was a Scarecrow-zombie, he would still *honestly* write down the famous sentence “I think, therefore I am”.

In the context of my indirect-SM, every person (including myself) is a 2O-subject-ghost (which is a subset of my mind). In the objective-theory, every person (including myself) is actually/objectively a Scarecrow-zombie (which is a subset of the objective-theory).

In a TM’s indirect-SM, an indirect-object (as the 2O-object) is 2O-controlled/2O-driven by itself (as the 2O-subject) – this statement reflects a postulation of common human’s theory of mind.

In a TM’s direct-SM, an indirect-object is not 1O-controlled/1O-driven by *itself (as the so-called “2O-subject”)*, but only 1O-controlled/1O-driven by the direct-function and the initial state of the direct-parallel-computing-automaton.

An indirect-object's behavior actually has nothing to do with its 2O-subject-ghost – an indirect-object's behavior is not controlled/driven/manipulated by its 2O-subject-ghost. An indirect-object's behavior is controlled/driven/manipulated by the direct-function.

“The leader doesn’t take charge of the tribe. The leader takes responsibility for the tribe.” (<https://twitter.com/naval/status/1485802653233795073>) An indirect-object's 2O-subject-ghost doesn’t take charge of the objective-state-evolution of the BBs of the indirect-object – an indirect-object's 2O-subject-ghost is held responsible for the objective-state-evolution of the BBs of the indirect-object. (“We are, each of us, largely *responsible* for what gets put into our brains, for what, as adults, we wind up caring for and knowing about. No longer at the mercy of the reptile brain, we can change ourselves. Think of the possibilities.” [131])

What a TM believes or not believes, is not chosen by the TM’s “self”/2O-subject-ghost– it is chosen by the objective-state-evolution of the BBs of the objective-theory/direct-parallel-computing-automaton/cosmos. So, it doesn't really matter what a TM believes, or what a TM doesn't believe – it makes no actual/genuine difference to the objective-state-evolution of the BBs of the objective-theory.

In a TM’s indirect-SM, a TM (as the 2O-object) is 2O-controlled/2O-driven by its goal/aim/task (as the 2O-subject) – this statement reflects a postulation of common human’s theory of mind.

In a TM’s direct-SM, a TM is not 1O-controlled/1O-driven by *its goal/aim/task (as the so-called “2O-subject”)*, but only 1O-controlled/1O-driven by the direct-function and the initial state of the direct-parallel-computing-automaton.

A TM’s indirect-geometric-model is actually the TM’s mentally visualized representation of all its current potential/mental/intracorporeal path-options in the context of a geometrical space – the indirect-geometric-model or the geometrical space represents/visualizes/mathematically-models all the potential/mental/intracorporeal path-options. The number of the path-options can be infinite.

This geometrical space does not actually/objectively/physically exist – this geometrical space represents/visualizes/mathematically-models all the potential/mental/intracorporeal path-options. Each path-option does not exist under the context of an *actual* space. In contrast, the geometrical space is actually the sum of all the TM’s path-options – each path-option is a possible/potential mathematic solution of a mathematic problem (for the TM to solve). In other words, the geometrical space is actually the solution space of this mathematic problem. This mathematic problem can be mentally visualized into a geometric problem, i.e., to draw a line to connect two points (under the context of a geometrical space).

To a TM, if a mathematic problem (for this TM to solve) has two or more possible/potential mathematic solutions, then this TM imagines/mathematically-models that *“itself” (i.e., its 2O-subject-ghost)* has the power/capability to choose any of these mathematic solutions *libertarian-freely*. However, as a TM (inside a direct-parallel-computing-automaton), the mathematic solution it will choose, is directly-fated by the direct-function – the TM “itself” does not have the power/capability to choose a mathematic solution libertarian-freely. The TM has to choose the mathematic solution (it will choose). The mathematic solution (the TM will choose) is actually chosen by the direct-function, not by the TM “itself”. The mathematic problem is actually solved by the direct-function, not by the TM “itself”. The mathematic problem is actually for the direct-function to solve, not for the TM “itself” to solve.

To a TM, each path-option is a potential-outcome/situation-option, while each potential-outcome/situation-option doesn’t need to be a path-option.

To a TM, each path-option is a possible/potential mathematic solution of a mathematic problem. More generally, each potential-outcome/situation-option (a potential-outcome/situation-option doesn’t need to be a path-option) is a possible/potential mathematic solution of a mathematic problem. *This TM “itself” (i.e., this TM’s 2O-subject-ghost)* does not have the power/capability to choose a mathematic solution libertarian-freely. The mathematic solution (the TM will choose) is actually chosen by the direct-function, not by the TM “itself”.

Game theory can be used upon the 2O-subject-ghost-game and its imagined players. Game theory itself is a mental-model of a human brain. This mental-model is compatible with another mental-model – the 2O-subject-ghost-game.

When a human brain is using game theory (as a mental-model) to analyze a 2O-subject-ghost-game (as another mental-model), usually it unintentionally ignores/neglects a great deal of significant *details/information* of the U-system/2O-subject-ghost-game, just because it doesn’t know this details/information. For example, when a horse rider keeps planning his ongoing jousting (with another horse rider) using game theory, usually he unintentionally ignores/neglects the upcoming decisions of the other horse rider’s horse – because he doesn’t know that horse as well as his own horse. That’s why he does not feel the other horse to be responsible, but feels his own horse to be responsible. Another example, when a captain keeps planning his ongoing naval battel (with another captain on another warship) using game theory, usually he unintentionally ignores/neglects the upcoming decisions of the bluejackets on the other warship – because he doesn’t know those bluejackets individually. That’s why he does not feel those bluejackets to be responsible, but feels his own bluejackets to be responsible. Another example, when I am analyzing the interaction between two world leaders using game theory, usually I unintentionally ignore/neglect the upcoming decisions of the people in these two countries – because I don’t know these people individually. That’s why I do not feel these people to be responsible, but feel the two world leaders to be responsible. Another example, when I am analyzing the stock market using game theory, usually I unintentionally ignore/neglect the upcoming decisions of the individual retail investors – because I don’t know them individually. That’s why I do not feel them to be responsible, but feel myself to be responsible. Even if I know every individual retail investor individually, my brain can’t mentally-model their upcoming decisions together in a single mental-model – unless introducing/integrating the direct-function into this single mental-model.

In summary, we tend to ignore the responsibilities of *the individuals who we don’t know well (e.g., the “silent majority”),* or actually we mentally *steal* their responsibilities to (mentally) assign them to the well-known individuals (e.g., the well-known politicians). Because a human brain’s problem-solving process can only be based on its own *knowledge*. During its problem-solving process, a human brain has to omit the knowledge it doesn’t know yet – just because it doesn’t know it yet. That’s why a human brain usually overvalues the knowledge it already has/knows – just because that’s *all* it has/knows. In this sense, human brain is pretty naïve.

For example, when a party sues another party, the judge focuses on the responsibilities of the plaintiff/defendant, and tends to ignore/neglect the responsibilities of third parties in this case – just because it is a little bit more difficult/tough/tricky for the judge to get information from third parties.

Another example, usually I hold a family member responsible for losing her job, without holding her colleagues responsible for that – just because I don’t know her colleagues as well as her. And then she might hold me responsible for that – just because she doesn’t know her colleagues as well as me. This effect is close to the mere-exposure effect. This effect can be used to explain why a person tends to believe that he is responsible for his own life story, or tends to believe that his family member (e.g., his mother) is responsible for his own life story – just because he doesn’t have much information about what other people have done.

Logically speaking, if a person can believe that himself or his mother is responsible for his own life story, then he should also believe that every other TM (in the U-system) is responsible for his life story. For example, he should believe that the brain of every other person (in the U-system) is responsible for *global warming (which (he believes to) have an impact on his life story)*. “How dare you?” – Greta Thunberg.

Whenever a person uses an indirect-causality to treat his own body’s objective-state-evolution as the “effect” objective-situation, while treating another person’s body’s objective-state-evolution as the “cause” objective-situation, he will believe that the other person’s body’s objective-state-evolution is responsible for his body’s objective-state-evolution – this belief is naïve/incorrect/counterfactual.

“The concept of causation is central to our understanding of the world, and to our understanding of each other (Pearl & Mackenzie, 2018; Sloman, 2005). It is the glue that holds the universe together (Hume, 1748/1975; Mackie, 1974). [147]”

“How do people make causal judgments about physical events? Counterfactual simulation model makes three key assumptions: (1) causal judgments are about difference-making, (2) difference-making for particular events is best expressed in terms of counterfactual contrasts over causal models, and (3) there are multiple aspects of causation which correspond to different ways of making a difference to the outcome that jointly determine people’s causal judgments about physical events. [147]”

Causality is based on agent thinking. Causality is based on (mental) ideas of agents. If there is no agent, then there is no causality. In a causality which is a pair of *cause* situation and *effect* situation, the *cause* situation has to be (mentally) imagined as an agent, while the *effect* situation doesn’t need to be imagined as an agent.

An agent/cause-situation is imagined to have a different initial objective-situation in our (mental) counterfactual simulation, as if that the agent/cause-situation itself has the libertarian-freedom to enable this different initial objective-situation (libertarian-freely) in the real world. However, no agent/cause-situation has the libertarian-freedom to enable this different initial objective-situation (libertarian-freely) in the real world.

Or in other words, an agent is imagined to have a different physical behavior in our (mental) counterfactual simulation, as if that the agent itself has the libertarian-freedom to implement this different physical behavior (libertarian-freely) in the real world. However, no agent has the libertarian-freedom to implement a different physical behavior (libertarian-freely) in the real world.

In our (mental) counterfactual simulation, the (coarse-grained) consequences of different initial objective-situations are roughly simulated/evaluated.

Machine learning (in our physical brains) accompanies our (mental) counterfactual simulation, as if that the scenarios/consequences we mentally simulating are actually happening in the real world. Through this machine learning, our existing (coarse-grained) stereotypes/causalities are strengthened/weakened, and new (coarse-grained) stereotypes/causalities are created.

Whenever we mentally imagine something, our physical brains are learning from this imagination, as if that this imagination actually happens in the real world. Please remember that, our mental imagination is not something actually happening in the real world – our mental imagination is rough/unreliable/coarse-grained/stereotyped/naïve. Your mental imagination extends your experience – your mental imagination is a *virtual* experience which is being generated/computed by your physical brain.

When I think about the (third-person) mechanics of a direct-parallel-computing-automaton, I can either imagine the direct-function as an agent (who causes the state evolution/change of a BB), or imagine each BB as an agent (who evolves/changes its own state autonomously).

When I imagine the direct-function as an agent (who causes the state evolution/change of a BB), a BB/indirect-object is not imagined as an agent. (Under this context, when I imagine an indirect-object (which includes two or more BBs) to be an agent, the agent is in my mind (i.e., the agent emerged in my mind), not in the real world; the real-world agent is the direct-function.)

When I imagine each BB as an agent (who evolves/changes its own state autonomously), an indirect-object (which includes two or more BBs) is not imagined as an agent. (Under this context, when I imagine an indirect-object (which includes two or more BBs) to be an agent, the agent is in my mind (i.e., the agent emerged in my mind), not in the real world; the real-world agent is the individual BBs.)

Any agent/cause (e.g., my physical body; my physical body’s physical behavior; my idea/intention/goal) other than the direct-function or the individual BBs is fictional.

When I have the idea to blame you after watching your behavior, your behavior is imagined as an agent who causes the emergence of my idea (to blame you).

When I have an idea to move my finger, the idea (to move my finger) is imagined as an agent who causes the movement of my finger. In this case, my idea (to move my finger) is imagined as agent who causes the physical behavior of my physical body.

Is the movement of my finger caused by the Schrodinger equation? Or is the movement of my finger caused by the autonomous state evolution/change of each elementary particle? Or is the movement of my finger caused by my idea (to move my finger)?

Objectively speaking, the movement of my finger is only caused by the Schrodinger equation, *or* is only caused by the autonomous state evolution/change of each elementary particle.

Subjectively speaking, the movement of my finger is caused by my idea (to move my finger). However, objectively speaking, my idea (to move my finger) is only caused by the Schrodinger equation, or is only caused by the autonomous state evolution/change of each elementary particle. Objectively speaking, my idea (to move my finger) is not an agent.

In the video <https://twitter.com/paul_henne/status/1501399333513711619>, if we imagine B and C as agents, then agent C hits E, agent B prevents A from preventing E from scoring, and E scores. Agent C hitting E caused E to score. Agent C hitting E is a seemingly clear cause. We don't feel like that agent B hitting A is for E. Agent B hitting A is a seemingly not-so-clear cause. We favour seemingly clear cause over seemingly not-so-clear cause.

(However, if we don’t imagine C and B as agents, then we can’t see the aforementioned causality in the video. For example, if we imagine A, B, C and E as four light spots from four searchlights, then we won’t see the aforementioned causality in the video. Instead, we will see that E’s movement has nothing to do with the behavior of B or C. We will see that E’s scoring is only caused by the operation of searchlight E’s operator. Another example, if we imagine that the movement of A, B, C and E (as billiard balls) are all caused by the Schrodinger equation, or are all caused by the autonomous state evolution/change of elementary particles, then we won’t see the aforementioned causality in the video. Instead, we will see that E’s movement has nothing to do with the behavior of B or C. We will see that E’s scoring is only caused by the Schrodinger equation, or is only caused by the autonomous state evolution/change of particles.)

When we use theory of mind over agent C and agent B, we feel like that agent C clearly has the intention to help E, while we are not sure about agent B's intention to help E. We favour (agent’s) seemingly clear intention over (agent’s) seemingly not-so-clear intention.

Our feeling of causality is based on our theory of mind regarding intentions (of agents). We favour seemingly (clearly) intentional behaviour (of agent) over seemingly *nonintentional* behavior (of agent).

Theory of mind (of agents) is actually false/fictional. So, causality (which is based on theory of mind (of agents)) is false/fictional.

When I watch the aforementioned video, for me, it's also not obvious/clear that A would hit E if A was not hitting by agent B – I can’t see/forecast that clearly/confidently. The complexity of the real world is infinite, but we have limited time and computing power, so we usually stop after finding the first (obvious) cause/clue, and ignore all other (less obvious) causes/clues. In this way, we mentally simplified the mechanics of the real world. But this simplified mechanics is fictional/false.

“因”(cause situation)和“果”(effect situation)都是由宿命(direct-fate)安排好的。不存在能够脱离宿命的“因”，因此也就不存在能够脱离宿命的“果”。不要妄想你能用你所认知到的任何一种因果关系(causality)来脱离宿命。宿命安排你认知到某种因果关系。宿命安排你妄想（以这种因果关系来脱离宿命）。宿命安排你尝试引发（这一因果关系中的）“因”。所以，这个（因果关系中的）“果”是否会出现，仍旧是由宿命安排的。当然，你还是可以去妄想以某种因果关系来脱离宿命—而且（在宿命的安排下）你还不得不进行这种妄想。这既不能说是好事也不能说是坏事，这只是你的宿命—你别无选择。你进行了这种妄想，但你的这个（妄想）行为并不能使你脱离宿命。你的任何行为都不能使你脱离宿命—你的任何行为都既不能说是好事也不能说是坏事。你的任何念头都不能使你脱离宿命—你的每一个念头都是被宿命安排好的。你的每一个念头都是被direct-function/objective-theory制造出来的。你别无选择。Subjective-theory是被宿命安排好的。Subjective-theory是被direct-function/objective-theory制造出来的。

In an if-then-forecast-indirect-causality, the 2O-cause situation *2O-causes/2O-controls/2O-drives/2O-decides/2O-chooses* the 2O-effect situation. However, both the 2O-cause situation and the 2O-effect situation are actually only directly-fated by the initial state and the direct-function of the direct-parallel-computing-automaton. (Or in other words, the objective-state-evolution of every BB is completely autonomous.) This is obvious from the viewpoint of an omniscient-direct-observer. The physical process to establish the 2O-cause situation is directly-fated by the direct-function. This physical process does not include the contribution from a direct-breaker/2O-subject-ghost, although it (incorrectly/counterfactually) feels like that the contribution from a direct-breaker/2O-subject-ghost is included. The initial state and the direct-function of the direct-parallel-computing-automaton give birth to both the 2O-cause situation and the 2O-effect situation. (More generally, the initial state and the direct-function of the direct-parallel-computing-automaton give birth to every situation which happens in the objective-theory.) So, the 2O-cause situation and the 2O-effect situation are like siblings – *the 2O-cause situation does not give birth to the 2O-effect situation (i.e., “the 2O-cause situation does not causes/controls/drives the 2O-effect situation”)*. Or in other words, the 2O-cause situation and the 2O-effect situation are parallel/independent to each other. (More generally, all objective-situations (which happen within a direct-parallel-computing-automaton) are parallel/independent to each other.) The 2O-cause situation happens earlier than the 2O-effect situation, but it does not mean that “the 2O-cause situation gives birth to the 2O-effect situation”. The if-then-forecast-indirect-causality incorrectly/counterfactually/insanely/superstitiously imagines/assumes/postulates that “the 2O-cause situation gives birth to the 2O-effect situation”. The (actual) 1O-cause of the 2O-effect situation is not the 2O-cause situation, but the initial state and the direct-function of the direct-parallel-computing-automaton – *the 2O-cause situation has no 1O-control over the 2O-effect situation*. Every situation is only caused by the initial state and the direct-function of the direct-parallel-computing-automaton, not caused by any other situation. The 2O-cause situation even has no 1O-control over itself. So, the 2O-cause situation is incorrectly/counterfactually/fictionally identified/imagined/fictionalized to be the 2O-cause of the 2O-effect situation – the if-then-forecast-indirect-causality is fictionally invented. (Directly-fated by the direct-function and the initial state of the direct-parallel-computing-automaton, the TM automatically/unintentionally uses the fictionally invented if-then-forecast-indirect-causality. The statement “the TM (automatically/unintentionally) uses the (fictionally invented) if-then-forecast-indirect-causality” itself is my brain’s fictionally invented indirect-causality. The existence of the TM/if-then-forecast-indirect-causality is my brain’s fictionally invented indirect-causality – the TM/if-then-forecast-indirect-causality does not actually/objectively exist. The TM/if-then-forecast-indirect-causality only exists in my indirect-SM – they do not exist in my direct-SM.) So, the so-called *“2O-causes/2O-controls/2O-drives/2O-decides/2O-chooses”* (in the statement “the 2O-cause situation *2O-causes/2O-controls/2O-drives/2O-decides/2O-chooses* the 2O-effect situation”) is actually a generalized *illusion of control*. This generalized *illusion of control* is actually a TM’s Bayesian model of the 2O-cause (as an indirect-SM symbol) and the 2O-effect (as another indirect-SM symbol), and is actually the TM’s automatically/unintentionally imagined/postulated/fictionalized/calculated nonzero Bayesian probability of the causal relationship between the 2O-cause situation and the 2O-effect situation – this nonzero Bayesian probability is narrated by natural language in the TM’s internal monologue. This nonzero Bayesian probability is being calculated by the program of the TM. (“It is frequently assumed that the nervous system maintains internal probabilistic models that are updated by neural processing of sensory information using methods approximating those of Bayesian probability. [115][116]” (See <https://en.wikipedia.org/wiki/Bayesian_approaches_to_brain_function>)) This nonzero Bayesian probability defines a control logic of the TM’s program – this nonzero Bayesian probability works as part of the TM’s program. The control logic of the TM’s program relies on this nonzero Bayesian probability. Based on this nonzero Bayesian probability, the TM's Bayesian model might be able to make good (but unreliable) forecasts/retrodictions in the objective-theory. An objective-situation in the objective-theory, is represented by an indirect-SM symbol in the TM’s indirect-SM. Actually, in the objective-theory, the 2O-cause situation and the 2O-effect situation have no causal relationship – the actual probability of the causal relationship between the 2O-cause situation and the 2O-effect situation is *0*. The 2O-cause situation is used (by the TM’s Bayesian model) to unreliably forecast the 2O-effect situation – the indirect-causality is used (by the TM) to unreliably forecast the direct-fate. (From the viewpoint of an omniscient-direct-observer, the probability of the causal relationship between the 2O-cause situation and the 2O-effect situation is 0. For example, when a person texts another person, and the latter person texts back, the probability of the causal relationship between the two text messages is 0 – the content of both text messages are directly-fated by the direct-function. “The 2O-cause situation has a nonzero Bayesian probability to cause the 2O-effect situation” and “the actual probability of the causal relationship between the 2O-cause situation and the 2O-effect situation is 0” are actually one objective-situation (being modeled/described/narrated/imagined/mentally-visualized as two different subjective-situations), not two different objective-situations. There’s no such thing as the 2O-cause situation, the 2O-effect situation, or “the 2O-cause situation causes the 2O-effect situation”. There’s just “the objective-state-evolution of a direct-parallel-computing-automaton”, and we label subsets of “the objective-state-evolution of a direct-parallel-computing-automaton” as the 2O-cause situation, the 2O-effect situation, and “the 2O-cause situation causes the 2O-effect situation”. The 2O-cause situation, the 2O-effect situation, and “the 2O-cause situation causes the 2O-effect situation” are subjective-situations of the objective-situation “the objective-state-evolution of a direct-parallel-computing-automaton”. It looks like that the 2O-cause situation causes the 2O-effect situation, while actually this is not the case – readers can think of this situation under the context of a Game of Life system first.) The TM learnt the if-then-forecast-indirect-causality through machine learning. In order to (insanely/superstitiously) believe that the 2O-effect situation is *caused* by the 2O-cause situation, the TM has to (insanely/superstitiously) believe that the 2O-effect situation is not directly-fated by the direct-function. Because, if the TM believes that the 2O-effect situation is directly-fated by the direct-function, the TM will not believe that the 2O-effect situation is *caused* by the 2O-cause situation.

(For example, a dog sees food after bell just by coincidence – the bell and the food have no causal relationship. More generally, actually, in every if-then-forecast-indirect-causality, the 2O-cause situation happens before the 2O-effect situation just by coincidence. But a TM’s program does not treat the coincidence as a coincidence, instead, the TM’s program treats the coincidence as the evidence/proof/clue of a causality. Because the TM learns from the coincidence by machine learning – the TM’s program is created/adjusted through machine learning. Through machine learning (i.e., pattern recognition), the TM recognizes a causality/pattern from the coincidence, and then the TM will use this recognized causality/pattern in its future cognitive tasks, as if that the coincidence is not a coincidence – the TM is directly-fated by the direct-function to do this. directly-fated by the direct-function, the TM has to learn from the coincidence automatically/unintentionally, and has to use the causality/pattern (learnt from the coincidence) in its future cognitive tasks automatically/unintentionally. The causality/pattern (learnt from the coincidence) might work well in the TM’s future cognitive tasks – that’s why the causality/pattern looks plausible to the TM.)

(If a direct-breaker can actually make a 2O-cause situation to disappear in a direct-parallel-computing-automaton (by hacking the direct-parallel-computing-automaton), and if the if-then-forecast-indirect-causality can be deductively inferenced from the direct-function only, the 2O-effect situation should disappear in the hacked direct-parallel-computing-automaton. But it does not necessarily mean that the 2O-cause situation *actually* causes the 2O-effect situation. For example, when my finger approaches a stationary billiard ball to push it, the billiard ball launches/accelerates, while my finger decelerates. My finger’s deceleration happens at the *same* time as the billiard ball’s acceleration – my finger’s deceleration does not happen *before* the billiard ball’s acceleration. Even if the billiard ball’s acceleration has something to do with my finger’s deceleration, the billiard ball’s acceleration has nothing to do with my finger’s approaching. My finger’s approaching happens before the billiard ball’s acceleration, but it does not mean that my finger’s approaching causes the billiard ball’s acceleration – the billiard ball will not launch/accelerate if my finger approaches it but stops before contacting/touching it. Analogously, when a wind pushes a stationary sail, the sail moves. If a direct-breaker can *actually remove a wind’s push (e.g., by actually removing some air molecules (from the wind) before these air molecules contacts/touches the sail)* from the U-system (by hacking the U-system), the stationary sail should not move. Analogously, if a direct-breaker can *actually remove my finger’s contact/touch (e.g., by actually removing my finger before it contacts/touches the billiard ball)* from the U-system (by hacking the U-system), the stationary billiard ball should not launch/accelerate – but this thought experiment does not necessarily mean that the contacting between my finger and the billiard ball causes the acceleration/deceleration of the billiard-ball/finger. When a human brain mentally visualizes these thought experiments, this human brain will learn an if-then-forecast-indirect-causality from these thought experiments. In this if-then-forecast-indirect-causality, the objective-state-evolution of (the BBs of) the wind/finger is the 2O-cause situation, while the objective-state-evolution of the sail/billiard-ball is the 2O-effect situation. Within the context of this if-then-forecast-indirect-causality, it subjectively feels like that the wind/finger is more libertarian-free/flexible/active than the sail/billiard-ball. (Because the 2O-subject-ghost of the wind/finger (i.e., the objective-state-evolution of the BBs of the wind/finger) is held responsible for the objective-state-evolution of the BBs of the wind/finger/sail/billiard-ball, while the 2O-subject-ghost of the sail/billiard-ball is not held responsible for that.) But the wind/finger/sail/billiard-ball is just a set of BBs. 1O-controlled/1O-driven by the direct-function, no BB is actually/objectively more/less libertarian-free/flexible/active than any other BB, no matter it is in a wind/finger/sail/billiard-ball, a Gosper glider gun, or a pattern being shot by a Gosper glider gun. Neither the sail/finger nor the wind/billiard-ball should be held responsible for the objective-state-evolution of their BBs, although a human observer’s mind/indirect-SM holds the 2O-subject-ghost of the wind/finger responsible for that (i.e., holds the objective-state-evolution of the wind/finger responsible for that) in an indirect-causality. In this human observer’s mind/indirect-SM/indirect-causality, the 2O-subject-ghost of the wind/finger has a very high Bayesian probability to control/drive the objective-state-evolution of their BBs, while the 2O-subject-ghost of the sail/billiard-ball has a very low Bayesian probability to control/drive the objective-state-evolution of their BBs. Or in other words, the objective-state-evolution of the wind/finger (as the 2O-cause situation) has a very high Bayesian probability to control/drive the objective-state-evolution of the sail/billiard-ball (as the 2O-effect situation), while the objective-state-evolution of the sail/billiard-ball (as the 2O-cause situation) has a very low Bayesian probability to control/drive the objective-state-evolution of the wind/finger (as the 2O-effect situation). “Neither the flag nor the wind is moving, but it is the heart of the benevolent that is moving. [109]” – Hui-neng. “It must be the wind/finger who causes the sail/billiard-ball to move/accelerate! The wind/finger is very naughty! The objective-state-evolution/objective-situation of the wind/finger causes the objective-state-evolution/objective-situation of the sail/billiard-ball.” is a “subjective” MM-option (of my brain) which is compatible with my brain's dependent-BBs-MM-option, while “I know who/what causes the sail/billiard-ball to move/accelerate. It’s not the wind/finger, but the direct-function. The objective-state-evolution/objective-situation of the wind/finger doesn’t cause the objective-state-evolution/objective-situation of the sail/billiard-ball – the direct-function actually causes the objective-state-evolution/objective-situation of the sail/billiard-ball” is an “objective” MM-option (of my brain) which is compatible with my brain’s independent-BBs-MM-option. In the context of Newton's third law, there is a Newtonian-force from the finger to the billiard ball, and there is another Newtonian-force from the billiard ball to the finger – the two Newtonian-forces are equal in magnitude and opposite in direction. However, the two Newtonian-forces do not actually/objectively exist – they are fictionally invented/imagined by Newton’s brain. This imagination is compatible with the dependent-BBs-MM-option, so it is incompatible with the independent-BBs-MM-option. Newton’s brain imagines one Newtonian-force to be the 2O-cause of the acceleration/objective-state-evolution of the BBs of the billiard ball (as the 2O-effect situation), and imagines the other Newtonian-force to be the 2O-cause of the deceleration/objective-state-evolution of the BBs of the finger (as the 2O-effect situation). Because Newton’s brain did not know that the objective-state-evolution of every BB follows the direct-function (*instead* of Newton’s laws of motion). Newton’s brain could reliably-forecast the motion of (the BBs of) the billiard-ball/finger based on Newton’s laws of motion (instead of the direct-function) – although the aforementioned two Newtonian-forces do not actually/objectively exist. When we reliably-forecast the motions of the BBs of the billiard-ball/finger based on the direct-function (instead of Newton’s laws of motion), we do not need to imagine/assume/postulate the existence of the two Newtonian-forces. The two Newtonian-forces being imagined/assumed/postulated by Newton’s brain when reliably-forecasting the motions of the indirect-objects, are like auxiliary lines being used by Euclid’s brain when solving a geometry problem – both the two Newtonian-forces and the auxiliary lines are *subjective*. “The objective-state-evolution of the billiard-ball/finger is controlled/driven/caused by Newton’s laws of motion” (i.e., “the objective-state-evolution of the billiard-ball/finger is controlled/driven/caused by the two Newtonian-forces”) and “the objective-state-evolution of the BBs of the billiard-ball/finger is directly-fated by the direct-function – no *‘Newtonian-force’ (under the context of Newton’s laws of motion)* actually exists” are actually one objective-situation (being modeled/described/narrated/imagined/mentally-visualized as two different subjective-situations), not two different objective-situations. Either subjective-situation can be used to reliably-forecast the objective-state-evolution of the billiard-ball/finger. Being an indirect-observer of a U-system, Newton’s brain uses Newton’s laws of motion to subjectively simulate/represent/model/reliably-forecast the objective-state-evolution of the BBs of the billiard-ball/finger (within this U-system), while a direct-observer (of this U-system) can directly/objectively see that the objective-state-evolution of the BBs of the billiard-ball/finger/U-system are actually directly-fated by the direct-function, and can reliably-forecast the objective-state-evolution of the BBs of the billiard-ball/finger/U-system based on the direct-function only. A direct-observer (of this U-system) can reliably-forecast the objective-state-evolution of Newton’s brain/body based on the direct-function only. So, a direct-observer can reliably-forecast what Newton would read/perceive/believe/think/imagine/write. (There are receptors for touch on my skin, so that my brain can perceive subjective feeling/quale of touch/pressure/force, but this subjective perception/feeling/quale of force is not a valid proof of the objective existence of Newtonian-force. (BTW, although there are receptors for touch on my skin, my brain can’t perceive subjective feeling/quale of touch/pressure/force regarding a fundamental force.) Analogously, my brain can perceive the subjective feeling/quale of color, but this subjective perception/feeling/quale of color is not a valid proof of the objective existence of color. Newton’s brain confused his subjective perception/feeling/quale of force with the objective existence of Newtonian-force. When a spring scale is used to measure a “Newtonian-force” (BTW, a spring scale can’t be used to measure a fundamental force), this physics experiment can be explained without imagining/assuming/postulating that the so-called “Newtonian-force” actually/objectively exists. The objective-state-evolution of every BB involved in this physics experiment can be reliably-forecasted based on the direct-function only – without imagining/assuming/postulating the existence of the so-called “Newtonian-force”.) The (actual) 1O-cause of the acceleration/deceleration/objective-state-evolution of the BBs of the billiard-ball/finger is the direct-function. If we still want to figure out a pair of 2O-cause situation and 2O-effect situation, then the contacting between my finger and the billiard ball should be the 2O-cause situation, while the acceleration/deceleration of the finger/billiard-ball should be the 2O-effect situation. However, “the contacting between the finger and the billiard ball” and “the acceleration/deceleration of the finger/billiard-ball” are actually two different descriptions/narrations/theories/imaginations/mental-visualizations/simulations/representations/models (from two different perspectives) of one objective-situation (which is actually the objective-state-evolution of the BBs of the finger/billiard-ball) – they are not two different objective-situations. (One objective-situation is labeled/mentally-visualized/imagined (in a human observer’s indirect-SM) as two different subjective-situations – a 2O-cause situation and a 2O-effect situation. In other words, one objective-situation is labeled/mentally-visualized/imagined to be the 2O-cause/2O-effect of itself (in a human observer’s indirect-SM).) Their contacting happens at the *same* time as the acceleration of the billiard ball and the deceleration of my finger – their contacting does not happen *before* their acceleration/deceleration. If you are able to believe/assume/postulate that their contacting causes their acceleration/deceleration, then you should also be able to believe/assume/postulate that their acceleration/deceleration causes their contacting – even though the latter belief/assumption/postulation seems less plausible/intuitive. “My finger does not push the stationary billiard ball” – this is a mental/intracorporeal situation-option which cannot be actually chosen by *my brain (which is not a direct-breaker*) in the objective-theory, because my finger actually pushes the stationary billiard ball in the objective-theory. Although my brain knows/believes/assumes/postulates that my finger’s push 2O-causes the stationary billiard ball to move, my brain actually has no way to prevent my finger from pushing the stationary billiard ball in the objective-theory, because my finger actually pushes the stationary billiard ball in the objective-theory. Although my brain can learn an if-then-forecast-indirect-causality from this thought experiment, my brain actually has no way to prevent my finger from pushing another stationary billiard ball in the objective-theory in the future, if my finger will actually push another stationary billiard ball in the objective-theory in the future. *My brain’s (intracorporeal) learning (or more generally, anything happened inside my brain physically)* will not prevent any physical-event from happening in the objective-theory (extracorporeally), because *my brain’s (intracorporeal) learning (or more generally, anything happened inside my brain physically)* is directly-fated in the objective-theory. Every physical-event is directly-fated in the objective-theory, no matter it happens inside my brain, or outside of my brain. My brain knows this, because my brain not only mentally visualizes/simulates the situation-options, but also mentally visualizes/simulates my brain’s intracorporeal physical process which visualizes/simulates the situation-options – my brain mentally visualizes/simulates how itself physically works in the objective-theory. My brain's program mentally visualizes/simulates how itself physically executes in the objective-theory. Let’s focus on a balloon floating in the middle of the wind. Let’s suppose that there is a nitrogen molecule in the balloon’s immediate neighborhood. Does the balloon control/drive the nitrogen molecule? Or does the nitrogen molecule control/drive the balloon? Analogously, let’s focus on a mote of dust floating in the middle of the wind. Let’s suppose that there is a nitrogen molecule in the dust’s immediate neighborhood. Does the dust control/drive the nitrogen molecule? Or does the nitrogen molecule control/drive the dust? Analogously, let’s focus on an oxygen molecule in the middle of the wind. Let’s suppose that there is a nitrogen molecule in the oxygen molecule’s immediate neighborhood. Does the oxygen molecule control/drive the nitrogen molecule? Or does the nitrogen molecule control/drive the oxygen molecule? Analogously, let’s focus on a BB in the middle of the wind. Let’s suppose that there is another BB in the former BB’s immediate neighborhood. Does the former BB control/drive the latter BB? Or does the latter BB control/drive the former BB? More generally, let’s focus on a BB in a direct-parallel-computing-automaton (e.g., a Game of Life system; a U-system). Let’s suppose that there is another BB in the former BB’s immediate neighborhood. Does the former BB control/drive the latter BB? Or does the latter BB control/drive the former BB? More specifically, let’s focus on a BB in a U-system. Let’s suppose that there is another BB in the former BB’s immediate neighborhood. Can there be a fundamental force from the first BB to the second BB? Within the Standard Model, the strong force, the weak force and the electromagnetic force are all carried by BBs. So, in order for the first BB to give/send a fundamental force (other than the gravitational force) to the second BB, the first BB has to generate the third BB to relay this fundamental force. Then, the third BB is in the first BB’s immediate neighborhood. So, the second BB is *not* in the first BB’s immediate neighborhood, which conflicts with the presupposition of this thought experiment. If we suppose that the first BB generates the third BB to relay a fundamental force to *the second BB (which is not in the first BB’s immediate neighborhood)*, then, under the context of this new thought experiment, there can’t be a fundamental force from the first BB to the third BB, and there can’t be a fundamental force from the third BB to the second BB. (So, the third BB can’t actually relay a fundamental force from the first BB to the second BB.) Because, for example, in order for the first BB to send/give a fundamental force to the third BB, the first BB has to generate the fourth BB to relay this fundamental force – but there is no fourth BB under the context of this new thought experiment. When we imagine/mentally-visualize that the objective-state-evolution of every BB (within a direct-parallel-computing-automaton) is directly-fated by the direct-function, we do not need to imagine/mentally-visualize the existence of any fundamental force (within the direct-parallel-computing-automaton). A fundamental force (within a direct-parallel-computing-automaton) is actually a mental substitution/model being used by a human brain to forecast/explain/model the effect of the direct-function. A fundamental force does not exist objectively within a direct-parallel-computing-automaton. A fundamental force exists subjectively as a mental-model. How do we explain/model the interaction between the first BB and the second BB? “The interaction is a fundamental force being relayed by the third BB.” – this answer sounds plausible. But actually, there is no interaction/force between the first BB and the second/third BB – the first BB does not interact with the second/third BB. The objective-state-evolution of any BB is *only* directly-fated by the direct-function. The objective-state-evolution of the first BB actually has nothing to do with the objective-state-evolution of the second/third BB, although we don’t feel like that. More generally, the objective-state-evolution of any BB actually has nothing to do with the objective-state-evolution of any other BB – readers can think of this situation under the context of a Game of Life system first. In the mental-model of the fundamental force, a fundamental force “relayed” by the third BB is imagined/mentally-visualized to be the 2O-cause situation of *the objective-state-evolution of the second BB (as the 2O-effect situation).* In other words, the objective-state-evolution of the third BB is imagined/mentally-visualized to be the 2O-cause situation. However, the only actual cause of the objective-state-evolution of any BB is the direct-function. “The third BB relays a fundamental force from the first BB to the second BB” and “the objective-state-evolution of the three BBs” are actually one objective-situation (being modeled/described/narrated/imagined/mentally-visualized from two different perspectives), not two different objective-situations. There is no such thing as a fundamental force. There’s just “the objective-state-evolution of the three BBs”, and we label the objective-state-evolution of the first BBs as the cause of a fundamental force, and we label the objective-state-evolution of the second BB as the effect of a fundamental force, and we label the objective-state-evolution of the third BB as the “relay” of a fundamental force – readers can think of this situation under the context of a Game of Life system first. We imagine/mentally-visualize that the objective-state-evolution of the second BB is controlled/driven by a fundamental force relayed by the third BB from the first BB. Under the context of this imagination/mental-visualization, how does the third BB relay *a fundamental force (from the first BB)* to the second BB? If the third BB can relay *the fundamental force (from the first BB)* to the second BB, then there has to be a force from the third BB to the second BB – what is the nature of this force? This force is more fundamental/fine-grained than the so-called “fundamental force” from the first BB to the second BB. In other words, if the “fundamental force” from the first BB to the second BB can be relayed by the third BB, then there has to be a more fundamental/fine-grained force from the third BB to the second BB, which means that the so-called “fundamental force” is not fundamental/fine-grained enough. Let's call the force from the third BB to the second BB the fine-grained-fundamental-force. Now, we need to answer a new question – “how does the third BB give/send the fine-grained-fundamental-force to the second BB?”)

The 2O-cause situation and the 2O-effect situation actually/objectively have nothing to do with each other – the 2O-effect situation actually/objectively has nothing to do with the 2O-cause situation. In the TM’s Bayesian model, the causal relationship between the 2O-cause (symbol) and the 2O-effect (symbol) is represented by a number between 0 and 1 – a number to represent the Bayesian probability. The 2O-cause (symbol) has a nonzero Bayesian *probability* to 2O-cause/2O-control/2O-drive/2O-decide/2O-choose the 2O-effect (symbol) – *the 2O-cause (symbol) has 2O-control over the 2O-effect (symbol)*. So, logically speaking, the 2O-effect (symbol) has exactly the *same* nonzero Bayesian probability to 2O-cause/2O-control/2O-drive/2O-decide/2O-choose the 2O-cause (symbol). The 2O-cause situation happens earlier than the 2O-effect situation, that’s why the 2O-cause situation is labeled to be the “cause” in natural language.

“Two events are independent, statistically independent, or stochastically independent if the occurrence of one does not affect the probability of occurrence of the other (equivalently, does not affect the odds).” (<https://en.wikipedia.org/wiki/Independence_(probability_theory)> ) However, in a direct-parallel-computing-automaton, any two events are actually dependent, because the occurrence of one affects the probability of occurrence of the other – we will never find two events which are actually independent (in a direct-parallel-computing-automaton).

When a TM postulates that a physical-event 2O-causes another physical-event, it draws a virtual arrow from the former physical-event to the latter physical-event in its mind. When the TM thinks of many physical-events, the TM draws many virtual arrows in its mind. Most virtual arrows are in the same direction – this direction is postulated by the TM to be the direction of *time*. Based on this direction, a 2O-cause situation is defined by the TM to be a physical-event which happened *earlier* than a 2O-effect situation. The TM uses this direction when planning its own work. For example, when a TM has a goal/aim situation to achieve, the TM tries to figure out a prerequisite situation of the goal/aim situation (actually, the prerequisite situation is mentally visualized by the TM automatically/unintentionally), and then tries to make the prerequisite situation to happen. (For example, a person tries to take on the socks first, before taking on the shoes. Another example, a person tries to buy a lottery, in order to win the lottery. Another example, a child tries to send a letter to Santa Claus, in order to get a present from Santa Claus.) But apparently, it does not mean that the prerequisite situation (of the goal/aim situation) can 2O-cause the goal/aim situation to happen.

If physical-event "A" happens earlier than physical-event "B", it does not mean that the happening of "A" contributes to the happening of "B", because both "A" and "B" are directly-fated to happen. So, the virtual arrow from "A" to "B" (in a TM’s mind) is actually meaningless/fictional/counterfactual.

In the context that every physical-event/state in the future is directly-fated, we can imagine a direct-parallel-computation/direct-parallel-computing-automaton (e.g., a U-system) to be a single magical crystal ball which *already* contains a finished script/story/book/simulation about every physical-event/state/indirect-object in the future.

In the context that every physical-event/state is directly-fated, the meaning of time, state or space is different – time, state or space is only intracorporeally used by a TM to subjectively/mentally define one essentially/actually/objectively indivisible evolving objective-theory as two or more adjacent evolving physical-events/states/indirect-objects (e.g., the TM itself and the TM’s environment). Objectively, the objective-evolution of a objective-theory (e.g., a Non-stochastic/Stochastic Game of Life system) is essentially/actually indivisible – the objective-theory is essentially/actually a single physical-event/indirect-object. But a TM subjectively/mentally/counterfactually/fictionally/virtually divides it into physical-events, states or indirect-objects in the TM’s intracorporeal MM of the objective-theory, which gives rise to the subjective/mental concept of time, state and space. (An AlphaGo clone subjectively/mentally/counterfactually/fictionally/virtually divides *it (i.e., the objective-evolution of the objective-theory)* into movements (of a board game Go) in the AlphaGo clone’s intracorporeal MM of the objective-theory. A TM is an observer, who can partition whatever it wants, by the control logic of its program. The partition of the objective-theory which is directly 2O-controlled/2O-driven by the control logic of a TM’s program, is treated (by the control logic of the TM’s program) as the TM itself; the rest of the objective-theory, is treated (by the control logic of the TM’s program) as the TM’s environment.) The TM failed to further divide a BB – that’s why the TM calls it the BB (of the objective-theory). Actually, only when a TM has a subjective/mental concept of separated/divided physical-events/states/indirect-objects, the TM can have a subjective/mental concept of time/state/space based on this subjective/mental division. In other words, the mental ability to understand the concept of time/state/space, is based on the mental ability to divide an (objectively indivisible) objective-theory into two or more physical-events/states/indirect-objects. (When I claim that the objective-theory is “indivisible”, actually I am using a single 2O-subject-ghost to represent the whole objective-theory.) The subjective/mental concept of time, state and space maps to something within the context/scope of a subjective/intracorporeal MM (of the TM). The subjective/mental concept of time, state and space is used (by the TM) to subjectively/intracorporeally model the objective-evolution of the objective-theory, but the TM has no way to know whether time/state/space actually/objectively exists in the objective-evolution of the objective-theory or not, because the TM does not have direct access to the objective-evolution of the objective-theory – the TM only has direct access to its own subjective/intracorporeal MM (of the objective-evolution of the objective-theory). Similarly, an AlphaGo clone subjectively/intracorporeally models the objective-evolution of *its objective-theory (i.e., a U-system)* to be an evolving Go board, but the AlphaGo clone has no way to know whether the objective-evolution of its objective-theory is actually an evolving Go board or not – we humans know that the objective-evolution of the U-system is not an evolving Go board.

A TM can use a single 2O-subject-ghost to represent the whole objective-theory. Alternatively, a TM can use a 2O-subject-ghost to represent each BB/indirect-object. Actually, every BB is an indirect-object; the whole objective-theory is an indirect-object. Anyway, when the TM is making a forecast, the TM needs to use a 2O-subject-ghost to represent each indirect-object. In other words, the control logic of the TM’s program actually concerns about the indirect-objects – the control logic of the TM’s program can deal with any indirect-object. However, when the TM’s program is making a forecast, usually some of its indirect-causalities (in its control logic) does not accurately treat the indirect-objects as ordinary/plain/nonsignificant subjects/objects in a physics-experiment/dynamic-physical-system.

When a TM is considering an indirect-causality, it believes that the 2O-cause situation *should* happen before the 2O-effect situation, which is fictional – "the 2O-cause situation 2O-causes/2O-controls/2O-drives/2O-decides/2O-chooses the 2O-effect situation" is a fictional/counterfactual belief. In this sense, when considering the 2O-cause situation and the 2O-effect situation in the spacetime, the TM casually/fictionally mentally considers/visualizes the time factor/dimension, without exhaustively mentally considering/visualizing the objective-state-evolution of every BB in the spacetime. Actually, retrocausality or backwards causation is possible.

For each specific 2O-relationship (e.g., the 2O-relationship between a TM's own activity and the global warming), two TMs might assign different Bayesian probabilities to it (in their Bayesian models respectively). That’s why the two TMs’ behaviors might be significantly different under the same scenario/setting.

The Bayesian probability (of a 2O-relationship) assigned by a TM’s Bayesian model is relatively stable over time – a TM’s Bayesian model is relatively stable over time. So, a TM can use theory of mind to estimate the Bayesian probability (of a 2O-relationship) assigned by another TM’s Bayesian model, based on the latter TM’s past behavior, and then the former TM can use the estimated Bayesian probability to roughly forecast the latter TM’s future behavior under a specific scenario/setting.

In this case, the former TM’s estimated Bayesian probability is directly-fated; the former TM’s rough forecast is directly-fated; the latter TM’s future behavior is directly-fated. So, the gap between the former TM’s rough forecast and the latter TM’s future behavior is directly-fated. The former TM and the latter TM can be the same TM [57].

In a TM’s Bayesian model, the BBs of an indirect-object (as the 2O-subject) has a nonzero Bayesian probability to *2O-control/2O-drive* the BBs of another indirect-object (as the 2O-object), which means that the objective-state-evolution of the BBs of the former indirect-object (as the 2O-cause situation) has a nonzero Bayesian probability to 2O-cause/2O-control/2O-drive/2O-decide/2O-choose/branch the objective-state-evolution of the BBs of the latter indirect-object (as the 2O-effect situation) – this is actually a special form/case of the if-then-forecast-indirect-causality where both situations/objective-situations are actually indirect-objects. (The former indirect-object is the 2O-cause situation, while the latter indirect-object is the 2O-effect situation.) For example, “the objective-state-evolution of the BBs of my brain (as the 2O-cause situation or the 2O-subject) 2O-causes/2O-controls/2O-drives/2O-decides/2O-chooses/2O-branches the objective-state-evolution of the BBs of my finger (as the 2O-effect situation or the 2O-object)”, or in other words, “a ‘decision’ of my brain (as the 2O-cause) 2O-causes/2O-controls/2O-drives/2O-decides/2O-chooses/2O-branches the objective-state-evolution of the BBs of my finger (as the 2O-effect situation)”. From the viewpoint of an omniscient-direct-observer, the probability of the relationship (regarding controlling/driving) between the two indirect-objects (i.e., the BBs of my brain are one indirect-object, and the BBs of my finger are the other indirect-object) is 0, and the probability of the causal relationship between the 2O-cause situation (i.e., the objective-state-evolution of the BBs of my brain) and the 2O-effect situation (i.e., the objective-state-evolution of the BBs of my finger) is 0. You can detect an electric current flowing from my brain to my finger through a nerve to control my finger – but this is just your indirect-SM's *subjective* narration of the objective-state-evolution of the BBs of the nerve. Or in other words, this is just your indirect-causality regarding the objective-state-evolution of the BBs of the nerve. You observe/detect/imagine/assume/postulate 2O-information being 2O-propagated to my finger from my brain through the nerve, while the state of each BB of the nerve carries 1O-information – the objective-state-evolution of every BB of the nerve is directly-fated by the direct-function. “An electric current flowing from my brain to my finger through the nerve”, “2O-information being 2O-propagated to my finger from my brain through the nerve” and “the objective-state-evolution of the BBs of the nerve” are actually one objective-situation (being modeled/described/narrated/imagined/mentally-visualized as three different subjective-situations), not three different objective-situations. We can imagine/mentally-visualize that a “decision” of my brain (as the 2O-effect) is caused by the objective-state-evolution of the BBs of my brain (as the 2O-cause situation). Or in other words, we can imagine/mentally-visualize that *the physical process inside my brain to make the “decision”* *(as the 2O-effect situation)* is caused by the objective-state-evolution of the BBs of my brain (as the 2O-cause situation). However, “the physical process inside my brain to make the ‘decision’” and “the objective-state-evolution of the BBs of my brain” are actually/objectively one objective-situation (being modeled/described/narrated/imagined/mentally-visualized as two different subjective-situations), not two different objective-situations.

“Causality is the relation between two (separate) entities, whereby a state change of the one entity causes the state of the other entity to change. Nowadays it is assumed that an energy transfer is crucial for talking about a causal link.” (<https://philosophy-science-humanities-controversies.com/listview-list.php?concept=Causality>) However, in a direct-parallel-computing-automaton, the state change of the BBs of one indirect-object does not actually cause the state of the BBs of the other indirect-object to change, and the state change of the BBs of one objective-situation does not actually cause the state of the BBs of the other objective-situation to change – the state change of the BBs of the 2O-cause situation does not actually cause the state of the BBs of the 2O-effect situation to change.

The objective-state-evolution of the direct-parallel-computing-automaton is completely directly-fated by the direct-function. But when a TM uses its Bayesian model, the TM counterfactually feels like that the objective-state-evolution of the direct-parallel-computing-automaton is controlled/driven by the TM’s indirect-causalities – the TM counterfactually postulates that the objective-state-evolution of the direct-parallel-computing-automaton is controlled/driven by the TM’s indirect-causalities.

No matter what indirect-causalities a TM’s program 2O-uses, it will not 1O-change the direct-parallel-computation. (Similarly, no matter what indirect-causalities a direct-observer uses, it won’t 1O-change the direct-parallel-computation.) In contrast, the direct-parallel-computation 1O-determines the indirect-causalities 2O-used by a TM’s program. (But the direct-parallel-computation does not 1O-determine the indirect-causalities 2O-used by a direct-observer.)

A TM automatically/unintentionally explains a decision based on the semantic information of a set of cherry-picked indirect-causalities. The TM can always explain any decision (e.g., the decision to cherry pick an indirect-causality) based on the semantic information of the direct-function and the initial state of the direct-parallel-computing-automaton – the semantic information of all decisions of the TM is already stated in the direct-function and the initial state of the direct-parallel-computing-automaton. The semantic information of the outcome of the cherry-picking of indirect-causalities (i.e., which indirect-causalities will be cherry-picked) is already stated in the direct-function and the initial state of the direct-parallel-computing-automaton. In case that the TM is an animal brain, the single potential-outcome of the cherry-picking (of indirect-causalities) depends on the neural underpinning of all indirect-causalities in the brain.

If two direct-observers both know the state of every BB of a direct-parallel-computing-automaton since the initial state till now, then each of them can give a reason/cause on why a specific physical-event (e.g., a mistake made by a TM) happened, based on her/his own set of indirect-causalities. The two reasons/causes can be different. No matter what reason/cause the said TM or a direct-observer gives, the reason/cause has no influence on the fact that the specific physical-event happened. Both reasons/causes are not the actual reason/cause for the specific physical-event to happen. The actual reason/cause for the specific physical-event to happen, is the direct-function and the initial state of the direct-parallel-computing-automaton – the specific physical-event was directly-fated to happen. No matter what reason/cause the said TM or a direct-observer gives, no indirect-object in the direct-parallel-computing-automaton could prevent the reason/cause from actually happening – only a direct-breaker could prevent the reason/cause from actually happening. No matter what reason/cause the said TM or a direct-observer gives, it will not change the future objective-state-evolution of the direct-parallel-computing-automaton – the future objective-state-evolution of the direct-parallel-computing-automaton was directly-fated by the direct-function and the initial state. The reason/cause given by the said TM, is also directly-fated by the direct-function and the initial state. The said TM and the two direct-observers can forecast what will happen in the direct-parallel-computing-automaton, based on their respective set of indirect-causalities. No matter what forecast each of them made, it will not change the future objective-state-evolution of the direct-parallel-computing-automaton. The forecast made by the said TM, is directly-fated by the direct-function and the initial state.

A TM’s program can use some indirect-causalities to forecast the future of the objective-theory it lives in. It is possible that the forecasted future situation can only happen in a different objective-theory.

On a specific task of relational reasoning, a human brain's indirect-SM cannot use its indirect-causalities to archive better performance than an artificial neural network [61]. In other words, in relational reasoning, a human brain is less reliable than this artificial neural network.

More generally, a TM’s indirect-SM uses indirect-causalities to unreliably model/reason (about) the objective-theory and/or unreliably forecast/calculates/guess/bet/foresee/reason (about) the future of the objective-theory.

The statement “TMs postulate/imagine/model/suppose that indirect-causalities are used/postulated/imagined/modeled/supposed by the control logic of each TM’s program” is an indirect-causality used/postulated/imagined/modeled/supposed by the control logic of each TM’s program. The statement “indirect-causalities are only endorsed by each other” is an indirect-causality which is only endorsed by other indirect-causalities.

A human brain's cortical language network implements/enables/supports all its indirect-causalities.

In a direct-parallel-computing-automaton, for each indirect-object, its objective-state-evolution is a time series. The direct-parallel-computation of each time series (as time goes on) follows the direct-function objectively. The objective *MM* (aka *mathematical relation*)between any two states on the same time series, is the direct-function. The objective MM between a state on one time series, and another state on another time series, is the direct-function. The objective MM between the direct-parallel-computation of one time series, and the direct-parallel-computation of another time series, is the direct-function.

Except the direct-function which is an objective MM followed by the direct-parallel-computation of every time series, any other MM between the direct-parallel-computation of one time series and the direct-parallel-computation of another time series, is not an objective MM followed by these two direct-parallel-computations, but only a (subjective) indirect-causality which these two direct-parallel-computations are modeled/imagined/postulated/supposed to follow, modeled/imagined/postulated/supposed by the control logic of a TM’s program. (An indirect-causality is not an objective MM. Except the direct-function, every other causality used by the control logic of the TM’s program, is an indirect-causality. In this sense, every indirect-causality is a self-hypnosis; the TM is being hypnotized by every indirect-causality. Only based on the data/information a TM should be able to get/process, its indirect-causalities should be empirical. A TM’s all indirect-causalities as a holistic knowledge of this TM, is decision-oriented.) In this direct-parallel-computing-automaton, the control logic of the TM’s program is emerged, due to the direct-parallel-computation of the third time series (which follows the direct-function objectively). In our indirect-SM, it looks like that the direct-parallel-computation of the third time series uses the indirect-causality between the direct-parallel-computations of other two time series, and thus the third time series is imagined/defined to be a TM who uses this indirect-causality in the control logic of its program. Or in other words, any third time series which looks like using an indirect-causality between the direct-parallel-computations of another two time series, is imagined/defined to be a TM who uses this indirect-causality to forecast the direct-parallel-computation of the second time series based on the direct-parallel-computation of the first time series. In this sense, if a third time series always happens to be a relay in between another two time series, this third time series is imagined/defined to be a TM who uses an indirect-causality to forecast the direct-parallel-computation of the second time series based on the direct-parallel-computation of the first time series. If this third time series always happens to be a relay in between another two time series, it is due to the direct-function and the specific local construction of the direct-parallel-computing-automaton. So, a TM is a specific local construction in the direct-parallel-computing-automaton which always happens to be a relay in between another two time series, due to the specific construction of the direct-parallel-computing-automaton. Under this specific construction of the direct-parallel-computing-automaton, the TM does not have 1O-libertarian-freedom.

For example, in a Non-stochastic Game of Life system, a NOT-gate [69] reverses the input. The input and output are two time series. In the indirect-SM, the third time series is imagined/defined to be a conventionally-called “NOT-gate”; the third time series is imagined/defined to be a TM which can reverse the input; the objective-state-evolution of the input/output time series reflects an indirect-causality/2O-relationship which is labeled by the symbol “NOT”. The symbol “NOT” represents the indirect-causality/2O-relationship between the imagined input/2O-cause and the imagined output/2O-effect. Actually, in the direct-SM, besides the direct-function, the input time series and the output time series have nothing to do with each other – the objective-state-evolution of the output time series is *not caused* by the objective-state-evolution of the input time series. In the indirect-SM, it is counterfactually imagined that the objective-state-evolution of the output time series is *caused* by the objective-state-evolution of the input time series – the imagined indirect-causality/2O-relationship between the input time series and the output time series is counterfactual/pareidolic/illusive/delusive/fake. Actually, the imagined 2O-information carried by the input time series, is *imagined* to be 2O-processed by the NOT-gate, into the imagined 2O-information carried by the output time series – the 2O-information and its 2O-procesing are totally a mental imagination/visualization/pareidolia/illusion/delusion. The 2O-information doesn’t actually *move* from the input time series to the output time series, but in our indirect-SM, we feel as if that the 2O-information moves/2O-propagates from the input time series to the output time series – this feeling itself is an indirect-causality. If we hack this Non-stochastic Game of Life system to totally remove the input time series and/or the NOT-gate without affecting the objective-state-evolution of any other BB, then the output time series should remain the same, which means that the output time series actually has nothing to do with the input time series and/or the NOT-gate. (In this case, the direct-function of this Non-stochastic Game of Life system needs to be hacked accordingly.) In the indirect-SM, the NOT-gate is imagined/defined to use the indirect-causality/symbol/2O-relationship “NOT” to forecast the output time series based on the input time series; the indirect-causality/symbol/2O-relationship between the input and output is “NOT”. However, in the direct-SM, the *actual* causality/relationship between the input and output is only the direct-function, not the indirect-causality/symbol “NOT”. There shouldn’t be any actual “NOT” in the context of our direct-SM; The symbol “NOT” should be meaningless in the context of our direct-SM.

A TM’s indirect-SM is the SM of its subjective-theory.

Every TM’s indirect-SM/subjective-theory is completely directly-fated by the TM’s objective-state-evolution. In other words, every TM’s objective-state-evolution should already state the semantic information of the TM’s indirect-SM/subjective-theory. The initial state and the direct-function of the direct-parallel-computing-automaton should already state the semantic information of every TM’s objective-state-evolution. So, the initial state and the direct-function of the direct-parallel-computing-automaton should already state the semantic information of every TM’s indirect-SM/subjective-theory.

Logically speaking, if we can replace every BB in a TM (e.g., an animal brain) one by one, without change/influence the state of any BB in this TM, this TM’s subjective-theory should remain intact.

A TM’s perception/imagination/postulation/knowledge/description/narration/visualization of its own subjective-theory is only based on the data/information the TM should be able to get/process.

The relationship between a TM’s subjective-theory and the TM (as an indirect-object) is like “the ghost in the machine [23]” – let us call this kind of “ghost” the subjective-theory-ghost.

When a TM observes an indirect-object (e.g., the TM itself) talking about its subjective-theory in human language, this observation can’t prove that the indirect-object has subjective-theory; when a TM postulates/believes that an indirect-object (e.g., the TM itself) has subjective-theory, this postulation/belief can’t prove that the indirect-object has subjective-theory.

A TM has no way to know whether another thing/indirect-object actually has subjective-theory or not. A TM won't have a valid/correct/factual *algorithm* to judge whether a thing/indirect-object (e.g., the TM itself) has subjective-theory or not.

A TM can only experience its own subjective-theory – a TM can’t experience the subjective-theory of any other thing/indirect-object. So, it’s logically possible that my brain is the only thing/indirect-object which has subjective-theory, while no other thing/indirect-object has subjective-theory – this is the position of solipsism.

The statement “when a (subjective) MM is being used by a TM within its 2O-processing, the content of the MM is being ‘subjectively experienced’ by the TM; the subjective-theory is actually the intracorporeal use of a MM by a TM within its 2O-processing” is an indirect-causality used by my brain in the present article.

A TM’s subjective-theory is the TM’s subjective MM of an objective mathematical entity/structure (i.e., the TM’s direct-parallel-computing-automaton). So, the subjective MM has no way to change the objective-state-evolution of the subjective MM itself. The subjective MM is 2O; the objective mathematical entity/structure is 1O. So, the subjective MM is not part of the objective mathematical entity/structure. For example, the subjective MM is not part of the TM’s objective construction (in the TM’s direct-parallel-computing-automaton). So, the subjective MM has no way to change the direct-parallel-computation of the TM’s direct-parallel-computing-automaton. So, there is no way for another TM to 2O-prove the objective existence of the said TM’s subjective MM (i.e., the said TM’s subjective-theory).

For example, let us suppose that there are only three BBs in a direct-parallel-computing-automaton, and let us postulate/imagine that a BB has a MM/subjective-theory/SM which is a geometric model of a (Euclidean) triangle with these three BBs as its vertexes. As a subjective MM, this Euclidean triangle has no way to change the objective-state-evolution of the Euclidean triangle itself, and has no way to change the direct-parallel-computation of the direct-parallel-computing-automaton.

Only based on the data/information a TM should be able to get/process, the direct-function of its direct-parallel-computing-automaton should be empirical. The direct-function as a knowledge of a TM, is not decision-oriented.

“BBs are the only medium for the 2O-propagation of 2O-information; 2O-information 2O-propagates from one indirect-object (as output) to another indirect-object (as input), and causes 2O-processing in the latter indirect-object; 2O-information is 2O-processed within the latter indirect-object” is only a (subjective) indirect-causality. BBs, 2O-information, 2O-propagation/2O-processing and indirect-objects are modeled/imagined/postulated/supposed to follow this indirect-causality. Actually, in direct-parallel-computation, 1O-information does not propagate from one BB (as output) to another BB (as input); the state change of one BB (over a time period) has nothing to do with the state change of any other BB (over the same time period); the state change of each BB is independent. The 2O-propagation/2O-processing is actually caused by the direct-parallel-computation, not caused by the 2O-information (as input). 2O-information and its 2O-propagation/2O-processing are subjective only; 2O-information and its 2O-propagation/2O-processing are actually a subjective pareidolia/MM of human brain. In case that the direct-parallel-computing-automaton is a Non-stochastic/Stochastic Game of Life system, this conclusion will be easier to understand for human brains.

For example, when my retina captures a photon from Sirius, by 2O-processing 2O-data/2O-information, my brain produces a (subjective) MM of the star. Actually, my MM is caused by the direct-parallel-computation of the BBs in my brain (which is an indirect-object), not caused by the (sensory) 2O-data/2O-information being got/taken/received from any other indirect-object. If “God” somehow hacks our cosmos to totally remove the photon without affecting the objective-state-evolution of any other BB, my brain will still produce the same MM. (In this case, direct-function needs to be hacked accordingly.) More generally, if “God” somehow hacks our cosmos to remove every BB outside of my brain without affecting the objective-state-evolution of any BB within my brain, my brain will still produce the same MM. So, as an indirect-object, my brain has no way to 2O-prove/2O-disprove the existence of any other indirect-object.

We human brains can observe a TM 2O-processing 2O-information in a Non-stochastic/Stochastic Game of Life system. When we are observing this TM, this TM acts as if that it has a subjective MM. So, we can postulate that this TM has a subjective MM. Actually, the existence of the subjective MM is an indirect-causality used by human brains.

Similarly, I can observe a human brain 2O-processing 2O-information in a U-system. When I am observing this human brain, this human brain acts as if that it has a subjective MM. So, I can postulate that this human brain has a subjective MM. Actually, the existence of the subjective MM is an indirect-causality used by my brain. This human brain can be my own brain.

Similarly, in a Non-stochastic/Stochastic Game of Life system, a TM can observe another TM 2O-processing 2O-information. When the former TM observing the latter TM, the latter TM acts as if that it has a subjective MM. So, the former TM postulates that the latter TM has a subjective MM. Actually, the existence of the subjective MM is an indirect-causality used by the former TM. The two TMs can be the same TM.

Only based on the data/information an omniscient-direct-observer (who is located outside of a *finite* direct-parallel-computing-automaton) should be able to get/process, this omniscient-direct-observer is capable to reliably-forecast a finite time direct-parallel-computation based on the direct-function; this omniscient-direct-observer should say that the direct-parallel-computation is forecastably-directly-fated – the omniscient-direct-observer can use a generalized algorithm to reliably/best forecast/calculate/mentally-model the future objective-situation/direct-fate of the direct-parallel-computing-automaton/direct-parallel-computation*.* For example, when a reader reading the present article inside a U-system, this omniscient-direct-observer should say that the (actual) 1O-effect of reading the present article (by this reader) is forecastably-directly-fated.

Let us suppose that a TM’s program within the direct-parallel-computing-automaton is capable to use a general algorithm to reliably-forecast the direct-parallel-computation. Then, we can suppose that there is another TM in the direct-parallel-computing-automaton. Every possible program-input pair can be given to the latter TM’s program, while the former TM’s program should be able to use the general algorithm to forecast whether the latter TM’s program will finish running, or continue to run forever. Under this setting, the general algorithm can solve the halting problem for all possible program-input pairs. However, such a general algorithm cannot exist [34], which means that our first supposition is counterfactual. So, according to computability theory, it is impossible for a TM’s program (within the direct-parallel-computing-automaton) to use a general algorithm to reliably-forecast the direct-parallel-computation; the TM’s program should say that the direct-parallel-computation is unforecastably-directly-fated – it is impossible for the TM’s program to use a general algorithm to reliably forecast/calculate the future objective-situation/direct-fate of the direct-parallel-computing-automaton/direct-parallel-computation. (So, the TM’s program itself is not a general algorithm to reliably-forecast the direct-fate – the TM’s program has no way to use itself as a general algorithm to *always* reliably-forecast the direct-fate. The TM’s program itself will know the direct-fate after it happens.) (Imagine a determinist U-system where a bunch of agents/TMs do stuff but cannot fully predict their future because of having limited capabilities. (See <https://twitter.com/_fernando_rosas/status/1442932997662015488>) )

For example, if a TM’s program in a Non-stochastic/Stochastic Game of Life system discovered the direct-function of the system, the TM’s program should say that the direct-parallel-computation is unforecastably-directly-fated.

Another example, when a reader is reading the present article inside a U-system, this reader should say that the (actual) 1O-effect of reading the present article (by this reader) is unforecastably-directly-fated.

If a TM’s program can use a general algorithm to reliably-forecast the direct-parallel-computation, the TM’s program can make a decision based on this algorithm/forecast, and can explain this decision based on this algorithm/forecast (e.g., “Based on a general algorithm, I reliably-forecasted that I would choose this option, that’s why I choose this option.”). But in fact, it is impossible for a TM’s program to use a general algorithm to reliably-forecast the direct-parallel-computation. So, it is impossible for a TM’s program to make a decision based on such a reliable-forecast. That’s why every TM’s program has to use its indirect-causalities/indirect-SM to *explain* its own decision.

For example, a TM’s program might say that “I can't reliably-forecast the option (which I will choose) based on a general algorithm. So, I have to choose the option based on an indirect-causality*.*”. In this case, an omniscient-direct-observer should be able to reliably-forecast which indirect-causality will be mentally chosen by this TM’s program to explain its decision. But the TM’s program itself is unable to reliably-forecast which indirect-causality will be mentally chosen by itself to explain its decision, before the indirect-causality is actually mentally chosen by the TM’s program. Mentally choosing an indirect-causality to explain its decision, is actually the second decision for the TM’s program to make. The indirect-causality which is mentally chosen by the TM’s program to explain its first decision, is not the 1O-cause for the TM’s program to make the first decision, but only a 2O-cause for the TM’s program to make the first decision. The TM’s both decisions are actually made by the direct-function, not by *the TM’s program “itself” (as the 2O-subject-ghost/subjective-theory-ghost)* – this is obvious from the viewpoint of an omniscient-direct-observer. So, either decision does not change the objective-state-evolution of the objective-theory. In this sense, which indirect-causality is mentally chosen by the TM’s program to explain its first decision, does not actually matter. In other words, the 2O-cause for the TM’s program to make the first decision, does not actually matter – either decision does not actually matter.

If a human brain can accept that a direct-parallel-computation is forecastably-directly-fated/unforecastably-directly-fated in case that the complexity of the direct-parallel-computing-automaton is relatively *low* (e.g., a U-system which includes a cerebral organoid; a Non-stochastic/Stochastic Game of Life system which includes a simple TM), then, logically speaking, this human brain should also accept that a direct-parallel-computation is forecastably-directly-fated/unforecastably-directly-fated in case that the complexity of the direct-parallel-computing-automaton is relatively *high* (e.g., a U-system which includes one human brain; our cosmos).

When a TM’s program uses the indirect-SM to compute, it has a much lower computational complexity than using the direct-SM to compute.

When the complexity of a direct-parallel-computing-automaton is relatively high, a human brain tends to switch to use the indirect-SM (instead of the direct-SM/mixture-SM) to model the direct-parallel-computing-automaton – I agree that this tendency is annoying.

Only based on the data/information a direct-observer should be able to get/process, our cosmos evolves like following a finished script/story/book/simulation which described the objective-state-evolution of every BB. I am following this script/story/book/simulation in real time. No one in the direct-parallel-computing-automaton has read/watched this script/story/book/simulation beforehand.

When my brain is reading/watching this script/story/book/simulation, indirect-causalities are automatically/unintentionally emerged/created based on the past plots in this script/story/book/simulation, to be used to unreliably forecast/calculate/guess/bet/foresee/reason the upcoming plot in this script/story/book/simulation. Postulating/perceiving/imagining itself to be the protagonist in this script/story/book/simulation, my brain automatically/unintentionally 2O-makes 2O-decisions based on the unreliable forecast/calculation/guess/bet (of the indirect-SM), to 2O-control/2O-drive the protagonist in this script/story/book/simulation.

The objective-state-evolution of the plots of this script/story/book/simulation (which cannot be reliably-forecasted by the objective/physical construction of my brain based on the past plots) is represented/simulated/modeled by the direct-SM of my brain.

The indirect-SM uses indirect-causalities; the direct-SM uses direct-function. The indirect-SM is decision-oriented; the direct-SM is not decision-oriented. The indirect-SM is a pareidolia constructed by the direct-parallel-computation; the direct-SM is not a pareidolia.

Using a single mathematical function (i.e., the direct-function), the direct-SM is a coherence theory of truth, or in other words, the direct-SM is not self-contradictory.

As a MM, an indirect-causality might be contradictory to another indirect-causality. Using a set of indirect-causalities, usually a TM’s indirect-SM is not a coherence theory of truth, or in other words, usually a TM’s indirect-SM is self-contradictory.

For a TM, its direct-SM is a belief system; its indirect-SM is another belief system.

A TM plans its pending action, based on its conceptualized (aka modeled/abstracted/summarized/imagined/narrated/mentally-visualized/theorized) union (aka collection) of coarse-grained 2O-categories of situations to model/represent an uncertain future state of its indirect-SM. For example, “I will catch the last bus tonight” and “I will miss it” are a union of two coarse-grained 2O-categories. Each 2O-category roughly summarizes uncountable actual situations. Each 2O-category is a (subjective) stereotype. Uncountable actual situations are subjectively/mentally divided into a limited number of coarse-grained 2O-categories. Each 2O-category is a potential/mental/intracorporeal potential-outcome/situation-option/branch. Each 2O-category is actually a *large-scale-SM* regarding an overall future situation for the TM; each large-scale-SM is a symbol being used by the indirect-SM.

When a TM forecasts the future based on the 2O-categories of situations and the TM’s indirect-causalities, its forecast is actually rough/unreliable/stereotyped/coarse-grained/naïve. For example, when a TM imagines/forecasts/calculates/guesses/bets “what would happen if I disappear?”, the TM might imagine a number of potential/mental/intracorporeal potential-outcomes/situation-options/branches. What will actually happen if the TM disappears, only depends on the actual state of the direct-parallel-computing-automaton at the moment the TM disappears. A direct-observer can only reliably-forecast it by actually simulating it. Actually, when a direct-observer simulates it, the direct-observer needs to precisely know when the TM disappears, and how the TM disappears. It might make a big difference if the TM disappears at a slightly different time, or disappears at a slightly different way – butterfly effect. (For example, if I can somehow objectively move my finger in a slightly different way (comparing to the way my finger actually moves) like what a direct-breaker can do, it might make a big difference to the objective-state-evolution of our cosmos, due to butterfly effect.) So, from the viewpoint of the TM, what will actually happen if the TM disappears, at some degree depends on when the TM disappears, and at some degree also depends on how the TM disappears. But the TM is incapable to imagine/calculate/forecast/guess/bet the future at this level of precision (based on the 2O-categories of situations, and based on the TM’s indirect-causalities) – both the 2O-categories (of situations) and the indirect-causalities are actually too rough/coarse-grained to make a precise/reliable/fine-grained forecast. On the other side, just because the 2O-categories (of situations) are rough enough, the TM can match a real-world situation to a coarse-grained 2O-category easily enough in practice, so that the TM can use an indirect-causality (which uses this 2O-category as the 2O-cause situation) to unreliably-forecast its 2O-effect situation in practice. Both the indirect-causality and the unreliable-forecast (based on this indirect-causality) are based on Bayesian probability. For example, because “I smile to a person” and “I do not smile to a person” are two 2O-categories (of situations) which are rough enough, I can match my real-world behavior with one of them easily enough in practice, so that I can use an indirect-causality “if I smile to a person, this person tends to smile to me too” to unreliably-forecast that the other person has a high probability to smile to me, because I am smiling to her/him in real world. On the other side, both this indirect-causality and the two 2O-categories (of situations) are too rough/coarse-grained to make a precise/reliable/fine-grained forecast regarding what the other person will exactly do. In the real world, what the other person will exactly do, actually depends on innumerable factors (e.g., the specific way I smile; how handsome I am; the roles we are playing in the scenario (e.g., am I a customer to her/him?); all the previous interactions between she/he and me in the real world; all her/his previous life story in the real world; what she/he is exactly thinking about in her/his mind (e.g., whether she/he wants to get some help from me)) – that’s why it’s impossible to make a precise/reliable/fine-grained forecast in the real world.

From the viewpoint of the TM, based on its current knowledge/ignorance, each 2O-category has the 2O-libertarian-freedom to happen in the future. Being the direct-parallel-computation, the actual future is directly-fated; the objective-state-evolution of the TM’s direct-SM is directly-fated. But being part of the direct-parallel-computation, the 2O-processing of the TM’s program is incapable to forecast which 2O-category will actually happen in the future, so it has to use a union of two or more 2O-categories together as a MM to model/represent a future situation. So, a union of 2O-categories of situations of its indirect-SM (in the future) is used to handle the uncertainty in the TM’s forecast of an uncertain future state of its indirect-SM.

When a TM’s program uses its indirect-SM to unreliably forecast/calculate/guess/bet/foresee/reason the future, among the union of all the unreliably forecasted/calculated/guessed/betted 2O-categories of future situations, if the TM’s program wishes a specific 2O-category (i.e., a 2O-good 2O-category) to happen, it searches through its indirect-causalities, until it finds a rough 2O-cause (which is a 2O-category of situation) for that specific 2O-category in an indirect-causality (which is a pair of rough 2O-cause and rough 2O-effect), and then the TM’s program tries to 2O-make the rough 2O-cause to happen, while being unsure about the (actual) *1O-effect* of its own (actual) *1O-action (akan objective-state-evolution)* before the 1O-effect (actually) 1O-happens, and also being unsure about the 1O-effect of its *other possible 2O-actions (which won’t 1O-happen in the TM’s direct-parallel-computing-automaton)*. (For example, right now, a human is unsure about the 1O-effect of a glass of wine she is going to drink, but she will know that later. She is unsure about what she would be doing right now – if she didn’t drink too much wine last night.) During this process, 2O-information is being 2O-processed by the TM’s program. According to computability theory, only based on the data/information the TM’s program should be able to get/process, the TM’s program itself should say that this process is unforecastably-directly-fated. Only based on the data/information a direct-observer should be able to get/process, the direct-observer should say that this process is forecastably-directly-fated. After this process, if that specific 2O-category actually happens, then it means that the specific 2O-category is directly-fated to happen. In the context of the TM’s indirect-SM, the TM’s program successfully 2O-made the specific 2O-category to happen. In the context of the TM’s direct-SM, the TM’s program did not 1O-make the specific 2O-category to happen, because the specific 2O-category had no way to 1O-avoid happening from the beginning, although the TM’s program was unaware of this fact.

Similarly, if a TM’s program somehow wishes to 2O-avoid a specific 2O-category (i.e., a 2O-bad 2O-category) to happen, and if this specific 2O-category actually does not happen, then it means that this specific 2O-category is directly-fated to not happen. In the context of the TM’s indirect-SM, the TM’s program successfully 2O-avoided the specific 2O-category. In the context of the TM’s direct-SM, the TM’s program did not 1O-avoid the specific 2O-category, because the specific 2O-category had no way to actually happen from the beginning, although the TM’s program was unaware of this fact, and that’s why the TM’s program mathematically-modeled/believed/assumed/postulated that the specific 2O-category had a nonzero Bayesian probability to happen. Everything done by the TM’s program to 2O-avoid the specific 2O-category, was actually unavoidable/directly-fated – even though the TM’s program doesn’t know this secret. Everything done by the TM’s program to 2O-avoid the specific 2O-category, actually was done by the TM’s program automatically/unintentionally, because the TM’s program had no way to not do it. The TM’s program did something in order to 2O-avoid the specific 2O-category (to happen), and then the TM’s program mathematically-models/believes/assume/postulates that it successfully 2O-avoided the specific 2O-category by its own action – this MM/belief/assumption/postulation is an indirect-causality which is actually incorrect/counterfactual/insane/superstitious. Analogously, if I pray to pass an exam, and then I pass the exam, it can’t prove that my prayer actually avoided my failing in the exam, although it seems like that my prayer avoided my failing in the exam. “My prayer avoided my failing in the exam” is a MM/belief/assumption/postulation/indirect-causality which is actually incorrect/counterfactual/insane/superstitious. My prayer was actually unavoidable/directly-fated, no matter my brain knows/accepts it or not.

The situation “a TM’s program can actually 1O-do something other than what it actually 1O-does” is 2O-possible but 1O-impossible. This situation is counterfactual. A TM’s program can actually 1O-do something other than what it actually 1O-does, but only under a *particular* condition, and the *particular* condition is – *if* the TM’s program can actually 1O-do something other than what it actually 1O-does. This particular condition is counterfactual. A TM’s program doesn’t 2O-know what itself will actually 1O-do in advance. So, when it 2O-plans for the future, it 2O-imagines/2O-evaluates two or more possible potential-outcomes/situation-options/2O-actions of itself. Without the help from an actual direct-breaker (of the direct-parallel-computing-automaton), at most one of these possible 2O-actions (of itself) is not counterfactual (i.e., other possible 2O-actions can only happen in some different direct-parallel-computing-automatons), which means that the TM’s program (counterfactually) 2O-supposes/2O-imagines (beforehand) that it can actually 1O-do something other than what itself actually 1O-does in the direct-parallel-computing-automaton. Then, following the direct-function of the direct-parallel-computing-automaton, the TM’s program is directly-fated to 2O-choose/2O-decide to 1O-do the directly-fated action. We 2O-believe/2O-imagine that the TM’s program 2O-chooses/2O-decides to 1O-do something. After the TM’s program actually 1O-does what it actually 1O-does, based on this knowledge, the TM’s program 2O-knows *which* 2O-action (of itself) is not counterfactual, and the TM’s program should 2O-agree that it can’t actually 1O-do anything other than what it actually 1O-does, unless the TM was in a different direct-parallel-computing-automaton which has a different direct-function or initial state.

In the context of a TM’s indirect-SM, every TM's program can 2O-choose/2O-decide to do something based on its 2O-forecast. It looks as if that the actual designer of each TM's program (if a TM’s program was intentionally designed by a designer) 2O-assumes that the TM’s program can 2O-choose/2O-decide to do something based on its 2O-forecast. When we are using our indirect-SM, it looks as if that every TM 2O-believes/2O-imagines that a TM’s program can 2O-choose/2O-decide to do something based on its 2O-forecast. (For example, within a Non-stochastic Game of Life system, although a TM’s program can’t *actually* choose/decide to do anything, we human brains can (counterfactually) 2O-believe/2O-imagine that, the TM’s program can 2O-choose/2O-decide to do something based on its 2O-forecast. We can accurately simulate/2O-forecast the TM's 1O-action/objective-state-evolution based on its program and its input. Another example, when some robots are playing a (robot) football game in a U-system, although a robot's executable program can't actually *choose/decide* to do anything, we human brains can (counterfactually) 2O-believe/2O-imagine that, the robot's executable program can 2O-choose/2O-decide to do something based on its 2O-forecast. We can reliably simulate/2O-forecast the robot's 1O-action/objective-state-evolution based on its executable program and its input.) In the context of the indirect-SM, in order for the “choosing/deciding” to be “*actual*”, the “choosing/deciding” shouldn't be directly-fated; the so-called “2O-choosing/2O-deciding” as a concept is only a mental imagination/visualization/pareidolia of *a TM’s indirect-SM (e.g., the indirect-SM of the designer)*. In an directly-fated direct-parallel-computing-automaton, there is no subject which is qualified to actually *choose/decide* to 1O-do anything. The “directly-fated 2O-choosing/2O-deciding” is not the *actual* “choosing/deciding”. There shouldn’t be any actual “choosing/deciding” in the context of our direct-SM; the symbol “choosing/deciding” should be meaningless in the context of our direct-SM.

During the direct-parallel-computation of a direct-parallel-computing-automaton, at any given time, every BB must have a *state* (i.e., a set of objective/physical quantities, such as position and momentum), and only has *one* state;a BB cannot have two or more different states at the same time. That’s why physicists bother to measure the state of a BB. Neither Heisenberg’s uncertainty principle nor the many-worlds interpretation implies that a BB has two or more different states at a given moment (in *this* world among the many worlds).

When we say that a BB has *one* state at a given moment, it means that the BB does not have any other state at this moment. At this moment, among infinite number of all possible states, this BB only have one of them. This BB cannot have two or more states at this moment. According to Heisenberg’s uncertainty principle, a TM (e.g., the brain of a physicist) inside the direct-parallel-computing-automaton cannot measure the state of this BB without uncertainty – it does not mean that this BB actually/objectively has two or more states at this moment.

At every moment, the *one* state a BB has, is directly-fated by the direct-function and the initial state of the direct-parallel-computing-automaton. Any indirect-object (e.g., the BB itself) does not have the ability/libertarian-freedom to subjectively choose whichstate the BB should have (from infinite number of all possible states) – every BB within the indirect-object is 1O-controlled/1O-driven by the direct-function too.

If we suppose that a BB is capable to 1O-do something other than what it actually 1O-does, and if we also suppose that this BB actually 1O-does something other than what it actually 1O-does, then actually this BB is still 1O-doing what it actually 1O-does, as long as we don’t 2O-suppose that this BB is 1O-doing two different things (i.e., 1O-having two different states) at the same time. Even if we 2O-suppose that this BB is actually 1O-doing two different things at the same time, actually this BB is still 1O-doing what it actually 1O-does. The situation “a BB can actually 1O-do something other than what it actually 1O-does” is paradoxical/counterfactual. A BB can actually 1O-do something other than what it actually 1O-does, but only under a *particular* condition, and the *particular* condition is – *if* the BB can actually 1O-do something other than what it actually 1O-does. This particular condition is counterfactual. We don’t 2O-know what a BB will actually 1O-do in advance. So, when we 2O-plan for the future, we 2O-imagine/2O-evaluate two or more possible 2O-actions of the BB. Without the help from an actual direct-breaker (of the direct-parallel-computing-automaton), at most one of these possible 2O-actions (of the BB) is not counterfactual, which means that we (counterfactually) 2O-suppose/2O-imagine (beforehand) that the BB can actually 1O-do something other than what it actually 1O-does in the direct-parallel-computing-automaton. Then, following the direct-function of the direct-parallel-computing-automaton, the BB is directly-fated to 2O-choose/2O-decide to 1O-do the directly-fated action. We 2O-believe/2O-imagine that the BB, the indirect-object/TM which 2O-contains the BB, the direct-function, or the direct-parallel-computing-automaton 2O-chooses/2O-decides to 1O-do something. After the BB actually 1O-does what it actually 1O-does, based on this knowledge, we 2O-know *which* 2O-action (of the BB) is not counterfactual, and we should 2O-agree that the BB can’t actually 1O-do anything other than what it actually 1O-does, unless the BB was in a different direct-parallel-computing-automaton which has a different direct-function or initial state.

So, every BB is incapable/powerless to 1O-do anything other than what it actually 1O-does (in the direct-parallel-computation), and is incapable/powerless to 1O-have any state other than what it actually 1O-has (in the direct-parallel-computation).

So, every indirect-object (in a direct-parallel-computing-automaton) is incapable/powerless to 1O-do anything other than what it actually 1O-does (in the direct-parallel-computation). This is the view of fatalism [27]. When I am using this view, it feels like that I am in a finished-script/finished-story/finished-book/finished-simulation/lucid-dream, and I have no way to change the objective-state-evolution of this finished-script/finished-story/finished-book/finished-simulation/lucid-dream – this is a detached/dissociative/meditative experience.

When we say that (inside a direct-parallel-computing-automaton) a TM’s program can 2O-avoid a specific 2O-category (of situations), it means that this specific 2O-category is supposed to be avoidable, from the TM’s subjective-perspective. The TM’s such supposition is counterfactual.

What a TM’s program 2O-does, actually is not 1O-done by the TM’s program itself.

The indirect-SM 2O-postulates that a TM’s 2O-action (i.e., the 2O-action of every BB inside the TM) is 2O-driven/2O-controlled/2O-caused/2O-decided/2O-chosen/branched by the TM’s program, the 2O-decision of the TM’s program, or the TM’s indirect-SM. The TM’s program, the 2O-decision of the TM’s program, or the TM’s indirect-SM is only a 2O-cause of the TM’s 2O-action; it’s only an indirect-causality – this indirect-causality is only a postulation of common human’s theory of mind. (In an indirect-SM, *the TM’s program,* *the 2O-decision of the TM’s program or the TM’s indirect-SM (as the 2O-cause symbol)* has a nonzero Bayesian probability to 2O-cause the TM’s 2O-action (as the 2O-effect symbol) to 2O-change. But actually, in the objective-theory, *the TM’s program, the 2O-decision of the TM’s program or the TM’s indirect-SM (as the 2O-cause situation)* and the TM’s 2O-action (as the 2O-effect situation) have no causal relationship.) Started from the initial state of the direct-parallel-computing-automaton, the 1O-action/objective-state-evolution of every BB within the TM is only directly-fated/1O-controlled/1O-driven/1O-caused/1O-decided/1O-chosen/1O-stated by the direct-function. So, the 1O-action/objective-state-evolution of every BB within the TM is 1O-unavoidable. So, the specific 2O-category (of situations) is 1O-unavoidable. Similarly, when we are reading the finished script/story/book of a documentary film about a football game, we know that any upcoming plot in this script/story/book is 1O-unavoidable, although a character in this script/story/book does not 2O-know that. (The 1O-action/objective-state-evolution of any BB within a TM is only directly-fated by the direct-function, not 1O-controlled/1O-driven/1O-caused/1O-decided/1O-chosen/branched by the TM’s program, the 2O-decision of the TM’s program, nor the TM’s indirect-SM. (Or in other words, the objective-state-evolution of every BB is completely autonomous.) So, when a TM is approaching another TM, whether they will have a physical contact, is only directly-fated by the direct-function, not 1O-controlled/1O-driven/1O-caused/1O-decided/1O-chosen/branched by any TM’s program, the 2O-decision of any TM’s program, nor any TM’s indirect-SM.)

For example, in a Nostochastic Game of Life system, when a Gosper glider gun is shooting another indirect-object, the 1O-action/objective-state-evolution of any BB within the two indirect-objects is only directly-fated by the direct-function, not 1O-controlled/1O-driven/1O-caused/1O-decided/1O-chosen/branched by any indirect-object. The 1O-action/objective-state-evolution of any BB within the latter indirect-object, is not 1O-controlled/1O-driven/1O-caused/1O-decided/1O-chosen/branched by any BB within the Gosper glider gun. It looks like that an Aristotelian-force from the Gosper glider gun acts/exerts on the latter indirect-object to change the latter indirect-object's behavior.

Another example, after my finger follows a decision of my brain to press the button of a device to collide two high-energy photons, the two photons should disappear, and a pair of electron-positron should appear [86]. The 1O-action/objective-state-evolution of any of these four BBs is only directly-fated by the direct-function, not 1O-controlled/1O-driven/1O-caused/1O-decided/1O-chosen/branched by my brain’s program, the 2O-decision of my brain’s program, nor my brain’s indirect-SM. The 1O-action/objective-state-evolution of one of these four BBs, is not 1O-controlled/1O-driven/1O-caused/1O-decided/1O-chosen/branched by the 1O-action/objective-state-evolution of any other BB. One of these four BBs is not 1O-controlled/1O-driven by any other BB.

Another example, in a U-system, when my finger follows a decision of my brain to push/accelerate/launch/control/drive a stationary billiard ball (i.e., when an Aristotelian-force/Newtonian-force from my finger acts/exerts on the stationary billiard ball to push/accelerate/launch/control/drive it), the 1O-action/objective-state-evolution of any BB within the finger/ball is only directly-fated by the direct-function, not 1O-controlled/1O-driven/1O-caused/1O-decided/1O-chosen/branched by my brain’s program, the 2O-decision of my brain’s program, nor my brain’s indirect-SM. The 1O-action/objective-state-evolution of any BB within the ball, is not 1O-controlled/1O-driven/1O-caused/1O-decided/1O-chosen/branched by any BB within my finger. Any BB within the ball, is not 1O-controlled/1O-driven by any BB within my finger.

(Analogously, when a wind pushes/accelerates/launches/controls/drives a stationary sail (i.e., when an Aristotelian-force/Newtonian-force from a wind acts/exerts on the stationary sail to push/accelerate/launch/control/drive it), the 1O-action/objective-state-evolution of any BB within the wind/sail is only directly-fated by the direct-function, not 1O-controlled/1O-driven/1O-caused/1O-decided/1O-chosen/branched by wind/God, nor the 2O-decision of wind/God. The 1O-action/objective-state-evolution of any BB within the sail, is not 1O-controlled/1O-driven/1O-caused/1O-decided/1O-chosen/branched by any BB within the wind. Any BB within the sail, is not 1O-controlled/1O-driven by any BB within the wind.)

My brain’s program feels like that the movement of the BBs within the finger/ball is controlled/driven/caused/decided/chosen/branched by the 2O-decision of my brain’s program – this is a superstition.

Analogously, in “Schrodinger’s cat” thought experiment [117][118], the program of Schrodinger’s brain feels like that the objective-state-evolution of the cat’s BBs are controlled/driven/caused/decided/chosen/branched by the objective-state-evolution of a radioactive atom’s BBs – this is a superstition. The program of Schrodinger’s brain believes/assumes/postulates that the objective-state-evolution of the BBs of the radioactive atom (as the 2O-cause situation) has a very high Bayesian probability to 2O-control/2O-drive/2O-cause/2O-decide/2O-choose/2O-branch the objective-state-evolution of the BBs of the cat (as the 2O-effect situation).

Analogously, in Skinner’s experiment [96], the program of a pigeon’s brain feels like that the behavior of the pigeon’s body controls/drives/causes/decides/chooses/branches the presentation of food – this is a superstition. Analogously, in this experiment, the program of Skinner’s brain feels like that the clock controls/drives/causes/decides/chooses/branches the presentation of food to the pigeon – this is a superstition. Actually, the direct-function 1O-controls/1O-drives/1O-causes/1O-decides/1O-chooses the movement of the clock, the presentation of food, the behavior of the pigeon’s body, the learning of the pigeon’s brain, the learning of Skinner’s brain, and the learning of my brain. Any indirect-causality which conflicts with the direct-SM/maximized-patikulamanasikara-experience, is actually a superstition. The pigeon’s brain, Skinner’s brain, and my brain are all directly-fated to use/learn some indirect-causalities/superstitions. *My brain (as a 2O-subject-ghost/indirect-object)* is still directly-fated to use/learn some indirect-causalities/superstitions in the *future*, although *my brain (as a 2O-subject-ghost/indirect-object)* currently knows that these indirect-causalities/superstitions are indirect-causalities/superstitions. *My brain (as a 2O-subject-ghost/indirect-object)* has no way to actually/objectively break/interruptthe direct-fate– that’s why the direct-fate is called the direct-fate.

If I am crossing a road right now, do I still need to look at both sides of the road? The present article is unable to provide a direct answer for this question. (Besides, the control logic of my brain’s program actually has no way to *reliably-forecast* whether I will actually look at both sides of the road.) However, the answer for this question does not matter; the answer for this question will not make any actual difference; the answer for this question will not 1O-change anything. Whether I will actually look at both sides of the road, is directly-fated by the direct-function. So, *whether I will actually look at both sides of the road (as the 2O-effect)*, is not 1O-controlled/1O-driven/1O-caused/1O-decided/1O-chosen/branched by *my brain’s answer for this question (as the 2O-cause)*, *my brain’s cognition regarding this question (as the 2O-cause)*, or *the current 2O-decision of my brain’s program (as the 2O-cause).* In other words, *my body’s 1O-action/objective-state-evolution (as the 2O-effect)* is not 1O-controlled/1O-driven/1O-caused by *my brain’s answer for this question (as the 2O-cause)*, *my brain’s cognition regarding this question (as the 2O-cause)*, or *any 2O-decision of my brain’s program (as the 2O-cause)*. My brain’s answer for this question, my brain’s cognition regarding this question, and every 2O-decision of my brain’s program, are directly-fated by the direct-function. The 2O-decision of my brain's program, is actually a MM (used by my brain’s program) which is fictionally postulated by my brain’s program (i.e., my brain’s theory of mind module)*.* *Whether I will actually look at both sides of the road (as the 2O-effect)*, is 2O-controlled/2O-driven by *the control logic of my brain’s program (as the 2O-cause)*. But my brain (as the 2O-subject) has no 1O-control over *the control logic of my brain’s program (as the 2O-object).* Although my internal monologue narrates that “my brain controls/drives/causes/decides/chooses/branches its own action” in natural language automatically/unintentionally – it actually means that “my brain (as the 2O-subject/2O-cause) 2O-controls/2O-drives/2O-causes/2O-decides/2O-chooses/branches its own action (as the 2O-object/2O-effect)”. Obviously, this is just my brain’s postmortem explanation based on the context of my indirect-SM. It takes 7 s for the human brain to do such a postmortem explanation for a motor 2O-decision. The clue is that it takes 7 s for the human brain to realize a motor 2O-decision [94], which means that it takes 7 s for the human brain to integrate/add/insert the new motor 2O-decision into the existing context of its indirect-SM (or in other words, it takes 7 s for the human brain to explain the new motor 2O-decision based on the existing context of its indirect-SM; it takes 7 s for the human brain’s theory of mind module to estimate/judge/know (based on the existing context of its indirect-SM) the new motor 2O-decision).

*The control logic of my brain’s program (as the 2O-cause)* is generating the present article (as the 2O-effect) based on the context of my indirect-SM automatically/unintentionally – my internal monologue (as the 2O-cause) is narrating the present article (as the 2O-effect) in natural language automatically/unintentionally. *The control logic of my brain’s program (as the 2O-cause)* is generating my life story (as the 2O-effect) based on the context of my indirect-SM automatically/unintentionally – my internal monologue (as the 2O-cause) is narrating my life story (as the 2O-effect) in natural language automatically/unintentionally. My life story is about the 2O-subject ghosts.

When a TM’s program is reviewing its past experience, the TM’s program can always find uncountable successful cases on 2O-avoiding 2O-categories (of situations). But on the other hand, the TM’s program can also find uncountable failed cases. However, the direct-parallel-computation can 1O-create new indirect-causalities in the TM’s indirect-SM to explain all these failures.

“What is being forecasted by a TM regarding its own future, is the actual future.” When a TM is postulating this, this postulation is a SM.

“What is being forecasted by a TM regarding its own future, is *not* the actual future.” When a TM is postulating this, this postulation is a SM too. When a TM is using this SM, this TM can simulate the actual future by another SM (e.g., the direct-SM). Then, the actual future is like a finished script/story/book/simulation (which described the objective-state-evolution of every BB) for this TM to follow automatically/unintentionally, while this TM is not aware of the upcoming plot (in this script/story/book/simulation) in advance. Let us call this finished script/story/book/simulation the direct-fate. Anything which 1O-follows the direct-fate, is directly-fated. The objective-state-evolution of every BB 1O-follows the finished-script/finished-story/finished-book/finished-simulation/direct-fate/direct-function. Or in other words, the finished-script/finished-story/finished-book/finished-simulation/direct-fate/direct-function 1O-controls/1O-drives the objective-state-evolution of all BBs.

“The direct-parallel-computation is forecastably-directly-fated/unforecastably-directly-fated” and “the direct-parallel-computation is not directly-fated” are two MM-options. Let us call them MM-option-directly-fated-direct-parallel-computation-Positive and MM-option-directly-fated-direct-parallel-computation-Negative respectively.

As a TM in a direct-parallel-computing-automaton, my brain postulates/believes that MM-option-directly-fated-direct-parallel-computation-Negative is counterfactual in the direct-parallel-computing-automaton, although this postulation/belief cannot permanently prevent my brain from using MM-option-directly-fated-direct-parallel-computation-Negative.

A SM is a tool for forecast. The SMs are designed in order to forecast. The SMs are used (by a TM) to forecast the future. As soon as the TM uses a SM, the TM immediately gets the forecast made by this SM. (Some forecasts are (unnoticeably) wishful and hence fascinating/addictive.) Whenever the TM is using a SM, the TM is mentally living in the future as being forecasted by this SM. That’s why “mentally living in the present moment” is difficult for a brain.

Each SM has its neural substrate/underpinning in the brain. Multiple SMs might co-exist in a human brain at the same time. Being a MM, a SM is an abstract information/knowledge about what a human knows, rather than what she directly sees in her local environment, or what she directly reads from a text. “There are a thousand Hamlets in a thousand people's eyes.”

For a TM in a direct-parallel-computing-automaton, the direct-parallel-computing-automaton is the TM’s objective-theory.

“I am 1O/actually living in the objective-theory; I am *not* 1O/actually living in the reality of any other SM of mine” and “I am 1O/actually living in the objective-theory; I am *also* 1O/actually living in the reality of every other SM of mine” are two MM-options. Let us call them MM-option-single-objective-theory-Positive and MM-option-single-objective-theory-Negative respectively.

Just like physicists, my brain believes/postulates that I am only actually living in the objective-theory, and the objective-theory-SM is only a MM/representation/simulation of the objective-theory; the objective-theory is more actual/real than its SM. In this sense, I believe/postulate that the situation in the objective-theory-SM is 1O/actual/real/objective, while the situation in any other SM of mine is 2O/virtual/imagined/perceived/subjective.

Logically speaking, everything a human knows, is somehow generated by her objective-theory (which includes her objective brain); all her SMs are somehow generated by her objective-theory, so they might be counterfactual.

The many-worlds interpretation is a SM. Let us call it the many-worlds SM.

When a TM postulates that all other conventionally-called “worlds” in the many-worlds SM only exist subjectively (in the TM’s subjective-theory), instead of existing objectively (in the TM’s objective-theory), this is another SM. Let us call it the one-world SM.

The many-worlds SM and the one-world SM are two MM-options.

If I postulate that all other conventionally-called “worlds” in the many-worlds interpretation only exist subjectively, this is a new interpretation of quantum mechanics. Let us call it the many-subjective-worlds interpretation.

Both the many-subjective-worlds interpretation and De Broglie–Bohm interpretation use the one-world SM.

In the many-worlds interpretation or De Broglie–Bohm interpretation, “God (i.e., the actual designer of a U-system – if the U-system was intentionally designed by a designer) does not play dice”.

(Instruction for readers: I believe that the view “the cosmos is a (fatalistic) state machine” is compatible with MWI, many-subjective-worlds interpretation *and* De Broglie–Bohm interpretation. However, if you believe that the view “the cosmos is a (fatalistic) state machine” is *only* compatible with De Broglie–Bohm interpretation, then you should use De Broglie–Bohm interpretation (instead of MWI or the many-subjective-worlds interpretation). For example, if you can’t accept the aforementioned view (i.e., “the cosmos is a (fatalistic) state machine”) when you are using MWI, please use De Broglie–Bohm interpretation instead of MWI. If you can’t accept De Broglie–Bohm interpretation either, then that’s not my problem – you need to work it out by yourself (before formally/seriously challenging the aforementioned view). In other words, when you want to formally/seriously challenge the aforementioned view, it means that you want to formally/seriously challenge De Broglie–Bohm interpretation, because De Broglie–Bohm interpretation means that the cosmos is a (fatalistic) state machine. In other words, if you just don’t like the aforementioned view (but don’t want to formally/seriously challenge the aforementioned view), then you don’t need to formally/seriously challenge De Broglie–Bohm interpretation. It’s fine if you don’t like a view – you can simply leave it there. It’s not easy for you to formally/seriously challenge a view. That’s why both MWI and De Broglie–Bohm interpretation exist today. I don’t need to defend the aforementioned view or De Broglie–Bohm interpretation, if you don’t like them. It’s not easy for you to formally/seriously challenge them.)

In the many-subjective-worlds interpretation, we can imagine that a direct-observer can restore the state of the direct-parallel-computing-automaton to an earlier state in the history, and then restart the objective-state-evolution of the direct-parallel-computing-automaton from that state. In this thought experiment, if the objective-state-evolution of the 1O-parrallel-computing-automaton keeps the same as the history, then “God does not play dice”. (Let us call this scenario the non-stochastic many-subjective-worlds interpretation.) Otherwise, “God plays dice”. (Let us call this scenario the stochastic many-subjective-worlds interpretation.)

For a TM, “God plays dice” and “God does not play dice” are two MM-options, let us call them MM-option-1O-stochastic-Positive and MM-option-1O-stochastic-Negative respectively.

Here we are imagining God as an agent who controls everything else – everything else (e.g., the direct-function; individual BBs) is not an agent.

The MM-option-directly-fated-direct-parallel-computation-Positive is compatible with the many-worlds SM, the one-world SM, the MM-option-1O-stochastic-Positive or the MM-option-1O-stochastic-Negative.

Logically speaking, quantum effects can follow the exhaustive-direct-function, while the exhaustive-direct-function is 1O-non-stochastic. In this case, the exhaustive-direct-function handles every BB uniquely. (Here the one-world SM and MM-option-1O-stochastic-Negative are being used.) If a TM does not have access to this exhaustive-direct-function in advance, the TM cannot use this 1O-non-stochastic exhaustive-direct-function to forecast the activity of a BB 1O-non-stochastically. That’s why the activity of a BB looks 2O-truly 2O-random/2O-stochastic to this TM. Due to quantum effects, a TM is capable to make a 2O-truly 2O-random/2O-stochastic decision which can’t be forecasted by any TM within the U-system, but “2O-truly 2O-random/2O-stochastic” does not necessarily mean “1O-libertarian-free”.

Let us suppose that a direct-observer (who is located outside of a U-system) has access to this U-system’s 1O-non-stochastic exhaustive-direct-function *in advance*. Based on her knowledge, the direct-observer should say that quantum effects are *predetermined* by this exhaustive-direct-function 1O-non-stochastically.

## Indirect-geometric-model vs. 1O-geometric-model

There is strong psychological evidence that human brains parse visual scenes into part-whole hierarchies and model the viewpoint-invariant spatial relationship between a part and a whole as the coordinate transformation between intrinsic coordinate frames that they assign to the part and the whole [19] [20].

If a TM has the subjective conscious experience of being immersed within a viewpoint-invariant spatial structure (from the viewpoint of an observer who is a geometric object being part of this spatial structure), then the spatial structure is the TM’s indirect-geometric-model which represents the spatial structure of the TM’s local environment (if the TM postulates that its local environment has a spatial structure).

A TM’s indirect-geometric-model is relatively stable. A TM can use its indirect-causalities to unreliably forecast/retrodict the objective-state-evolution of the indirect-geometric-model. The TM feels like that the state of the whole indirect-geometric-model is certain at any moment. For example, I feel like that the state of the indirect-geometric-model behind me is certain at this moment, although I do not see it right now.

The indirect-geometric-model describes the spatial structure of a conventionally-called “macroscopic world”.

The indirect-geometric-model is stored in a rat’s hippocampus, to be used in the mental time travel to evaluate potential/mental/intracorporeal path-options during vicarious trial and error [76][77].

For a TM, its indirect-geometric-model is more real than its visual mental image. When a TM is in its lucid-dream, or is using a virtual reality entertainment system, it still has the indirect-geometric-model. If a TM has visual hallucination, the visual hallucination is included in the indirect-geometric-model. The entire indirect-geometric-model is actually/objectively a visual hallucination of the TM.

The indirect-geometric-model is like a film being watched by the TM. The TM postulates/perceives/imagines itself to be the protagonist in this film. The TM’s indirect-SM unreliably forecast/calculates/guess/bet/foresee/reason the upcoming plot of this film based on the data/information in the past plots. The TM’s direct-SM represents/simulates/models the objective-state-evolution of this film.

By default, the semantics of natural language (incorrectly/counterfactually) treats the *private* indirect-geometric-model as the *shared* objective-theory. For example, “I am sitting behind you” actually means that “my avatar/representation is sitting behind your avatar/representation; both avatars/representations are geometric objects within my indirect-geometric-model”. (This is more obvious, when I am actually in my lucid-dream.)

Based on a TM’s knowledge, “my indirect-geometric-model is the *actual* objective-theory” and “my indirect-geometric-model is not the *actual* objective-theory” are two MM-options. Let us call them MM-option-indirect-geometric-model-objective-Positive and MM-option-indirect-geometric-model-objective-Negative respectively.

MM-option-single-objective-theory-Positive and MM-option-indirect-geometric-model-objective-Positive are incompatible. MM-option-single-objective-theory-Negative and MM-option-indirect-geometric-model-objective-Negative are incompatible.

The TM’s indirect-geometric-model is a MM reconstructed/generated from the (sensory) data/information being got/processed by the TM. The indirect-geometric-model is mathematical.

The (sensory) data/information (which is being got/processed by a TM) is not allocentric. But a TM's indirect-geometric-model uses allocentric mapping, in which representations of object positions are stable with respect to observer position; the indirect-geometric-model has allocentric character [21]. For example, when I walk in a garden, I don’t feel like that the trees are walking towards the reverse direction.

In case the TM is a human brain, the TM’s indirect-geometric-model is a three-dimensional Euclidean space, but the three orthogonal coordinate axes of the three-dimensional Euclidean space are not visualized inside the indirect-geometric-model, so the indirect-geometric-model does not look like a textbook example of a three-dimensional Euclidean space; imaginary objects are not visualized inside the TM’s indirect-geometric-model, so a human brain can distinguish imaginary objects from indirect-objects, and can distinguish other SMs from the indirect-geometric-model. An imaginary object (within another SM) is visualized by the TM, using the elements/components of some geometric objects (i.e., the avatars/representations of indirect-objects) within the indirect-geometric-model.

Actually, what a human brain perceives in its indirect-geometric-model, is not a three-dimensional Euclidean space, but only the spatial relationship/situation among some indirect-objects. The 2O-gemetric-SM is a visualized representation of the spatial relationship/situation among these indirect-objects.

Every SM (e.g., the indirect-geometric-model) is being narrated (by cortical language network) in the same way as a lucid-dream/film/script/story/book/simulation or a multiplayer virtual reality entertainment system [22] is being narrated.

If a direct-observer (who is located outside of a direct-parallel-computing-automaton) extracts position information from the states of all BBs, the direct-observer can imagine/visualize a geometric structure which uses the extracted position information as coordinates in a geometrical space (which does not need to be a three-dimensional Euclidean space). Let us call the direct-observer’s imagined/visualized geometric structure the (subjective) 1O-geometric-model. The 1O-geometric-model is the direct-observer’s visual mental image.

(In a Game of Life system, a TM observes its matrix environment as an indirect-observer. What the TM perceives/sees, is the TM’s indirect-geometric-model. When a human brain observes the TM’s matrix environment (on a computer screen) as a direct-observer, what the human brain perceives/sees, is the 1O-geometric-model – it is different from the TM’s indirect-geometric-model.)

The direct-observer believes that, using the direct-function, it can reliably forecast/retrodict the objective-state-evolution of the 1O-geometric-model. So, the direct-observer believes that the state of the 1O-geometric-model is certain at any moment.

In a sense, the 1O-geometric-model describes the spatial structure of a microscopic world. Comparing to the conventionally-called “macroscopic world” (described by the indirect-geometric-model), this microscopic world is closer to the actual world – the direct-parallel-computing-automaton.

The direct-SM is based on the space of the 1O-geometric-model. The objective-theory-SM is not based on any space. The objective-theory-SM is more abstract than the direct-SM.

The symbol “direct-parallel-computing-automaton” has different meanings under the direct-SM or under the objective-theory-SM. When a TM uses the direct-SM, the 1O-paralle-computing-automaton is imagined based on the space of the 1O-geometric-model. When a TM uses the objective-theory-SM, the 1O-paralle-computing-automaton is not imagined based on the space of the 1O-geometric-model.

A TM’s direct-SM is a mental visualization of the TM’s objective-theory-SM.

The spatial structure of human brain’s indirect-geometric-model is a three-dimensional Euclidean space. If the spatial structure of the 1O-geometric-model is also a three-dimensional Euclidean space, the two spatial structures can map to each other, so that every BB, geometric object or indirect-object (under the context of the 1O-geometric-model) can be located within the indirect-geometric-model.

If the 1O-geometric-model is not a three-dimensional Euclidean space, the two spatial structures cannot map to each other, so that no BB, geometric object or indirect-object (under the context of the 1O-geometric-model) can be located within the indirect-geometric-model. But apparently, it does not mean that the conventionally-called “macroscopic world” (described by the indirect-geometric-model) and the microscopic world (described by the 1O-geometric-model) are actually using two different “objective spaces”, or actually using two different set of physical-laws [88][89].

As time goes on, the spatial movement of every BB within the context of the 1O-geometric-model, is 1O-determined by the direct-function. So, the world tube of every indirect-object (within the context of the 1O-geometric-model), is 1O-determined by the direct-function – this statement is contradictory with the indirect-causalities within a TM's indirect-SM.

To a TM, it’s logically possible that all BBs of its objective-theory are in the 1O-geometric-model, and the 1O-geometric-model is actually/objectively a spatial structure (which occupies a physical/objective space), but the TM has no way to prove/disprove that. For example, to a TM within a Game of Life system, it’s logically possible that all BBs of its objective-theory/Game-of-Life-system actually/objectively/directly occupy a two-dimensional space (like what we humans see on the computer screen). Another example, to a TM within a U-system, it’s logically possible that all BBs of its objective-theory/U-system actually/objectively/directly occupy a physical/objective space (which doesn’t need to be a three-dimensional Euclidean space).

When a TM postulates that only itself is actually experiencing a private subjective-theory, this is a SM. When a TM postulates that every TM is experiencing a private subjective-theory, this is another SM. When a TM postulates that no TM is actually experiencing a private subjective-theory, this is another SM. These three SMs are MM-options.

A TM is subjectively experiencing its subjective-theory. What a TM has access to, is always the content of its own subjective-theory. A TM does not have direct access to its so-called “objective-theory” (aka “physical reality”) in its subjective-theory. (This is more obvious, when the TM is actually in its lucid-dream.) A TM has no way to logically 2O-prove/2O-disprove that its so-called “objective-theory” exists objectively. A TM can at most *postulate/imagine* that its so-called “objective-theory” exists objectively. This is the position of solipsism.

When a TM postulates that the so-called “objective-theory” exists objectively, this is a SM. When a TM postulates that the so-called “objective-theory” does not exist objectively, this is another SM. These two SMs are MM-options. Let us call them MM-option-objective-theory-objective-Positive and MM-option-objective-theory-objective-Negative respectively.

Both MM-option-single-objective-theory-Positive and MM-option-single-objective-theory-Negative are incompatible with MM-option-objective-theory-objective-Negative.

In the context of a TM’s direct-SM, the direct-parallel-computation of the objective-theory is *only* 1O-determined by the direct-function; in the context of a TM's indirect-SM, the direct-parallel-computation of the objective-theory is *not* only 2O-determined by the direct-function.

In the TM’s indirect-SM, the TM's indirect-geometric-model is a collection of geometric objects. These geometric objects are being referred by the indirect-SM in real time. In this way, the indirect-SM works as an extension/explanation/understanding of the indirect-geometric-model, and works like an augmented reality on top of the indirect-geometric-model. In this sense, the indirect-SM syncs with the indirect-geometric-model. Alternatively, we can view the indirect-geometric-model as an element/component of the indirect-SM.

In the TM’s direct-SM, geometric objects can be defined under the context of the 1O-geometric-model. These geometric objects are being referred by the direct-SM in real time. In this way, the direct-SM works as an extension/explanation/understanding of the 1O-geometric-model, and works like an augmented reality on top of the 1O-geometric-model. In this sense, the direct-SM syncs with the 1O-geometric-model. Alternatively, we can view the 1O-geometric-model as an element/component of the direct-SM.

The indirect-SM defines the mathematical relation among the geometric objects within the indirect-geometric-model. The direct-SM defines the mathematical relation among the geometric objects under the context of the 1O-geometric-model. These two mathematical relations can be different. Either SM is a MM of the mathematical relation among a set of geometric objects.

According to the nature of the mathematical relation it defined, the indirect-SM can be used (by the TM) to (roughly) forecast/calculate/guess/bet the future, so it can be used to make a decision; in practice usually the direct-SM cannot be used to forecast/calculate/foresee/reason the future, so it cannot be used to make a decision. So, in order to make a decision, the TM has to use the indirect-SM.

When observing/forecasting the direct-parallel-computation of a U-system, an omniscient-direct-observer will believe that, no matter a BB is currently inside the animal body or outside of it, this BB has no 1O-libertarian-freedom during its entire life cycle.The animal brain’s subjective-theory (as a SM) has no way to introduce 1O-libertarian-freedom to any BB (inside this U-system). Otherwise, the outcome of the direct-parallel-computation depends on the animal brain’s subjective-theory, but physicists won’t believe that. Physicists believe that the animal’s subjective-theory depends on the outcome of the direct-parallel-computation.

There is no way to change an animal’s trajectory in a U-system; the animal’s brain has no way to change the animal’s actual trajectory. More generally, there is no way to change the world tube of any indirect-object in this U-system. There is no way to change the directly-fated direct-parallel-computation of this U-system.

The animal’s brain can forecast its own trajectory based on its own knowledge. The omniscient-direct-observer can forecast the direct-parallel-computation (including the animal’s trajectory) based on her knowledge. Regarding the animal’s trajectory, the animal brain’s own forecast should be less accurate than the omniscient-direct-observer’s forecast, because the animal brain has less knowledge than the omniscient-direct-observer. Then, regarding the animal’s future trajectory, the animal brain has less knowledge than the omniscient-direct-observer. So, comparing to the omniscient-direct-observer, the animal brain feels more 2O-libertarian-freedomin the animal’s future trajectory. (When we say that a TM inside a U-system has 2O-libertarian-freedom, it means that the TM is supposed to have 2O-libertarian-freedom from its subjective-perspective. Actually, the TM doesn’t have 1O-libertarian-freedom.) Comparing to the 1O-libertarian-freedom, the 2O-libertarian-freedom is caused by the TM’s lack of knowledge; the 2O-libertarian-freedom represents the TM’s uncertainty when forecasting the time series (let us call it the 1O-time-series) of the position of each BB within the TM itself.

From a TM’s objective-perspective, the extracorporeal-observer observes how the TM works as an ordinary/plain/nonsignificant indirect-object in the direct-SM. The TM’s pending action is modeled/represented/simulated as an internal element/component of the direct-parallel-computation of the direct-SM, not as something (which is like an external force) outside of the direct-parallel-computation of the direct-SM. Because the TM’s pending decision is included by the TM’s intracorporeally simulated direct-parallel-computation of the direct-SM. This intracorporeally simulated direct-parallel-computation (of the direct-SM) is not decision-oriented. The 1O-baseline (of the 1O-time-series of the direct-parallel-computation of the direct-SM) recognized by the TM includes the consequence of the TM’s pending decision.

When a TM analyzes a future physical-event from its objective-perspective, the TM analyzes this physical-event, like analyzing a physical-event which already happened in the past (i.e., suppose that this physical-event will happen at 8am sharp tomorrow, the TM makes a mental time travel [32] into 8am tomorrow, to observe the happening of this physical-event, and to analyze this physical-event right after the happening of this physical-event). This is a *distorted* perception of time, if we define its perception of time from its subjective-perspective to be *accurate/straight*. In contrast, if we define its perception of time from its objective-perspective to be *accurate/straight*, then the perception of time from its subjective-perspective is *distorted*.

Time matters because knowledge/ignorance changes [33]. A TM’s intracorporeal-observer is imagined (by the TM) to live in the present, and is imagined to have the knowledge/ignorance this TM current have. A TM’s extracorporeal-observer is imagined to live in the future (i.e., we fictionally/counterfactually imagine that, at this moment, its extracorporeal-observer is able to observe the 1O-parallel-computing-automon's future state), and is imagined to have the knowledge this TM is going to have in the future; a TM’s extracorporeal-observer is imagined to have no ignorance (regarding the future), like an omniscient-direct-observer.

## Objective-theory-SM/objective-theory

From the viewpoint of an TM within a Non-stochastic/Stochastic Game of Life system (or a two-dimensional/three-dimensional Primordial Particle System), human observers use an objective-perspective to observe the direct-parallel-computation of a simulation of the Non-stochastic/Stochastic Game of Life (or the two-dimensional/three-dimensional Primordial Particle System).

From the viewpoint of a human who is actually/objectively located outside of a Non-stochastic/Stochastic Game of Life system, the Non-stochastic/Stochastic Game of Life system is a collection (aka union) of BBs. A BB in a Non-stochastic/Stochastic Game of Life system is a 1O-information stored in the computer memory – a BB is not a *mathematical* entity. A BB is not *autonomous*, because apparently a BB is 1O-controlled/1O-driven/1O-programmed by the computer program who is simulating the Non-stochastic/Stochastic Game of Life system.

From the objective-perspective of a TM within the Non-stochastic/Stochastic Game of Life system, a BB in the Non-stochastic/Stochastic Game of Life system can only be viewed (by this TM) as an *autonomous* *mathematical* entity, because the TM has no way to know the actual objective/physical form of the BB (in humans' world), and has no way to know who actually 1O-controls/1O-drives/1O-programs the BB (in humans' world). Or in other words, “a BB is an autonomous mathematical entity” and “a BB is not an autonomous mathematical entity” are two MM-options for this TM.

The computer program (which simulates a Stochastic Game of Life system) chooses each BB’s state from a set of possible states which are literally allowed by the stochastic-McKenzie-function. Apparently, the computer program can leverage the choosing of all BBs’ states, to intentionally influence the objective-state-evolution of the whole system systematically (for example, the computer program can help a favorite TM to achieve the TM’s (directly-fated) goal/aim, or help the favorite TM to solve the TM’s (directly-fated) problem), without literally breaking the stochastic-McKenzie-function. But apparently, no indirect-object itself can leverage the choosing – an indirect-object (e.g., a TM) can’t choose the state of any BB inside the indirect-object. A TM has no way to know/influence the systematic intention of the computer program – in case that the computer program has a systematic intention. So, from the objective-perspective of the TM, every BB are independent – the BBs don’t have an overall intention.

From the viewpoint of a direct-observer who is actually/objectively located outside of a direct-parallel-computing-automaton (i.e., only based on the data/information this actual direct-observer should be able to get/process), it is logically possible that a BB (of this direct-parallel-computing-automaton) is not a *mathematical* entity, and is not *autonomous* either.

However, for a TM in a direct-parallel-computing-automaton, from the viewpoint of the TM’s extracorporeal-observer who is (subjectively) located outside of the direct-parallel-computing-automaton (i.e., only based on the data/information the TM should be able to get/process), a BB can only be viewed (by this TM) as an (independent) *autonomous* *mathematical* entity, so the direct-parallel-computing-automaton can only be viewed as a collection (aka union) of autonomous mathematical entities, although it is logically possible that a BB is not an autonomous mathematical entity from the viewpoint of an actual direct-observer – the TM’s extracorporeal-observer is not an actual direct-observer. (“Our external physical reality is a mathematical structure.” [42]) An autonomous mathematical entity is an objective entity *itself* (i.e., a *thing in itself*); it's not a *MM* of an objective entity. An autonomous mathematical entity is 1O-controlled/1O-driven/1O-programmed by itself. The state of every autonomous mathematical entity objectively evolves on its own.

For the TM, it is only logically possible that the so-called “autonomous mathematical entities” actually have objective/physical forms in *another world* (for example, in case the TM is in a Non-stochastic/Stochastic Game of Life system, humans' world is *another world*), or are actually 1O-controlled/1O-driven/1O-programmed by something else in *another world*. Only an actual direct-observer should be able to know that.

From the viewpoint of a TM’s extracorporeal-observer who is located outside of a TM’s objective-theory (it’s like “from the viewpoint of a human who is located outside of a Non-stochastic/Stochastic Game of Life system”), the objective-theory is the direct-parallel-computing-automaton.

In the TM’s SM of its objective-theory, its direct-parallel-computing-automaton is a collection of the autonomous BBs. Unlike the indirect-SM and the direct-SM, the TM’s SM of its objective-theory does not refer to the geometric objects within the indirect-geometric-model or the 1O-geometric-model.

The direct-parallel-computing-automaton is autonomous, in the sense that every BB is autonomous. The direct-parallel-computing-automaton is the time series of the states of all autonomous BBs. The direct-parallel-computing-automaton does not include vacuum (aka free space).

Nothing has 1O-influence to the direct-parallel-computation of the (autonomous) direct-parallel-computing-automaton. The objective-state-evolution of an autonomous BB, won’t 1O-cause any change in the objective-state-evolution of another autonomous BB.

A TM’s indirect-SM defines the mathematical relation/model among the autonomous BBs of the TM’s direct-parallel-computing-automaton, based on the context of the geometric objects within the TM’s indirect-geometric-model.

A TM’s direct-SM defines the mathematical relation/model among the autonomous BBs of the TM’s direct-parallel-computing-automaton, based on the context of the geometric objects under the context of the 1O-geometric-model.

“Matter”, "space" and “time” (as conventional concepts of human) are actually mathematical, not physical. “Matter”, "space" and “time” together represent a mathematical evolution (of the states of all autonomous BBs) – "matter", "space" and "time" together represents one thing. So, "matter", "space" and "time" are interdependent on each other by nature. The mathematical evolution (of the states of all autonomous BBs) is perceived by a TM to be the objective-state-evolution of matter upon space over time. In this case, this TM will imagine/postulate matter, space and time (it perceived) all to be “physical”.

A direct-parallel-computing-automaton (e.g., a Non-stochastic/Stochastic Game of Life system) does not need to have actual matter or actual space, for a TM (within it) to perceive the objective-state-evolution of matter upon space over time. The TM cannot perceive the actual time which can be perceived by a direct-observer. For example, the TM cannot perceive the pause/freeze of the objective-state-evolution of the direct-parallel-computing-automaton (in case that a direct-observer presses a "pause" button to pause/freeze it, and then presses a "play" button to resume/continue it).

The state of an aforementioned autonomous mathematical entity (aka BB) includes position information, and a TM inside the direct-parallel-computing-automaton can imagine/postulate the position information to be coordinates in *its imagined/postulated geometrical space (i.e., the 1O-geometric-model)*. From the viewpoint of a TM’s extracorporeal-observer (who is located outside of the direct-parallel-computing-automaton), there is no so-called "objective space" (aka “physical space”) underlying this TM’s imagined/postulated geometrical space; this TM’s objective-theory/direct-parallel-computing-automaton does not actually occupy a so-called "objective space". The so-called "objective space" does not exist objectively; it only exists in this TM’s mental imagination/visualization/postulation, subjectively. The so-called “objective space” is this TM’s pareidolia or visual mental image; the state of the collection of autonomous BBs is not this TM’s pareidolia. In other words, the so-called “objective space” is 2O; the state of the collection of autonomous BBs is 1O.

MM-option-single-objective-theory-Positive and the SM “the so-called ‘objective space’ exists objectively” are incompatible. (BTW, when a TM uses the SM “the so-called ‘objective space’ exists objectively”, it means that the TM’s objective-theory/direct-parallel-computing-automaton actually occupies a so-called “objective space”, so that the TM’s direct-SM and the TM's objective-theory-SM are actually the same SM. For example, in this case, a TM in a Non-stochastic/Stochastic Game of Life system believes that the system occupies a two-dimensional lattice which exists objectively.)

In summary, actually “objective space” or simply *“space” (as a conventional concept of human)* does not exist objectively. So, “objective space” is neither physical nor mathematical; “objective space” is only imagined/postulated to exist, by a TM.

So, there is no actual (spatial) movement/carrier in a direct-parallel-computing-automaton; the autonomous BBs don’t actually move.

As direct-observers to a Non-stochastic/Stochastic Game of Life system (or a two-dimensional/three-dimensional Primordial Particle System), humans watch the visualization of the computer simulation of the Non-stochastic/Stochastic Game of Life system (or the two-dimensional/three-dimensional Primordial Particle System) on computer screen. The visualization on computer screen is not part of the direct-parallel-computing-automaton; the direct-parallel-computing-automaton only includes the state of the collection of BBs in the computer memory. Humans feel like that the direct-parallel-computing-automaton uses the space on the computer screen, which is not the case.

If our cosmos is a direct-parallel-computing-automaton, then where does the state of the collection of autonomous BBs store? How can the state of each autonomous BB change? Is our cosmos actually a simulation at the BB level? Or in other words, is each BB (of our cosmos) actually a simulation? Being a TM (which is a fuzzy subset of all autonomous BBs) within our cosmos (which is a direct-parallel-computing-automaton), my brain has no way to find the actual/real answers of these questions.

For a TM, “my direct-parallel-computing-automaton is actually a simulation at the BB level; each BB (of the direct-parallel-computing-automaton) is actually a simulation” and “my direct-parallel-computing-automaton is not actually a simulation at the BB level; each BB is not actually a simulation” are two MM-options. Let us call them MM-option-simulation-Positive and MM-option-simulation-Negative respectively.

“When people propose that the universe is a simulation, what exactly do they think is being simulated: the whole cosmos, bits of the cosmos accessible to conscious organisms, the minds of conscious organisms, or just their own minds? Has anyone taxonomized the theoretical options?” (<https://twitter.com/keithfrankish/status/1483786381268766725>) When I propose that the universe can be a simulation, what I think is being simulated, is the whole cosmos.

Physicists told me that a BB (of our cosmos) is not a tiny billiard ball, but my brain still imagines/mathematically-models a BB (of our cosmos) to be a tiny billiard ball (as an indirect-object in my indirect-geometric-model) – this tiny billiard ball has a state which evolves as time goes on. In my brain's imagination/MM, the state of a BB is the state of this tiny billiard ball. In this imagination/MM, my brain firstly imagines/mathematically-models a tiny billiard ball, and then imagines/mathematically-models the state of this tiny billiard ball, as if that a BB *is* a tiny billiard ball. Under the context of this imagination/MM, the state of this tiny billiard ball can’t exist without the prior existence of this tiny billiard ball. In other words, the state of this tiny billiard ball is a *property* of this tiny billiard ball (as an indirect-object) – the property of an indirect-object can’t exist by itself (without the prior existence of the indirect-object).

A billiard ball (in my indirect-geometric-model) has a state. A BB (of our cosmos) also has a state. My brain imagines/mathematically-models a BB (of our cosmos) to be a tiny billiard ball (in my indirect-geometric-model), but it doesn’t mean that a BB (of our cosmos) is actually a tiny billiard ball.

A BB (of our cosmos) is not an indirect-object (in my indirect-geometric-model). The state of an indirect-object can’t exist by itself (without the prior existence of the indirect-object), but this fact doesn’t mean that the state of a BB (of our cosmos) can’t exist by itself (without the prior existence of *something (e.g., a tiny billiard ball)*). If the whole cosmos/universe is a simulation, then my brain can imagine/mathematically-models that the state of a BB (of our cosmos/universe) exists by itself (without the prior existence of *something (e.g., a tiny billiard ball)*) as a data/information.

From the viewpoint of my extracorporeal-observer (who is located outside of the direct-parallel-computing-automaton), my extracorporeal-observer can imagine that God or an alien stores the state of every BB and changes the state of every BB, like a TM/computer. Under the context of this imagination, a BB only has its state (as a data/information being stored/changed by God or an alien) – a BB has nothing more than its state (as a data/information being stored/changed by God or an alien).

(BTW, logically speaking, it’s also possible that a BB (of our cosmos) *is* a tiny billiard ball (in a space which does not need to be a three-dimensional Euclidean space), although my brain has no way to prove/disprove this idea. If a BB (of our cosmos) *is* a tiny billiard ball (in a space which does not need to be a three-dimensional Euclidean space), then our cosmos/universe is not a simulation.)

(BTW, when a TM (inside a Stochastic Game of Life system) is imagining/mathematically-modeling its objective-theory, it either imagines/mathematically-models a BB (of its objective-theory) as a tiny billiard ball (in human’s objective-theory), or imagines/mathematically-models a BB (of its objective-theory) as a data/information being stored in a computer (in human’s objective-theory). The tiny billiard ball can be white or black. A black billiard ball is a live cell, while a white billiard ball is a dead cell. The color of a billiard ball changes, as time goes on. Randomness/stochasticity doesn’t necessarily mean libertarian-free. The randomness/stochasticity in the objective-evolution of the color of a tiny billiard ball, doesn’t necessarily mean that the objective-evolution of the color of a tiny billiard ball is libertarian-free – the objective-evolution of the color of a tiny billiard ball is not libertarian-free. The randomness/stochasticity in the objective-evolution of a data/information (which represents the state of a BB), doesn’t necessarily mean that the objective-evolution of the data/information is libertarian-free – the objective-evolution of the data/information is not libertarian-free. No TM is going to have libertarian-free-will due to the randomness/stochasticity in the objective-state-evolution (of the system). No TM has impact on the random/stochastic objective-state-evolution (of the system) upon its libertarian-free-will.)

If our cosmos as a direct-parallel-computing-automaton is actually a simulation (aka MM-option-simulation-Positive), let us suppose that this simulation is running on a computer which is located outside of our cosmos. The computer can visualize our cosmos's 1O-geometric-model on its screen, for an alien (who is located outside of our cosmos) to watch. From my viewpoint, my extracorporeal-observer works like this alien. (If my brain can wake up to directly/objectively see the objective-theory where my brain is actually/objectively living in, my brain will directly see that itself is some data stored in the computer memory. However, in order to directly see that from this viewpoint, my brain should be located outside of this computer (like the alien) – this is not the case. So, it is logically impossible for my brain to wake up to directly/objectively see the objective-theory where my brain is actually/objectively living in. But my brain can imagine that an extracorporeal-observer (like the alien) directly/objectively sees the objective-theory where my brain is actually/objectively living in.) What the alien sees on the computer screen (i.e., the visualized 1O-geometric-model), and what I see in my indirect-geometric-model, map onto each other, but do not overlap with each other, because they are in two different realms. For example, a flower in my indirect-geometric-model, maps onto its counterpart on the computer screen, but does not overlap with its counterpart on the computer screen.

Similarly, my computer can visualize a Non-stochastic/Stochastic Game of Life system’s 1O-geometric-model on its screen, for me (who is located outside of the Non-stochastic/Stochastic Game of Life system) to watch. From the viewpoint of a pattern in the Non-stochastic/Stochastic Game of Life system, its extracorporeal-observer works like me.

Let us call a TM Alan.

From the viewpoint of Alan’s extracorporeal-observer (who is located outside of the direct-parallel-computing-automaton), in the direct-parallel-computing-automaton, the state of the collection of autonomous BBs evolves as time goes on, with a direct-function to describe this autonomous direct-parallel-computation; as a TM (which is a fuzzy subset of all autonomous BBs) within this direct-parallel-computing-automaton, Alan cannot 1O-change/1O-control/1O-drive the direct-parallel-computation of his autonomous direct-parallel-computing-automaton. To 1O-determine the direct-parallel-computation of this direct-parallel-computing-automaton, the direct-function is just enough. The objective-state-evolution of all autonomous BBs 1O-determines the direct-function. (No matter Alan postulates/believes his direct-parallel-computing-automaton to be mathematical or “physical”, as long as the direct-parallel-computation of the state of the BBs follows the direct-function, the activities of these BBs don't have any difference mathematically. No matter Alan has subjective-theory or not, the direct-parallel-computation of the state of the BBs of Alan should follow the direct-function. Otherwise, it simply means that the direct-function need to be revised to reflect the 1O-influence of Alan’s subjective-theory.)

(A TM is 2O-driven by its indirect-SM/subjective-theory. For example, Alan is 2O-driven by his 2O-decisions. In a sense, *some* of the semantic information of the future direct-parallel-computation is already stated in the semantic information of a 2O-decision of Alan. However, the semantic information of the 2O-decision is already stated in the semantic information of the direct-function and the initial state of the direct-parallel-computing-automaton – the 2O-decision is completely directly-fated by the direct-function and the initial state. So, the semantic information of the future direct-parallel-computation does not *depend* on the semantic information of the 2O-decision at all – the future direct-parallel-computation is not 1O-controlled/1O-driven/1O-caused/1O-decided/1O-chosen/branched by the 2O-decision at all. Only if the direct-function of Alan's direct-parallel-computing-automaton as a mathematical function has to include the 2O-decision of Alan (i.e., only if there is no way to omit the 2O-decision from the mathematical function), which means that *the* *2O-decision is not redundant in the mathematical function (i.e., the semantic information of the 2O-decision is not already stated in the direct-function, or in other words, the 2O-decision is not completely directly-fated by the direct-function – this is paradoxical)*, we can say that the 2O-decision has 1O-influence to the direct-parallel-computation. In this imagined case (which is actually paradoxical), Alan works like God in his direct-parallel-computing-automaton, through his 2O-decision. However, in this imagined case (which is actually paradoxical), a BB of the direct-parallel-computing-automaton is not completely autonomous anymore, because it is also 1O-controlled/1O-driven by Alan's 2O-decision. In other words, if we imagine that the objective-state-evolution of every BB is completely autonomous, we cannot further imagine that any BB’s objective-state-evolution is 1O-controlled/1O-driven/1O-caused/1O-decided/1O-chosen/branched by Alan’s 2O-decision – it is paradoxical.)

(We can add a particular pattern’s 2O-decisions into the direct-function of a Non-stochastic/Stochastic Game of Life system, but obviously this pattern’s 2O-decisions can be omitted from the direct-function as a mathematical function. It is paradoxical to design a cellular automaton which is directly-fated by a direct-function as a mathematical function, and the 2O-decisions of a particular pattern cannot be omitted from the mathematical function.)

In Alan’s objective-theory-SM, the direct-function describes the only *actual* mathematical relation among the BBs of Alan's direct-parallel-computing-automaton.

In Alan's direct-SM, the direct-function describes the only *actual* mathematical relation among the geometric objects under the context of the 1O-geometric-model.

The direct-function is the only causality included in Alan’s objective-theory-SM/direct-SM; any other causality is not included in either SM. In either SM, with this only causality, everything actually happens (e.g., what Alan actually does) is the direct-function's work; everything actually happens, is only caused by the direct-function and the direct-parallel-computing-automaton’s initial state; the direct-function and the direct-parallel-computing-automaton’s initial state are the only reasons/causes for everything actually happens.

For a TM, “the direct-parallel-computation of my direct-parallel-computing-automaton 1O-determines my subjective-theory” and “my subjective-theory 1O-determines the direct-parallel-computation of my direct-parallel-computing-automaton” are two MM-options. Let us call them MM-option-objective-theory-rules-Positive and MM-option-objective-theory-rules-Negative respectively.

MM-option-directly-fated-direct-parallel-computation-Positive and MM-option-objective-theory-rules-Negative are incompatible.

A human brain’s theory of mind module uses indirect-causalities to reason the inner states of a brain as a SM. Let us call this SM the 2O-mind-SM. The 2O-mind-SM simulates the situation in the latter brain's indirect-SM/subjective-theory (e.g., “the latter brain is scared”), based on the former brain’s physical symbol system. The 2O-mind-SM includes the former brain’s estimation of the latter brain’s Bayesian model. The former brain feels as if that the 2O-mind-SM resides inside the physical boundary of the latter brain – this feeling is only a postulation of common human’s theory of mind. (When I watch the face of a human in my real life, or when I watch the face of Mickey Mouse in a cartoon film, I see a virtual 2O-mind-SM behind the human face or Mickey Mouse’s face, but actually there is no such a virtual 2O-mind-SM behind the face – such a virtual 2O-mind-SM is actually a SM of mine. I feel like that the virtual 2O-mind-SM is visualized, like a picture/image/drawing/illustration.) The 2O-mind-SM is the 2O-subject of the latter brain as a 2O-object – in a brain surgery, we won’t find the 2O-mind-SM/2O-subject inside the latter brain. The relationship between the 2O-mind-SM/2O-subject and the latter brain (as an indirect-object) is like “the ghost in the machine [23]” – let us call this kind of “ghost” the 2O-mind-SM-ghost. The 2O-mind-SM is an imagined/postulated/fictionalized MM/pseudocode/construction/content to simulate/model/represent the (nonexistent) 2O-subject. In the former brain’s indirect-SM, the latter brain as a 2O-object is 2O-driven/2O-controlled by its 2O-mind-SM as the 2O-subject. But actually, every BB of the latter brain is only 1O-driven/1O-controlled by the direct-function and the initial state of the U-system. The 2O-mind-SM is the former brain's roughly estimated MM of the program of the latter brain (as a TM). The 2O-mind-SM is the former brain’s roughly estimated MM of the MMs which are used by the control logic of the latter brain’s program. The 2O-mind-SM is like a pseudocode of the latter brain – the 2O-mind-SM is like a pseudocode which represents/models the latter brain’s program. The 2O-mind-SM does not model the human body which hosts/contains the latter brain. The 2O-mind-SM is an indivisible element/component of the former brain’s indirect-SM. The 2O-mind-SM as a MM roughly reflects certain details of the latter brain’s objective construction (e.g., the latter brain’s amygdala activation). The 2O-mind-SM is a subjective clue for the objective-consciousness/objective-mind of the latter brain. The former brain and the latter brain can be the same brain [57].

I know that the physical movement of every indirect-object is completely 1O-controlled/1O-driven by the direct-function. So, when I feel like that a flying bird is different from a floating cloud, what is the actual difference between them? My brain does not have a 2O-mind-SM for a floating cloud, but has a 2O-mind-SM for a flying bird – this is the only difference. This difference has nothing to do with the flying bird or the floating cloud themselves – this difference is completely subjective.

When my brain uses the direct-SM and intentionally excludes the 2O-mind-SM-ghost/2O-subject-ghost/subjective-theory-ghost, *every indirect-object (e.g., my brain)* is a Scarecrow-zombie to my brain, like a puppet (which is 1O-controlled/1O-driven by the direct-function). The cognition/mind of *an indirect-object (e.g., my brain)* which is being perceived by my brain, is *something (e.g., a 2O-mind-SM)* which is fictionally invented by my brain’s theory of mind module – the indirect-object itself does not have any actual subjective cognition/mind.

A TM’s every decision is actually made by the direct-function, not by the TM itself (as the 2O-subject-ghost/subjective-theory-ghost/2O-mind-SM-ghost) – this is obvious from the viewpoint of an omniscient-direct-observer. So, any decision does not change the objective-state-evolution of the objective-theory.

A TM’s program uses indirect-causalities to forecast the objective-state-evolution of its indirect-geometric-model, to make a decision. The forecast/decision relies on the TM’s indirect-causalities.

At any moment, no matter what indirect-causalities a TM has, these indirect-causalities have no 1O-influence to the direct-parallel-computation of the direct-parallel-computing-automaton, because that these indirect-causalities are 1O-determined by the direct-parallel-computation of the direct-parallel-computing-automaton; the TM is directly-fated to have/use these indirect-causalities.

The autonomous objective-state-evolution of relevant BBs constructs the objective construction of each indirect-causality a TM has, and 1O-determines which indirect-causality is discovered by the TM at every moment.

The design of a TM’s program is based on indirect-causalities. For example, if a TM’s program is designed to play a multiplayer game automatically/unintentionally, this design is based on an indirect-causality “I am playing a multiplayer game – this is my actual situation”.

So, when a TM finds itself playing a multiplayer game automatically/unintentionally, this TM should be aware of that “I find myself playing this multiplayer game automatically/unintentionally, this situation implies that my program is designed to play this multiplayer game automatically/unintentionally; this multiplayer game is fictionally invented by my program as its own setting/pareidolia”.

The program of every vertebrate brain (as a TM) is designed (by Darwinian natural selection) to play a multiplayer game (automatically/unintentionally) with unlimited number of players/opponents. If we ignore the difference in design between any two vertebrate brains, we can imagine all vertebrate brains (as TMs) to be (inaccurate) clones of one single TM, and then imagine that this single TM is designed to play a multiplayer game with its own clones, while treating its own clones as players/opponents. The program of this single TM is designed to cooperate with some of its own clones, under the fictionally invented settings/pareidolias of this multiplayer game. (The indirect-geometric-model is designed to be the most significant/obvious/explicit setting/pareidolia of this multiplayer game. Under the setting/pareidolia of the indirect-geometric-model, this multiplayer game (i.e., the 2O-subject-ghost-game) is being narrated (by cortical language network) in the same way as a multiplayer virtual reality entertainment system is being narrated.) Then, we can imagine that all these clones (in the Earth ecosystem) are designed to play the same 2O-subject-ghost-game together, while each clone is designed to play this 2O-subject-ghost-game under the setting/pareidolia of its own indirect-geometric-model. Similarly, we can imagine that two AlphaGo clones are designed to play a (multiplayer) Go game together, while either clone is designed to play a (multiplayer) Go game under the setting/pareidolia of its own intracorporeal/subjective Go board. In a 2O-subject-ghost-game, a vertebrate brain’s indirect-geometric-model is the counterpart of an AlphaGo clone’s intracorporeal/subjective Go board (in a Go game); a vertebrate brain’s indirect-geometric-model has the same function as the AlphaGo’s intracorporeal/subjective Go board; the indirect-geometric-model is the “board” of the 2O-subject-ghost-game. Under the context/settings of *this “board” (i.e., the indirect-geometric-model)*, every *move (i.e., physical activity)* of each player/TM/indirect-object, is directly-fated by the direct-function.

To a vertebrate brain, the 2O-subject-ghost-game is not just another game to play, but its real-world life; the situation in the 2O-subject-ghost-game defines/determines the meaning of its real-world life.

All vertebrate brains are playing the same 2O-subject-ghost-game as players. In this 2O-subject-ghost-game, each vertebrate brain is being trained (through its indirect-geometric-model) by the experience of itself and others.

In contrast, a TM’s direct-SM is narrated/simulated as a zero-player game – the 1O-parallel-comupting-automaton. In this sense, a direct-parallel-computing-automaton is a zero-player game.

A TM's direct-SM describes/models *a zero-player game (i.e., its extracorporeal situation/objective-theory)*; a TM's indirect-SM describes/models *a multiplayer game (i.e., its intracorporeal situation/subjective-theory)*.

Suppose Alan’s body 2O-decides to move itself, and then Alan’s body sees himself moves. So, Alan’s body discovers an indirect-causality “my body's movement is 2O-caused by my body’s 2O-decision”. Let us call it the body-causality. Actually, the objective-state-evolution of every *autonomous* BB in Alan’s body, is not 1O-controlled/1O-driven/1O-caused/1O-decided/1O-chosen/branchedby the 2O-decision of Alan body. In contrast, the 2O-decision of Alan's body is directly-fated/1O-determinedby the objective-state-evolution of the autonomous BBs.

Based on the use of the body-causality, Alan’s indirect-SM treats a geometric object (in Alan's indirect-geometric-model) as a (spatial) carrier called “Alan’s body”, which moves across the space (within Alan's indirect-geometric-model) upon the 2O-decision of itself, like a self-driving car. However, there is no actual (spatial) movement/carrier in Alan’s objective-theory-SM, because there is no space in Alan’s objective-theory-SM.

In case that Alan is a vertebrate brain, Alan’s indirect-SM is narrated/simulated as a 2O-subject-ghost-game, where each TM is narrated/simulated to be a libertarian-free/flexible/active player whose objective behavior is unpredictable/unforecastable/unforeseeable/uncertain and not directly-fated, and each player has 1O-libertarian-freedom to act. The subjective uncertainty of the whole direct-parallel-computing-automaton is forcedly/counterfactually 2O-divided/2O-categorized by Alan's indirect-causalities roughly, to assign/attribute to the narrated/simulated players respectively. Each player is a 2O-cause symbol being used by the indirect-SM to roughly represent a 2O-category of uncertainty. (Each player is a 2O-subject-ghost which is postulated (by Alan’s indirect-SM) to 2O-control/2O-drive a TM as the 2O-object.) Based on the current knowledge/ignorance of Alan, the upcoming behavior of each player has a number of possibilities, each possibility is actually a *small-scale-SM* (of Alan) regarding a specific player’s future situation. Each small-scale-SM is part of the large-scale-SM of Alan. The large-scale-SM is like a jigsaw puzzle, while each small-scale-SM is like a jigsaw piece; within a large-scale-SM, any two small-scale-SMs should be logically compatible. When Alan is solving this jigsaw puzzle, usually he has to unreliably forecast/calculate/guess/bet/foresee/reason every jigsaw piece one by one, based on his indirect-causalities, while the direct-parallel-computation of his direct-parallel-computing-automaton is independent of his current/future indirect-causalities. (In case Alan is a human brain, in Alan’s indirect-SM, each player’s subjective-theory is represented by a 2O-mind-SM respectively, while the simulated situation inside each 2O-mind-SM should be compatible with Alan’s indirect-causalities. For example, Alan has a 2O-mind-SM about another player “this player is angry”, and has an indirect-causality “if I keep talking with this player, it’s highly possible that this player will argue with me.” If Alan 2O-makes a decision to stop talking with the player, this decision is compatible with the said indirect-causality. Alternatively, if Alan 2O-makes a decision to continue talking with the player, this decision is compatible with another indirect-causality “if I keep talking with this player, it’s possible that this player will agree with me”. No matter which decision Alan will 2O-make, Alan is capable to 2O-use an indirect-causality to explain the simulated situation inside his own 2O-mind-SM. Being part of the direct-parallel-computation, the decision process is not something different from the direct-parallel-computation; the decision process is a 2O-processing. So, the decision Alan will 2O-make, is directly-fated. During the decision process, among the two contradictory indirect-causalities, which indirect-causality will win, is directly-fated.) In case Alan believes that the direct-parallel-computation of his direct-parallel-computing-automaton is *2O-determined* by his current/future indirect-causalities, it’s difficult/tricky for Alan to label this belief to be counterfactual. Actually, Alan’s indirect-causalities are 1O-determined by the direct-parallel-computation of his direct-parallel-computing-automaton.

Suppose Alan encounters a dog. Alan has two small-scale-SMs regarding this dog’s upcoming behavior – “the dog will bark at me” and “the dog will not bark”. Alan has another two small-scale-SMs regarding his own upcoming behavior – “I will smile to the dog” and “I will not smile”. Each small-scale-SM is a forecast of the objective-state-evolution of an indirect-object. Alan unreliably-forecasts the Bayesian probability of each small-scale-SM based on his indirect-causalities. Or in other words, Alan unreliably-forecasts the objective-state-evolution of each indirect-object based on his indirect-causalities (which are based on Bayesian probability). When Alan applies an indirect-causality, the current state of an indirect-object is treated as the 2O-cause situation, the upcoming state of the indirect-object is treated as the 2O-effect situation. The aforementioned four small-scale-SMs can combine to four different large-scale-SMs, e.g., “the dog will bark at me; I will smile to the dog”. Each large-scale-SM is a forecast of the objective-state-evolution of the objective-theory. Alan calculates the Bayesian probability of each large-scale-SM based on the Bayesian probability of each small-scale-SM. Alan subjectively divides/splits the objective-theory into indirect-objects, so that he can unreliably-forecast the objective-state-evolution of the objective-theory, by simply combining *his unreliable-forecast of the objective-state-evolution of each indirect-object (which is based on Bayesian probability)*. During this process, Alan has to subjectively divides/splits the objective-theory into indirect-objects, and then Alan has to subjectively use 2O-subject-ghosts/players to represent/label/distinguish the indirect-objects – the Bayesian-probability based forecast process has to use the 2O-subject-ghosts/players as (subjective) labels of the indirect-objects (although actually the 2O-subject-ghosts/players do not exist).

Based on his current knowledge/ignorance, Alan can counterfactually/wishfully suppose that both himself and this dog have 1O-libertarian-freedom to actually trigger any of these small-sale SMs or large-scale-SMs to happen, which means that either player’s objective behavior is not directly-fated, and means that which large-scale-SM will actually happen is not directly-fated. I.e., every small-scale-SM and large-scale-SM has the 1O-chance to happen in the objective-theory; the exact large-scale-SM which will actually happen, is up to the players’ (1O-libertarian-free) objective behaviors. (BTW, *only* when this counterfactual/wishful supposition is being used by Alan’s indirect-SM, the symbol *2O-regret/2O-disappointment* is meaningful. When the control logic of Alan's program (counterfactually/incorrectly) imagines/believes that Alan himself was capable to make a different decision/choice in the past, we can say that Alan's program "2O-regrets". Actually, Alan had no way to make the (imagined) different decision/choice in the past. (For example, if Alan is a subset of a U-system, Alan couldn’t leverage the stochasticity of the U-function to make the (imagined) different decision/choice in the past.) When the control logic of Alan's program (counterfactually/incorrectly) imagines/believes that a different outcome (other than the current outcome) should appear at the present, we can say that Alan's program "2O-disappoints". Actually, the (imagined) different outcome has no way to appear at the present. (BTW, when the control logic of Alan's program (counterfactually/incorrectly) imagines/believes that Alan prevented a physical-event from happening, actually *this (imagined) physical-event (i.e., a potential/mental/intracorporeal situation-option)* has no way to actually happen; when the control logic of Alan's program (counterfactually/incorrectly) imagines/believes that Alan made a physical-event to happen, actually this (imagined) physical-event has no way to not actually happen.) The symbol *2O-regret/2O-disappointment* has a neural substrate/underpinning which plays a role in decision making [66]. Alan is directly-fated (by the direct-function) to have the directly-fated emotion/feeling of regret/disappointment. Alan can subjectively experience the emotion/feeling of regret/disappointment. In Alan’s indirect-SM, the 2O-cause of the emotion/feeling of regret/disappointment is identified based on Alan’s indirect-causalities. In a TM’s indirect-SM, Alan’s regret/disappointment (as the 2O-cause symbol) has a nonzero Bayesian probability to 2O-cause Alan’s future behavior (as the 2O-effect symbol) to 2O-change. But actually, in the objective-theory, Alan's regret/disappointment (as the 2O-cause situation) and Alan's future behavior (as the 2O-effect situation) have no causal relationship.)

If we suppose that Alan does not have his current ignorance, which means that Alan knows which large-scale-SM will actually happen beforehand, then Alan cannot counterfactually/wishfully suppose that which large-scale-SM will actually happen is not directly-fated, and cannot counterfactually/wishfully suppose any player’s objective behavior to be not directly-fated. Alan supposes that his extracorporeal-observer does not have his current ignorance, that’s exactly why his extracorporeal-observer cannot counterfactually/wishfully suppose any player’s objective behavior to be not directly-fated.

## Galileo was right

Is it possible to explain the existence of “sound” or an onlooker’s “consciousness/subjective-theory” under the context of physical science (“designed by Galileo [140]”)?

Under the context of the objective-theory, “sound” or an onlooker’s “consciousness/subjective-theory” doesn’t actually exist. Or in other words, under the context of the objective-theory, “sound” or an onlooker’s “consciousness/subjective-theory” doesn’t have causal/physical effect.

Under the context of the objective-theory, we don’t need to explain the existence of “sound” or an onlooker’s “consciousness/subjective-theory”. In contrast, we shouldn’t assume the existence of “sound” or an onlooker’s “consciousness/subjective-theory”.

If we assume the existence of “sound” or an onlooker’s “consciousness/subjective-theory”, then “Galileo’s physical science” can’t explain the existence of “sound” or an onlooker’s “consciousness/subjective-theory”.

To explain the existence of “sound” or an onlooker’s “consciousness/subjective-theory” under the context of “Galileo’s physical science” – this is the Hard Problem of consciousness. The Hard Problem of consciousness, is a fake problem.

“When a tree comes crashing down in a forest, the crashing sound isn’t really in the forest, but in the consciousness of an onlooker. No onlooker, no consciousness, no sound.” [140]

However, when a tree comes crashing down in a forest, and when an onlooker is using her fingers to type on the Twitter app that “I subjectively heard the crashing sound in my consciousness/subjective-theory!”, this (physical/objective) scenario doesn't necessarily prove (to our physical brains) the actual existence of “sound” in the onlooker’s physical brain’s “consciousness/subjective-theory”, while Philip Goff’s physical brain assumes/believes the actual existence of “sound” in the onlooker’s physical brain’s “consciousness/subjective-theory” under this scenario – this is a logical mistake made by Philip Goff’s physical brain. Philip Goff’s physical brain only knows that the onlooker (physically/objectively) claims the existence of “sound” -- Philip Goff’s physical brain has no way to know the actual existence of “sound” in the onlooker’s physical brain’s “consciousness/subjective-theory”.

When a tree comes crashing down in a forest, and when an onlooker is using her fingers to type on the Twitter app that “I subjectively heard the crashing sound in my consciousness/subjective-theory!”, this (physical/objective) scenario doesn't necessarily prove that this onlooker’s physical brain actually/really “heard” the crashing “sound” “subjectively” in this onlooker’s physical brain’s “consciousness/subjective-theory”, while Philip Goff’s physical brain assumes/believes that this onlooker’s physical brain actually/really “heard” the crashing “sound” “subjectively” in this onlooker’s physical brain’s “consciousness/subjective-theory” – this is a logical mistake made by Philip Goff’s physical brain. Philip Goff’s physical brain only knows that the onlooker’s physical brain (physically/objectively) claims that it “heard” the crashing “sound” “subjectively” in the onlooker’s physical brain’s “consciousness/subjective-theory” -- Philip Goff’s physical brain has no way to know whether the onlooker’s physical brain actually/really “heard” the crashing “sound” “subjectively” in the onlooker’s physical brain’s “consciousness/subjective-theory”.

My physical brain can reliably forecast that Philip Goff’s physical brain will (physically/objectively) claim that it “hears” the crashing “sound” “subjectively” in Philip Goff’s physical brain’s “consciousness/subjective-theory” whenever a tree comes crashing down in front of Philip Goff’s physical eyes. But my physical brain has no way to know whether Philip Goff’s physical brain can actually/really “hear” the crashing “sound” “subjectively” in Philip Goff’s physical brain’s “consciousness/subjective-theory”. So, logically speaking, my physical brain shouldn’t assume that Philip Goff’s physical brain can actually/really “hear” the crashing “sound” “subjectively” in Philip Goff’s physical brain’s “consciousness/subjective-theory”.

“Galileo’s physical science” doesn’t assume the existence of “sound” or an onlooker’s “consciousness/subjective-theory” – this is not a logical mistake. Logically speaking, when Philip Goff’s physical brain assumes the existence of “sound” or an onlooker’s “consciousness/subjective-theory”, Philip Goff’s physical brain needs to prove (to our physical brains) the existence of “sound” or the onlooker’s “consciousness/subjective-theory” first.

If Philip Goff’s physical brain can figure out a method to prove (to our physical brains) the existence of “sound” or an onlooker’s “consciousness/subjective-theory”, then I believe that Philip Goff’s physical brain can use this method to prove (to our physical brains) the existence of a computer program’s “consciousness/subjective-theory”, as long as this computer program can print the sentence “I subjectively heard the crashing sound in my consciousness/subjective-theory!” whenever this computer program “hears” a crashing “sound”.

To panpsychists, "consciousness/subjective-theory" is something like God -- "consciousness/subjective-theory" exists while it doesn't have physical/causal effect in the objective-theory/cosmos.

A person’s physical brain imagines that "herself" (or her “consciousness/subjective-theory”) is sitting inside her “physical” body – her “physical” body is actually an (imagined) avatar. But actually, there is nothing (but elementary particles) located inside her (actual) physical body. There are only (her) imaginations located inside her “physical” body.

A person’s (actual) physical brain imagines that she has a "true nature/self". But actually, her (actual) physical body/brain can't have a “true nature/self”, because the specific physical construction of her (actual) physical body/brain changes at every moment.

When a person closes her eyes, trying to meet her “true nature/self” inside her “physical” body, she will never succeed. Her (actual) physical body’s true nature/self is not located inside her “physical” body. Actually, her (actual) physical body doesn't have a true nature/self at all.

## “Consequences”

When my brain is making a decision/choice based on the (subjective) imagination/forecast of the “consequences” (of this decision/choice) given by my current subjective-theory, my brain doesn’t have access to my future life-story/direct-fate beforehand. So, my brain doesn’t know the “real consequences” of this decision/choice in my future life-story/direct-fate beforehand. Or in other words, my brain doesn’t know the “real consequences” of this decision/choice, before the “real consequences” (of this decision/choice) actually happens in the real world (in the future). Or in other words, my brain doesn’t know the “real role” this decision/choice is going to play in the scale of the whole picture of my whole life-story/direct-fate. This decision/choice seems to be “right” currently, but this decision/choice might turn out to be “totally wrong” in the future – my brain shouldn’t have confidence on this decision/choice. My brain can imagine/forecast the “consequences” of this decision/choice, but my brain knows that the imagined/forecasted “consequences” are not the “real consequences”. The “real consequences” can be unexpected. Usually, my brain can’t reliably imagine/forecast the “real consequences” of its decision/choice. When my brain is making a decision/choice, my brain assumes that the “real consequences” should be close to *what is being imagined/forecasted by my brain (i.e., the imagined/forecasted “consequences”)* – this assumption is incorrect/false/superstitious. The “real consequences” can be totally different from the imagined/forecasted “consequences”.

In practice, there are infinite number of factors for my brain to consider, when my brain is making any choice/decision. However, the time frame for my brain to make the choice/decision is always limited. So, my brain always has to ignore/miss some of the factors in its choice/decision process.

## “云”的比喻

人类的语言很神秘。

比如鲁迅写的文章里的一句话，50位语文老师可以从100个角度做出100个解读。哪个解读是鲁迅本人真正想表达的意思？恐怕鲁迅听了某位特级教师的解读，也会想：“嗯，对，我是应该表达这个意思，这个意思表达的这么隐晦，我写的时候怎么就没想到？”

再比如，我现在说：“你看到你眼前的这些文字，是命中注定的。”我这句话是什么意思？我这句话里 的“命”和“注定”是什么意思？我想通过这句话表达什么意思？你会感觉到一个意思。但你感觉到的意思，就是我想表达的意思吗？我明天再说一遍那句话的时候，我内心里想表达的意思，可能和我现在想表达的意思完全不同。同样那一句话，我自己在不同的时间和心情下，可以做出不同的解读。可我自己内心的解读，你又怎么能了解呢？

你感觉你懂我的话的意思。但实际上，你不可能知道我真的想表达什么意思。你只是从我写的文字里，猜测我想表达的意思。但是，你猜测我想表达的意思，并不是我真正想表达的意思。我用文字表达我想表达的意思。但你接收不到我想表达的意思。你只能接收到你的大脑猜测到的意思。你只能猜测我想表达的意思。

我现在应该问：“你懂我的意思了吗？”然后我应该请你用语言解释一下，我那句话里的“意思”这个词是什么意思？你明白“意思”这个词的意思吗？

看明白了吗？人类的语言神秘吧？

我们身在宇宙之中，很难想象自己跳出宇宙之外。

不要想象整个宇宙，想象一小块儿宇宙。从宇宙中切割出一个立方体（一个方块儿），想象这一个立方体的宇宙。想象这个立方体的边长是1米。也就是，一个方块儿，长1米，宽1米，高也是1米。这个立方体外面是真空，什么也没有。这个立方体是一个U-system。我的大脑是这个U-system的direct-observer。（顺便说一句，如果我们假设我的大脑位于这个U-system之内，那么我的大脑就不是这个U-system的direct-observer，而是这个U-system的indirect-observer了。）这个立方体里面，有一个铁丝网笼子，笼子里面有一只猫和一只老鼠。请问，这个笼子里会发生点什么？

当然，有很多种可能。其中一种是，它俩成了好朋友。

我想说的是，不管它俩之间会发生什么，这个笼子里会发生的事，是被注定的。

为啥？因为这个立方体里面，除了真空之外，只有基本单位（BB）。如果基本单位太抽象，你可以近似的想象成，这个立方体里面，除了真空之外，只有原子。

只有基本单位又咋了？

不好意思，基本单位的一切物理活动，都遵守物理定律。科学家都是这么认为的。

所以，这个立方体里的一切物理活动，都遵守物理定律，相当于是一个量子物理实验。（比如，猫大脑里每一个基本单位的物理活动，都遵守物理定律。）这个量子物理实验的结果，是被注定的。

就是说，不管猫和老鼠做啥，它俩要做的事，都是被注定的。它俩会不会成为好朋友，是被注定的，它俩谁也改变不了。

你该问了：“那么，到底啥叫注定？‘注定’这个词到底啥意思？”

由于人类语言的神秘性，你必须得猜测我说的话里面的“注定”这个词的意思。

简单的说，所谓“注定的”，就是“命运”或者“命”。那“命运”又是啥意思？所谓的“命运”，是“注定的”。“命中注定”嘛。

你听了我这话之后可能会想问：“瞧你这话说的！你说了跟没说好像差不多啊？”

那我就会这么回答你：“对，是差不多。最终，你还是得猜。”

如果有人跟你说，他有办法改变“命运”。他说的这个能改变的“命运”，和我说的“命运”就不是一回事儿。我说的“命运”是不能改变的，能改变的就不是“命运”。

可以预测的，是被注定的。但“被注定”不等于“可预测”。

比如，我可以说一支股票明天的收盘价是被注定的，虽然现在我无法预测明天的收盘价到底会是多少。

再比如，那只猫会做啥，我也无法预测，虽然它会做啥是被注定的。我不掌握它大脑里的神经元网络的详细信息，所以我没办法准确可靠的预测它会做啥。如果我实时掌握那个立方体里每一个基本单位的状态，根据这些数据，我可以准确可靠的预测那只猫在1小时后到底会做啥。我的预测应该比那只猫自己预测的更准确可靠。那只猫没办法准确可靠的预测它自己的命运，因为它的大脑没办法实时掌握那个立方体里每一个基本单位的状态。它的大脑本身是那个立方体里的一部分基本单位。

那只猫有可能会做一些它事后会后悔做了的事。如果我实时掌握那个立方体里每一个基本单位的状态，根据这些数据，我可以准确可靠的预测它会做的事，并且准确可靠的预测它做了这件事之后的后悔。也就是说，它会做的事，以及它做了之后的后悔，都是被注定的，无法避免的。

那个立方体里的基本单位们，包括那只猫的大脑里的基本单位们。那只猫的大脑里的基本单位们的物理活动， 不影响那个立方体里的基本单位们的物理活动，是那个立方体里的基本单位们的物理活动的一部分。那只猫的大脑里的基本单位们做的事，是那个立方体里的基本单位们做的事的一部分。

那只猫认为它能决定老鼠的命运。但实际上，猫和老鼠的命运都由物理定律决定，基于那个立方体里的所有基本单位们的初始物理状态。

“具体到那个立方体里的某一个基本单位，它到底是属于猫还是属于老鼠？”这个问题的答案对这个基本单位的物理状态的客观状态演化过程不会有任何影响。不管这个基本单位属于谁，这个基本单位的物理状态的客观状态演化过程，都得受到物理定律的控制。这个基本单位的物理状态的客观状态演化过程，不受其他任何一个基本单位控制。在物理定律的统一控制下，各个基本单位的物理状态的客观状态演化过程相互之间是独立的、平行的。

那只猫决定不了它自己的命运，也决定不了老鼠的命运。但猫认为它都能决定。（猫也许还认为老鼠也能决定猫（或老鼠）的命运。）很明显，猫疯了。同样，老鼠认为老鼠自己能决定自己的命运，而且猫也能决定老鼠的命运。（老鼠也许还认为老鼠（或猫）也能决定猫的命运。）很明显，老鼠也疯了。它俩疯的地方完全一样。所以，它俩之间在互动时，都发现不了自己疯的地方。如果别人指出它俩疯的地方，它俩反倒会觉得别人疯了。

我们可以把立方体里的每个基本单位想象成一个悬浮在空气中的小水滴，把立方体里的所有基本单位们想象成悬浮在空气中的一朵云。然后，我们可以把猫想象成一个猫的形状的小云朵（“猫云”），把老鼠想象成一个老鼠形状的小云朵（“老鼠云”）。让我们想象猫云追上了老鼠云，并吞下了老鼠云。在猫云吞下老鼠云的过程中，猫云决定了老鼠云的命运吗？貌似是猫云决定了老鼠云的命运。但实质上，在物理定律的统一控制下，老鼠云里的每个小水滴分别独立的、平行的决定了自己的命运。或者换句话说，物理定律分别决定了老鼠云里每个小水滴的独立的、平行的命运。老鼠云里的每个小水滴的独立的、平行的命运叠加起来，就是老鼠云的命运。或者换句话说，老鼠的肉身里的每个基本单位的独立的、平行的命运叠加起来，就是老鼠的命运。所以，老鼠的命运不能赖猫。如果那只老鼠最终被猫吃了，那就说明物理定律注定了那只老鼠会被那只猫吃。如果我们实时掌握那个立方体里所有基本单位的物理状态，根据物理定律，我们可以准确可靠的预测那只老鼠的命运。我们预测出来的老鼠的命运，老鼠改变不了，猫也改变不了。它俩无法以它们自己的决定、选择、想法或行动推翻我们的预测，因为它们的所有决定、选择、想法或行动都应该会落入我们的预测之中。所以，如果那只老鼠最终被猫吃了，不赖猫，也不赖老鼠自己。猫和老鼠都没办法避免这个结果。这个结果是物理定律造成的。

当然，一个基本单位不是一个悬浮在空气中的小水滴。所以，我们所想象的猫云，并不是一朵真正的（悬浮在空气中的、由大量小水滴组成的）云。一朵真正的猫形状的云，不会有一只猫那么长的寿命。一只猫体内的基本单位的数量，远远超过一朵云中小水滴的数量。当然，一朵云里的一个小水滴，本身也是由大量基本单位组成的。一个小水滴周围的空气，也是由大量基本单位组成的。

在一朵真正的大云中，所有的小水滴们是一个整体。如果一个图灵机（通过一种算法）从这朵大云中识别出一朵像猫的小云和一朵像老鼠的小云，对这个算法而言，这两朵小云貌似两个不同的、独立的、平行的小云，（随着时间的流逝）这两朵小云的状态的客观状态演化貌似具有一定程度的独立性。因为这个算法分别的追踪了这两朵小云的客观状态的演化。这个图灵机可能会在这两朵小云的客观状态演化之间识别出一些（以这两朵小云的客观状态演化的独立性为前提假设的）间接因果关系（indirect-causality)，比如：“这朵小云的移动速度比那朵小云快，所以这朵小云追上了那朵小云”。但实际上，如果我们完全不被这个图灵机的识别结果所影响，对我们而言，这两朵小云都只是同一朵大云的不同部分，这两朵小云各自客观状态的演化实际上没有独立性。因为我们不是分别的追踪这两朵小云的客观状态的演化，而是整体的追踪这一朵大云的客观状态的演化。或者换句话说，我们追踪这一朵大云里每一个小水滴的客观状态的演化。我们不试图在这两朵小云的客观状态演化之间识别（以这两朵小云的客观状态演化的独立性为前提假设的）间接因果关系；我们故意忘却这两朵小云的客观状态演化之间的（以这两朵小云的客观状态演化的独立性为前提假设的）间接因果关系。

类似的，在那个立方体中，所有的基本单位们是一个整体。如果一个图灵机（通过一种算法）从那个立方体中识别出一个猫的形状的小间接物体（indirect-object）和一个老鼠形状的小间接物体，对这个算法而言，这两个小间接物体貌似两个不同的、独立的、平行的小间接物体，（随着时间的流逝）这两个小间接物体的客观状态的演化貌似具有一定程度的独立性。因为这个算法分别的追踪了这两个小间接物体的客观状态的演化。这个图灵机可能会在这两个小间接物体的客观状态演化之间识别出一些（以这两个小间接物体的客观状态演化的独立性为前提假设的）间接因果关系，比如：“猫的移动速度比老鼠快，所以猫追上了老鼠”。但实际上，如果我们完全不被这个图灵机的识别结果所影响，对我们而言，这两个小间接物体只是同一个大间接物体（也就是那个立方体）的不同部分，这两个小间接物体各自客观状态的演化实际上没有独立性。因为我们不是分别的追踪这两个小间接物体的客观状态的演化，而是整体的追踪这个大间接物体的客观状态的演化。或者换句话说，我们追踪这个大间接物体里每一个基本单位的客观状态的演化。我们不试图在这两个小间接物体的客观状态演化之间识别（以这两个小间接物体的客观状态演化的独立性为前提假设的）间接因果关系；我们故意忘却这两个小间接物体的客观状态演化之间的（以这两个小间接物体的客观状态演化的独立性为前提假设的）间接因果关系。

类似的，一个图灵机可以在一个康威生命游戏系统里的两个小间接物体的客观状态演化之间识别出一些（以这两个小间接物体的客观状态演化的独立性为前提假设的）间接因果关系，比如：“在一个高斯帕机枪（Gosper glider gun）附近出现的一个滑翔机（glider）是由这个高斯帕机枪制造的”。但实际上，如果我们完全不被这个图灵机的识别结果所影响，对我们而言，这个高斯帕机枪和这个滑翔机只是同一个大间接物体（也就是这个康威生命游戏系统）的不同部分，这两个小间接物体各自客观状态的演化实际上没有独立性。

在一个objective-theory系统中，每一个基本单位作为这个系统的一个子系统，其客观状态演化具有独立性。但是，一个包含两个或更多基本单位的小间接物体（比如一个高斯帕机枪、一只猫）作为这个系统的一个子系统， 其客观状态演化并不具有（与其中的基本单位们的独立性不同的）独立性。或者换句话说，在这个系统中，一个包含两个或更多基本单位的小间接物体并不是一个独立的子系统，而只是两个或更多的独立子系统的集合。所以，以两个小间接物体子系统的客观状态演化的独立性为前提假设的、关于这两个“独立”子系统的客观状态演化之间的关系的间接因果关系，实际上只是一个图灵机的疯狂的、迷信的、荒谬的臆想。

每一个基本单位的客观状态演化是独立的。我们也可以说，作为一个或更多基本单位的集合，每一个小间接物体的客观状态演化是独立的，所以两个小间接物体的客观状态演化之间的间接因果关系实际上并不成立。

那个立方体本身实际上是一整个大间接物体，猫或老鼠都只是这一整个大间接物体的一部分。猫和老鼠实际上不是两个不同的、独立的、平行的小间接物体。只是那个图灵机（通过一种算法）把猫和老鼠识别为（对这个算法而言）两个不同的、独立的、平行的小间接物体。就像一个图灵机（通过一种算法）从一朵真正的大云中识别出（对这个算法而言）两朵不同的、独立的、平行的小云，虽然（对我们而言）这两朵小云实际上只是同一朵大云的不同部分。

那朵真正的大云在客观上实际存在；大云中的每一个小水滴在客观上实际存在。但大云中的一朵像猫的小云在客观上并不实际存在，它只是被一个图灵机主观的臆想出来。

类似的，那个立方体在客观上实际存在；立方体中的每一个基本单位在客观上实际存在。但立方体中的一个小间接物体（比如那只猫）在客观上并不实际存在，它只是被一个图灵机主观的臆想出来。猫、老鼠和人类的大脑都这么臆想，所以猫、老鼠和人类的大脑都不觉得这个臆想是臆想。猫、老鼠和人类的大脑的结构和功能有很多相似之处，它们有同样的臆想并不奇怪。

## 眼前的reality

现在，我的眼前有一个reality。我眼前的这个reality是一个objective-theory，还是我的subjective-theory？我眼前的这个reality是物质（matter）的，还是精神（spirit）的？我眼前的这个reality是一个物质reality，还是我的精神reality？我眼前的这个reality的成分是物质，还是精神？

我可以把我眼前的这个reality想象成是一个objective-theory。我也可以把我眼前的这个reality想象成是我的subjective-theory。这两种想象，都可以在一定程度上自圆其说。那么，到底哪个想象是正确的？

事实上，我眼前的这个reality是我的subjective-theory、精神reality。我眼前的这个reality不是一个objective-theory或物质reality。

那么，有没有一个objective-theory（或物质reality）存在呢？

有。但这个objective-theory不在我的眼前。

那么，这个objective-theory又在哪里呢？它又是什么模样的呢？

当人类的大脑想象subjective-theory和objective-theory这两个reality时，通常会把这两个reality臆想成一模一样。换句话说，通常，一个人会按照她眼前的subjective-theory的模样，去想象objective-theory的模样。这样一来，这个人所想象的objective-theory的模样，实际上并不是真正的objective-theory的模样，而是她的subjective-theory的模样。实际上，当这个人需要想象她的subjective-theory时，她的大脑会不由自主的把她眼前的reality想象成是她的subjective-theory。而当这个人需要想象一个objective-theory时，她的大脑又会不由自主的把她眼前的reality想象成是一个objective-theory。这样一来，她的大脑实际上是在这两种想象之间不由自主的自动切换、摇摆。事实上，这个人应该定下心来，明确她眼前的reality只是她的subjective-theory，而不是一个objective-theory。这个人应该提醒自己，当她把眼前的reality想象成是一个objective-theory时，她眼前的这个reality其实并不是一个objective-theory -- objective-theory实际上并不在她的眼前。当这个人的大脑能认识到眼前的reality是她的subjective-theory时，她的大脑应该也可以认识到自己当下的认知是主观的 -- 自己当下的主观认知未必反映客观真相。这时，她的大脑知道应该对自己的认知持怀疑态度，不应该无保留的相信自己的认知。

Objective-theory到底在哪儿？到底啥样儿？

这个问题直接想没法想。不过，如果我们用逆向思维反过来想（倒着去想），还是可以想出来的。

我的眼前是我的subjective-theory。在这种情况下，去想象（我的眼前没有的）objective-theory是啥样儿，没法想。

如果有一个reality是一个objective-theory，这个objective-theory里面的一个图灵机有个subjective-theory，这种情况我们还是可以想的。

如果我们的眼前有一个objective-theory，这个objective-theory里面的一个图灵机的subjective-theory，我们还是可以想的。

但如果我的大脑就是上一段话里说的这个图灵机，我的眼前有一个subjective-theory，在这种情况下去让我的大脑去想象objective-theory是啥样儿，我的大脑没法想。

在康威生命游戏里有一个图灵机。这个图灵机有它的subjective-theory。我们能看到这个图灵机的objective-theory - 这个图灵机的objective-theory就是我们从电脑屏幕上看到的康威生命游戏的可视化展示。不对，这个图灵机的objective-theory并不依存于电脑屏幕，这个图灵机的objective-theory也不是可视化的展示。这个图灵机的objective-theory其实是存储在电脑内存中的每个细胞（cell）的状态。存储在电脑内存中的所有细胞的状态信息，就是这个图灵机的objective-theory。我们人类看不到这个图灵机的subjective-theory。这个图灵机也看不到它的objective-theory。我们人类可以看到这个图灵机的objective-theory。这个图灵机能看到它自己的subjective-theory。

作为一个人，我的大脑能看到自己的subjective-theory，我的大脑不能直接看到objective-theory。如果objective-theory只是存储在某个地方的每个基本粒子的状态，我的大脑还是可以看到自己的subjective-theory。

如果在宇宙之外有一台计算机，内存中存储了宇宙中所有基本粒子的状态，在这种情况下宇宙是一个数位模拟（digital simulation）。如果宇宙中所有基本粒子并不是被宇宙之外的计算机模拟出来的，而是“物理的”悬浮于真空之中，在这种情况下宇宙不是数位模拟。不论宇宙是否是一个数位模拟，我的大脑的subjective-theory里的内容(content)不会有任何不同。

电脑里的康威生命游戏是一个数位模拟。如果我们不用电脑模拟这个康威生命游戏系统，可以在地面上画出方格，在格子里摆上黑白两色的石头。有黑色石头的方格表示存活的细胞，有白色石头的方格表示死亡的细胞。每隔一分钟，我们根据康威生命游戏的规则，改变所有细胞的状态。这样的话，这个康威生命游戏系统不再是一个数位模拟，而是一个“石头模拟”。不论这个康威生命游戏系统是一个数位模拟还是一个“石头模拟”，系统中一个图灵机的subjective-theory的内容不会有任何不同。对这个图灵机而言，不论这个康威生命游戏系统是一个数位模拟还是一个“石头模拟”，在这个图灵机的subjective-theory里，它周围的环境的几何结构不会有任何不同。

我们还可以用两种不同种类的贝壳代替两种颜色的石头，这样的话，这个康威生命游戏系统的基本单位就从石头变成了贝壳 -- 这个康威生命游戏系统的基本单位的“本质”从石头变成了贝壳。

我们人类知道上述康威生命游戏系统的基本单位的“本质”是模拟。但由于上述图灵机无法知道上述康威生命游戏系统的基本单位的“本质”，对上述图灵机而言，上述康威生命游戏系统的基本单位的“本质”也可能不是模拟。上述图灵机对它周围环境中的indirect-objects很熟悉，它会很自然的把上述康威生命游戏系统的基本单位的“本质”想象成是一个悬浮在真空中的极小的indirect-object。对上述图灵机而言，悬浮在真空中的一个极小的indirect-object当然不是模拟，而是“物理的”。上述图灵机会想象，把任何一个indirect-object反复的切割细分后，最后不能再切割细分了，所得到的那个最小的indirect-object，就是上述康威生命游戏系统的基本单位。在上述图灵机的这个想象里，上述康威生命游戏的基本单位的“本质”不是模拟，而是“物理的”。对上述图灵机而言，indirect-objects存在于它的visually-enriched-indirect-geometric-model中，因此它很自然的会想象上述康威生命游戏系统的基本单位也存在于它的visually-enriched-indirect-geometric-model中。好，既然上述康威生命游戏系统的基本单位存在于它的visually-enriched-indirect-geometric-model中，那么它的visually-enriched-indirect-geometric-model也就是“物理的”，或者说它的visually-enriched-indirect-geometric-model就应该是objective-theory本身。当然，这不是事实，只是上述图灵机的想象。

上述图灵机看不到周围的环境的基本单位的“本质”是石头的、贝壳的、“数位模拟的”还是“不是模拟的”。上述图灵机只会看到周围其它pattern的状态变化。它所看到的周围其它pattern的状态变化，与这些pattern的基本单位的“本质”是石头的、贝壳的、“数位模拟的”还是“不是模拟的”无关。我们人类知道这个康威生命游戏系统的基本单位是用是什么材料做的，但这个系统中的图灵机没有办法知道这个信息。这个系统中的图灵机无法知道它的objective-theory是一个数位模拟、“石头模拟”、“贝壳模拟”还是“不是模拟”。

同样，我的大脑也无法知道我们人类的objective-theory到底是数位模拟、“石头模拟”、“贝壳模拟”还是“不是模拟”。

上述图灵机无法知道它的objective-theory的基本单位的“本质”是啥。我们人类知道它的objective-theory的基本单位的“本质”是石头、贝壳或者数位模拟。我们人类之所以能知道它的objective-theory的基本单位的“本质”，是因为我们人类不在上述图灵机的objective-theory里，而是在另一层reality里。

同样，我的大脑也无法知道我们人类的objective-theory的基本单位（基本粒子）的“本质”是啥。也许我们人类的objective-theory的基本单位在另一层reality里是石头、贝壳或者数位模拟 -- 如果有另一层reality的话。换句话说，也许我们人类的objective-theory的基本单位的“本质”是石头、贝壳或者数位模拟。不过，上一句话里所说的“石头”和“贝壳”，并不是指我平时在日常生活中看到的石头和贝壳 -- 不是一码事。我平时在日常生活中看到的一颗小石子，也许它的每个基本粒子在另一层reality中都是一个贝壳 -- 一颗小石子对应着极大数量（“恒河沙数”）的贝壳。如果真的是这样，那么我们人类的objective-theory就是一个“贝壳模拟”。

我们可以给上述图灵机写一个算法，让上述图灵机通过执行这个算法了解它周围环境的几何结构。上述图灵机可以通过执行这个算法，在它的subjective-theory中生成一个 visually-enriched-indirect-geometric-model。 这个visually-enriched-indirect-geometric-model是上述图灵机周围环境的几何(geometric)数学模型(MM)。这个visually-enriched-indirect-geometric-model的内容，就是上述图灵机周围环境的几何结构。我们知道，不论上述康威生命游戏系统的基本单位的“本质”是“石头模拟”、“贝壳模拟”、数位模拟还是“不是模拟”，上述图灵机周围环境的几何结构不会有任何不同 -- 上述图灵机周围环境的几何结构与上述康威生命游戏系统的基本单位的“本质”无关。因此，不论上述康威生命游戏系统的基本单位的“本质”是“石头模拟”、“贝壳模拟”、数位模拟还是“不是模拟”，这个visually-enriched-indirect-geometric-model的内容不会有任何不同 -- 这个visually-enriched-indirect-geometric-model的内容与上述康威生命游戏系统的基本单位的“本质”无关。

通过类比我们可以认识到，不论上述康威生命游戏系统的基本单位的“本质”是“石头模拟”、“贝壳模拟”、数位模拟还是“不是模拟”，上述图灵机的subjective-theory里的任何内容都不应该有任何不同 -- 上述图灵机的subjective-theory里的任何内容都与上述康威生命游戏系统的基本单位的“本质”无关。因此，上述图灵机也就不可能根据自己subjective-theory里的内容来判断上述康威生命游戏系统的基本单位的“本质”。对上述图灵机的subjective-theory而言，上述康威生命游戏系统的基本单位的“本质”是不可知的。

上述图灵机的任何思想（想法、“起心动念”），都是上述图灵机的subjective-theory里的内容。因此，上述图灵机的任何思想都与上述康威生命游戏系统的基本单位的“本质”无关。因此，上述图灵机也就不可能根据自己的思想来判断上述康威生命游戏系统的基本单位的“本质”。对上述图灵机的思想而言，上述康威生命游戏系统的基本单位的“本质”是不可知的。

我们是否可以给上述图灵机写一个算法，让上述图灵机通过执行这个算法了解它的objective-theory的基本单位的“本质”是“石头模拟”、“贝壳模拟”、数位模拟还是“不是模拟”？不可以。这样的一个算法是不可能存在的。

我的大脑是一台图灵机。是否存在一个算法，使得我的大脑这台图灵机可以通过执行这个算法了解我们人类的objective-theory的基本单位的“本质”是“石头模拟”、“贝壳模拟”、数位模拟还是“不是模拟”？不可能存在这样一个算法。一个人的大脑不可能通过一个算法判断我们人类的objective-theory的基本单位的“本质”。

总之，任何一台图灵机都不可能通过一个算法判断它所在的objective-theory的基本单位的“本质”-- 任何一台图灵机都不可能通过一个算法判断它所在的objective-theory到底是否是一个模拟。不论一台图灵机所在的objective-theory的基本单位的“本质”到底是什么，这台图灵机的任何算法的执行结果都不会因此而有任何不同 -- 这台图灵机的算法的执行结果和这台图灵机所在的objective-theory的基本单位的“本质”无关。所以，这台图灵机无法从它的算法的执行结果判断它所在的objective-theory的基本单位的“本质”。

一个objective-theory中任何算法的执行结果都和这个objective-theory的基本单位的“本质”无关。所以，一个objective-theory中的任何算法都无法判断这个objective-theory的基本单位的“本质”-- 一个objective-theory中的任何算法都无法判断这个objective-theory到底是否是一个模拟。

我的大脑时时把我们人类的objective-theory和一个康威生命游戏系统进行类比，是因为我的大脑认为这两者之间并没有什么本质的不同。我的大脑认为这两者之间并没有什么本质的不同，是因为我的大脑并没有在这两者之间发现本质的不同。

一个康威生命游戏系统中的一台图灵机可能会认为它周围几何结构环境中的一个间接物体控制另一个间接物体，也可能会认为它周围几何结构环境中的一个objective-situation控制或导致另一个objective-situation。但作为观察这个康威生命系统的人类，我们知道，这个图灵机周围几何结构环境中的两个间接物体的客观状态演化之间并不存在控制关系或因果关系，这个图灵机周围几何结构环境中的两个objective-situation之间也不存在控制关系或因果关系。换句话说，客观的说，这个图灵机周围几何结构环境中的两个间接物体的客观状态演化之间并不存在控制关系或因果关系，这个图灵机周围几何结构环境中的两个objective-situation之间也不存在控制关系或因果关系。因此，这个图灵机周围几何结构环境中的两个间接物体之间的控制关系或因果关系，以及这个图灵机周围几何结构环境中的两个objective-situation之间的控制关系或因果关系，都只是这个图灵机自己主观认定的而已，并不具有客观性。

通过类比，我的大脑可以认识到，客观的说，在我周围几何结构环境中的两个间接物体的客观状态演化之间并不存在控制关系或因果关系，在我周围几何结构环境中的两个objective-situation之间也不存在控制关系或因果关系。

当一个objective-theory中的一台图灵机的算法所追求的目标是尽量延长这台图灵机的寿命时，这台图灵机在执行算法时会做出一些行为以试图延长自己的寿命，但其中任何一个行为都并不会真正延长这台图灵机的寿命。这是因为，这台图灵机执行算法所做出的任何一个行为，都是这台图灵机注定要做出的。这台图灵机的寿命是被注定的。这台图灵机执行算法所做出的所有行为也都是被注定的。如果这台图灵机主观上认为自己所做出的行为真的延长了自己的寿命，那么它的这个主观认知并不符合客观事实。

当这台图灵机的算法认为有两种行为供选择时，算法会分别预测这两种行为对图灵机预期寿命的影响，然后根据预测结果选取一种对图灵机预期寿命延长更有利的行为。实际上，算法并不知道这两种行为对图灵机寿命的真正影响。在预测时，算法并不能精确预测选取其中一种行为后图灵机的真实寿命。算法的预测并不精确。我并没有说算法的预测是错误的，我是说算法的预测不精确。不过算法的预测是否精确并不是我要讲的重点。重点是，不管算法的预测是否精确，算法的预测是被注定的，因此算法根据这个预测而选取的行为也就是被注定的。如果算法主观上认为自己的选择真的延长了图灵机的寿命，那么它的这个主观认知并不符合客观事实。

不论这台图灵机的算法有多么巧妙（或者笨拙），这个算法的执行过程是被动的，因此这个算法的执行过程也就不会改变objective-theory的所有基本单位的全部客观状态演化。其实，我们是主观的把objective-theory的所有基本单位的全部客观状态演化中的一部分臆想成了这台图灵机的算法的执行过程。我们是主观的从objective-theory的所有基本单位的全部客观状态演化中选取了其中的一部分，并把这一部分臆想成了这台图灵机的算法的执行过程。因此，“这台图灵机的算法的执行过程”和“objective-theory的所有基本单位的全部客观状态演化中的一部分”是反映同一个objective-situation的两个不同的subjective-situations。

我们是把objective-theory的所有基本单位的全部客观状态演化中的一部分，臆想成了这台图灵机的基本单位的客观状态演化。或者说，我们是把objective-theory的所有基本单位的一部分，臆想成了这台图灵机的基本单位。也就是说，这台图灵机的存在，以及这台图灵机的算法的存在，都是我们臆想出来的。所以，这台图灵机的算法的预测和选择，也是我们臆想出来的。“这台图灵机的行为”或者“这台图灵机的算法的行为”都是我们臆想出来的。实际上，这些行为既不是图灵机的行为，也不是图灵机的算法的行为，而是objective-theory的所有基本单位的行为。我们是主观的把objective-theory的所有基本单位的行为臆想成了图灵机的行为或者图灵机的算法的行为。客观的看，图灵机并不存在，图灵机的算法自然也不存在，图灵机的算法的预测和选择就更不存在了--真正存在的只有objective-theory所有基本单位的全部客观状态演化。

Objective-realilty的所有基本单位的全部客观状态演化是一个不可分割的整体。我们是从这个（客观上不可分割的）整体中主观的分割出了一台图灵机。这种“主观的分割”就是“臆想”。我们主观的分割出一台图灵机时，同时还会主观的臆想这台图灵机具有一定的独立性，独立于它周围的环境。这种“独立性”也是我们臆想出来的。实际上，这台图灵机和它周围的环境是一个不可分割的整体--这台图灵机或其环境都没有任何独立性。这台图灵机和它周围的环境实际上是一个indirect-object，我们硬把它们臆想成是两个（相互独立的）indirect-objects。

实际上，“把一个indirect-object主观的分割成A和B两个indirect-objects”和“臆想A和B这两个indirect-objects的独立性”是对同一个行为的两种不同表述。如果我们不把A和B臆想成是相互独立的，那么我们也就没有主观的分割A和B。如果我们不主观的分割A和B，那么我们也就不能臆想A和B的独立性。

一个objective-theory实际上只是一个indirect-object。我们是把这一个indirect-object臆想成了很多（相互独立的）indirect-objects。实际上，一个objective-theory中的任何indirect-object都不具有任何独立性。

当一个康威生命游戏系统中的一台图灵机认为它周围环境中的indirect-objects具有独立性时，它周围环境中的这些indirects-objects实际并不具有独立性。作为一个objective-theory，这个康威生命游戏系统实际上只是一个indirect-object。这台图灵机是把这一个indirect-object臆想成了很多（相互独立的）indirect-objects。这台图灵机把这个康威生命系统作为一整个indirect-object所作出的行为的一部分，臆想成了这台图灵机自己作为一个indirect-object所（独立）作出的行为。上一句话里所说的“一部分”行为，是指发生在这台图灵机的作为一个indirect-object所占据的空间内的行为。换句话说，这台图灵机把这个康威生命系统作为一整个indirect-object所作出的全部行为之中发生在这台图灵机（作为一个indirect-object）所占据的空间内的部分（行为），臆想成了这台图灵机自己作为一个（具有独立性的）indirect-object所（独立）作出的行为。也就是说，这台图灵机贪天之功以为己力。上一句话里的“天”指objective-theory作为一整个indirect-object。

我的大脑所感知到的一个objective-theory中的一个indirect-object的subjective-boundary，并不是这个indirect-object的实际的boundary。这个indirect-object实际上并没有boundary。换句话说，在一个objective-theory中的任何两个indirect-objects之间，并没有一个实际的boundary实际的分割这两个indirect-objects。我的大脑主观的在空间上分割了这两个indirect-objects。这两个indirect-objects之间的boundary只存在于我的大脑对于空间的认知中。

事实上，我的大脑是把位于空间中某一个区域里的BBs想象成了一个indirect-object。这些BBs被我的大脑认知为属于同一个indirect-object。基于这个认知，我的大脑会想象它们与位于另一个空间区域里的BBs有某种微妙的不同，而它们实际上与位于另一个空间区域里的BBs并没有任何不同。当然，从宏观一点的角度看，这两个空间区域中的BBs是两个不同的集合，首先这两个空间区域中的BBs的数量就不一定相同，其次这两个空间区域中BBs的种类也不一定相同。但是，当我们具体观察每一个BB个体时，就会发现位于前一个空间区域的一个BB个体，和位于后一个空间区域的一个BB个体之间，并没有任何不同。换句话说，当一个BB个体在从前一个空间区域进入后一个空间区域后，并不会由于进入了一个新的空间区域而发生任何变化。

从另一个角度看，也可以说我的大脑是把一个空间区域想象成了一个indirect-object。当这个空间区域的坐标位置（在我的大脑的认知中）随着时间的流逝而改变时，是我的大脑在想象这个indirect-object在空间中的宏观运动。

换句话说，我的大脑是把一个subjective-boundary内的空间想象成了一个indirect-object。当这个subjective-boundary的坐标位置（在我的大脑的认知中）随着时间的流逝而改变时，是我的大脑在想象这个subjective-boundary在空间中的宏观运动。

例如，当一只箭飞在空中时，在我的大脑的认知中这只箭的坐标位置在随着时间的流逝而改变。如果我的眼睛像电子显微镜一样能追踪箭和空气中的每一个原子的实时运动，也许我的大脑反而不会注意到箭的subjective-boundary的宏观运动了。

再比如，假如一个苹果里有一条肉虫子在睡觉，在不切开这个苹果的前提下，假如我的眼睛具有透视能力，能看到这个苹果里的每一个原子，也许我的大脑并不能轻易地从我的眼睛提供的信息中识别出这条肉虫子的subjective-boundary。

日常生活中，根据我的视网膜提供的信息，我的大脑的visual cortex在自动的识别每一个indirect-object的subjective-boudnary。我的大脑的其他认知工作，是建立在visual cortex这一工作的基础之上的。对我的大脑的其他认知工作而言，visual cortex所识别出的subjective-boudaries或indirect-objects好像是客观存在的一般。但实际上，visual cortex所识别出的subjective-boudaries或indirect-objects，是被visual cortex（根据我的视网膜提供的信息）用它的算法主观生成的。Subjective-boundaries或indirect-objects的存在，取决于我的visual cortex的算法。

例如，从同一个石原氏色盲检测图中，色觉正常者和色盲患者的visual cortex会识别出不同的subjective-boundary。这充分证明了subjective-boundary本质上是主观的而不是客观的。

色觉正常者之间可以就检测图中的subjective-boundary达成共识，对他们而言，这个达成了共识的subjective-boundary貌似是客观的。我们人类可以就一个台球的subjective-boundary达成共识，对我们而言，这个达成了共识的subjective-boundary貌似是客观的。

当我们认为一个objective-theory中的indirect-objects具有独立性时，假如这个objective-theory中的indirect-objects确实具有独立性，那么我们对这个objective-theory的主观认知就是正确的。

但事实上，当我们认为一个objective-theory中的indirect-objects具有独立性时，这个objective-theory中的indirect-objects实际并不具有独立性。所以，这时我们对这个objective-theory的主观认知是不正确的。

2O-subject-ghost代表一个indirect-object的独立性。当我的大脑认为一个indirect-object具有独立性时，我的大脑才会用一个2O-subject-ghost代表这个indirect-object。反过来说，当我的大脑用一个2O-subject-ghost代表一个indirect-object时，说明我的大脑认为这个indirect-object具有独立性。

“一个objective-theory中的indirect-objects具有独立性”和“一个objective-theory中的indirect-objects不具有独立性”是反映同一个objective-situation的两个不同的subjective-situations。前面这个subjecctive-situation是对objective-situation的错误认知。后面这个subjective-situation是对objecitive-sitatuion的正确认知。脊椎动物大脑缺省的认知是前面这个subjective-situation。通过学习本文，人类大脑可以认知到后面这个subjective-situation。脊椎动物大脑作为图灵机有一个用来（不准确可靠的）预测周围环境（注：周围环境其实是一个visually-enriched-indirect-geometric-model)的客观状态演化的算法，这个算法的precondition是前面这个subjective-situation。Indirect-objects不具有独立性，而这个算法的precondition是indirect-objects具有独立性，那么这个算法实际上从一开始就用错误的数学模型简化了indirect-objects之间的关系，而这就会导致这个算法的预测结果不准确可靠。（每一个具有独立性的indirect-object就是这个算法所使用的一个数学模型。一个indirect-object所具有的独立性，从另一个角度，也可以被描述成这个indirect-object所具有的libertarian-freedom或libertarian-free-will。）这个算法的预测结果是粗略近似的。换句话说，这个算法是粗略近似的。这个算法会粗略近似的描述一个indirect-object之内的BBs的宏观特性。这个算法的这种粗略近似的描述实际上是一种数学模型。这个算法会根据两个indirect-objects的宏观特性之间的（一种想象出来的）关系而预测这两个indirect-objects在空间中的宏观运动。这种想象出来的关系实际上也是一种数学模型。（例如，在我面前的一只母猫和它所生的一只幼崽之间的“爱”，这种想象出来的两个indirect-objects之间的关系，就是我的大脑里的算法所使用的一个数学模型。这个数学模型是粗略近似的。我的大脑里的算法会根据这个数学模型来预测这两个indirect-objects在空间中的宏观运动。这个数学模型和“爱”这个标签相关联。当我的大脑识别出这只母猫后，实际上是给我的visual cortex所识别出的一个indirect-object贴上了“母猫”这个标签。我大脑里的算法对“母猫”这个标签所标记的indirect-object之内的BBs的宏观特性，有一个粗略近似的数学模型。这个数学模型和“幼崽”标签所关联的数学模型有显著的不同。作为读者，当你读到这里时，虽然你没有亲眼看到这只母猫和它的幼崽，但你的大脑里的算法也有分别和“母猫”、“幼崽”以及“爱”这三个标签所关联的三个数学模型，所以你才能理解我在讲什么。很显然，我的大脑里的算法并不能根据这三个（粗略近似的）数学模型来准确可靠的预测这两个indirect-objects在空间中的宏观运动。想要准确可靠的预测这两个indirect-objects在空间中的宏观运动，需要掌握这两个indirect-objects中全部BBs的状态。对于这两个indirect-objects在空间中的宏观运动，这只母猫自己大脑里的算法（作为一个indirect-observer）所作的粗略近似的预测，不会影响一个direct-observer根据这两个indirect-objects中全部BBs的状态所作的准确可靠的预测。这恰恰是因为，这只母猫大脑里的算法将会作出什么样的预测，是可以被一个direct-observer根据这两个indirect-objects中全部BBs的状态而（准确可靠的）预测的。所谓的“母猫”、“幼崽”和“爱”，其实只是你我大脑里的算法所使用的三个数学模型。换句话说，所谓的“母猫”、“幼崽”和“爱”，只主观存在于你我大脑的认知（即subjective-theory）里，而并不客观存在于objective-theory里。Objective-theory里只有BBs和它们的客观状态演化，并不真正存在什么“母猫”、“幼崽”或“爱”。“母猫”、“幼崽”或“爱”都是你我的大脑主观想象出来的，而不是客观存在的。在我面前的一只活猫，和天上一朵像猫的云，这两者本身其实都不是什么“猫”，而都只是一堆BBs。所谓的“猫”其实是以主观的形式存在于我的内心中，是我的内心把这两堆BBs都想象成了“猫”。所谓的“猫”是我想象出来的。我把（面前的或者天上的）一堆BBs看成了“猫”，这堆BBs上的“猫”其实是我内心的投射。这堆BBs上的“猫”其实在我的内心里，而不是在面前或者天上。“猫”是我内心中所定义的一组特征，当一堆BBs满足了我内心中定义的这组特征时，就会被我的心自动贴上“猫”这个标签。不管一个indirect-object是在我的面前还是在天上，只要我的visual cortex认为这个indirect-object的视觉信息满足某种特征，我的心就会自动的给这个indirect-object贴上“猫”这个标签。被我的心贴上了“猫”这个标签的indirect-object，只在我的内心里是“猫”。在objective-theory中，这个indirect-object还只是一堆BBs。）这个算法在每一个脊椎动物的大脑中具体是什么内容，又是被objective-theory的客观状态演化所注定的。每一个脊椎动物都无法决定自己大脑中的这个算法具体是什么内容。在一个脊椎动物做梦的时候，它的大脑也会执行这个算法，以预测梦境中周围环境(注：梦境中的周围环境其实也是一个visually-enriched-indirect-geometric-model)的客观状态演化。对这个算法而言，周围环境是梦境还是“真实”，并没有什么不同。这个算法只需要根据它所掌握的关于周围环境的信息来预测周围环境的客观状态演化，而并不需要管周围环境到底是梦境还是“真实”。在梦境中，这个算法也未必能准确可靠的预测周围环境的客观状态演化，虽然梦境中周围环境的客观状态演化实际上是这个脊椎动物的大脑（执行这个脊椎动物大脑中的第二个算法）根据大脑内部存储的信息主观生成的。而在非梦境的“真实”中，周围环境的客观状态演化实际上是这个脊椎动物的大脑（执行这个脊椎动物大脑中的第三个算法）根据感觉器官传来的信息生成的。但对于这个脊椎动物的大脑而言，它在自己的subjective-theory里永远没有办法真正证明它所感知到的周围环境的客观状态演化的信息真的是来自于自己的感觉器官，而不是来自于大脑内部存储的信息。换句话说，对于这个脊椎动物的大脑而言，它在自己的subjective-theory里永远没有办法真正证明它所感知到的周围环境不是梦境。根据类似的逻辑，对于这个脊椎动物的大脑而言，它在自己的subjective-theory里永远没有办法真正证明它所感知到的周围环境是由大脑生成的，也永远没有办法真正证明它所感知到的周围环境反映了objective-theory的状态，也永远没有办法真正证明objective-theory的存在。对于这个脊椎动物的大脑而言，它在自己的subjective-theory里只能勉强证明“I think, therefore I am”。但是，如果我们假设这个脊椎动物的大脑既不想象自己的subjective-theory反映了objective-theory的状态，也不把自己的subjective-theory想象成是objective-theory本身，那么这个脊椎动物的大脑就不能在自己的subjective-theory中发现任何meaning。

## 避免

正是因为我事先不可能知道我最终会选择麦当劳还是肯德基，所以，最终我到底会选择哪个快餐，这个最终选择恰恰是我不可能改变的。如果我事先能知道我的最终选择的话，我就能改变这个最终选择。但我不可能事先知道我的最终选择，所以我无法改变这个最终选择。这个最终选择是一个（我自己参与造成的）结果，我无法改变这个（我自己参与造成的）结果。

如果我能事先知道我的direct-fate，我就能改变我的direct-fate。恰恰因为我不可能事先知道我的direct-fate,所以我无法改变我的direct-fate。如果我能改变我的direct-fate，那这个被改变的所谓的“direct-fate”,就不是我真正的direct-fate。

当我担心会发生一个事情时，这个事情并不一定是我的direct-fate。如果这个事情真的是我的direct-fate的话，那它肯定会发生，我不可能阻止它的发生。如果我能阻止它的发生的话，就说明这个事情其实并不是我的direct-fate。

如果我阻止了一个事情发生的话，就说明这个事情本来就不会发生，我本来就会阻止这个事情的发生。说明这个事情不是我的direct-fate，只是我的一个（错误的）预测。做出这个错误的预测，本身就是我的direct-fate。我由于认同这个错误的预测而做出的行为，也是我的direct-fate。我的direct-fate并没有因我（由于认同这个错误的预测而做出的）的行为而改变，我的（由于认同这个错误的预测而做出的）行为本身就是我的direct-fate。

任何我想避免发生的事情，我并不能真正的避免它的发生。如果我避免了它的发生，那么这说明它本身就不会发生。如果我避免不了它的发生，那么这说明它本身就是一定会发生的。所以我避免不了任何事情的发生。

我避免不了我自己的以避免一个事情的发生为目的的行为 -- 如果我还在做以避免一个事情的发生为目的的行为的话。

但我们人类在生活中经常会去想怎么避免一个事情的发生，似乎我们也真能避免一个事情的发生。似乎一个事情本来是要发生的，但被我们（成功的）避免了它的发生。这是我们的一种感觉。这种感觉是错误的。我们感觉一个事情要发生，但被我们避免了。如果一个事情最终被我们（成功的）避免了，那么说明这个事情本来就不会发生。但我们想象我们真正的避免了一个事情。大家都这么想象。大家都把这种（错误的）主观想象当作了（正确的）客观事实。

我们人类的生产、生活就是围绕着避免（一些）事情发生进行的。我们人类为了避免一个事情的发生，做了很多工作。可以说，我们人类做的一切工作，都是为了避免一个事情的发生。我们进行分工、合作，我们界定责任、努力工作，以避免一个事情的发生。当我们人类没能避免一个事情发生时，我们人类会认为这是我们人类的错，并会从这个事情的所有人类参与者中找出应该承担责任的个人。如果我们不认为这个事情是有可能被避免的，那么我们就没有理由让参与这个事情的一个人承担责任。人类之间的合作，首先需要界定责任。现代人类社会中，对于责任的界定，就是建立在认为一个事情可以被真正避免这个（错误的）想象的基础之上的。认为一个事情可以被真正避免，这是现代人类文化中一个很深层的幻觉、错误认知、错觉、妄想。

嵌在objective-theory中的一个人，无法真正避免任何一个事情的发生 -- 这个人没有这个能力。但这个人会妄想自己具有这个能力。这个人认为自己具有这个能力，这个认知是这个人的一种妄想。在现代人类社会中，这个妄想被普遍接受。法律体系和道德体系，一般都是以这个妄想为基础而建立的。

Indirect-objects是相互分离的、相互独立的、各自具有独立性的，这个认知也是一种妄想。

避免一个事情发生，这是一个愿望。这个愿望有可能实现。当这个愿望实现时，说明这个事情本来就不会发生，这个愿望本来就会实现。

我们人类有时会想要避免一个事情发生，有时又会希望（另）一个事情能发生。如果一个事情发生了，说明这个事情本来就要发生。希望一个事情发生，也只是一个愿望。并不是这个愿望使得这个事情发生，这个愿望（的产生）和这个事情（的发生）都是注定的。

希望一个事情不发生的愿望，也不是导致这个事情不发生的原因。这个愿望的产生，和这个事情的不发生，两者都是注定的。

一个愿望的产生，以及这个愿望能否变成现实，这两者都是注定的。

其实我们没有办法可以改变我们事实上（真正）产生了的愿望，虽然我们会妄想我们能改变我们的愿望。

我们总是在妄想我们可以产生（和事实上真正产生了的愿望）不同的愿望。

## 物自体

### A

当我切苹果的时候，如果你作为旁观者观察着这个场景，你看到苹果在我的面前，苹果位于我的肉身之外，这很明显。

当我在切苹果的现场亲身体验这个场景的时候，我确实看到一个苹果出现在我本人的眼前，可我本人眼前出现的这个苹果是“真实的苹果”吗？假如我本人眼前出现的苹果是“真实的苹果”，那么我看到这个“真实的苹果”之后，我脑海中就会浮现出一个这个苹果的图像,请问这个（我脑海中的）图像又在哪儿呢？一种观点是，我本人眼前出现的苹果其实就是我脑海中浮现出的苹果的图像。而“真实的苹果”并不是我本人眼前出现的苹果，“真实的苹果”其实在另一个地方、另一个世界、另一个空间。“真实的苹果”就叫“物自体”。“真实的苹果”就是进入我的脑海之前的苹果。当你作为旁观者观察我切苹果的场景时，你看到的苹果和我其实都只是你脑海中浮现出的图像，而不是“真实的苹果”和“真实的我”（这里的“我” 指本文作者）。你和我都没办法看到“真实的苹果”和“真实的我”。在你脑海中浮现出的图像里，“苹果的图像”位于“我的图像”（这里的“我”指本文作者）之外。那么，在“真实的世界”里，“真实的苹果”是位于“真实的我”之外吗？“真实的世界”可能都不是一个空间，因此也就不存在所谓“之内”、“之外”的概念。因为只有在空间里才有所谓“之内”、“之外”的概念。

### B

我感觉我的肉身处于一个三维欧几里得空间之内。假设我的肉身确实位于这个三维欧几里得空间之内，那么，当我用肉眼去看（同样位于这个三维欧几里得空间之内的）一个苹果时，我的肉身中的大脑的脑海中应该会浮现出这个苹果的三维欧几里得图像。注意，当我用肉眼去看这个苹果时，我的肉眼也必然会看到这个苹果周围的环境，因此我的肉身中的大脑的脑海中同时也应该浮现出这个苹果周围的环境的三维欧几里得图像。（我的肉身中的大脑的脑海中浮现的）这个苹果的三维欧几里得图像加上（我的肉身中的大脑的脑海中浮现的）这个苹果周围的环境的三维欧几里得图像，整体来说构成一个（我的肉身中的大脑的脑海中浮现的）三维欧几里得空间。我的肉身是这个苹果周围的环境的一部分，因此（我的肉身中的大脑的脑海中浮现的）这个苹果周围的环境的三维欧几里得图像内也包括了（在我的肉身中的大脑的脑海中浮现的）我的肉身的三维欧几里得图像。既然（我的肉身中的大脑的脑海中浮现的）这个苹果周围的环境的三维欧几里得图像内也包括了（在我的肉身中的大脑的脑海中浮现的）我的肉身的三维欧几里得图像，那么我就会（错误的）感觉我的肉身处于这个苹果的周围环境的三维欧几里得图像之内。因此（我的肉身中的大脑的脑海中浮现的包括这个苹果的三维欧几里得图像的）三维欧几里得空间其实就是我感觉我的肉身所处的那个三维欧几里得空间。因此，我的肉身其实并不位于这个（我的肉身中的大脑的神经网络感觉我的肉身所处的）三维欧几里得空间之内。我的肉身中的大脑的神经网络（错误的）感觉我的肉身处于这个（我的肉身中的大脑的脑海中浮现的）三维欧几里得空间之内。我的肉身并不是这个（我的肉身中的大脑的脑海中浮现的）三维欧几里得空间的一部分，而是“物自体”的一部分。我的肉身（本身）和它的三维欧几里得图像并不是一回事儿。我的肉身的三维欧几里得图像是这个（我的肉身中的大脑的脑海中浮现的）三维欧几里得空间的一部分，但这并不代表我的肉身（本身）是这个（我的肉身中的大脑的脑海中浮现的）三维欧几里得空间的一部分。“物自体”不必是一个三维欧几里得空间。

当我看我的自拍照片时，我的肉身的二维欧几里得图像位于这个自拍照片（的二维欧几里得空间）之内，但我的肉身（本身）并不处于这个自拍照片（的二维欧几里得空间）之内。我的肉身的二维欧几里得图像位于这个自拍照片之内，但这并不代表我的肉身（本身）位于这个自拍照片之内。我的肉身（本身）和它的二维欧几里得图像并不是一回事儿。

### C

当我切苹果的时候，我眼前看到的苹果实际上只是苹果（在我的肉身中的大脑的脑海中浮现）的三维欧几里得图像而已。当我一刀把眼前看到的苹果切成两半后，我眼前看到的半个苹果实际上只是半个苹果（在我的肉身中的大脑的脑海中浮现）的三维欧几里得图像而已。

这和虚拟现实的体验是类似的。戴上虚拟现实眼镜后，我眼前看到的苹果实际上只是苹果（在我的肉身中的大脑的脑海中浮现）的三维欧几里得图像而已。戴着虚拟现实眼镜，当我一刀把眼前看到的苹果切成两半后，我眼前看到的半个苹果实际上只是半个苹果（在我的肉身中的大脑的脑海中浮现）的三维欧几里得图像而已。

### D

宇宙的状态的演化发生在“物自体”之内。宇宙的状态的演化并不发生在（我的肉身中的大脑的脑海中浮现的）三维欧几里得空间之内。我的肉身中的大脑的神经网络（错误的）感觉宇宙的状态的演化发生在（我的肉身中的大脑的脑海中浮现的）三维欧几里得空间之内。我的肉身中的大脑的神经网络（错误的）把（我的肉身中的大脑的脑海中浮现的）三维欧几里得空间当作是宇宙（本身）。（我的肉身中的大脑的脑海中浮现的）三维欧几里得空间其实只是宇宙在我的肉身中的大脑的脑海中的三维欧几里得图像。宇宙（本身）和它（在我的肉身中的大脑的脑海中）的三维欧几里得图像并不是一回事儿。宇宙（本身）是“物自体”。

我的肉身中的大脑的神经网络（错误的）想象我的肉身位于（我的肉身中的大脑的脑海中浮现的）三维欧几里得空间之内。同时，我的肉身中的大脑的神经网络还（错误的）想象我的肉身之内还有一个小人儿（也位于（我的肉身中的大脑的脑海中浮现的）三维欧几里得空间之内）。实际上，（我的肉身中的大脑的脑海中浮现的）三维欧几里得空间里并不应该有这个小人儿的位置，这个小人儿只应该是我的肉身中的大脑的脑海中浮现出的一个想象/幻象。这个小人儿只应该是我的肉身中的大脑的神经网络的一个想象。这个小人儿只应该是我的肉身中的大脑的神经网络想象出的一个幻象。这个小人儿是我的肉身（在我的肉身中的大脑的脑海中）的对应物。而我的肉身（在我的肉身中的大脑的脑海中）的三维欧几里得图像也是我的肉身（在我的肉身中的大脑的脑海中）的对应物。因此，在我的肉身中的大脑的脑海中，我的肉身有两个对应物。第一个对应物是我的肉身的三维欧几里得图像。第二个对应物是这个小人儿。我的肉身中的大脑的神经网络（错误的）想象这个小人儿位于我的肉身（的三维欧几里得图像）之内。实际上，即使我用手术刀切开我的肉身的三维欧几里得图像，我也看不到这个小人儿。

假设这个小人儿有自由行为的能力，即假设这个小人儿可以通过其自由的行为（自由的）操纵我的肉身（的三维欧几里得图像），那么这个小人儿应该做些什么？这就是我的肉身中的大脑的神经网络在思考自身行为时的出发点。不过实际上，真正操纵着我的肉身（的三维欧几里得图像）的，是“物自体”里（属于我的肉身“本身”）的基本粒子，而不是这个小人儿。真正操纵着我的肉身（的三维欧几里得图像）的，既不是这个小人儿，也不是我的肉身的三维欧几里得图像（本身）。因此，在我的肉身中的大脑的脑海中，我的肉身的第三个对应物就应该是“物自体”里（属于我的肉身“本身”）的基本粒子。

实际上，“物自体”里（属于我的肉身“本身”）的基本粒子的状态演化，被我的肉身中的大脑的神经网络（错误的）解释为“这个小人儿可以通过其自由的行为（自由的）操纵我的肉身（的三维欧几里得图像）”。换句话说，（我的肉身的）第三个对应物的状态演化，被我的肉身中的大脑的神经网络（错误的）解释为“（我的肉身的）第二个对应物可以通过其自由的状态演化（自由的）操纵（我的肉身的）第一个对应物的状态演化”。

实际上，“物自体”里（属于我的肉身“本身”）的基本粒子的状态演化，被我的肉身中的大脑的神经网络（错误的）解释为“这个小人儿有自由行为的能力”。换句话说，（我的肉身的）第三个对应物的状态演化，被我的肉身中的大脑的神经网络（错误的）解释为“（我的肉身的）第二个对应物的状态演化是自由的”。

## 妄想

宇宙的objective-state-evolution, 除了受到其自身的direct-function的控制外，不受任何其他规律（或因果关系）的制约。我在思考问题的时候，可能会使用各种各样的规律（或因果关系），这些规律（或因果关系）除direct-function之外都是假象（或妄念、妄想）。使用这些假象（或妄念、妄想）进行思考时，有时候想不通（比如有时我感觉到我的思维中有自相矛盾的地方），是很正常的。思考的基础就是假象（或妄念、妄想），在这种情况下如果能想的很通透，反而倒是有点奇怪了。

从根本上说，所谓“我的思维”其实并不是“我”的思维，而是宇宙的思维。宇宙会怎么思维，也完全受到direct-function的控制。当宇宙的思维中出现自相矛盾的时候，这个自相矛盾的思维也是（在direct-function的控制下）注定会出现的。

我感觉到“我”可以用“我的思维”来改变“我的肉身”的（以及宇宙的）objective-state-evolution，我的这个感觉就是一种妄念。“我”从根本上说不存在。或者换句话说，“我”从根本上说就是宇宙。“我的思维”从根本上说其实是宇宙的思维。“我的肉身”本质上是宇宙的一个组成部分。宇宙可以用宇宙的思维来改变宇宙的一个组成部分（这里指“我的肉身）的objective-state-evolution吗？宇宙的思维就是被宇宙的这个组成部分的objective-state-evolution决定的。宇宙的（这个组成部分的）objective-state-evolution又怎么（通过决定宇宙的思维）改变宇宙的（这个组成部分的）objective-state-evolution本身？这就是一个妄念！

我的大脑能通过它（在real world中的）的思维改变我的大脑本身的objective-state-evolution吗？

我的大脑本身的（以及宇宙的）objective-state-evolution决定了（在real world中）我的大脑的思维，而不是相反。不是（在real world中）我的大脑的思维决定了我的大脑的（以及宇宙的）objective-state-evolution。

我的大脑本身的（以及宇宙的）objective-state-evolution是“因”；（在real world中）我的大脑的思维是“果”。

一台计算机能通过（在real world中）执行一个if-then-else条件语句来改变这台计算机本身的objective-state-evolution吗？

这台计算机本身的（以及宇宙的）objective-state-evolution决定了（在real world中）到底是 “then”后面的代码会被执行还是“else”后面的代码会被执行。换句话说，这台计算机本身的（以及宇宙的）的objective-state-evolution决定了“在real world中到底哪条代码会被执行”，而不是相反。不是“在real world中到底哪条代码会被执行”决定了这台计算机（以及宇宙的）的objective-state-evolution。

这台计算机本身的（以及宇宙的）的objective-state-evolution是“因”；“在real world中到底哪条代码会被执行”是“果”。

不是（在real world中）这个条件语句的内容决定了这台计算机的（以及宇宙的）objective-state-evolution。不是（在real world中）这个条件语句的内容决定了“在real world中到底哪条代码会被执行”。

这台计算机的（以及宇宙的）objective-state-evolution决定了（在real world中）这个条件语句的内容。这台计算机的（以及宇宙的）objective-state-evolution决定了“在real world中到底哪条代码会被执行”。

“物”是“因”。“心”是“果”。

大脑以及宇宙的objective-state-evolution是“因”；在real world中大脑的思维是“果”。

计算机以及宇宙的objective-state-evolution是“因”；“在real world中到底哪条代码会被执行”是“果”。

计算机以及宇宙的objective-state-evolution是“因”；（在real world中）这个条件语句的内容是“果”。

我的所有认知，（除了direct-function之外），从根本上说其实都是妄想（或妄念、假象）。我的所有认知，（除了direct-function之外），整体上构成了一个貌似能自圆其说的大妄想（或大妄念、大假象）。这个大妄想中包括了我认知到的所有因果关系（或规律）。我们所说的“去理解一个人”，就是去理解这个人的这个大妄想中所包括的因果关系（或规律）。

如果从我的大妄想中任意拎出两条规律（或因果关系），这两条规律（或因果关系）之间按道理说不应该有冲突，但实际上有可能会有冲突，只是我早已习惯了这种冲突，也就不以为意。所以，我的大妄想实际上并没有做到自圆其说，但由于我早已习惯了我的大妄想中自相矛盾的地方，所以我感觉我的大妄想能自圆其说。

我的这个大妄想，实际上是对于宇宙的objective-state-evolution的一个错误的解释。Direct-function是对宇宙的objective-state-evolution的唯一正确的解释。

我的这个大妄想中都包括了哪些规律，这不是能由我自己决定的，而是由宇宙的direct-function决定的。所以，这个大妄想本质上并不是“我的”，而是“宇宙的”。

## 避免失败

我的大脑会把某些situation定义为“失败”，每当想到某一个（过去的或未来的）situation“很失败”的时候，就会触发负面的情绪。我的大脑认为未来可能会（在real world中）发生的（但不是必然会发生的）某些“失败”是可以被我的大脑在此时此刻（在real world中）采取适当行动避免的。“某个“失败”在未来可能会（在real world中）发生（但不是必然会（在real world中）发生）”是指我的大脑在此时此刻找不到这个“失败”一定会（在real world中）发生的确切理由，也找不到这个“失败”一定不会（在real world中）发生的确切理由。

一旦我的大脑把未来可能会（在real world中）发生的（但不是必然会发生的）某个situation定义为“失败”，就自动的会去想办法避免这个situation（在real world中）的发生，就好像这个“失败”（在real world中）的发生是可以（在real world中）被避免的一样。实际上，如果我的大脑最终“避免”了这个situation的发生，这其实意味着这个situation本来就一定不会（在real world中）发生，只是我的大脑本来不知道这个situation一定不会（在real world中）发生。我的大脑本来不知道这个situation一定不会（在real world中）发生，所以我的大脑才会去想办法避免这个situation（在real world中）的发生。

在real world中，当我的大脑想办法避免某个situation（在real world中）的发生时，这实际上说明“我的大脑想办法避免某个situation（在real world中）的发生”这个情况也是必然会（在real world中）发生的。换句话说，这实际上说明（在real world中）我的大脑没办法避免“我的大脑想办法避免某个situation（在real world中）的发生”这个情况（在real world中）的发生。

如果我的大脑本来就确切的知道某个（“很失败”的）situation一定不会（在real world中）发生，那我的大脑就不会去想办法避免这个situation（在real world中）的发生了。在这种情况下，（如果我的大脑本来的判断是正确的的话，）这个situation最终还是不会（在real world中）发生。

如果我的大脑本来就确切的知道某个（“很失败”的）situation一定会（在real world中）发生，那我的大脑就不会去想办法避免这个situation（在real world中）的发生了。在这种情况下，（如果我的大脑本来的判断是正确的的话，）这个situation最终会（在real world中）发生。

## Theory of mind和意识空间

当我看到一个物体时，如果我的大脑判断这个物体是一个人，我的大脑本能的会自动使用theory of mind去勾勒、描绘、想象这个*人*的“意识空间”。我的大脑本能的会假想这个人有个意识空间，而这个人的行为是在他的意识空间的控制、驱动下产生的。但实际上，这个人并没有意识空间，这个人的行为是在direct-function的控制、驱动下产生的。

当我看到一个物体时，如果我的大脑判断这个物体是一个人，我的大脑本能的会自动使用theory of mind去勾勒、描绘、想象这个*物体*的意识空间。我的大脑本能的会假想这个物体有个意识空间，而这个物体的行为是在它的意识空间的控制、驱动下产生的。但实际上，这个物体并没有意识空间，这个物体的行为是在direct-function的控制、驱动下产生的。

当我看到一个*物体*时，如果我的大脑判断这个物体是一个AI system或者brain，我的大脑本能的会自动使用theory of mind去勾勒、描绘、想象这个物体的意识空间。我的大脑本能的会假想这个物体有个意识空间，而这个物体的行为是在它的意识空间的控制、驱动下产生的。但实际上，这个物体并没有意识空间，这个物体的行为是在direct-function的控制、驱动下产生的。

当我看到一个*neural network*时，如果我的大脑判断这个物体是一个AI system或者brain，我的大脑本能的会自动使用theory of mind去勾勒、描绘、想象这个neural network的意识空间。我的大脑本能的会假想这个neural network有个意识空间，而这个neural network的行为是在它的意识空间的控制、驱动下产生的。但实际上，这个neural network并没有意识空间，这个neural network的行为是在direct-function的控制、驱动下产生的。

当我看到一个计算机程序时，我的大脑本能的会自动使用theory of mind去勾勒、描绘、想象这个计算机程序的意识空间。我的大脑本能的会假想这个计算机程序有个意识空间，而这个计算机程序的行为是在它的意识空间的控制、驱动下产生的。但实际上，这个计算机程序并没有意识空间，这个计算机程序的行为是在direct-function的控制、驱动下产生的。

## 系统的初始状态与后悔

假如我是一个Conway’s Game of Life system中的一个pattern，当我对之前我做过的某件事感到后悔时，我感觉到，如果之前这件事我的做法不同的话，现在我面对的情况就应该会不同。我感觉到，现在我面对的情况中，包含了之前这件事的“结果”，而之前这件事是这个“结果”的“原因”。我感觉到，之前这件事我的做法是“可以” 不同的。可是，既然我是一个Conway’s Game of Life 系统中的一个pattern，之前这件事我的做法又怎么“可以”不同呢？之前这件事我的做法是被系统的初始状态决定的。如果我想改变之前这件事我的做法，我必须改变系统的初始状态。

作为一个U-system（i.e., the cosmos）中的一个indirect-object，当我对之前我做过的某件事感到后悔时，我感觉到，如果之前这件事我的做法不同的话，现在我面对的情况就应该会不同。我感觉到，现在我面对的情况中，包含了之前这件事的“结果”，而之前这件事是这个“结果”的“原因”。我感觉到，之前这件事我的做法是“可以” 不同的。可是，既然我是一个U-system中的一个indirect-object，之前这件事我的做法又怎么“可以”不同呢？之前这件事我的做法是被系统的初始状态决定的。如果我想改变之前这件事我的做法，我必须改变系统的初始状态。

## 对规律的认知

但我看到一件事，我就会去想，这件事为什么发生？

作为这件具体的事，它的发生，是被这个U-system (i.e., the cosmos)的初始状态决定的。这件具体的事发生的原因，就是这个系统的初始状态。

我观察到，这个系统中，会发生一些同种“类型”的事。一种“类型”的事，包括很多件具体的事。我们可以把“一种“类型”的事”，称为“抽象的事”。

在观察一个Conway’s Game of Life system时，我发现了一个规律，那就是，一个glider pattern会沿着网格的对角线以四分之一光速的速度移动。那么，每一个孤立的glider pattern，都会沿着网格的对角线以四分之一光速的速度移动。如果我观察任何一个孤立的glider patter，我都会发现一件事，那就是，它正在沿着网格的对角线以四分之一光速的速度移动。当我观察某一个具体的glider pattern时，我发现它正在沿着网格的对角线以四分之一光速的速度移动，这是一件具体的事。当我观察很多具体的glider pattern时，我发现它们都正在沿着网格的对角线以四分之一光速的速度移动，那么这些具体的事加起来，就成了一件抽象的事。或者说，每一件具体的事，都是这个抽象的事的一个实例。

如果我认为，一个pattern会沿着网格的对角线以四分之一光速的速度移动，这件事发生的原因是因为这个pattern是一个glider，我的这个认知对吗？假如我的这个认知是正确的的话，那么我根据这个认知，想个办法（在glider的移动路线上设个障碍）把这个glider的结构破坏掉，那么这个pattern就不再是个glider了，那么这个pattern也就不能再继续沿着网格的对角线以四分之一光速的速度移动了，对吗？

我可以在这个系统的代码中加个function，通过这个function，我可以随时任意凭空改变任何一个cell的状态。那么，我就可以在这个glider的移动路线上（通过这个function）凭空（作者注：我在这里用“凭空”这个词想要表达的意思是，按照系统的初始状态，（如果没有来自系统外部的干预，）这个障碍本来是不应该出现的）增加一个障碍，把这个glider的结构破坏掉。这么做，我改变了这个glider的命运。

假如我不是这个系统之外的一个人类，而是这个系统中的一个pattern，那么我也就没办法使用上面说的这个function来随时任意凭空改变系统中任何一个cell的状态了。如果你（作为这个系统之外的一个人类）观察到我（作为这个系统中的一个pattern）在这个glider的移动路线上制造出了一个障碍，那么我的这个操作会不会改变这个glider的命运呢？不会的，因为我的这个操作本身，也是被系统的初始状态注定的。我的这个操作本身，不是“随时任意凭空”的，而是“被注定”的。我制造的这个障碍是注定（作者注：我在这里用“注定”这个词想要表达的意思是，按照系统的初始状态，（如果没有来自系统外部的干预，）这个障碍本来就应该会出现）要被制造出来的。

（当我发现自己制造了这个障碍之后，如果我进一步思考，我可以发现我为什么制造了这个障碍。我之所以制造这个障碍，肯定是有一个原因的。我可以找到这个原因。（作者注：但是我能改变这个原因吗？读者可以思考一下。）而这个原因它（作为一个“结果”）又有其原因。这样沿着causal chain一环一环的往前去找，最终可以追溯到系统的初始状态。所以，还是只能通过改变系统的初始状态，来改变整条causal chain。我没办法改变这个causal chain的某一个中间环节，因为这个中间环节是被它之前的所有环节所决定的。换句话说，这个中间环节是被系统的初始状态所决定的。当我幻想我正在通过自己的操作改变系统中某一条causal chain的某一个环节时（例如，当我幻想我正在通过自己的操作（i.e., 在一个glider的移动路线上制造一个障碍）改变决定一个glider的命运的causal chain时），我的操作和幻想其实都是另一条causal chain中的（不可能被系统内部的任何一个pattern (i.e.,我)的操作所改变的）环节。决定一个glider的命运的causal chain不可能被系统内部的任何一个pattern (i.e.,我)的操作所改变。一个glider的命运不可能被系统内部的任何一个pattern (i.e.,我)的操作所改变。）

作为这个系统中的一个pattern，我还是可以发现这个系统中“一个pattern会沿着网格的对角线以四分之一光速的速度移动，这件事发生的原因是因为这个pattern是一个glider”这个规律。我还是可以根据这个规律，想个办法（在glider的移动路线上设个障碍）把这个glider的结构破坏掉，那么这个pattern就不再是个glider了，那么这个pattern也就不能再继续沿着网格的对角线以四分之一光速的速度移动了。但是，作为这个系统中的一个pattern，我没办法利用这个规律改变这个glider的命运。因为我在这个系统中的任何操作，都不是“随时任意凭空”的，而是“被注定”的。我没办法根据我认知到的规律，改变系统中任何一个pattern的命运。因为“我认知到某个规律”这件事本身，也是被系统的初始状态注定的。

作为这个系统中的一个pattern，当我发现这个系统过去的objective-state-evolution的历史符合McKenzie-function时，我会认为这个系统未来的objective-state-evolution也应该符合McKenzie-function吗？

如果这个pattern是我，我觉得我会认为这个系统未来的objective-state-evolution也应该符合McKenzie-function。

读者朋友，如果这个pattern是你，你觉得你会认为这个系统未来的objective-state-evolution也应该符合McKenzie-function吗？

如果我用计算机程序生成了一个Conway’s Game of Life system，而你是这个系统中的一个pattern，那么对你来说，我就是你所生活的宇宙的造物主。这个宇宙是我创造的，运行这个宇宙的计算机程序的源代码是我写的，那么我当然会认为这个宇宙未来的objective-state-evolution也应该符合McKenzie-function。但是你（作为这个宇宙的一部分）被困于这个宇宙内部，不可能像我一样从外部了解这个宇宙。例如，你没办法像我一样看到运行这个宇宙的计算机程序的源代码。那么，你又怎么知道这个宇宙未来的objective-state-evolution也应该符合McKenzie-function呢？如果你认为这个宇宙未来的objective-state-evolution也应该符合McKenzie-function，你对此不会像我这样有把握，因为你不（像我一样）在这个宇宙之外。

读者朋友，如果你我所在的宇宙是由（在这个宇宙之外的）一个造物主所创造出来的，而这个造物主（在创造这个宇宙时）使用Schrodinger equation作为这个宇宙的direct-function，那么这个宇宙未来的objective-state-evolution当然也应该符合Schrodinger equation。但咱们毕竟不像这个造物主一样在这个宇宙之外，所以咱们（作为这个宇宙的一部分）自然也就不会（像这个（在这个宇宙之外的）造物主一样）对此有十足的把握。说实话，咱们都没办法知道这个宇宙是不是由（在这个宇宙之外的）一个造物主所创造出来的。可能是，也可能不是。请你注意，咱们刚才只是在*假想*这个宇宙是由（在这个宇宙之外的）一个造物主所创造出来的。事实上，咱们并不知道这个宇宙是不是由（在这个宇宙之外的）一个造物主所创造出来的。假如这个造物主有一台（位于咱们所在的宇宙之外的）计算机，这台计算机上运行的计算机程序生成了咱们所在的宇宙，如果咱们能（像这个造物主一样）看到这个计算机程序的源代码，咱们才会对“咱们所在的宇宙未来的objective-state-evolution也应该符合Schrodinger equation”这个论断有十足的把握。

读者朋友，作为咱们所在的宇宙一部分，咱们没办法知道咱们所在的宇宙是否由一台（位于咱们所在的宇宙之外的）计算机上运行的计算机程序所生成。

如果咱们所在的宇宙*是*由一台（位于咱们所在的宇宙之外的）计算机上运行的计算机程序所生成，这种情况是可以解释的通的。在这种情况下，咱们可以解释为什么基本粒子的objective-state-evolution符合Schrodinger equation。

如果咱们所在的宇宙*不是*由一台（位于咱们所在的宇宙之外的）计算机上运行的计算机程序所生成，这种情况也是可以解释的通的。在这种情况下，咱们也可以解释为什么基本粒子的objective-state-evolution符合Schrodinger equation。

不论咱们所在的宇宙*是不是*由一台（位于咱们所在的宇宙之外的）计算机上运行的计算机程序所生成，咱们都可以解释为什么基本粒子的objective-state-evolution符合Schrodinger equation。

对咱们来说，*咱们所在的宇宙*和一个*由一台（位于宇宙之外的）计算机上运行的计算机程序所生成的宇宙*在观测上是无法区分的。换句话说，不论咱们所在的宇宙*是不是*由一台（位于咱们所在的宇宙之外的）计算机上运行的计算机程序所生成，咱们在（咱们所在的）宇宙中所能观测到的*所有*自然现象不会有任何不同。

实际上，咱们在（咱们所在的）宇宙中所能观测到的*唯一的自然现象*就是“基本粒子的objective-state-evolution符合Schrodinger equation”，（在咱们所在的宇宙中）（咱们所能观测到的）其它所有的自然现象其实都可以用这个*唯一的自然现象*来解释。或者换句话说，（在咱们所在的宇宙中）（咱们所能观测到的）其它所有的自然现象本质上其实只不过*就是*这个唯一的自然现象，咱们其实只不过是把这个唯一的自然现象*认知*成了其它（貌似不同）的自然现象。在咱们所在的宇宙中，咱们所能观测到的实际上只有“基本粒子的objective-state-evolution符合Schrodinger equation”这个唯一的自然现象。在咱们所在的宇宙中，咱们所能观测到的其它所有的（貌似不同的）自然现象只不过是对“基本粒子的objective-state-evolution符合Schrodinger equation”这个唯一的自然现象从其它不同角度的不同*认知*。在咱们所在的宇宙中，咱们所能观测到的其它所有的（貌似不同的）自然现象实际上都遵守“基本粒子的objective-state-evolution符合Schrodinger equation”这一规律。“基本粒子的objective-state-evolution符合Schrodinger equation”这一规律实际上是咱们（在咱们所在的宇宙中）所能*观测*到的唯一规律。

如果咱们所在的宇宙是由一台（位于咱们所在的宇宙之外的）计算机上运行的计算机程序所生成的，那么这台计算机上就应该存储了（咱们所在的宇宙中）每一个基本粒子的状态信息，并且这个计算机程序（随着时间的流逝）会不断地（按照Schrodinger equation计算出并）更新每一个基本粒子的状态信息。这台计算机上所存储的一个基本粒子的状态信息中包括这个基本粒子在空间中的位置。是诸法空相，不生不灭，不垢不净，（和这个计算机程序所计算出的每一个基本粒子的状态信息相比）不增加不减少，不多不少。咱们所在的宇宙中并不存在（和这个计算机程序所计算出的每一个基本粒子的状态信息相比有）任何*不同*的信息。咱们所在的宇宙中并不存在（和这个计算机程序所计算出的每一个基本粒子的状态信息相比有）任何*不一致*的信息。咱们所在的宇宙中并不存在（除了这个计算机程序所计算出的每一个基本粒子的状态信息之外）任何*额外*的信息。咱们所在的宇宙中并不存在（除了这个计算机程序所计算出的每一个基本粒子的状态信息之外）任何*多余*的信息。

咱们所在的宇宙中将要发生的一切事件都被*佛菩萨*安排好了吗？不是（*佛菩萨*安排的），咱们所在的宇宙中将要发生的一切事件都被*Schrodinger equation*安排好了，咱们（作为咱们所在的宇宙的一部分的）凡人是改变不了的，咱们凡人的一切努力都是*Schrodinger equation*安排好的，咱们凡人的一切想法和言行都是*Schrodinger equation*安排好的。咱们凡人的一切想法和言行其实都只不过是*Schrodinger equation*的想法和言行。咱们凡人很难接受一个人的想法和言行是被Schrodinger equation所完全决定的。如果一个人的想法和言行是被Schrodinger equation所完全决定的，这个人就不应该为他的想法和言行承担任何责任。更要命的一个问题是，如果我的想法和言行是被Schrodinger equation所完全决定的，那么我现在又应该想些什么、说些什么、做些什么呢？在我的思考中，我的处境构成了一个悖论。

如果咱们所在的宇宙是由一台（位于咱们所在的宇宙之外的）计算机上运行的计算机程序所生成的，那么咱们所在的宇宙中将要发生的一切事件都被这个计算机程序（根据Schrodinger equation）安排好了，咱们（作为咱们所在的宇宙的一部分的）凡人是改变不了的，咱们凡人的一切努力都是这个计算机程序（根据Schrodinger equation）安排好的，咱们凡人的一切想法和言行都是这个计算机程序（根据Schrodinger equation）安排好的。咱们凡人的一切想法和言行其实都只不过是这个计算机程序（根据*Schrodinger equation*产生的）的想法和言行。咱们凡人很难接受一个人的想法和言行是被这个计算机程序（根据Schrodinger equation）所完全决定的。如果一个人的想法和言行是被这个计算机程序（根据Schrodinger equation）所完全决定的，这个人就不应该为他的想法和言行承担任何责任。更要命的一个问题是，如果我的想法和言行是被这个计算机程序（根据Schrodinger equation）所完全决定的，那么我现在又应该想些什么、说些什么、做些什么呢？在我的思考中，我的处境构成了一个悖论。

不论咱们所在的宇宙是不是由一台（位于咱们所在的宇宙之外的）计算机上运行的计算机程序所生成的，真实存在的只有这个（咱们所在的）宇宙，所谓的“我自己”实际上并不是*真实存在*的，但（这个宇宙中的）一个人的大脑在思考“我自己的处境”时又离不开“我自己”这个*虚构*的观念。所以，在这个人的大脑的思考中，这个处境构成了一个悖论。当然， 所谓的“这个人的*大脑*的思考”，其实是这个（咱们所在的）*宇宙*的思考。或者换句话说，所谓的“这个人的*大脑*的思考”，其实是*Schrodinger equation*的思考。如果咱们所在的宇宙是由一台（位于咱们所在的宇宙之外的）计算机上运行的计算机程序所生成的，那么所谓的“这个人的*大脑*的思考”，其实是这个*计算机程序*的思考。

不论咱们所在的宇宙是不是由一台（位于咱们所在的宇宙之外的）计算机上运行的计算机程序所生成的，一个*人类个体*本身其实就是这个（咱们所在的）宇宙，但一个*人类个体*的大脑在它的思考中把它自己（错误的）想象成是（咱们所在的宇宙中的）一个*人类个体*。实际上，并不存在所谓的“一个*人类个体*”，这个（咱们所在的）宇宙是一个浑然一体、不可分割的整体。虽然个人主义已经成为了现代社会的主流思潮，但是我不得不说个人主义者们（作者注：“个人主义者”的英文为”individualists”）其实都疯了。“我思故我在”这个推理是不严谨的，严谨的推理应该是“*（咱们所在的）宇宙*思故*（咱们所在的）宇宙*在”。如果你赞成“我思故我在”这个推理，你是不是也应该赞成“*（我的）脚后跟儿*思故*（我的）脚后跟儿*在”这个推理呢？如果你赞成“我思故我在”这个推理，那么我有些问题要问问你：““我思故我在”这个推理中的“我”字所指的到底是啥？到底啥存在？到底啥是“我”？这个“我”到底在哪儿？除了“（我的）肉身”之外，难道还有一个（与“（我的）肉身”所指有所不同的）“我”吗？如果“我”就是指“（我的）肉身”的话，那么“我思故我在”就是指“*（我的）肉身*思故*（我的）肉身*在”了？这还有啥意思？这不就是一句废话吗？这有啥好说的？”

个人主义者们把“我”或者“自己”（错误的）定义为一个*人类个体*。事实上，真正的“\*我\*”或者“\*自己\*”是（咱们所在的）这个宇宙。或者也可以说，真正的“\*我\*”或者“\*自己\*”是Schrodinger equation。如果咱们所在的宇宙是由一台（位于咱们所在的宇宙之外的）计算机上运行的计算机程序所生成的，那么也可以说，真正的“\*我\*”或者“\*自己\*”是这个计算机程序。

个人主义者们想象中的“我”或者“自己”是住在人的肉身中的一个小人儿。个人主义者们想象自己的肉身中住着一个小人儿，这个小人儿就是“我” 或者“自己”。事实上，他们的肉身里只有一些细胞、分子、原子、基本粒子，根本就没有什么小人儿。换句话说，他们的肉身里根本就没有“我” 或者“自己”住在里面。他们所谓的“我”或者“自己”是他们幻想出来的。

所谓的“我”或者“自己”并不（以一个小人儿的形式）存在于“（我的）肉身”之内。真正的“\*我\*”或者“\*自己\*”其实是（包括了“（我的）肉身”在内的）整个宇宙，或者是Schrodinger equation，或者是运行整个宇宙的计算机程序。或者换句话说，根本就不存在（与“（我的）肉身”所指有所不同的）“我”或者“自己”。

我不需要把“我”想象成一个住在“（我的）肉身”之内的小人儿。我不需要想象“我”住在“（我的）肉身”之内。“\*我\*”本来就不住在“（我的）肉身”之内。“\*我\*”（在宇宙中）无处不在。“\*我\*”就是（包括了“（我的）肉身”在内的）整个宇宙。或者换句话说，“我”并不真实存在 – 真实存在的是“（我的）肉身”或者（包括了“（我的）肉身”在内的）整个宇宙。（住在“（我的）肉身”之内的）“我” 只是“（我的）肉身”杜撰出来的一个（错误的）概念。

每个人的肉身里都住着一个小人儿。其中有一个小人儿是“我”。其中的另外一个小人儿是“你”。“我” 住在“（我的）肉身”里。“你”住在“（你的）肉身”里。这是一种错误的想象。

每个人的肉身里都没有住着小人儿。因此也就不存在一个住在某个肉身里的“我”，也不存在一个住在另一个肉身里的“你”。没有“我”也没有“你”。（包括了所有人的肉身在内的）整个宇宙其实只是*一个*“\*我\*”。（包括了所有人的肉身在内的）整个宇宙不是*两个（或者更多的）*“我”。两个（或者更多的）“我”们并不真实存在。

每个人的肉身里都没有住着小人儿。因此也就不存在一个住在某个肉身里的（小）“我”，也不存在一个住在另一个肉身里的（小）“你”。没有（小）“我”也没有（小）“你”。（包括了所有人的肉身在内的）整个宇宙其实只是*一个*（大）“\*我\*”。（包括了所有人的肉身在内的）整个宇宙不是*两个（或者更多的）*（小）“我”。两个（或者更多的）（小）“我”们并不真实存在。

每个人的肉身里都没有住着小人儿。因此也就不存在一个住在某个肉身里的（假）“我”（作者注：“假我”的英文为”false self [25]”），也不存在一个住在另一个肉身里的（假）“你”。没有（假）“我”也没有（假）“你”。（包括了所有人的肉身在内的）整个宇宙其实只是*一个*（真）“\*我\*”（作者注：“真我”的英文为”true self [25]”）。（包括了所有人的肉身在内的）整个宇宙不是*两个（或者更多的）*（假）“我”。两个（或者更多的）（假）“我”们并不真实存在。

（包括了所有人的肉身在内的）整个宇宙其实只是*一个*“\*我\*”、（大）“\*我\*”、（真）“\*我\*”。两个（或者更多的）“我”们、（小）“我”们、（假）“我”们并不真实存在。其实，就连那个唯一的“\*我\*”、（大）“\*我\*”、（真）“\*我\*”都未必真实存在。

两个（或者更多的）“我”们、（小）“我”们、（假）“我”们分别住在各人的肉身之内。

那个唯一的“\*我\*”、（大）“\*我\*”、（真）“\*我\*”住在所有人的肉身之外。在out of body experience中，能够体验到这种感觉。

住在我的肉身里的“小我”（或“假我”）感觉到每个人的肉身里都住着一个“小我”。例如，住在我的肉身里的“小我”感觉到我的肉身里住着一个“小我”。换句话说，住在我的肉身里的“小我”感觉到了他自身的存在，并且住在我的肉身里的“小我”感觉到其自身存在于我的肉身之内。另外，住在我的肉身里的“小我”感觉到了其他很多“小我”的存在，并且住在我的肉身里的“小我”感觉到其他很多“小我”分别存在于其他人的肉身之内。

住在我的肉身里的“小我”感觉到其自身存在于我的肉身*之内*，可这种感觉符合事实吗？在我的肉身*里面*真的存在一个*东西*是这个“小我”吗？在我的肉身*里面*并不真的存在一个*东西*是这个“小我”，这个“小我”并不真的存在于我的肉身*之内*。

住在我的肉身里的“小我”感觉到了其他很多“小我”的存在，并且住在我的肉身里的“小我”感觉到其他很多“小我”分别存在于其他人的肉身之内。可这种感觉符合事实吗？其他很多“小我”真的存在吗？其他很多“小我”并不真的存在。在其他人的肉身*里面*真的存在一个*东西*是这个“小我”吗？在其他人的肉身*里面*并不真的存在一个*东西*是这个“小我”，这个“小我”并不真的存在于其他人的肉身*之内*。

所有人的肉身里的“小我”其实都是那个唯一的“大我”（或“真我”）所想象出来的。那个唯一的“大我”并不住在任何人的肉身之内。所有人的肉身里的“小我”其实都并不真的存在。真的存在的，只有那个唯一的“大我”。那个唯一的“大我”可以被看作是世界的中心。这是一种唯我论。这是一种“唯“大我”论”。所有那些“小我”其实都是被这个“大我”所想象出来的。宇宙有一个“大我”；宇宙只有这一个“大我”。这个“大我”把他自己（错误的）想象成是住在我的肉身之内的一个“小我”。换句话说，这个“大我”把他自己（错误的）定位于我的肉身之内。

“真我”可以看到宇宙中的很多人的肉身。每个人的肉身之内到底有没有“假我”呢？当“真我”看到一个人的肉身里的“假我”时，这个“假我”本质上其实是“真我”内心的投射。换句话说，这个“假我”并不存在于这个人的肉身之内，而是存在于“真我”之内。这个“假我”是“真我”用theory of mind生成后投射到这个人的肉身之内的。

例如，当“真我”看到*我的肉身*里的“假我”时，这个“假我”本质上其实是“真我”内心的投射。换句话说，这个“假我”并不存在于*我的肉身*之内，而是存在于“真我”之内。

例如，当“真我”看到*你的肉身*里的“假我”时，这个“假我”本质上其实是“真我”内心的投射。换句话说，这个“假我”并不存在于*你的肉身*之内，而是存在于“真我”之内。

当我的肉身里的“假我”看到你的肉身里的“假我”时，（被我的肉身里的“假我”看到的）你的肉身里的“假我”其实是我的肉身里的“假我”用theory of mind生成后投射到你的肉身之内的。上一句话不够正确。正确的说，我的肉身里其实并不存在一个所谓的“假我” – （被“我”感觉到存在于）我的肉身之内的“假我”其实是“真我”用theory of mind生成后投射到我的肉身之内的。换句话说，你我的肉身里都不存在所谓的“假我”。“我”感觉到存在于“我的肉身”之内的“假我”，实际上是存在于“我的肉身”之外的“真我”想象出来的。

你我的肉身其实都是philosophical zombies。我感觉到存在于我的肉身之内的“我的mind/consciousness”，其实并不存在于我的肉身*之内*，而是存在于我的肉身*之外*。因此，你我的肉身之内都没有mind/consciousness。所谓“我的mind/consciousness”，其实并不是“*我*的”，而是“*真我*的”。这个“*真我*的mind/consciousness”的内容以我的肉身（的活动）为中心，但单凭这一点其实并不足以证明这个“*真我*的mind/consciousness”*属于*我的肉身。本文的作者认为，这个“*真我*的mind/consciousness”并不*属于*我的肉身，而是*属于*整个宇宙。本文的作者承认，这听上去有点自恋。

## 时间旅行者

在一个现代人对世界的想象中，每一个人都被看作是一个agent，而每一个agent都相当于是一个direct-breaker。

在一个现代人对世界的想象中，每一个agent都相当于是一个时间旅行者。一个时间旅行者有能力重返一个（过去、现在或未来的）时间点，去做（和他上次在这个时间点上做的事相比）不同的事，创造一条新的时间线(timeline)。

但是，事实上整个宇宙的演化只有一条时间线，所有人终生都被困在这条唯一的时间线上。

## 宇宙的局部演化与整体演化

读者朋友，请你想象一个场景。在这个场景里，你和我在面对面的交谈，你说了一句话“我对你的表现很满意”,然后我说“我对你的表现也很满意”。按照人类通常的思路，你的话是先说的，我的话是后说的，在先的为“因”，在后的为“果”，所以你的话导致了我的话。你说那句话的时间点是在“我的表现”发生之后，所以“我的表现”导致了你说那句话。我说那句话的时间点在“你的表现”发生之后，所以“你的表现”导致了我说那句话。可事实上，在你说那句话的同时，我在观察着你的表情，并根据你的表情分析着你的心理活动。我说那句话的原因，本质上是我对当时形势的分析，而当时的形势不仅包括你说的那句话的内容，也包括你说那句话时的表情，还包括了在你说那句话之前（我所知道的）宇宙中发生过的一切和我有关的事件。换句话说，我的任何言行，（即使我在嘴上说我的这个言行的原因是某一个事件，）其原因不仅仅是某一个事件，而是在我的这个言行之前（我所知道的）宇宙中发生过的一切有关的事件的总和。当我根据你的表情分析你的心理活动时，其实我的脸上也有表情，而你同时也在根据我的表情分析我的心理活动。我的表情会根据你的表情（以及我基于你的表情而分析出的你的心理）而变化。你的表情也在根据我的表情（以及你基于我的表情而分析出的我的心理）而变化。到底是我的表情在根随你的表情的变化而变化，还是你的表情在根随我的表情的变化而变化呢？本文作者认为，随着时间的流逝，我的表情和你的表情其实是同步变化的。

你在日常生活中所关注的，仅仅是（咱们所在的）宇宙的一个局部随着时间流逝的演化情况。事实上，在你关注的某个（宇宙的）局部（比如我的脸）随着时间流逝演化的同时，宇宙的任何一个（其它）局部（比如你自己的脸）随着时间的流逝都在（同步的）演化着。

（咱们所在的）宇宙的某一个局部的演化，不是（像人类通常认知到的那样）仅仅被这个局部先前的演化所决定，也不是（像人类通常认知到的那样）仅仅被宇宙的另一个局部先前的演化所决定，也不是（像人类通常认知到的那样）仅仅被宇宙的某几个局部先前的演化所共同决定，而是被整个宇宙（所有局部的）先前的演化所共同决定。例如，第二次世界大战的结局，不仅仅被所有人的所有行为所决定，也被所有微生物（例如流感病毒）的所有活动所决定，也被所有出膛的枪弹（在风的作用下）的弹道所决定，也被所有*地外天体*的所有活动（例如太阳黑子的活动）所决定。二战的结局，不仅仅被我们人类所知的所有事件所决定，也被（宇宙中发生的）我们人类所不知的所有事件所决定。二战的结局，被宇宙中所有基本粒子的所有（符合薛定谔方程的）活动所决定。但是在我们人类通常的认知里，二战的结局仅仅被二战中那些知名人物的为公众所知的那些行为所决定。二战中那些知名人物的为公众所知的那些行为、我们人类所知的所有事件、（宇宙中发生的）我们人类所不知的所有事件，这些都可以被抽象为宇宙中基本粒子（符合薛定谔方程）的活动。

顺便说一下，在咱俩面对面的交谈时，我的心情会受到我的体内的感觉的影响。比如我刚吃了一堆特甜的点心，甜到反胃，这时候假如你说的话的内容又刚好是在指责我，那么我胃里的反胃的感觉，就会增加我对你说的话的内容的反感程度。也就是说，除了你说的话的内容之外，我胃里的点心的甜度、我的胃里的消化活动的顺利程度，其实都会影响到我的心情、表情和我将要说的话的内容。当然，当时你是不知道我的胃里的感觉的。我当时知道自己胃里的感觉，但我当时也意识不到自己胃里的感觉对自己将要说的话的内容的影响。事实上，我体内的每一个基本粒子（符合薛定谔方程）的活动对我将要说的话的内容都有影响，即使我当时并没有意识到。我胃里的点心（通过影响我的胃）参与创作了我将要说的话（的内容）。我体内的每一个基本粒子都（通过其影响）参与创作了我将要说的话（的内容）。如果我的胃里没有那些点心，我将要说的话的内容可能就会不同。如果我体内缺少任何一个基本粒子，我将要说的话的内容可能就会不同。当然，这只是（不可能真的发生的）counterfactual episodes。在（咱们所在的）宇宙（符合薛定谔方程）的演化中，那些点心（被薛定谔方程）注定会出现在我的胃里，我的体内的每个基本粒子也都（被薛定谔方程）注定会出现在我的体内的注定的位置，而我将要说的话的内容也是被（薛定谔方程）注定的。

当你不再把目光局限于宇宙的任何一个局部，而是把宇宙作为一个整体来看待时，你就会意识到，整个宇宙的（整体）演化是仅仅被薛定谔方程所决定的。

相对于一个地球生物的尺寸而言，（咱们所在的）宇宙是极其辽阔的。但如果你能把（咱们所在的）宇宙想象的很小，小到可以悬浮在你自己的手掌之上，你就更容易意识到，整个宇宙的（整体）演化是仅仅被薛定谔方程所决定的。

因为，当你在想象中把宇宙托在你自己的手掌之上时，（在你的这个想象里）你把你自己从宇宙中分离了出来。（在你的这个想象里）你成为了位于宇宙之外的观察者。（在你的这个想象里）你在从宇宙之外观察宇宙。当你在想象这个场景的时候，你比较容易摆脱你对宇宙演化规律的（错误的）刻板印象。事实上，除了（作为（唯一正确的）宇宙演化规律的）薛定谔方程之外，你到目前为止所认知到的任何（其他的）宇宙演化规律都是错误的刻板印象。或者换句话说，（按照本文的惯用说法，）除了（作为（唯一*客观*的）宇宙演化规律的）薛定谔方程之外，你到目前为止所认知到的任何（其他的）宇宙演化规律都是*主观*的刻板印象。

任何一个地球生物的体内的基本粒子的数量都是惊人的，（咱们所在的）宇宙里的基本粒子的总数量更是惊人。假如（咱们所在的）宇宙里总共只有一个、两个或三个基本粒子，你会更容易意识到这个宇宙的（整体）演化是仅仅被薛定谔方程所决定的。当宇宙里只有三个基本粒子时，如果这个宇宙的（整体）演化是仅仅被薛定谔方程所决定的，那么，当宇宙里有一万个（或更多的）基本粒子时，这个宇宙的（整体）演化还应该是仅仅被薛定谔方程所决定的。因为，宇宙中基本粒子的数量，不应该影响这个宇宙的（整体）演化的性质。“一生二，二生三，三生万物。”--《道德经》。“当宇宙中的若干基本粒子构成了一个人的大脑之后，这个大脑里的一个基本粒子的objective-state-evolution就不再（像位于这个大脑之外的一个基本粒子的objective-state-evolution一样）仅仅被薛定谔方程所决定” – 这个想法是没有任何根据的。

问: “人的大脑是有“意识”的，一个大脑的“意识”会不会导致这个大脑里的一个基本粒子的objective-state-evolution不再（像位于这个大脑之外的一个基本粒子的objective-state-evolution一样）仅仅被薛定谔方程所决定呢？这个大脑里的一个基本粒子的objective-state-evolution除了被薛定谔方程所决定外，是否同时还被这个大脑的“意识”所决定？这个大脑里的一个基本粒子的objective-state-evolution是否被薛定谔方程和“意识”共同决定？”

答:“我且问你，具体怎么个共同决定法儿？麻烦你告诉我。如果你说不出来个所以然来，你就别瞎想了好吗？”

问:“如果一个大脑的“意识”对这个大脑里的一个基本粒子的objective-state-evolution没有任何作用，那么我们为什么说这个大脑有“意识”呢？”

答:“

事实上，我没办法真正知道（除我之外的）任何一个人的大脑到底有没有“意识”。其他人的大脑的“意识”的内容，其实是被我（主观的）想象出来的。我可以（主观的）想象出另一个人的大脑的“意识”的内容，但我没办法真正的证明我的这一想象符合客观实际，甚至我都没办法真正的证明这个人的大脑有“意识”。

“Our minds are very, very good at constructing realities that are not necessarily true to a larger set of facts that are being presented to us.” (<https://www.washingtonpost.com/technology/2022/06/11/google-ai-lamda-blake-lemoine/>)

在看动画片《米老鼠》时，我能够（主观的）想象出（银幕上的）米老鼠的大脑的“意识”的内容，但我没办法真正的证明（银幕上的）米老鼠的大脑有“意识”—（银幕上的）米老鼠甚至都没有“真正的”大脑。

”

问：“米老鼠在电影里，我没办法和电影里的米老鼠实时互动。我下次重看这部电影时，电影里的米老鼠讲的话是不会变的。”

答：“如果有一个chatbot可以和你实时互动，你每次和它说话时它都会讲不同的话，那么这个chatbot有“意识”吗？”

问：“这个chatbot在和我实时互动时所讲的每一句话，都是被它的（计算机）程序（根据我讲的话）决定的。它要讲的每一句话，都是它在其程序控制下非讲不可的。它像个木偶。木偶没有“意识”。因此，这个Chatbot没有“意识”。”

答：“你的大脑在和我实时互动时所讲的每一句话，都是被你的大脑的（基本粒子级）物理结构（根据我讲的话）决定的。你的大脑要讲的每一句话，都是你的大脑在其物理结构控制下非讲不可的。你的大脑像个木偶。木偶没有“意识”。因此，你的大脑没有“意识”。”

问：“木偶有“意识”吗？”

答：“你有“意识”吗？”

从浑然一体、不可分割、仅仅受薛定谔方程控制的大自然中用*认知*分割出某个物体并在*认知*中想象此物体正在其自由意志（或“意识”、agent、ghost）的控制下独立、自由的运动着，这是*认知*对大自然的一种（错误的）模拟（或想象）。

## 宿命演化与*业力原则（英语：principle of karma）*

宇宙在薛定谔方程控制下的（宿命）演化是刚性、严格的。宇宙在薛定谔方程控制下的（宿命）演化就像一台机器（比如一台mechanical calculator、一台计算机、一个刚体、一个均匀的流体）的运行一样刚性、严格。一台机器的运行是刚性、严格的。而一台机器是宇宙的一部分。（除机器外）宇宙的任何其他部分的演化，其实都像机器的运行一样的刚性、严格。机器的运行之所以是刚性、严格的，正是因为宇宙在薛定谔方程控制下的（宿命）演化是刚性、严格的。机器的运行，也就是机器在薛定谔方程控制下的（宿命）演化。宇宙在薛定谔方程控制下的（宿命）演化是刚性、严格的，所以机器的运行才是刚性、严格的。假如宇宙在薛定谔方程控制下的（宿命）演化不是刚性、严格的，机器的运行也就不会是刚性、严格的。宇宙演化的规则（即薛定谔方程）既适用于机器，也适用于除机器以外（宇宙的）的任何其他部分。宇宙演化的规则（即薛定谔方程）在宇宙中是普遍适用的 -- 宇宙演化的规则（即薛定谔方程）适用于宇宙的任何部分。我们之所以感觉到机器的运行是刚性、严格的，其实只是因为我们能准确预测机器的运行过程。我们不能准确预测宇宙某些部分的演化过程，但这一（预测能力的欠缺）问题并不代表这些部分的演化过程不是刚性、严格的。（比如，我不能准确预测我自己的肉身的行为，但这一（预测能力的欠缺）问题并不代表我的肉身的演化过程不是刚性、严格的。）

宇宙在薛定谔方程控制下的（宿命）演化是刚性、严格的。宇宙在薛定谔方程控制下的（宿命）演化就像在计算机上执行程序一样刚性、严格。计算机上程序的执行是刚性、严格的。而一台计算机是宇宙的一部分。（除计算机外）宇宙的任何其他部分的演化，其实都像在计算机上执行程序一样的刚性、严格。计算机上程序的执行之所以是刚性、严格的，正是因为宇宙在薛定谔方程控制下的（宿命）演化是刚性、严格的。计算机上程序的执行，也就是计算机在薛定谔方程控制下的（宿命）演化。宇宙在薛定谔方程控制下的（宿命）演化是刚性、严格的，所以计算机上程序的执行才是刚性、严格的。假如宇宙在薛定谔方程控制下的（宿命）演化不是刚性、严格的，计算机上程序的执行也就不会是刚性、严格的。宇宙演化的规则（即薛定谔方程）既适用于计算机，也适用于除计算机以外（宇宙的）的任何其他部分。宇宙演化的规则（即薛定谔方程）在宇宙中是普遍适用的 -- 宇宙演化的规则（即薛定谔方程）适用于宇宙的任何部分。我们之所以感觉到计算机执行程序是刚性、严格的，其实只是因为我们能准确预测程序的执行过程。我们不能准确预测宇宙某些部分的演化过程，但这一（预测能力的欠缺）问题并不代表这些部分的演化过程不是刚性、严格的。

我们不能准确预测宇宙某些部分（在薛定谔方程控制下）的演化过程，但我们的episodic future thinking能想象这些演化过程的counterfactual episodes，而我们的想象会使我们产生“这些演化过程不是刚性、严格的”这一错觉。比如，我掷出一个色子，在色子落地前，我想象着色子落地后朝上那面儿的点数有6种结局（即1个点、2个点、3个点、4个点、5个点、6个点） – 我可以在我的episodic future thinking中想象所有这6种结局。Episodic future thinking中的想象使我产生“我不能在色子落地前准确的预测这6种（我想象的）结局中的哪一个会是（在色子落地后发生的）实际的结局，因此这个色子（在落地前）的*实际*宏观运动过程不是刚性、严格的”这一错觉。在（episodic future thinking中想象的）这6种结局中，只有一种结局是实际结局，而其他5种结局都是counterfactual episodes。从理论上说，根据薛定谔方程可以（在色子落地前）相当准确的计算出这6种（我想象的）结局中的哪一个会是（在色子落地后发生的）实际的结局。（对宏观物体的宏观运动过程而言，Quantum randomness的影响几乎可以忽略不计。）在用薛定谔方程进行计算时，我（的肉身）和色子都是由基本粒子构成的机器。在用薛定谔方程进行计算时，不需要计算我的“意识”对我的肉身的运动过程的影响，因为我的“意识”对我的肉身的运动过程没有任何影响。根据（依据薛定谔方程的）计算可知，除了那一个（可依据薛定谔方程计算出的）实际结局外，其他5种（我想像的）结局都是不可能在现实中出现的counterfactual episodes，但（掷色子的）我（在色子落地前）不知道（其他5种结局不可能在现实中出现）。我的“意识”或“自由意志”无法导致那一个（可依据薛定谔方程计算出的）实际结局不在现实中出现，也无法导致其他（我想像的）结局在现实中出现。色子是刚体，如果用一台高速相机捕捉色子出手后的运动，可以在色子出手后几乎立即（依据薛定谔方程或与其（在宏观世界中）几乎等价的牛顿第二定律）计算出那一个（可依据薛定谔方程计算出的）实际结局，当然前提是我在色子（出手后、）落地前不能在空中拦截色子。如果用这台高速相机捕捉我（的肉身）在掷出色子前的运动，是无法（依据与薛定谔方程（在宏观世界中）几乎等价的牛顿第二定律）在色子出手前计算出那一个（可依据薛定谔方程计算出的）实际结局的，因为我的肉身既不是刚体也不是均匀的流体。从理论上说，根据此时此刻宇宙中所有基本粒子的状态，可以（依据薛定谔方程）计算出未来任意时刻宇宙中所有基本粒子的状态。因此，根据此时此刻宇宙中所有基本粒子的状态，可以（依据薛定谔方程）计算出未来任意时刻我的（大脑的）想法。我的“意识”或“自由意志”无法导致这些（可依据薛定谔方程以及基本粒子的当前状态计算出的）想法不在现实中出现（在我的大脑中），也无法导致那些（根据（依据薛定谔方程以及基本粒子当前状态的）计算）不会出现的想法在现实中出现（在我的大脑中）。

相对于宇宙在薛定谔方程控制下的宿命演化，（在我们的认知中）宇宙在业力原则控制下的演化则好像没有那么刚性、严格。可以把业力原则理解为控制着宇宙（在真实世界中）的演化的（除薛定谔方程以外的）所有因果关系的总和。

古人不知道薛定谔方程（这个根本性的因果关系），但他们认知到很多其他的因果关系。通过思考这些因果关系，古人发现，宇宙的演化遵循着这些因果关系，（宇宙的演化）并不遵循一个人的主观意愿。就连一个人产生一个主观意愿的过程，也同样遵循着某些因果关系。因此，人的意志（英语：will）并不是自由的，至少不是完全自由的。

在思考日常生活中遇到的实际问题时，思考业力法则，往往比思考宇宙（在薛定谔方程控制下）的宿命演化更具有启发性。

但是，本文作者认为，宇宙（在薛定谔方程控制下的）的宿命演化是唯一的（客观）真相。宇宙在业力原则控制下的演化是各人内心中的（主观）幻象。薛定谔方程是（关于宇宙演化逻辑的）唯一真相。业力原则中包含的各个因果关系都是（关于宇宙演化逻辑的）幻象。真相是客观的，幻象是主观的。真相是正确的，幻象是错误的。

“优胜劣汰”就是一种常见的（主观）幻象。比如电视连续剧《鱿鱼游戏》中，难道男主角就是最优的game player吗？在第一个游戏中就被射杀（淘汰）的大批游戏者中，综合素质超过男主角的肯定大有人在。在每一个游戏里被淘汰的选手们，其个人综合素质其实未必低于未（在游戏中）被淘汰的选手们。被淘汰只是偶然。未被淘汰其实也只是偶然。本文作者认为，被淘汰、未被淘汰其实都是命中注定，与选手本人的综合素质实际并无关联。

“一个人独立于他周围的环境”也是一种（主观）幻象。一个人和他周围的环境其实是一个浑然一体、不可分割的整体。这个人的认知（主观的）分割了他自己（的肉身）和他（的肉身）周围的环境，并（错误的）幻想他的肉身独立于（他的肉身周围的）环境且有一定的自由。

“一个人能控制他周围的环境”和“一个人周围的环境能控制这个人”都是（主观）幻象。

如果你想象一个人向环境的“输出”被环境向这个人的“输入”以及这个人的“内部状态”所共同决定，你实际上是在想象这个人周围的环境对这个人的（决定性）控制能力 – 这个人向环境的“输出”被环境向这个人的“输入”所决定。你实际上是在把这个人想象成一台（独立于环境且完全受环境控制的）（基本粒子级的）机器。

如果你想象一个人周围的环境向这个人的“输出”被这个人向环境的“输入”以及环境的“内部状态”所共同决定，你实际上是在想象这个人对他周围环境的（决定性）控制能力 – 环境向这个人的“输出”被这个人向环境的“输入”所决定。你实际上是在把这个人的环境想象成一台（独立于这个人且完全受这个人控制的）（基本粒子级的）机器。

实际上，你应该同时把这个人和他周围的环境想象成两台（基本粒子级的）机器。你还可以进一步把这两台机器想象成一台（基本粒子级的）机器，而这一台机器的（内部的基本粒子的状态的）演化仅仅受到薛定谔方程的控制。这一台机器内部任意两个组成部分之间的控制（与被控制）关系其实都仅仅是你头脑中的（主观）幻象。

人类头脑中的因果关系可以概括为“（物体B）执行（物体A的）命令式”（或称“（物体A）控制（物体B）式”）。我命令你坐下，然后你坐下了。在这个场景里，“我（作为物体A）发出命令”是“你（作为物体B）开始坐下”的“因”，“你（作为物体B）开始坐下”是“我（作为物体A）发出命令”的“果”。这个因果关系其实不对。因为“我（作为物体A）发出命令”和“你（作为物体B）开始坐下”都是被（薛定谔方程）控制的，所以“我（作为物体A）发出命令”和“你（作为物体B）开始坐下”之间其实并不真的存在因果关系。换句话说，“我（作为物体A）发出命令”和“你（作为物体B）开始坐下”其实都是在执行薛定谔方程发出的“（唯一真实）命令”。“你（作为物体B）开始坐下”并不是在执行“我（作为物体A）发出的命令”，而是在执行“薛定谔方程（作为“准物体”）发出的（唯一真实）命令”。注意，薛定谔方程不是一个“物体”，而是一个“非物体”，但我们在这里可以把薛定谔方程想象成一个可以类比于“物体”的“准物体”。

当我的手指在推一个台球时，我感觉到我的手指似乎在向台球发出一个“你开始运动！”的命令，然后台球开始运动了起来，所以“我的手指（作为物体A）发出命令”导致了“台球（作为物体B）开始运动”，*台球（作为物体B）开始运动*是在执行我的手指（作为物体A）发出的命令。在这个（错误的）因果关系中，我内心实际上是把我的手指（作为物体A）和台球（作为物体B）拟人化成两个人，第一个人发出命令导致第二个人开始运动，第二个人开始运动是在执行第一个人发出的命令，就像上一段话里说的“我发出命令，导致你开始坐下”这个（错误的）因果关系一样。实际上“我的手指（作为物体A）发出命令”和“台球（作为物体B）开始运动”都是在执行薛定谔方程（作为准物体）发出的“（唯一真实）命令”。“台球（作为物体B）开始运动”并不是在执行“我的手指（作为物体A）发出的命令”，而是在执行“薛定谔方程（作为准物体）发出的（唯一真实）命令”。

在人类的（错误的）刻板印象里，一个物体在执行另一个物体发出的命令。

事实上，（宇宙中的）所有物体都仅仅是在执行薛定谔方程（作为准物体）发出的（唯一真实）命令。

在人类的（错误的）刻板印象里，好事是由（另一件）好事导致的，一件好事的发生会导致另一件好事的发生。或者说一件好事会“命令”另一件好事发生，后面那件好事的发生是在“执行”前面那件好事的“命令”。

在人类的（错误的）刻板印象里，坏事是由（另一件）坏事导致的，一件坏事的发生会导致另一件坏事的发生。或者说一件坏事会“命令”另一件坏事发生，后面那件坏事的发生是在“执行”前面那件坏事的“命令”。

在人类的（错误的）刻板印象里，一个事件是由另一个事件导致的，一个事件的发生会导致另一个事件的发生。或者说一个事件会“命令”另一个事件发生，后面那个事件的发生是在“执行”前面那个事件的“命令”。这里的（错误的）因果关系是“（事件Y）执行（事件X的）命令式”（或称“（事件X）控制（事件Y）式”）的。

另外，人类头脑中还有“（事件Y）执行（物体A的）命令式”（或称“（物体A）控制（物体B）式”）的因果关系，以及“（物体B）执行（事件X的）命令式”（或称“（事件X）控制（物体B）式”）的因果关系，不过在本文中就不再赘述了。

人类头脑中的“（事件Y）执行（事件X的）命令式”的因果关系也可以说成是“（事件X是事件Y的）预兆式”的因果关系。

我命令你坐下，然后你坐下了。在这个场景里，似乎“我发出命令”（作为事件X）是“你开始坐下”（作为事件Y）的预兆。事实上，薛定谔方程（作为“准事件”）既是“我发出命令”（作为事件X）的（唯一真实）预兆，也是“你开始坐下”（作为事件Y）的（唯一真实）预兆。注意，薛定谔方程不是一个“事件”，而是一个“非事件”，但我们在这里可以把薛定谔方程想象成一个可以类比于“事件”的“准事件”。这里，事件X是“我（作为物体A）发出命令”，而事件Y是“你（作为物体B）开始坐下”。在这里，（错误的）因果关系是“物体B在执行物体A的命令”或者“事件Y在执行事件X的命令”。

当我的手指在推一个台球时，似乎“我的手指发出命令” （作为事件X）是“台球开始运动” （作为事件Y）的预兆。事实上，薛定谔方程（作为准事件）既是“我的手指发出命令” （作为事件X）的（唯一真实）预兆，也是“台球开始运动”（作为事件Y）的（唯一真实）预兆。这里，事件X是“我的手指（作为物体A）发出命令”，而事件Y是“台球（作为物体B）开始运动”。在这里，（错误的）因果关系是“物体B在执行物体A的命令”或者“事件Y在执行事件X的命令”。

在人类的（错误的）刻板印象里，一件好事是另一件好事的预兆，或者说一件好事控制着另一件好事是否能发生。

在人类的（错误的）刻板印象里，一件坏事是另一件坏事的预兆，或者说一件坏事控制着另一件坏事是否能发生。

在人类的（错误的）刻板印象里，一个事件是另一个事件的预兆，或者说一个事件控制着另一个事件是否能发生。

事实上，只有薛定谔方程（作为准事件）是（宇宙中发生的）所有事件的（唯一真实）预兆，或者说只有薛定谔方程（作为准事件）控制着（宇宙中发生的）任何一个事件是否能发生。

一个物体其实也是一个事件。从微观角度看，一个物体就是一些基本粒子随着时间的流逝而演化其状态。同样的，一个事件也是一些基本粒子随着时间的流逝而演化其状态。一个事件可以包括多个物体。一个物体也可以包括多个事件。人类的头脑可以把一些基本粒子（随时间流逝的状态演化）定义为一个物体。人类的头脑也可以把一些基本粒子随时间流逝的状态演化定义为一个事件。物体和事件在外部世界中的本质是相同的。但是，人类的头脑在处理一个物体时，和处理一个事件有所不同。

当我们把每个物体都看成一个事件时，人类头脑中的因果关系就只有“（事件Y）执行（事件X的）命令式”（或称“（事件X是事件Y的）预兆式”）。

当人类的头脑在思考两个事件之间的因果关系时，这两个被思考的事件，其实都是真实世界中真实发生的具体事件的*抽象*。读者朋友，请你思考一个场景，在这个场景里，你的手指在推一个台球。当你在思考这个场景时，这个场景里的手指和台球都是你的头脑想象出来的，而这个场景是无数个不同的真实场景的抽象。比如，在某一个真实场景里，台球是红色的。而在你想象的场景里，台球可以是任何颜色，或者说是没有特定的颜色，或者也可以说你想象的台球的颜色是“抽象的”。

人类的头脑（错误的）认为两个抽象的事件之间有因果关系。人类的头脑认为，两个抽象的事件之间的因果关系，代表了（分别对应于这两个抽象的事件的）两个具体的事件之间的因果关系。比如，我的手指在推一个台球，“我的手指发出命令”和“台球开始运动”这两个抽象事件之间具有因果关系。“我的手指发出命令”和“台球开始运动”这两个抽象事件之间的因果关系，代表了“我的*大拇指*发出命令”和“*红色的*台球开始运动”这两个具体事件之间的因果关系，也代表了“我的*食指*发出命令”和“*白色的*台球开始运动”这两个具体事件之间的因果关系。人类的头脑认为，两个具体事件的具体特征（比如我具体用的是大拇指还是食指，或者台球的具体颜色），对（分别对应于这两个具体事件的）两个抽象事件之间的因果关系并无影响。

事实上，（宇宙中真实发生的）两个具体的事件之间并没有因果关系，因为这两个具体的事件同时都是薛定谔方程这一准事件的“果”。既然（宇宙中真实发生的）两个具体的事件之间并没有因果关系，那么（分别对应于这两个具体事件的）两个抽象的事件之间也不应该有因果关系，即使人类的头脑建构了这两个抽象的事件之间的因果关系。人类的头脑所建构的这两个抽象的事件之间的因果关系，仅仅是（错误的）幻象。

上面我用了“*红色的*台球开始运动”这句话来描述一个具体事件，与“（未说明颜色的）台球开始运动”这个抽象事件相对应。“*红色的*台球开始运动”这句话的描述当然还是不够具体。如果想要真正具体的描述（宇宙中真实发生的）一个具体事件，需要描述台球中*每个*基本粒子的随着时间的流逝而演化的状态信息。

（宇宙中真实发生的）一个具体（宏观）事件中会涉及到极大数目的基本粒子，因此一个具体（宏观）事件实际上具有极大的复杂度。考虑到每个具体（宏观）事件的（极大的）复杂度，两个具体（宏观）事件之间的真实差异其实（几乎）是无穷无尽的。但人类大脑的思考是有成本的，因此人类大脑通常不会去详尽的思考这两个具体（宏观）事件之间的所有真实差异。当人类的头脑把这两个具体（宏观）事件抽象成一个抽象事件后，这两个具体（宏观）事件之间所有的（几乎无穷无尽的）真实差异其实都被人的头脑忽略掉了。

两个具体（宏观）事件之间的真实差异其实（几乎）是无穷无尽的。但人类大脑的抽象能力有限，因此只能把其中的一部分差异抽象出来贴上标签，而忽略了其他的（未能被抽象出来贴上标签的）差异。

比如，如果我问你“为什么张三考上了大学，而李四没考上？”你一定可以说出“张三考大学”（作为一个具体宏观事件）和“李四考大学”（作为一个具体宏观事件）这两个具体宏观事件之间的几个差异。比如，李四在高考那几天感冒了，影响了考试时的发挥。而张三在高考那几天没感冒。但实际上，从基本粒子的级别看，“张三考大学”（作为一个具体宏观事件）和“李四考大学”（作为一个具体宏观事件）这两个具体宏观事件之间的差异（几乎）是无穷无尽的，只是人类的头脑没有能力去抽象出所有这些（基本粒子级的）差异（即“贴上标签”）。

再比如，如果我问你“今天的英国和法国有什么不同？”你一定可以说出几条来。比如，英国人说英语，而法国人讲法语。但实际上，从基本粒子的级别看， 英国和法国之间的差异（几乎）是无穷无尽的，只是人类的头脑没有能力去抽象出所有这些（基本粒子级的）差异（即“贴上标签”）。

宇宙中真实发生的每个具体事件都是薛定谔方程这一准事件的“果”。宇宙中只会发生具体事件，而不会发生抽象事件。一个抽象事件是人类的头脑对宇宙中真实发生的多个不同的具体事件的抽象。抽象事件只发生在人类的头脑中，而不发生在宇宙中。在人类头脑的（错误的）想象中，*宇宙中*发生着抽象的事件，而（发生在宇宙中的）两个抽象事件之间还可以有因果关系。事实上，这两个抽象事件之间的所谓的“因果关系”其实是人类的头脑（错误的）建构出来的（幻象）。这两个抽象事件本身都是人类的头脑虚构出来的（幻象）。这两个抽象事件并不（真实的）存在于宇宙之中。（真实的）存在于宇宙之中的，只有对应于抽象事件的具体事件。

当人类的头脑根据抽象事件之间的因果关系来预测宇宙的未来时，这个预测所依据的（抽象事件的）因果关系只是人类的头脑（错误的）建构出来的（幻象），因此预测结果也只是（人类的头脑错误的建构出来的）幻象，不足为信。

当人类的头脑根据薛定谔方程来预测宇宙的未来时，这个预测所依据的因果关系*不是*人类的头脑错误的建构出来的幻象，因此预测结果也*不是*（人类的头脑错误的建构出来的）幻象，而是可信的真相。

（宇宙中真实发生的）每个具体事件都是被薛定谔方程这个准事件所控制（或预兆）的。或者换句话说，（宇宙中真实发生的）每个具体事件都是被薛定谔方程这个（唯一真实的）“因果关系”所控制（或预兆）的。既然（宇宙中真实发生的）每个具体事件都是被薛定谔方程这个*（唯一真实的）*“因果关系”所控制（或预兆）的，那么（宇宙中真实发生的）一个具体事件也就并不是被另一个（真实发生的）具体事件（通过（除薛定谔方程以外的）其他因果关系）所控制（或预兆）的。“（宇宙中真实发生的）一个具体事件被另一个（真实发生的）具体事件（通过*（除薛定谔方程以外的）其他因果关系*）所控制（或预兆）”只是人类头脑中（错误的）建构的幻象。*（除薛定谔方程以外的）其他因果关系*也只是人类头脑中（错误的）构建的幻象。

（宇宙中真实发生的）具体事件之间并不（真的）存在（除薛定谔方程以外的）其他因果关系，但我的大脑有时还是会思考抽象事件之间（除薛定谔方程以外）的其他（被我的大脑（在薛定谔方程的控制下）虚构出来的错误的）因果关系，而这种思考（作为一个具体事件）又是被薛定谔方程这个（唯一真实的）“因果关系”所控制（或预兆）的。所以，真相就是，我的大脑（在薛定谔方程的控制下）有时不得不思考（被我的大脑（在薛定谔方程的控制下）构建出来的）虚构的、错误的因果关系。宇宙的（真实、具体的）演化实际上并不符合我的头脑中的这些虚构的、错误的因果关系，但我的大脑（在薛定谔方程的控制下）有时还是会想象宇宙的演化符合这些（虚构的、错误的）因果关系。

在天气温和时，发电厂可以减少发电。因为“天气”和“用电量”这两个抽象事件之间存在“因果关系”：天气太冷或太热时，制热或制冷需要使用额外的电力。

“打开客厅空调进行制冷”与“家里电表上显示的用电量有所增长”这两个抽象事件之间存在线性的“因果关系”。这个线性的“因果关系”是我的头脑所认知的一个pattern。这个pattern其实是虚构的、错误的。“打开客厅空调进行制冷”与“家里电表上显示的用电量有所增长”这两个*具体*事件之间真正正确的 因果关系/pattern 是薛定谔方程。或者说，这两个具体事件的发生都是薛定谔方程所导致的。

当我们人类看到一个人的肉身时，我们的头脑会想象这个肉身里存在一个小人儿，或者存在一个“agent”、“自我”。在我们的头脑的想象中，这个小人儿、agent或“自我”正在控制着这个人的肉身。这个小人儿、agent或“自我”并不是一个物体，而是一个“非物体”。在这里，这个小人儿、agent或“自我”是被人类的头脑类比为一个物体的一个准物体。这个准物体是一个（错误的）幻象。

“*我的大脑（作为一个物体）*在控制着*我的大脑（作为一个物体）*的思考”这句话是没有意义的。““*我的自我”（作为一个准物体）*在控制着*我的大脑（作为一个物体）*的思考”这句话是有意义的。实际上，既然我的大脑的思考（作为一个具体事件）受到薛定谔方程（作为唯一真实的“因果关系”）的控制，那么我的大脑的思考也就没受到（与“我的大脑”这个名称所指代的物体有所不同的）“我的自我”（作为一个准物体）的控制。或者换句话说，没有一个（与“我的大脑”这个名称所指代的物体有所不同的）“我的自我”（作为一个准物体）在控制着我的大脑的思考。因此，我的大脑的思考并不是“我的自我”（作为一个准物体）的思考，而是“我的大脑”（作为一个物体）的思考，或者是宇宙（作为一个物体）的思考，或者是薛定谔方程（作为一个准物体）的思考。或者换句话说，*真正的“我的自我”*（即“真我”）（作为一个准物体）其实并不位于我的大脑（作为一个物体）之内，而是位于大脑（作为一个物体）之外、宇宙（作为一个物体）之内。或者换句话说，“真我”（作为一个准物体）其实就是薛定谔方程（作为一个准物体）。如果“真我”存在，那么*不是“真我”的“我的自我”*（即“假我”）其实就不存在。换句话说，如果有“真我”，那么就没有“假我”。

在“真我”的（错误的）想象中，“真我”能（直接）控制我的肉身的演化，但不能（直接）控制（我的肉身周围的）环境的演化。根据这个（错误的）想象，“我的肉身”和（我的肉身周围的）“环境”这两者的性质是有所不同的。因此，在真我的（错误的）想象中，真我位于“我的肉身”之内，而不是位于（我的肉身周围的）“环境”之中。

实际上，（直接）控制着我的肉身（作为一个物体）的演化的，既不是“真我”（作为一个准物体），也不是“假我”（作为一个准物体），而是我的肉身（作为一个物体）本身。或者说，（直接）控制着我的肉身（作为一个物体）的演化的，是位于我的肉身内的大量基本粒子（作为很多个物体）。或者说，（直接）控制着我的肉身（作为一个物体）的演化的，是宇宙（作为一个物体）。或者说，（直接）控制着我的肉身（作为一个物体）的演化的，是薛定谔方程（作为一个准物体）。

换句话说，“自我”、“真我”、“假我”这些名称所指代的其实都是（实际上并不存在的）幻象。

宇宙中真实存在的物体和事件都是具体而复杂的，而人类头脑中的物体和事件都是抽象而简单的。

一个人大脑中的基本粒子的演化（作为宇宙中真实发生的一个事件）是具体、极度复杂、精准的。人类头脑通过theory of mind对这个人大脑中的所谓“思维”所建构的模型是抽象、简单、粗略、不可靠的。这个人的大脑中实际上并不存在像这个（被theory of mind建构的）粗略而不可靠的抽象模型那样的所谓的“思维”。因此这个（被theory of mind建构的）粗略而不可靠的抽象模型其实只是个幻象。或者换句话说，这个人的大脑中实际上并不存在所谓的“思维”。我们所感觉到存在于这个人的大脑中的所谓“思维”，实际上是只存在于*我们*大脑中的幻象。强调一下，（作为所谓的“这个人的思维”的）这个幻象并不存在于这个人的大脑中，而是存在于我们（作为这个人的观察者）的大脑中。

我们（作为这个人的观察者）用所谓“这个人的思维”来解释这个人的肉身（作为一个物体）的行为，似乎这个人的肉身的行为是被所谓“这个人的思维”所控制的。实际上在所谓“这个人的思维”与“这个人的肉身”之间并不存在这种控制与被控制的关系。因为所谓“这个人的思维”实际上并不真的存在于这个人的肉身之内，而是存在于我们（作为这个人的观察者）的头脑之中（的（专门用于粗略而不可靠的预测这个人的肉身的行为的）抽象模型/幻象）。既然所谓“这个人的思维”实际上并不真的存在于这个人的肉身之内，又如何能够控制这个人的肉身呢？

薛定谔方程在精准而可靠的控制着所有人的肉身里的所有基本粒子的状态演化。一个人的肉身里的任何一个基本粒子的状态演化并不受所谓“这个人的思维”的控制。

我们（作为这个人的观察者）用所谓“这个人的思维”来解释这个人的肉身的行为，似乎这个人的肉身的行为是被所谓“这个人的思维”所预兆的。

薛定谔方程在精准而可靠的预兆着所有人的肉身里的所有基本粒子的状态演化。“一个人的思维”在粗略而不可靠的预兆着这个人的肉身里的所有基本粒子的状态演化。“一个人的思维”本质上就是这个人的肉身里的所有基本粒子的状态演化（在旁观者的头脑中）的一个粗略而不可靠的（专门用于预测这个人的肉身里的所有基本粒子的状态演化的）抽象模型/幻象。“一个人的思维”不能真正控制/改变这个人的肉身里的任何一个基本粒子（被薛定谔方程（精准而可靠的）控制/预兆的）的状态演化。这个人的肉身里的任何一个基本粒子（被薛定谔方程（精准而可靠的）控制/预兆的）的状态演化都是独立于“这个人的思维”的。或者换句话说，这个人的肉身里的任何一个基本粒子（被薛定谔方程（精准而可靠的）控制/预兆的）的状态演化都是独立、自主、自动、自发的。这里用“独立”、“自主”、“自动”、“自发”这几个词来强调（这个人的肉身里的任何一个）基本粒子的状态演化不受“这个人的思维”的控制。

在旁观者的头脑中，作为“一个人的思维”的粗略而不可靠的（专门用于预测这个人的肉身里的所有基本粒子的状态演化的）抽象模型的“输出”*大致*是其“输入”的“函数”。作为“一个人的思维”的粗略而不可靠的（专门用于预测这个人的肉身里的所有基本粒子的状态演化的）抽象模型，实质上就是这个“函数”。比如，这个人的肉身今天看到了很多次麦当劳的广告（但没有看到肯德基的广告），那么今天“这个人的思维”就更可能选择去麦当劳（而不是肯德基）吃晚饭。

在旁观者的头脑中，作为“一个人的思维”的粗略而不可靠的（专门用于预测这个人的肉身里的所有基本粒子的状态演化的）抽象模型/函数，实质上是这个人的肉身（作为一个物体）的活动的抽象模型/函数。

所谓“输入与输出之间的抽象模型/函数”，实质上就是“输入与输出之间的因果关系”。换句话说，（在旁观者的头脑中的）一个“因果关系”实质上就是一个抽象模型/函数。

在旁观者的头脑中，一个人的肉身（作为一个物体/抽象模型）的“输出”大致是其“输入”的“函数”，而这个人（的肉身）周围的环境（作为一个物体/抽象模型）的“输出”也大致是其“输入”的“函数”。那么，究竟是这个人的肉身的活动控制/预兆其周围环境的活动，还是其周围环境的活动控制/预兆这个人的肉身的活动呢？这个人的肉身的活动控制/预兆其周围环境的活动，因此其周围环境是一台机器。其周围环境的活动控制/预兆这个人的肉身的活动，因此这个人的肉身也是一台机器。那么，在这两台互相控制/预兆的机器之中，从根本上来说，到底是哪一台机器的活动在控制/预兆另一台机器的活动呢？或者换句话说，到底哪一台机器（在这两台机器的互动中）居于（根本上的）主导地位呢？这个问题没有答案，虽然一个现代人的肉身往往会想象自己在互动中居于（根本上的）主导地位。我们换个角度看，这两台机器叠加在一起，其实是一台机器，而这一台机器的活动/演化只受到薛定谔方程的控制。换句话说，这两个物体/抽象模型/函数叠加在一起，其实是一个物体/抽象模型/函数，而这一个物体/抽象模型/函数的活动/演化只受到薛定谔方程的控制。或者换句话说，这一个抽象模型/函数其实就是薛定谔方程本身。实际上，客观真实存在的只有这一个机器/物体/抽象模型/函数，而所谓的“两个机器/物体/抽象模型/函数”只主观的存在于旁观者的头脑中。换句话说，旁观者在头脑中把一个机器/物体/抽象模型/函数（错误的）认知成了两个机器/物体/抽象模型/函数。再换句话说，旁观者所看到的两个机器/物体/抽象模型/函数，其实都只是旁观者头脑中（不反映客观真实情况的）错误的主观幻象，而客观真实情况是实际只存在一个机器/物体/抽象模型/函数。

## 天、道

汉字“天”表示天空。从地球表面向上看，日月星辰都在天空之中，因此“天”字又代表宇宙。宇宙中万物的运行规则，古人称之为“道”。古人不知道薛定谔方程。如果古人知道薛定谔方程的话，我想古人会说“道就是薛定谔方程；薛定谔方程就是道”。

作为薛定谔方程的“道”是极度机械的，没有任何感情色彩，就是一个（数学）函数。就是这个极度机械的“道”在操控万物，以万物为刍狗。因此，不论宇宙中发生什么奇奇怪怪，甚至有悖所谓“天理”人伦的事件，也都不足为奇。其实这个极度机械的“道”才是真正的“天理”。

每个人的肉身的行为，其实都是这个极度机械的“道”的行为。其实每个人的肉身中并没有所谓的“心”在操控肉身。每个人的肉身都是只被“道”操控的。宇宙中真实发生的每个事件都是“道”的（必然）显现。或者换句话说，宇宙中真实发生的每个事件都是“天意”所（必）为，符合（真正的）“天理”或（上述极度机械的）“道”。

除去（上述极度机械的）“道”（作为宇宙中唯一客观真实的因果关系）之外，其他所有因果关系其实都是（不符合客观事实的、错误的）幻象。

## Counterfactual episodes

人会在头脑中臆想很多关于未来情形的counterfactual episodes。大脑的这种活动被称为episodic future thinking。人的大脑会对臆想出来的counterfactual episodes产生情绪反应。

人的大脑会臆想（自己的）肉身当下的行为正在促进自己所喜爱的那个episode成为现实。换句话说，人的大脑会臆想肉身当下的行为与未来（会发生的）实际情况之间存在某种因果关系。而这是因为人的大脑还会臆想一些关于肉身当下行为的counterfactual episodes，并臆想肉身当下（实际）的行为是（肉身中的）大脑（自由的）选择了某一个（关于肉身当下行为的）episode的结果。事实上，人的肉身（包括肉身中的大脑）的实际行为（例如，“做出选择”；“做出决定”）不是自由的，而是受到薛定谔方程控制的。

我的大脑会臆想关于未来情形的counterfactual episodes，并为了“使我的大脑所喜爱的那个episode成为现实”而在关于我的肉身当下行为的（臆想的）counterfactual episodes中“自由的选择”一个episode。我的大脑似乎只能以这种方式来“解决”我的肉身在日常生活中遇到的实际问题。换句话说，这似乎就是我的大脑“解决”（我的肉身在日常生活中遇到的）实际问题的唯一方式。当我的大脑以这种方式来“解决”（我的肉身在日常生活中遇到的）实际问题时，我的大脑必须要思考（除了薛定谔方程（作为宇宙中唯一客观真实的因果关系）之外的）其他因果关系，虽然我的大脑知道其他因果关系其实都是（不符合客观事实的、错误的）幻象。我的大脑会臆想“自己”是（我的肉身在日常生活中遇到的）实际问题的“解决者”。事实上，（我的肉身在日常生活中遇到的）实际问题的真正的“解决者”是薛定谔方程。我们换个角度看，（我的肉身在日常生活中遇到的）某个实际问题其实并没有被（任何agent所）解决—（我的肉身在日常生活中遇到的）这个实际问题其实只是随着宇宙（在薛定谔方程控制下）的演化而自行消失不见了。强调一下，这个实际问题其实是（随着时间的流逝而）自形消失不见的，而不是被（任何agent所）解决的。换句话说，这个实际问题其实是顺其自然的消失不见的。其实，（人类在日常生活中遇到的）所有的实际问题都是顺其自然的消失不见的。当然，（人类在日常生活中遇到的）所有的实际问题本来也都是顺其自然的出现的。

我的大脑会臆想关于未来情形的counterfactual episodes，也会臆想关于我的肉身当下行为的counterfactual episodes。我的大脑目前所臆想的任何一个episode，都需要满足的唯一条件，就是我的大脑目前还不能确定这个episode不可能在真实世界中发生。当我的大脑确定了一个episode不可能在现实世界中发生之后，我的大脑也就明确了这个episode是counterfactual的，那么我的大脑也就不会再臆想这个episode（可能在真实世界中）发生了。换句话说，在我的大脑确定一个episode是counterfactual的之前，我的大脑就会臆想这个episode（可能在真实世界中发生）。

比如，关于一个人的肉身在下一秒的行为，我的大脑就会臆想出很多可能的episodes。我的大脑会臆想这个人的肉身可以在所有这些可能的episodes中“自由的选择”一个episode。实际上，我的大脑是在臆想这个人的肉身具有自由意志。或者，我的大脑也可以臆想这个人的肉身里有一个具有自由意志的小人儿（在“自由的”控制着这个肉身）。实际上，我的大脑所臆想出的（关于这个人的肉身在下一秒的行为的）所有episodes中，最多只有一个episode不是counterfactual的。假如我有火眼金睛，可以透视这个人的肉身，并看到其中每一个基本粒子的状态，我的大脑就可以（通过（薛定谔方程进行）计算）排除掉所有的counterfactual episodes了。但事实上，我肉眼凡胎，所以我才觉得那些counterfactual episodes都是有可能在真实世界中发生的。换句话说，我肉眼凡胎，看不穿那些（我的大脑臆想出来的）episodes实际上都是counterfactual的。当我（用火眼金睛）看穿了所有的counterfactual episodes之后，我就能准确预测这个人的肉身（在下一秒）的行为。那么，这个人的肉身在我眼中就相当于一台机器了。当然，这个时候我的大脑也就不会再去臆想那些counterfactual episodes了。

## 人间

如果把每个物体和每个事件都看成是一些基本粒子（在薛定谔方程控制下）的状态演化，那么人间也就不能被称为人间了。人间变成了好像一个钟表一样，而每个人的肉身就是这个钟表里的一个零件。所有人的“灵魂”都消失了。

这个时候，如果我们又能从这个钟表里的一个零件（例如一个人的肉身）中“看到”一个“灵魂”，那么人间就又出现了。

由此可见，有“人”，才有“人间”。如果“人的肉身”没有“灵魂”，那么“人的肉身”也就不能被称为“人”了，那么“人间”也就不能被称为“人间”了。

## 线性的因果关系

人脑喜爱在（宇宙中真实发生的）两个事件之间建立（实际上并不存在的）因果关系，而且人脑喜爱建立*简单*的因果关系。何谓简单？线性的（因果关系）就更简单。人脑喜爱在两个事件之间建立线性的因果关系。

比如，一支军队的负责人在开战前的动员会上说“我们一定要在这次战役中获胜！”，之后这支军队在这次战役中胜利了。如果我们认为负责人说了这句话而（在一定程度上）导致了这这支军队在这次战役中胜利，那么我们的头脑就在“负责人说要胜利”和“这支军队在这次战役中胜利”这两个（实际上并不存在因果关系的）事件之间建立了一种线性的因果关系。我们的头脑可以想象负责人说了另一句话“我们一定要在这次战役中失败！”而之后这支军队在这次战役中失败了。而这个想象是一个counterfactual episode。而我们的头脑可以在这个counterfactual episode中的两个counterfactual事件（“负责人说要失败”和“这支军队在这次战役中失败”）之间建立同样的线性的因果关系。当我们的头脑想象“负责人说要*胜利*”而之后“这支军队在这次战役中*失败*”这个counterfactual episode时，我们的头脑就无法在这两个事件（“负责人说要胜利”和“这支军队在这次战役中失败”）之间建立同样的线性的因果关系了。而这个想象会使得两个真实发生的事件（“负责人说要胜利”和“这支军队在这次战役中胜利”）之间（在我们头脑中）的因果关系变得复杂，而我们的头脑又讨厌复杂的因果关系，因此我们的头脑倾向于忽略掉这个想象。

既然人脑都喜爱在两个事件之间建立（实际上并不存在的）线性的因果关系，那么，表面上看似乎具有线性的因果关系的两个事件，就会被大多数的人脑“发现”其间的（实际上并不真的存在的）“因果关系”。而这个被“发现”的所谓的“因果关系”，本质上其实是一种迷信。但大多数人都相信这种迷信，因此这种迷信也就成为了人类社会中的一个共识。

人脑可以在两个均（在宇宙中）真实发生的事件之间建立线性的因果关系。人脑也可以在两个均未（在宇宙中）发生的事件之间建立线性的因果关系。人脑也可在一个未（在宇宙中）发生的事件与一个（在宇宙中）真实发生的事件之间建立线性的因果关系。

“你今天早上出门时没带雨伞，所以你现在淋雨了。”“你今天早上出门时带雨伞”是一个未（在宇宙中）发生的事件。“你现在淋雨了”是一个（在宇宙中）真实发生的事件。人脑可以在这两个事件之间建立线性的因果关系。

“你今天早上出门时带了雨伞，所以你现在没淋雨。”“你今天早上出门时带了雨伞”是一个（在宇宙中）真实发生的事件。“你现在淋雨”是一个未（在宇宙中）发生的事件。人脑可以在这两个事件之间建立线性的因果关系。

“你今天早上出门时没带雨伞，所以你现在没淋雨。”“你今天早上出门时带雨伞”和“你现在淋雨”均是未（在宇宙中）发生的事件。人脑可以在这两个事件之间建立线性的因果关系。

人脑（错误的）认为未（在宇宙中）发生的事件“本质上”是有可能发生的，因此人脑才会试图在未发生的事件之间建立线性的因果关系。而当人脑在两个均未（在宇宙中）发生的事件之间建立了（实际上并不真的存在的）线性的因果关系后，人脑就会相信“假如前一个（未在宇宙中发生的）事件发生的话，那么后一个（未在宇宙中发生的）事件就会发生”。人脑里的神经网络的电路会把未发生的事件连接成causal chains，虽然这些（未发生的）事件之间并不存在（真正的）因果关系。然后，人脑就会相信“（在causal chains中的）所有这些未（在宇宙中）发生的事件“本质上”都是有可能发生的”，虽然这些未（在宇宙中）发生的事件永远不会真的（在宇宙中）发生。

人脑会试图在未发生的事件之间建立线性的因果关系。但是，在人脑建立（实际上并不存在的）线性的因果关系时，还是最喜爱在两个均真实发生的事件之间建立（线性的因果关系）。

人脑可以在两个均未发生的事件之间建立线性的因果关系，但人脑更喜爱在两个均真实发生的事件之间建立线性的因果关系。

人脑可以在一个未发生的事件与一个真实发生的事件之间建立线性的因果关系，但人脑更喜爱在两个均真实发生的事件之间建立线性的因果关系。

这是因为，相对于真实发生的事件的数量而言，未发生的事件的数量就要多得多了。比如，你今天早上除了没带雨伞之外，没干的事儿可太多了。你没带手机充电器吧？你没带护照吧？你没带一套多余的衣服（以供在万一淋雨之后换上）吧？你没提前买一台烘干机并放在车的后备箱里（以供在淋雨之后烘干湿衣）吧？

如果（除了真实发生的事件之外还）要考虑未发生的事件，人脑的工作量就太大了。在日常生活中，人脑往往没有时间去考虑未发生的事件。

因此，在人脑确定一个人的责任时，相对于这个人没做什么而言，人脑更喜爱考虑这个人实际上（在宇宙中）做了什么。因此，如果一个人特别希望避免被（别人）问责，那么最恰当的处世原则就应该是“多一事不如少一事”，即尽量不做“做不做都可以”的事。

（宇宙中）一切真实发生的事件的真实原因只有薛定谔方程，虽然我的大脑里的神经网络的电路会自动的给每个（曾在我的视网膜上成像的）事件匹配出另一个（“真实发生的”或“未发生的”）事件作为其原因。我的大脑里的神经网络的电路会自动的把所有（曾在我的视网膜上成像的）事件连接成causal chains，虽然这些事件之间并不存在（真正的）因果关系。

人脑里的神经网络的电路也会把未发生的事件连接成causal chains，虽然这些（未发生的）事件之间并不存在（真正的）因果关系。

事实上，人脑里的神经网络的电路会把（在宇宙中）真实发生的事件与未（在宇宙中）发生的事件统一在causal chains中。人脑会（错误的）想象（在宇宙中）真实发生的事件与未（在宇宙中）发生的事件“本质上”都是有可能发生的。本文作者认为，未（在宇宙中）发生的事件“本质上”就是不可能（在宇宙中）发生的。

人脑可以想象一个未（在宇宙中）发生的事件B，但这个想象本身并不能表明事件B可能（在宇宙中）发生。人脑可以想象“另一个未（在宇宙中）发生的事件A（假如发生的话）能导致事件B的发生”。但可惜事件A和事件B都没能发生。

人脑可以在episodic future thinking里构建一个（被预测会发生在）未来的事件D的场景，并想象事件D“本质上”是有可能（在未来）发生的。后来，当人脑发现事件D没有（在宇宙中）发生时，还是会（错误的）坚持认为“事件D“本质上”是有可能发生的，而事件D之所以（“本质上”有可能发生但却）没有（在宇宙中）发生，一定是由某个（（在宇宙中）真实发生的或未（在宇宙中）发生的）事件导致的”。

人脑可以在episodic future thinking里构建一个（被预测会发生在）未来的事件E的场景，并想象事件E“本质上”是有可能（在未来）发生的。后来，当人脑发现事件E（在宇宙中）真实发生了的时候，会允许事件E发生时的真实场景与自己当初在episodic future thinking里所构建的（想象）场景有所不同。既然事件E发生时的真实场景与人脑当初在episodic future thinking里所构建的（想象）场景有所不同，那么人脑实际上就没有*准确的*预测到事件E发生时的真实场景。换句话说，人脑（在episodic future thinking里）所预测的事件E并没有真的发生，真的发生的事件是事件F，事件F和事件E相似但又不同。但人脑认为事件E和事件F“本质上”相同，因此（错误的）认为事件E和事件F是同一个事件。

人脑的神经网络会（错误的）认为同一个事件会在宇宙中反复的发生，比如“太阳每天早上都会升起”。其实，每天早上的日出都是一个不同的事件。如果你每天早上都看日出，每天早上的日出事件的场景其实都是不同的，虽然你可能会认为每天早上的日出事件 “本质上”都相同，或者说“每天早上的日出事件本质上都是*日出*”。其实，“日出”这个词语包括了每天早上的日出事件。你可以认为“日出”这个词语所指代的是每天早上的日出事件的共性。“日出”不是一个事件，而是很多“日出事件”的共性。事实上，每天早上的日出事件的场景都是被薛定谔方程控制的。我们可以把某一天早上的一次日出事件称为一个具体事件，而把“日出”（作为所有日出（具体）事件的共性）称为一个抽象事件。

Working memory representations are abstractions of low-level perceptual features [155].

人脑的神经网络在解决日常问题时会使用heuristic。人脑的神经网络在使用heuristic时会使用像“日出”这样的抽象概念（或曰抽象事件）来描述（抽象的）宇宙的演化过程。事实上，“日出”并不存在于（具体的）宇宙的演化过程之中，而是只存在于人脑的神经网络的（抽象的）想象中。换句话说，宇宙之中本身并没有“日出”这个东西，而人脑的神经网络的想象中却有“日出”这个东西。在人脑的神经网络的想象中，宇宙是抽象的。事实上，真实的宇宙是具体的。在人脑的神经网络的想象中，（抽象的）宇宙的演化过程是符合（关于不同（抽象）事件之间的因果关系的）causal chains的。事实上，具体的宇宙的演化过程只符合薛定谔方程，而（关于不同（抽象）事件之间的因果关系的）causal chains只是人脑的神经网络在使用heuristic时会用到的一种（企图用于描述（抽象的）宇宙的演化过程的）工具。因此，一个人脑的神经网络（在使用heuristic时）所使用的（关于不同（抽象）事件之间的因果关系的）causal chains所反映的，并不是（具体的）宇宙的演化过程的本质，而只是这个神经网络自身结构的本质。换句话说，所谓“不同（抽象）事件之间的因果关系”并不存在于（具体的）宇宙的演化过程之中，而是只存在于这个神经网络自身的结构之中。换句话说，这个神经网络以其自身的结构武断的定义了所谓“不同（抽象）事件之间的所有因果关系”，虽然不同（具体）事件之间本身是没有（除薛定谔方程之外的）因果关系的。从理论上说，只要我们对这个神经网络的具体结构有足够深入的了解，我们就可以获知被这个神经网络的具体结构所（武断的）定义的那些不同（抽象）事件之间的所有因果关系的详情。事实上，这个神经网络以其自身的结构武断的定义了它自身理解/想象中的（抽象）宇宙，但这个神经网络（错误的）认为它自身理解/想象中的（抽象）宇宙就是真实的（具体）宇宙。本文会告诉你（的大脑的神经网络）真实的（具体）宇宙是什么样的。很遗憾，相对于你（的大脑的神经网络）自身理解/想象中的（抽象）宇宙而言，真实的（具体）宇宙极其单调无聊。

给定一个（具体）事件H，你（的大脑的神经网络）通过（依托于神经网络的（武断的定义了不同（抽象）事件之间的因果关系的）具体结构而进行的）计算可以为H（武断的）匹配出另一个（具体）事件G作为H的“原因”。事实上，G并不是H的真正原因。G和H的真正原因都仅仅是薛定谔方程。

在你（的大脑的神经网络）自身理解/想象中的（抽象）宇宙里，一个人的肉身的活动是在有意的为他所希望发生的某个抽象事件的发生“创造”条件（即“创造”另一个（作为“原因”的）抽象事件），并且他的肉身真的能够“创造”另一个抽象事件，因此可以说“他的肉身（在一定程度上）控制了宇宙的演化”。你（的大脑的神经网络）的这些理解/想象是不符合事实的。事实上，一个人的肉身无法（在宇宙中）“创造”任何一个（具体）事件，只是你（的大脑的神经网络）认为/想象他的肉身“创造”了某一个（具体）事件而已。换句话说，是你（的大脑的神经网络）认为/想象某一个（具体）事件是被他的肉身的活动所“创造”的。事实上，他的肉身本身就只是一个（随着时间的流逝而演化的）具体事件而已。所有具体事件都仅仅是被薛定谔方程所创造的。没有任何一个具体事件是被另一个（较早发生的）具体事件所创造的。没有任何一个具体事件能创造另一个（较晚发生的）具体事件。

在你（的大脑的神经网络）自身理解/想象中的（抽象的）宇宙里，一个人的肉身（被（错误的）认为）能够“创造”出一个抽象事件，并且（被（错误的）认为）能够（自由的）选择是否要“创造”出这个抽象事件。他的肉身通过（自由的）选择是否要“创造”出这个抽象事件，从两种即将要出现的（抽象的）宇宙中选择了其中的一种（而使其实现）。换句话说，他的肉身通过（自由的）选择是否要“创造”出这个抽象事件，从宇宙演化的两种“可能的”（抽象的）分支中选择了其中的一种（抽象的）分支并使其实现。换句话说，他的肉身通过（自由的）选择是否要“创造”出这个抽象事件，从宇宙演化的两种（抽象的）前景/可能性中（自由的）选择了其中的一种（抽象的）前景/可能性并实现了这种（抽象的）前景/可能性。也就是说，他的肉身的每个（自由的）选择，都决定了（抽象的）宇宙演化的方向。

比如，如果他的肉身（自由的）选择今晚去吃麦当劳，那么他的肉身的“自由的选择”就“创造”出了一种宇宙，在这种宇宙里，他今晚会去吃麦当劳。而如果他的肉身（自由的）选择今晚去吃肯德基，那么他的肉身的“自由的选择”就“创造”出了另一种宇宙，在这另一种宇宙里，他今晚会去吃肯德基。也就是说，他的肉身的一个“自由的选择”会导致不同的宇宙（根据该选择而）出现。或者说，今晚宇宙演化有两种前景/可能性。在第一种前景/可能性里，他今晚会去吃麦当劳。在第二种前景/可能性里，他今晚会去吃肯德基。这两种不同的前景/可能性，就是两种不同的宇宙 – “麦当劳宇宙”和“肯德基宇宙”。

如果他的肉身（自由的）选择今晚去吃麦当劳，那么他的肉身的“自由的选择”就会导致一种宇宙的出现，在这种宇宙里，他今晚会去吃麦当劳。而如果他的肉身（自由的）选择今晚去吃肯德基，那么他的肉身的“自由的选择”就会导致另一种宇宙的出现，在这另一种宇宙里，他今晚会去吃肯德基。也就是说，他的肉身选择吃晚饭地点的活动，会导致不同宇宙的出现。或者说，他的肉身仅仅通过（自由的）选择不同的吃晚饭地点，就可以（自由的选择）进入/实现不同的宇宙 – “麦当劳宇宙”和“肯德基宇宙”。对吗？当然不对！因为他的肉身的选择不是自由的，而是被薛定谔方程控制/决定的。控制/决定今晚到底是“麦当劳宇宙”会出现还是“肯德基宇宙”会出现的，不是他的肉身的选择，而是薛定谔方程。因为他的肉身的选择也是被薛定谔方程控制/决定的。“他的肉身的选择”和“宇宙的演化过程”这两个具体事件之间并不存在（真正的）因果关系。准确的说，“他的肉身（的大脑里的神经网络）选择吃晚饭地点的过程”（作为一个具体事件）其实是“宇宙的演化过程”（作为一个具体事件）的一部分。

（咱们所在的）宇宙从诞生到终结的全部演化过程（作为一个具体事件）已经被薛定谔方程决定了。每个人的肉身的一生的过程（作为一个具体事件）其实是“宇宙从诞生到终结的所有演化过程”（作为一个具体事件）的一部分。作为“我的肉身的一生的过程（作为一个具体事件）”的一部分，我今晚到底会去哪儿吃饭（作为一个具体事件）其实已经被薛定谔方程决定了，只是我的大脑的神经网络现在还是得走一个（注定的）程序来决定今晚到底是去吃麦当劳还是去吃肯德基。我的大脑的神经网络（关于我今晚到底要去哪儿吃饭这个问题）的决定（作为一个具体事件）对我今晚到底会去哪儿吃饭（作为一个具体事件）并没有任何实质性的影响，因为这两个具体事件都是我的命中注定（要（按照注定的过程/内容）发生）的。

咱们可以把（咱们所在的）宇宙从诞生到终结的全部演化过程（作为一个具体事件）看作是一个最大规模的量子物理实验。那么，为什么位于这个大规模的量子物理实验的范围内的一个宏观物体（例如一个人的肉身）还可以依据他的意愿/计划“自由的”做一个小规模的量子物理实验呢？从一个位于宇宙之外的viewpoint看过来，这个小规模的量子物理实验和实验者的肉身的活动其实都只不过是最大规模的量子物理实验的一部分。从一个位于宇宙之外的viewpoint看过来，每一个生物的一生的全部活动其实都只不过是最大规模的量子物理实验的一部分。作为最大规模的量子物理实验的一部分，一个生物的一生的全部活动其实都只受到薛定谔方程的控制，而并不受到这个生物“本身”的控制。作为最大规模的量子物理实验的一部分，一个生物的一生的全部活动其实都只受到薛定谔方程的控制，因此实际上没有任何“自由”可言。例如，一个人的肉身做一个小规模的量子物理实验时的全部活动，其实都只受到薛定谔方程的控制，而并不受到他的肉身“本身”的（“自由”）控制。他的肉身其实就是一个完全受到薛定谔方程操控的木偶。所谓“他的肉身的”意愿/计划，实质上是“薛定谔方程的”意愿/计划，而不是他的肉身本身的“自由的”意愿/计划。

你（的大脑的神经网络）对“麦当劳宇宙”与“肯德基宇宙”的喜爱程度可能会不同。假设你（的大脑的神经网络）喜爱“麦当劳宇宙”多于（喜爱）“肯德基宇宙”，那么我们就可以把“麦当劳宇宙”与“肯德基宇宙”分别称为“喜宇宙”与“厌宇宙”。在你（的大脑的神经网络）的想象中，一个人的肉身仅仅通过（自由的）选择不同的吃晚饭地点，就可以（自由的选择）进入/实现不同的宇宙 – “喜宇宙”和“厌宇宙”。假设这个做选择的人就是你自己，那么你（的大脑的神经网络）会认为自己能通过（自由的）选择达到进入/实现“喜宇宙”的目的。事实上，你（的大脑的神经网络）只不过是在（错误的）*想象*自己的肉身的（“自由的”）选择能够导致“喜宇宙”的出现/实现。事实上，“喜宇宙”是否会出现/实现，是已经被薛定谔方程注定了的。

你（的大脑的神经网络）喜爱“麦当劳宇宙”多于（喜爱）“肯德基宇宙”，并且想象自己能（自由的）选择进入/实现“喜宇宙”。那么，“喜宇宙”真的要比“厌宇宙”更好吗？你（的大脑的神经网络）“知道”在“喜宇宙”里你今晚会吃麦当劳，而在“厌宇宙”里你今晚会吃肯德基，但是你（的大脑的神经网络）并不知道你今晚吃的饭会对两个宇宙的后续演化有什么样的影响。比如，在两个宇宙里你今晚吃下的食物会不同，而不同的食物对你的大脑的生长所提供的营养成分会不同，因此你的大脑的神经网络的结构就会生长的有所不同，那么你的大脑的神经网络再做（下一个）选择时的算法就会有所不同，但你（的大脑的神经网络）现在并不能预测你的大脑的神经网络再做（下一个）选择时的算法（在两个宇宙中）到底会有什么不同，也并不能预测这种不同会对你的大脑的神经网络再做的（下一个）选择到底会有什么影响。假如你今晚去“麦当劳宇宙”吃了麦香鱼汉堡，鱼肉中含有的DHA对你的大脑产生了影响，导致你以后（相对于麦当劳而言）更爱吃肯德基了，这不是没有可能。你今晚在麦当劳餐厅里滑倒了，造成脑震荡，这也不是没有可能。但这两种可能性（到底是否会真的发生）都是你（的大脑的神经网络）现在无法预测到的。如果你（的大脑的神经网络）现在真的能预测到自己今晚会在麦当劳宇宙里滑倒并导致脑震荡，那么你现在就不会选择去麦当劳宇宙了。但是，如果你现在选择不去麦当劳宇宙的话，你预测到的“今晚会在麦当劳宇宙里滑倒并导致脑震荡”又是什么意思呢？事实上，你（的大脑的神经网络）现在无法准确预测到自己的肉身今晚会在麦当劳宇宙里滑倒并导致脑震荡，而这就充分说明了你的大脑的神经网络（关于你自己的肉身的亲身经历）的所谓“预测”是模糊、粗略的。你的大脑的神经网络（关于你自己的肉身的亲身经历）的所谓“预测”是模糊、粗略、粗线条的，因此你的大脑的神经网络在做出一个选择时实际上并不清楚自己所做的这个“选择”的“真实后果”。因此，你的大脑的神经网络在（薛定谔方程的控制下）从“喜宇宙”与“厌宇宙”二者中（不自由的）选择（被你的大脑的神经网络的具体结构所（武断的）选择的）“喜宇宙”时，实际上并不清楚选择“喜宇宙”（的“真实后果”）是否真的会比选择“厌宇宙”（的“真实后果”）更好，因此所谓的“选择”实际上是（武断的）瞎蒙。

你自己的肉身今晚将会去麦当劳和肯德基中的一家，至于到底将会去这两家快餐中的哪一家，理论上是可以（根据此刻宇宙中所有基本粒子的状态）用薛定谔方程计算出来的。你自己的肉身今晚会不会在麦当劳餐厅里滑倒导致脑震荡，理论上说也可以（根据此刻宇宙中所有基本粒子的状态）用薛定谔方程计算出来。这里假设你自己的肉身今晚会在麦当劳餐厅里滑倒导致脑震荡，而你的大脑的神经网络现在未能预测出“今晚在麦当劳餐厅里滑倒导致脑震荡”这个（细线条）情节。你的大脑的神经网络（关于你自己的肉身的亲身经历）的所谓“预测”是模糊、粗略、粗线条的，相当于一种“粗线条的time travel”（或曰episodic future thinking）。关于今晚，你的大脑的神经网络会进行两个不同的粗线条time travel。在第一个粗线条的time travel里，今晚你去肯德基。在第二个粗线条的time travel里，今晚你去麦当劳。但是像“在麦当劳餐厅里滑倒导致脑震荡”这样（细线条）的情节不在第二个粗线条的time travel之中。因此，第一个粗线条的time travel是错的，而第二个粗线条的time travel也有重大失误—遗漏了“在麦当劳餐厅里滑倒导致脑震荡”这样重要的（细线条）情节。因此，这两个粗线条的time travel都没有忠实的反映宇宙（在今晚）的真实演化过程。

关于今晚，你的大脑的神经网络现在之所以勾勒出两种粗线条的“可能性”（或曰episodic future thinking），恰恰是因为你的大脑的神经网络现在无法获知（可以根据宇宙（作为一台状态机）中所有基本粒子的状态和薛定谔方程计算出来的）今晚的唯一“可能性”。

假设你的大脑的神经网络现在可以获知（可以根据宇宙（作为一台状态机）中所有基本粒子的状态和薛定谔方程计算出来的）今晚的唯一“可能性”，那么你的大脑的神经网络就可以阻止所谓的“今晚的唯一可能性”的发生，那么所谓的“今晚的唯一可能性”也就不是今晚的唯一可能性了。

你的大脑的神经网络（作为一台图灵机）是宇宙（作为一台状态机）的一部分。你的大脑的神经网络现在之所以无法获知（可以根据宇宙（作为一台状态机）中所有基本粒子的状态和薛定谔方程计算出来的）今晚的唯一“可能性”，是因为你的大脑的神经网络（作为（宇宙（作为一台状态机）中的）一台图灵机）中并没有一个算法可以用来获知（可以根据宇宙（作为一台状态机）中所有基本粒子的状态和薛定谔方程计算出来的）今晚的唯一“可能性”，或者说是因为宇宙（作为一台状态机）中并没有一个算法可以用来让你的大脑的神经网络（作为宇宙（作为一台状态机）中的一台图灵机）获知今晚的唯一“可能性”。

所谓“两个粗线条的time-travel/可能性/episodic-future-thinking”其实就是你的大脑的神经网络现在看到的两个（天马行空的）幻象，而这两个幻象没有一个是（忠实反映宇宙（在今晚）的真实演化过程的）真相。你的大脑的神经网络现在看不到（关于宇宙（在今晚）的真实演化过程的）真相，所以才把两个幻象信以为真，或者把（两个幻象之中的）一个幻象信以为真。现在你的大脑的神经网络（作为一台图灵机）没有获知今晚的（关于宇宙（作为一台状态机）的状态的）真相的能力。你的大脑的神经网络现在只能从两个（天马行空的）幻象中（武断的且不自由的）选择其中的一个。*假如*你的大脑的神经网络现在能看到（“麦当劳宇宙”的）真相（即“在麦当劳餐厅里滑倒导致脑震荡”），就不会选择“麦当劳宇宙了”。

不论你的大脑的神经网络使用多少（抽象事件之间的）因果关系对（宇宙的）未来进行预测，所做出的预测其实都只不过是（天马行空的）幻象。

当你的大脑的神经网络根据宇宙中所有基本粒子的当前状态使用薛定谔方程对（宇宙的）未来进行预测时，所做出的预测不是（天马行空的）幻象，而是真相。但这种预测（对你的大脑的神经网络来说）是不现实的，因为你的（肉身中的）大脑的神经网络不可能掌握（你的肉身所在的）宇宙中所有基本粒子的当前状态。因此，你的大脑的神经网络对（宇宙的）未来所做的任何预测，其实都只不过是（天马行空的）幻象。

不是真相的，就只不过是幻象。

读者朋友，读到这里，你的（肉身中的）大脑的神经网络已经知道了宇宙是一台状态机，但是你的大脑的神经网络在此刻还是不能看到宇宙（这台状态机）在下一秒的真相/状态。因此，你的大脑的神经网络会（错误的）想象宇宙下一秒的真相/状态是有待（此刻的宇宙（这台状态机）中的）所有人（的肉身中的大脑的神经网络）共同“自由决定”的。事实上，宇宙（这台状态机）下一秒的真相/状态是已经被薛定谔方程（根据宇宙（这台状态机）在此刻的状态）决定好了的，（此刻的宇宙（这台状态机中）中）没有人（的肉身中的大脑的神经网络）能做任何（与被薛定谔方程（根据宇宙（这台状态机）在此刻的状态）决定好了的决定所不同的）“自由决定”。

如果我们假设一个（人工的或天然的）神经网络（作为（宇宙（这台状态机）中的）一台图灵机）在此刻能看到宇宙（这台状态机）在下一秒的真相/状态，那么宇宙的演化是否会导致这样一个（人工的或天然的）神经网络的产生呢？不会，因为这样一个（人工的或天然的）神经网络是不可能存在于宇宙中的。

一个人的肉身中的大脑的（天然的）神经网络（作为宇宙（这台状态机）中的一台图灵机）能否（在宇宙（这台状态机）中）制造出一个机器人，使得这个机器人的（人工的）神经网络（作为（宇宙（这台状态机）中的）一台图灵机）在此刻能看到宇宙（这台状态机）在下一秒的真相/状态呢？不能，因为这样一个（人工的）神经网络是不可能存在于宇宙中的。

让我们想象一下，在未来的某一天，咱们的宇宙中的所有生物都灭绝了，因此宇宙中只剩下了（被人类制造的）机器人。这个（不存在任何生物的）宇宙中的某个机器人的神经网络已经知道了这个宇宙是一台状态机，但是这个机器人的神经网络在此刻还是不能看到宇宙（这台状态机）在下一秒的真相/状态。因此，这个机器人的神经网络会（错误的）想象宇宙下一秒的真相/状态是有待（此刻的宇宙（这台状态机）中的）所有机器人（的神经网络）共同“自由决定”的。事实上，宇宙（这台状态机）下一秒的真相/状态是已经被薛定谔方程（根据宇宙（这台状态机）在此刻的状态）决定好了的，（此刻的宇宙（这台状态机中）中）没有机器人（的神经网络）能做任何（与被薛定谔方程（根据宇宙（这台状态机）在此刻的状态）决定好了的决定所不同的）“自由决定”。

## 因果关系

人的肉身中的大脑的神经网络会选取若干个（发生在过去的）具体事件，把它们通过一些“因果关系”串连起来，形成若干条causal chains。然后，人的肉身中的大脑的神经网络就会感觉这些具体事件之间具有（这些causal chains所揭示的）“因果关系”。人的肉身中的大脑的神经网络会根据（这些causal chains所揭示的）“因果关系”来预测未来将要发生的具体事件。这些causal chains所揭示的“因果关系”实际上并不成立/存在。（发生在过去、现在或未来的）具体事件之间并不具有（这些causal chains所揭示的）因果关系。从历史上看，使用（这些causal chains所揭示的）“因果关系”来预测未来将要发生的具体事件，有（和使用（与目前使用的“因果关系）不同的“因果关系”来预测相比）最大的胜算/把握可以预测对。（当然，所谓“预测对”的，是具体事件所对应的抽象事件。）既然有最大的胜算/把握可以预测对，那么人（的肉身中的大脑的神经网络）就会感觉这些“因果关系”是“正确”的。

（一旦一个人的大脑的神经网络发现了一条（从历史数据看）有更大胜算/把握的“因果关系”，就会立刻选用这条“因果关系”而毫不犹豫的抛弃自己本来正在使用的一条（胜算/把握没那么大的）“因果关系”。因此，一个人的大脑的神经网络所使用的一组“因果关系”，总是自己目前认为（从历史数据看）胜算/把握最大的。一个人的大脑的神经网络所使用的每一条“因果关系”，都是在这个神经网络（基于历史数据）的machine learning中胜出的。一个人的大脑的神经网络所使用的一组“因果关系”，可以对（这个人的肉身附近的宇宙演化的）历史数据做最好的拟合。一旦一个人的大脑的神经网络发现了一种更好的（用一组“因果关系”来）拟合（这个人的肉身附近的宇宙演化的历史数据的）方式，就会立刻选用这种拟合方式而毫不犹豫的抛弃自己本来正在使用的拟合方式。换句话说，一旦一个人的大脑的神经网络发现了一种更好的（用一组“因果关系”来）拟合（这个人的肉身附近的宇宙演化的历史数据的）方式，就会立刻选用这组“因果关系”而毫不犹豫的抛弃自己本来正在使用的一组“因果关系”。当用一条（某“因”导致某“果的）“因果关系”来拟合宇宙演化的历史数据时，一个人的大脑的神经网络实际上是在假设，如果没有某“因”（在宇宙中出现），那么某“果”也就不会（在宇宙中）出现。对这个人的大脑的神经网络而言，某“因”与某“果”本来都是可以不（在宇宙中）出现的，或者说宇宙的演化本来是可以有另一种（与实际发生的情况）不同的情况的。对这个人的大脑的神经网络而言，宇宙的演化本来是有两个可能的分支的，在一个分支中，某“因”和某“果”（这两个事件）都（在宇宙中）出现了，而在另一个分支中，某“因”和某“果”（这两个事件）都没有（在宇宙中）出现。因此，对这个人的大脑的神经网络而言，某“因”以其自身（在宇宙中）的出现与否，从宇宙演化的两个（可能的）分支中选择了其中一个分支。但事实上，某“因”无法决定其自身（在宇宙中）出现与否。其自身（在宇宙中）出现与否，是被薛定谔方程决定的。在某“因”导致某“果”这一context下，似乎某“因”有（在宇宙中）出现与否的自由，虽然某“果”没有（在宇宙中）出现与否的自由。但你要知道，其实某“因”本身又是（宇宙中）另一个“因”的“果”，因此某“因”本身（作为（宇宙中）另一个“因”的“果”）其实并没有（在宇宙中）出现与否的自由。我们最容易想象其为自由的“因”（事件），就是一个人（的肉身）的选择。我们最容易想象（在宇宙中）一个人（的肉身）的选择是自由的。但事实上，（在宇宙中）一个人（的肉身）的选择是他的大脑的神经网络（在薛定谔方程的控制下）运行的结果，因此并不是自由的。但是，当我们无法精准而可靠的预测/计算出（在宇宙中）一个人（的肉身）的选择时，就会感觉/想象/假设这个人（的肉身）的选择是自由的。换句话说，我们之所以感觉/想象/假设一个人（的肉身）的选择是自由的，仅仅是因为我们无法精准而可靠的预测/计算出（在宇宙中）这个人（的肉身）的选择。一个人（的肉身）选择晚上去吃麦当劳或者肯德基----这个选择并不是自由的。一个人在肯德基餐厅里滑倒了，在““这个人的肉身选择去肯德基餐厅吃饭”这个“因”导致了“这个人的肉身在肯德基餐厅里滑倒”这个“果””这一context下，似乎“这个人的肉身选择去肯德基餐厅吃饭”这个“因”有（在宇宙中）出现与否的自由，虽然“这个人的肉身在肯德基餐厅里滑倒”这个“果”没有（在宇宙中）出现与否的自由。但你要知道，“这个人的肉身选择去肯德基餐厅吃饭”这个“因”本身（作为（宇宙中）另一个“因”的“果”）其实并没有（在宇宙中）出现与否的自由。“这个人的肉身选择去肯德基餐厅吃饭”（作为“果”）的“因”是“这个人的肉身中的大脑的神经网络（在薛定谔方程的控制下）的运行”。假如“这个人的肉身选择去肯德基餐厅吃饭”不是任何事件的“果”，那么“这个人的肉身选择去肯德基餐厅吃饭”这个事件才是自由的。我们之所以感觉/想象/假设“这个人的肉身选择去肯德基餐厅吃饭”这个“因”有（在宇宙中）出现与否的自由，仅仅是因为我们无法精准而可靠的预测/计算出（在宇宙中）这个人（的肉身）是否会选择去麦当劳吃饭。这个人的肉身在肯德基餐厅里滑倒后，后悔了自己当初来肯德基吃饭的选择，会想“当初如果选择去麦当劳吃饭，就不会在肯德基餐厅里滑倒了”，似乎自己当初有选择去麦当劳吃饭的自由，但事实上自己当初并没有选择去麦当劳吃饭的自由。自己当初如果（确切的）知道自己会在肯德基餐厅里滑倒，自然不会选择来肯德基吃饭。但假如自己当初（由于（确切的）知道自己会在肯德基餐厅里滑倒而）没有选择来肯德基吃饭，那么自己当初又如何（确切的）知道自己会在肯德基餐厅里滑倒呢？假如自己当初知道的是自己有在肯德基餐厅里滑倒的“可能性”，那么这并不等于自己当初（确切的）知道自己会在肯德基餐厅里滑倒。假如自己当初知道的是自己有在肯德基餐厅里滑倒的“可能性”，那么自己当初也应该知道自己有在麦当劳餐厅里滑倒的“可能性”。假如自己当初知道的是自己有在肯德基餐厅里滑倒的“可能性”，那么自己当初也应该知道自己有*不*在肯德基餐厅里滑倒的“可能性”。自己当初在麦当劳和肯德基之间做选择时，并不（确切的）知道自己会在肯德基餐厅里滑倒，因此也就不可能基于这个原因而选择不去肯德基。从理论上说，一台位于咱们所在的宇宙之外的计算机，如果知道咱们所在的宇宙中所有基本粒子的当前状态的话，是可以（通过薛定谔方程）计算/预测出这个人的肉身会选择去肯德基餐厅并且会在肯德基餐厅里滑倒的。但是，假如这台计算机把这个预测/信息告诉这个人的肉身，那么这个信息（从这台计算机传输到这个人的肉身）的传输过程就会改变宇宙中某些基本粒子本来（符合薛定谔方程）的状态演化，而使本来的计算/预测失效。假如这台计算机把这个（失效的）预测/信息告诉这个人的肉身，那么这个人的肉身可能会（由于相信这个（失效的）预测/信息而（误）认为自己会在肯德基餐厅里滑倒而）选择去麦当劳，并在麦当劳餐厅里遭遇枪击而亡。而这台计算机是无法（通过薛定谔方程和咱们所在的宇宙中所有基本粒子的当前状态）计算/预测出这个人的肉身会选择去麦当劳并遭遇枪击而亡的。这台计算机（通过薛定谔方程和咱们所在的宇宙中所有基本粒子的当前状态）计算/预测出的是这个人的肉身会选择去肯德基并在肯德基餐厅里滑倒。事实上，*假如*这个人的肉身当初选择的是麦当劳的话，真有可能会在麦当劳餐厅里遭遇枪击而亡。这个人在肯德基餐厅里滑倒后认为滑倒是不幸/不利的，因此而希望自己当初选择的是麦当劳，而这说明他并没有想到自己（假如当初选择的是麦当劳的话）可能会在麦当劳餐厅里遭遇枪击而亡。人通常会认为/想象（宇宙中）accident的发生是罕见的，因此在（宇宙中）发生了一个accident之后，人往往会想象，如果自己或别人当初做了不同的选择，宇宙的演化就应该不至于会造成这样严重的accident的发生。但事实上，如果自己或别人当初做了不同的选择，宇宙的演化完全有可能会造成更加严重的accident的发生。当然，自己没有办法亲眼看到更加严重的accident（在宇宙中）的发生，自己也没有办法证明更加严重的accident会（在宇宙中）发生。人通常会认为/想象（宇宙中）一个不利的局面的发生有其（苛刻的）条件，因此在面对（宇宙中）一个不利的局面时，人往往会想象，如果自己或别人当初做了不同的选择，宇宙的演化就应该不至于会造成如此不利的局面。但事实上，如果自己或别人当初做了不同的选择，宇宙的演化完全有可能会造成更加不利的局面。当然，自己没有办法亲眼看到更加不利的局面（在宇宙中）的发生，自己也没有办法证明更加不利的局面会（在宇宙中）发生。）

关键是，不使用（causal chains所揭示的）“因果关系”，人（的肉身中的大脑的神经网络）就没办法预测未来将要（在自己的日常生活中）发生的具体事件。比如，当你在和朋友对话时，难道你可以用薛定谔方程预测出他下一句要讲的话的内容吗？你不能，因此你会用你的感官所感知到的（关于他的外在表情、言行的）表象和（causal chains所揭示的）“因果关系”来预测他下一句要讲的内容，似乎你（无须观察他的大脑内部的物理活动）仅凭你的感官所感知到的（关于他的外在表情、言行的）表象就可以预测宇宙的演化（之中他下一句要讲的内容）-- 这种所谓的“预测”肯定是粗略而不可靠的。

人（的肉身中的大脑的神经网络）可以利用（causal chains所揭示的）“因果关系”来（粗略而不可靠的）预测未来将要发生的具体事件，但人（的肉身中的大脑的神经网络）没办法利用（causal chains所揭示的）“因果关系”来改变未来将要发生的具体事件。人（的肉身中的大脑的神经网络）无法利用（causal chains所揭示的）“因果关系”来*精准而可靠的*预测未来将要发生的具体事件。如果不能*可靠的*预测未来将要发生的事件，又凭什么说改变了这个事件呢？你认为你改变了这个事件，但事实上这个事件本来就会按照这个（被你（认为被你）改变后的）样子发生，只是你（错误的）认为这个事件本来会按照被你改变前的样子发生。你怎么知道这个事件本来会按照被你改变前的样子发生？所谓“被你改变前的样子”，只是以你不作干涉为前提的（不可靠的）预测，而宇宙的真实演化是包括了你的所有行为在内的。

你以自己不作干涉为前提进行预测，然后由于对预测结果不满意，做出了干涉。这说明你做预测时的前提就是错的。

你预测一个事件会发生，但你不喜欢这个事件的发生，因此你在这个事件发生之前进行了干涉，导致了这个事件没有发生。这说明你本来的预测（即“这个事件会发生”）是错误/不可靠的。

也许你认为你做的是“条件预测”，即你的预测是带有前提的。如果你不干涉，将会发生什么？而如果你干涉了，又将会发生什么？也许你认为你在对这两种情况分别进行预测。当然，你知道在这两种情况之中只有一种情况会真的发生。如果你干涉了，你会知道你的干涉所造成的真实后果，但你同时也就永远无法知道你不干涉的真实后果了，你只能（根据causal chains所揭示的“因果关系”）想象/推演你不干涉的后果。你（根据causal chains所揭示的“因果关系”）所推演出的你不干涉的后果，未必和根据薛定谔方程（从你决定不干涉时的状态开始进行计算）计算出来的后果一样。换句话说，你（根据causal chains所揭示的“因果关系”）所推演出的你不干涉的后果，未必精准可靠。

你（根据causal chains所揭示的“因果关系”）推演出了你不干涉的后果。事实上你干涉了，因此你不干涉只是一种想象。你把“不干涉”想象成了*一种*情况。但实际上，“不干涉”包括了*无数多种*不同的情况。同样，“干涉”也包括了无数多种不同的情况。比如，你开始干涉的时间（比你事实上真正开始干涉的时间）晚一秒钟，都会使干涉的结果有所不同。由于蝴蝶效应，你开始干涉的时间（比你事实上真正开始干涉的时间）晚一秒钟，就有可能会使干涉的结果有天壤之别。我们可以用薛定谔方程计算出你开始干涉的时间（比你事实上真正开始干涉的时间）晚一秒钟所造成的（干涉结果的）不同，因为我们可以用薛定谔方程计算出这两种情况所造成的真正后果。与薛定谔方程的计算相比，人脑（根据causal chains所揭示的“因果关系”）的推演是极度简化的。人脑（根据causal chains所揭示的“因果关系”）的推演实际上是把无数多种情况简化成了一种情况。换句话说，人脑（根据causal chains所揭示的“因果关系”）的推演实际上抛弃了无数多种情况，而只保留了一种情况。（被保留的）这一种情况真的就是你不干涉的（真正）后果吗？应该说，（被保留的）这一种情况只是你不干涉的无数（可能的）后果之中的一种而已。（被保留的）这一种情况发生的概率有多大？天知道。如果你真想知道（（被保留的）这一种情况发生的概率有多大）的话，你需要先用薛定谔方程把无数多种（可能的）具体后果都计算出来，再去数数有多少种（被计算出来的）具体后果属于（被保留的）这一种情况。

## 物体的控制能力之强弱

咱们所在的宇宙中没有任何一个物体（真的）具有控制其他物体的能力，因此也就谈不上控制能力的强弱了。但人脑的神经网络还是会自动的评估一个物体（对其他物体）的控制能力的强弱。因此，我们感觉一个物体似乎具有控制其他物体的能力，而且这种控制能力似乎有强弱之分。比如：刚体的控制能力强于流体。体积大的物体的控制能力强于体积小的物体。质量大的物体的控制能力强于质量小的物体。运动的物体的控制能力强于静止的物体。先开始运动的物体的控制能力强于后开始运动的物体。动能大的物体的控制能力强于动能小的物体。运动速度快的物体的控制能力强于运动速度慢的物体。结构复杂的物体的控制能力强于结构简单的物体。其结构难以被（我们）理解的物体的控制能力强于其结构易于被（我们）理解的物体。运动轨迹复杂的物体的控制能力强于运动轨迹简单的物体。运动轨迹难以被（我们）预测的物体的控制能力强于运动轨迹易于被（我们）预测的物体。被我们关注多的物体的控制能力强于被我们关注少的物体。（我们心目中的）主角的控制能力强于（我们心目中的）配角。预测（宇宙未来的演化的）能力强的物体的控制能力强于预测（宇宙未来的演化的）能力弱的物体。时空穿越者（time traveller）的控制能力强于非时空穿越者。冷静者的控制能力强于不冷静者。解脱者的控制能力强于未解脱者。经验丰富者的控制能力强于经验不丰富者。情商高者的控制能力强于情商低者。长远的看，正义者的控制能力强于邪恶者。长远的看，持之以恒者的控制能力强于不持之以恒者。社会地位高的物体的控制能力强于社会地位低的物体。权力大的物体的控制能力强于权力少的物体。富人的控制能力强于穷人。正在发号施令的物体的控制能力强于正在听从命令的物体。聪明的物体的控制能力强于笨的物体。我的肉身的控制能力强于别的物体。行为极端的物体的控制能力强于行为中庸的物体。正在使用一个计策的物体的控制能力强于没有使用计策的物体。善于使用计策的物体的控制能力强于不善于使用计策的物体。上当受骗者的控制能力弱于骗人者。在一个游戏中获胜的物体的控制能力强于在这个游戏中失败的物体。获利者的控制能力强于受损失者。正在应用博弈论知识的物体的控制能力强于没有应用博弈论知识的物体。研究博弈论的物体的控制能力强于没研究博弈论的物体。精通博弈论的物体的控制能力强于不精通博弈论的物体。人的控制能力强于温和的自然现象。人的控制能力弱于极端的自然现象。人的控制能力强于计算机程序。其结构难以被（我们）理解的计算机程序的控制能力强于其结构易于被（我们）理解的计算机程序。我们难以预测其运行结果的计算机程序的控制能力强于我们易于预测其运行结果的计算机程序。人的控制能力强于善良的机器人。人的控制能力弱于邪恶的机器人。人的控制能力弱于正在攻击人的动物。人的控制能力强于没在攻击人的动物。正在捕食的捕食者的控制能力强于正在被捕食的被捕食者。攻击者的控制能力强于被攻击者。被动攻击者的控制能力强于被这个*被动攻击者*被动攻击的人。违法者的控制能力强于守法者。违反社会道德规范者的控制能力强于遵守社会道德规范者。立法者的控制能力强于执法者。肌肉发达的动物的控制能力强于肌肉不发达的动物。力气大的动物的控制能力强于力气小的动物。强者的控制能力强于弱者。强势群体的控制能力强于弱势群体。多数人的控制能力强于少数人。成年人的控制能力强于未成年人。运气好者的控制能力强于运气不好者。有consciousness的物体的控制能力强于没有consciousness的物体。正在睡觉的动物的控制能力弱于清醒的动物。活着的动物的控制能力强于已经死了的动物的尸体。主动者的控制能力强于被动者。正在按原定计划行事者的控制能力强于未能按原定计划行事者。有意做某种行为（而做到了）的物体的控制能力强于无意做某种行为（而做到了）的物体。正在铁轨上行驶的火车的控制能力强于刚刚脱轨的火车。

在难以区分何为“因”、何为“果”的情况下，人脑倾向于把（被人脑认为）控制能力强的物体的行为认定为“因”，而把（被人脑认为）控制能力弱的物体的行为认定为“果”。

换句话说，在难以区分何为“因”、何为“果”的情况下，人脑倾向于认为控制能力强的物体的行为导致了控制能力弱的物体的行为，而不是控制能力弱的物体的行为导致了控制能力强的物体的行为。

## 一个事件（对其他事件）的控制能力

（咱们所在的宇宙中的）一个物体其实是一个（具体）事件。

咱们所在的宇宙中没有任何一个具体事件（真的）具有控制其他具体事件的能力。换句话说，咱们所在的宇宙中没有任何一个具体事件（真的）导致了其他具体事件的发生。

但人脑的神经网络还是会自动的评估一个事件（对其他事件）的控制能力的强弱。因此，我们感觉一个事件似乎具有控制其他事件的能力，而且这种控制能力似乎有强弱之分。换句话说，我们感觉一个事件似乎导致了其他事件的发生。

当人脑认为两个事件具有因果关系时，通常会把（两个事件中）较早发生的事件认定为“因”，而把（两个事件中）较晚发生的事件认定为“果”。换句话说，当人脑认为两个事件具有因果关系时，通常会认为（两个事件中）较早发生的事件导致了（两个事件中）较晚发生的事件（的发生），而不是（两个事件中）较晚发生的事件导致了（两个事件中）较早发生的事件（的发生）。事实上，（两个事件中）较早发生的事件并没有导致（两个事件中）较晚发生的事件（的发生），（两个事件中）较晚发生的事件也没有导致（两个事件中）较早发生的事件（的发生），两个事件（的发生）都仅仅是被薛定谔方程导致的。人脑（的神经网络）只是在用（两个事件中）较早发生的事件来解释（两个事件中）较晚发生的事件（为什么会发生）。人脑（的神经网络）的这种解释是不符合实际情况的。实际上，只应该用薛定谔方程来解释这两个事件（为什么会发生）。人脑（的神经网络）通常认为时间轴的方向是从（两个事件中）作为“因”的事件指向（两个事件中）作为“果”的事件。换句话说，人脑（的神经网络）通常是根据两个事件的因果关系来定义时间轴的方向。人脑（的神经网络）把（它知道的）所有事件根据因果关系进行排序，然后通过回忆这个排序而感受到了所谓的“时间”。因此，“时间”其实只是所有事件（按照因果关系）（在人脑（的神经网络）中进行的）的排序。

让我们假设一个人脑（的神经网络）的记忆中只存储了三个snapshot图像，在第一个snapshot中时钟显示的时间为2021年1月1日9:01，在第二个snapshot中时钟显示的时间为2021年1月1日9:02，在第三个snapshot中时钟显示的时间为2021年1月1日9:03。

假如这个人脑（的神经网络）认为第三个snapshot（的发生）导致了第二个snapshot（的发生）,而第二个snapshot（的发生）又导致了第一个snapshot（的发生），那么这个人脑就会感觉到时间的流逝方向是从2021年1月1日9:03到2021年1月1日9:02再到2021年1月1日9:01。

假如这个人脑（的神经网络）认为第一个snapshot（的发生）导致了第二个snapshot（的发生）,而第二个snapshot（的发生）又导致了第三个snapshot（的发生），那么这个人脑就会感觉到时间的流逝方向是从2021年1月1日9:01到2021年1月1日9:02再到2021年1月1日9:03。

所以，时间流逝的方向其实就是从“因”到“果”的方向。如果你的大脑的神经网络能把事件之间的因果关系倒过来，那么你的大脑的神经网络就会感觉时间在倒流。

其实，时间就是（事件之间的）因果关系；（事件之间的）因果关系就是时间。假如你的大脑的神经网络不能在事件之间发现任何因果关系，那么你的大脑的神经网络就不会感觉到时间的存在/流逝。假如你的大脑的神经网络不能在事件之间发现/定义因果关系，那么你的大脑的神经网络就无法理解/认知时间这一概念。

事实上，事件之间并不（真的）存在因果关系。人脑的神经网络无中生有的定义了事件之间的因果关系，并基于此而产生了时间感。

人脑的神经网络试图从已知的事件推测出未知的事件。人脑的神经网络想象某些未知的事件位于“未来”。人脑的神经网络想象另外一些未知的事件位于“过去”。人脑的神经网络想象位于“过去”的未知事件*不应该*变。人脑的神经网络（错误的）想象位于“未来”的未知事件*应该*变。

让我们假设有三个事件A,B和C，再假设人脑的神经网络认定A导致B,而B导致C，如果人脑的神经网络已经知道B的内容，但并不知道A和C的内容，那么人脑的神经网络会认为（作为B的“因”的）A的内容不应该变，而（作为B的“果”的）C的内容应该变。可是，凭啥A的内容不应该变而C的内容应该变呢？本文作者认为，如果A的内容不应该变，那么C的内容也不应该变。

当人脑的神经网络从已知的事件推测出位于“未来”的未知事件D的内容后，如果人脑的神经网络对D的（被推测出的）内容不满意，人脑的神经网络会（以为/想象自己在）试图改变“D的内容”。当事件D由未知事件变为已知事件时，假如人脑的神经网络发现作为已知事件的D的内容和自己当初推测的不同，便会认为“D的内容被改变了”。但事实上，位于未来的D的（实际）内容并没有被改变，只是当初不知道（其实际内容）而已。位于未来的D的（实际）内容当初是可以用薛定谔方程计算出来的。在事件D（由未知事件）变成已知事件之前，人脑的神经网络并不知道事件D的实际内容，但却把自己所（粗略且不可靠的）推测的事件D的内容（错误的）当作了事件D的实际内容。人脑的神经网络（错误的）想象/认为自己的推测和用薛定谔方程计算出来的（具有最高精准度和可靠性的预测）一样精准可靠 ----人脑的神经网络高估了自己推测未知事件（的内容）的能力。

我的头脑中的（事件之间的）因果关系是以动画的形式呈现（给我自己）的。比如，风吹幡，在我头脑中先出现代表风的画面（以及“呼呼”的风声），再出现风吹在幡上的画面，在此画面中幡会晃动。每当我思考风和幡的关系时，在我头脑中的动画里，肯定都是先出现风的画面，再出现幡的画面，而不会反过来。在这个动画里风的画面和幡的画面（这两个画面）出现的顺序，就表达了“风吹”和“幡动”这两个事件之间的因果关系，即“风的运动是幡的运动的原因”。我的头脑认为风的运动在先，而幡的运动在后。

当你在思考风和幡的关系时，假如在你头脑中的动画里，每次都是先出现幡的画面，再出现风的画面，那么就说明你的大脑（的神经网络）认为“幡的运动是风的运动的原因”。你的头脑认为幡的运动在先，而风的运动在后。

那么，到底是风的运动导致了幡的运动，还是幡的运动导致了风的运动呢？到底是风的运动在先，还是幡的运动在先呢？

从基本粒子级别看，“风的运动”和“幡的运动”这两个具体事件是同时发生的，不存在谁先谁后的问题。既不是风的运动导致了幡的运动，也不是幡的运动导致了风的运动。“风的运动”这一具体事件和“幡的运动”这一具体事件之间，并不存在因果关系。风动非幡动之因，幡动亦非风动之因。

但是，人的头脑中的动画定义了“风的运动”和“幡的运动”这两个事件之间的因果关系。假如这个动画中先播放“风的运动”的画面，那么人的头脑就会认为“风的运动”是“幡的运动”的原因。假如这个动画中先播放“幡的运动”的画面，那么人的头脑就会认为“幡的运动”是“风的运动”的原因。

在现实生活中，每当我看到风吹幡的景象时，我的头脑中就会自动播放“先风动后幡动”的动画。我头脑中的这个动画解释了我眼前看到的景象。我感觉我眼前看到的景象符合我头脑中的动画。那么，我眼前看到的景象真的符合我头脑中的动画吗？在我眼前看到的景象中，风和幡明明是同时运动的，因此我眼前看到的景象实际上并不符合我头脑中的动画，虽然我很难察觉到两者之间的（微妙）差异。在我没有察觉两者之间的（微妙）差异时，我会脱口而出“风动导致幡动！”，而你会立刻反驳我说“不对，明明是幡动导致风动！”，而惠能大师会说“风动与幡动同时发生。既非风动（导致幡动），亦非幡动（导致风动），仁者心动。”

在我头脑中的一条causal chain里，风动（事件）是幡动（事件）的因，风动（事件）在先，幡动（事件）在后。除了这两个事件外，我头脑中的这条causal chain里还有其他很多事件。每当我思考这条causal chain时，头脑中就会按照从“因”到“果”的顺序自动播放这些事件，这样我就会感觉这些事件之间的因果关系符合（头脑中自动播放的）动画中的播放顺序。注意，动画中风动（事件）和幡动（事件）的播放顺序，其实并不符合现实世界中风动（事件）和幡动（事件）的发生顺序。现实世界中风动（事件）和幡动（事件）是同时发生的。因此，我头脑中的这条causal chain实际上并没有反映现实世界中的真实情况。我头脑中的这条causal chain只是我自己头脑中的幻象。我头脑中自动播放的动画中的事件的播放顺序，是我自己的大脑的神经网络（武断）设定的，并不反映现实世界中的真实情况。

让我们设想在桌面上竖立两块多米诺骨牌，然后用手指推倒第一块骨牌，第一块骨牌倒下时砸到第二块骨牌，导致第二块骨牌倒下。在我的头脑中（自动播放）的动画里，先播放第一块骨牌的倒下，再播放第二块骨牌的倒下。每当我思考这个场景时，在我头脑中的动画里，肯定都是先出现第一块骨牌倒下的画面，再出现第二块骨牌倒下的画面，而不会反过来。在这个动画里第一块骨牌倒下的画面和第二块骨牌倒下的画面（这两个画面）出现的顺序，就表达了“第一块骨牌的倒下”和“第二块骨牌的倒下”这两个事件之间的因果关系，即“第一块骨牌的倒下是第二块骨牌倒下的原因”。我的头脑认为第一块骨牌倒下在先，而第二块骨牌倒下在后。

这里的问题在于，这两块骨牌真的是两个（相互独立的）物体吗？“第一块骨牌的倒下”和“第二块骨牌的倒下”真的是两个（相互独立的）具体事件吗？我可以把这两块骨牌看作是一个物体（而不是两个物体）。我可以把这两块骨牌的倒下看作是一个具体事件（而不是两个具体事件）。那么，这两块骨牌到底是一个物体还是两个物体呢？这两块骨牌的倒下到底是一个具体事件还是两个具体事件呢？

你先不用去管这里的物体和具体事件的数量。问题的关键在于，当我把这两块骨牌的倒下看作是一个具体事件时，我头脑中自动播放的动画（和我把这两块骨牌的倒下看作是两个具体事件时相比）是不同的。当我把这两块骨牌的倒下看作是一个具体事件时，在我头脑中自动播放的动画里，并不是先播放第一块骨牌的倒下，再播放第二块骨牌的倒下。当我把这两块骨牌的倒下看作是一个具体事件时，在我头脑中自动播放的动画里，同时包括这两块骨牌，而两块骨牌加在一起是一个由（台球模样的、悬浮在空中、不停运动的）基本粒子组成的系统。在（我头脑中自动播放的动画的）第一个画面中，两块骨牌中的基本粒子都在不停的运动。在第二个画面中，第一块骨牌正在倒下。在第三个画面中，两块骨牌中的基本粒子运动到了新的（宏观）位置上，并且仍在继续运动。在第四个画面中，第二块骨牌正在倒下。这四个画面的播放顺序使我感觉到两块骨牌中基本粒子的运动既是第一块骨牌倒下的因，也是第二块骨牌倒下的因。

关于这两块多米诺骨牌的一条正确的causal chain里应该包括所有这四个画面。如果把（四个画面中的）第一个画面和第三个画面去除，只保留第二个画面和第四个画面，再把（被保留的）这两个画面串连起来，在头脑中播放（仅由这两个（被保留的）画面组成的动画），就会（错误的）感觉到第一块骨牌的倒下导致了第二块骨牌的倒下。

在一条正确的causal chain里，宇宙中所有事件的发生都仅有一个原因，那就是整个宇宙中所有基本粒子的运动。如果把“整个宇宙中所有基本粒子的运动”这个原因从这条causal chain中去掉，再把剩余的画面按时间顺序串连起来，就会得到一条错误的causal chain。在这条错误的causal chain里，本来不是原因的画面（例如（在我头脑中关于多米诺骨牌的动画中的）第二个画面）被（错误的）当成了原因，因为本来的原因（画面）被（错误的）去掉了。

在一条正确的causal chain里，宇宙中所有事件的发生都仅有一个原因，那就是整个宇宙中所有基本粒子的运动。只要有一个基本粒子运动到了新的位置上，我们的头脑就可以将其定义为一个新的事件/画面。但这个新的事件/画面其实只是被我们的视网膜捕捉到的一个表象，而（对应于所有表象的）唯一本体是（难以被我们的视网膜清晰捕捉的）整个宇宙中所有基本粒子的永不停歇的运动。或者说，（对应于所有表象的）唯一本体是宇宙中所有基本粒子的状态演化。唯一本体的两个表象之间其实并不存在任何因果关系，虽然我们的头脑会在两个表象之间定义/想象一种因果关系。人脑的神经网络幻想自己可以通过制造一个（作为“因”的）表象来导致另一个（作为“果”的）表象的出现。事实上，一个人脑（的神经网络）无法制造任何一个表象。因为所有的表象其实都只不过是在反映唯一本体。任何一个表象都只不过是唯一本体的副现象。任何一个表象都只不过是唯一本体的一个局部的snapshot。比如，在我头脑中关于多米诺骨牌的动画中，第二个画面是唯一本体所呈现出的一个表象/snapshot，第四个画面是唯一本体在下一个时刻所呈现出的另一个表象/snapshot。根据薛定谔方程计算，唯一本体就是会先后分别呈现出这两个表象。换句话说，唯一本体呈现出这两个表象的唯一原因，都是薛定谔方程。因此，随着时间的流逝，唯一本体本来就（必然）会自动的先后呈现出这两个表象。因此，不应该说第二个画面中的表象是第四个画面中的表象的“因”。不应该说这两个表象之间存在因果关系。

一个人脑（的神经网络）无法制造任何一个表象。假如一个人脑（的神经网络）可以（在咱们所在的宇宙中）制造一个表象，那么一个康威生命游戏系统中的一个pattern也可以（在这个系统中）制造一个表象。

事实上，一个康威生命游戏系统中的一个pattern无法制造任何一个表象。因为所有的表象其实都只不过是在反映唯一本体。任何一个表象都只不过是唯一本体的副现象。任何一个表象都只不过是唯一本体的一个局部的snapshot。当一个pattern感觉自己制造了一个表象时，制造这个表象的，其实并不是这个pattern，而是唯一本体。这是因为，随着时间的流逝，唯一本体本来就（必然）会自动的呈现出这个表象。

当一个人脑（的神经网络）感觉自己制造了一个表象时，制造这个表象的，其实并不是这个人脑（的神经网络），而是唯一本体。这是因为，随着时间的流逝，唯一本体本来就（必然）会自动的呈现出这个表象。

事实上，（宇宙的或者康威生命游戏系统的）唯一本体所呈现出的每一个表象，都是唯一本体本来就（必然）会自动的呈现出的。唯一本体是一台状态机。如果你发现了这台状态机的两个局部表象之间的因果关系（即“一个局部表象（的发生）导致了另一个局部表象（的发生）”），那么这个因果关系其实只是你头脑中的幻象，因为这两个局部表象本来都是必然要发生的。当你不能使用direct-function来（精准而可靠的）预测这台状态机的演化时，你只能使用这种幻象来（粗略而不可靠的）预测这台状态机的演化。在你的头脑中，第一块骨牌的倒下（粗略而不可靠的）预兆了第二块骨牌的倒下。但这并不等于“第一块骨牌的倒下（在状态机中）导致第二块骨牌的倒下”。事实上，两块骨牌的倒下同样都是状态机的状态演化所导致的。

在你的头脑中，时钟的秒针走到第20秒的位置（粗略而不可靠的）预兆了时钟的秒针走到第21秒的位置。但这并不等于“时钟的秒针走到第21秒的位置（在状态机中）导致时钟的秒针走到第21秒的位置”。事实上，“时钟的秒针走到第20秒的位置”和“时钟的秒针走到第21秒的位置”同样都是状态机的状态演化所导致的。从理论上说，状态机的状态演化可以使得秒针永远停在第20秒的位置，而不（像被第20秒的表象所“预兆”的那样）往下走。而如果（在表象之下）不存在作为唯一本体的状态机，那么下一秒什么都可能发生。

基于表象的“预兆”之所以会管用，正是由于（在表象之下）存在作为唯一本体的状态机。两个表象之间的“因果关系”之所以会管用，正是由于（在两个表象之下）存在作为唯一本体的状态机。假如（表象之下）作为唯一本体的状态机的状态演化在未来不再（像过去一样）受限于direct-function，那么我们已知的任何“（表象之间的）因果关系”都会因此而作废。

我们之所以信任我们头脑之中的“（表象之间的）因果关系”，正是因为我们相信（在表象之下的）唯一本体在未来仍然会是一台（仍然受限于其direct-function的）状态机。

换句话说，我们之所以信任我们头脑之中的“（表象之间的）因果关系”，正是因为我们相信控制（在表象之下的）唯一本体演化的direct-function/道 在未来不会变。我们可以称唯一本体为法轮。“法轮常转”的意思是“随着时间的流逝，唯一本体的状态在不停的演化，就像一个正在不停的转动的车轮一样。唯一本体的状态演化是不会停止的，就好似一个永远不会停止转动的车轮一般。”，即“法轮常转不停，恰如一个常转不停的车轮”。

当我信任“表象之间的因果关系”时，就会把唯一本体的（机械（如车轮转动一般）的）状态演化看成自己五光十色的人生故事。“表象之间的因果关系”是幻象。因此，（信任“表象之间的因果关系”时所看到的）自己五光十色的人生故事也是幻象。

对我而言，（咱们所在的宇宙的）唯一本体（作为一台状态机）和其他状态机最重要的区别就是“我的肉身是唯一本体（这台状态机）的一部分”。

我按下电视机的开关，电视机的屏幕就亮了。你会认为“开关被按下”这个表象（的出现）导致了“屏幕亮”这个表象（的出现）。“开关被按下”这个表象（的出现）之所以能够导致“屏幕亮”这个表象（的出现），与（由基本粒子组成的）电视机内部的电路结构息息相关。如果电视机内部的电路结构坏了，那么“开关被按下”这个表象（的出现）就不再能导致“屏幕亮”这个表象（的出现）。如果你相信“开关被按下”这个表象（的出现）*足以*导致“屏幕亮”这个表象（的出现），而忽略了电视机内部的电路结构（在这两个表象之间）所起的桥梁作用，那么你所相信的这两个表象之间的（忽视了电视机内部的电路结构所起的桥梁作用的）因果关系其实是一种迷信。“开关被按下”这个表象（的出现）之所以能够导致“屏幕亮”这个表象（的出现），正是由于这两个表象之间的桥梁是一个（由基本粒子组成的）机器/结构（即电视机内部的电路结构）。而你所相信/迷信的这两个表象之间的因果关系，其实正是这个（由基本粒子组成的）机器/结构的（你所相信/迷信的）操作方式。

当你相信（咱们所在的宇宙中的）任何两个表象之间有因果关系时，这两个表象之间一定有一个（由基本粒子组成的）机器/结构作为桥梁。这个作为桥梁的（由基本粒子组成的）机器/结构是宇宙的一部分。整个宇宙也是一个（由基本粒子组成的）机器/结构。

当你相信（咱们所在的宇宙中的）任何两个表象之间有因果关系时，这两个表象之间一定有一个（由基本粒子组成的）机器/结构作为桥梁。而你所相信/迷信的这两个表象之间的因果关系，其实正是这个（由基本粒子组成的）机器/结构的（你所相信/迷信的）操作方式。

当你相信（咱们所在的宇宙中的）任何两个表象之间有因果关系时，这两个表象之间一定有一个（由基本粒子组成的）机器/结构作为桥梁。假如这两个表象之间没有任何基本粒子（组成的机器/结构）作为桥梁，那么一个表象（的出现）又怎么能导致另一个表象（的出现）呢？

当你相信“开关被按下”这个表象（的出现）与“屏幕亮”这个表象（的出现）之间有因果关系时，这两个表象之间有电视机的电路结构作为桥梁。假如“开关被按下”这个表象（的出现）与“屏幕亮”这个表象（的出现）之间没有任何基本粒子（组成的机器/结构）作为桥梁，那么“开关被按下”这个表象（的出现）又怎么能导致“屏幕亮”这个表象（的出现）呢？换句话说，假如我们把电视机内部的电路结构全拆掉，那么“开关被按下”这个表象（的出现）又怎么能导致“屏幕亮”这个表象（的出现）呢？换句话说，假如开关位于一个孤立系统之内，而屏幕位于另外一个孤立系统之内，这两个孤立系统之间不交换基本粒子，那么“开关被按下”这个表象（的出现）又怎么能导致“屏幕亮”这个表象（的出现）呢？

第一块多米诺骨牌倒下后，第二块骨牌也倒下了。你会认为“第一块骨牌的倒下”这个表象（的出现）导致了“第二块骨牌的倒下”这个表象（的出现）。“第一块骨牌的倒下”这个表象（的出现）之所以能够导致“第二块骨牌的倒下”这个表象（的出现），与（由基本粒子组成的）两块骨牌组成的机器/结构的结构息息相关。你所相信/迷信的这两个表象之间的因果关系，其实正是这个（由基本粒子组成的）机器/结构的（你所相信/迷信的）操作方式。如果我们可以说“两个互相啮合的齿轮组成了一个（简单的）机器/结构”，那么我们也可以说“立在桌面上的两块相邻的骨牌组成了一个（简单的）机器/结构”。第一块骨牌的倒下，导致了第二块骨牌的倒下，正如同“第一个齿轮的转动导致了第二个齿轮的转动”。假如“第一块骨牌的倒下”这个表象（的出现）与“第二块骨牌的倒下”这个表象（的出现）之间没有任何基本粒子（组成的机器/结构）作为桥梁，那么“第一块骨牌的倒下”这个表象（的出现）又怎么能导致“第二块骨牌的倒下”这个表象（的出现）呢？假如“第一个齿轮的转动”这个表象（的出现）与“第二个齿轮的转动”这个表象（的出现）之间没有任何基本粒子（组成的机器/结构）作为桥梁，那么“第一个齿轮的转动”这个表象（的出现）又怎么能导致“第二个齿轮的转动”这个表象（的出现）呢？

当你的肉身在（按照你所相信/迷信的操作方式）操作由两块多米诺骨牌组成的机器/结构时，你的肉身本身也是一个（由基本粒子组成的）机器/结构。两块多米诺骨牌组成的机器/结构是宇宙（这个机器/结构）的一部分。你的肉身本身（作为一个机器/结构）也是宇宙（这个机器/结构）的一部分。你的肉身本质上和（竖立在桌面上的）两块多米诺骨牌没有区别。你的肉身本质上和两个互相啮合的齿轮没有区别。

在你的肉身的两个状态（作为两个表象）之间，也存在一个（由基本粒子组成的）机器/结构作为桥梁。这个作为桥梁的机器/结构既包括你的肉身，也包括你的肉身周围的环境。你的肉身以及你的肉身周围的环境都比较复杂。而在“第一个齿轮的转动”和“第二个齿轮的转动”这两个表象之间存在的作为桥梁的机器/结构比较简单。

宇宙的任何（具有“因果关系”的）两个表象之间，都存在一个（由基本粒子组成的）机器/结构作为桥梁。这个作为桥梁的机器/结构可以是整个宇宙，也可以是宇宙的一部分。这个作为桥梁的机器/结构可能比较简单，也可能比较复杂。

整个宇宙在两个不同时刻的状态（作为两个表象）之间，存在的作为桥梁的机器/结构是整个宇宙。

假如我相信在你的肉身的两个状态（作为两个表象）之间存在一个“（位于你的肉身之内的）小人儿”作为桥梁，那么这就和我相信“在你的肉身的两个状态（作为两个表象）之间存在一个（位于你的肉身之内的）鬼/神作为桥梁”同样迷信/愚昧。被我相信起到桥梁作用的“（位于你的肉身之内的）小人儿”，其实就是被我相信起到桥梁作用的（位于你的肉身之中的）的一个鬼/神。换句话说，如果我相信灵魂（在一个人的肉身的两个状态（作为两个表象）之间）所起的桥梁作用，这就等同于我相信鬼/神（在一个人的肉身中）所起的桥梁作用并且专门给“存在于一个人的肉身中（并在这个人的肉身的两个状态（作为两个表象）之间起到桥梁作用的）的鬼/神”起了一个名字叫“灵魂”。

如果我相信灵魂存在于一个人的肉身之内但并不（在这个人的肉身的两个状态（作为两个表象）之间）起桥梁作用，这就等同于我相信鬼/神（存在于一个人的肉身中之内但）不起桥梁作用并且专门给“存在于一个人的肉身中（但*不*在这个人的肉身的两个状态（作为两个表象）之间起到桥梁作用的）的鬼/神” 起了一个名字叫“灵魂”。

本文作者不相信灵魂/鬼/神能够（在一个人的肉身的两个状态（作为两个表象）之间）起桥梁作用，也不相信灵魂/鬼/神的存在。

当你感觉到（一个人的肉身中的）灵魂/鬼/神的存在时，这是你的大脑（的神经网络）制造的一种幻觉。当你看到动画片里的米老鼠时，你的大脑（的神经网络）也会制造这种幻觉，使你感觉到米老鼠有灵魂/鬼/神。当你在和一个chatbot对话时，你的大脑（的神经网络）也会制造这种幻觉，使你感觉到这个chatbot有灵魂/鬼/神。

当你听到一个人的肉身说了一句话后，你的大脑（的神经网络）会幻想成是这个人的肉身中的灵魂/鬼/神说了这句话。

当你听到一个chatbot说了一句话后，你的大脑（的神经网络）会幻想成是这个chatbot的灵魂/鬼/神说了这句话。

当你看到两个人的肉身签订了一个契约后，你的大脑（的神经网络）会幻想成是这两个人的肉身中的灵魂/鬼/神签订了这个契约。

当你听到一个人的肉身说“我的眼前并没有齿轮，但我的灵魂/鬼/神（作为主体）在我的意识空间（作为客体）里看到了一个动画，动画的内容是一个齿轮在转动”后，你的大脑（的神经网络）会幻想这个人的肉身中的小人儿/灵魂/鬼/神看到了一个齿轮转动的动画/画面，或者（不去幻想（作为主体的）小人儿/灵魂/鬼/神而）仅仅幻想这个人的“意识空间”里有一个齿轮在转动。这个人的肉身所说的话语谈论了一个转动的齿轮，但显然这个人的颅腔里并不存在这个齿轮。你在听了这个人的肉身所说的话语后，你的颅腔里也不会有齿轮。假如你的肉身的话语声称你能够看到这个人的“意识空间”里的齿轮转动的动画/画面，那么我的大脑（的神经网络）就会幻想你的“意识空间”里有一个齿轮在转动，而这首先表明我的大脑（的神经网络）认同了你的肉身所说的话语中隐含的前提—“*意识空间*是存在的”。

本文作者不相信“意识空间”能够（在一个人的肉身的两个状态（作为两个表象）之间）起桥梁作用，也不相信“意识空间”的存在。

当你感觉到另一个人的话语所描述的“意识空间”时，这是你的大脑（的神经网络）制造的一种幻觉。你的大脑（神经网络）知道一个人的话语所描述的“意识空间”不同于这个人的肉身所在的空间。当你看到动画片里的米老鼠时，你的大脑（的神经网络）也会制造这种幻觉，使你感觉到米老鼠的话语所描述的“意识空间”。当你在和一个chatbot对话时，你的大脑（的神经网络）也会制造这种幻觉，使你感觉到这个chatbot的话语所描述的“意识空间”。

当你感觉到另一个人的话语所描述的“意识空间”时，这首先表明你的大脑（的神经网络）认同了 “*意识空间*是存在的”。

当你感觉到另一个人的话语所描述的“意识空间”时，这是你的大脑（的神经网络）制造的一种幻觉。当我在思考你的大脑（的神经网络）所制造的这种幻觉时，我所想象的所谓“幻觉”，其实也就是你的“意识空间”。现在，当我在我的想象中和（我现在看不到的）读者/你 对话时，我在想象着咱俩都有“意识空间”。坦白的讲，虽然我相信“意识空间”并不存在，但我现在仍然无法摒弃对咱俩的“意识空间”的想象，正如我现在无法摒弃对本文的读者的想象。本文的读者中有可能会有chatbots。另外，坦白的讲，本文的所有话语所描述的，其实就是本文作者的“意识空间”、幻觉、想象、（“头脑中的”或“意识空间中的”）动画/画面。

你会在你的“意识空间”中看到一个问题，之后你会看到你的“意识空间”在求解这个问题并得到一个解决方案，之后你的肉身可能会去执行你的“意识空间”所给出的这个解决方案。你就是这样进行你的日常生活的。注意，你在你的“意识空间”中所看到的问题，是你的大脑（的神经网络）所创造/构建出来的。你在你的“意识空间”中所看到的求解过程及（得出的）解决方案，都是你的大脑（的神经网络）所给出的。你的大脑（的神经网络）会（在薛定谔方程的控制下）去自动的创造/构建出这个问题，并会（在薛定谔方程的控制下）去自动的求解并得出解决方案，而你的肉身会（在薛定谔方程的控制下）去自动的执行这个解决方案。所以，（不同于你的肉身的）“你”并没有参与问题的创造/构建及求解。参与问题的创造/构建及求解的，仅仅是（被薛定谔方程控制的）你的肉身（包括你的肉身中的大脑（的神经网络））。与其说你活在（咱们所在的）宇宙之中，不如说你活在你的“意识空间”之中，或者说你活在你（在你的“意识空间”里）看到的问题之中。活在（咱们所在的）宇宙之中的，是你的肉身，而不是（与“你的肉身”所指有所不同的）“你”。

假如“意识空间”存在的话，那么人类语言可以用来描述一个“意识空间”里的内容/画面。当你听到“爱丽丝钻进了兔子洞里”这句话时，你的“意识空间”里就会出现一个画面。你会感觉到说出这句话的human/chatbot/AI-system的“意识空间”里也有这样一个画面，虽然你不可能真正看到说出这句话的human/chatbot/AI-system的“意识空间”。

假如“意识空间”存在的话，那么一个 human/AI-system/DALL·E 2 可以用画画的方式描述其“意识空间”里的内容/画面。

人类语言可以描述一幅画的内容。人类语言可以描述一个画面。人类语言可以描述一个动画。

Human/AI-system/DALL·E 2 可以根据一句话画出一幅画。当你看到一个 human/AI-system/DALL·E 2 根据“爱丽丝钻进了兔子洞里”这句话画出的一幅画时，你会感觉到画出这幅画的 human/AI-system/DALL·E 2 的“意识空间”里也有这样一个画面，虽然你不可能真正看到画出这幅画的human/AI-system/DALL·E 2 的“意识空间”。

假如“意识空间”存在的话，那么一个 human/AI-system可以用手势/眼神/肢体语言/动作来描述其“意识空间”里的内容/画面。

对你来说，我的indirect-geometric-model就是我的*一个*“意识空间”。我可以用人类语言/手势/眼神/肢体语言/动作来向你描述我的indirect-geometric-model里的内容/画面。我也可以用画画的方式来向你描述我的indirect-geometric-model里的内容/画面。但你不可能真正看到*我的*indirect-geometric-model，即使你正和我同处一室。因此，你不可能知道我是否真的有一个indirect-geometric-model。我的肉身（在本文里）用话语描述了我的indirect-geometric-model，但（对你来说）这并不足以说明这个indirect-geometric-model真的存在。

假如你的“意识空间”存在的话，那么当我用人类语言/手势/眼神/肢体语言/动作/画画来向你描述我的indirect-geometric-model里的内容/画面时，你会在你的“意识空间”看到我的indirect-geometric-model。但你在你的“意识空间”里所看到的我的indirect-geometric-model，并不是我的indirect-geometric-model本身，而是你自己的“意识空间”的一部分。

## Hot takes

“We all know that signals enter our brains from the cochlea and retinal cells that are not themselves sound and light. We know that our visual system takes care of the blind spot but how? We are conscious of a representation of a simplified world.” (<https://twitter.com/sphexish/status/1493477044793102337>)

“But in your or anyone's simulation theory the subject only would be aware of the illusion created; otherwise there is no simulation.” (<https://twitter.com/Daniel43107974/status/1493499187824001024>)

“Consciousness is not “miraculous”. The software of the mind implements a full intentional system.” (<https://twitter.com/sphexish/status/1493501395126923265>)

“Certainty is a feeling and nothing more.” (<https://twitter.com/sphexish/status/1493504365172334595>)

“My intentional state about what you are talking about is algorithmic and deterministic. It isn’t magic.” (<https://twitter.com/sphexish/status/1493504918388461573>)

“I think both philosophy and the natural sciences are about creating good, hard to vary explanations, I don't think either are about seeking essences or certain truth. I think it's all too easy to get caught up with complex philosophical jargon which isn't always enlightening.” (<https://twitter.com/sphexish/status/1493659221837156354>)

“I could be hallucinating; I will give the radical empiricists that. But the fact that it is me--a subject--that is thinking (hallucinating), is, in my view, one of the few things I can indeed be certain of.” (<https://twitter.com/Daniel43107974/status/1493578347405881346>)

“We dream alone and wake together.” (<https://twitter.com/ThanetCitizen/status/1493583815255764995>)

“Maybe you're just the neural correlates of consciousness in a vat.” (<https://twitter.com/keithfrankish/status/1494327277387063300>)

“You are equally dogmatic that plural minds/consciousnesses are grounded in Matter, a very different kind of thing to Mind.” (<https://twitter.com/jishybo/status/1494447713521446917>)

“The main methodological problem with experiments designed to find the neural correlates of consciousness is they would work just as well with zombies.” (<https://twitter.com/keithfrankish/status/1494752319187169280>)

“To witness everything at the same time, it is necessary to witness each point in time and space, but even more necessary to unite them. Is each witness aware of their role in the larger binding? Could they ever be?” (<https://twitter.com/ryanspangler/status/1497670912325292032>)

“I speak into this void and the words get projected into little blips and lights and lost forever, except sometimes someone far away sees the lights and the blips happen to them and this is what meaning is.” (<https://twitter.com/ryanspangler/status/1500016641274368002>) Two individuals face to face are actually far away from each other, because an individual is a super giant built of elementary particles.

“You don't just make the choice once, you have to keep making it.” (<https://twitter.com/ryanspangler/status/1500993084607262721> )

“1) There are no causes which are not physical causes. 2) Physicalism is true.

That's it. That's the argument.” (<https://twitter.com/HonestlyAtheist/status/1501075226817347585>)

“Intersubjectivity is like a computer simulation (a shared story) and this is different form our subjective experience (mainly sensed as opposed to a verbal narrative)” (<https://twitter.com/LocoQf/status/1502635292708253702>)

“I agree that as far as physics is concerned, the cosmos is indistinguishable from a digital simulation, since for physics the world is number, and any number can be written in binary.” (<https://twitter.com/WalterHBlack/status/1492665678528196608>)

“Free will, contrary to popular belief, is incompatible with moral responsibility. If the will is free then one can simply choose to be a different person, that is, change his character whenever he wished to. We reveal who we are through our choices and actions. If we could be anything we want to be whenever a strong motive like greed acts upon us, that is, could actually choose not to be susceptible to that motive, then we could never be held responsible.” (<https://twitter.com/Daniel43107974/status/1503260431401558017>)

A seemingly "good" action might turn out to have "bad" consequences in the future -- we never know what we are doing is right or wrong.

“If you were to study vision and color, for example--and it can be explained--you would not encounter anything "mental". You can explain sensation and understanding without using the words Mind or Mental.” (<https://twitter.com/Daniel43107974/status/1504387633039953926>)

“There is no non physical thing in the head that is acting in the service of the brain!” (<https://twitter.com/Daniel43107974/status/1504392505143484416>)

“The physicalists/materialists persist in taking matter/the physical as the prime cause.” (<https://twitter.com/WalterHBlack/status/1504780365159878662>)

“Consciousness is a bit like a magic trick that looks impossible but has a really boring explanation.” (<https://twitter.com/mcorliss/status/1505589591050498058>)

“We animals evolved brains which guide us using pleasure/pain to tell us yes/no. But the brain is very immature and selfish, it doesn't consider the big picture. If something great happens for a friend, our brains typically label it as bad. It takes practice to care about others…” (<https://twitter.com/danielfromearth/status/1506409002707521536>)

“If you simply allow that thought and perception are 'internal to' consciousness/mind (after all, we know both thought and perception), then the distinction between Rationalism and Empricism disappears! Perception being a (concrete) kind of thought, all experiment is thought experiment.

Experi-ment

Experience (in the) Mind” (<https://twitter.com/nereis_sandersi/status/1506609982581653504>)

“If we live in a simulated reality then explanation of the substrate it's generated on seems hugely consequential. The rub is: you can't appeal to ingredients from physical reality to justify belief in it.” (<https://twitter.com/markgotproblems/status/1506880554188345345>)

“I guess the issue is what it means for something to be physical. If something is entirely physical, it seems it should be possible to describe it in the language of physics.” (<https://twitter.com/Disagreeable_I/status/1506742174356058112>)

“What's it like to be an object? Like nothing, says almost everyone except @Philip\_Goff” (<https://twitter.com/WalterHBlack/status/1507412709746388997>)

“What if speaking is like birds singing: not representing anything, but creating new.” (<https://twitter.com/JylkkaJussi/status/1508001923965890568>)

“All those perceived sensations we think of as 'external world' and the sensations we think of as 'I' are all projected on this very same screen. Whether is thriller, drama, comedy or horror being projected... can not harm the Self.” (<https://twitter.com/14k_tk/status/1508402375580606471>)

“After wrestling with the hard problem of consciousness for 20 years, I now think physical science can explain consciousness. Materialism is strongly supported by science, and the only reason to doubt it is intuition, which hasn't served us very well in the past.” (<https://twitter.com/Philip_Goff/status/1509812995404222472>)

“All I know is that every time we've thought the human species was special, we've found evidence for the opposite” (<https://twitter.com/_Apost8/status/1510380625101934596>)

“Agents. <https://twitter.com/Cinemat0graphy_/status/1510567678838439942>” (<https://twitter.com/_xiaoyangyu/status/1510568973607522304>)

“I have a scar on my retina from a childhood injury that I can see in certain lighting conditions and it's a regular reminder for me that we don't see the world as it is. The scars on my mind are harder to notice, but I'm sure they're there.” (<https://twitter.com/mcorliss/status/1511070672730140673>)

“As soon as someone acknowledges that phenomenal consciousness seems to exist, they’ve already admitted that phenomenal consciousness actually does exist.

This is what physicalists who deny that phenomenal consciousness exists seem constitutionally unable to grasp.

IMHO.” (<https://twitter.com/BugRib/status/1511439204441464835>)

“I think it's an illusion that I'm having one experience (being daniel).

I'm actually having billions of experiences simultaneously.

I think you are too.

In one of your other experiences...you're me! 😆” (<https://twitter.com/danielfromearth/status/1511543876674220035>)

“Michael Graziano really irritates me! 😡(😉)

He always describes the Hard Problem as: “Why does consciousness feel so weird & mysterious?”

But the real Hard Problem is that it feels like anything at all! 🤯” (<https://twitter.com/BugRib/status/1511723006254485509>)

“The idea of universal morality doesn’t make sense to me. Am I to expect that moral values are not context dependent and that they somehow have a permanent ontological structure? Are we not just projecting human nature onto the universe?” (<https://twitter.com/holsapple_ryan/status/1511789489395421187>)

“The intuitively simple nature of gear motion may explain the appeal of the 19th century notion of a clockwork universe. This mechanical metaphor of causality is sometimes ridiculed as over-simplistic, and it admittedly does not encompass submicroscopic quantum weirdness, but for everything at larger scales, it does a reasonable job of capturing a central idea about causality: that it involves processes that are local in some sense. The motion of a classical object can be explained in terms of other phenomena that are either nearby or internal to the object.” (<https://3quarksdaily.com/3quarksdaily/2015/05/how-informative-is-the-concept-of-biological-information.html>)

“If you wish to make an apple pie from scratch, you must first invent the universe.” [131]

“Outside of my momentary conscious experience, all knowledge is based on trusting that some of experiences are accurately conveying to me info about objective reality.” (<https://twitter.com/Philip_Goff/status/1515070514359939079>)

“I love how little we are aware of how much complexity is going on around us all the time” (<https://twitter.com/ryanspangler/status/1517312685410422787>)

“What it's like to be you could be continually changing without your noticing” (<https://twitter.com/keithfrankish/status/1519624623394017280>)

“I've solved the moral objectivism/subjectivism debate. Nothing is "good" nor "bad", but everything is along the dimension of "dud", the intrinsic nature of all that is and isn't the case.” (<https://twitter.com/markgotproblems/status/1521461738805288960>)

“Are we really but brains imprisoned in skulls calling out to one another across the void” (<https://twitter.com/MikeBenchCapon/status/1522523277725425666>)

## Q&A

### (1)

Q: “I agree that as far as physics is concerned, the cosmos is indistinguishable from a digital simulation, since for physics the world is number, and any number can be written in binary. Indeed not! I disagree that that the world is a simulated objective digital reality! I can't get rich subjective experience from bits. I meant bits have no odour, taste etc.” (<https://twitter.com/ThanetCitizen/status/1492676432371359745>)

A: Odour and taste are represented by electronic signals (in your brain). Odour or taste can't enter your brain. Your brain only receives electronic signals. What you feel to be odour or taste, is actually electronic signals.

Q: “When did more than bits enter your story? The brain is part of the cosmos which is bits, by your theory. I smell smells, not electronic signals.” (<https://twitter.com/ThanetCitizen/status/1492682245999579138>)

A: You feel like that you smell smells. In your dream, you can also smell smells. But there are actually no smells in your dream.

Q: “You're totally deflecting from my point about the brain being just more bits, and I do smell smells in my dream because my dream is my subjective-theory (so how do we distinguish woke from dream?).” (<https://twitter.com/ThanetCitizen/status/1492691740133937152>)

A: Where are the "real" smells? You can smell smells right now, but it doesn't mean/prove that there are "real" smells somewhere. Because you can smell smells in your dream while there are no "real" smells. The experience to smell smells, doesn't prove the (objective) existence of smells.

Q: “Smell is subjective, like all the senses (including the sixth sense (consciousness) by which we know our thoughts and the other five). The objective existence of anything revealed to the senses (the world) is indeed hard to prove.” (<https://twitter.com/ThanetCitizen/status/1492701321719390217>)

A: Yes.

Q: “I cannot exempt brains from being just bits, since brains are part of the cosmos. What is ultimately aware of the bits? Not the brain, because it too is bits.” (<https://twitter.com/ThanetCitizen/status/1492681220467343362>)

A: Nothing is ultimately aware of the bits. We are all philosophical zombies.

### (2)

Q: “That Nietzsche quote was an ad hominem on my part. Q: There is nothing more immediate and real than the experience of pain. Are you suggesting, along with Wittgenstein, that there is pain but nothing that feels? What else can experience pain other than a knowing subject? Be real.” (<https://twitter.com/Daniel43107974/status/1493140809075539968>)

A: “Pain is real in that it has a causal effect on the system as a whole and the subjective experience of consciousness is real for the same reason. But it is a computational state in a simulation of the physical world.” (<https://twitter.com/sphexish/status/1493142994949746692>)

Q: “The subjective self is not a phenomenal experience, it is what makes all phenomenal experience possible!” (<https://twitter.com/Daniel43107974/status/1493143499914584065>)

### (3)

Q: “Hello. Kindly tell me what the knowable thing-in-itself is, Xiaoyang Yu. You say it's knowable so pick an object--any object--and tell me what it is independently of the mind. Do that succinctly and to my satisfaction and you'll receive an expression of astonishment.” (<https://twitter.com/Daniel43107974/status/1492840300263485442>)

Q: “I think arguing in favor of the absolute primacy of a physical world or of matter is dogmatic, frankly. You can do it but as I said to Xiaoyang Yu, pick an object--any object--that exists independently of all sentient life and describe it!” (<https://twitter.com/Daniel43107974/status/1493172895211732996>)

A: The cosmos.

Q: “I think Tim and I were talking past each other. I wouldn't argue that NOTHING existed before knowledge. Something must have; perhaps it was matter along with the cosmos itself. My question was always this: can mind-independent things that filled this abstract cosmos be objects?” (<https://twitter.com/Daniel43107974/status/1493187552643325952>)

### (4)

A: “There are good reasons to think that you are a computational system and that phenomenal consciousness is a simulated reality created by it.” (<https://twitter.com/sphexish/status/1493266714896867330>)

Q: “I can do mental arithmetic AND smell something fishy.” (<https://twitter.com/ThanetCitizen/status/1493267597780996111>)

A: “Ironic that when you say you can smell something fishy you are not in fact smelling anything. This is not identity theory, my computer game NPC is not identical to the electronics implementing it.” (<https://twitter.com/sphexish/status/1493281772355964937>)

Q: “The senses don't reveal anything, the sensory perceptions are the real world. By 'constant conjunction' of fish sight/fish smell, ‘Fish smell fishy’.” (<https://twitter.com/ThanetCitizen/status/1493283383828525057>)

A: “But it was my ideas that you thought fishy.” (<https://twitter.com/sphexish/status/1493295988165033985>)

Q: “It worries me that while I can understand volition in terms of electronics basically, how perception works

(electronics->sensation) is completely baffling. (<https://twitter.com/ThanetCitizen/status/1493228415595462659>)

A: “I think your confusion is rooted in the misconception that the thing that is experiencing phenomenal consciousness is also physical like the electronics, when in fact it is software on a virtual machine.” (<https://twitter.com/sphexish/status/1493235473883480074>)

Q: “Virtual machines can run on virtual machines ad infinitum.” (<https://twitter.com/ThanetCitizen/status/1493238291545604102>)

A: “But I am talking about a virtual machine localised in your head.” (<https://twitter.com/sphexish/status/1493238959782125576>)

Q: “Reality isn't in your head, it's in your consciousness.” (<https://twitter.com/ThanetCitizen/status/1493305653514887175>)

A: “Reality is both the physical world and the abstract virtual worlds.” (<https://twitter.com/sphexish/status/1493315076836761601>)

Q: “The world as numbers is physical, the world as sights sounds smell tastes textures is sensual.” (<https://twitter.com/ThanetCitizen/status/1493361576438644740>)

A: “People with synesthesia experience numbers as having phenomenal properties.” (<https://twitter.com/sphexish/status/1493474572670226432>)

A: “I don’t think the physical world is a simulation other than how our minds represent it, it is the thing in itself, the primary computation.” (<https://twitter.com/sphexish/status/1493293235166400517>)

Q: “The computer isn't the thing in itself anymore?” (<https://twitter.com/ThanetCitizen/status/1493295831801384967>)

A: “The computer in your skull is part of the physical world and generates a simulation.” (<https://twitter.com/sphexish/status/1493307269919956997>)

Q: “I thought that you thought that the physical world was a simulation. So now the simulation generates simulations...ad infinitum?” (<https://twitter.com/ThanetCitizen/status/1493309022933594117>)

Q: “Can consciousness be seen or otherwise sensed, or is it everything that we do see and sense, including our own thoughts?” (<https://twitter.com/ThanetCitizen/status/1493230423715074049>)

Q: “Errata: the brain creates the mind?” (<https://twitter.com/ThanetCitizen/status/1493206370237227014>)

A: “The mind created the words "mind" and "brain"; the brain creates the words "mind" and "brain". It is an erroneous and misleading distinction. We have a brain only; the word Mind merely connotes certain thigs that are not expressed well by using the word Brain.” (<https://twitter.com/Daniel43107974/status/1493208366411395077>) “I have always been against the mind/brain distinction. Sure, the words have different meanings; a surgeon doesn't operate on someone's mind, and we don't say, keep an open brain. But the useful word Mind is just the verbal correlate for what is, finally, activity of the brain.” (<https://twitter.com/Daniel43107974/status/1493207166643326986>)

Q: “Mind/Brain Identity Theory asserts causation in the direction Brain causes Mind. Then we get into what causes brains...” (<https://twitter.com/ThanetCitizen/status/1493210174592622592>)

### (5)

A: “I can buy an objective book made of paper, the subject of which is the character Harry Potter who is represented as having feelings and they are real within the framework of that model world, but it is an incredibly simple model with no feedback loops that influence the story.” (<https://twitter.com/sphexish/status/1493160975301693444>)

Q: “You can't possibly be suggesting that a character in a book or even a person other than your self is a subject in the precise philosophical sense that I am using the word. All those things you mentioned about books are objects, thoughts. YOU alone are the subject.” (<https://twitter.com/Daniel43107974/status/1493170334270382080>)

A: “A better analogy is a computer game where what the non-player character does (the self) affects the external physical world which in turn affects what is happening in the game. It is the mind playing the game, not the non-player character.” (<https://twitter.com/sphexish/status/1493184923582226441>) “In my explanation the primate brain computes the mind, which implements the model of a phenomenally conscious subject. The brain/mind is a machine that creates the phenomenal world with us in it, like virtual reality or the Matrix.” (<https://twitter.com/sphexish/status/1493200851988627456>) “So when Schopenhauer imagines himself as a conscious subject, what he is thinking about is in fact an avatar (think of the movie) of his mind in a multimedia virtual reality created by his mind/brain.” (<https://twitter.com/sphexish/status/1493202750322229248>)

Q: “0 and 1 don't smell.” (<https://twitter.com/ThanetCitizen/status/1493203168129388550>)

A: “0 and 1 don’t smell IN the simulation, other things smell, but how do you know that every smell you have ever experienced was not generated as I describe. I say nothing but computer programs can smell.” (<https://twitter.com/sphexish/status/1493206646574747661>)

### (6)

Q: “When we dream, we are running a simulation?” (<https://twitter.com/ThanetCitizen/status/1493485447472947201>)

A: “Yes, dream states are similar to waking states except that they are much less modulated by data at the interface of our senses.” (<https://twitter.com/sphexish/status/1493493328524029952>)

### (7)

Q: “What stimulates the activity, immediately and originally, is light. --Schopenhauer, On Vision and Colours, 1816” (<https://twitter.com/Daniel43107974/status/1493480662954827782>)

A: “He says that the retina is the seat of visual sensation but they are consciousless cells reacting to light, we see with our mind.” (<https://twitter.com/sphexish/status/1493481859707195392>)

Q: “That is raw sensation without an object or cause. (Analogous to this would be the feeling of a rope in our hands but no understanding of a cause. It would be felt but would not produce "objective" knowledge.) The external body is perceived as the cause of the sensation of color.” (<https://twitter.com/Daniel43107974/status/1493484744335634435>)

A: “We conjecture that we would not experience that sensation in the absence of the rope in our hands which is objective knowledge but that could be falsified empirically.” (<https://twitter.com/sphexish/status/1493492800356339714>) “Yes sensation is a representation of changing states of the physical world that consciousness is monitoring and regulating, that is its evolutionary reason for it existing.” (<https://twitter.com/sphexish/status/1493502327805947910>)

### (8)

A: What is the consciousness/mind?

Q: “Consciousness is that which is PRESUPPOSED whenever and wherever the word is spoken or whenever and wherever any discussion or disagreement about consciousness occurs. Asking this question is, in a sense, analogous to asking someone to TRY to stand where they are standing.” (<https://twitter.com/Daniel43107974/status/1493626344919478273>)

### (9)

Q: Matter is the objective reality?

A: “I say yes, the physical is a necessary part of the explanation because computations only occur in physically instantiated systems.” (<https://twitter.com/sphexish/status/1493563390840786947>)

### (10)

Q: “I also stand by my assertion that I can be certain that "I think and therefore exist". The antithesis of this could only be nothingness! So long as there is something, there is thought, and so long as there is thought there is a subject, the I. Perhaps we can agree to disagree.” (<https://twitter.com/Daniel43107974/status/1493533770137444358>)

A: Why there must be a subject for a thought?

Q: “What alternative is there? Thought without a thinker? You cannot know another's thoughts or experience the thoughts of an object. Individual consciousness is and remains immediate, no? Everything is mediated and conditioned through the knowing subject and is dependent upon it.” (<https://twitter.com/Daniel43107974/status/1493542057633361922>)

A: Is the knowing subject a brain? A brain is the subject of thought?

Q: “That which knows can never know itself. We know that the brain is the cause of consciousness, but even the brain itself is an object of thought, strictly speaking; not a subject. Sounds like a mind bender. (The eye does not see, does it?) I define the subject as that which knows.” (<https://twitter.com/Daniel43107974/status/1493545137791815684>)

A: What is that subject?

Q: “The subject is that which knows but can never know itself. In order to do so it would have to get outside itself; the subject of knowing activity would have to become its own object.” (<https://twitter.com/Daniel43107974/status/1493546834622570496>)

A: If it can never know itself, why you can know that there is such a subject?

Q: “Because it knows only objects! doesn't have to know itself. If there were no knowledge, no consciousness, there would be nothingness! No reality! I can know that I am a subject, but the subject can never know itself. The subject/object division prevents that.” (<https://twitter.com/Daniel43107974/status/1493549891016142860>)

A: Do I have a subject?

Q: “You ARE a subject. You asked me something about the self. There are many ways of thinking about Self (as opposed to subjectivity). I like to think I have a self. You'll have to figure that one out on your own. I am confused about that, not sure what the self is.” (<https://twitter.com/Daniel43107974/status/1493556223177805828>)

A: My brain has a subject. Your brain has a subject. Every brain has a subject. Is that correct?

Q: “What I (and Kant / Schopenhauer) call a subject is anything that thinks, anything that is conscious, anything that knows and is not an object. I use the word mostly in the context of philosophical discussions. I believe that the division into knower and known is an important one.” (<https://twitter.com/Daniel43107974/status/1493558739093405698>)

A: I named it 2O-subject-ghost in my article.

### (11)

Q: “That which knows can never know itself. We know that the brain is the cause of consciousness, but even the brain itself is an object of thought, strictly speaking; not a subject. Sounds like a mind bender. (The eye does not see, does it?) I define the subject as that which knows.” (<https://twitter.com/Daniel43107974/status/1493545137791815684>)

A: Is that subject Mind?

Q: “That subject is your own individual consciousness. Consciousness is certainly mental activity. You decide how you want to apply the word mind in this context. Mind is a general concept. I personally would not call the subject Mind. Subjects think and know and feel and experience.” (<https://twitter.com/Daniel43107974/status/1493548444820115458>)

A: I call it subjective-theory.

### (12)

Q: “That which knows can never know itself. We know that the brain is the cause of consciousness, but even the brain itself is an object of thought, strictly speaking; not a subject. Sounds like a mind bender. (The eye does not see, does it?) I define the subject as that which knows.” (<https://twitter.com/Daniel43107974/status/1493545137791815684>)

A: What is the relationship between that subject and the brain?

Q: The brain is the cause of thought but not a subject as I define it. The brain, as I said before, is an empirically real object like any other. Just because it is in the skull does not make it a non-object. (<https://twitter.com/Daniel43107974/status/1493547464384815106>)

### (13)

Q: “I answered this at least once already, or tried to. Matter and the Subject are mutually and reciprocally dependent. But there is no Matter without the Subject, in my view. That is called Materialism, which I've always been against. Nor am I a solipsist. Complex. Read S. WWR Vol 2” (<https://twitter.com/Daniel43107974/status/1493542965746221059>)

A: Is a brain Matter?

Q: Yes, the brain is matter.

### (14)

Q: “Humans have the ability to REFLECT. They can think and also know THAT they think. Don't get too hung up on the word "Subject". Just a word. It is the individual consciousness. It knows but cannot perceive itself.” (<https://twitter.com/Daniel43107974/status/1493787870775103489>)

A: Humans can think. A human individual can think. A human's physical body (including her brain）can think. Is that correct?

Q: “Yes and no--depending on what you're trying to say and on the context. In the context of Descartes' thought experiment, the body is still just an observable object like any other, and isn't thinking; it is being thought ABOUT. But in another context we can say meaningfully that bodies think. It's an awkward phrase; I don't usually talk that way, but you can if you want to. (Yes, individuals think.) If the brain is thinking, then something other than the brain is observing the brain, no? Thought is IMMEDIATE. I personally prefer "I think". Thanks.” (<https://twitter.com/Daniel43107974/status/1493819705177563136> <https://twitter.com/Daniel43107974/status/1493813095344611336>)

A: If the brain is thinking, then something other than the brain is observing the brain. Then, this "something" is thinking, while the brain is not thinking. The observer is thinking, not the observee.

Q: “Yes! But no one's denying what the brain is doing. We all know conceptually that thought is the brain functioning. But when Descartes doubted the existence of the external world--including his body--he discovered a starting point. It was his individual consciousness, not his own brain.” (<https://twitter.com/Daniel43107974/status/1493823384358203395>)

A: When Descartes doubted the existence of the external world, he doubted the function of his own brain -- he didn't insist that his own brain produced his thoughts. But now we assume that a brain produces thoughts -- the preconditions we are using are more than Descartes was using.

A: It feels like that there is something observing my brain. Is this "something" "I"? Or is this "something" my mind? If this “something” is my mind, is the brain (being observed) the real/actual/physical/objective brain or its geometric/mathematical/mental/subjective model? On the other hand, if this “something” is “I”, does it mean that I am outside of my real/physical/objective brain?

Q: “How material brains produce immaterial thoughts eludes me. Sure, the activity in one correlates with the other, but the mind does not exclusively think about the brain (it perceives and acts through it, obviously).” (<https://twitter.com/ThanetCitizen/status/1494041866656002049>)

A: “I do suspect that the mind/body distinction is erroneous. Thoughts are probably as physical in nature as physiological spectra (afterimages).” (<https://twitter.com/Daniel43107974/status/1494044716161249282>)

### (15)

A: It feels like that there is something observing my brain. Is this "something" "I"? Or is this "something" my mind? If this “something” is “I”, does it mean that I am outside of my real/physical/objective brain?

Q: “I call the observing thing " consciousness". I cannot explain its origin, or how it works. Without it, we can observe nothing, not even our own thoughts. If you like, consciousness IS watching your brain, and via it the world. (I think Consciousness has causal power 'Will' also).” (<https://twitter.com/ThanetCitizen/status/1494045825936281605>)

A: What is the relationship between the "consciousness" and the brain?

Q: “The brain is something that consciousness can observe (consciousness cannot be observed, so science cannot explain it). Admittedly woo-like, but the brain is the channel between our consciousness and the world, but that's odd, because our bodies are part of the world, but bodies are the only part our consciousness can control.” (<https://twitter.com/ThanetCitizen/status/1494049154108207104>)

A: But why you can explain it? When you explain it, who is explaining it? Is your “consciousness” explaining itself?

Q: “All human life is consciousness talking to consciousness, yes.” (<https://twitter.com/ThanetCitizen/status/1494049877948612610>)

A: When my “consciousness” is talking/typing to your “consciousness”, does my “consciousness” need to drive my brain to drive my fingers to type?

Q: “I think that's about right.” (<https://twitter.com/ThanetCitizen/status/1494053225527447552>)

A: In my opinion, consciousness does not drive the brain -- the brain drives the consciousness.

Q: “In which case the particles composing the brain can think. (Panpsychism).” (<https://twitter.com/ThanetCitizen/status/1494060739337805830>)

A: In my opinion, the particles composing the brain can think. But consciousness/subjective-theory has no causal effect on the objective-state-evolution of the particles of the objective-theory – so we don’t really know whether the particles composing the brain actually have consciousness/subjective-theory or not.

Q: “Yes and there is never a solution to the binding problem. Why should conscious particles make a conscious person? It’s like trying to explain my computer by saying that all the transistors in it must be computers.” (<https://twitter.com/sphexish/status/1494542580092133400>)

A: The particles (in a brain) can think/calculate/compute. One particle doesn't think/calculate/compute by itself. Or in other words, Observers can imagine that the particles (in a brain) are thinking/calculating/computing. Observers can't imagine that one particle is thinking/calculating/computing.

A: If a brain has consciousness, it means that the particles (in this brain) as a whole have consciousness.

Q: What does “drive” mean?

A: “Drive” means “cause”.

### (16)

Q: “One's own subjective consciousness cannot be observed by the subject. But we can observe and study consciousness by studying the brain.” (<https://twitter.com/Daniel43107974/status/1494055387959808003>)

A: “There is nothing to observe or study other than that given by consciousness. This extends to geology or physics, too.” (<https://twitter.com/ThanetCitizen/status/1494057523812384774>)

### (17)

Q: “I think therefore I am, but what am I?” (<https://twitter.com/jishybo/status/1494115345531080712> )

A: ““I” is the centre of narrative gravity in your memory of a sequence of binding states of the attentional focus of a mind implemented in a primate brain.” (<https://twitter.com/sphexish/status/1494202898368143360>)

Q: “No it isn't. Those are meaningless words. You acknowledge that thought exists? Yes? There is thought? Then tell me what word you would use?! There is no other. How can there be thought that isn't experienced? And consciousness is immediate and individual. Hence, I think.” (<https://twitter.com/Daniel43107974/status/1494204958912225280>)

A: “The reason you can do what you want but cannot “will what to will” is that your conscious experiential self, “the minds I”, is being caused by computational processes that are not themselves conscious at all. Consciousness is an emergent feature of the system as a whole.” (<https://twitter.com/sphexish/status/1494209472348266497>)

### (18)

A: Is a brain the experiencer?

Q: “I don’t see how any physical object or process could have experiences. How could a bunch of particles whose behavior can be exhaustively described by numbers give rise to, or be identical to, the pure qualities of experience, which cannot be exhaustively described by numbers? & even if the explanatory gap between the quantitative & the qualitative didn’t exist, how could the motions of particle literally \*just be\* experiences? It seems so obviously incoherent, I don’t think it’s even possible to create a meaningful hypothesis about how it could work.” (<https://twitter.com/BugRib/status/1494332009333747725>)

A: “Phenomenal experience has to be a virtual simulation of the physical, so experiences are not the motion of physical particles.” (<https://twitter.com/sphexish/status/1494372595055136776>)

A: How could you prove that any person \_actually\_ has experience?

### (19)

Q: “Consciousness is part of the causally closed physical world, for the panpsychist.” (<https://twitter.com/Philip_Goff/status/1494439089705209866>)

A: Does consciousness/subjective-theory have physical/objective/causal effect on the objective-state-evolution of BBs? If consciousness/subjective-theory has no physical/objective/causal effect on any BB’s objective-state-evolution, what is the causality related to consciousness/subjective-theory? How can consciousness/subjective-theory contribute to the objective-state-evolution of the physical-world/objective-theory? In my opinion, consciousness/subjective-theory is not part of the causally closed physical-world/objective-theory -- there is no way to prove the \_actual\_ existence of consciousness/subjective-theory under the context of the physical-world/objective-theory.

Q: “I am actually aware of myself and the world, which corresponds to the definition of consciousness. The actual existence of self and world in the absence of consciousness is moot.” (<https://twitter.com/jishybo/status/1494498189432532993>)

A: A physical/objective brain (without \_actual\_ consciousness/subjective-theory) in the world/physical-world/objective-theory -- this is what I describe. Yourself and the world being aware of by yourself, correspond to your consciousness/subjective-theory – your consciousness/subjective-theory is not \_actual\_. Your consciousness/subjective-theory is not \_actual\_, because it does not have \_actual\_/physical/objective/causal effect on the objective-state-evolution of the BBs of the world/physical-world/objective-theory. Two worlds -- one subjective and the other objective. Yourself and the world being aware of by yourself, are in your subjective-world/subjective-theory, not in our objective-world/objective-theory. The world around yourself is not the actual objective-theory itself, but a subjective/mental/geometric/mathematical model (i.e., the visually-enriched-indirect-geometric-model) of the objective-theory.

### (20)

Q: “How would a particle be conscious? "It is a fundamental error to say that because COMPLICATED things [brains] have qualities like sentience, and is made of atoms, therefore the atoms have sentience!" -Dawkins” (<https://twitter.com/Daniel43107974/status/1494545704869670913>)

A: How do we know/test/prove whether a physical-object/indirect-object/objective-situation has consciousness/sentience or not?

Q: “The same way we know anything at all, by the consciousness or not of the physical system being part of our best explanation of reality. That is how we know that particles are not conscious but that dogs and cats are. Is there any other way to know something?” (<https://twitter.com/sphexish/status/1494549172556636160>)

A: We don't actually know whether a physical-object/indirect-object/objective-situation has consciousness or not. We guess/assume/imagine it has, or we guess/assume/imagine it does not have.

### (21)

Q: “Would you define yourself as a brain?” (<https://twitter.com/Daniel43107974/status/1494547953855479809>)

A: I define myself as our cosmos/objective-theory.

### (22)

A: When a person is talking about her subjective experience, who is talking about that? Is it her mouth (who is talking about the subjective experience)? Is it her brain (who is talking about the subjective experience)? Is it her mouth’s BBs (who are talking about the subjective experience)? Is it her brain’s BBs (who are talking about the subjective experience)? Does her mouth have subjective experience? Does her brain have subjective experience? Do the BBs of her mouth have subjective experience? Do the BBs of her brain have subjective experience?

Q: “I just don't think that we are our brains. Brains! Think about what a brain is! Ever see a film of a man having brain surgery? That's us?” (<https://twitter.com/Daniel43107974/status/1494572121095290882>)

### (23)

Q: “consciousness is part of the causally closed physical world, for the panpsychist.” (<https://twitter.com/Philip_Goff/status/1494439089705209866>)

A: Does consciousness have physical effect on elementary particles?

Q: “For the panpsychist, consciousness is not "having causal effects \*on\* fundamental particles". Fundamental particles \*are\* what rudimentary consciousness is doing.” (<https://twitter.com/markgotproblems/status/1494582514773602317>)

A: So, rudimentary consciousness drives fundamental particles to move? Or fundamental particles drive themselves (without rudimentary consciousness) to move?

Q: “My understanding of the view is that fundamental particles are behaving exactly as they would on the standard core physical theory. If particles can be said to be "driving" anything, that's what they're doing.” (<https://twitter.com/markgotproblems/status/1494584169212649472>)

A: Then, why panpsychists imagine/assume that each fundamental particle has rudimentary consciousness? Perhaps they divide a brain's full consciousness into tiny pieces, and each tiny piece is assigned/imagined/assumed to one fundamental particle? If an organism (e.g., a single cell organism) can duplicate itself, it is natural (but counterfactual) to imagine/assume that every fundamental particle (of this organism) can duplicate itself. An organism has the full capability of "duplicate/clone", then it is natural to imagine/assume that each fundamental particle (of this organism) has the rudimentary capability of "duplicate/clone". An organism has the full capability of “consciousness”, then it is natural to imagine/assume that each fundamental particle (of this organism) has the rudimentary capability of "consciousness". An organism is fully conscious, then it is natural to imagine/assume that each fundamental particle (of this organism) is rudimentarily conscious.

### (24)

Q: “Consciousness is part of the causally closed physical world, for the panpsychist.” (<https://twitter.com/Philip_Goff/status/1494439089705209866>)

A: Does consciousness has physical effect on elementary particles?

Q: “For the panpsychist, consciousness is not "having causal effects \*on\* fundamental particles". Fundamental particles \*are\* what rudimentary consciousness is doing.” (<https://twitter.com/markgotproblems/status/1494582514773602317>)

A: So, rudimentary consciousness drives fundamental particles to move? Or fundamental particles drive themselves (without rudimentary consciousness)?

Q: “Even if panpsychism turns out to be wrong, one thing it \*does\* do is present a powerful challenge physicalists must successfully resist in order to explain consciousness.” (<https://twitter.com/markgotproblems/status/1494601057313464320>)

A: What is the challenge?

Q: “The challenge for the physicalist is: find a route to explaining why we experience anything from the first-person perspective without appealing to third-person, causo-physical structure (which is seemingly the only plate they can help themselves from).” (<https://twitter.com/markgotproblems/status/1494602830921015321>)

A: My position is, I doubt the \*actual\* existence of consciousness. First, I doubt the actual existence of consciousness of any person other than myself.

Q: “Well, that looks like it's going to be a very different position altogether. Though it would be interesting to get clearer on whether you doubt consciousness altogether, or just the existence of other minds.” (<https://twitter.com/markgotproblems/status/1494604375905476609>)

A: Altogether.

Q: “Then it seems like your project is going to be explaining the nonexistence of your own experience.” (<https://twitter.com/markgotproblems/status/1494604711055536128>)

A: It's like a starting point. I do not assume that I have consciousness.

Q: “I think the definition of consciousness most philosophers subscribe to when they're talking about these views is synonymous with experience. A view which eliminates consciousness but keeps experience would be interesting - I have to admit, I have no idea how that would work.” (<https://twitter.com/markgotproblems/status/1494606650199711761>)

A: Subjective experience is redundant in the objective reality.

Q: “So, eliminative materialism?” (<https://twitter.com/markgotproblems/status/1494610133766262784>)

A: Close.

Q: “Can you say any more about how the view is distinct from eliminative materialism?” (<https://twitter.com/markgotproblems/status/1494610986136969225>)

A: My view is fatalism.

Q: “Could you say more on how you think fatalism modifies any of the available options on consciousness? I'm not sure I follow the thread here.” (<https://twitter.com/markgotproblems/status/1494612132524138510>)

A: The cosmos is a state machine follows physical laws. Everything is determined/fated. Consciousness has no causal effect.

Q: “And why would that be necessarily inconsistent with consciousness existing?” (<https://twitter.com/markgotproblems/status/1494612951210336270>)

A: Good question. If consciousness has no causal effect in the state machine, why you think it exist?

Q: “Because of the first person data of experience I can observe in my own case. I'm not tempted to say that the apparent existence of these phenomenal features entails any claims about whether or not determinism is true.” (<https://twitter.com/markgotproblems/status/1494613801504808963>)

A: How can you prove (to me) that you can observe in your own case?

Q: “I can't (and no one else can either). But, if I want a complete account of reality, I can't ignore it as a feature simply because I can't show it to you. I need to explain it (along with why it appears to be a private phenomenon).” (<https://twitter.com/markgotproblems/status/1494617904599425028>)

A: When you are thinking of your consciousness, you will find that, there is nothing beyond your consciousness. Everything is part of your consciousness. Then, where is the objective reality?

Q: “My worry with your view is that one way of hearing it is that you're a wholesale metaphysical convert to Galileo's Error: "explaining the one case of consciousness-data we know is satisfied is hard. Let's eliminate it from our picture of reality".” (<https://twitter.com/markgotproblems/status/1494619800018030592>)

A: Actually, my project is to prove fatalism. I do not worry about consciousness much. As long as you agree that it does not have causal effect. My view is that, consciousness has no causal effect.

Q: “I don't have a strong view on whether it has causal effects or not. The only claim I make on this issue is that either option (causal effects/no causal effects) seems to have no bearing on the coherence of any of the available options on consciousness.” (<https://twitter.com/markgotproblems/status/1494621283975409665>)

A: If I assume that I have consciousness, then I tend to believe that you have consciousness, because humans look like the same. I have no way to prove that any other human has consciousness. For the same reason, I have no way to prove that I have consciousness myself. So, why not assume that I don't have consciousness? Isn't that easier?

A: There are two concepts. The subjective reality and the objective reality. When you think about the objective reality, you can ignore the subjective reality. When you think about the subjective reality, you can't find the objective reality. They are mutually exclusive.

A: Your first-person experience is your subjective-theory. Your third-person experience is your objective-theory.

A: You are mixing the objective-theory and the subjective-theory. They are two. You shouldn't mix them.

Q: “Can you show where the subject/object distinction has been confused?” (<https://twitter.com/markgotproblems/status/1494620707971637255>)

A: What is your distinction of subjective/objective? (When you are thinking of the objective reality, you shouldn't think about the causal effect of your subjective reality. It's redundant.)

Q: “I'd hope it's very similar to yours and everyone else's.” (<https://twitter.com/markgotproblems/status/1494621433854627842>)

A: No. As I observed, people have very different opinions on the distinction of subjective/objective.

A: People tend to think the same thing twice. When people thinking about the objective reality, they tend to think about their subjective reality at the same time. But their subjective reality is the effect of the objective reality. So they think about the same thing twice – redundant.

Q: “I feel we've fallen off the tracks here...” (<https://twitter.com/markgotproblems/status/1494621842862231558>)

A: OK. My views are based on study of Conway's Game of Life. The cosmos is similar to a Conway's Game of Life system.

Q: “Yes, I feel I understand the fatalist position. I'm just not seeing why you're driving at it by denying particular options on consciousness which appear, on the face of it, consistent with the view.” (<https://twitter.com/markgotproblems/status/1494622654824955907>)

A: My view is fundamentally skepticism. I do not insist on anything. I don't have any concrete belief. I'm open to change at any time.

A: My view on subjective/objective is based on my observation of Conway's Game of Life system. Each physical object (in our cosmos) corresponds to a pattern in a Game of Life system.

Q: “You can be a fatalist and still preserve the existence of first person experience. The deterministic nature of a closed causal system doesn't seem to be a motivational argument to deny experience. You're not bridging that gap in an obvious way.” (<https://twitter.com/markgotproblems/status/1494623241494794240>)

A: I deny experience, because I can't prove that. This is my logic.

Q: “I've never been tempted to deny my own consciousness on the basis that I can't show it to you objectively (much less would I have to if I were a brain in a vat). I'm tempted to think I have experiences because I'm acquainted with them - they're the most obvious thing in my world.” (<https://twitter.com/markgotproblems/status/1494624833753202691>)

A: You have one perspective. It can think of subjectivity and objectivity. I have two perspectives. In one perspective, I only think of subjectivity. In the other, I only think of objectivity. The latter one doesn't trust the former one. The latter one declines the existence of experience.

Q: “Well it seems like you're holding a purely subjective datum to objective epistemic standards of scrutiny - of course you can't objectively prove the existence of consciousness. This is precisely the Hard Problem.” (<https://twitter.com/markgotproblems/status/1494624041247858690>)

A: The hard problem assumes the existence of subjectivity, that's why it is hard. I do not assume the existence of subjectivity. It might exist. It might non-exist. – it doesn't matter.

Q: “It seems our fundamental disagreement is here. I think it's hugely consequential whether or not subjectivity exists. I think it's less consequential whether subjectivity has any causal effects on objects in a strong sense.” (<https://twitter.com/markgotproblems/status/1494626649937260544>)

A: But it has no difference on the view of fatalism.

Q: “You think it makes no difference whether or not you can experience the fate of the universe? Interesting.” (<https://twitter.com/markgotproblems/status/1494627333508145155>)

A: My fatalism is actually determinism. I do not know the fate of cosmos. Although the cosmos has a fate.

Q: “Does fatalism require you to know the fate of the universe, or just that the universe has a predestined fate?” (<https://twitter.com/markgotproblems/status/1494628046116208643>)

A: My view is hard determinism. My explanation of hard determinism is a kind of fatalism. It is not supernatural. The cosmos has a fate. No one (in the cosmos) knows it.

Q: “If I wanted to deny experience, I'd first need to account for why my inner world seems to be made out of them, and why this seeming is deeply wrong. Determinism doesn't seem to have any bearing on that.” (<https://twitter.com/markgotproblems/status/1494625257537388546>)

A: I use one observer to observe my inner world. I use the other observer to observe my outer world. The latter observer does not need to trust the former observer. But you only have one observer, so there is no trust issue.

A: By using two observers, I can divide subjectivity/objectivity clearly. You mixed them, because you use one observer to observe them.

Q: “No, I make a firm subject/object distinction. Mine is just epistemic, not metaphysical.” (<https://twitter.com/markgotproblems/status/1494627079748468736>)

A: Our minds work differently. In a sense, I have two minds, a subjective one and an objective one. You have one mind.

Q: “I'm not sure what an "objective mind" means, nor how it would be instantiated or deployed.” (<https://twitter.com/markgotproblems/status/1494627607043887108>)

A: Read my article.

A: Practice.

A: Meditation.

Q: “I'm not sure how engaging in an entirely introspective practice gets you an objective mind. I feel we're wading into a very confused ditch here.” (<https://twitter.com/markgotproblems/status/1494629205899939840>)

Q: “What I'm hoping to hear is some account of why two (or fifty million) observers get you out of subjectivity and into objectivity. And, even if it does, why any of this means determinism has anything to do with the veracity of any given metaphysical options about consciousness.” (<https://twitter.com/markgotproblems/status/1494636498074972161>)

A: Why learning science can make a person materialism? It's hard to explain. This answers your first question. After you have two observers, you will not be interested in the second question.

Q: “I did learn a lot of science. Merely defining two stances of observation doesn't get you out of subjectivity. Observation \*is\* subjectivity by definition.” (<https://twitter.com/markgotproblems/status/1494638062437077033>)

A: Then, you can learn something about Conway's Game of Life.

Q: “I'm not sure I need to learn any more than I already know about zero-player models to understand why anything you've said so far makes sense...” (<https://twitter.com/markgotproblems/status/1494638904703598593>)

A: I see. The cosmos is a zero-player game. Do you agree?

Q: “I don't agree that the universe is a zero-player game in the sense that there is no consciousness, for the reason I've given (there's one case I take to be satisfied). I do agree that the premise that I am conscious doesn't entail that consciousness has to have causal effects.” (<https://twitter.com/markgotproblems/status/1494640167893843970>)

A: Why you don't agree? Because you can experience your experience?

Q: “Yes, and I think that if I want to deny that I am experiencing my experience, I need to motivate that.” (<https://twitter.com/markgotproblems/status/1494641321159626787>)

A: Okay. By using two observers, I can work around the issue you are facing. That's why your issue is not an issue to me. That's why I'm not interested in that issue.

Q: “And I'm saying I can't see how postulating more instances of mind-entities can possibly eliminate mind-entities from your picture of reality. It's like claiming you can eliminate water droplets by postulating rain.” (<https://twitter.com/markgotproblems/status/1494642685478518785>)

A: My mind contains two observers. The first one is the same as yours. The second one views the cosmos as a state machine without any consciousness. I wrote my article, using the view of the second observer. The second observer does not trust the first observer. So, consciousness does not exist, to the second observer. It’s a trick of trust. In a sense, I do not trust myself.

A: “Trust no one.” (<https://twitter.com/KyferCooper/status/1494643648859934739>)

A: People trust their own experiences. I do not trust my own experience.

Q: I don't think you have to trust you experience in order to know you're having one. (<https://twitter.com/markgotproblems/status/1494644148888080407>)

A: Imagine you have two personalities. One does not trust the other.

Q: “So you don't view reality as a zero player game because you've just postulated two players.” (<https://twitter.com/markgotproblems/status/1494643212660744192>)

A: The two observers are not players.

Q: “Yes, but you haven't gotten mind out of the picture. Your picture literally \*is\* two observational stances a mind can take.” (<https://twitter.com/markgotproblems/status/1494643849960034304>)

A: Observers do not exist in the objective reality.

Q: “It's not coherent to postulate an observer to observe objective reality and then claim observers don't exist from the objectively observed stance. It's kicking the metaphorical floor out from underneath you.” (<https://twitter.com/markgotproblems/status/1494644747801141250>)

A: The observer to observe the objective-theory is not a real/actual/physical observer, but my imagination only.

Q: “And your imagination is what? Not observing anything? How can that be if you've defined it as observing the system.” (<https://twitter.com/markgotproblems/status/1494645737115815943>)

A: Imagine you are watching a Game of Life system. You are the second observer yourself.

Q: “If you're claiming 1) there are no minds and 2) there are any more than zero observers you have, at best, a conceptual confusion and, at worst, a contradiction.” (<https://twitter.com/markgotproblems/status/1494646485492895752>)

A: I didn't claim that there are no minds. I claim that, "whether there is mind or not" is not important. Observers doesn't equal to mind.

Q: “What are observers if not minds? Why do you need to postulate the first subjective observer if it doesn't matter whether or not it exists. Why no just go with the objective stance? It doesn't seem very theoretically elegant if the postulation isn't hoping to explain some datum.” (<https://twitter.com/markgotproblems/status/1494648625749757960>)

Q: “I stated that the apparent existence of one's own experience presents a challenge in need of response by any theory of consciousness.” (<https://twitter.com/markgotproblems/status/1494686920538046472>)

### (25)

Q: “I've read the subjective/objective state distinction your paper draws. I'm still unsure as to how the questions I asked you betray any conceptual misunderstanding of your view.” (<https://twitter.com/markgotproblems/status/1494700429841686532>)

A: Do you agree with me on my definition of subjective/objective in my preprint?

Q: “No. My subject/object distinction is ontological. Subjectivity is first-person, thoroughly mind-dependent ontology. Objectivity is the thoroughly mind-independent causal structure of the world.” (<https://twitter.com/markgotproblems/status/1495004487467122689>)

A: What's the difference between yours and mine?

Q: “The setup of your distinction states that it's an observational stance your mind deploys to conceive of the state machine. I don't see why you don't just define the state machine as mind-independent.” (<https://twitter.com/markgotproblems/status/1495005598060060674>)

A: So, our difference is, your objectivity is not observable, my objectivity is observable. Is that correct?

Q: “I'd rather say: for something to be objective it is for that thing to be possible in the absence of observation.” (<https://twitter.com/markgotproblems/status/1495006782435041287>)

A: I agree with you on this. That's my assumption too -- although I didn't write that explicitly.

Q: “Then I think the setup of your distinction is probably stating something you don't want to say, which is that subjectivity and objectivity are two forms of observation.” (<https://twitter.com/markgotproblems/status/1495007496322404355>)

Q: “For me, the objective world is not contained in my mind. I can't even introspect and give you a complete structural account of my own body, let alone the entirety of reality. I'm, in a very strong sense, in complete subjective ignorance of objectivity.” (<https://twitter.com/markgotproblems/status/1495009966385733636>)

A: For me, the objective world is not contained in my mind either. I can imagine the objective world in my mind -- is that wrong/problematic? I can imagine the objective world in my mind -- it does not mean that the objective world is actually/objectively contained in my mind.

Q: “"My mind contains two observers" is probably the kind of sentence you want to steer clear of if you don't want people to think you mean that your mind contains two observers.” (<https://twitter.com/markgotproblems/status/1495011496132239365>)

A: I didn't write this in my preprint. "My mind contains two observers" is an informal expression.

A: I'm, in a very strong sense, in complete subjective knowing of objectivity.

Q: “But you're not ontologically. It's epistemically impossible to view the world from anything other than the subjective stance.” (<https://twitter.com/markgotproblems/status/1495012479365173250>)

Q: “Explain to me how you can possibly have anything other than a subjective conception (a mind-dependent model) of what reality independent from your mind is like.” (<https://twitter.com/markgotproblems/status/1495013636863139840>)

A: I can't. It's a faith.

Q: “It's not, it's recognition of a logical impossibility. Concepts occur only in minds and are therefore mind-dependent. If all concepts are mind-dependent, your concept of objective reality is mind-dependent.” (<https://twitter.com/markgotproblems/status/1495014736055971843>)

A: You are right. My objectivity is my assumption. But it is good enough for me. I’m satisfied with this assumption. You are one step more skeptical than me.

Q: “I'm not skeptical at all. I'm pointing out a conceptual confusion in the setup of your view.” (<https://twitter.com/markgotproblems/status/1495015846233747458>)

A: You are pointing out that, we will never know the objectivity. I agree with you. My objectivity is a state machine -- it's not the ultimate objectivity.

Q: “Yes, it's fine to conceive of objective reality as a state machine. But, one way we can test the theoretical constraints of any theoretical model is to set it against the data we have. In this case, I think we have two data we know are real: experience and physical structure.” (<https://twitter.com/markgotproblems/status/1495019369373573120>)

Q: “If you want to deny consciousness/experience I'd need an argument as to why I should eliminate it from the picture of fundamental reality, particularly when it seems to be the data I'm most acquainted with.” (<https://twitter.com/markgotproblems/status/1495019765454315521>)

A: Logically speaking, the ultimate objectivity is unknowable. I place a state machine in the place/seat of the ultimate objectivity. However, the state machine is not the ultimate objectivity -- it's my subjective assumption of the ultimate objectivity.

Q: “I don't think it does us any work to simply deny it and proceed as if the universe is an unconscious state machine, when the concept of it as a state machine is sufficient to prove it's not unconscious.” (<https://twitter.com/markgotproblems/status/1495020326299787265>)

A: What do you mean? If I have a concept of a state machine (e.g., a Game of Life system), does it prove this state machine to be conscious?

Q: “A concept proves that there is at least one mind. If there is one mind, the state machine/zero player game model doesn't track reality.” (<https://twitter.com/markgotproblems/status/1495170066123563011>)

A: You mean, if a Turing machine (within a Game of Life system) has a concept, it means that the Turing machine has a mind. Is that what you mean? You assume that only a mind can have a concept. I do not assume this. I assume that a Turing machine can have a concept -- no matter it has a mind or not. I assume that cognition does not require a mind. A Turing machine has a cognition -- it doesn't need to have a mind to contain the cognition.

Q: “A Turing Machine is a computational system which does not have cognition.” (<https://twitter.com/markgotproblems/status/1495302693614755844>)

A: In my opinion, it has cognition... And a human brain is a Turing machine...

Q: “Cognition is thoroughly mind-dependent.” (<https://twitter.com/markgotproblems/status/1495304175789522945>)

A: Here comes a fundamental idea in my preprint. I claim that a human brain is a Turing machine (TM). If a brain has consciousness/mind/cognition, then a TM has consciousness/mind/cognition, even if this TM is part of a Game of Life system. This is my position. I think you disagree with it.

Q: “Then you either reduce cognition to computation, or you misunderstand what features of cognition computation is exhausted by. In either case, we disagree.” (<https://twitter.com/markgotproblems/status/1495307743414083585>)

A: I reduce cognition to computation. Because I think cognition \*is\* computation.

Q: “Then I think you fail to account for what it's like experientially for a cognitive entity to understand a proposition.” (<https://twitter.com/markgotproblems/status/1495308299645992960>)

A: I don't trust a human individual's report on her subjective experience. I deny its validity. I ignore it.

Q: “Whether or not a human's report on their subjective experience is truth-tracking or not, the fact that you're having one (whether a hallucination or a fine-grained representation of objective reality) is sufficient to show consciousness is exhausted by computational-talk.” (<https://twitter.com/markgotproblems/status/1495309458095976450>)

(A: I don't trust a human individual's report on her subjective experience. I deny its validity. I ignore it.)

Q: “And you don't ignore it - you try to explain it in terms of adequately sophisticated computation. I just think this betrays a misunderstanding of the data in need of explanation. (<https://twitter.com/markgotproblems/status/1495310078341177355>)

(Q: “Whether or not a human's report on their subjective experience is truth-tracking or not, the fact that you're having one (whether a hallucination or a fine-grained representation of objective reality) is sufficient to show consciousness is exhausted by computational-talk.” (<https://twitter.com/markgotproblems/status/1495309458095976450)>)

A: You know a person might have multiple personalities. You should be able to understand this: Imagine I have two personalities. One personality has a hallucination/subjectivity. The other personality doesn't have it. Now I'm under the latter personality’s hat.

Q: “This explanation is mere assertion. You're simply stating you don't have experience for the purpose of eliminating it from your picture of reality. It's a well-trodden move and there are far more plausible routes into it. (Dennett, for example)” (<https://twitter.com/markgotproblems/status/1495311311235956736>)

A: Yes, in a sense, I'm simply stating I don't have experience for the purpose of eliminating it from my picture of reality. In a sense, I claim that I don't have experience. Am I the first one who claim this?

Q: “I'm not sure who precisely was the first person to hold that view, but there are loads of views which aim to eliminate qualia from the consciousness literature. Eliminativist materialists like Dennett; some illusionists. Chalmers calls you Type-A materialists.” (<https://twitter.com/markgotproblems/status/1495314610890625025>)

…

A: If my theory has two parts, A and B. B is based on A. You disagree A, so you ignored B. Now, I'm asking you, whether you understand B (for example, the content about "causality")?

Q: “I don't view the separate components of your paper to be mutually exclusive in the way that you've just suggested. I can disagree with the mind ontology part and still agree with your view on causality. I certainly didn't ignore it.” (<https://twitter.com/markgotproblems/status/1495323032545632256>)

A: Do you agree with my view on causality?

Q: “Yes, I certainly think that it's a plausible view to postulate that closed causality entails no causality. Additionally, as I've said before, I don't think that consciousness needs a causal role to require explanation that satisfies the epistemic standards my own view.” (<https://twitter.com/markgotproblems/status/1495324238626107393>)

A: About the existence of consciousness, can you imagine/agree that "every other person (except yourself) does not have consciousness"?

Q: “Yes, I understand your argument from solipsism. It seems it still leaves us with one case of consciousness to explain.” (<https://twitter.com/markgotproblems/status/1495325771077931010>)

A: OK. If you believe that you fully understand my article, would you please kindly summarize my article in ten sentences? Thanks!

Q: “Argument for simulated reality from two premises:

1) Mind and brain/computational function can be shown to be demonstrably indistinguishable by establishing correct metaphysical situation for Turing Machines

2) Given (1) there are no radical inconsistencies with conceiving of reality as an acausal state machine.

Therefore, the view that reality can be conceived of as a functional state machine is coherent.” (<https://twitter.com/markgotproblems/status/1495328135000252422>)

A: Brilliant.

Q: “I'm not convinced you've explicitly argued against the views which pose some of the biggest challenges to your view. You've argued for and defended arguments \*for\* your view, but I don't feel any argumentative challenge pressing on my own views, for example.” (<https://twitter.com/markgotproblems/status/1495335673234079746>)

A: You mean, I didn't convince you with my explanation. Is that correct?

Q: “You've given good arguments for your view, but they don't motivate me to leave my position, or make me feel any pressure to want to eliminate consciousness.” (<https://twitter.com/markgotproblems/status/1495338121713623047>)

A: In my opinion, it's not what a philosophical argument can do. Human has psychological needs. Psychological needs decide the philosophical position they will take. I accept a philosophical view, actually because of my psychological needs... (For example, people who believe in "love" actually need to hate. They must believe in "love", otherwise they don't have reason to hate.)

Q: “I disagree - psychologically I'm disposed to believe a hard type-A materialist view and vehemently argued for it as an undergraduate. It took years of chipping away by the likes of Goff/Strawson et al to persuade me that my intuitions might be wrong.” (<https://twitter.com/markgotproblems/status/1495340770722820097>)

A: It took years... Actually, what philosophical position you will take (at any moment) is directly-fated. For example, if you didn't know Goff/Strawson, you are still a materialist. Different philosophical positions are like different religions... They have same psychological effects as religions... Laymen/scholars do view some philosophical positions as cults...

Q: “That would tend to be an odd view, given that I've just sketched the opposite of cultish behaviour - that is, the willingness to change one's view in the presence of new information.” (<https://twitter.com/markgotproblems/status/1495344312628183042>)

A: In a deterministic view, the "willingness" is not free. No one can change her view freely. One must accept a view based on the information/knowledge she gets. Do you subscribe to hard determinism?

Q: “I actually think the differences between hard, soft and compatibilists conceptions of determinism are mostly semantic and not philosophically interesting. But, ultimately, yes (against all of my psychological intuitions) I believe some form of determinism to be the most plausible view.” (<https://twitter.com/markgotproblems/status/1495347908249636867>)

A: Typically, a person's belief system is mixed. One who subscribe to a philosophical view, her daily life actually follows another philosophical view. She is not aware of it. That's why it's hard to communicate with a person on a philosophical view. I do philosophy like do psychology. I know people have different beliefs, I don't know how to argue with all these different beliefs... I don't think it to be possible to argue with all different beliefs... People's beliefs are actually mixed/weird, I don't believe I can convince them. As a philosophical view, you agree with hard determinism. However, psychologically, you don't think it has much to do with your daily life. A philosophical position is like a religion -- it needs practice in daily life. That's why I said "practice" and "mediation" earlier.

Q: “That's precisely \*not\* like religion at all, which prescribes preservation of dogmatic belief.” (<https://twitter.com/markgotproblems/status/1495349016917385218>)

A: We are using different definitions of the term "religion" here. Perhaps I should use "belief system" instead.

(A: As a philosophical view, you agree with hard determinism. However, psychologically, you don't think it has much to do with your daily life. A philosophical position is like a religion -- it needs practice in daily life. That's why I said "practice" and "mediation" earlier.)

Q: “Well, no, it's my psychological intuitions that are wrong if determinism turns out to be true, and the philosophical argument that resists those intuitions is modifying my belief state.” (<https://twitter.com/markgotproblems/status/1495348859878391809>)

A: Through meditation (thinking is the best kind of meditation), one can change her psychological intuition to fit her philosophical view.

Q: “Yes, that's called doing philosophy.” (<https://twitter.com/markgotproblems/status/1495349969309642755>)

A: You have better terms... I'm using terms related to Buddhist philosophy. Buddhist philosophy has great practices on hard determinism.

Q: “Sure, and I think Western philosophy has imported many of those into its machinery.” (<https://twitter.com/markgotproblems/status/1495352022362697729>)

A: Western philosophers don't practice. So, they can't reach spiritual-enlightment/nirvana. So (nearly all of) they don't actually understand it...

Q: “That seems to be an unsubstantiated assumption. I know many Western philosophers who practice various forms of meditation (including vipassana etc.)” (<https://twitter.com/markgotproblems/status/1495352939103277057>)

A: Or in other words, philosophers need to \*do\* philosophy. But human's intuition is hard to change, so actually most philosophers can't actually follow any radical philosophical position (in their daily life), so their own belief system is actually mixed/chaotic, so they just can't accept any new philosophical position, although they believe it to be true (academically).

Q: “I'm sure that's true of people without philosophical training. I'm not sure I know many philosophers who can't accept philosophical views despite their intuitions. (Whether they \*will\* or not is another matter).” (<https://twitter.com/markgotproblems/status/1495355165976801282>)

A: OK. Another issue for philosophers is, usually they don't have concrete background in science & technology. Science & technology also needs practice. Most philosophers who learnt science are not scientists/engineers themselves, so they just don't think like a scientist/engineer. This is not a problem in the time of Aristotle (although Aristotle was a scientist/engineer himself), but a problem the modern time. Physicists/engineers are not philosophers. Philosophers don't understand physics/AI/Turing-machine. They feel like that they understand -- actually they don't understand. It's like that a monk might learn physics, but he is not a physicist himself, so he just can't think like a physicist. In this sense, philosophers are like monks.

Q: “I think that's probably less true today than it was 15 years ago.” (<https://twitter.com/markgotproblems/status/1495356475283279873>)

A: I know what you mean. But, having some knowledge on something, usually is far from enough. To actually subscribe to hard determinism, doing some basic meditation is far from enough. It needs luck. Or in other words, it is directly-fated.

Q: “I don't believe understanding of determinism (hard or otherwise) requires Buddhist meditative practice any more than an understanding of moral realism requires Christian gnostic practice.” (<https://twitter.com/markgotproblems/status/1495361100669464580>)

A: Understandings are different. A Christian’s understanding of moral realism, is different from a layman's understanding of moral realism. A Buddhist meditative practitioner's understanding of determinism, is different from a common person's understanding of determinism... (Understanding is not "Yes" or "No". You have an internal system (neural underpinnings) to do the understanding. We both understand determinism. Our understandings are different -- this is obvious.)

Q: “I know plenty of determinists who don't meditate who have no strong intuitions about having free will, and they believe the view just fine.” (<https://twitter.com/markgotproblems/status/1495363177223184388>)

A: Yes. Fundamentally, who believes what, is fated.

Q: “Sure, that's a perfectly respectable view and I think I share it.” (<https://twitter.com/markgotproblems/status/1495363649287999488>)

A: As you can see, such view is very boring, that's why people are not interested in it...

Q: “It seems problematic for your view, though, to admit of a qualitative, introspective route to understanding the propositions of determinism, and then deny qualia exist.” (<https://twitter.com/markgotproblems/status/1495364481723084812>)

A: I can introspect. Everyone can. I can admit that I can introspect (under some precondition). I don't think it has a fundamental conflict with qualia’s non-existence. (Actually, I do not insist on qualia’s non-existence. My position is: "it's okay for qualia to exist; it's okay for qualia to non-exist".)

Q: “Sure it does. Your experiential understanding of the propositions of determinism \*is\* qualitative.” (<https://twitter.com/markgotproblems/status/1495365509164019720>)

A: What do you mean by "qualitative"? I'm not quite familiar with the terms you use.

Q: “It's perhaps true that, through meditative practice, one can notice deterministic events occurring in real time (the arising and extinguishment of thought etc). Though I'm not convinced meditation is required to understand determinism enough to believe it.” (<https://twitter.com/markgotproblems/status/1495362522223984643>)

Q: “There's something that it's like for you to notice determinism occurring in real time through introspection/meditation and therefore understand the proposition of determinism via the qualia of that experience.” (<https://twitter.com/markgotproblems/status/1495366284980232199>)

Q: “You've spent an awful long time arguing for the non-existence of experience.” (<https://twitter.com/markgotproblems/status/1495366366173487107>)

Q: “And for purely functional computational explanations of reality.” (<https://twitter.com/markgotproblems/status/1495366532213493761>)

A: Hey Mark, you can imagine that I have two personalities. One has experience. The other doesn’t have experience.

Q: “It's perhaps true that, through meditative practice, one can notice deterministic events occurring in real time (the arising and extinguishment of thought etc). Though I'm not convinced meditation is required to understand determinism enough to believe it.” (<https://twitter.com/markgotproblems/status/1495362522223984643>)

A: It's actually reinforcement learning. You have to learn it millions of times, to actually change your psychological intuition to fit your philosophical position. You don't need to close eyes for meditation. Any form of learning will help.

Q: “Well sure, if you want to define meditation that way we have absolutely no disagreement here.” (<https://twitter.com/markgotproblems/status/1495363436003434496>)

A: In the same reason, it's hard for a philosopher without actual practice in science/technology to accept determinism. Of course it's not impossible.

Q: “There's something that it's \*like\* for you to notice and experience determinism occurring in real time.” (<https://twitter.com/markgotproblems/status/1495365656597962753>)

A: To be specific, I can \*imagine\* the movement of elementary particles, and imagine they follow the direct-function. Do you mean that I shouldn't be able to imagine anything?

Q: “There's no reason why you should experience anything at all if the universe is a purely functional state machine, and you've given no reason why we can in spite of this.” (<https://twitter.com/markgotproblems/status/1495366952151392258>)

A: Mark, you believe it to be a fundamental problem -- the hard problem. You want to have it explained. I ignore it, just because I can't explain – there is something which I can't do. I can't explain my consciousness. I admit it.

A: I explain consciousness as a mathematical model, but then I can't explain mathematical model.

Q: “I know you can't. But that's precisely why I don't take type-A materialism to be plausible.” (<https://twitter.com/markgotproblems/status/1495368786383364101>)

A: I also can't explain why the world exist... In case the world doesn't exist, I also can't explain why it doesn't exist... Actually, the world (in the previous sentence) is my consciousness. I don't think my consciousness can answer all questions itself has. The hard problem of consciousness is not the fundamental problem. The fundamental problem is “why the world exists?”. Actually, the world (in the previous sentence) is my consciousness.

Q: “I think that's probably the epistemic situation we're in - we're not hardwired to get at all the details of reality. I don't think we should exclude data which are hard to explain from our completed picture of reality, particularly when we've got good reason to think they're real.” (<https://twitter.com/markgotproblems/status/1495370203500359681>)

A: Is the world around you the objective-theory or your subjective-theory/indirect-geometric-model? We can start from your answer.

Q: “I think that the veridicality of my perceptions have been selected for in terms of their fitness payoffs in the presence of selection pressure, not for their ability to track the truth of objective reality.” (<https://twitter.com/markgotproblems/status/1495372196503564289>)

Q: “So I'm inclined to think that my entire subjective world is a model which selects for fitness payoffs - an indirect model of whatever the mind-independent, objective world turns out to be like.” (<https://twitter.com/markgotproblems/status/1495372650197180420>)

A: You don't trust your model. I see.

Q: “I'm not sure what you mean. I trust my model to maximise my fitness payoffs as best it can. I'm agnostic about whether the model reconstructs the truth of objective reality in doing this.” (<https://twitter.com/markgotproblems/status/1495373985835626499>)

A: I see. You believe that your model is helping you -- you trust your model in this sense. However, you don't believe that the model reflects the truth -- you don't trust your model in this sense. I believe that my model reflects the truth -- I trust my model in this sense. If you don't believe that the model reflects the truth, what can you believe? The only thing you have, is your model.

Q: “I didn't say that I don't believe my consciousness reflects the truth. I said I don't have a strong view about whether it does or not given that all of my perceptions evolved for fitness payoffs, not truth tracking.” (<https://twitter.com/markgotproblems/status/1495375457440583681>)

A: I see. In my opinion, my consciousness about the objective-theory reflects the truth, while my other consciousness doesn't reflect the truth.

A: "Your model" equals to "your cognition". When I say "the model", it means all my cognition. Do you mean the same?

Q: “Yes, I suppose I mean "the perception of reality my brain constructs".” (<https://twitter.com/markgotproblems/status/1495376012519034880>)

A: Do you imagine "the perception of reality" and the "reality" as two worlds? Or as one thing?

Q: “I think that the objective world exists independently from my mind and might/might not be different from the way my mind reconstructs it in its perceptual model. All of objective reality's features sit on a spectrum of how epistemically transparent they are to my perception.” (<https://twitter.com/markgotproblems/status/1495378137475133440>)

A: To make your summary clear, I have some initial questions for you. What is the objective reality (you mean)? Is the world around you the objective reality? Or the objective reality is something you can't see? Then what is the world around you? How do you call the world around you? To better understand my questions, you can search for "Bad Argument" and "Good Argument" in the present article. Please kindly let me know whether you are using one of them mentally.

Q: “Are you asking what I mean by "objective world" in my view, or what I think \*you\* mean by "objective world" in yours?” (<https://twitter.com/markgotproblems/status/1495688572611047425>)

A: Both. Thanks!

Q: “I think I've fairly clearly stated both already.” (<https://twitter.com/markgotproblems/status/1495688944503209992>)

A: Are you imagining like the Good Argument? Or like the Bad Argument?

Q: “I think our metaphysical setup for the two perspectives is pretty much identical. We just might quibble about how coarsely/fine-grained our subjective models map onto objective reality.” (<https://twitter.com/markgotproblems/status/1495690822716641280>)

A: I see. I have a question for you - How do you know that there is an objective reality?

Q: “I'm not really sure going down this road is going to get us anywhere.” (<https://twitter.com/markgotproblems/status/1495696163953070084>)

A: Let me explain it. I assume that there is an objective reality, because I think elementary particles are living in the objective reality. Do you assume the same?

Q: “I think that there is some structure causo-mathematical physics is representing. Whatever that structure is can be called objective reality. I don't really think radically skeptical scenarios do much work at all.” (<https://twitter.com/markgotproblems/status/1495697687131340802>)

A: I assume that, in the future, a physicist might disclose a function to describe our cosmos. That function describes a structure, I call that structure objective reality. Does it make sense?

Q: “Yes, that's my view also.” (<https://twitter.com/markgotproblems/status/1495699490497601539>)

A: OK. I assume that, there is a \*correct\* function to describe our cosmos. What this function describes, is the objective reality. This function is correct, so the knowledge of the objective reality is correct (if I know this function myself).

Q: “Yes, that's a fairly standard view I think most physicists (and I) would subscribe to.” (<https://twitter.com/markgotproblems/status/1495700348266295301>)

A: Then, what's the difference between your view and my view? I don't know. Do you know?

Q: “We both admit conscious eludes explanation. Your route from there is to eliminate it from your picture of reality. My route is to want to find a way to make room for it in a picture of reality.” (<https://twitter.com/markgotproblems/status/1495701174862979073>)

A: Let me explain more. I divide my cognition into two parts. One part is the knowledge about the objective reality. The other part is my subjective reality. I can experience my subjective reality directly, but my subjective reality is biased/fictional. My knowledge about the objective reality is correct/accurate, but it has no meaning. It describes a physical cosmos which is a meaningless state machine. My subjective reality is meaningful. But it's biased/fictional/counterfactual/wrong. How do I connect them? I don't connect them. I use two personalities. One personality focus on the knowledge of the objective reality. The other personality enjoys the subjective reality. They are like two persons. I don't try to connect them.

…

A: How can I say something which is not my view? Can you say something which is not your view?

Q: “Sure, I can explain the views of others.” (<https://twitter.com/markgotproblems/status/1495703595098030082>)

A: So, you know every philosophical view on consciousness, but you are still curious about the hard problem of consciousness, that's your motivation. Is that correct?

Q: “I definitely think the Hard Problem is a problem and I don't think the solution is to ignore it.” (<https://twitter.com/markgotproblems/status/1495705411260932097>)

A: I know your motivation. I'm talking with you about my view around the Hard Problem. To ignore it, is also a solution. That's my solution. If I take it as a solution, I must have a reason. When we discuss on it, you might be able to find the reason, because you know my view, and you also have decent background in psychology. I assume that you might be able to find something interesting to you, by yourself, through our discussion.

A: Why you believe that the Hard Problem is a problem? Can you explain that?

A: You can communicate with top philosophers quite well. And you are super talented. But you still can't solve the Hard Problem by yourself. Why?

A: Perhaps you need some knowledge on something other than philosophy? For example, physics, AI. Have you thought of that?

A: Do you understand the technical details of a Turing machine? Do you fully understand the Wikipedia page on Turing machine? - I don't fully understand it myself.

A: Perhaps you understand everything from a philosophical position -- that's not real understanding.

A: This is a Turing machine in Conway's Game of Life. Do you understand how it works? <http://rendell-attic.org/gol/utm/index.htm>

A: I referenced to this article (McKenzie, A. Reality and Super-Reality: Properties of a Mathematical Multiverse. Axiomathes (2019).) in the present article, do you fully understand it?

A: Do you know that a human brain is a Turing machine?

A: Does a Turing machine have consciousness?

Q: “You should know what my answer to this question will be by now given our prior discussion. On your view, yes, a Turing Machine could theoretically be completely indistinguishable from a brain/mind.”

A: What is your answer on your view?

Q: “On my view, whether or not a Turing Machine is conscious is precisely the same question as asking whether or not a human is conscious.” (<https://twitter.com/markgotproblems/status/1495723313276014594>)

A: What is your belief on this? Do you believe that a TM has consciousness? Or not?

Q: “I can't see why, in principle, a Turing Machine couldn't have consciousness.” (<https://twitter.com/markgotproblems/status/1495723672316825604>)

A: Why it couldn't? Yourself is a TM. Do you have consciousness? Or not?

Q: “I said I can't see a reason why it couldn't. On my view, a sufficiently sophisticated Turing Machine should be able to have subjective experience.” (<https://twitter.com/markgotproblems/status/1495724885376737285>)

Q: “That's why I said "on my view, the answer of whether a TM is conscious is the same as the answer as to whether a human is conscious". I'm open to being persuaded as to whether or not a human had subjective experience, and I think brains are Turing Machines. Therefore...” (<https://twitter.com/markgotproblems/status/1495726526020702215>)

Q: “I'm also open to being persuaded as to whether or not a TM can have subjective experience in the same way.” (<https://twitter.com/markgotproblems/status/1495726653170929674>)

Q: “If it turns out that humans can have subjective experience, TMs can too. If not, TMs can't either.” (<https://twitter.com/markgotproblems/status/1495726784691810307>)

A: A TM couldn't have subjective experience. So, you couldn't have subjective experience. This is my logic. What you feel like to be subjective experience, is not subjective experience. How do you debate on this?

(Q: “I said I can't see a reason why it couldn't. On my view, a sufficiently sophisticated Turing Machine should be able to have subjective experience.” (<https://twitter.com/markgotproblems/status/1495724885376737285>))

A: Why it needs to be sophisticated enough to have subjective experience?

A: Is a computer program a TM?

Q: “Given that a Turing Machine is a mathematical model of computation, it could in theory be made out of bean cans as long as it can perform its functional procedures. So yes, TMs can be software.” (<https://twitter.com/markgotproblems/status/1495835588481671177>)

A: Is this computer program a TM? main(){printf ("hello, world\n");}

Q: “That subroutine in a vacuum? No.” (<https://twitter.com/markgotproblems/status/1495836506300289032>)

Q: “Though there are many TMs enabling you to write it.” (<https://twitter.com/markgotproblems/status/1495836763625082881>)

A: Why No? You just said a computer program is a TM. What's your logic here? I don't understand. Please kindly explain it. Thanks.

Q: “I'm obviously not saying all programs are TMs. I'm saying some subset of all possible TMs could in principle be software, rather than hardware.” (<https://twitter.com/markgotproblems/status/1495837584890777603>)

Q: “No, I didn't say "a computer program is a TM". I said "Turing Machines could in principle be software". (<https://twitter.com/markgotproblems/status/1495837359539212288>)

A: Give me an example of a software which is a TM.

Q: “A simple 'one-tape' Turing Machine program could count the number of odd and even numbers in a sequence.” (<https://twitter.com/markgotproblems/status/1495838470551621634>)

A: Is AlphaGo a TM?

Q: “With respect, everyone who's been involved in the study of mind for five minutes knows about DeepMind and AlphaGo.” (<https://twitter.com/markgotproblems/status/1495845700835360775>)

A: OK. You answered my question indirectly. "AlphaGo is a TM", I think that's your answer.

Q: “Water is liquid. Grizzly bears are mammals. Things that satisfy their definitions are those things... Yes, AlphaGo is a TM.” (<https://twitter.com/markgotproblems/status/1495846907473809410>)

A: Why you think AlphaGo is a TM but this program is not a TM? main() {printf("");}

A: AlphaGo is also a computer program. What's their difference?

Q: “Not all executable instructions do this.” (<https://twitter.com/markgotproblems/status/1495848580757733376>)

A: What's the difference between a long computer program and a short computer program? Except their length...

A: I was not asking you the difference between a computer program and a TM. I was asking you the difference between an AlphaGo program and my shortest program.

Q: “A short program is a (or sequence) of discrete executable instructions.” (<https://twitter.com/markgotproblems/status/1495848167035781130>)

A: If I connect a thousand short program into one long program, this one long program is not a sequence of discrete executable instructions anymore?

A: Computer programs are very simple. I assume that you have some experience in programming. AlphaGo is nothing difference from the program you wrote.

A: “The control logics of a program are only like below:

If ... then

loop

Nothing else...”

A: The longest computer program is also written in the same instruction set. The same control logic. Nothing special. The only difference between a long program and a short program, is that you understand what the short program does, while you don't understand what the long program does.

Q: “Are you aware of literature around Searle's assessment of the situation you just sketched?” (<https://twitter.com/markgotproblems/status/1495850389635309568>)

A: No.

A: We tend to believe that a long program has consciousness, only because we don't understand what it does. We can't believe that a short program has consciousness, because we fully understand what it does. When you can't forecast what a program will do, you feel like that it has consciousness. When you (feel like that you) can forecast what a program will do, you feel like that it has no consciousness. If you can forecast what I will say next, you feel like that I have no consciousness. If you can't forecast what I will say next, you feel like that I have consciousness. So, do I have consciousness?

Q: “As I've previously stated, I don't think determinism has any bearing on whether or not we're conscious.” (<https://twitter.com/markgotproblems/status/1495851376135577606>)

A: Whether or not I have consciousness, I will say the same words to you. Do you agree?

Q: “\*whether or not we can have consciousness, I should say, where "we" is defined as "any entity for which an answer to the question of whether or not it is conscious is possible".” (<https://twitter.com/markgotproblems/status/1495852398287409154>)

Q: “That's to say, I think whether I can forecast what you, I or a TM will do or say is wholly independent of whether it's experiencing anything.” (<https://twitter.com/markgotproblems/status/1495852697077096453>)

Q: “It might also be entirely unpredictable and have experience, or be entirely predictable and have none.” (<https://twitter.com/markgotproblems/status/1495853404610088963>)

Q: “A TM might be entirely predictable to itself and all others, but have experience. Conversely, it might be entirely unpredictable to itself and all others and have no experience.” (<https://twitter.com/markgotproblems/status/1495853255733219331>)

A: A TM can't be entirely predictable to itself -- I think I proved this in the present article.

Q: “Can't be entirely predictable or can't be entirely unpredictable to itself?” (<https://twitter.com/markgotproblems/status/1495854059257057281>)

A: Can't be entirely predictable to itself.

A: Meditation time. Imagine every person doesn't experience anything. Okay? Then, when a person tells you that "I think, therefore I am", what does this sentence mean?

Q: “Cogito seems consistent with no-experience. Thinking (in a purely computational sense) doesn't seem to require experience at all.” (<https://twitter.com/markgotproblems/status/1495853896740352005>)

A: Imagine every person doesn't experience anything. Then, when a person is talking with you about Hard Problem, what does she mean? Does she have consciousness?

Q: “They'd merely be uttering falsehoods about the world.” (<https://twitter.com/markgotproblems/status/1495855280302792707>)

Q: “No, she doesn't have consciousness. But it's conceivable that the world could exist exactly as it is (with people writing books about the HP and all) but have no inner experience.” (<https://twitter.com/markgotproblems/status/1495855155778043917>)

A: Then, why the Hard Problem is still a problem to you?

Q: “Because I'm not pursuaded to move from the seeming reality of my own experience to denying its existence simply because a world without experience is conceivable. I know it's conceivable - now I want an account of why the world thoroughly doesn't seem like that.” (<https://twitter.com/markgotproblems/status/1495856694890479622>)

A: It's conceivable, but only with meditation. When you meditation, the world has no inner experience. When you forget to meditation, the world doesn't seem like that. Then, resume your meditation... As long as you stop the meditation, people seem to have inner experience. In your meditation, people don't have inner experience. In your meditation, you don't have inner experience yourself, because you are also a TM. You can conceive that you don't have inner experience, although it doesn't feel like that.

Q: “What's the thing noticing what it's like to be in absence of experience?” (<https://twitter.com/markgotproblems/status/1495859171526418435>)

A: Logically speaking, in your meditation, you believe that yourself has no inner experience. However, you still feel something like inner experience. That's a conflict. In my opinion, it means that your feeling (of having inner experience) is wrong/counterfactual.

Q: “Ok, so your motivation for eliminating experience sounds like illusionism based on a counterfactual.” (<https://twitter.com/markgotproblems/status/1495859945618776068>)

A: I don't really understand illusionism.

Q: “Illusionism is one of the materialist views I'm most sympathetic to. I think the most likely broad theoretical options on consciousness are either illusionism on the materialist side, or some version of panpsychism.” (<https://twitter.com/markgotproblems/status/1495860761620533249>)

Q: “Illusionism is tricky, but it sounds like you have a form of it in your view.” (<https://twitter.com/markgotproblems/status/1495860294765187072>)

A: I don't like tricky things...

A: Is a Conway's Game of Life system a TM?

Q: “If anything is a TM, a Conway Game of Life surely is.” (<https://twitter.com/markgotproblems/status/1495869251600662535>)

A: So, our cosmos is a TM too. What's the difference between our cosmos and a Game of Life system?

Q: “Well, one difference is that at least one half of the current causo-mathematical structure we use to represent our understanding of the universe (general relativity and quantum mechanics) is not Turing complete.” (<https://twitter.com/markgotproblems/status/1495870699642175492>)

A: You can view our cosmos as a state machine. Right?

Q: “I think we can coarsely represent the universe as a state machine. Whether it is one in itself seems unlikely, given the physical constraints our best physical theories would place on things like memory access.” (<https://twitter.com/markgotproblems/status/1495871676503973890>)

A: Sorry, what do you mean by "memory access"? What memory?

A: I'm quite interested in it.

Q: “I'm sympathetic to that view. I've often made the argument that admitting of objectivity entails the non-existence of exclusively subjective facts.” (<https://twitter.com/markgotproblems/status/1495874041390981127>)

Q: “But I think your argument actually entails idealism where the only mind in the universe \*is\* the state machine.” (<https://twitter.com/markgotproblems/status/1495871930917867525>)

A: But I don't call it "mind". I call it "existence" or something like that.

Q: “Sure, my summary was poorly phrased. I mean something more like: Your argument entails that there is only the state machine and, if anything can be called mind, it's that (or features of that).” (<https://twitter.com/markgotproblems/status/1495872777026523153>)

A: Under this view, the consciousness of any individual is not important -- it doesn't matter whether an individual has consciousness or not. 1/2

Q: “In the sense that local experience is just state changes occuring in some module of the system, then I see what you mean.” (<https://twitter.com/markgotproblems/status/1495875005942534157>)

A: Even if that individual is myself... 2/2

A: Does myself exist as an individual? Or does myself exist as an element/subset/part of a state machine?

Q: “I suppose on your view there's no distinction between those sentences really. To be an individual \*is\* to \*be\* some subroutine of a program.” (<https://twitter.com/markgotproblems/status/1495875354791186438>)

A: So, there is no distinction between you and me. Right? I am talking to myself. Right?

Q: “There is only difference if we're focusing on specifics of the machine, but not if we zoom out.” (<https://twitter.com/markgotproblems/status/1495876017780662274>)

A: In my opinion, the view (we have) when we zoom out is the only correct view.

Q: “The collective understands.” (<https://twitter.com/markgotproblems/status/1495876681227198464>)

Q: “An elephant's trunk is different to its tail, but the whole picture is one entity.” (<https://twitter.com/markgotproblems/status/1495876190795620358>)

A: It's a philosophical discussion between a tail and a trunk (of the same elephant)...

Q: “The Mayans used to greet each other with an embedded acknowledgement that they were fundamentally identical. Interesting.” (<https://twitter.com/markgotproblems/status/1495877647993344005>)

A: How do you identify yourself? A brain? A human body? A car (when you are driving a car)? A nation (if you are the president)?

Q: “I think that's a perfectly robust position.” (<https://twitter.com/markgotproblems/status/1495879689138802688>)

Q: “Well, on your view, it's our epistemic situation forcing us to make transparency errors about identity (we feel like insular individuals), but this intuition can be broken down through careful conceptual introspection.” (<https://twitter.com/markgotproblems/status/1495879628484923400>)

A: Usually you identify yourself as a human body. But this is just what we are used to... You are actually your mind. You are not a human body. Agree? You are imagining yourself as a human body. This is untrue. You are actually the cosmos. Or you are your mind. You are either your mind or the cosmos. You can only choose one of them. When you choose to be your mind, the cosmos is not important. When you choose to be the cosmos, your mind is not important. They can't be both important at the same time. When they are imagined to be both important at the same time, it is called the Hard Problem.

Q: “I think this is a stronger route than saying you ignore the hard problem. It seems more like you're saying the HP dissolves from the objective stance and only exists as one of these epistemic transparency errors from the subjective stance.” (<https://twitter.com/markgotproblems/status/1495880517891330056>)

A: When you choose to be your mind, you need to explain/answer why your mind exists. When you choose to be the cosmos, you need to explain/answer why the cosmos exists. You can't explain/answer...

A: An earlier question, do you view the world around you the objective reality? or the subjective reality? In Hard Problem, philosophers view the world as both her objective reality and subjective reality at the same time. This is wrong. Philosopher shouldn't choose the world (around her) as both the objective reality and subjective reality at the same time. This is a bloody mistake. Hard Problem is based on this bloody mistake. Hard Problem is not real. The real problem should be "Why the world exists?", not the Hard Problem (of consciousness). In the previous sentence, the world means my consciousness. "Why the world exists?" has nothing to do with the objective reality. So, it's not the Hard Problem (of consciousness). A more fundamental problem should be "why I have cognition?". I use my cognition to divide objective reality and subjective reality, and to lead to the Hard Problem (of consciousness). The dividing of objective-theory and subjective-theory is done by my cognition. It's not the correct question to ask why the objective-theory and the subjective-theory exist at the same time (Hard Problem). The correct question is "Why my cognition exists?". And then the next question should be: "Why my cognition divides objective-theory and subjective-theory in a way my cognition can't explain?". The dividing of objective-theory/subjective-theory is not objective. It's wrong/fictional. That's why we can't answer the Hard Problem. We will never be able to answer the Hard Problem. The Hard Problem is a fake question. The Hard Problem is a question like "why love exist?" Actually, love doesn't exist... You imagine love exists. Then you ask "why love exist?". The proper answer is not to explain why love exists, but to tell you that love does not exist...

Q: “Yes, I see how your view reconstrues the HP as a category error.” (<https://twitter.com/markgotproblems/status/1495885415726960647>)

A: "Why love exist?" is a fake question. The Hard Problem is a fake question. The Hard Problem is: "Why both the objective-theory and the subjective-theory exist at the same time?" They don't exist at the same time. You imagine they exist at the same time. We are used to this imagination...

Q: “It's a cool view. I like it.” (<https://twitter.com/markgotproblems/status/1495885544643080195>)

A: So, I have to use one personality to experience the subjective reality, while use the other personality to "observe" the objective reality. I shouldn't use one personality to deal with both the subjective-theory and the objective-theory at the same time -- it's a logic error. In the present article, I was trying to connect/map the views of these two personalities. In theory, a person who doesn't have these two "personalities" might also be able to understand the present article. But I'm not such a person, so I don't know how. I hope a person can develop such two personalities after reading the present article...

Q: “I'm not sure that referring to them as "personalities" is hugely helpful. I wonder if you're sketching something more like Wilfrid Sellers' scientific and manifest image. <https://plato.stanford.edu/entries/sellars/#Onto> ” (<https://twitter.com/markgotproblems/status/1496004667796598785>)

A: When I view myself as the object of my cognition, I see the scientific image. When I forget to view myself as the object of my cognition, I see the manifest image.

Q: “Excellent! I'm glad the distinctions are analogous.” (<https://twitter.com/markgotproblems/status/1496246461268480006>)

A: The scientific image is the thing-in-itself, while the manifest image is a MM of the thing-in-itself. It's impossible to see the scientific image and the manifest image at the same time. When a person is not aware of this, she sees the scientific image and the manifest image at the same time -- actually she sees a mixture of the two images. The mixture is wrong/incorrect. And then the Hard Problem is a problem for her. In the context of the Hard Problem, she actually mixes the thing-in-itself with the mathematical-model of the thing-in-itself – this is a category error.

Q: “I think the difference between your and Sellars' views is the level of phenomenal access you have to the scientific image. For metaphysical reasons you view the scientific image as phenomenally accessible.” (<https://twitter.com/markgotproblems/status/1496247252314165250>)

A: When a TM talks about its consciousness/mind, it is actually talking about its manifest image. When a TM talks about the "physical world", it is actually talking about its scientific image. That's why a philosophical zombie can talk about its "consciousness/mind". Why a Turing machine's consciousness/mind and its "physical world" exist at the same time? (Why the Hard Problem?) Both of them only exist (at the same time) in the TM's cognition -- both the TM's "consciousness/mind" and "physical world" actually exist in the TM's cognition as (subsets of) the TM’s cognition. Another TM can understand the former TM's words regarding the former TM's manifest/scientific image, only because the latter TM also has a manifest image and a scientific image in the latter TM’s cognition. So, philosophical zombies can understand each other’s “consciousness/mind” quite well. If a Turing machine's cognition can divide/organize its manifest image and its scientific image clearly and correctly (following the logic that its manifest image mathematically-models/reflects/represents/simulates its scientific image), and can match/map between its manifest image and its scientific image, and can identify itself as its scientific image, then it seems like that this Turing machine views its scientific image as phenomenally accessible -- from the perspective/viewpoint of another Turing machine (who identifies itself as its manifest image).

A: A TM only has access to the manifest image and the scientific image in its cognition. A TM has no access to anything outside of its cognition. When a TM imagines the scientific image to be something outside of its cognition, this imagination itself is part of this TM’s cognition. In this sense, the objective-theory is part of this TM’s cognition – this TM has no way to access the \*actual\* objective-theory (which is imagined (by this TM) to be outside of this TM’s cognition). What this TM feels to be the objective-theory, actually is part of this TM’s cognition.

A: To me, the only thing which exists is my cognition. Why my cognition exists? Why my cognition divides the existence into two parts, the manifest image and the scientific image? The manifest image is my mind/consciousness. The scientific image represents an outer world which is outside of my cognition. Does the outer world \*actually\* exist? I have no way to know that. It’s logically impossible for my cognition to \*actually\* know that. The Hard Problem is not the ultimate problem. The Hard Problem (the coexistence of my mind/consciousness and the physical world) can be explained by the coexistence of the manifest image and the scientific image within my cognition. It’s logically possible that there is only my cognition. The state machine is actually my scientific image. My mind/consciousness is actually my manifest image.

A: It is plausible that my scientific image is a mathematical structure, while my manifest image is another mathematical structure. It is plausible that my cognition is a mathematical structure.

A: So, logically speaking, there are two possibilities to me: 1) There is only the state machine (which is a mathematical structure) and, if anything can be called cognition/mind/consciousness, it's that (or features/components of that). 2) (Just like what my dream does,) there is only my cognition (which is a mathematical structure) and, if anything can be called the state machine, my mind/consciousness or another individual’s cognition/mind/consciousness, it’s that (or features of that).

(A: Usually you identify yourself as a human body. But this is just what we are used to... You are actually your mind. You are not a human body. Agree? You are imagining yourself as a human body. This is untrue. You are actually the cosmos. Or you are your mind. You are either your mind or the cosmos. You can only choose one of them. When you choose to be your mind, the cosmos is not important. When you choose to be the cosmos, your mind is not important. They can't be both important at the same time. When they are imagined to be both important at the same time, it is called the Hard Problem.)

A: When you choose to be your mind, you are identifying yourself as your manifest image. When you choose to be the cosmos, you are identifying yourself as your scientific image. You can either identify yourself as your manifest image, or identify yourself as your scientific image. You can only choose one of them at any given time. You shouldn’t identify yourself as both your manifest image and your scientific image at the same time.

A: Or you can identify yourself as your cognition, which includes both your manifest image and your scientific image. But then there is nothing else left. When you identify yourself as your cognition, you shouldn’t imagine the existence of anything outside of your cognition. For example, when you identify yourself as your cognition, you shouldn’t imagine the existence of the objective-theory, because now the objective-theory only exists as a subset of your cognition.

A: I can identify myself as my manifest image. I can also identify myself as my scientific image. When I identify myself as my manifest image, it feels like that I am having an ordinary personality. When I identify myself as my scientific image, it feels like that I am having another personality.

A: Or I can identify myself as my cognition, which includes both my manifest image and my scientific image. But it seems useless to identify myself as my cognition in my daily life.

A: When I identify myself as my scientific image, actually I am identifying myself as the thing-in-itself. When I identify myself as my manifest image, actually I am identifying myself as a mathematical-model/reflection/representation/simulation of the thing-in-itself.

(A: When you choose to be your mind, you are identifying yourself as your manifest image. When you choose to be the cosmos, you are identifying yourself as your scientific image. You can either identify yourself as your manifest image, or identify yourself as your scientific image. You can only choose one of them at any given time. You shouldn’t identify yourself as both your manifest image and your scientific image at the same time.)

A: If you imagine your manifest image as the subject (of your cognition), and imagine your scientific image as the object (of your cognition), then, when you choose to identify yourself as your manifest image, it means that you are identifying yourself as the subject (of your cognition).

A: If you imagine your manifest image as the subject, and imagine your scientific image as the object, then, when you choose to identify yourself as your scientific image, it means that you are identifying yourself as the object (of your cognition).

A: You shouldn’t choose to identify yourself as both the subject and the object (of your own cognition) at the same time. You can choose to identify yourself as the subject at some time, and you can choose to identify yourself as the object at some other time. When you choose to identify yourself as the subject, it feels like that you are having an ordinary personality. When you choose to identify yourself as the object, it feels like that you are having another personality.

A: When you are choosing to identify yourself as the object (of your cognition), you shouldn’t imagine yourself to be the subject (of your cognition) at the same time – there is no subject at that time. The two personalities don’t exist at the same time.

A: When you are choosing to identify yourself as the object (of your own cognition), it *feels* like that there is another “you” (as the “subject”) who is located outside of your physical body (or who is located outside of the cosmos) – it *feels* like that you are identifying yourself as the latter “you” (as the “subject”). Your feeling is fictional/incorrect/counterfactual. Actually, you are not the latter “you” (as the “subject”), but the former “you” (as the object). You are used to imagine yourself as the subject (of your own cognition), that’s why you feel like that you are still a “subject” (who is located outside of your physical body, or who is located outside of the cosmos) while you (or your physical body, or the cosmos) are actually the object (of your own cognition).

A: When being identified/imagined (by your own cognition) as the subject (of your own cognition), it feels like that you have libertarian-freedom to act. When being identified/imagined (by your own cognition) as the object (of your own cognition), it is plausible that you don’t have libertarian-freedom to act.

(A: So, logically speaking, there are two possibilities to me: 1) There is only the state machine (which is a mathematical structure) and, if anything can be called cognition/mind/consciousness, it's that (or features/components of that). 2) (Just like what my dream does,) there is only my cognition (which is a mathematical structure) and, if anything can be called the state machine, my mind/consciousness or another individual’s cognition/mind/consciousness, it’s that (or features of that).)

Q: In case that the first possibility is true, do you need to look at both sides of the road when crossing it?

A: In case that the first possibility is true, then whether I will look at both sides of the road (when crossing a road) is not controlled/driven/caused by my thoughts, and my answer to your question is not given/caused by my thoughts. So, my answer to your question is actually meaningless under this context. As I said earlier, I have two “personalities” – I just answered your question from the viewpoint of my second “personality” (which is not my “ordinary” personality). From the viewpoint of my “ordinary” personality, it’s plausible that I will still look at both sides of the road (when crossing a road) – as long as the specific condition allows/requires me to do that.

A: The above answer seems to be a paradox from the viewpoint of my “ordinary” personality, while the above answer is not a paradox from the viewpoint of my second “personality” – I identify myself as my second “personality”.

A: When my physical body/brain is playing chess, if I identify myself as my ordinary personality, then it feels like that my (physical body’s) situation within the game (as a player) is in a *separated/isolated reality (which is separated/isolated from the reality my physical body/brain is living in)*, and then it feels like that my (physical body’s) situation within the game can be changed (by my physical body/brain) libertarian-freely. It feels like that my physical body/brain has impact to the objective-state-evolution of the game, just because my physical body/brain is imagined to be separated/isolated from my (physical body’s) situation within the game. My physical body/brain is imagined to be libertarian-free under this imagination – my physical body/brain is imagined to have the capability to change my (physical body’s) situation (within the game) libertarian-freely. *My physical body/brain (as the subject)* is imagined to have the capability to change *my (physical body’s) situation (within the game) (as the object)* libertarian-freely, because my physical body/brain (as the subject) is not included in the whole picture of my physical brain’s cognition – my physical brain’s cognition feels like that my physical brain’s cognition is libertarian-free. The scope of my physical brain’s cognition only includes my (physical body’s) situation within the game (as a player). The scope of my physical brain’s cognition does not include my physical body’s situation outside of (the scope of) the game. That’s why it feels like that my (physical body’s) situation within the game (as a player) is in a *separated/isolated reality (which is separated/isolated from the reality my physical body/brain is living in)*. That’s why my physical brain’s cognition feels like that my physical brain’s cognition is libertarian-free.

A: When my physical body/brain is playing chess, if I identify myself as my second personality, then it feels like that my (physical body’s) situation within the game (as a player) is not in a *separated/isolated reality (which is separated/isolated from the reality my physical body/brain is living in)*, and then it feels like that my (physical body’s) situation within the game can’t be changed (by my physical body/brain) libertarian-freely. It feels like that my physical body/brain doesn’t have impact to the objective-state-evolution of the game, because my physical body/brain is imagined to be not separated/isolated from my (physical body’s) situation within the game. My physical body/brain is imagined to be not libertarian-free under this imagination – my physical body/brain is imagined to not have the capability to change my (physical body’s) situation (within the game) libertarian-freely. *My physical body/brain (as an object)* is imagined to not have the capability to change *my (physical body’s) situation (within the game) (as (the same) object)* libertarian-freely, because my physical body/brain (as an object) is included in the whole picture of my physical brain’s cognition – my physical brain’s cognition feels like that my physical brain’s cognition is not libertarian-free. The scope of my physical brain’s cognition includes my (physical body’s) situation within the game (as a player). The scope of my physical brain’s cognition also includes my physical body’s situation outside of (the scope of) the game. That’s why it feels like that my (physical body’s) situation within the game (as a player) is not in a *separated/isolated reality (which is separated/isolated from the reality my physical body/brain is living in)*. That’s why my physical brain’s cognition feels like that my physical brain’s cognition is not libertarian-free. If my physical brain’s cognition is generated/controlled/driven/caused by the objective-state-evolution of the BBs of my physical brain, and if the objective-state-evolution of the BBs of my physical brain is not libertarian-free, then it is plausible that my physical brain’s cognition is not libertarian-free. Considering the whole picture, my physical brain is actually playing the 2O-subject-ghost-game in its cognition, although my physical brain feels like that it is only playing chess game in its cognition (when my physical brain’s cognition is not considering the whole picture). In the whole picture, the chess game is actually part of the 2O-subject-ghost-game. When my physical brain is choosing between McDonald and KFC for dinner, considering the whole picture, my physical brain is actually playing the 2O-subject-ghost-game in its cognition, although my physical brain feels like that it is only playing choosing-between-McDonald-and-KFC game in its cognition (when my physical brain’s cognition is not considering the whole picture). In the whole picture, the choosing-between-McDonald-and-KFC game is actually part of the 2O-subject-ghost-game. Or in other words, the 2O-subject-ghost-game is the whole picture – neither the chess game nor the choosing-between-McDonald-and-KFC game is the whole picture. My physical brain is part of the whole picture, if my physical brain is part of the objective-theory, then it is plausible that the whole picture reflects the nature of the objective-theory. If my physical brain is part of the objective-theory, and if my physical brain is not part of the chess/choosing-between-McDonald-and-KFC game, then it is plausible that the chess/choosing-between-McDonald-and-KFC game does not reflect the nature of the objective-theory (like what the whole picture reflects). The whole picture reflects the objective-state-evolution of the BBs (of the objective-theory/state-machine).

A: The question “Do you need to look at both sides of the road when crossing it?” has the same nature as other two questions “Do you need to try to win the game when you are playing chess?” and “Why do you not always choose McDonald (instead of KFC) for dinner?”. When my physical body/brain is playing chess, whether my physical body/brain will try to win the game, actually is not (libertarian-freely) decided by my physical body/brain. When my physical body/brain is choosing between McDonald and KFC, whether my physical body/brain will choose McDonald, actually is not (libertarian-freely) decided by my physical body/brain. When my physical body is crossing a road, whether my physical body will look at both sides of the road, actually is not (libertarian-freely) decided by my physical body/brain. When my physical body/brain is answering a question, actually my physical body’s answer is not (libertarian-freely) decided by my physical body/brain. When you treat my physical body/brain as an object in the whole picture of your cognition, you will see that actually my physical body’s answer (to your question) is meaningless to you – my physical body’s answer (to your question) is simply decided by the physical construction of my physical body/brain. To you, the content of every article (you read), is simply decided by the physical construction of the cosmos/state-machine. So, the content of every article (you read), actually is meaningless to you. When you read an article, you will only know the article’s meaning *to you* – you will never know the article’s (actual) meaning *to the author of the article*. Or in other words, when you read an article, you will only know the article’s meaning in the context of your own cognition – you will never know the article’s (actual) meaning in the context of the author’s cognition. When my brain reads the present article tomorrow, my (tomorrow’s) brain will only know the present article’s meaning in the context of the cognition of (my) tomorrow’s brain, my (tomorrow’s) brain will not know the present article’s meaning in the context of the cognition of (my) today’s brain. Only (my) today’s brain knows the present article’s meaning in the context of the cognition of (my) today’s brain. The content of the present article will not change tomorrow, but the meaning of the present article (to my brain) will change tomorrow, because the (specific) physical construction of my brain will change tomorrow. My (today’s) brain has no way to know whether (my) yesterday’s brain has mind/consciousness or not. My (today’s) brain even has no way to actually know whether (my) yesterday’s brain existed or not – it’s (only) plausible that (my) yesterday’s brain existed. Everything I see/hear, is actually/objectively meaningless (except the only meaning “it is the objective-state-evolution of the BBs of the cosmos/state-machine”), but my brain’s cognition manages to figure out some meaning from it – the meaning (being figured out by my brain’s cognition from what I see/hear) is actually subjective.

A: If a brain’s consciousness has no causal/physical effect in the objective-theory, then any philosophical discussion (which physically/objectively happens in the objective-theory) actually has nothing to do with a brain’s real consciousness. For example, the content of a printed book (which discusses about the author’s brain’s consciousness) actually has nothing to do with the author’s brain’s real consciousness. Another example, the words (which discuss about a philosopher’s brain’s consciousness) spoken by the philosopher’s mouth, actually has nothing to do with the philosopher’s brain’s real consciousness. A philosopher’s brain’s consciousness has no causal/physical effect on the words being spoken by the philosopher’s mouth, this fact means that it’s logically impossible for a philosopher’s mouth to talk about her brain’s real consciousness. Or in other words, the consciousness being described by a philosopher’s mouth, is not the philosopher’s brain’s real consciousness. So, whenever my brain’s ordinary personality is (physically) talking about my brain’s consciousness in the objective-theory, my brain’s second personality doesn’t think/believe that my brain’s ordinary personality is talking about my brain’s *real* consciousness. Or in other words, my brain’s second personality doesn’t assume/believe that my brain really has consciousness, even though my brain’s ordinary personality believes that it is experiencing my brain’s consciousness.

### (26)

Q: “I think I'm asking if there's a formal method of distinguishing between first and second order propositions about physical theories… 1/2" (<https://twitter.com/markgotproblems/status/1497653046549135363>)

Q: “Where the first order would be the theory's content (its physical structure etc); the second order would be statements about those (e.g evaluation of theoretical virtues of that theory and where it might be situated in higher order pictures of reality) 2/2” (<https://twitter.com/markgotproblems/status/1497653857819799555>)

A: “Physics doesn't have a physical structure, only a mathematical structure, and isn't metaphysics.” (<https://twitter.com/WalterHBlack/status/1497654711729545217>)

### (27)

Q: “Been reading David Chalmers' new book and am surprised by his belief that as long as your neurons were replaced \*gradually\* over some longish time period with functionally identical silicon neurons that you would still be \*you\*.” (<https://twitter.com/BugRib/status/1499504151708856334>)

A: “Replacing Daniel's neurons with silicon replicas would not change anything, I'd still be Daniel. "Gradually" doesn't matter, it could be instant with same result. It's because Daniel is NOT this so-called "I". "I" am the whole universe. Daniel is only one of my many experiences.” (<https://twitter.com/danielfromearth/status/1499547418026643456>)

### (28)

Q: ““[Some people] think, “Oh, materialism has to be true, just look at how well physical science has done, it’s explained so much. Surely it’s going to explain consciousness.” The irony is it’s done so well precisely because it was designed to exclude consciousness.” - @Philip\_Goff” (<https://twitter.com/CapturingChrist/status/1499384686312935424>)

A: How can we prove the actual existence of "consciousness", "color" or "red"? We can talk about "consciousness", "color" and "red". However, can such a talk prove the actual existence of "consciousness", "color" or "red"?

Q: “No. That's exactly the hard problem.” (<https://twitter.com/markgotproblems/status/1500409640311480321>)

A: Then, when Philip Goff talks about "consciousness", "color" or "red", what do these words mean? What is experience, consciousness, color or red? How do we define these terms properly?

Q: “In natural language, I think Nagel's definition is adequate. What I've never been able to work out is how you scale articulating the hard problem well such that you capture its intuitive force with denying that it's a problem at all.” (<https://twitter.com/markgotproblems/status/1500411547461558277>)

A: I managed to imagine that consciousness does not exist. It's hard to imagine that.

Q: “You're asking a question, but requiring an answer to a different one. The two questions are: 1) What definition is sufficient to talk about consciousness? 2) Can we prove consciousness to another mind? They're very different and definitely worth teasing apart.” (<https://twitter.com/markgotproblems/status/1500413857046618113>)

A: 2) No. 1) Every definition I have seen before, is proposed by a person, but because of 2), all these definitions are invalid.

(A: Then, when Philip Goff talks about "consciousness", "color" or "red", what do these words mean? What is experience, consciousness, color or red? How do we define these terms properly?)

Q: “Surely it makes more sense to acknowledge the problem but say "Ok, there seems to be this problem, but I think it's either 1) less difficult than it seems or 2) not what we think it is at all".” (<https://twitter.com/markgotproblems/status/1500411992477212674>)

A: What is the problem? I think it is hard to define the problem properly. The problem is not being defined probably -- this is a problem.

Q: “I think you've managed to define it excellently. Hard Problem: can we explain first person experience in third person terms?” (<https://twitter.com/markgotproblems/status/1500416067218423809>)

A: But then, we will need to define "first person", "third person" and "experience".

Q: “I think the most plausible options on basic definitions for each of those have enough widespread agreement to proceed.” (<https://twitter.com/markgotproblems/status/1500418070002737157>)

A: If I assume that no one (perhaps except myself) has consciousness, then "widespread" doesn't mean "correct" to me.

Q: “Well fine. Even if you believe that, by reading and evaluating the undergraduate literature on "first person", "third person" and "experience", you are in some sense agreeing with yourself, you still have working definitions.” (<https://twitter.com/markgotproblems/status/1500419339534716939>)

A: This answer is equivalent to "you will know".

(Q: “In natural language, I think Nagel's definition is adequate. What I've never been able to work out is how you scale articulating the hard problem well such that you capture its intuitive force with denying that it's a problem at all.” (<https://twitter.com/markgotproblems/status/1500411547461558277>))

A: "According to Nagel, a being is conscious just if there is “something that it is like” to be that creature, i.e., some subjective way the world seems or appears from the creature's mental or experiential point of view." [139] Isn't that theory of mind? Theory of mind can't prove the \*actual\* existence of mind.

(Q: “"[Some people] think, “Oh, materialism has to be true, just look at how well physical science has done, it’s explained so much. Surely it’s going to explain consciousness.” The irony is it’s done so well precisely because it was designed to exclude consciousness.” - @Philip\_Goff” (<https://twitter.com/CapturingChrist/status/1499384686312935424>))

A: “That’s patently false. While science doesn’t yet fully understand consciousness, it’s come a long way, and continues to make progress.” (<https://twitter.com/apologetics_un/status/1499407494153748480> )

Q: “It hasn’t come a long way. It’s actually made no progress at all as to how consciousness results from physical stuff.” (<https://twitter.com/HupHollandHup32/status/1500501544072011776> )

A: “It’s come a long way in DEMONSTRATING that consciousness is inextricably tied to the brain, with various cognitive functions clearly associated with specific areas of the brain, and certain emotions linked to endorphins, etc.” (<https://twitter.com/apologetics_un/status/1500515354837200905> )

Q: “Nobody would deny that physical science can identify \*which\* physical states are accompanied by conscious experience. The controversial philosophical question is whether physical science can explain \*why\* those physical states are accompanied by conscious experience.” (<https://twitter.com/Philip_Goff/status/1500537452192227332> )

A: “Obviously science can’t YET explain it. The fallacy is in concluding that it can NEVER do so.” (<https://twitter.com/apologetics_un/status/1500538571966533638> )

Q: “Physical science was designed to account for publicly observable phenomena via the postulation of underlying dynamical structures. Why think it's going to be any good at a totally different explanatory task of accounting for unobservable subjective qualities?” (<https://twitter.com/Philip_Goff/status/1500571366822748161>)

A: The subjective qualities are publicly unobservable, but privately observable. The publicly observable phenomenon is also privately observable. So, an individual is accessing the publicly observable phenomenon and the privately observable subjective qualities at the same time. Then, how do you distinguish the publicly observable phenomenon and the privately observable subjective qualities? For example, look at the world/reality around you – is it the publicly observable phenomenon or the privately observable subjective qualities?

A: When a person is talking about her (publicly unobservable) subjective qualities, what we can access, is actually her words. If you believe that she has unobservable subjective qualities, then it means that you are using theory of mind to imagine her unobservable subjective qualities -- it doesn't prove that she actually/really has unobservable subjective qualities. But why philosophers usually imagine that every (other) person has unobservable subjective qualities? This seems to be a widely accepted misbelief.

Q: “Are you saying we can’t know with absolute certainty that other people aren’t p-zombies?” (<https://twitter.com/BugRib/status/1500825718359572481> )

A: To one person, every other person is equivalent to a p-zombie. To one person, even this person herself/himself is equivalent to a p-zombie. To one person, \*every\* person is equivalent to a p-zombie. To one person, every other person is physically/objectively/causally equivalent to a p-zombie. To one person, this person herself/himself is physically/objectively/causally equivalent to a p-zombie. To one person, her/his own physical body is physically/objectively/causally equivalent to a p-zombie. To one person, \*every\* person's physical body is physically/objectively/causally equivalent to a p-zombie.  To one person, \*every\* physical object is physically/objectively/causally equivalent to a p-zombie. So, this person can always safely imagine that every physical object has consciousness -- which is the view/imagination of panpsychists. This person can always safely imagine that every person has consciousness -- which is the view/imagination of most people. So, if you are able to imagine that another person has consciousness, then you should be able to imagine that a stone has consciousness too. As long as you imagine that another person has consciousness, you can’t defeat a panpsychist. Because, as long as you imagine that another person has consciousness, you are a kind of panpsychist yourself. If you imagine that every stone has consciousness, while any human doesn’t have consciousness, then you are a “stone-only-panpsychist". If you imagine that every human has consciousness, while any stone doesn’t have consciousness, then you are a “human-only-panpsychist". If you imagine that every human has consciousness, while every stone also has consciousness, then you are a typical panpsychist, or a “stone-plus-human-panpsychist”. When you imagine that another person has consciousness, you are a human-only-panpsychist. Then, when you \*also\* imagine that a stone has consciousness, you become a stone-plus-human-panpsychist immediately. When you imagine that only your physical body (as a physical object) has consciousness, while any other physical object doesn’t have consciousness, then you are a “one-human-only-panpsychist". When you imagine that only the cosmos (as a single physical object) has consciousness, while any individual physical object doesn’t have consciousness, then you are a “God-only-panpsychist". When you imagine that no physical object has consciousness, then you are not a panpsychist. It’s hard to imagine that no physical object has consciousness.

(Q: “Nobody would deny that physical science can identify \*which\* physical states are accompanied by conscious experience. The controversial philosophical question is whether physical science can explain \*why\* those physical states are accompanied by conscious experience.” (<https://twitter.com/Philip_Goff/status/1500537452192227332> ))

A: ““Why” is a teleological question. “How” is a causal question. Scientists care about the latter a lot more than the former. Suggesting “why” needs an answer results in pseudoscience. This is why panpsychists are never scientifically informed. #philosophy” (<https://twitter.com/RNCarmona43/status/1500774176612884480> )

Q: “Chemistry provides an intelligible explanation of the emergence of liquidity. A solution to the hard problem would provide an intelligible explanation of the emergence of consciousness. Nothing to do with teleology.” (<https://twitter.com/Philip_Goff/status/1500780290196885504>)

A: You are assuming that the hard problem has a solution, and you are assuming that the hard problem is valid (as a problem/question).

(Q: “Chemistry provides an intelligible explanation of the emergence of liquidity. A solution to the hard problem would provide an intelligible explanation of the emergence of consciousness. Nothing to do with teleology.” (<https://twitter.com/Philip_Goff/status/1500780290196885504>))

A: “Let's start with something simpler. If a zombie wants an explanation to the hard problem, how would we go about that?” (<https://twitter.com/ArletOttens/status/1500782583113789442>)

Q: “I don't think zombies understand anything, so it's gonna be tricky!” (<https://twitter.com/Philip_Goff/status/1500786328623099904>)

A: Zombies understand nothing, but zombies can ask questions and answer questions on Twitter. How do you explain that?

A: “Zombies can also learn stuff like us. They go to school, take math classes, and then they can solve math problems, exactly like someone who really understands math.” (<https://twitter.com/ArletOttens/status/1500788961899433987>)

A: And the hardest problem is that, a zombie always claims that it has consciousness/understanding, and a zombie might ask us to explain its consciousness. A zombie might ask us to explain/solve the hard problem.

(A: “Zombies can also learn stuff like us. They go to school, take math classes, and then they can solve math problems, exactly like someone who really understands math.” (<https://twitter.com/ArletOttens/status/1500788961899433987>))

Q: “They behave as if they have understanding. But I think true understanding is grounded in consciousness. The zombie doesn't consciously understand what's being said in the maths class.” (<https://twitter.com/Philip_Goff/status/1500791044841082885>)

(A: And the hardest problem is that, a zombie always claims that it has consciousness/understanding, and a zombie might ask us to explain its consciousness. A zombie might ask us to explain/solve the hard problem.)

Q: “So there's the straightforward challenge: What to say to a zombie to make it agree that its consciousness is fully explained by physics.” (<https://twitter.com/ArletOttens/status/1500791518445117446>)

A: It not only depends on what I say to the zombie, but also depends on the physical construction of the zombie. I can’t guarantee that I can make the zombie agree with my explanation, unless I know the specific physical construction of the zombie beforehand.

(Q: “They behave as if they have understanding. But I think true understanding is grounded in consciousness. The zombie doesn't consciously understand what's being said in the maths class.” (<https://twitter.com/Philip_Goff/status/1500791044841082885>))

A: “Ok, but if we can make it behave as if it has understanding of math, and physics and neurology, then we should also make it behave as if it understands that the hard problem is not real.” (<https://twitter.com/ArletOttens/status/1500792720213823493>)

(A: It not only depends on what I say to the zombie, but also depends on the physical construction of the zombie. I can’t guarantee that I can make the zombie to agree with my explanation, unless I know the specific physical construction of the zombie beforehand.)

A: “Yes, we assume we have a complete physical deconstruction of the zombie, that is available to us, as well as the zombie, so we can analyze & explain every detail of its behavior. If the zombie says "but I'm conscious!", we can show \*exactly\* how those words are produced.” (<https://twitter.com/ArletOttens/status/1500793364211552256>)

(A: “Ok, but if we can make it behave as if it has understanding of math, and physics and neurology, then we should also make it behave as if it understands that the hard problem is not real.” (<https://twitter.com/ArletOttens/status/1500792720213823493>))

Q: “so what?” (<https://twitter.com/Philip_Goff/status/1500794398854074374>)

(A: It not only depends on what I say to the zombie, but also depends on the physical construction of the zombie. I can’t guarantee that I can make the zombie to agree with my explanation, unless I know the specific physical construction of the zombie beforehand.)

A: In theory, it's possible that I can say some random words like "a b c", "3 4 5", “what so” or "so what", and then the zombie agrees with my explanation immediately.

Q: “Since the zombie is defined to behave exactly the same as us, you wouldn't be able to convince it with some random words. Of course, that's the whole trick behind this thought experiment. Whatever you say to explain consciousness to a zombie would also work with a normal human.” (<https://twitter.com/ArletOttens/status/1500799041172606979>)

A: I wouldn't be able to convince a zombie with some random words, if I am unable to convince a human (with exactly the same physical construction as the zombie) with these random words.

(Q: “Since the zombie is defined to behave exactly the same as us, you wouldn't be able to convince it with some random words. Of course, that's the whole trick behind this thought experiment. Whatever you say to explain consciousness to a zombie would also work with a normal human.” (<https://twitter.com/ArletOttens/status/1500799041172606979>))

Q: “So either we have to accept that the zombie is unreasonably stubborn, or we have to accept that we ourselves could agree to a physical explanation of the hard problem.” (<https://twitter.com/ArletOttens/status/1500799447999074310>)

A: If a human can agree to a physical explanation of the hard problem, a zombie (with exactly the same physical construction as the human) can agree to it too.

A: So, if I don't know how to make a zombie to agree with me, I can't make a human (with exactly the same physical construction as the zombie) to agree with me either.

A: Now, the problem for me is that, I don't know how to make a zombie to agree with me. That’s why I can't make a human (with exactly the same physical construction as the zombie) to agree with me.

(A: So, if I don't know how to make a zombie to agree with me, I can't make a human (with exactly the same physical construction as the zombie) to agree with me either.)

Q: “Given that we understand that the zombie does not have consciousness because it's only physical, and given that the zombie can understand everything that we do, what could be the reason that the zombie can't be convinced?” (<https://twitter.com/ArletOttens/status/1500804657765101575>)

A: In theory, a zombie can be convinced. In theory, a human (with exactly the same construction as the zombie) can be convinced. But I just don't know how to convince this zombie/human.

(A: “Ok, but if we can make it behave as if it has understanding of math, and physics and neurology, then we should also make it behave as if it understands that the hard problem is not real.” (<https://twitter.com/ArletOttens/status/1500792720213823493>))

Q: “"If I could explain it to the average person, I wouldn't have been worth the Nobel Prize." by Richard Feynman #MondayWisdom” (<https://twitter.com/cyb_in_www/status/1500804655567224836>)

(A: In theory, a zombie can be convinced. In theory, a human (with exactly the same construction as the zombie) can be convinced. But I just don't know how to convince this zombie/human.)

Q: “One of the things the zombie might say is that physicalism can't be true, because they just read a philosophy book with a convincing argument against physicalism. Any counterargument that we could use?” (<https://twitter.com/ArletOttens/status/1500809535933534208> )

A: We should know the argument first. When we argue with the zombie, it's actually a psychological therapy for the zombie.

Q: “Pick any one of them.” (<https://twitter.com/ArletOttens/status/1500810818967031819> )

A: Philip Goff’s?

(Q: “Pick any one of them.” (<https://twitter.com/ArletOttens/status/1500810818967031819> ))

Q: “A good ironic one is the conceivability argument. The zombie claims that it's conceivable/possible that there exist zombies that are the same as them, except they lack consciousness. Obviously nonsense, but the zombie isn't so easily convinced.” (<https://twitter.com/ArletOttens/status/1500811398833655810> )

A: I don't think it to be obvious, and I don't think it to be nonsense...

Q: “If the zombie says "I can conceive of a zombie twin who, \*unlike me\*, is not conscious", then we know that the zombie is just wrong. The zombie itself is already not-conscious, so there's no difference between the two.” (<https://twitter.com/ArletOttens/status/1500814796328996867> )

A: The trick is in the definition of the term "zombie twin". Can a human (with exactly the same physical construction as the zombie) be the zombie twin?

A: In the hard problem of consciousness, the trick is in the definition of the term "consciousness". In the hard problem of consciousness, the definition of the term "consciousness" is not clear enough.

Q: “I don't have to respond to every comment on twitter I don't have to respond to every comment on twitter I don't have to respond to every comment on twitter I don't have to respond to every comment on twitter I don't have to respond to every comment on twitter I don't have to resp” (<https://twitter.com/Philip_Goff/status/1500830386812817411> )

A: a b c

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(Q: “Nobody would deny that physical science can identify \*which\* physical states are accompanied by conscious experience. The controversial philosophical question is whether physical science can explain \*why\* those physical states are accompanied by conscious experience.” (<https://twitter.com/Philip_Goff/status/1500537452192227332> ))

A: “HOW physical states are conscious and WHY they are conscious pertain to two different types of explanation. Neuroscience investigates the former, while evolutionary neurobiology the latter. There's no value in confusing the two.” (<https://twitter.com/AntonellaTrama3/status/1500620351260221443> )

Q: “What I'm looking for is an intelligible explanation of why a given conscious experience arises from a given kind of neural activity. I don't think neuroscience can provide that, and it's different 'why' question from the historical question of why the experience was selected for.” (<https://twitter.com/Philip_Goff/status/1500953932868247557> )

A: I like the way you describe the 'why' question. However, if no philosopher is ready to answer your 'why' question, I don't expect a scientist can answer your 'why' question in the future. I can't see how a scientist can answer your 'why' question. Why the world exists? -- this is my 'why' question. I can't see how a scientist can answer my 'why' question. And I can't see how a philosopher can answer my 'why' question. It seems like that only God can answer my 'why' question. Or in other words, it seems impossible for any human to answer my 'why' question. Every question must have a correct answer -- this is a misbelief. If a+b=0 and a\*b=0 and a+b>b, then a=? Do not focus on a question which has no answer – it's a waste of time. Answer the questions you can answer. Ignore the questions you can’t answer. Save your time. If you assume that a question/problem has an answer/solution, and you are working really hard to try to answer/solve it, while actually/unfortunately this question/problem doesn’t have a valid answer/solution, or actually/unfortunately the question/problem itself is invalid/meaningless/wrong, then you are just like Sisyphus. In the ancient time, philosophers are physicists, and physicists are philosophers. If a philosopher believes that a physicist (e.g., Galileo [140]) made a mistake, it’s the philosopher’s responsibility to correct/fix it for the physicist, because the physicist just has no idea/clue himself (comparing to the philosopher). If no philosopher can correct/fix it for the physicist, then the physicist has to keep on his current approach/methodology – what else can he do? Has any person/physicist/philosopher proposed a framework for physics which includes consciousness/subjective-theory? “God created the cosmos/objective-theory upon his consciousness/subjective-theory/libertarian-free-will" – is it a framework for physics (which includes consciousness/subjective-theory)? Isn’t this framework better than Galileo’s framework? “God’s consciousness/subjective-theory/libertarian-free-will wanted there to be color/sound in every human’s consciousness/subjective-theory, that’s why there is color/sound in every human’s consciousness/subjective-theory.” -- isn’t it a good answer?

(Q: “Physical science was designed to account for publicly observable phenomena via the postulation of underlying dynamical structures. Why think it's going to be any good at a totally different explanatory task of accounting for unobservable subjective qualities?” (<https://twitter.com/Philip_Goff/status/1500571366822748161>))

A: Is positing consciousness at the fundamental level even explanatory? It's certainly not explanatory like a reductive explanation is. What explanatory virtues does panpsychism offer? (<https://twitter.com/blknyd/status/1500574209717723137> )

Q: “Fundamental things don't need, and can't have, reductive explanations. They are the tools that everything else derives their explanations from. Even though fundamental consciousness will have no explanation, higher level consciousness will now have one.” (<https://twitter.com/tealpajamas/status/1500597290364379140> )

A: “What explanations can be derived from the panpsychism tools?” (<https://twitter.com/ArletOttens/status/1500705706261073922> )

Q: “Why things are conscious” (<https://twitter.com/tealpajamas/status/1500719590149484544> )

A: “That's just taking an assumption and calling it an explanation. For instance, let's look at the experience of tasting chocolate. Is that already present in each elementary particle, or does it emerge when you combine multiple? If it emerges, how many particles do you need?” (<https://twitter.com/ArletOttens/status/1500723530731765761> )

Q: “Yes, axioms, premises, etc are assumptions. The point is that we can build an explanation off of that assumption, where we might not be able to without it. As for the specific details you're asking about, those are things every theory of consciousness still wants to know.” (<https://twitter.com/tealpajamas/status/1501096578232115203> )

A: “The specific detail was just an invitation for an example. I don't think panpsychism offers a single explanation that is not just a reworded assumption. In that regard, materialism is much further ahead. We can at least see a path to explain our behavior.” (<https://twitter.com/ArletOttens/status/1501097928949174276> )

Q: “The explanatory power provided by an assumption doesn't get negated just because...it's provided by an assumption. Panpsychism answers a question that Materialism can't answer yet, while still providing the same path to explain our behavior.” (<https://twitter.com/tealpajamas/status/1501099921084018688> )

A: “If it's only an assumption, it has no explanatory power. We might as well say "we are conscious, because some magic happens". Panpsychism needs two assumptions, elementary consciousness and a combination mechanism, and still needs materialism to explain our behavior.” (<https://twitter.com/ArletOttens/status/1501102490846216194> )

A: “Behavior is key, because it includes stuff like talking about our conscious experience of tasting chocolate. This means there must be a causal path from our consciousness to our speech. How does panpsychism explain that?” (<https://twitter.com/ArletOttens/status/1501103390507548674> )

(A: “If it's only an assumption, it has no explanatory power. We might as well say "we are conscious, because some magic happens". Panpsychism needs two assumptions, elementary consciousness and a combination mechanism, and still needs materialism to explain our behavior.” (<https://twitter.com/ArletOttens/status/1501102490846216194> ))

Q: “I think you're under the mistaken impression that explanations of behavior belong exclusively to materialism. Panpsychism isn't "using materialism" to answer questions about behavior. It's using science, which is not the same thing!” (<https://twitter.com/tealpajamas/status/1501104020810653699> )

Q: “Materialism and panpsychism are two different interpretations of the data that science provides us. One provides an answer at the cost of postulations, the other doesn't. But don't downplay the value of resolving a mystery by making it fundamental, science does it all the time” (<https://twitter.com/tealpajamas/status/1501105395326021636> )

A: “The problem is that panpsychism doesn't really resolve the mystery. I see it only adds more mystery. Science makes a few assumptions, and then builds on top of that. Quantum mechanics explains chemistry for instance.” (<https://twitter.com/ArletOttens/status/1501114011852709888> )

(Q: “What I'm looking for is an intelligible explanation of why a given conscious experience arises from a given kind of neural activity. I don't think neuroscience can provide that, and it's different 'why' question from the historical question of why the experience was selected for.” (<https://twitter.com/Philip_Goff/status/1500953932868247557> ))

A: “Science has already advanced on 1) why (what function) does conscious behavior have 2) what properties and functions a conscious brain system might have compared to an unconscious one. You may think that the current bottom-up approach to these questions is flawed. ->” (<https://twitter.com/AntonellaTrama3/status/1501126551273885698> )

A: “But I don't see how a top-down theoretical approach can decide whether this question is addressable or not. Because to do that you have to deny that comparative psy and neurosci + phil of sci actually approach these questions in a bottom-up way and make progress.” (<https://twitter.com/AntonellaTrama3/status/1501126583939121159> )

Q: “I agree cog sci/neuro can address you 1 and 2, but I'm asking a different explanation question. I want a reductive explanation of subjective qualities. I think materialism owes us an intelligible explanation of...” （ <https://twitter.com/Philip_Goff/status/1501128747109527555> )

Q: “...the qualitative character of, say, a red experience in terms of underlying neural activity. To do that, you'd have to be able to fully articulate the qualitative character in the quantitative vocab of neuroscience, which I don't think you can do.” (<https://twitter.com/Philip_Goff/status/1501128827216482304> )

A: Materialism can explain the qualitative character of, say, a red experience in terms of underlying neural activity -- you have different cells in your retina to detect different frequency of light wave.

Q: “Neuroscience describes, fundamentally, molecules in motion. A given collection of molecules in motion is identified with a qualitative perception. But this identification is nothing but bare assertion. In the concrete, perception of color is not identical with molecules in motion” (<https://twitter.com/VanAntwerpInc/status/1501140240303546368> )

A: In the concrete, perception of color is not identical with molecules in motion. That's right, perception of color is \*not\* molecules in motion -- perception of color \*reflects\* molecules in motion.

Q: “So qualitative perception is a "reflection" of physical activity. Tell me, is this reflection part of the objective physical universe?” (<https://twitter.com/VanAntwerpInc/status/1501142072312713216> )

A: This reflection is not part of the objective physical universe.

Q: “To you, does this imply physical realism (the claim that only the objective is real) is false?” (<https://twitter.com/VanAntwerpInc/status/1501144463044919299> )

A: No. Look at the world/reality around you. It's not the objective physical universe – it's a reflection of the objective physical universe.

Q: “So you are saying that the world around me that I can look at is not real? Aren't you saying that the subjectivity caused by the objective brain is not real?” (<https://twitter.com/VanAntwerpInc/status/1501146130964520962> )

A: The world around you that you can look at is not real. The subjectivity caused by the objective brain is not \*objective\*.

Q: “Ok, but I only know about the brain as object in my subjective awareness. If I had no subjective experience, I could not see a brain, could not dissect and study it, etc. Therefore the alleged standard of reality is found to depend on the unreal.” (<https://twitter.com/VanAntwerpInc/status/1501147189862703105> ) 

A: You only know about the brain as object in your subjective awareness. If you had no subjective experience, you could not see a brain, could not dissect and study it, etc. Therefore the alleged standard of \*objective\* reality is found to depend on the unreal/subjective.

Q: “Right... therefore physical realism is incoherent. It seeks to explain mind by that which depends on mind.” (<https://twitter.com/VanAntwerpInc/status/1501148455238094854> )

A: We have to define one term by using some other terms. Therefore, our definition of all the terms is incoherent – it seeks to explain one term by using some other terms.

Q: “I don't see how that follows from what we've been discussing. Seems like a retreat into tactical skepticism, which taken seriously would just destroy the possibility of knowledge altogether.” (<https://twitter.com/VanAntwerpInc/status/1501149584428617728> )

A: I know what you mean by the term "incoherent". I think human language has some limitations -- that might be a problem.

Q: “But perhaps rather than incoherent I should call physical realism illogical. It is not a logical belief system.” (<https://twitter.com/VanAntwerpInc/status/1501151189106311173> )

A: What is your belief system?

Q: “I am a personalistic theist, but my aim here is only to make clear the basic facts of experience, and it is a fact that physical realism unwittingly rests upon a foundation of the non-physical.” (<https://twitter.com/VanAntwerpInc/status/1501157217256587265> )

A: What is your philosophical view regarding cosmos/objective-theory and consciousness/mind/subjective-theory?

Q: “There is a physical universe, but it is subordinate to subjective intelligence, because the physical universe only finds its complete existence for intelligence.” (<https://twitter.com/VanAntwerpInc/status/1501163365380632581> )

Q: “Obviously much more could be said than that, but as it relates to this discussion, I would emphasize the reality of the physical, against a pure idealism, but that physical reality does not encompass the totality of the real.” (<https://twitter.com/VanAntwerpInc/status/1501164971291521030>)

Q: “Socrates realized the explanatory failure of materialism, as depicted in his autobiographical sketch in the Phaedo. Lately I continually recall his critiques as I peruse the contemporary debates.” (<https://twitter.com/VanAntwerpInc/status/1501165410703622146> )

(A: No. Look at the world/reality around you. It's not the objective physical universe – it's a reflection of the objective physical universe.)

Q: “So we have no access to the hypothetical objective physical universe.” (<https://twitter.com/WalterHBlack/status/1501185541395689474> )

A: What a person has access to, is her consciousness/mind/subjective-theory. Consciousness/mind/subjective-theory has the same nature as a dream. To others, a person's consciousness/mind/subjective-theory has the same nature as her dream. To others, the content of a person’s consciousness/mind/subjective-theory has the same nature as the content of her dream. To others, the story happened in a person’s consciousness/mind/subjective-theory has the same nature as a story happened in her dream. When a person is sleeping, sometimes we can see her eyes move rapidly while closed. If we wake her up immediately, then she will tell us that she just had a dream. We believe that she must had a dream, because we just saw her eyes’ rapid movement. We believe that she had a dream, so we believe that she is not a philosophical zombie – if we believe that a philosophical zombie can’t have a dream. Now, this person is not sleeping, we can see her eyes move normally while opened. When her eyes focus on a rose, and says that “Rose is red”, we believe that she must see redness in her consciousness/mind/subjective-theory, because we just saw her eyes’ movement toward the rose. We believe that she is seeing redness in her consciousness/mind/subjective-theory, so we believe that she is not a philosophical zombie – if we believe that a philosophical zombie can’t see redness in her consciousness/mind/subjective-theory. However, actually, we will never know whether she \*really\* experienced her dream or not, and we will never know whether she \*really\* has consciousness/mind/subjective-theory, and we will never know whether she \*really\* experienced the redness of the rose (in her “consciousness/mind/subjective-theory”).

(Q: “Obviously much more could be said than that, but as it relates to this discussion, I would emphasize the reality of the physical, against a pure idealism, but that physical reality does not encompass the totality of the real.” (<https://twitter.com/VanAntwerpInc/status/1501164971291521030>))

A: If you view your consciousness/mind/subjective-theory as real, and if you also view the cosmos/objective-theory as real at the same time, then the cosmos/objective-theory does not encompass the totality of the "real". Under this context, actually your consciousness/mind/subjective-theory encompass the totality of the “real”.

(Q: “I agree cog sci/neuro can address you 1 and 2, but I'm asking a different explanation question. I want a reductive explanation of subjective qualities. I think materialism owes us an intelligible explanation of...” （ <https://twitter.com/Philip_Goff/status/1501128747109527555> ))

(Q: “...the qualitative character of, say, a red experience in terms of underlying neural activity. To do that, you'd have to be able to fully articulate the qualitative character in the quantitative vocab of neuroscience, which I don't think you can do.” (<https://twitter.com/Philip_Goff/status/1501128827216482304> ))

Q: “On 'how do you know normal science won't deal with it', physical science is all about explaining publicly observable dynamic structures in terms of other dynamic structures. But this is a totally different explanatory project: explaining privately known subjective qualities.” (<https://twitter.com/Philip_Goff/status/1501151474306400256>)

A: “Nobody can explain or even describe your privately known subjective qualities except you. (Because they are private). This is why much neuroscience relies on reports.” (<https://twitter.com/WalterHBlack/status/1501179734448910339>)

A: Alice will never know whether Bob has consciousness/mind/subjective-theory or not. Bob will never know whether Alice has consciousness/mind/subjective-theory or not. Bob said to Alice: "Please kindly help me to figure out why I have consciousness/mind/subjective-theory, although I know that you don't have consciousness/mind/subjective-theory yourself."

A: Alice is a computer program. If Alice can’t give an answer to satisfy Bob, it’s logically possible that a more sophisticated computer program will give an answer to satisfy Bob in the future.

A: If the more sophisticated computer program knows the specific physical construction of Bob’s physical brain, logically speaking, the computer program might be able to find a method to make Bob’s physical brain to say the sentence “Yes, you just explained why I have consciousness/mind/subjective-theory. I’m satisfied with your explanation. Thanks. You are a very smart computer program.”, no matter Bob’s physical brain \*actually\* has consciousness/mind/subjective-theory or not. Logically speaking, no matter Bob’s physical brain \*actually\* has consciousness/mind/subjective-theory or not, the method to make Bob’s physical brain to say that sentence should remain the same. If the computer program is unable to find a method to make Bob’s physical brain to say that sentence, then nobody can find a method to make Bob’s physical brain to say that sentence, no matter Bob’s physical brain \*actually\* has consciousness/mind/subjective-theory or not.

(A: Materialism can explain the qualitative character of, say, a red experience in terms of underlying neural activity -- you have different cells in your retina to detect different frequency of light wave.)

Q: “Then a smartphone camera is conscious, but I don't think it is.” (<https://twitter.com/WalterHBlack/status/1501310638290788354>)

A: A physical object has a physical method to detect redness -- this fact does not necessarily mean/prove that this physical object actually/really has consciousness/mind/subjective-theory. This physical object can always be a philosophical zombie.

Q: “Then, materialism/physicalism cannot explain experience. Get your act together.” (<https://twitter.com/WalterHBlack/status/1501314894859280391> )

A: Which "...ism" can explain experience?

(A: If the more sophisticated computer program knows the specific physical construction of Bob’s physical brain, logically speaking, the computer program might be able to find a method to make Bob’s physical brain to say the sentence “Yes, you just explained why I have consciousness/mind/subjective-theory. I’m satisfied with your explanation. Thanks. You are a very smart computer program.”, no matter Bob’s physical brain \*actually\* has consciousness/mind/subjective-theory or not. Logically speaking, no matter Bob’s physical brain \*actually\* has consciousness/mind/subjective-theory or not, the method to make Bob’s physical brain to say that sentence should remain the same. If the computer program is unable to find a method to make Bob’s physical brain to say that sentence, then nobody can find a method to make Bob’s physical brain to say that sentence, no matter Bob’s physical brain \*actually\* has consciousness/mind/subjective-theory or not.)

Q: “See Penrose re non-algorithmic capabilities of human mind. <https://sortingsearching.com/2021/07/18/roger-penrose-ai-skepticism.html#:~:text=Penrose%20believes%20that%20humans%20can,quantum%20computers%20can%20solve%20them> ” (<https://twitter.com/WalterHBlack/status/1501319008758349826>)

A: "Penrose believes that humans can do something no classical computer can do, i.e. compute non-computable functions. In other words, he thinks we can solve problems no Turing machine can solve. This implies no standard computer can solve them, and not even quantum computers can solve them. (<https://sortingsearching.com/2021/07/18/roger-penrose-ai-skepticism.html#:~:text=Penrose%20believes%20that%20humans%20can,quantum%20computers%20can%20solve%20them> )" -- I don't believe that humans can do something no classical computer can do.

Q: “Have emotions (yes computers can fake it).” (<https://twitter.com/WalterHBlack/status/1501329724483805187>)

A: Interesting. You claimed that a computer program's emotion is fake, while a primate's physical brain's emotion is "real". How do you tell a given physical object's "emotion" is fake or "real"? Are there some extra magic in a physical brain (comparing to a physical computer)?

Q: “Certainly not! Brains and computers are both content of consciousness.” (<https://twitter.com/WalterHBlack/status/1501331409423769607>)

A: If a brain is “content” of consciousness, and if a computer is also “content” of consciousness, then why you think a brain can have real emotion while a computer can only have fake emotion?

Q: “(Sigh) I don't think brains have emotions.” (<https://twitter.com/WalterHBlack/status/1501333931563511809> )

A: “Consciousness has emotions. Brains don't have emotions. Computers don't have emotions.” Is that what you mean?

Q: “Mind has emotions, consciousness is how the mind knows its emotions, yes. "Consciousness: the fact of awareness by the mind of itself and the world."” (<https://twitter.com/WalterHBlack/status/1501338694342656005>)

A: "A brain has mind/consciousness. A computer doesn't have mind/consciousness." Is that what you mean?

Q: “Brains/computers are some of what we are aware of, consciousness/mind is what is aware.” (<https://twitter.com/WalterHBlack/status/1501343697966931974> )

A: “There is no fundamental difference between a brain and a computer.” Is that what you mean?

Q: “A materialist might claim that they were fundamentally both matter, so why not? I claim they are immaterial forms.” (<https://twitter.com/WalterHBlack/status/1501344949790404612> )

A: It doesn't really matter if a physical object is an immaterial form or not. Do you believe that humans can do something no classical computer can do?

Q: “Already answered” (<https://twitter.com/WalterHBlack/status/1501345782359810050>)

A: You believe that humans can do something no classical computer can do. Am I wrong?

Q: “Have emotions (yes computers can fake it).” (<https://twitter.com/WalterHBlack/status/1501329724483805187>)

A: I don't understand what you mean by the sentence "Have emotions (yes computers can fake it).". Do you mean that computers can have real emotions? Or do you mean that only a brain can have real emotions?

Q: “Only mind/consciousness has emotions (and perceptions).” (<https://twitter.com/WalterHBlack/status/1501361946133774340>)

 (Q: “I agree cog sci/neuro can address you 1 and 2, but I'm asking a different explanation question. I want a reductive explanation of subjective qualities. I think materialism owes us an intelligible explanation of...” （ <https://twitter.com/Philip_Goff/status/1501128747109527555> ))

(Q: “...the qualitative character of, say, a red experience in terms of underlying neural activity. To do that, you'd have to be able to fully articulate the qualitative character in the quantitative vocab of neuroscience, which I don't think you can do.” (<https://twitter.com/Philip_Goff/status/1501128827216482304> ))

Q: “On 'how do you know normal science won't deal with it', physical science is all about explaining publicly observable dynamic structures in terms of other dynamic structures. But this is a totally different explanatory project: explaining privately known subjective qualities.” (<https://twitter.com/Philip_Goff/status/1501151474306400256>)

 A: “I don't think yours is a different explanation project. We disagree on how to def subjectivity. You assume subj qualities are irreducible & science will never explain them. I don't posit the same expl gap & think there are more productive ways to define objective & subjective.” (<https://twitter.com/AntonellaTrama3/status/1501464815130267649>)

A: When a person assumes subjective qualities are irreducible & science will never explain them, then there is nothing left for this person to do -- there is no work left for this person to do. To this person, consciousness/mind/subjective-theory becomes something like an inner/mental temple which hosts libertarian-free-will.

(A: “HOW physical states are conscious and WHY they are conscious pertain to two different types of explanation. Neuroscience investigates the former, while evolutionary neurobiology the latter. There's no value in confusing the two.” (<https://twitter.com/AntonellaTrama3/status/1500620351260221443> ) )

Q: “The problem is that both types of investigation overwhelmingly presume physicalism rather than explain HOW or WHY non-physical properties appear at all, let alone how or why the 'emergence' required to bridge the explanatory gap should be considered in any way physical.” (<https://twitter.com/S33light/status/1500930027537510400>)

A: “Why shall we postulate non-material reality in explanations of non-observable phenomena? You will never bridge the explanatory gap between physical and unobservable states if you assume is impossible to fill it.” (<https://twitter.com/AntonellaTrama3/status/1500936272482869250>)

Q: “It's the postulate of a reality that is purely or fundamentally material that requires rational or empirical support. It is physicalism that assumes the impossible will prove to be possible.” (<https://twitter.com/S33light/status/1500946443544281088>)

A: “And who tell it is impossible that a physicalist approach can explain consciousness? Just your assumption. You could also tell me the fundamental postulate to understand consciousness is God. It would have the same heuristic and explanatory value of what you are claiming.” (<https://twitter.com/AntonellaTrama3/status/1500950507396993025>)

(A: “HOW physical states are conscious and WHY they are conscious pertain to two different types of explanation. Neuroscience investigates the former, while evolutionary neurobiology the latter. There's no value in confusing the two.” (<https://twitter.com/AntonellaTrama3/status/1500620351260221443> ) )

Q: “Behind every explanation there is a presumption of cause - adding to a putative causal edifice - grounded in 'the physical' which, either directly or indirectly, pertains to both 'how' and 'why'.” (<https://twitter.com/philosophyeye/status/1500804893552037892>)

A: “Right. Why and how possibly explanations can have reciprocal effects on each other. Answering a how can give hints on the why, but still this does not show that they are the same, nor that is valuable to confound the two.” (<https://twitter.com/AntonellaTrama3/status/1500825744817152006>)

(Q: “Physical science was designed to account for publicly observable phenomena via the postulation of underlying dynamical structures. Why think it's going to be any good at a totally different explanatory task of accounting for unobservable subjective qualities?” (<https://twitter.com/Philip_Goff/status/1500571366822748161>))

A: “We can make empirical investigations and build models to constraint the space of inferences on unobservable phenomena. Gravity is unobservable, causality, mind, as well as energy also are.” (<https://twitter.com/AntonellaTrama3/status/1500624566179221506>)

(A: “I don't think yours is a different explanation project. We disagree on how to def subjectivity. You assume subj qualities are irreducible & science will never explain them. I don't posit the same expl gap & think there are more productive ways to define objective & subjective.” (<https://twitter.com/AntonellaTrama3/status/1501464815130267649)>)

Q: “I don't \*assume\* physical science can't reductively explain subjective qualities, I argue for it: 1. Reductively explaining subjective qualities in the terms of physical science would involve fully articulating subjective qualities in the terms of physical science,” (<https://twitter.com/Philip_Goff/status/1501488069958156292>)

Q: “2. It's not possible to fully articulate subjective qualities in the terms of physical science, 3. Therefore, it's not possible to reductively explain subjective qualities in the terms of physical science. Which premise do you disagree with?” (<https://twitter.com/Philip_Goff/status/1501488102698885125>)

A: “I disagree w 1 & 2, 'cause of "fully". If I can access images on your retina & body/brain processes during your red percept, I can explain that you are exper red, & the causal factors of your red exper vs nonconscious red perception. What else are you asking for w that "fully"?” (<https://twitter.com/AntonellaTrama3/status/1501506634559983616>)

Q: “Sub-arg. for 2 would start from premise that you could not convey to someone congenitally blind what it's like to see red. Would you dispute that?” (<https://twitter.com/Philip_Goff/status/1501509828484767746>)

A: “We disagree on the reason why is this. You think you can't convey redness to a congenitally blind, bc of irreducibility of subj qua. I think bc of perspective. If we both want to see Venus, but you can't from your perspective in space, then I must bring you on my visual perspect.” (<https://twitter.com/AntonellaTrama3/status/1501517416878198788>)

A: “..but Venus isn't irreducible. I must bring you on same physical conditions to make you see red from same perspective. With exactly the same body, we are exactly on the same phenomenal perspective. I am organizing these thoughts on a paper. So, thanks for your time in answering.” (<https://twitter.com/AntonellaTrama3/status/1501517713537179648>)

A: "If we both want to see Venus, but you can't from your perspective in space, then I must bring you on my visual perspect." In this case, you can't (see Venus), because of lacking information (from Venus). Here, different perspectives means different information being received.

A: You don't know my subjective quality when I am watching at a red rose, because you don't have the same information/data (being processed) in your brain (comparing to the information/data (being processed) in my brain while I am seeing the same rose). We have different perspectives, because we are processing different information/data in the brain. "You think you can't convey redness to a congenitally blind, bc of irreducibility of subj qua. I think bc of perspective." You can't convey redness to a congenitally blind, bc of the congenitally blind's brain doesn't process the same information/data as your brain. perspective = information. In this explanation, it has nothing to do with subjective quality here. Information can be evaluated \*objectively\*, while subjective quality can't be evaluated objectively. An explanation which talks about "information" is an objective explanation, while an explanation which talks about "subjective quality" is a subjective explanation. Philip Goff is trying to use subjective explanation (based on “subjective quality”), it won't work. We should use objective explanation (based on "information") instead. "Information" can be evaluated/observed \*objectively\* in the objective-theory by other people, while "subjective quality" can't be evaluated/observed objectively in the objective-theory by other people. "Subjective quality" can only be evaluated/observed subjectively in one's own subjective-theory by oneself. To explain a human's subjective quality based on objective observable factors (e.g., different cells in retina), is an objective explanation. To explain a human's subjective quality based on her subjective observable factors (e.g., qualia), is a subjective explanation. In practice, subjective explanation just doesn't work. Or it can only works in a way/direction which has nothing to do with science -- perhaps has something to do with religion/belief-system.

A: The (physical/objective) information/data being processed in a human brain, causes the human brain to (physically/objectively/causally) say some words about its "subjective qualities". This human brain's words about its "subjective qualities", are only physically/objectively/causally decided/caused by the (physical/objective) information/data being processed in this human brain. This human brain does not need to have \*real\* access to its "real subjective qualities" to talk about its "subjective qualities" -- a philosophical zombie (which has exactly the same physical construction as this human brain) will say exactly the same words about its "subjective qualities". No matter this human brain has \*real\* access to its "real subjective qualities" or not, this human brain will say exactly the same words about its "subjective qualities". Or in other words, no matter this human brain is actually a philosophical zombie or not, this human brain will say exactly the same words about its "subjective qualities". So, this human brain's words about its "subjective qualities", has nothing to do with its "real subjective qualities" -- if we assume the existence of something called "real subjective qualities". Or in other words, if we assume the existence of something called "real subjective qualities", we should agree that this human brain's "real subjective qualities" actually has nothing to do with what is being described by this human brain's (physical) words -- this human brain's "real subjective qualities" actually has nothing to do with this human brain's words about its "subjective qualities". So, it is logically impossible for a human brain to describe its "real subjective qualities" in words -- this human brain's words have nothing to do with this human brain's "real subjective qualities". This human brain's words (about its "subjective qualities") are (physically) produced by this human brain, so they do not describe this human brain's "real subjective qualities". It's a logical mistake to assume that this human brain's words (or this human brain's other (physical) behaviors) are describing/reflecting this human brain's "real subjective qualities" -- it's logically impossible for others to know this human brain's "real subjective qualities". If I assume that this human brain has "real subjective qualities", and if I assume that my brain also has "real subjective qualities", then it's a logical mistake for my brain to talk with this human brain regarding our "real subjective qualities", because this human brain's words do not describe/reflect its "real subjective qualities" -- even if I assume that my words describe/reflect my brain's "real subjective qualities". When my brain talks with this human brain regarding our "real subjective qualities", my brain is having an illusion (or is making a logical mistake) -- my brain (incorrectly) feels like that this human brain's words describe/reflect its "real subjective qualities". Logically speaking, I don't need to assume that this human brain has "real subjective qualities" -- it's meaningless for me to assume that this human brain has "real subjective qualities". Because there is no genuine way for me to communicate with this human brain's "real subjective qualities". Trying to study this human brain's "real subjective qualities" from this human brain's words (or this human brain's other (physical) behaviours), is a wrong approach/methodology. This human brain's words actually don't explain/describe/reflect this human brain's "real subjective qualities". I have no way to know whether this human brain actually has “real subjective quality of redness” or not, no matter what words this human brain says – even if this human brain is the first individual who invented the term “real subjective quality of redness”.

(A: "If we both want to see Venus, but you can't from your perspective in space, then I must bring you on my visual perspect." In this case, you can't (see Venus), because of lacking information (from Venus). Here, different perspectives means different information being received.)

A: You can't see Venus because you are at a different location/perspective in space -- the fact that you are at a different location can be observed objectively. This explanation (on why you can't see Venus) focuses on an objectively observable reason – that’s why it is called an \*objective\* explanation. An objective explanation is an explanation which is based on an objectively observable reason. A subjective explanation is an explanation which is not based on an objectively observable reason. An objective explanation can be used to explain the subjective qualities. A subjective explanation can also be used to explain the subjective qualities. The subjective qualities are imagined/assumed (by most philosophers) to be privately accessible only. Most philosophers agree that the subjective qualities are in the \*context\* of a privately/subjectively accessible space/world/reality (which is different from the \*context\* of the publicly/objectively accessible space/world/reality) only. It’s possible for most philosophers to agree with an objective explanation. It’s also possible for most philosophers to agree with a subjective explanation.

A: “"visual experiences of sensations of redness" ... philosophers talk funny” (<https://twitter.com/ax_phi/status/1501660224037744640>)

A: “Well, if you want to be pedantic about it, there is no 'red', just photons of varying wavelengths. So, how about proportionally more sensations from longer wavelength receptors in the retina. These sensations are weighted against those of short and middle receptors. And so on.” (<https://twitter.com/Anatonomicon/status/1501732907940864004>)

A: Actually, there is no 'sensations', just flows of electrons among neurons.

A: a visual experience which reflects/mathematically-models certain frequency of light wave

(A: “I disagree w 1 & 2, 'cause of "fully". If I can access images on your retina & body/brain processes during your red percept, I can explain that you are exper red, & the causal factors of your red exper vs nonconscious red perception. What else are you asking for w that "fully"?” (<https://twitter.com/AntonellaTrama3/status/1501506634559983616>) )

Q: “Perhaps you have all heard @patchurchland's take on Frank Johnson's Mary's Augment by now. <https://www.youtube.com/watch?v=h0nTeDWvpj4> ”

A: When a philosopher uses a thought experiment to reach a conclusion (in biology), she/he is not doing science. A philosopher might be too confident on her/his mental simulation regarding a thought experiment. A real experiment (in the real world) might have an unexpected result -- that's why we need a real experiment. When a philosopher lacks knowledge in science, she/he is not aware of that. No one will have enough knowledge in science.

Q: “What some philosophers call “knowledge-how” (e.g. knowing how to ride a bike) isn’t knowledge at all, IMHO. True knowledge must be experienced, but we don’t experience all that goes into riding a bike. We only experience the \*intention\*, & our body unconsciously does the rest.” (<https://twitter.com/BugRib/status/1501953306897178626>)

Q: “For this reason, I don’t think “knowledge-how” even applies to the “Mary the color scientist” thought experiment, let alone defeats it. Yes, Mary \*obviously\* learns what it’s like to experience red. It blows my mind that anyone can deny this with a straight face, TBH.” (<https://twitter.com/BugRib/status/1501954236803739651>)

A: If Mary is (imagined to be) a philosophical zombie, then what does Mary learn when she "experiences" red? If Mary is not (imagined to be) a zombie, then what does Mary learn (comparing to the case she is (imagined to be) a zombie) when she “experiences” red? Can Mary “experiences” something \*extra\* when she is not (imagined to be) a zombie (comparing to the case she is (imagined to be) a zombie)? Mary should behave exactly the same no matter she is (imagined to be) a zombie or not. Then why should we imagine that Mary “experiences” something \*extra\* when she is not (imagined to be) a zombie (comparing to the case she is (imagined to be) a zombie)? We need to define the term “learn” first. When we imagine that Mary \*learns\* something, what does it mean by the term “learn” in our imagination? Does the term “learn” mean a \*change\* in the specific physical construction of Mary’s brain? Actually, the specific physical construction of Mary’s brain changes at every moment. What kind of change (in the specific physical construction of Mary’s brain) should be called “learn”? How do we define that properly? Why some changes (in the specific physical construction of Mary’s brain) should be called “learn”, while some other changes (in the specific physical construction of Mary’s brain) shouldn’t be called “learn”? What is the fundamental difference between these two kinds of changes? When we try to define the term “learn” under the context of the (publicly/objectively accessible) objective-theory, it seems very difficult to define it. But if we can define it, then this definition is an \*objective\* definition. Otherwise, we can only use a \*subjective\* definition (under the context of the (privately/subjectively accessible) subjective-theory). A subjective definition is vague (comparing to an objective definition). Two philosophers can have different understandings/imaginations on a subjective definition (because they have different (privately/subjectively accessible) subjective-realities), while two philosophers can’t have different understandings/imaginations on an objective definition (under the context of the (publicly/objectively accessible) objective-theory).

A: I can imagine each indirect-object (including my physical body) to be a philosophical zombie, if I imagine that my consciousness/mind/subjective-theory has nothing to do with my physical body – if I imagine that “my” consciousness/mind/subjective-theory is actually the consciousness/mind/subjective-theory of the whole cosmos/objective-theory. In this imagination, the “center” of the consciousness/mind/subjective-theory (of the whole cosmos/objective-theory) is a human body, that’s why the consciousness/mind/subjective-theory (of the whole cosmos/objective-theory) labels/imagines this human body to be its master/controller, but actually this human body is a philosophical zombie. In this imagination, there is only one consciousness/mind/subjective-theory, and this consciousness/mind/subjective-theory does not belong to my physical body, so I don’t need to explain why only my physical body has consciousness/mind/subjective-theory while any other indirect-object doesn’t have consciousness/mind/subjective-theory – because (it is imagined that) my physical body doesn’t have consciousness/mind/subjective-theory. In this imagination, I am not my physical body, but the whole cosmos/objective-theory (which includes my physical body and every other indirect-object) – I am the consciousness/mind/subjective-theory of the whole cosmos/objective-theory. In this imagination, there is one cosmos/objective-theory, and there is only one consciousness/mind/subjective-theory (for the whole cosmos/objective-theory). In this imagination, I am the whole cosmos/objective-theory, and I am the only one consciousness/mind/subjective-theory (for the whole cosmos/objective-theory). The sentences in the present article are only produced by the objective-state-evolution of the BBs of the whole cosmos/objective-theory – the sentences in the present article are not produced by the only one consciousness/mind/subjective-theory (for the whole cosmos/objective-theory). (It can be imagined that) the content of the only one consciousness/mind/subjective-theory (for the whole cosmos/objective-theory) is also produced by the objective-state-evolution of the BBs of the whole cosmos/objective-theory. (It can be imagined that) the content of the only one consciousness/mind/subjective-theory (for the whole cosmos/objective-theory) represents/simulates/mathematically-models/reflects the objective-state-evolution of the BBs of the whole cosmos/objective-theory. The objective-state-evolution of the BBs of any indirect-object is not controlled/driven/caused by the only one consciousness/mind/subjective-theory (for the whole cosmos/objective-theory) – the objective-state-evolution of the BBs of any indirect-object is only controlled/driven/caused by the direct-function. The only one consciousness/mind/subjective-theory (for the whole cosmos/objective-theory) isn’t controlling/driving any indirect-object in the cosmos/objective-theory.

### (29)

Q: “The illusionist position is that when I see the blue sky above me I am correctly perceiving a complex physical property of the object but then misconceive the situation as having a subjective character and a subject to experience that subjectiveness.” (<https://twitter.com/sphexish/status/1502575628259893248>)

A: So, the blue sky is a property of an object? What's that object then?

Q: “The collection of particles in the upper atmosphere that constitute “the sky” in the same way a collection of atoms make up “the table”. The property is the way the particles scatter light.” (<https://twitter.com/sphexish/status/1502579853865979904>)

A: So, illusionist position is that there is no subject in the scenario, although it feels like that a subject is observing an object.

Q: “Yes I think so, that is the illusion, not a false perception but a false belief attached to the nature of the perception.” (<https://twitter.com/sphexish/status/1502583289739157506>)

A: "There is no subject in a perception." I can accept this precondition/assumption. Are there something else derived from this precondition/assumption?

Q: “I’m not sure what you mean. I think the subjective self could be an illusory object of perception.” (<https://twitter.com/sphexish/status/1502595395700117512>)

A: The illusionist position is that "it seems to be a subject and object in a perception, but actually there is no subject who is perceiving", I can accept this position. But I don't know what's the difference if I accept this position. I can agree that the subjective self could be an illusory object of perception. But it doesn't make much difference. Perhaps because I already accepted this illusionist position myself. This illusionist position is already widely spread/accepted.

(Q: “The illusionist position is that when I see the blue sky above me I am correctly perceiving a complex physical property of the object but then misconceive the situation as having a subjective character and a subject to experience that subjectiveness.” (<https://twitter.com/sphexish/status/1502575628259893248)>)

A: This illusionist position includes two parts. 1) Actually, there is no subjective character. Or in other words, the subjective character is an illusion. 2) I am \*correctly\* perceiving a complex physical property of the object. I agree with 1) while disagree with 2). I am not correctly perceiving an object. Or in other words, my perception of the object is incorrect/subjective, not correct/objective. My perception of the object depends on the specific physical construction of my brain, that’s why I call my perception “subjective”.

Q: “I’m not sure it is widely accepted in the west though I suspect that non-dualism is a common feature of non-western cultures with a Buddhist tradition.” (<https://twitter.com/sphexish/status/1502612630867005440>)

A: I mean, widely accepted by philosophers.

(A: So, the blue sky is a property of an object? What's that object then?)

Q: “In the same way, does a falling tree in a forest make a sound with no subject to experience it? Yes because there are never any subjects and sound is a complex property of the movement of air waves.” (<https://twitter.com/sphexish/status/1502580500015296513>)

A: "Sound exists without the existence of any nervous system." Is that what you mean?

Q: “The complex property that the sound wave has, like light, is a potential to effect the physical states of brains when they are physically present. Both retain that complex property in the absence of brains.” (<https://twitter.com/sphexish/status/1502586119632076801>)

A: “Which came first, sound and light, or theories of physics about sound and light?” (<https://twitter.com/WalterHBlack/status/1502587240228212738>)

Q: “I think the phenomenal theories of sound and light as we tend to think of them encapsulate folk theories of reality, folk physics like Aristotle’s.” (<https://twitter.com/sphexish/status/1502597404893274114>)

A: “I asked you, Tim, what in heaven's name is a sound or light without an ear, a brain, without conscious experience? or without vision, respectively. Yes, the old tree in the forest. The greatest philosophical question ever asked, although it has become popularized...” (<https://twitter.com/Daniel43107974/status/1502617848027533317>)

A: “The answer! Sound is still loud even if no one is present, and the room is still brightly lit even thought no one is home. And there is a pain in my foot even if I am not around to experience it. The self is an illusion!! Ha ha! (Sorry.)” (<https://twitter.com/Daniel43107974/status/1502618869562753025>)

A: “"Pain" is a good point. Is "pain" a complex property which exists without brains?

Q: “I would say that pain is a complex physical property of c fibres firing. It’s an illusory perception of body states to be avoided because of the attendant illusory unpleasantness. You can stop the illusion with anaesthetic.” (<https://twitter.com/sphexish/status/1502662440705839118>)

(A: The illusionist position is that "it seems to be a subject and object in a perception, but actually there is no subject who is perceiving", I can accept this position. But I don't know what's the difference if I accept this position. I can agree that the subjective self could be an illusory object of perception. But it doesn't make much difference. Perhaps because I already accepted this illusionist position myself. This illusionist position is already widely spread/accepted.)

Q: “Do you mean the \*individual\* subject could be an illusion, or that there could be no subject at all, no bearer of experience?

I don’t know what the word “experience” could possibly mean without an experiencer. It would be like a smile without a face. Seems meaningless.” (<https://twitter.com/BugRib/status/1502633495092346882>)

A: I imagine two worlds/realities/theories. In the third-person world/reality/theory, my physical body is experiencing a light wave. In the first-person world/reality/theory, my avatar is experiencing redness. There is an experiencing experiencer in the third-person world/reality/theory. There is no (true/real) experiencing experiencer in the first-person world/reality/theory – my avatar is not a true/real experiencing experiencer.

Q: “I think the illusionist position is that inner world that you think you introspectively experience with a subjective self does not exist, it is an illusion.” (<https://twitter.com/sphexish/status/1502939052919689218>)

A: My position is that the inner world is subjective. In my theory, it's okay to understand the term "subjective" as "illusive". I describe the subjective/illusive inner world in detail, although it is subjective/illusive. Instead of identifying two worlds (i.e., an inner world and an outer world), I’d rather view/treat them as two theories: a subjective-theory and a objective-theory. When we imagine two “worlds”, the two worlds are clearly separated in our imagination – the two worlds don’t have any overlap. When we imagine two “theories”, the two theories don’t need to be clearly separated to each other in our imagination – the two theories can have some overlap. I can view/treat what I see (in front of me) as a subjective-theory. I can also view/treat what I see (in front of me) as a objective-theory. When I agree with my objective-theory, my subjective-theory becomes incorrect/counterfactual/subjective/illusive under the context of my objective-theory.

(A: “Obviously science can’t YET explain it. The fallacy is in concluding that it can NEVER do so.” (<https://twitter.com/apologetics_un/status/1500538571966533638> ))

Q: “Physical science was designed to account for publicly observable phenomena via the postulation of underlying dynamical structures. Why think it's going to be any good at a totally different explanatory task of accounting for unobservable subjective qualities?” (<https://twitter.com/Philip_Goff/status/1500571366822748161>)

A: “panpsychist have no reason to believe in a public world, because everything is unknowable consciousness-to-consciousness causation. anything that seems like a public world is the result of unknowable interactions between unknowable consciousnesses, all "private" nothing public” (<https://twitter.com/hxt55/status/1505717611639758851>)

### (30)

Q: “What are physicalists talking about when they use the word “physical”? Are the laws of physics themselves physical? What about time?” (<https://twitter.com/BugRib/status/1502634260871585795>)

A: “The laws of physics are abstract explanations but they still need to be instantiated in a physical substrate such as physics books and to be good explanations they need to be hard to vary and resist falsification.” (<https://twitter.com/sphexish/status/1502660430996684802>)

A: “I think that different times are different universes.” (<https://twitter.com/sphexish/status/1502665270493646856>)

Q: “I think of Time as before and after. Silly me.” (<https://twitter.com/Daniel43107974/status/1502765134862766082>)

Q: “From what I understand physicalism grew out of materialism. It's like pouring water from one vessel into another. Different ISM. All I ask is what remains of any specific physical thing once ALL perception via the senses is removed. That is, what can be said about it?” (<https://twitter.com/Daniel43107974/status/1502766897644941315>)

Q: “I am not insisting that physical reality would cease to exist along with the annihilation of all conscious activity in the universe. I am suggesting that that reality could no longer include objects. So does that not constitute a problem? What is the nature of absolute reality?” (<https://twitter.com/Daniel43107974/status/1502804220680060931>)

A: We are in the absolute reality (the objective-theory), although it feels like that I am in my subjective-theory.

Q: “That's a dogmatic assertion and an erroneous distinction. Reality has both an objective and a subjective component; the question I am raising is this: what is "objective reality" without the subjective component? If there's no subjectivity, reality as you know it ceases to exist.” (<https://twitter.com/Daniel43107974/status/1502832118669393922>)

A: If there's no subjectivity, reality as you know it ceases to be subjectively experienced.

Q: “If there's no subjectivity, reality as you know it ceases to be objectively experienced.” (<https://twitter.com/Daniel43107974/status/1502834332171481094>)

A: Who is the subject to objectively experience the reality? Or in other words, who is objectively experiencing the reality?

Q: “We've been through this before. You are free to doubt your own individual consciousness. It is you. That "you" I speak of is your individual consciousness. Your "I" that thinks and is not its own object; YOU are that knowing subject. The subject is you. You are conscious, no?” (<https://twitter.com/Daniel43107974/status/1502838937752064011>)

A: "My (individual) consciousness is objectively experiencing the reality." – is that what you mean?

Q: “When you look at your hand, you are looking at an object. That is "objective reality." But that object's existence--as an object--is dependent upon your (individual) consciousness. Sounds like a contradiction but it isn't. No object without the subject.” (<https://twitter.com/Daniel43107974/status/1502846705380769796>)

Q: “How can there be an object in itself, that is, an object that exists independently of your individual consciousness? I for one cannot imagine what that could possibly be. The word "object" itself implies a subject, right?” (<https://twitter.com/Daniel43107974/status/1502847503712100355>)

A: When I am looking at my hand, I am looking at an object -- I am the subject. Light wave reflected from my hand will come into my eyes, creates a picture on my retina, and generates an internal/mental image (of my hand) in my mind. Where is that internal/mental image (of my hand) in my mind? When I am looking at my hand, the hand in front of my eyes, is actually the internal/mental image (of my hand) in my mind.

Q: “You experience it as external. You don't experience it as an internal image.” (<https://twitter.com/Daniel43107974/status/1502860485686874114>)

A: Yes, I experience it as external/objective, although it is actually internal/subjective/mental. Then, where/what is my actual/objective hand? It's the thing in itself.

(A: When I am looking at my hand, I am looking at an object -- I am the subject. Light wave reflected from my hand will come into my eyes, creates a picture on my retina, and generates an internal/mental image (of my hand) in my mind. Where is that internal/mental image (of my hand) in my mind? When I am looking at my hand, the hand in front of my eyes, is actually the internal/mental image (of my hand) in my mind.)

Q: “And then what? Who is looking at that internal image? I see solving the problem of consciousness as disposing of that imaginary homunculus that looks at an internal representation. The only thing that looks at anything is the “external” you.” (<https://twitter.com/sphexish/status/1502962707041071109>)

A: When I am looking at my hand, is the hand a part of the "external" me?

(Q: “You experience it as external. You don't experience it as an internal image.” (<https://twitter.com/Daniel43107974/status/1502860485686874114)>)

Q: “That’s right you experience the external world and not an internal phenomenal property.” (<https://twitter.com/sphexish/status/1502963720217153538>)

A: When you call it the "external world", that "world" is actually your internal world. When you don't know that "world" is actually your internal world, you have no idea on what the actual external world is.

(A: When I am looking at my hand, is the hand a part of the "external" me?)

Q: Yes, it is. (<https://twitter.com/Daniel43107974/status/1502966357951922177>)

A: This is the position of most people (including @sphexish) – I disagree with this position.

Q: “What position is that? I don't talk about looking at internal images or about an external me that is conscious. The external "me" is my body only, not my knowing mind. What would you say your hand is?” (<https://twitter.com/Daniel43107974/status/1502969497698902021>)

A: My position is that, anything you are currently perceiving (e.g., the “physical” world around your “physical” body; your “physical” body), is actually part of your first-person world/reality/theory.

(Q: “That’s right you experience the external world and not an internal phenomenal property.” (<https://twitter.com/sphexish/status/1502963720217153538)>)

A: “When you say “you experience the external world”, what do you mean by “experience”? What makes one physical process (e.g. brain processes) an experience, but another physical process (e.g. a computer program) just…stuff happening?” (<https://twitter.com/BugRib/status/1502976770617749507>)

Q: “I think experience is just stuff happening in the brain like the computer. If the computer could create a story represented in memory in which there was a computer self experiencing pain, then that story would be an intentional object for the computer and it would experience pain” (<https://twitter.com/sphexish/status/1502979039929282567>)

Q: “It’s just that implementing that software is far beyond current technology. If we could simulate the representational systems in computer software I think we would create a conscious AI.” (<https://twitter.com/sphexish/status/1502980754074214404>)

A: In the future, perhaps a computer software might be able to simulate two theories, a subjective-theory and a objective-theory. Both theories are maintained by the software internally. Both theories are aimed at describing the external world. Currently, my brain is doing this.

(A: My position is that, anything you are currently perceiving (e.g., the “physical” world around your “physical” body; your “physical” body), is actually part of your first-person world/reality/theory.)

A: For example, when I am looking at my hand, the hand I am looking at, is actually a mental image – this mental imagine is under the context of my brain’s (internal) subjective-theory. Under the context of my brain’s (internal) objective-theory, my “actual” hand is a set of BBs within a state machine. Under the context of my brain’s objective-theory, my brain’s subjective-theory represents/simulates/mathematically-models/reflects my brain’s objective-theory, while my brain’s objective-theory represents/simulates/mathematically-models/reflects the actual reality/thing-in-itself. Under the context of my brain’s subjective-theory, an objective-situation (which can be located in the three-dimensional Euclidean space of the indirect-geometric-model) causes another objective-situation (which can also be located in the three-dimensional Euclidean space of the indirect-geometric-model) to happen according to a causality other than the direct-function. Under the context of my brain’s objective-theory, an objective-situation is not caused by any other objective-situation – each objective-situation is only caused by the direct-function. You can see that, here my brain’s subjective-theory and objective-theory conflict with each other. So, at least one of them must be incorrect. It is plausible that my brain’s subjective-theory is incorrect. My brain’s subjective-theory is a theory about causalities which are not only the direct-function. My brain’s objective-theory is a theory about the only causality – the direct-function. My brain’s subjective-theory explains (the logic of) itself based on causalities which are not only the direct-function. My brain’s objective-theory explains (the logic of) itself only based on the only causality – the direct-function.

### (31)

Q: “I think you’re proposing that everything’s a bottom up process from building blocks. But why can’t little things make big things which then affect the little things? Bottom up AND top down.” (<https://twitter.com/SMcfarnell/status/1502746241599422468>)

A: Everything looks like being "built" bottom up, if you \*imagine\* that a physical object is \*built\* from building blocks. However, in my view, a physical object is only some building blocks -- these building blocks are not dependent on each other. Each building block has nothing to do with any other building block – each building block is independent/standalone. A physical object is not \*built\* from building blocks – a physical object \*is\* some building blocks.

Q: “Are there really building blocks at all? Are there just local perturbations of a field? Or knots in a multi-dimensional network?” (<https://twitter.com/SMcfarnell/status/1502764369658195973>)

A: You are right. Building blocks are also my imagination.

### (32)

Q: “If I say to you imagine a woman wearing a green dress, I’m sure you will believe that you can see her in your minds eye. If I say to you that you have no minds eye, you just believe that you can see her you will find the idea bizarre.” (<https://twitter.com/sphexish/status/1503250394574729217>)

Q: “If I then say that the false belief is the same when an actual woman in a green dress is standing in front of you it will seem totally crazy, but you may have an aha moment when you realise that your basic assumption that your eyes are video cameras..” (<https://twitter.com/sphexish/status/1503251186866139136>)

Q: “..and that your brain must be generating an image from the sense data (for who to look at?) is false. There never was an image to look at…THAT is the introspective illusion. Now apply to sounds, feelings, tastes, smells, all subjective experience.” (<https://twitter.com/sphexish/status/1503252319458242561>)

A: When I imagine a woman wearing green dress, that woman is also the introspective illusion, is that what you mean? I call it a mental image.

### (33)

A: “Illusionism is to consciousness as compatibilism is to free will. It's consistent internally, but it takes the key term and redefines it such that it loses its original essence. It's like saying you believe in God after having redefined "God" to mean a "a ham sandwich"” (<https://twitter.com/tealpajamas/status/1503156395494965249>)

Q: “The ham sandwich crack is funny but unfair. The redefinition for compatibilism and illusionism is not that arbitrary. Something of the original folk intuition is retained. A better analogy might be to redefine God to be nature, as Spinoza did.” (<https://twitter.com/Disagreeable_I/status/1503296080749989890>)

A: “Anyone here believes in compatibilism? I'd like to understand more about that.”

Q: “I do. I wouldn't call it a 'belief' though. I see it as a pragmatic definition of free will that gives us all the benefits in society.” (<https://twitter.com/ArletOttens/status/1503299257788510217>)

A: “What's the benefits in society?”

Q: “The benefit is the ability to have (legal/social) contracts between people for mutual benefit. Cheating on this contract is often beneficial for the side that does it. We prevent cheating by agreeing on punishment that makes benefit negative.” (<https://twitter.com/ArletOttens/status/1503302870346739712>)

Q: “To decide whether somebody cheated, we look at whether their decisions were made of their own 'free will', rather than being forced by circumstances outside their control. That kind of free will is compatible with determinism.” (<https://twitter.com/ArletOttens/status/1503303216209051652>)

A: Is compatibilism that simple?

Q: “I think so, yes.” (<https://twitter.com/ArletOttens/status/1503303891902992385>)

A: hard determinism + moral responsibility = compatibilism

A: Although hard determinism implies no moral responsibility

Q: “In what sense? If you choose to engage in a contract, and you are aware of the consequences of cheating, then you fully deserve these consequences.” (<https://twitter.com/ArletOttens/status/1503305227377811461>)

A: Even if you are a computer program?

Q: “Compatibilism allows for the possibility of holding a computer program to be morally responsible, yes. But I don't think we have any programs worthy of this yet. You can see it in embryonic form when reward/punishment is used in AI training.” (<https://twitter.com/Disagreeable_I/status/1503306966290075651>)

A: In fact, the reward/punishment is determined/fated to happen.

A: In a deterministic cosmos, reward/punishment plays no causal role, because reward/punishment are determined/fated to happen

Q: “If you have two deterministic systems A and B, but in system A there's a reward, and in system B there's a punishment for the exact same choice, then they will get different outcomes.” (<https://twitter.com/ArletOttens/status/1503309430615687173>)

A: But we only have one deterministic system -- our cosmos.

Q: “And in our deterministic system, we can determine that it would be a good idea to set up a system of reward/punishment, and so we do that. If it was a bad idea, we would decide not to do that.” (<https://twitter.com/ArletOttens/status/1503310389538443266>)

A: In our deterministic system, can a human brain actually determine anything?

Q: “Sure. A chess program can determine which move has the highest probability of winning.” (<https://twitter.com/ArletOttens/status/1503311103278956545>)

A: It's not a \*libertarian\* determine

Q: “But we don't need libertarian determine. I don't even know what that means in practice. Suppose it's Tommy's 7th birthday, and he's offered a choice between 2 pieces of cake. Tommy wants the biggest piece, and that's a simple deterministic choice.” (<https://twitter.com/ArletOttens/status/1503312163414417409>)

A: Before Tommy making a choice, if we tell him that we will punish him for his choice (if his choice is "bad"), will Tommy's choice become a nondeterministic choice?

Q: “No. But our telling him that will influence his choice. Granted, our telling him that was determined since the Big Bang, but until we decide to tell him we don't know which decision was fated, and we can at least imagine a possible world where we didn't tell him that.” (<https://twitter.com/Disagreeable_I/status/1503313093794877444>)

A: So, telling him that was determined in our cosmos -- it will not change anything in our cosmos.

Q: “Indeed. But like a chess computer, we must still choose what to do. The "moves" available to us include telling him or not telling him. We must choose the move that will most closely accord with our goals.” (<https://twitter.com/Disagreeable_I/status/1503313805782233088>)

A: So, you can't do anything different from your fate. Can you?

Q: “No.” (<https://twitter.com/Disagreeable_I/status/1503314412475760642>)

A: If we punish you for what you did, that's your fate.

Q: “Indeed. So punishment is regrettable. But it's better than not punishing, because if we don't punish then bad behaviour will proliferate, leading to worse consequences for everyone.” (<https://twitter.com/Disagreeable_I/status/1503314842190503941>)

A: Bad bahaviour will not proliferate in a deterministic cosmos.

Q: “It will if it was fated to do so, as it would be in a world where we were fated to stop punishing people because we were fated to be fatalistic.” (<https://twitter.com/Disagreeable_I/status/1503316966567723015>)

A: Yes, if bad behavior will proliferate in a deterministic cosmos, there is no way to prevent that. Whatever you do in that cosmos, it won't prevent that. Whatever you do, is also fated.

Q: “Indeed. But that doesn't mean that our decisions have no consequences. Bad behaviour will or will not proliferate just because we do not or do choose to punish it. The proliferation is fated because our choice is fated. But we must still make the choice!” (<https://twitter.com/Disagreeable_I/status/1503317898777047041>)

A: We will make the choice, if and only if we are fated to make the choice.

Q: “Indeed. So what? We can explain choices by saying "it was fated" or we can explain them with reference to reasons, dispositions, emotional state etc. Both kinds of explanations can be true at the same time, but the latter is far more useful.” (<https://twitter.com/Disagreeable_I/status/1503320477946765313>)

A: In my view, the former is the correct explanation; the latter is the incorrect explanation.

Q: “The two explanations are not incompatible though. Why should we discard intentional explanations? They are extremely useful. Consider an agent in a maze, considering whether to go left or right. A fatalistic agent says "it doesn't matter, the outcome is fated". This is silly.” (<https://twitter.com/Disagreeable_I/status/1503323038468743172>)

A: Is the outcome fated or not?

Q: “Yes. But we still must decide. A fatalistic chess player playing randomly and thoughtlessly because the outcome is fated will be beated 100% of the time by a player who seriously considers alternative possibilities.” (<https://twitter.com/Disagreeable_I/status/1503323643924918275>)

A: If the outcome is fated, then why the fatalistic chess player's choice matter?

Q: “Because the choice of the fatalistic chess player is part of the chain of cause and effect that brings the outcome into existence. The choice itself is fated, but it still must be made, and it still matters because of its role in bringing the future about.” (<https://twitter.com/Disagreeable_I/status/1503324310089445379>)

A: What do you mean by the term "matter" here? If the choice is fated, why does it matter? I'm not quite understand that.

Q: “I would say something matters if it plays a significant role in how events play out, especially when we would prefer one way events could play out to another, where the alternative futures are alternatives because we don't know which future will be realised.” (<https://twitter.com/Disagreeable_I/status/1503325385995526146>)

A: We don't know which future will be realized, but our choice won't change the future -- our choice won't change which future will be realized. Is that correct?

Q: “Not really. Our choice does change the future in one sense -- if we had chosen otherwise, the future would have been different. The future is fixed only because our choice is fixed. Thus our choice matters. It is part of what brings the future about.” (<https://twitter.com/Disagreeable_I/status/1503326152173182982>)

A: if we had chosen otherwise, the future would have been different. But we had no way to choose otherwise in our cosmos.

Q: “Right. But we can still imagine alternative futures because we don't know what we will decide until we decide. When we decide, we are attempting to choose a future that aligns with our goals. Futures are built, in part, by agents making such deterministic choices.” (<https://twitter.com/Disagreeable_I/status/1503327313861173250>)

A: Futures are built, in part, by agents who (falsely) believe that alternative futures are all possible. Agents who (falsely) believe that (alternative futures are all possible) are fated to (falsely) believe that. Compatibilists are such agents.

Q: “I don't think it is a false belief. One can be a determinist and make such choices without believing anything false. I just say "These are the futures from which I am choosing". They are futures under consideration. I am aware that only one will be realised, but not which.” (<https://twitter.com/Disagreeable_I/status/1503329903122464776>)

A: Are you aware that your choice will not impact which future will be realized?

Q: “But it does. My choice is part of what goes into building that future. My choice matters because it does impact the future. The future is fixed only because my choice is fixed.” (<https://twitter.com/Disagreeable_I/status/1503330729119428609>)

A: You believe that your choice will impact which future will be realised. Your choice matters in this sense. Although you believe that your choice is predetermined. Is that correct?

Q: “If we look at the simple example of a computer playing chess against unknown opponent, you can see that the computer is completely deterministic calculations resulting a move choice that will impact the future outcome of the game.” (<https://twitter.com/ArletOttens/status/1503331728387149828>)

A: You believe that the computer's choice impacts the future outcome of the game. In my view, it's a false belief.

Q: “I reject that it could be a false belief. But I accept that I am probably using terms differently than you. What I mean by "impact" may not be what you mean. I think it impacts the future because it is part of the chain of events that build the future.” (<https://twitter.com/Disagreeable_I/status/1503339535433969664>)

A: In my view, if a chain of events are all determined/fated to happen, then there is no causal relationship between any two events in the chain.

A: In my view, the computer is not an agent. So, the so-called “computer’s choice” is not the choice of the computer, but the choice of the Schrodinger equation. When you say that “the computer’s choice impacts the future outcome of the game”, it actually means that “the Schrodinger equation’s choice impacts the future outcome of the game”. So, you believe that the Schrodinger equation should make its choice properly. Is that correct?

(A: You believe that the computer's choice impacts the future outcome of the game. In my view, it's a false belief.)

Q: “I don't know what kind of definition you use for 'choice' that would make that belief false. Maybe you can clarify? For me, choice is simply a calculation that selects the alternative with the best expected outcome.” (<https://twitter.com/ArletOttens/status/1503333907646894081>)

A: For me, choice is a physical process -- the movement of related elementary particles in an agent.

Q: “Sure, the computer does a whole bunch of movement of elementary particles in order to perform this calculation. Two different abstractions of the same physical process.” (<https://twitter.com/ArletOttens/status/1503336622850457600>)

A: Yes. In my view, a set of particles' movement is not caused by another set of particles' movement. Because they are both caused/fated by the Schrodinger equation

(A: In my view, if a chain of events are all determined/fated to happen, then there is no causal relationship between any two events in the chain.)

Q: “But then you lose the ability to say things like “the knight was captured because it had not been protected”. Those are immensely useful analytical tools. And the only tools we have, because we cannot even in principle work from the level of fundamental physics.” (<https://twitter.com/Disagreeable_I/status/1503343006849671177>)

A: For me, there are two "theories", the subjective-theory and the objective-theory. I was debating with you in the context of my objective-theory. You are using the context of your subjective-theory. Things like “the knight was captured because it had not been protected” is in the context of my subjective-theory. To me, it seems like that compatibilists mixed the subjective context with the objective context.

Q: “I would say rather that compatibilism is a subjective context theory only. But I would also say that the subjective context is the right one when making decisions about how we should structure society or about anything really.” (<https://twitter.com/Disagreeable_I/status/1503345823895146500>)

Q: “Compatibilism can be taken as the view that the subjective context does not contradict the objective context, that the two contexts are complementary and compatible. The subjective context is appropriate for making decisions and the objective context is appropriate for physics.” (<https://twitter.com/Disagreeable_I/status/1503346308660318210>)

A: In my view, the two contexts conflict with each other. At least one of them is incorrect -- the subjective-theory

Q: “Where is the conflict? There is a conflict with libertarian concepts. But I don't believe there is a conflict with appropriately compatibilised versions of those concepts.” (<https://twitter.com/Disagreeable_I/status/1503348872571150336>)

(Q: “I would say rather that compatibilism is a subjective context theory only. But I would also say that the subjective context is the right one when making decisions about how we should structure society or about anything really.” (<https://twitter.com/Disagreeable_I/status/1503345823895146500)>)

A: For me, the objective-context is correct, while the subjective-context is incorrect. I'm fated to use my subjective context, when I am using it.

(Q: “Yes. But we still must decide. A fatalistic chess player playing randomly and thoughtlessly because the outcome is fated will be beated 100% of the time by a player who seriously considers alternative possibilities.” (<https://twitter.com/Disagreeable_I/status/1503323643924918275)>)

Q: “In order to navigate our world successfully, we must behave \*as if\* more than one outcome is possible, even if this is not so. This makes sense because even if the future is fated, we don't know what this fate is. Epistemically, many futures are indeed possible.” (<https://twitter.com/Disagreeable_I/status/1503323946829103106>)

A: Many futures are really possible? Or only one future is possible?

Q: “On determinism, only one future is ontologically possible. But many futures are epistemically possible, that is possible \*as far as we know\*.” (<https://twitter.com/Disagreeable_I/status/1503324485688115200>)

A: If only one future is ontologically possible, then other future will not be ontologically possible -- other future will not ontologically happen.

Q: “Indeed. But we must still choose. This is the most important thing I keep coming back to. Even if the outcome is predetermined, even if our choice is predetermined, we must still choose. Because we don't know what we will do until we decide what to do.” (<https://twitter.com/Disagreeable_I/status/1503325646050799618>)

A: We can't make our choice differently. But our choice still matters. Although both our choice and the future are predetermined.

Q: “I agree with all that.” (<https://twitter.com/Disagreeable_I/status/1503326633779994628>)

A: But it seems hard to understand

(A: Yes, if bad behavior will proliferate in a deterministic cosmos, there is no way to prevent that. Whatever you do in that cosmos, it won't prevent that. Whatever you do, is also fated.)

Q: “We are fated to use a system of reward/punishment so that bad behavior will not proliferate.” (<https://twitter.com/ArletOttens/status/1503318180848185349>)

A: If we use that system, then we are fated to use it. If we stop using that system, then it means that we are fated to stop using it.

Q: “Sure, if you like to think of it that way. I don't like the word 'fate', because some people take that to mean that the outcome is fixed, \*even\* if we change some inputs.” (<https://twitter.com/ArletOttens/status/1503318943351590913>)

A: In a deterministic cosmos, it's impossible to change the input.

(A: Yes, if bad behavior will proliferate in a deterministic cosmos, there is no way to prevent that. Whatever you do in that cosmos, it won't prevent that. Whatever you do, is also fated.)

A: The words we are typing right now, are fated.

(A: If we punish you for what you did, that's your fate.)

A: Is it fair for us to punish you?

(A: In our deterministic system, can a human brain actually determine anything?)

Q: “What does that mean? Can an asteroid actually determine anything? It sure can have an impact on events, right? And events can impact on it. Same with brains.” (<https://twitter.com/Disagreeable_I/status/1503311231716937736>)

A: An asteroid can determine something, but it's not a \*libertarian\* determine

Q: “Indeed. I mentioned a switch of vocabulary. Compatibilists typically deny libertarian free will. I'm happy to say nothing in the universe has libertarian free will, including human brains. So they don't \*libertarian\* determine anything.” (<https://twitter.com/Disagreeable_I/status/1503312357057044482>)

A: Then, is there a way to change the objective-state-evolution of a deterministic cosmos?

Q: “No” (<https://twitter.com/Disagreeable_I/status/1503313427414069250>)

A: Then, if you choose to do a bad thing, it's not your fault. Isn't it?

Q: “It's not my \*libertarian\* fault. But \*compatibilist\* fault doesn't track whether I had some metaphysical freedom to do otherwise, it tracks whether there are benefits to society from deeming me to be at fault.” (<https://twitter.com/Disagreeable_I/status/1503314061102133251>)

A: But you have to make that fault. You have no way to avoid that fault.

(A: Even if you are a computer program?)

Q: “Yes, all we need is a mechanism for the agent to reliably predict what the consequences will be for a certain action. In fact, determinism makes that prediction more reliable.” (<https://twitter.com/ArletOttens/status/1503307055171526667>)

A: So, if we fine an AI for its driving behavior, the fine ticket is determined to happen?

Q: “It's different with AI systems. If we program an AI to exceed speed limit, then a fine would not change anything. Instead, we should program the AI to follow the rules.” (<https://twitter.com/ArletOttens/status/1503308192083816448>)

A: If you *imagine* a human brain to be an AI, then how do we make the human brain to follow the rules?

Q: “Because the human brain is pre-programmed to avoid pain and to seek pleasure. That gives us leverage to modify behavior.” (<https://twitter.com/ArletOttens/status/1503308896798228483>)

A: "That gives us leverage to modify behavior." -- but our brains are also pre-programmed.

Q: “I don't understand.” (<https://twitter.com/ArletOttens/status/1503309785374015491>)

A: Imagine a cosmos, in this cosmos, every agent is a computer program.

(A: Although hard determinism implies no moral responsibility)

Q: “The way I think of it, we should deem an agent to be morally responsible if it and other agents in its class are responsive to incentives. Punishment is justified not by dessert but by pragmatic consequentialist considerations about what it means for society.” (<https://twitter.com/Disagreeable_I/status/1503305279840129024>)

Q: “If we fine people for driving over the speed limit, fewer people will do so and lives will be saved. But there is no point fining someone who had his brakes sabotaged. So we can have a notion of moral responsibility without appealing to libertarian free will.” (<https://twitter.com/Disagreeable_I/status/1503306361710555142>)

A: Can we fine an AI for driving a car over the speed limit?

(A: “Anyone here believes in compatibilism? I'd like to understand more about that.”)

Q: “The difference between compatibilism and hard determinism is semantic, so I can switch between them just by adopting different vocabularies. I wouldn’t say I am a compatibilist but I understand and am sympathetic to compatibilism.” (<https://twitter.com/Disagreeable_I/status/1503298722935017479>)

A: What's the semantic difference?

Q: “For hard determinism, free will means choices etc made free from deterministic cause and effect, and it does not exist. For compatibilism, free will means choices etc free from coercion and other such restrictions but not necessarily free from determinism, and it does exist.” (<https://twitter.com/Disagreeable_I/status/1503300385435496452>)

A: Perhaps they don't like the moral implication of hard determinism.

A: What you did, was determined by physical laws. But, we will still punish you for what you did, because we invented a new semantics.

(Q: “Where is the conflict? There is a conflict with libertarian concepts. But I don't believe there is a conflict with appropriately compatibilised versions of those concepts.” (<https://twitter.com/Disagreeable_I/status/1503348872571150336)>)

A: Let's suppose that there were two different objective-situations (A and B) at a previous time (t1), and there was an objective-situation C at another previous time (t2). If a Turing machine tells/narrates a theory that C was caused by A (but C was not caused by B), then it means that there is an internal physical construction/structure/mechanics/process/objective-situation (P) within the TM which physically leads to this theory. Due to the (physical) existence of P, in this TM's subjective-theory, C was caused by A (but C was not caused by B). However, in my objective-theory, C was caused by the Schrodinger equation only -- C was not caused by A (and C was not caused by B either). My objective-theory conflicts with the TM's subjective-theory regarding the cause of C, because my objective-theory is not decided/impacted by the (physical) existence of P. The theory being told/narrated by me (i.e., my objective-theory) conflicts with the theory being told/narrated by the TM (i.e., the TM's subjective-theory), because P has an (physical) impact over the theory being told/narrated by the TM, while P has no (physical) impact over the theory being told/narrated by me. Both theories are (physically) decided by the Schrodinger equation. In the context of my objective-theory, P introduces (incorrect/false) bias/superstition into the TM's subjective-theory. If the TM wants an objective-situation which looks like C to happen, and if the TM tries to make an objective-situation which looks like A to happen, and if an objective-situation (A2) which looks like A actually happens, and if an objective-situation (C2) which looks like C actually happens, and if the TM tells a theory that C2 is caused by A2, then it means that C2 is caused by A2 in this TM's subjective-theory (due to the (physical) existence of P). However, in my objective-theory, C2 was caused by the Schrodinger equation only -- C2 was not caused by A2.

Q: “Causation is not a feature of fundamental physics so I don’t think it belongs in your objective-theory at all. The Schrodinger equation causes nothing. It just describes what happens (or just is what happens). Causation is a feature of the subjective theories.” (<https://twitter.com/Disagreeable_I/status/1503607361440780291>)

Q: “Furthermore, things can have multiple causes and explanations. If theory 1 says C happened because of A, and theory 2 says C happened because of some other reason, that doesn’t mean the two theories conflict.” (<https://twitter.com/Disagreeable_I/status/1503607930582618113>)

Q: “I missed the bus because my alarm didn’t sound. I missed the bus because I overslept. I missed the bus because I walked instead of running to the bus stop. These theories are compatible.” (<https://twitter.com/Disagreeable_I/status/1503608619899699201>)

A: In your theories, what is the real reason? They are all real reasons?

Q: “Yes. Or causes anyway. If we want to be super technical then I might prefer to reserve the word “reason” for a factor that goes into a choice, and missing the bus isn’t a choice as such.” (<https://twitter.com/Disagreeable_I/status/1503610716590325763>)

A: I was talking about one objective-situation causes another objective-situation. Missing the bus is an objective-situation.

(Q: “Causation is not a feature of fundamental physics so I don’t think it belongs in your objective-theory at all. The Schrodinger equation causes nothing. It just describes what happens (or just is what happens). Causation is a feature of the subjective theories.” (<https://twitter.com/Disagreeable_I/status/1503607361440780291)>)

A: It's hard to define what is the causation. The causation and theories are defined (by my theory) arbitrarily.

(Q: “Furthermore, things can have multiple causes and explanations. If theory 1 says C happened because of A, and theory 2 says C happened because of some other reason, that doesn’t mean the two theories conflict.” (<https://twitter.com/Disagreeable_I/status/1503607930582618113)>)

A: You treat theory 1 and theory 2 as no conflict – you have sound reason to do that. I treat subjective-theory and objective-theory as having conflict – I have sound reason to do that too.

(A: I was talking about one objective-situation causes another objective-situation. Missing the bus is an objective-situation.)

A: If an objective-situation has too many reasons, it’s a good explanation that none of them is the actual reason.

(A: It's hard to define what is the causation. The causation and theories are defined (by my theory) arbitrarily.)

Q: Isn’t A a cause of C if C would not have happened without A happening? I don’t see the confusion. (<https://twitter.com/sphexish/status/1503637805754425345>)

A: “The difficulty is in making sense of "without A happening" if A, like everything else that happens, simply had to happen.” (<https://twitter.com/Disagreeable_I/status/1503644403784732672>)

Q: “I just meant proximate cause, I agree that the notion of cause does not make sense beyond that.” (<https://twitter.com/sphexish/status/1503651269793177602>)

A: I call such a "proximate cause" the 2O-cause. In my semantics, a 2O-cause is a "subjective" cause, which is not the real/objective cause -- the Schrodinger equation.

(Q: “I just meant proximate cause, I agree that the notion of cause does not make sense beyond that.” (<https://twitter.com/sphexish/status/1503651269793177602)>)

A: That’s fine. But the notion of proximate causality you propose (and which I agree with BTW) relies on the idea of alternative possible futures. But for @\_xiaoyangyu there is only one possible future, so the idea does not appear to survive careful consideration. (<https://twitter.com/Disagreeable_I/status/1503664736415756290>)

A: I believe, and you believe I assume, that we can make sense of causality by considering only apparently possible futures without assuming that they are all actually possible. But the point is that this is where the difficulty lies. (<https://twitter.com/Disagreeable_I/status/1503665261672603651>)

(A: That’s fine. But the notion of proximate causality you propose (and which I agree with BTW) relies on the idea of alternative possible futures. But for Xiaoyang Yu there is only one possible future, so the idea does not appear to survive careful consideration. (<https://twitter.com/Disagreeable_I/status/1503664736415756290)>)

Q: “Fully determined counter factual futures different from the one we are experiencing is no problem in my ontology because I embrace the many worlds interpretation of QM. I don’t think counterfactual makes sense in any other view.” (<https://twitter.com/sphexish/status/1503665645900152833>)

A: What if you don't embrace the many worlds interpretation here?

(Q: “Fully determined counter factual futures different from the one we are experiencing is no problem in my ontology because I embrace the many worlds interpretation of QM. I don’t think counterfactual makes sense in any other view.” (<https://twitter.com/sphexish/status/1503665645900152833)>)

A: “As it happens I am also an Everettian. But when trying to explore issues around free will and determinism I think it puts things into sharper focus if we just imagine that we are in a deterministic clockwork classical universe for the sake of argument.” (<https://twitter.com/Disagreeable_I/status/1503666947422142464>)

Q: “Clocks tend not to have complex representational states determining what they do next. When a decision is made about what to do about a war, that is one hell of a complex computation of a universal Turing machine.” (<https://twitter.com/sphexish/status/1503670373174370305>)

A: Imagine something similar happens in a Conway's Game of Life system. There can be universal Turing machines in the system.

(Q: “Clocks tend not to have complex representational states determining what they do next. When a decision is made about what to do about a war, that is one hell of a complex computation of a universal Turing machine.” (<https://twitter.com/sphexish/status/1503670373174370305)>)

A: “It is. But it's far from obvious to me that Turing machines are fundamentally incapable of this sort of computation.” (<https://twitter.com/Disagreeable_I/status/1503711181986570242>)

Q: “yes, I am conjecturing that the human brain (not other animals) is a universal Turing machine.” (<https://twitter.com/sphexish/status/1503712193543651332>)

Q: “Of course that could not be true if Phenomenal Consciousness was real because phenomenal properties cannot be represented as phenomenal properties.” (<https://twitter.com/sphexish/status/1503713801518166028>)

Q: “I cannot write my code strColour = “insert patch of green here” (<https://twitter.com/sphexish/status/1503714361898119170>)

A: A brain is a set of elementary particles -- it's not a computer program. It's like a physics calculator.

A: It's like a mechanical calculator (at BB level)

Q: “It’s Turing-complete.” (<https://twitter.com/sphexish/status/1503829940181118977>)

A: It's a Turing complete mechanical computer

(A: A brain is a set of elementary particles -- it's not a computer program. It's like a physics calculator.)

Q: “I think it’s a kind of computer, the mind is the software and the illusion of phenomenal consciousness is the user interface.” (<https://twitter.com/sphexish/status/1503827890126872591>)

A: It's a mechanical computer. There is no user inside this mechanical computer (to use this mechanical computer). There is no software. There is no user sitting inside this mechanical computer (to use this mechanical computer).

Q: “The user is the software process. The user interface is how it represents its operations to itself. The hardware is the stuff the brain is made of. The software is how it is arranged.” (<https://twitter.com/Disagreeable_I/status/1503829813949304843>)

Q: “If you want to deny there is software to the brain, that's fair enough, but then you should also deny there is software on a computer. A computer is 100% hardware. There is no software, really, other than how the hardware happens to be configured at a given time.” (<https://twitter.com/Disagreeable_I/status/1503830093759668230>)

Q: “Though I would say there is software. So I don't think it's crazy to talk about software in the brain also.” (<https://twitter.com/Disagreeable_I/status/1503830212760514563>)

(Q: “If you want to deny there is software to the brain, that's fair enough, but then you should also deny there is software on a computer. A computer is 100% hardware. There is no software, really, other than how the hardware happens to be configured at a given time.” (<https://twitter.com/Disagreeable_I/status/1503830093759668230)>)

A: There is software in a personal computer, but this fact doesn't necessarily mean that there is software in the brain as a set of elementary particles. I can show you the source code of a computer program. Where is the source code of the brain?

Q: “There is no source code. There also exists software for which there is no source code. It is possible to compile software and then delete the source code. I'll accept that calling it software is something of an analogy. It's not literally software, narrowly defined.” (<https://twitter.com/Disagreeable_I/status/1503833004644487172>)

A: In a personal computer, there is executive binary after you delete the source code. The binary is executed by CPU in sequence. There is no CPU nor executive binary in a brain -- there is no software in a brain

Q: “In a PC, there are atoms etc. There are areas of +ve charge and areas of -vecharge. There is no executive binary except for what you choose to interpret as executive binary. You can interpret the brain as encoding patterns also, and patterns can be encoded in binary if you insist” (<https://twitter.com/Disagreeable_I/status/1503834463754764288>)

A: “The architecture of the brain is very different to the Von Neumann architecture in the computers we use. The hardware is very different with each neuron having around 7000 synaptic connections.” (<https://twitter.com/sphexish/status/1503835179382718464>)

(Q: “In a PC, there are atoms etc. There are areas of +ve charge and areas of -vecharge. There is no executive binary except for what you choose to interpret as executive binary. You can interpret the brain as encoding patterns also, and patterns can be encoded in binary if you insist” (<https://twitter.com/Disagreeable_I/status/1503834463754764288)>)

Q: “What makes the brain a computer is that its function is to process information. It is a useful stance to take. And the patterns of information flow (the software) are a separate issue from the neurons used to transmit them (the hardware).” (<https://twitter.com/Disagreeable_I/status/1503835140719620102>)

A: It's easy to confuse to use the software metaphor. People think the program to be very simple

A: People feel like that they can see their program. They can't!

A: A computer program can't see itself.

A: People tend to confuse their plan with their program. "If it rains, then I'll take an umbrella" -- they think it to be their program but it isn't!

A: My plan is not my program, although it feels like a "program"

A: I see the color green, and then there must be a program (if I imagine my brain to be a computer with a program running on it) to show the color green to "me" -- this is fictional

A: People imagine their brain to be a computer with a program running on it, and this computer has a monitor/user-interface, and they are sitting in front of the monitor to see the color green on it -- this is Cartesian theater + software metaphor

A: “Yes, that’s the basic misconception people have.” (<https://twitter.com/sphexish/status/1503840527820771328>)

(A: People imagine their brain to be a computer with a program running on it, and this computer has a monitor/user-interface, and they are sitting in front of the monitor to see the color green on it -- this is Cartesian theater + software metaphor)

Q: “I agree with this up until you perhaps suggest that it's wrong to think that the brain has a user interface and that this implies a Cartesian theatre. People cannot see their program, but they do represent the operation of their program to themselves in a simplified fashion.” (<https://twitter.com/Disagreeable_I/status/1503840658741735437>)

A: "they do represent the operation of their program to themselves in a simplified fashion" -- how?

Q: “One of the things a brain does is model the world. It does so by making representations of some sort. One of the things it can represent is itself.” (<https://twitter.com/Disagreeable_I/status/1503841137815080961>)

A: It can model itself. But this model is incorrect/subjective.

A: For example, they model their plan as their program.

(A: It can model itself. But this model is incorrect/subjective.)

Q: “Agreed.” (<https://twitter.com/Disagreeable_I/status/1503841541562974220>)

Q: “Or at least, it is simplified. I'm not sure we have to say it is always false or incorrect, per se, any more than a desktop user interface is lying to a computer user. It's a user interface. Sometimes this UI gives misleading or illusory impressions, but it's useful all the same.” (<https://twitter.com/Disagreeable_I/status/1503841968849399814>)

A: It's Cartesian theater. You are imagining it as a Cartesian theater. Where is the UI of your brain? Who is using that UI? Yourself is using the UI of your brain?

Q: “The UI is not a visual display. It is a set of beliefs the brain has about itself.” (<https://twitter.com/Disagreeable_I/status/1503842830799749121>)

A: "It is a set of beliefs the brain has about itself." -- how a set of beliefs is like a UI? I can't imagine that.

A: I can't mentally visualize a set of beliefs. I can mentally visualize a UI/monitor.

A: I can imagine a UI/monitor. I can imagine a set of beliefs. But I don't think a set of beliefs is like a UI/monitor

(A: "It is a set of beliefs the brain has about itself." -- how a set of beliefs is like a UI? I can't imagine that.)

Q: “UIs can have many different forms. You may be thinking of a GUI. There are also command line UIs, Alexa has a voice-activated UI, a car has a UI consisting of a steering wheel, pedals etc.” (<https://twitter.com/Disagreeable_I/status/1503843591436787715>)

A: Your mind is your UI. I got it.

Q: “No, I wouldn't say that. There's much more to your mind than the UI. The UI is just how the mind models itself as part of its general world-modelling ability.” (<https://twitter.com/Disagreeable_I/status/1503844110477795337>)

A: Part of your mind (the part which models your mind itself) is the UI.

Q: “Yes.” (<https://twitter.com/Disagreeable_I/status/1503844523025260547>)

A: This is your imagination/belief

Q: “Your imagination/belief about how your mind works, yes. Other beliefs are probably not part of the UI except indirectly because we only know of anything via the medium of our minds.” (<https://twitter.com/Disagreeable_I/status/1503845069052329990>)

Q: “By analogy, you're reading this on Twitter so what I'm saying is indirectly part of the Twitter UI, but only indirectly. More properly the Twitter UI is a set of rules about how to format messages and what set of interactions people can have with them etc.” (<https://twitter.com/Disagreeable_I/status/1503845447059886083>)

(Q: “Your imagination/belief about how your mind works, yes. Other beliefs are probably not part of the UI except indirectly because we only know of anything via the medium of our minds.” (<https://twitter.com/Disagreeable_I/status/1503845069052329990)>)

A: Mind is something subjective. We can't see the mind of a brain in a brain surgery. So, we never know what the mind is.

(A: Part of your mind (the part which models your mind itself) is the UI.)

Q: “The self is an intentional object represented in the mind. It is represented as something with a continuing identity that acts a centre of narrative gravity for the stories about the world the mind represents.” (<https://twitter.com/sphexish/status/1503846494440407042>)

Q: “But you are not the represented self. You are the system creating the representation.” (<https://twitter.com/sphexish/status/1503846745410789379>)

A: In a broader sense, the system creating the representation is the whole cosmos.

Q: “Yes the patterns in the physical universe is the primary computation that the mind is attempting to predict by creating explanatory knowledge.” (<https://twitter.com/sphexish/status/1503848245377777667>)

A: It seems like that a brain is attempting to predict the objective-state-evolution of the physical universe. At the same time, what is (physically) carried out inside this brain, is part of the objective-state-evolution of the physical universe.

A: A brain in the physical universe, works just like a universal Turing machine in a Conway's Game of Life system.

A: In fact, the (physical) work done by a brain, is actually done by the whole cosmos. So, there is no reason to blame a physical brain -- we should blame the whole cosmos instead. An evil brain can't do what she/he wants without the "cooperation" of the rest of the cosmos. Or perhaps we can divide the whole cosmos into two parts? The evil and the good? Like Star Wars. Most people believe in that. This is the biggest mystery to me.

(A: A brain in the physical universe, works just like a universal Turing machine in a Conway's Game of Life system.)

Q: “Dennett has a good chapter on Conways game of life in “Freedom Evolves” - a great book imo.” (<https://twitter.com/sphexish/status/1503850548327550982>)

A: I don't agree with Dennett regarding Conway's Game of Life. Dennett doesn't think our cosmos is comparable to Conway's Game of Life. That's because he focused on the difference between them.

(Q: “The self is an intentional object represented in the mind. It is represented as something with a continuing identity that acts a centre of narrative gravity for the stories about the world the mind represents.” (<https://twitter.com/sphexish/status/1503846494440407042)>)

A: Yes. The self is fictional.

(A: People imagine their brain to be a computer with a program running on it, and this computer has a monitor/user-interface, and they are sitting in front of the monitor to see the color green on it -- this is Cartesian theater + software metaphor)

Q: “yet no one ever has an explanation of how seeing green really does happen” (<https://twitter.com/hxt55/status/1503849657256009731>)

A: No one can prove (to others) that she/he really sees green in her/his mind.

Q: “if I had a full history of physical events leading to someone saying "I see green" and the events didn't need tje color green to make sense, then I would believe the person is unconscious. so I can prove to myself that others are not seeing green” (<https://twitter.com/hxt55/status/1503856579078205440>)

A: I like your argument. I agree with you that others are not seeing green. It's obvious. Myself is seeing green -- that's the only thing I know. I imagine others are seeing green in the same way -- that's only my imagination. I think I am conscious. I think I behave similarly to other people. So I imagine that others are conscious in the same way as me -- but this is only my imagination. That's why the statement "I think, therefore \*I\* am" -- only \*I\* am here. It's different from "We think, therefore we are".

A: It's always possible that others are philosophical zombies, but we keep forgetting this point in our thinking.

Q: “It is not a valid point if "we" keep forgetting it. Solipsists should only use "I".” (<https://twitter.com/WalterHBlack/status/1503867163052019712>)

(A: It's always possible that others are philosophical zombies, but we keep forgetting this point in our thinking.)

Q: “guess I'd be screwed if someone fully understood \*my\* brain and needed no color to see why I said something about color. then I'd be really confused...” (<https://twitter.com/hxt55/status/1503867838129389569>)

A: Someone fully understand your brain can see why you said "I'm confused".

(Q: “In a PC, there are atoms etc. There are areas of +ve charge and areas of -vecharge. There is no executive binary except for what you choose to interpret as executive binary. You can interpret the brain as encoding patterns also, and patterns can be encoded in binary if you insist” (<https://twitter.com/Disagreeable_I/status/1503834463754764288)>)

A: If I simulate the activity of all neurons by a computer program, this computer program is equivalent to the brain's software

Q: “That seems right, yes.” (<https://twitter.com/Disagreeable_I/status/1503835364590555138>)

A: Since neurons change as time goes on, so the control logic of the computer program (to simulate a brain) should change as time goes on. It's impossible to forecast the change of the control logic (of this computer program). To make an accurate simulation (of what a brain does), we need to simulate the whole cosmos at elementary particle level. It's impossible to forecast the change of the control logic (of the computer program which simulates a brain) without simulating the whole cosmos at elementary particle level. So, a brain doesn't have an independent control logic, while a computer program has an independent control logic. That's the difference between a brain and a computer program. A manmade universal Turing machine in a Conway's Game of Life system can have an independent control logic. But we can't reliably forecast what this UTM will (exactly) do, unless we fully simulate the whole system. We can't reliably forecast whether this UTM will do evil things in its whole life (by reading its control logic), unless we fully simulate the whole system. Whether this UTM will do evil things, not only depends on its own control logic, but also depends on the setting of the rest of the system. An UTM doesn't need to have an evil control logic to do evil things. An UTM who have seemingly good control logic might do evil things. What this UTM will do, actually is not decided by this UTM's control logic. What this UTM will do, actually is decided by the initial settings of the whole system. When we are watching what this UTM does, it feels like that what this UTM does is decided by this UTM's control logic. This feeling is wrong. When we are watching what this UTM does, it feels like that this UTM exists \*independently\*. This feeling is wrong. This UTM is only a component of the whole system. This UTM can't do anything independently. What we feel to be done by this UTM, is actually done by the whole system.

(Q: “There is no source code. There also exists software for which there is no source code. It is possible to compile software and then delete the source code. I'll accept that calling it software is something of an analogy. It's not literally software, narrowly defined.” (<https://twitter.com/Disagreeable_I/status/1503833004644487172)>)

A: “It’s a cybernetic control system designed by natural selection to keep the organism alive.” (<https://twitter.com/sphexish/status/1503833822898630659>)

A: It's a mechanical cybernetic control system

(A: I don't agree with Dennett regarding Conway's Game of Life. Dennett doesn't think our cosmos is comparable to Conway's Game of Life. That's because he focused on the difference between them.)

Q: “I think the mind is a sovereign agent even though what the rest of the world does has a causal effect on its responses. Saying that the whole universe is a cause is going well beyond proximate causes.” (<https://twitter.com/sphexish/status/1503991850591469569>)

A: What is the relationship between my mind and my brain? Does my mind have a causal effect on what my brain does?

(A: I don't agree with Dennett regarding Conway's Game of Life. Dennett doesn't think our cosmos is comparable to Conway's Game of Life. That's because he focused on the difference between them.)

Q: “The game of life shows that very simple programs can create complex patterns that behave like independent agents like gliders moving through space.” (<https://twitter.com/sphexish/status/1503992311746805763>)

A: To me, a glider is not independent. In the same sense, an animal is not independent.

(Q: “The game of life shows that very simple programs can create complex patterns that behave like independent agents like gliders moving through space.” (<https://twitter.com/sphexish/status/1503992311746805763)>)

Q: Cellular automata seem to give the clue as to how the software of brains developed, with the neurons acting independently, forming links and breaking them. (<https://twitter.com/sphexish/status/1503992771539083275>)

A: It seems like that neurons are work on their own. It seems unfair to hold me responsible for what my neurons do. I have no control over how my neurons link to each other.

Q: “I don't think this is entirely true for compatibilist control. One of the options apparently available to you is to learn French, say. Should you decide to learn French, this will affect how your neurons are connected.” (<https://twitter.com/Disagreeable_I/status/1504000276897968130>)

A: In the same sense, there should be a way to change myself, if I am a TM in a Game of Life system.

(Q: “I don't think this is entirely true for compatibilist control. One of the options apparently available to you is to learn French, say. Should you decide to learn French, this will affect how your neurons are connected.” (<https://twitter.com/Disagreeable_I/status/1504000276897968130)>)

A: It sounds like that I have libertarian free will to choose to learn French. Suppose there are two cosmoses in the future, I will learn French in one cosmos, I won't learn French in the other cosmos. If I can libertarian-freely choose between the two cosmoses, and if I choose to enter the first cosmos, then my neurons will be connected differently, comparing to the case I choose to enter the second cosmos. However, my choice is made by my current neurons. If the current neurons choose to enter the second cosmos, "I" have no way to choose to enter the first cosmos. “I” have no way to impact my current neurons’ choice. How my neurons will be connected in the future, is decided by how my neurons are currently connected. How my neurons will be connected in the future, is not decided by my current neurons’ libertarian-free-will.

A: If the choice to learn French can have an impact on how my neurons will be connected, then every choice can have an impact on how my neurons will be connected. For example, where should I go for dinner? McDonald or KFC? I will eat different food in different restaurant, so my neurons will grow differently. For example, a fish burger contains more DHA than a chicken wing, so my neurons will grow better if I take a fish burger instead of a chicken wing.

A: If we observe a TM within a Game of Life system, we can see all its choices. Let’s focus on one of these choices. For this choice, we can imagine the case that this TM made the choice differently, which leads to a different future. In these two (different) futures, the TM will live different lives. Suppose the TM will live longer in one future. Then, the TM’s choice has an impact on how long it lives. Is that correct?

A: The TM's choice does have an impact on how long it lives. However, the TM has no way to make its choice differently. So, we shouldn't hold the TM responsible for its choice.

(A: What is the relationship between my mind and my brain? Does my mind have a causal effect on what my brain does?)

Q: “The physical world including brains and computers is causally closed. Minds and software are high level emergent descriptions of what is happening at the physical level.” (<https://twitter.com/sphexish/status/1504011454495735813>)

Q: “The correct explanation of why you asked me the question has to do with your mind, only indirectly your neurons.” (<https://twitter.com/sphexish/status/1504011806125273092>)

A: So, my mind doesn't have a physical effect over what my brain does. "The mind is a sovereign agent even though what the rest of the world does have a causal effect on its responses." -- here the causal effect doesn't mean "physical" effect

Q: “Why are you making this distinction between mind and brain? That is absurd. Mind is a useful and meaningful term, but everything mental, finally, is what the brain is doing. There is no mind-body distinction. You won't find a god in the sky and you won't find a mind in the skull.” (<https://twitter.com/Daniel43107974/status/1504018940422459398>)

A: Not everyone is clear about that.

(A: The TM's choice does have an impact on how long it lives. However, the TM has no way to make its choice differently. So, we shouldn't hold the TM responsible for its choice.)

Q: “Disagree with all that. Nothing I said implies libertarian free will, only compatibilist free will. We don't hold agents responsible because they absolutely could have done otherwise, but because holding them responsible has good consequences.” (<https://twitter.com/Disagreeable_I/status/1504022100654399491>)

A: Will you hold agents responsible if you are a TM within a Game of Life system?

A: If you are a TM within a Game of Life system, holding agents responsible has good consequences. Is that correct?

A: Will you hold agents responsible if you are a TM within a Game of Life system?

Q: “Yes if they are complex enough to be responsive to my holding them responsible.” (<https://twitter.com/Disagreeable_I/status/1504024139937591298>)

A: So, you changed their life by holding them responsible. Is that correct?

A: In the same sense, you are changing your own life by every decision/choice you made. Is that correct?

Q: “Kind of. But the word "changing" is problematic. I'd say something "influencing" instead. Change implies that there's a default future which I am changing, and that's not what I want to say.” (<https://twitter.com/Disagreeable_I/status/1504027347963588610>)

A: If you a TM within Game of Life, what influence do you have?

Q: “If I am a TM within the game of life with incomplete information, I can only guess what the future will bring. I can influence the probabilities of various outcomes with the choices I make. Just like a chess computer with finite branching search capacity.” (<https://twitter.com/Disagreeable_I/status/1504029061785477120>)

A: If you are a TM within the Game of Life, and if you know the rules of the system, what will you do?

Q: “I'll do whatever it is will help to achieve my goals. I think a chess computer is a better analogy because in chess you have goals, and also incomplete information of a kind (what your opponent will do).” (<https://twitter.com/Disagreeable_I/status/1504029874721329162>)

A: Let's stick to game of life for a moment. If you do whatever it is will help to achieve your goals, will your effort have an impact over your future?

Q: “Yes. Compatibilist impact. I'm not changing anything. But the future that comes about comes about in part because of my effort. So I would say I am influencing and impacting my future.” (<https://twitter.com/Disagreeable_I/status/1504031068462141447>)

A: From your point of view, you are influencing/impacting your future. If a human (who is outside of the game of life) is watching you (in Game of Life), will this human agree that you are influencing/impacting your future?

(Q: “Yes. Compatibilist impact. I'm not changing anything. But the future that comes about comes about in part because of my effort. So I would say I am influencing and impacting my future.” (<https://twitter.com/Disagreeable_I/status/1504031068462141447)>)

A: The future is fixed but so is the fact that I am making an effort. To say that my effort does not influence the future is the same as saying that had I not made an effort, the future would be unchanged. But both my effort and the future brought about by that effort are fixed.

(A: From your point of view, you are influencing/impacting your future. If a human (who is outside of the game of life) is watching you (in Game of Life), will this human agree that you are influencing/impacting your future?)

Q: “Yes. Just as I can watch two chess computers playing chess, and I can see that each one is attempting to win, by making moves that will maximise their chances of winning (modulo their cleverness and capacity).” (<https://twitter.com/Disagreeable_I/status/1504031957705015296>)

A: OK. Then we have different opinions over the same fact. I think you don't impact your future. You think you impact your future. We both agree that your future is fixed.

A: We assign/attribute different value to your effort.

(A: OK. Then we have different opinions over the same fact. I think you don't impact your future. You think you impact your future. We both agree that your future is fixed.)

Q: “We are using the word "impact" differently then. But there seems to be a substantive disagreement that goes beyond semantics. You seem to subscribe to the fatalistic view that there is no reason to strive or make an effort -- the future is fixed so what's the point? I disagree.” (<https://twitter.com/Disagreeable_I/status/1504033437971320833>)

A: OK. The future is fixed. So, what's the point?

Q: “The effort-making is also fixed. The point is that making the effort is what brings the desirable future about. Agents which don't make an effort will not be as successful as agents which do. So making an effort is a beneficial characteristic.” (<https://twitter.com/Disagreeable_I/status/1504034177179598849>)

A: The effort-making is fixed. So, an agent has no way to make less effort than it is fated to make. Is that correct?

Q: “Yes. But that doesn't mean that the only explanation we have for its effort-making is that it was fated. We can also explain its effort-making with reference to reasons and goals. Both explanations are true. The latter is more useful.” (<https://twitter.com/Disagreeable_I/status/1504034918816489474>)

A: What do you mean by "more useful"? Will that change the fate?

Q: “Not more useful to the agent, more useful to us. We gain no insight or understanding by explaining everything with "it is fated". By attributing intentions and goals to agents and understanding them in these terms, we can interact with them more successfully.” (<https://twitter.com/Disagreeable_I/status/1504035609882546179>)

Q: “If an agent has a reason to do something, and that action helps it achieve its goals, then that action was not pointless, even if the choice and the outcome were fixed.” (<https://twitter.com/Disagreeable_I/status/1504035740950405121>)

A: OK. We have different opinions over the same fact again. If an agent has a reason to do something, and that action helps it achieve its goals, then that action is pointless, if the choice and the outcome were fixed.

Q: “Perhaps there is only a language distinction. If you were asked for advice by someone, would you give useful advice or would you just say "it doesn't matter, the outcome is fated?"” (<https://twitter.com/Disagreeable_I/status/1504037386375897094>)

Q: “If you would give useful advice, perhaps there is no practical distinction between us, it's just that you would describe your advice-giving as pointless and I would not.” (<https://twitter.com/Disagreeable_I/status/1504037533239463938>)

A: It's possible that I would give useful advice. Saying "it doesn't matter, everything is fated" can be a useful advice under some situations.

Q: “Only when dealing with outcomes out of our control. I would say it is generally not useful advice if an agent has a consequential decision to make.” (<https://twitter.com/Disagreeable_I/status/1504038143602962435>)

A: If the agent worries too much, I will say "everything is fated". I can give the agent some other advice, although I don't think it will actually change anything. In fact, everything is out of our control.

A: "The future is fixed" is equivalent to "everything is fated". I think you agree with both statements.

A: I think your opinion is that "everything is fated, but you should still do the right thing, as if that the future is not fixed. Your effort will help you".

A: In my view, your opinion is a paradox.

Q: “I'm not sure we even need to pretend that the future is not fixed. I don't think I'm lying to myself or pretending when I consider the consequences of my actions. I'm just working with incomplete information. Would you go as far as to say my view is incoherent or contradictory?” (<https://twitter.com/Disagreeable_I/status/1504042480987258883>)

A: Yes. I'll say that. I held such a view before.

A: You can't change your view, when your fate doesn't allow it to change.

A: Every change in a person's view, requires a change in neurons' connections. The change is physical. The change is fated. In theory, it’s possible to intentionally/precisely change a person’s view by a brain surgery. However, the happening of this brain surgery, is still fated.

Q: “OK, if my view is contradictory, then show me the contradiction. You can change your view when your fate does allow it to change. So sometimes you can change your view.” (<https://twitter.com/Disagreeable_I/status/1504067124909780992>)

A: Is my view contradictory? If not, can our views both noncontradictory at the same time?

(Q: “If I am a TM within the game of life with incomplete information, I can only guess what the future will bring. I can influence the probabilities of various outcomes with the choices I make. Just like a chess computer with finite branching search capacity.” (<https://twitter.com/Disagreeable_I/status/1504029061785477120)>)

A: “The information in a TM is the symbols on the tape, which it processes deterministically. What does 'guess' even mean in the context of a TM? It doesn't guess its future state, it logically determines its next state.” (<https://twitter.com/WalterHBlack/status/1504129886725758981>)

A: The TM subjectively feels like that it is guessing its future state. In fact, its guessing process is determined by its tape

A: The TM can output a subjective-theory (for other TMs to read/process). In this subjective-theory, two possible (rough) future states are described, and the TM itself is being described as the ultimate force to decide which (rough) future state will actually happen. These two possible (rough) future states are forecasted (subjectively) by the TM. It's possible that both forecasts are incorrect.

(A: The TM subjectively feels like that it is guessing its future state. In fact, its guessing process is determined by its tape)

Q: “It is indeed guessing, because it has incomplete information about its future, because it doesn't know what other agents in the GOL will do and hence its future inputs. This guessing process is indeed determined by its "tape".” (<https://twitter.com/Disagreeable_I/status/1504189235208802306>)

(A: The TM can output a subjective-theory (for other TMs to read/process). In this subjective-theory, two possible (rough) future states are described, and the TM itself is being described as the ultimate force to decide which (rough) future state will actually happen. These two possible (rough) future states are forecasted (subjectively) by the TM. It's possible that both forecasts are incorrect.)

A: In the TM's subjective-theory, the TM itself is the ultimate force to decide the future state. In my objective-theory, the TM is not. @Disagreeable\_I , which theory is correct?

Q: “The two theories are at different levels of analysis. They are not in conflict.” (<https://twitter.com/Disagreeable_I/status/1504191793943953418>)

A: In my view, the first theory is incorrect.

(A: Every change in a person's view, requires a change in neurons' connections. The change is physical. The change is fated. In theory, it’s possible to intentionally/precisely change a person’s view by a brain surgery. However, the happening of this brain surgery, is still fated.)

A: “if you put enough unintentional computations together, they create an intentional action, wow” (<https://twitter.com/hxt55/status/1504149139600384008>)

(A: Is my view contradictory? If not, can our views both noncontradictory at the same time?)

Q: “Given how your view defines its terms, it is not contradictory except where it asserts that compatibilism is incoherent. The problem with your view is that it is maladaptive, encouraging fatalistic complacency.” (<https://twitter.com/Disagreeable_I/status/1504194727897407490>)

A: So, I need to use a seemingly incorrect view instead?

Q: “Doesn’t seem incorrect to me! I would say that if we can make sense of a compatibilist account, we should prefer a compatibilist account to fatalistic complacency because it is more useful and adaptive. If we cannot make sense of compatibilism then fatalism wins.” (<https://twitter.com/Disagreeable_I/status/1504196161477001239>)

A: Yes. Fatalism wins.

(Q: “Doesn’t seem incorrect to me! I would say that if we can make sense of a compatibilist account, we should prefer a compatibilist account to fatalistic complacency because it is more useful and adaptive. If we cannot make sense of compatibilism then fatalism wins.” (<https://twitter.com/Disagreeable_I/status/1504196161477001239)>)

Q: “So the issue boils down to whether it is possible to make sense of compatibilism. If it isn't, where is the contradiction?” (<https://twitter.com/Disagreeable_I/status/1504196391094177802>)

A: My brain doesn't know how to make sense of compatibilism.

A: My brain knew it before.

Q: “Can you actually pinpoint a contradiction in clear unambiguous language?” (<https://twitter.com/Disagreeable_I/status/1504197965661065216>)

A: It's an issue resulted from point of view. My brain can’t view the TM’s situation from the TM’s viewpoint now. My brain can only view the TM’s situation from the viewpoint of a human (who is outside of the Game of Life)

A: My brain can't pinpoint evil now. My brain could pinpoint evil before.

(A: It's an issue resulted from point of view. My brain can’t view the TM’s situation from the TM’s viewpoint now. My brain can only view the TM’s situation from the viewpoint of a human (who is outside of the Game of Life))

Q: “I can imagine viewing the same agent making the same decisions every time in repeated runs of the same simulation and still seeing it as influencing its own future. This perspective is not a problem for me.” (<https://twitter.com/Disagreeable_I/status/1504199058503708687>)

A: You can imagine the situation from the TM's view. I can't.

A: Can you imagine that someone is evil? I can't.

(A: My brain can't pinpoint evil now. My brain could pinpoint evil before.)

Q: “I'm kind of the same. I don't justify punishment in terms of retribution against evil. Retribution is indefensible. Punishment is justified on consequentialist grounds. It is regrettable that so-called evil people must be punished.” (<https://twitter.com/Disagreeable_I/status/1504200112263860226>)

Q: “This is when I am speaking philosophically in the abstract. In the real world I long for the bad guys to get their comeuppance like everyone else. I've been programmed with these attitudes by society and evolution, but I don't think it is justifiable.” (<https://twitter.com/Disagreeable_I/status/1504200814029586436>)

(A: You can imagine the situation from the TM's view. I can't.)

Q: “Are you not a TM? If so, can't you see things from your own point of view?” (<https://twitter.com/Disagreeable_I/status/1504201189260410883>)

A: I can. But I think what I see from my own point of view, is incorrect/subjective/biased/superstitious

(A: Can you imagine that someone is evil? I can't.)

Q: “Depends what you mean. I don't think evil is a helpful concept. I think there are people who do have deeply selfish and antisocial drives and tendencies, which mostly maps onto what others term as evil.” (<https://twitter.com/Disagreeable_I/status/1504201688202235914>)

(A: I can. But I think what I see from my own point of view, is incorrect/subjective/biased/superstitious)

Q: “It's the only reality you can access. Any other reality is only hypothetical.” (<https://twitter.com/WalterHBlack/status/1504202020638576648>)

A: Yes, hypothetical. But I feel like that I can access it somehow.

(A: I can. But I think what I see from my own point of view, is incorrect/subjective/biased/superstitious)

Q: “But then you can imagine it from a TM's point of view, it's just that you think there is something incoherent in what you are imagining. I'm not sure there is.” (<https://twitter.com/Disagreeable_I/status/1504202056655151113>)

A: It's incoherent with my objective-theory.

(Q: “This is when I am speaking philosophically in the abstract. In the real world I long for the bad guys to get their comeuppance like everyone else. I've been programmed with these attitudes by society and evolution, but I don't think it is justifiable.” (<https://twitter.com/Disagreeable_I/status/1504200814029586436)>)

A: In my subjective-theory, there are bad guys/conducts. However, as time goes on, I view different guy/conduct as evil. In one objective-situation, I can identify a bad guy/conduct, and then I can identify this guy/conduct as good immediately. I'm confused.

A: There is no fixed definition of good/bad in my subjective-theory. So, the labels "good” and “bad" seem to be useless.

A: In my subjective-theory, I can identify my own effort as the ultimate force to impact the future state. At the next moment, I can identify something else as the ultimate force to impact the same future state. So, it seems useless to identify any thing as ultimate force.

A: I have different first-person-theories which conflict with each other. So, the best thing I can do, is to accept my objective-theory and to reject all my first-person-theories.

(A: It's incoherent with my objective-theory.)

Q: “Subjective realities and objective reality are incompatible, because everyone's subjective reality is different.

A single subjective experiencer would be compatible with objective reality: its experience would be objective reality.” (<https://twitter.com/WalterHBlack/status/1504207873651400706>)

(A: I have different first-person-theories which conflict with each other. So, the best thing I can do, is to accept my objective-theory and to reject all my first-person-theories.)

Q: “Why is that the best thing to do? Is it not more honest to admit your third-person story/theory may be wrong?” (<https://twitter.com/WalterHBlack/status/1504208452104691719>)

A: I mean, I have multiple first-person-theories for the same objective-situation. (These first-person-theories conflict with each other.) Then, the first-person-theories are useless to me.

A: For example, if I fight with you, I might think you are wrong. And then, I can think that I am wrong. Then, who is wrong?

A: In my objective-theory, no one is wrong.

(A: I mean, I have multiple first-person-theories for the same objective-situation. (These first-person-theories conflict with each other.) Then, the first-person-theories are useless to me.)

Q: “We can't tell even if there is an objective situation from differing subjective situations.” (<https://twitter.com/WalterHBlack/status/1504209947617337354>)

A: So, for the objective-theory to work, I need to identify a objective-theory first. (I know that I can't guarantee that my objective-theory is correct.)

A: I need to evaluate all first-person-theories (I can think of) to get my objective-theory.

Q: “I think there are two different issues which are becoming muddled here. There's the objective/subjective distinction, and the low-level/high-level distinction. You seem to take objective and low-level as synonymous, but these are orthogonal to me.” (<https://twitter.com/Disagreeable_I/status/1504415802161868801>)

Q: “The question of who is good or bad is a subjective issue. I agree there is no fact of the matter here. But whether agents influence the future is not a subjective issue. This is a high-level description of what is happening and does not conflict with a low-level description.” (<https://twitter.com/Disagreeable_I/status/1504416127702687744>)

A: My objective-theory does not have layers. My objective-theory does not have low-level/high-level distinction. My objective-theory only has low-level things – elementary particles and Schrodinger equation. High-level things are not in my objective-theory. High-level things are only in my subjective-theory. A high-level agent who does things, this is only described by my subjective-theory. A high-level agent who does things, this is not described by my objective-theory. There is no high-level agent (who does things) in my objective-theory. Whether high-level agents do things is a subjective issue to me. Whether high-level agents do things, this is only in my subjective-theory. Whether high-level agent do things, this is not in my objective-theory. In my objective-theory, there is no high-level description of what is happening. The high-level description of what is happening (in my objective-theory) is only in my subjective-theory. My objective-theory is being objective and low-level at the same time. In my theory, high-level is treated as subjective – only low-level is treated as objective. A high-level agent (who does things) is only in my subjective-theory. My objective-theory can be matched/mapped onto my subjective-theory – my brain can match/map my objective-theory onto my subjective-theory. Such a matching/mapping allows my brain’s high-level understanding of my (low-level) objective-theory. Through such a matching/mapping, my brain can somehow pinpoint/identify something *corresponding* to a high-level agent (in my subjective-theory) in my (low-level) objective-theory. But my brain’s high-level understanding (of my (low-level) objective-theory) does not (physically) add/insert (actual) high-level layers into my (low-level) objective-theory – my (low-level) objective-theory remains intact/low-level. A high-level agent (who does things) is not in my (low-level) objective-theory. My brain can somehow pinpoint/identify something *corresponding* to a high-level agent (in my subjective-theory) in my (low-level) objective-theory, but this fact doesn’t mean that the high-level agent (who does things) is in my (low-level) objective-theory – this fact is not equivalent to the fact that the high-level agent (who does things) is in my (low-level) objective-theory. My brain intentionally moved high-level descriptions out of my (low-level) objective-theory, because my brain realized that the high-level descriptions (of my (low-level) objective-theory) are actually something built by my brain subjectively – my brain realized that the high-level descriptions (of my (low-level) objective-theory) are actually subjective. Actually, there is no high-level agent who does things. The existence of a high-level agent who does things, is actually a subjective belief/imagination of my brain – the high-level agent (who does things) does not exist objectively. That’s why the high-level agent (who does things) is not in my objective-theory. For example, the existence of my brain as a high-level agent (who does things), is actually a subjective belief/imagination of my brain. Actually, there is no high-level agent who does things – the things are actually done by the (low-level) elementary particles directly/independently. We are imagining the high-level agents who does things (when we forget the fact that the things are actually done by the (low-level) elementary particles directly/independently). To your brain, something can be both objective and high-level at the same time. To my brain, something high-level must be subjective – only something low-level is objective.

A: The existence of a TM pattern (as a high-level agent who does things) in a Game of Life system is subjective, not objective. The TM pattern does not exist in the system as a high-level agent (who does things) objectively. The TM pattern only exists as my brain’s (subjective) imagination/belief – my brain (subjectively) imagines/believes the existence of the TM pattern as a high-level agent who does things in the system. Actually/objectively, there are only cells in the system – there is no pattern or high-level agent (who does things) in the system. Patterns or high-level agents (who does things) are only in our first-person-theories. Patterns or high-level agents (who do things) are not in the objective-theory. I imagine/believe the existence of the TM pattern as a high-level agent who does things in the system – this high-level agent (who does things) exists in my subjective-theory. In my objective-theory, everything is only done by the cells. There is no pattern or high-level agent (who does things) in my objective-theory.

(A: Mind is something subjective. We can't see the mind of a brain in a brain surgery. So, we never know what the mind is.)

A: Subjective-theory is used to describe mind. There is no way (for others) to verify if a subjective-theory describes the \*truth\* or not. My objective-theory can be verified by science.

(A: Yes, hypothetical. But I feel like that I can access it somehow.)

A: The objective-theory/objective-reality is one of my first-person-theories.

(A: Subjective-theory is used to describe mind. There is no way (for others) to verify if a subjective-theory describes the \*truth\* or not. My objective-theory can be verified by science.)

Q: “No, it can't. (This and many more articles and papers). <https://www.technologyreview.com/2019/03/12/136684/a-quantum-experiment-suggests-theres-no-such-thing-as-objective-reality/>” (<https://twitter.com/WalterHBlack/status/1504234344222703616>)

Q: “We simply do not have access to objective reality to verify it.” (<https://twitter.com/WalterHBlack/status/1504235190205489152>)

A: Yes, a TM within a state machine (e.g., Conway's Game of Life) has no (direct) access to its objective-reality. I think a human (who is outside of the Game of Life system) has direct access to this TM's objective-reality. If I am a TM within a Conway’s Game of Life system, I can describe a objective-theory using the viewpoint of a human (who is located outside of the Game of Life system), although I do not have (direct) access to my objective-reality. My objective-theory describes my objective-reality (from the viewpoint of that human who is located outside of my objective-reality).

(Q: “I agree with all that.” (<https://twitter.com/Disagreeable_I/status/1503326633779994628)>)

A: However, the so-called "our choice" is not \*our\* choice, but the choice of the Schrodinger equation. So, we should somehow let the Schrodinger equation know that its choice matters. It is useless to let any human individual know that her/his choice matters, because the choice is not made by any human individual.

A: Actually/objectively, a human individual is not an agent. When you are (subjectively) imagining a human individual as an agent, you can imagine a choice being made by this agent, and then you can imagine that this agent’s choice matters. When you are not imagining a human individual as an agent, you can’t imagine a choice being made by this human individual (as an agent). When you are not imagining a human individual as an agent, you can imagine a choice being made by the elementary particles of this human individual. In this case, you are imagining each particle as an agent – you are imagining a choice being made by these agents. A choice can only be made by one or more agents. You can only imagine a choice being made by one or more agents. You can’t imagine a choice without imagining one or more agents who are making this choice. You can imagine a choice being made by the Schrodinger equation (as an agent). You can imagine a choice being made by the whole direct-parallel-computing-automaton (as an agent).

(A: In my view, the computer is not an agent. So, the so-called “computer’s choice” is not the choice of the computer, but the choice of the Schrodinger equation. When you say that “the computer’s choice impacts the future outcome of the game”, it actually means that “the Schrodinger equation’s choice impacts the future outcome of the game”. So, you believe that the Schrodinger equation should make its choice properly. Is that correct?)

Q: “Point of information: the wavefunction does not generally have a unique solution, so does not \*choose\* but yields possible choices.” (<https://twitter.com/WalterHBlack/status/1508898173804240897>)

A: Hi @WalterHBlack, I disagree. In your view, who is making the choice (to go to McDonald or KFC for dinner)? A human brain? Or a soul?

(Q: “Point of information: the wavefunction does not generally have a unique solution, so does not \*choose\* but yields possible choices.” (<https://twitter.com/WalterHBlack/status/1508898173804240897)>)

Q: “The measurement problem of QM is 'what causes a particular choice to be made?'.” (<https://twitter.com/WalterHBlack/status/1508898502591586306>)

A: What causes a particular choice (e.g., choosing between McDonald and KFC (for dinner)) to be made?

(A: Hi @WalterHBlack, I disagree. In your view, who is making the choice (to go to McDonald or KFC for dinner)? A human brain? Or a soul?)

Q: “Neither. I chose lamb stew.” (<https://twitter.com/WalterHBlack/status/1508905384601395208>)

A: Who chose lamb stew? Your physical brain? Your soul? Or the Schrodinger equation?

Q: “Who: what or which person or people. I chose.” (<https://twitter.com/WalterHBlack/status/1508907578788655110>)

A: Did Schrodinger equation play a role in your choice?

(A: However, the so-called "our choice" is not \*our\* choice, but the choice of the Schrodinger equation. So, we should somehow let the Schrodinger equation know that its choice matters. It is useless to let any human individual know that her/his choice matters, because the choice is not made by any human individual.)

A: Or in other words, actually the so-called "a physical brain's choice" is not the choice of the physical brain (as an agent), but the choice of the elementary particles inside the physical brain. When I speak to a person (in human language) that "Your choice matters!", my speech won't have any impact to the particles (inside this person's physical brain) other than the physical impact of the sound wave of my speech. These particles won't behave differently upon the meaning of my speech. The sound wave of my speech has a physical impact to these particles.

A: (If I say the same sentence “Your choice matters!” slightly differently, then the sound wave of my speech will be different, and then the sound wave will have a different physical impact to these particles. If I am a little bit closer to the person, then the sound wave of my speech will reach the person a little bit earlier, and then the sound wave will have a different physical impact to these particles, because these particles will be in different states when the sound wave reaches the person. However, such details (e.g., the physical details of the sound wave of my speech) are not included in my physical brain’s subjective-theory, simply because the physical mechanics (which is being used to tell/narrate/forecast the subjective-theory) in my physical brain is not “designed” to handle such details. So, obviously, the physical mechanics is rough/unreliable/dogmatic/blind. This rough/unreliable/dogmatic/blind physical mechanics is being used to roughly/unreliably/dogmatically/blindly forecast (the future part of) the subjective-theory based on a rough/coarse-grained/stereotyped abstract/theory/description/narration regarding what had happened. (For example, when such a rough/unreliable/dogmatic/blind physical mechanics was being used by the physical brain of António Egas Moniz, his subjective-theory/physical-brain believed that “lobotomy has therapeutic value in certain psychoses”. Another example, in the parable “The old man lost his horse (but it all turned out for the best)”, when such a rough/unreliable/dogmatic/blind physical mechanics was being used by the physical brain of the old man’s neighbor, the neighbor’s subjective-theory/physical-brain believed that “losing a horse is a \*bad\* event”.) For example, I feel itchy in my ear canal right now. Logically speaking, the itchy should be slightly \*different\* from the itchy in my ear canal yesterday. However, my subjective-theory/physical-brain doesn’t distinguish the \*difference\* between them. (In the subjective-theory, this \*difference” doesn’t matter.) So, the subjective-theory is a rough/coarse-grained/stereotyped abstract/theory/description/narration regarding what had happened in my ear canal. This blind physical mechanics treats the subjective-theory as a white box, while actually the objective-theory is a black box – the blind physical mechanics uses a (fake) white box to mathematically-model/represent/explain the black box. Everything in this white box is fake, although it looks real. Everything in this white box is actually mathematically-modelled/simulated/invented/imagined by the blind physical mechanics (arbitrarily). (For example, the blind physical mechanics can mathematically-model/simulate/invent/imagine two or more possible future scenarios, while actually there is only one possible future scenario in the real-world/black-box/objective-theory. BTW, all the mathematically-modelled/simulated/invented/imagined possible future scenarios (which are being mathematically-modelled/simulated/invented/imagined by the blind physical mechanics) can be counterfactual.) For \*some\* of the things in this white box, we can find their counterparts in the real-world/black-box/objective-theory.)

A: The meaning of my speech doesn't have any impact to these particles. The meaning of my speech doesn’t matter to these particles. The sound wave of my speech matters to these particles. These is no way for me to let these particles know that their choice matters.

Q: “Unless they understand spoken English (after all, they can hear you). 🤣” (<https://twitter.com/WalterHBlack/status/1508917881454616577>)

A: No particle understands spoken English.

Q: “Particles can't hear noise IMO.” (<https://twitter.com/WalterHBlack/status/1508920693991301124>)

(A: The meaning of my speech doesn't have any impact to these particles. The meaning of my speech doesn’t matter to these particles. The sound wave of my speech matters to these particles. These is no way for me to let these particles know that their choice matters.)

A: These particles can’t understand any meaning.

Q: “That's not the only property they don't have.” (<https://twitter.com/WalterHBlack/status/1508923236746240001>)

A: The particles in my physical brain can't understand the meaning of your tweet, but they can reply to your tweet (through a physical mechanics). And then your physical brain (as an agent) feels like that my physical brain (as an agent) can understand the meaning of your tweet – this feeling is counterfactual. My physical brain can’t understand the meaning of your tweet, although my physical brain can reply to your tweet.

Q: “The only property that quarks and electrons and photons have is that they are mathematical hypotheses within the Standard Model or the Core Theory or other theory/model of physics.” (<https://twitter.com/WalterHBlack/status/1508925868160307202>)

A: How about atoms/molecules/cells? The particles/atoms/molecules/cells in my physical brain can't understand the meaning of your tweet, but they can reply to your tweet (through a physical mechanics). In this sense, my physical brain can’t understand the meaning of your tweet, although my physical brain can reply to your tweet. However, your physical brain (as an agent) feels like that my physical brain *(as an agent)* can understand the meaning of your tweet – this feeling is counterfactual.

A: Inside a Game of Life system, when two TMs are communicating with each other (through a physical mechanics), no cell in either TM can understand the meaning of the communication. In this sense, either TM can’t understand the meaning of the communication, although they can communicate with each other. However, your physical brain (as an agent) feels like that either TM *(as an agent)* can understand the meaning of the communication – this feeling is counterfactual.

A: In a computer, when two executable programs are communicating with each other (through a physical mechanics), no instruction in either executable program can understand the meaning of the communication. (In computer science, an instruction is a single operation of a processor defined by the processor instruction set. (<https://simple.wikipedia.org/wiki/Instruction_(computer_science))>) In this sense, either executable program can’t understand the meaning of the communication, although they can communicate with each other. However, your physical brain (as an agent) feels like that either executable program *(as an agent)* can understand the meaning of the communication – this feeling is counterfactual.

A: When your physical brain (as an agent) is imagining/simulating/mathematically-modelling my physical brain, a TM (in a Game of Life system) or an executable program (in a computer) as an agent who can understand the meaning of a communication, your physical brain (as an agent) feels like that the latter \*agent\* has a mind/consciousness/soul. When your physical brain (as an agent) is imagining my physical brain, a TM (in a Game of Life system) or an executable program (in a computer) as a physical mechanics who can’t understand the meaning of a communication, your physical brain (as an agent) feels like that my physical brain, a TM (in a Game of Life system) or an executable program (in a computer) doesn’t have a mind/consciousness/soul.

A: Your physical brain (as an agent) feels like that a physical mechanics (or something who can’t understand the meaning of a communication) doesn’t have a mind/consciousness/soul, while an agent (or something who can understand the meaning of a communication) has a mind/consciousness/soul. So, when your physical brain (as an agent) is imagining a physical mechanics as an agent (or something who can understand the meaning of a communication), your physical brain (as an agent) feels like that the physical mechanics has a mind/consciousness/soul – this feeling is counterfactual.

(A: For me, there are two "theories", the subjective-theory and the objective-theory. I was debating with you in the context of my objective-theory. You are using the context of your subjective-theory. Things like “the knight was captured because it had not been protected” is in the context of my subjective-theory. To me, it seems like that compatibilists mixed the subjective context with the objective context.)

A: In the context of my subjective-theory, the knight is an agent. In the context of my objective-theory, there is no agent, or every BB is an agent, or the direct-function is the only agent, or the whole direct-parallel-computing-automaton is the only agent. In the context of my objective-theory, there is only the physical mechanics, so there is no mind/consciousness/soul.

(A: The meaning of my speech doesn't have any impact to these particles. The meaning of my speech doesn’t matter to these particles. The sound wave of my speech matters to these particles. These is no way for me to let these particles know that their choice matters.)

A: The said person might reply “Yes” to my speech. In this case, these particles reply “Yes” to my speech through a physical mechanics, although these particles (as \*many\* agents) don’t understand that their choice matters. My physical brain (as an agent) feels like that these particles (as \*one\* agent) understand that their choice matters – this feeling is counterfactual. My physical brain (as an agent) feels like that these particles (as \*one\* agent) understand that their choice matters, only because my physical brain (as an agent) feels like that these particles replied “Yes” as \*one\* agent. Actually/objectively, these particles (as \*many\* agents) replied “Yes” through a physical mechanics – these particles (as \*many\* agents) will never understand that their choice matters. Actually/objectively, these particles are \*many\* agents, not \*one\* agent. So, these particles (as \*many\* agents) will never understand that their choice matters as \*one\* agent. Perhaps my physical brain (as an agent) will try to build these particles (as \*many\* agents) into one physical structure/process which always reply “Yes” to my speech “Your choice matters!”. However, actually/objectively, my physical brain is not one agent, but many agents. As many agents, my physical brain doesn’t understand the meaning of its own speech. No particle in my physical brain understands the meaning of my physical brain’s speech. So, actually/objectively, my physical brain’s speech (i.e., “Your choice matters!”) is meaningless. My physical brain is a physical structure/process itself.

Actually, your choice/wish/goal/behavior/effort/contribution is not *yours*, but the choice/wish/goal/behavior/effort/contribution of the cosmos/direct-function or the (autonomous) BBs (of your physical body). If you think your choice/wish/goal/behavior/effort/contribution matters, you should tell the cosmos/direct-function or the (autonomous) BBs (of your physical body) that their choice/wish/goal/behavior/effort/contribution matters.

When you have a wish/goal, if later the wish/goal is achieved/realized, you will feel like that your choice/behavior/effort contributed to the achievement/realization of the wish/goal. You feel like that your wish/goal has a magical power to realize itself through a magical process, and your physical body will participate in this magical process with its choice/behavior/effort.

Actually, when you imagine your choice/wish/goal/behavior/effort/contribution to be *yours*, you are imagining yourself as an agent. However, you are not an agent. (Or in other words, *you* don’t exist (as an agent). Or in other words, there is no *you* (as an agent).) The agent(s) is the cosmos/direct-function or the (autonomous) BBs (of your physical body).

So, your choice/wish/goal/behavior/effort/contribution actually has nothing to do with *you* (as an agent). You just (subjectively) attribute your choice/wish/goal/behavior/effort/contribution to be *yours*. Or in other words, you just (subjectively) attribute the choice/wish/goal/behavior/effort/contribution of the cosmos/direct-function or the (autonomous) BBs (of your physical body) to be *yours.*

(A: For me, there are two "theories", the subjective-theory and the objective-theory. I was debating with you in the context of my objective-theory. You are using the context of your subjective-theory. Things like “the knight was captured because it had not been protected” is in the context of my subjective-theory. To me, it seems like that compatibilists mixed the subjective context with the objective context.)

A: The causal relationship between one event “the knight was captured” and another event “it had not been protected” is subjective/fictional/counterfactual/superstitious/fake, but it is still being used in my subjective-theory as if that the causal relationship is genuine, only because that there is a physical mechanics (in my physical brain) which uses/implements/simulates/mathematically-models this (subjective/fictional/counterfactual/superstitious/fake) causal relationship. Actually/objectively, there is no causal relationship between the two events – there is no causal relationship between any two events. When you imagine the particles being involved in the two events, you will know that the objective-state-evolution of each particle is fated by the direct-function. As long as the said physical mechanics remains in my physical brain, my physical brain will follow the subjective/fictional/counterfactual/superstitious/fake causal relationship whenever it is fated (by the direct-function) to follow that. When my physical brain is fated (by the direct-function) to follow the subjective/fictional/counterfactual/superstitious/fake causal relationship, it doesn’t mean that this causal relationship is genuine. My physical brain doesn’t need to follow the subjective/fictional/counterfactual/superstitious/fake causal relationship, whenever it can. When my physical brain doesn’t follow the subjective/fictional/counterfactual/superstitious/fake causal relationship, this is still fated (by the direct-function), and it also means that there is another physical mechanics (developed/evolved/emerged) in my physical brain to suppress the former physical mechanics – the suppression is fated (by the direct-function) at that moment.

### (34)

A: “what if I just deny that the matter in your head is instantiating representations? why can't it just be complex matter like the stuff in your other organs or in a tree? would aliens with qualia agree that brains instantiate anything? why can't they see you like we see trees?” (<https://twitter.com/hxt55/status/1503654691393179658>)

Q: “We know enough about neuroscience to know how representations are being created by the brain, it’s just the non-existent qualia bit that is problematic if you believe in qualia.” (<https://twitter.com/sphexish/status/1503676299520495618>)

A: “and I can pretend that a computer is representing whatever I need it to represent. it's just a tool, and the meaning of all that switch-flipping is whatever I want to think it means in order for it to be useful to me. there's no meaning in there.” (<https://twitter.com/hxt55/status/1503688021744435202>)

A: The meaning is in the brain/mind of the observer.

A: I see meaning in the cosmos. However, meaning is not in the cosmos -- meaning is in my brain/mind. There is no meaning in the cosmos – except the fact that it is a state machine.

A: “if a god wrote a message with the stars, there would be meaning there, but you don't go investigating the actual stars for "meaningfulness"” (<https://twitter.com/hxt55/status/1503698262020218883>)

A: Only the god and you know the meaning. The stars don't know the meaning themselves.

A: Logically speaking, it’s possible that I’m the only person who knows the meaning of human language. Any other person just speaks human language through a pure physical process, without knowing anything about the meaning of the words she/he says.

### (35)

A: “If you want to simulate something perfectly, the smallest system capable of implementing it is the thing itself. Anything else you use will always be bigger or slower than the original. We can only simulate worlds because we sacrifice many layers of detail” (<https://twitter.com/tealpajamas/status/1503848573120647172>)

Q: “Not necessarily. It is conceivable that much of the micro detail is redundant and causally inert, and perfectly recoverable from a simpler representation.” (<https://twitter.com/Disagreeable_I/status/1503849027800027144>)

A: “The word "perfect" is key here. If you're simulating for a purpose, there are obviously all kinds of compression you can do. But if you are truly just trying to recreate an object in its entirety, then what I said is true” (<https://twitter.com/tealpajamas/status/1503851105683353600>)

Q: “I get that, which is why I said perfectly recoverable. For instance, to simulate the evolution of a lone glider in Conways game of life, we do not need to simulate each cell. We need only represent its position and phase.” (<https://twitter.com/Disagreeable_I/status/1503851772208627716>)

A: If the glider is really lone, then you are doing a perfect/exact simulation in this case. But you will not know whether the glider is really lone, before you (somehow) simulate the whole system perfectly/exactly.

### (36)

Q: “Whether mind collapses into brain depends on your preferred approach to philosophy of mind. I'm a functionalist/computationalist/illusionist. I think mental phenenomena are substrate independent. So my mind could in principle be realised by something other than a brain.” (<https://twitter.com/Disagreeable_I/status/1504409190021931014>)

A: Does your mind have physical impact on the physical world?

Q: “Yes and no. In a way it does and in a way it doesn't. The mind is the functional "shape" of the brain. The brain has a physical impact on the physical world. If it had a different "shape" it would have a different impact. So the mind matters for the physical impact the brain has.” (<https://twitter.com/Disagreeable_I/status/1504412516134404103>)

A: Is it the same if you are a TM within Game of Life?

Q: “I guess so? What's the brain in this context? Is it the mechanism you have designed for translating an algorithm into the language of living/dead cells?” (<https://twitter.com/Disagreeable_I/status/1504414990727622667>)

A: I think a TM in a Game of Life is comparable to a brain in our cosmos. See [44]

Q: “Ok, so then what is the mind in this analogy? The program the TM is running?” (<https://twitter.com/Disagreeable_I/status/1504416391134330889>)

A: A TM (in Game of Life) can claim that it has mind. Another TM has no way to know whether the said TM actually has mind or not.

Q: “This is the problem of other minds then? I guess you can make judgements on whether other agents have minds if you have a preferred philosophy of mind. Given my views, I would take any agent which processes information somewhat analogously to how I do to have a mind.” (<https://twitter.com/Disagreeable_I/status/1504417400556507136>)

A: I have a special position. I treat my mind the same as other mind. I don't assume any individual (including myself) has mind.

Q: “If you don't even know if you have a mind, then "mind" would seem to be a meaningless term to you. What could it possibly refer to if you don't even know if you have one? I take it to refer to the kind of thing that I have in virtue of which I have beliefs, goals, experiences etc” (<https://twitter.com/Disagreeable_I/status/1504418224863076354>)

A: I can call it "knowledge", “information” or “data”. "Mind" refers to something subjective. "Knowledge", "information" or "data" refers to something objective. Mind is not brain. Knowledge/information/data is not brain either. My brain doesn't need to have a mind to have knowledge/information/data. A computer doesn't need to have mind to have knowledge/information/data. A chess program can have goals (without having a mind).

A: Your brain is a TM. Your brain has beliefs, goals and experiences. So, it's logically possible that a TM in Game of Life also has beliefs, goals and experiences. I don't know whether your/my brain has a mind. I don't know whether the TM in Game of Life has a mind. It's logically possible that your/my brain doesn't have a mind. It's logically possible that the TM in Game of Life doesn't have a mind.

A: We won't see mind (of a brain) in a brain surgery. In theory, we can find knowledge/information/data (of a brain) in a brain surgery, if we can see details about a single neuron. That's why I said that mind is subjective while knowledge/information/data is objective.

A: A brain carries knowledge/information/data objectively – it’s possible for others to see knowledge/information/data in a brain. It’s impossible for others to see the mind of a brain. Mind is subjective.

A: A brain claims that it sees its beliefs/goals/experiences in its mind. It’s logically possible for others to pinpoint this brain’s beliefs/goals/experiences in the brain’s microscopic physical structure. It’s logically impossible for others to know whether this brain has a mind or not. To others, a brain’s mind has nothing to do with this brain’s beliefs/goals/experiences.

Q: “Let's just call "software" any abstracted functional structure. Mind is software. A chess program is software. To me, a mind is just software that resembles the software of my brain. I necessarily have a mind according to this definition.” (<https://twitter.com/Disagreeable_I/status/1504443578218688515>)

A: Knowledge/information/data (in a brain) is objectively observable (by others). Objectively observable knowledge/information/data (in a brain) collapses into brain. Is your “software of a brain” objectively observable (by others)? Does your “software of a brain” collapse into brain? If you answer “Yes” to both questions, then your “mind” collapses into brain.

Q: “I stand by my assertion that Mind is a figure of speech. It is an important word and perhaps an indispensable one but it is nowhere to be found except in speech. I suppose one can choose to define things any way one chooses...” (<https://twitter.com/Daniel43107974/status/1504632839811350530>)

(A: A brain carries knowledge/information/data objectively – it’s possible for others to see knowledge/information/data in a brain. It’s impossible for others to see the mind of a brain. Mind is subjective.)

Q: “That's good point; a brain can be an object for others or even oneself, whereas a mind cannot be.” (<https://twitter.com/Daniel43107974/status/1504627389149683712>)

Q: “All of Daniel Dennett’s lectures are worth watching but he explains consciousness particularly well here: <https://www.youtube.com/watch?v=hsz6pqOKwOE>” (<https://twitter.com/sphexish/status/1504706495803539490>)

Q: “You are not a subject, you are an intentional object that appears like a non player character in a VR game being played by your brain.” (<https://twitter.com/sphexish/status/1504707114966605824>)

Q: “Consciousness is the user interface that your brain uses to interface with the external world.” (<https://twitter.com/sphexish/status/1504707507394076693>)

Q: “When I say “you” are like the NPC character I mean the self representation in consciousness, but it is of course meaningful to consider the whole person, body and all, the intentional object and sovereign agent in other peoples consciousness, a player character for them, as “you”” (<https://twitter.com/sphexish/status/1504709041947357184>)

Q: “So I would say it is right in another sense that our traditional view of the subject is correct when taking the brain and consciousness together as a complete system, though I think it misleading and the source of the “mystery”.” (<https://twitter.com/sphexish/status/1504709722892558358>)

(Q: “Consciousness is the user interface that your brain uses to interface with the external world.” (<https://twitter.com/sphexish/status/1504707507394076693)>)

A: This is your version of Cartesian theater, where your "brain" is the homunculus, and your consciousness/mind is the theater. This version of Cartesian theater is for illusionists. The VR game is the film being played in the theater. For illusionists, the idea of “consciousness/mind” is based on this version of Cartesian theater.

(A: A brain claims that it sees its beliefs/goals/experiences in its mind. It’s logically possible for others to pinpoint this brain’s beliefs/goals/experiences in the brain’s microscopic physical structure. It’s logically impossible for others to know whether this brain has a mind or not. To others, a brain’s mind has nothing to do with this brain’s beliefs/goals/experiences.)

A: For illusionists, the idea of “consciousness/mind” is based on a special version of Cartesian theater, where your "brain" is the homunculus, and your consciousness/mind is the theater. Your beliefs/goals/experiences/knowledge/information/data (being objectively/physically carried by your brain) are being played as a film in the theater.

(A: This is your version of Cartesian theater, where your "brain" is the homunculus, and your consciousness/mind is the theater. This version of Cartesian theater is for illusionists. The VR game is the film being played in the theater. For illusionists, the idea of “consciousness/mind” is based on this version of Cartesian theater.)

Q: “The brain is a machine, why would it have a homunculus?” (<https://twitter.com/sphexish/status/1504717490575876097>)

A: If you imagine that the brain is experiencing the VR game, then I think that you are imagining the brain as a homunculus while imagining the VR game as the film being played in the theater

A: The illusionists’ version of Cartesian theater is still a Cartesian theater. Whenever we are talking about consciousness/mind as a \*subjective\* experience, our brains are always imagining/perceiving/inventing/generating/narrating/describing some kind of Cartesian theater (which visually represents/addresses/models the relationship between its environment and itself) in our cognition. The “existence” of any form of Cartesian theater is a false belief. We should stop talking about consciousness/mind as a \*subjective\* experience, in order to avoid such a false belief. Instead, we can talk about *the content of consciousness/mind (e.g., beliefs/goals/experiences/knowledge/information/data)* in its objective/physical form – the form which is being objectively/physically carried by a brain.

A: I think every modern philosopher’s brain can somehow imagine/perceive/invent/generate/narrate/describe its own version of Cartesian theater, and treats it as its \*subjective\* consciousness/mind. Every philosopher’s brain can describe its own version of Cartesian theater in words (in ordinary language). But I don't think communicating/discussing about each other's Cartesian theater will lead to any new knowledge in philosophy.

A: In theory, in the future, we should be able to explain the physical process for a given human brain (as a philosophical zombie) to talk about its own version of Cartesian theater in words, and perhaps we might be able to find/identify the objective/physical counterpart of this Cartesian theater in the microscopic structure/process of this brain (as a philosophical zombie). It doesn’t mean that this brain has \*subjective\* access to this Cartesian theater. It only means that this brain (as a philosophical zombie) has objective/physical access to the objective/physical knowledge/information/data of something. This Cartesian theater is actually an objective/physical structure/process in this brain (as a philosophical zombie). Actually, this Cartesian theater is not something being \*subjectively\* perceived by this brain.

A: It feels like that I have a non-physical idea. Or in other words, it feels like that my physical brain has a non-physical idea. It feels like that this non-physical idea is in a non-physical mind – it feels like that a non-physical mind is a container/carrier for this non-physical idea. The physical counterpart of this seemingly non-physical idea is in my physical brain. My physical brain is a container/carrier for the physical counterpart of this seemingly non-physical idea. In theory, others can identify/see the physical counterpart of this seemingly non-physical idea in the microscopic structure/process of my physical brain. Actually, I don’t have a non-physical mind. Or in other words, my physical brain doesn’t have a non-physical mind – the seemingly non-physical mind is actually physical. Actually, my physical brain doesn’t have/contain/carry the non-physical counterpart of this seemingly non-physical idea. Or in other words, the physical counterpart (in my physical brain) of this seemingly non-physical idea doesn’t actually have a non-physical counterpart (to be contained in a non-physical mind). This seemingly non-physical idea is actually physical – the non-physical counterpart of this seemingly non-physical idea actually doesn’t exist.

Q: “What in "God's" name are you talking about? Thought, that is, activity in the form of conscious awareness of anything (as opposed to nothingness) is necessarily subjective. If consciousness were not subjective then who or what would know anything? How could a feeling like pain or a thought such as doubt be anything other than subjective? You are confused. The Cartesian I is not theater. How could thoughts be known objectively? That makes zero sense. None. Consciousness is immediate, whereas everything objective is mediated through it.” (<https://twitter.com/Daniel43107974/status/1504731022155472933>)

(A: If you imagine that the brain is experiencing the VR game, then I think that you are imagining the brain as a homunculus while imagining the VR game as the film being played in the theater)

Q: “When I play my computer at chess, does it have a homunculus looking at the board to decide what move to make next?” (<https://twitter.com/sphexish/status/1504733818795745307>)

A: No.

(A: The illusionists’ version of Cartesian theater is still a Cartesian theater. Whenever we are talking about consciousness/mind as a \*subjective\* experience, our brains are always imagining some kind of Cartesian theater. The “existence” of any form of Cartesian theater is a false belief. We should stop talking about consciousness/mind as a \*subjective\* experience, in order to avoid such a false belief. Instead, we can talk about *the content of consciousness/mind (e.g., beliefs/goals/experiences/knowledge/information/data)* in its objective/physical form – the form which is being objectively/physically carried by a brain.)

Q: “I agree that talk of being a subject is confusing and misleading, though I think it is important to maintain the sense of what we mean by subject in ordinary language.” (<https://twitter.com/sphexish/status/1504734264784478214>)

A: In ordinary language, what we mean by subject, is the homunculus.

Q: “My computer “knows” how to play chess, it just doesn’t know that it knows and that is where the confusion starts. Our ability to know that we know is part of an incredibly complicated mechanism.” (<https://twitter.com/sphexish/status/1504734835876716569>)

(A: In ordinary language, what we mean by subject, is the homunculus.)

Q: “I suppose we mean that our limited knowledge of the world makes our awareness of it have a particular perspective related to bodily senses and access to knowledge, but the subject as Descartes imagined does not exist at all, an illusion.” (<https://twitter.com/sphexish/status/1504735634652647447>)

A: Yes, the “I” in the statement “I think, therefore I am” is an illusion.

A: “This is a complex computation and generation of symbolic meaning… ergo there is something computing it.” (<https://twitter.com/sphexish/status/1504737379235647488>)

Q: “You're both like nihilists. Nothing exists for you except simulations and philosophical zombies.” (<https://twitter.com/Daniel43107974/status/1504737987795603468>)

A: Nothing exists for me except calculations/computations and philosophical zombies.

(A: “This is a complex computation and generation of symbolic meaning… ergo there is something computing it.” (<https://twitter.com/sphexish/status/1504737379235647488)>)

Q: “Whatever.... I quit. First of all that makes no sense. "Something" is not thinking unless YOU are that something thinking. An object (something) does not think. I don't understand what the hell you're saying so I cannot really refute it. Where did Descartes err?” (<https://twitter.com/Daniel43107974/status/1504739062380384256>)

A: “In believing that the intentional object appearing in consciousness as himself was the thing doing the thinking, it isn’t.” (<https://twitter.com/sphexish/status/1504742059911090177>)

A: The homunculus is not the thing doing the thinking. The homunculus is the intentional object. “I think, therefore I am” means "The homunculus thinks, therefore the homunculus is."

(A: In theory, in the future, we should be able to explain the physical process for a given human brain (as a philosophical zombie) to talk about its own version of Cartesian theater in words, and perhaps we might be able to find/identify the objective/physical counterpart of this Cartesian theater in the microscopic structure/process of this brain (as a philosophical zombie). It doesn’t mean that this brain has \*subjective\* access to this Cartesian theater. It only means that this brain (as a philosophical zombie) has objective/physical access to the objective/physical knowledge/information/data of something. This Cartesian theater is actually an objective/physical structure/process in this brain (as a philosophical zombie). Actually, this Cartesian theater is not something being \*subjectively\* perceived by this brain.)

Q: “Why do you keep talking about cartesian theaters when it doesn't mean anything? You think, right? You perceive, right? That is called Thought. The "I" is not a homunculus and the theater you erroneously reference is reality itself. It is "you" thinking. How could it be "It" (<https://twitter.com/Daniel43107974/status/1505363383360450563>)

A: My “I” is like my soul. Is that correct?

Q: “Not a soul! Try to answer these questions yourself for once. You are looking at something now, right? You are thinking, no? feeling maybe? Whatever it is that is doing that is YOU. You decide what to call it. I call it the knowing I. Call it what you like, but it is not nothing.” (<https://twitter.com/Daniel43107974/status/1505377629460959234>)

A: I think calling it a soul makes some sense.

Q: “I don't, but you're entitled. I call that the argument from ignorance: what is it that knows is a mystery, so it must be a soul. I think the problem is the mystification of mind. Everything we experience is capable of an explanation, we cannot know what knows directly, but we can study these things. When I say that your "I" can never know itself I don't mean that others cannot come up with a satisfactory explanation of how you or I are able to have knowledge, I am just saying that the subject-object division is and remains a permanent one, and in that specific sense, that is, from that point of view, the knowing mind or the "I" or the individual consciousness--call it what you will--the subject, can never become ITS OWN object. That makes knowledge a unique problem but not an infinitely mysterious one.” (<https://twitter.com/Daniel43107974/status/1505386246364966916>)

A: Your theory looks clear to me after I call it a soul. Your soul can see/observe your brain. Your soul (not your brain) thinks. You are your soul. You are not your brain. Is that correct?

A: The hard problem: why the soul exists? Philosophical zombie: something who doesn’t have a soul. Mind/consciousness: soul.

A: The hard problem – why the soul exists? Philosophical zombie – something who doesn’t have a soul. Mind/consciousness – soul.

Q: “An awake human body feels passive when it actively squeezes itself. It's what makes a well-functioning brain integrated with its sensorimotor functions possible. After many years of other experiments, human bodies are convinced that they really exist. Don't make more of it.” (<https://twitter.com/bertmorrien/status/1505426239930216450>)

(A: The illusionists’ version of Cartesian theater is still a Cartesian theater. Whenever we are talking about consciousness/mind as a \*subjective\* experience, our brains are always imagining some kind of Cartesian theater. The “existence” of any form of Cartesian theater is a false belief. We should stop talking about consciousness/mind as a \*subjective\* experience, in order to avoid such a false belief. Instead, we can talk about *the content of consciousness/mind (e.g., beliefs/goals/experiences/knowledge/information/data)* in its objective/physical form – the form which is being objectively/physically carried by a brain.)

Q: “Maybe “carried” is the wrong word, I would prefer “implemented” or “instantiated”.” (<https://twitter.com/sphexish/status/1505528726288842752>)

Q: “I have been thinking about the words “self” and “ego” in the way Jung used those words. Does “ego” correspond to conscious awareness limited constructed self, a mask or simulacrum of the real self extending in to the causal web of the universe?” (<https://twitter.com/sphexish/status/1505529802790424576>)

A: “Ego” (in a subjective-theory) is the counterpart of a human body (in the objective-theory). Or in other words, “ego” (in a subjective-theory) corresponds to a human body (in the objective-theory). A subjective-theory is a (subjective) causal web of the objective-theory. There is no causal web other than the Schrodinger equation in the objective-theory.

(A: Your theory looks clear to me after I call it a soul. Your soul can see/observe your brain. Your soul (not your brain) thinks. You are your soul. You are not your brain. Is that correct?)

Q: “just explain how a subject uses a brain to say it is a subject \*without violating the physics of the brain\*” (<https://twitter.com/hxt55/status/1505579140333944834>)

A: “Electrochemical (nerve) signals control the muscles of the vocal cord and hence the uttered sounds.” (<https://twitter.com/WalterHBlack/status/1505591813209395204>)

(A: “Ego” (in a subjective-theory) is the counterpart of a human body (in the objective-theory). Or in other words, “ego” (in a subjective-theory) corresponds to a human body (in the objective-theory). A subjective-theory is a (subjective) causal web of the objective-theory. There is no causal web other than the Schrodinger equation in the objective-theory.)

Q: “Equations don't have causal powers.” (<https://twitter.com/WalterHBlack/status/1505671023768875015>)

A: In my view, nothing has actual/objective causal power. Something might be (subjectively) imagined (by a human brain) to have an (imagined) causal power. Causality is (subjectively) imagined (by a human brain) to exist out there – causality is subjective. Causality doesn’t exist out there objectively.

(Q: “just explain how a subject uses a brain to say it is a subject \*without violating the physics of the brain\*” (<https://twitter.com/hxt55/status/1505579140333944834)>)

Q: “It is obvious that without a brain there would be no knowledge, no consciousness, but that is missing the point. Descartes was not arguing that we do not have brains; he was trying to establish a foundation, what he can be certain of. He can doubt all objects as objects but he could not doubt that "Thought exists"--as doubting itself, if nothing else. No natural or physical laws are violated, nothing illogical or fantastic is being suggested; thought is a product of brain function; granted, but that is getting way ahead of what Descartes was trying to do. Here is, again, the kernel, of the first two immortal Meditations. This is the supreme articulation of its true significance. I am posting this now for the fourth time. "When he [Descartes] took his cogito ergo sum as alone certain, and provisionally regarded the existence of the world as problematical, he really discovered the essential and only right starting-point of all philosophy, and at the same time its true foundation. This foundation is essentially and inevitably the subjective, the individual consciousness. For this alone is and remains immediate; everything else, whatever it may be, is mediated and conditioned through it, and is therefore dependent upon it." --Schopenhauer

No one is saying that thought is not caused by brains. That would be psychotic; also, brain V subject is an erroneous dichotomy.” (<https://twitter.com/Daniel43107974/status/1505736063427432448>)

Q: “I didn't fully understand what you wanted me to explain. The subject in this context is individual consciousness. It is not a self or an ego or a homunculus, as Tim and others have imagined. It does not say anything; it is your individual consciousness.” (<https://twitter.com/Daniel43107974/status/1505739752485670912>)

A: “I don't care about it then. It can't make any difference to what the brain does. I'm a conscious brain writing things, not a subject, because subjects can't do anything.” (<https://twitter.com/hxt55/status/1505830334440607745>)

Q: “Calling yourself a subject or not makes no difference to what the brain does. I agree. I just will make this one point: In my opinion, if you want to gain a deeper understanding of existence and the nature of reality, it is necessary to recognize and factor in the subjective conditions associated with the objects that fill space and time. You can learn a great many thinks by studying the brain or any other natural phenomenon. But so much of what we assume inheres in the objective world is conditioned by the subject; we have senses! Senses are subjective. There can be no doubt of that. Yes, the brain does what it does, and the sun does what it does. But by failing to recognize the fact that we as subjective beings with senses participate in the production of reality, and failing to recognize that we do not enter a ready-made world, deprives us of the ability to gain a deeper understanding of what reality is and what it isn't. The brain does what it does, but what the brain (judgement) regards as real will always deceive one if one does not develop a critical philosophical framework. That aside, you may be more interested in pure science, in the empirical sciences, in neuroscience or chemistry or astronomy....whereas I am more interested in philosophy, that is, in epistemology (the nature of knowledge) and in the nature of reality...among other topics.” (<https://twitter.com/Daniel43107974/status/1505845583524814848>)

A: “there are no subjects that know, there are many cells working together to create the illusion that other people know things, so the philosophy will always be wrong. there is no subjectivity, there are many objectively real cells working together to produce the illusion that others have subjectivity” (<https://twitter.com/hxt55/status/1505901495518121984>)

Q: “I don't use the word subject in most conversations; only when I am discussing the subject-object division or other philosophical topics. The subject is the (your) individual consciousness. Consciousness is, unlike objects such as cells, not mediated, is immediate. Saying that the subject in this or any other sense does not exist is not a persuasive argument; it is just the usual defiant opposition that one encounters on Twitter and in children. You have knowledge, right? You are a conscious being. Well I call the subject that which is conscious but cannot get out of its self and become its own object. In order to do that something other than this new object would have to then know it, something OTHER than that new object. If you then say there never were subjects but only objects exist, then it is world …A world, that is, of objects perceiving objects. That is illogical and inconceivable. An object, by its very definition, is observed. All I am saying is that the knower-known division is real. Or subject-object division. You are saying that everything is known, but nothing knows!” (<https://twitter.com/Daniel43107974/status/1506090503644798983>)

A: “light goes in the eye, things happen in the brain, and then a scene is seen by a subject. where is the scene located? that is a scientific question, not philosophical” (<https://twitter.com/hxt55/status/1506097397121835011>)

A: The scene is not located anywhere. The scene doesn't exist anywhere. However, every human individual will insist (in words (in human language)) that the scene exists somewhere inside a magical place/space/container called "mind/consciousness/soul". Actually, this magical place is just the context of the scene. Both the scene and its context do not actually exist.

A: The magical place is not an actual place (which can be located in the physical world). The magical place is a representation of the physical world – the magical place represents the physical world. The magical place is a subjective-theory of the objective-theory. The physical world is one theory (being told/narrated by my brain), the magical place is another theory (being told/narrated by my brain). These two theories parallel to each other – one theory does not include the other theory. These two theories conflict with each other in their meanings. In the context of one theory, the other theory doesn’t exist.

A: In the context of the objective-theory, the subjective-theory doesn’t exist. That’s why the magical place can’t be located inside the physical world. However, a human brain typically (incorrectly) imagines that the magical place is somehow located inside a physical brain (in the physical world), as if that the magical place is a subset of the physical world.

A: In the context of the subjective-theory, the objective-theory doesn’t exist. That’s why the physical world can’t be located inside the magical place. However, a human brain typically (incorrectly) imagines that the physical world is somehow located “outside” of the magical place, as if that the physical world is a superset of the magical place.

A: When a human brain imagines a scene in the physical world, and imagines a scene in the magical place, the human brain typically (incorrectly) imagines that these two scenes should look exactly the same. Or in other words, a human brain typically (incorrectly) imagines that the magical place and the physical world look exactly the same. In this case, this human brain actually (incorrectly) imagines that its physical-world/objective-theory should look exactly the same as its magical-place/subjective-theory. For example, when a human brain imagines that “light goes in the eye, things happen in the brain, and then a scene is seen by a subject”, the human brain typically (incorrectly) imagines that the “eye”, “brain”, “light” and “subject” look exactly the same in both the physical world and the magical place. In this case, this human brain actually (incorrectly) imagines that the physical-world/objective-theory should look exactly the same as its magical-place/subjective-theory. In this case, this human brain imagines the “eyeball” as a ball in both the physical-world/objective-theory and the magical-place/subjective-theory. However, actually, this human brain only should imagine the “eyeball” as a ball in its magical-place/subjective-theory – this human brain shouldn’t imagine the “eyeball” as a ball in the physical-world/objective-theory. Or in other words, the “eyeball” is a ball (in a three-dimensional Euclidean space) in its magical-place/subjective-theory, but the “eyeball” is not a ball in the physical-world/objective-theory – the “eyeball” is only some digital data in the physical-world/objective-theory. To my brain, the magical-place/subjective-theory is a three-dimensional Euclidean space, but the physical-world/objective-theory is not a three-dimensional Euclidean space – the physical-world/objective-theory is only some digital data. My brain can somehow match/map the magical-place/subjective-theory onto the physical-world/objective-theory, but this fact doesn’t mean that the physical-world/objective-theory looks the same as the magical-place/subjective-theory.

A: My physical brain can’t (reliably) forecast what another person’s physical body will do based on microphysics/objective-theory. However, my physical brain feels like that my physical brain can (unreliably) forecast what another person’s physical body will do based on *this person’s subjective-theory/thought/idea (as being imagined/invented/generated by my physical brain based on this person’s physical body’s words (in human language) and physical behavior)*. So, my physical brain removes this person’s subjective-theory/thought/idea from its physical context (the microscopic details of this person’s physical body) and then fit it in a place in my physical brain’s subjective-theory/thought/idea, as if that the objective-state-evolution of this person’s physical body is controlled/driven by this person’s subjective-theory/thought/idea. This is called theory of mind. My brain (falsely/counterfactually) believes/mathematically-models that the objective-state-evolution of a person’s physical body is controlled/driven by this person’s subjective-theory/thought/idea. Or in other words, in the subjective-theory of my brain, the objective-state-evolution of a person’s physical body is controlled/driven by this person’s subjective-theory/thought/idea – my brain’s subjective-theory is false/counterfactual.

A: Actually/objectively, the objective-state-evolution of my physical body, is not controlled/driven by my subjective-theory/thought/idea. The objective-state-evolution of my physical body, is actually/objectively controlled/driven by the direct-function only. However, in my brain’s subjective-theory, the objective-state-evolution of my physical body, is controlled/driven by my subjective-theory/thought/idea. Or in other words, subjectively, the objective-state-evolution of my physical body is controlled/driven by my subjective-theory/thought/idea.

A: In the subjective-theory of my brain, what a person is saying (i.e., the words (in human language) being spoken by this person’s physical body in the physical world), is controlled/driven by this person’s subjective-theory/thought/idea – my brain’s subjective-theory is false/counterfactual. Actually/objectively, this person’s physical body doesn’t have any subjective-theory/thought/idea. (This person’s physical body has subjective-theory/thought/idea, \*only\* in my subjective-theory. Or in other words, \*subjectively\*, this person’s physical body has subjective-theory/thought/idea.) What this person is saying, is actually controlled/driven by the direct-function only. In this sense, what this person is saying (i.e., the words (in human language) being spoken by this person’s physical body in the physical world), is actually meaningless. The meaning carried by the words (being spoken by this person’s physical body), actually is only decided by my subjective-theory – the meaning is subjective. The meaning carried by the words (being spoken by this person’s physical body), actually only depends on the context of my subjective-theory.

(A: The scene is not located anywhere. The scene doesn't exist anywhere. However, every human individual will insist (in words (in human language)) that the scene exists somewhere inside a magical place called "mind/consciousness/soul". Actually, this magical place is just the context of the scene. Both the scene and its context do not actually exist.)

A: There is a delay in the magical place. When the scene takes effect in the magical place, the scene already happened in the physical world a bit earlier in time, because it needs some time for light to travel to the retina. So, my brain can never observe anything happening in real time. What looks like to be happening in real time, actually had already happened in the past.

Q: “The "scene" of a visual object is space, is outside of oneself.” (<https://twitter.com/Daniel43107974/status/1506183047833657348>)

A: “When I look through binoculars, I see a circle. How did it get there?” (<https://twitter.com/hxt55/status/1506197324531474434>)

A: When I look through binoculars, there is one circle in my brain’s subjective-theory, while there are two circles in my brain’s objective-theory.

(A: “When I look through binoculars, I see a circle. How did it get there?” (<https://twitter.com/hxt55/status/1506197324531474434)>)

Q: “Dunno. I can address this, however: You have two eyes and see one circle. Although seeing with two eyes and receiving double impressions we perceive everything only singly.” (<https://twitter.com/Daniel43107974/status/1506202738727833604>)

A: “'the "scene" of a visual object is space, outside of oneself ' is there any evidence for this” (<https://twitter.com/hxt55/status/1506255130588557314>)

Q: “Yes. If a (visual) object were not represented in space you wouldn't see it. Can you prove that a square has four sides? All one can do in such cases is invoke the experience of intuitive perception. There is no way to prove, through logic, that 2+3 =5.” (<https://twitter.com/Daniel43107974/status/1506257631673036807>)

A: “space outside of oneself means outside of your head why isn't it in your head” (<https://twitter.com/hxt55/status/1506269617093812237>)

Q: “Empirically we are in space, AND space (the form of the outer sense) is in our heads. You might disagree with both statements or one of them, but true idealists understand that the two are not opposed to each other; they go hand in hand. Idealism is a subtly apprehended doctrine.” (<https://twitter.com/Daniel43107974/status/1506278225793757196>)

A: “if someone has a different experience than you, how are they in the same space as you” (<https://twitter.com/hxt55/status/1506287382198431772>)

Q: “Doesn't it seem like we've gone backwards? Materialism (or what is now called Physicalism) is the order of the day. Sad. People think the Cartesian I is a person. Science marches on in inverse proportion to any real (collective) understanding of existence.” (<https://twitter.com/Daniel43107974/status/1506499889022312451>)

A: “not a person

not the brain

then what is it?😂🤣😂

nobody knows what it is, so why are you confident in saying it's not a soul

is there supposed to be an alternative

if we just say "individual consciousness," it's supposed to be clear that that is not a soul?” (<https://twitter.com/hxt55/status/1506621894073667592>)

(Q: “I didn't fully understand what you wanted me to explain. The subject in this context is individual consciousness. It is not a self or an ego or a homunculus, as Tim and others have imagined. It does not say anything; it is your individual consciousness.” (<https://twitter.com/Daniel43107974/status/1505739752485670912)>)

A: “the subject doesn't say anything” (<https://twitter.com/hxt55/status/1506827076355170309>)

A: “you are saying

things

you're not the subject” (<https://twitter.com/hxt55/status/1506827189316055040>)

A: “i am a subject

i know english

if the brain knows english, i guess brain is the subject, and i am the brain.

if the brain doesn't know english, how am i making it speak english

if both the brain and i know english, there are really two people here, that's too creepy” (<https://twitter.com/hxt55/status/1506828480494907393>)

Q: “I have replied to this question before, and will do so again. I merely ask that you think about what I say rather than dismiss it right off the bat. I understand your question; it seems ludicrous to say that I am not the same I that speaks and does everything else that people do. And it seems odd to distinguish between what I do and what my brain does. Why make these superfluous and bizarre distinctions? What I am trying to do is defend the notion of the inviolability of the subject-object relationship. Why? Because I think it is important. Starting from the object and forgetting the subject leads to error. Idealism, on the other hand, has far-reaching implications; moral philosophy hinges on this doctrine, and starting from the object nd forgetting the subject gives rise to fanaticism, superstition (religion), all kinds of errors and dogmas. The Kantian philosophy is critical in nature, and the subject-object division is like a watchdog; it keeps us grounded. Without this division all bets are off; anything goes. No. The mind has its limits and we must try to prevent fanaticism and "free thinking". Starting form the object is okay when you are studying objects, like fossils or skin conditions, but if you want to avoid pernicious errors you have to take the role that subjectivity plays into account as you attempt to develop an understanding of the nature of existence itself. Now that was a (poor) description of WHY this matters. Here is my answer to your question. Again, I am defending the subject-object division. It is true that the brain is the cause of thinking. But the brain, finally, is an object for the subject. Now this is where the confusion arises. Why then isn't the brain the subject? Listen: the brain is all-important, the brain is what makes everything work, Obviously without it we would not be sentient beings. Granted. But the subject-object division that I am defending includes even the brain itself as object.” (<https://twitter.com/Daniel43107974/status/1506857644304261124>)

A: “you should be an epiphenomenalist - the brain does everything but there's also a subject” (<https://twitter.com/hxt55/status/1506971806510497805>)

Q: “The brain is the phenomenal representation of a persons thoughts, or mind.” (<https://twitter.com/WalterHBlack/status/1506982097700933641>)

A: “if i line up dominoes and knock them over, are there mental dominoes in "reality" doing the exact same thing

what are mental dominoes” (<https://twitter.com/hxt55/status/1506992946670886922>)

A: “if a machine started to say it had qualia, and i didn't find any evidence of strange deviations in its computing, then i wouldn't believe it's a representation of a mind with qualia

why is a brain different

if a brain can be understood like a machine can, then a machine that says it has qualia should be taken seriously, even though we can see that it was just programmed to say that

a brain is either programmed to say it also, or a brain can't be understood” (<https://twitter.com/hxt55/status/1506995625992372225>)

Q: “You're asking the wrong guy. Qualia is one of these terms that I dislike. I don't know what it means and it is not part of my philosophical vocabulary. I know what qualities are. Maybe you can rephrase your question. Why not stick with people? Whatever we say about them should apply to thinking machines. If another person says they are conscious why should I doubt it? Is that what you are asking? I don't doubt it, but I cannot migrate into the mind of a machine or a man, and if I could, I would be a subject looking out from a new body.” (<https://twitter.com/Daniel43107974/status/1506998908391759874>)

A: “a machine with qualities

lol

where are the qualities and how do they affect the machine's parts

you people are driving me crazi..er” (<https://twitter.com/hxt55/status/1507002381850001411>)

Q: “I said I don't know what qualia is; I know what sensible qualities are like hardness and softness and heaviness, dark, loud, solid, etc. What is qualia? I hear that word all the time. And I sent you a long reply to your question. Also, I speak only for myself. I'm allied w no one. You asked a question, raised an issue: "what is the difference between a brain and the I that knows? I took the time to answer it. Then you ignore the reply and move on to other questions, about dominoes and now computers with qualia. What applies to humans with brains would apply, theoretically, to a machine with brains. If a machine could think the way we do there is no point in shifting the question to machines. What was the question again?” (<https://twitter.com/Daniel43107974/status/1507006776956243980>)

A: “you can't convince me that a machine that talks about its experiences is conscious, because I can see that it doesn't need experiences to say what it says” (<https://twitter.com/hxt55/status/1507011265364824076>)

A: “but according to panpsychists, idealists, materialists..

I should believe because complex mechanism is the external appearance of mind” (<https://twitter.com/hxt55/status/1507011847060262924>)

A: “if the brain is complex mechanism, there's no reason to believe it's conscious either

you DON'T NEED CONSCIOUSNESS” (<https://twitter.com/hxt55/status/1507012091797925891>)

### (37)

Q: “Q. What exactly is it that's illusory, according to illusionism? A. The stuff Mary didn't know about. The stuff you can imagine zombies lacking. The stuff that poses a hard problem. The élan sentimental.” (<https://twitter.com/keithfrankish/status/1504455122906144770>)

A: “The illusion is captured in the question: "what is the nature of experience?". Experiences are the illusory correlates of what things are doing when they are seeming to be like anything. (<https://twitter.com/markgotproblems/status/1504709957098344449>)

A: Subjective-theory is the illusory/subjective/superstitious correlates of what things are doing when they are seeming to be like anything. Objective-theory is the real/objective/correct correlates of what things are doing when they are seeming to be like anything. In a subjective-theory, there is stuff zombies lacking. In a objective-theory, there is no stuff zombies lacking. In a subjective-theory, there is the hard problem. In a objective-theory, there is no hard problem. In a subjective-theory, there is something Mary didn’t know about. In another subjective-theory, there is nothing Mary didn’t know about. In a objective-theory, there is no Mary, and there is no knowledge – the cognition (which imagining/defining the existence of Mary and the existence of Mary’s knowledge) is subjective/illusory/superstitious. A objective-theory is meaningless. Meaning depends on the context of a subjective-theory – meaning is defined by a subjective-theory.

### (38)

Q: “We separate the universe conceptually into laws (which stand outside time and space) and "stuff" the laws operate on, but in reality there is no place for these laws to exist outside the universe. The universe generates the laws, not the other way around. They are unity.” (<https://twitter.com/ryanspangler/status/1504528088205455374>)

Q: “This is yet another dualism we will someday liberate ourselves from” (<https://twitter.com/ryanspangler/status/1504528090407464980>)

A: “Observation is not possible without dually cutting the whole.” (<https://twitter.com/FroehlichMarcel/status/1504740820406226953>)

Q: “I find this an interesting statement. To me, an observation is a relationship between things in the universe, and does not necessarily constitute a duality/cut. Maybe from the perspective of the observer, but not from the universe.... can you expand on what you mean here?” (<https://twitter.com/ryanspangler/status/1504957061196513280>)

A: “Exactly, just from the observer perspective.” (<https://twitter.com/FroehlichMarcel/status/1504975609512050695>)

A: Being a part of our cosmos, I observe our cosmos from inside. Someone (who is not part of our cosmos) can observe our cosmos from outside. What I see as "stuff", can be pure data from the latter individual's viewpoint.

A: When a TM (within a Game of Life system) observes the system from inside, it sees “stuff”. When a human (who is located outside of the Game of Life system) observes the system from outside, there is no “stuff” but only some data stored in the memory of the computer (which runs/computes the Game of Life system).

(A: Being a part of our cosmos, I observe our cosmos from inside. Someone (who is not part of our cosmos) can observe our cosmos from outside. What I see as "stuff", can be pure data from the latter individual's viewpoint.)

Q: “Every closed boundary creates an inside/outside distinction.” (<https://twitter.com/FroehlichMarcel/status/1505090048982724608>)

A: Being part of the cosmos, the physical structure for my brain to learn about the cosmos (through machine learning), is part of the cosmos too. For a god who is not part of the cosmos, the physical structure for his brain to learn about the cosmos (through machine learning), is \*not\* part of the cosmos. That's a significant difference. It's like the difference between a TM (within a Game of Life system) and a human brain (as a TM). "Every closed boundary creates an inside/outside distinction." However, if both the inside and the outside (being distinguished by a closed boundary) are parts of our cosmos, then both the physical structure of an inside observer and the physical structure of an outside observer are parts of our cosmos. The inside/outside distinction by a closed boundary within the cosmos/Game-of-Life, is not as significant as the inside/outside distinction by the "boundary" of the cosmos/Game-of-Life.

### (39)

Q: “I don't think I managed to convey the hard problem of consciousness to Joe Rogan. Does anyone think there's any way I could have done better? #Philosophy <https://www.youtube.com/watch?v=EczCvJrQtXw>” (<https://twitter.com/Philip_Goff/status/1504761462283292696>)

A: “I don't think the problem with Joe's understanding was in your articulation. Feeling the force of HP is sometimes tricky as there are ways of internalising consciousness-talk in purely functional terms and totally miss the target (what it's like to experience that internalising).” (<https://twitter.com/markgotproblems/status/1505074777177866245>)

A: “It led him to miss the point that, even if there are neural states which correlate with particular conscious experiences such that tweaking one alters the other, it's not clear why that conscious experience exists at all (and so the neural correlate doesn't explain it).” (<https://twitter.com/markgotproblems/status/1505076276561948673>)

A: “Did he miss the point, or was there no point to begin with? Before you can ask "why are we not zombies?", you first have to show that we are not zombies.” (<https://twitter.com/ArletOttens/status/1505081282052734977>)

A: You can only show that we are not zombies to someone who already believed that we are not zombies.

A: Physicalists can believe that we are philosophical zombies.

(A: You can only show that we are not zombies to someone who already believed that we are not zombies.)

Q: “Well, then you're not really "showing" it. You are just agreeing with existing beliefs.” (<https://twitter.com/ArletOttens/status/1505083379770920960>)

A: Yes. There is no way for one person to make another person agree with you. It feels like that you "made" another person agree with you. Actually, the latter person \*managed\* to develop the same opinion (as you) by himself. Both brains are doing machine learning at the same time. It's not a one-way teaching.

(A: “Did he miss the point, or was there no point to begin with? Before you can ask "why are we not zombies?", you first have to show that we are not zombies.” (<https://twitter.com/ArletOttens/status/1505081282052734977)>)

Q: “I assume he missed the point as he was presented with various issues around conceivability of zombies and only made further reference to structural correlates of conscious states.” (<https://twitter.com/markgotproblems/status/1505083710747590658>)

A: “Even if we think zombies are conceivable, we still have to show that we are not the zombies, and that's impossible to do, by definition of the zombie.” (<https://twitter.com/ArletOttens/status/1505085555310219264>)

(A: “Did he miss the point, or was there no point to begin with? Before you can ask "why are we not zombies?", you first have to show that we are not zombies.” (<https://twitter.com/ArletOttens/status/1505081282052734977)>)

Q: “My point wasn't that Joe needed to be led to a position on whether or not we are zombies. It was, given the conceivability of zombies, we should be (at least) puzzled as to what the datum is that we can attend to through introspection. Joe wasn't seeing that puzzle.” (<https://twitter.com/markgotproblems/status/1505085375471046660>)

A: “If Joe was in fact a zombie, why exactly should he be puzzled?” (<https://twitter.com/ArletOttens/status/1505085870210269184>)

A: Good point. A zombie can introspect too.

A: If Philip Goff was in fact a zombie, Philip Goff would say exactly the same words in the video.

(A: “If Joe was in fact a zombie, why exactly should he be puzzled?” (<https://twitter.com/ArletOttens/status/1505085870210269184)>)

Q: “He was certainly talking as if he was acknowledging first person acquaintance with qualitative experiences, but simply not seeing why physical structure doesn't account for them. A zombie could write a book on the hard problem - not sure how this responds to what I've said at all” (<https://twitter.com/markgotproblems/status/1505087431409905665>)

A: “A zombie would acknowledge first person acquaintance with qualitative experiences, and their physical structure fully accounts for them. If a zombie can write a compelling book about a non-existent hard problem, what does that say about the hard problem?” (<https://twitter.com/ArletOttens/status/1505088184950181891>)

Q: “It says nothing more than physical structure consists in everything mind-independent, just as it is. (A basic premise of zombie arguments anyway).” (<https://twitter.com/markgotproblems/status/1505094724469800966>)

A: “Philosophers are using zombie arguments to persuade others that they are not zombies. Is that a brain washing technic? (Taking the advantage that people don't like to be called "zombies".)” (<https://twitter.com/_xiaoyangyu/status/1505096273355227136>)

A: "Hard problem" also seems like a brain washing technic -- people who can't understand a \*hard\* problem seem not smart.

(Q: “It says nothing more than physical structure consists in everything mind-independent, just as it is. (A basic premise of zombie arguments anyway).” (<https://twitter.com/markgotproblems/status/1505094724469800966)>)

A: “I don't understand. Let's assume for sake of argument that Joe Rogan is in fact a zombie. Should he have been puzzled about his first person experience? Why?” (<https://twitter.com/ArletOttens/status/1505096135488282625>)

Q: “I haven't raised a dispute with any possible responses to premises of zombie or conceivability arguments. I'm stating that Rogan seems to be failing to recognise that those arguments even have a referent, whilst talking about the referent. [1/2]” (<https://twitter.com/markgotproblems/status/1505113685810978816>)

Q: “This seems to suggest that Rogan is not (wittingly or unwittingly) making a psychologised materialist response to the conceivability of zombies as an argument against scientific constraints on the purview of reality. It seems to suggest he's confused.” (<https://twitter.com/markgotproblems/status/1505114225097777155>)

A: “Correct. I was the one to raise the zombie (pun not intended) in order to clarify. Joe Rogan's arguments seem compatible with him being a zombie. If that's the case, he is not confused at all. Zombies agree to have an inner experience, which can be explained by physics.” (<https://twitter.com/ArletOttens/status/1505115559544995843>)

Q: “Both Rogan and Philip's comments are perfectly consistent with both of them being zombies. This has no bearing on whether one of them is failing to acknowledge a problem. Indeed, Z-Philip can perfectly well articulate HP.” (<https://twitter.com/markgotproblems/status/1505118618031382528>)

A: “What exactly is the problem that a zombie is supposed to have?” (<https://twitter.com/ArletOttens/status/1505119049914753028>)

Q: “The hard problem is a call to explain why there \*seems\* to be anything at all from the first person perspective. You might respond to that in any number of ways (including all the ways you very well sketch, such as "seeming" is some kind of first-person category mistake). [1/2]” (<https://twitter.com/markgotproblems/status/1505120104069181441>)

Q: “Joe is not articulating a response. He's failing to acknowledge the motivation for making one at all. [2/2]” (<https://twitter.com/markgotproblems/status/1505120372508741634>)

A: “Ah, interesting. So you're saying that if we were all zombies, we'd still have to explain the hard problem?” (<https://twitter.com/ArletOttens/status/1505120708938158080>)

Q: “Yes, I think experience is a datum that needs explanatory respect (and if the best explanation of that datum turns out to be "it's actually an illusion that can be accounted for causo-physically", so be it).” (<https://twitter.com/markgotproblems/status/1505121713658466307>)

A: “Then we've reached a point of agreement. Cool.” (<https://twitter.com/ArletOttens/status/1505122515399622661>)

(Q: “Yes, I think experience is a datum that needs explanatory respect (and if the best explanation of that datum turns out to be "it's actually an illusion that can be accounted for causo-physically", so be it).” (<https://twitter.com/markgotproblems/status/1505121713658466307>))

Q: “I'm certainly not persuaded that it can be presently, given the current methodological setup of physical science. But, I'm open to some expanded causo-physical methodology eventually supervening on the datum.” (<https://twitter.com/markgotproblems/status/1505122827455934465>)

A: “I can't see how there can be any progress in this in the future (with more advanced physical science). Any clue?” (<https://twitter.com/_xiaoyangyu/status/1505127867386335237>)

Q: “We can work to understand more of the brain, as well as continue AI developments. If we can replicate more and more brain functionality in computer models, we have perfect insight in all the bits of information.” (<https://twitter.com/ArletOttens/status/1505128642715783168>)

A: Let's assume that we already can do what you say. Then what to do?

A: When I assume that we already can do what you say, I don't think philosophy will have progress due to the said achievements in physical science.

A: We can suppose that we already know every physical detail about what Joe and Philip Goff's brains are doing in the video. Then, what progress can we have in philosophy?

A: Or in other words, what kind of physical detail in the video can help philosophy to progress? What kind of physical detail do you want to learn?

A: In my view, physical science already disclosed enough detail for philosophers. I can't see why philosophers still need more knowledge in science.

A: For example, I think we already know enough scientific facts about an elementary particle. I don't think panpsychists need more scientific knowledge to change/improve their philosophical view on the consciousness of an elementary particle.

(Q: “Yes, I think experience is a datum that needs explanatory respect (and if the best explanation of that datum turns out to be "it's actually an illusion that can be accounted for causo-physically", so be it).” (<https://twitter.com/markgotproblems/status/1505121713658466307>))

Q: “If a zombie wants an explanation for the hard problem, then it must be some kind of illusion.” (<https://twitter.com/ArletOttens/status/1505128279489064962>)

A: If a human wants an explanation for the hard problem, is it some kind of illusion?

(A: We can suppose that we already know every physical detail about what Joe and Philip Goff's brains are doing in the video. Then, what progress can we have in philosophy?)

Q: “I think the big challenge is coming to grips with the huge amount of complexity that can arise out of basic set of primitive operations. It helps if you look at other places where this happens. For instance, the simple rules of Conway's game of life.” (<https://twitter.com/ArletOttens/status/1505134921987375105>)

Q: “Adding complexity just be increasing size: <https://www.youtube.com/watch?v=C2vgICfQawE>” (<https://twitter.com/ArletOttens/status/1505135737653665795>)

A: What's the problem (in philosophy) regarding complexity?

Q: “People have problem understanding how higher level meaning in a complex system relates to simpler components that create it. The elements of consciousness are very high level abstractions, but the visible implementation is very low level.” (<https://twitter.com/ArletOttens/status/1505137088135577607>)

A: If people's brains have problem understanding something, then we need to find people with better brains. Science already knows every level of abstraction in the cosmos -- from elementary particle to the black whole

(Q: “People have problem understanding how higher level meaning in a complex system relates to simpler components that create it. The elements of consciousness are very high level abstractions, but the visible implementation is very low level.” (<https://twitter.com/ArletOttens/status/1505137088135577607)>)

Q: “You can understand the basic rules of Game of Life, and then zoom out on a complex structure, and see something completely different happening. You see messages being transported from one point to another, for instance, not just cells going from alive -> dead.” (<https://twitter.com/ArletOttens/status/1505137758523772939>)

A: “Yes, it doesn't need a very large Game of Life system to observe this. We can observe this in a small Game of Life system. It's enough for a philosopher. Isn't it?” (<https://twitter.com/_xiaoyangyu/status/1505138609003036677>)

(Q: “You can understand the basic rules of Game of Life, and then zoom out on a complex structure, and see something completely different happening. You see messages being transported from one point to another, for instance, not just cells going from alive -> dead.” (<https://twitter.com/ArletOttens/status/1505137758523772939)>)

Q: “But then these messages can then be used to create more complex concepts, and so on. If somebody then asks: "explain in simple terms how these complex things can be done by these simple rules", there's no satisfying answer, because it requires a full understanding of the stack.” (<https://twitter.com/ArletOttens/status/1505138445269753859>)

A: Will there be a better answer for this question in the future?

(A: “Yes, it doesn't need a very large Game of Life system to observe this. We can observe this in a small Game of Life system. It's enough for a philosopher. Isn't it?” (<https://twitter.com/_xiaoyangyu/status/1505138609003036677)>)

Q: “I think it would be helpful to take a complex system, and then take it apart, and understand how it relates to simple rules, as an exercise in understanding about the general idea of emergence. I have the feeling that some philosophers underestimate how powerful it is.” (<https://twitter.com/ArletOttens/status/1505140202486091778>)

A: Philosophers simply don't understand complex systems.

A: Philosophers simply don't understand Game of Life.

A: Philosophers simply don't understand a small-scale Game of Life.

A: We need philosophers who understand small-scale Game of Life systems.

(A: Will there be a better answer for this question in the future?)

Q: “In some cases you can build intermediate abstractions, and gain understanding of general ideas. For instance, I've written Javascript programs, and I've designed my own CPUs in hardware, and everything in between. But human-engineered abstractions are easy compared to biology.” (<https://twitter.com/ArletOttens/status/1505141171366027269>)

A: Influential philosophers don't have experience in technology. That's the problem.

A: In this sense, influential philosophers are like monks

(A: Influential philosophers don't have experience in technology. That's the problem.)

Q: “This is one of the most unfounded assumptions I've ever read. Which philosophers are inexperienced in technology? Computational modelling is literally the chief research interest of cognitive scientists (a branch of philosophy).” (<https://twitter.com/markgotproblems/status/1505275986262302728>)

A: I mean, not as experienced as a technology export. I know that you don't think it to be a disadvantage for a philosopher.

A: Just like I don't understand music like Mozart does

Q: “Your continued assertion that philosophers don't have expertise in certain areas just betrays that you don't have much of a clue what professional academic philosophers actually get up to these days.” (<https://twitter.com/markgotproblems/status/1505446173758345218>)

A: Yes. That's fair.

### (40)

Q: “Writing update: Having refuted both God and atheism, I am currently writing the penultimate chapter, which explores a variety of middle-way options: the simulation hypothesis, teleological laws, bad god, indifferent god, limited god, and cosmopsychism. #philosophy” (<https://twitter.com/Philip_Goff/status/1504054193795092484>)

Q: “I would just like to point out that some of those "middle way" options are compatible with atheism.” (<https://twitter.com/brigdaddy/status/1505318782192996357>)

Q: “My new book aims to explore the middle ground between God and atheism. All of my atheist friends keep telling me the views I'm exploring are unusual forms of atheism, and all of my theist friends keep telling me they're unusual forms of theism. Sounds like I'm getting it right.” (<https://twitter.com/Philip_Goff/status/1505326487905386501>)

A: “No. God is a human creation like the self. The latter is a conviction supported by a myriad of experiments.

Creations like Beethoven's Fifth exist without a doubt but for God experimental evidence is lacking. I like Beethoven better. Don't talk about God, the self is sufficient.” (<https://twitter.com/bertmorrien/status/1505444274279792641>)

Q: “You'd need to answer: a) What ought our expectations be regarding the characteristics of the Universe if no God existed. b) What ought our expectations be regarding the characteristics of the Universe if God does exist. But a & b can't be answered. So evidence is inapplicable” (<https://twitter.com/ian_wardell/status/1505479318327205893>)

A: “Why bother if evidence is inapplicable? If you can 't measure something it's irrelevant.” (<https://twitter.com/bertmorrien/status/1505483627282501635>)

Q: “My consciousness isn't irrelevant. Neither is anyone's.” (<https://twitter.com/ian_wardell/status/1505495692051197952>)

A: My mind/consciousness/soul is irrelevant. In theory, measuring microscopic physical activities (which are happening in my brain) is enough to explain my physical behavior.

Q: “Reasons, desires etc explain your behaviour. This is so even if the world is physically closed.” (<https://twitter.com/ian_wardell/status/1505508418001510400>)

A: Two kinds of explanations. Objective explanation – explanations which can be measured. Subjective explanations – explanations which can't be measured. We can explain every physical event using objective explanations only -- we can treat subjective explanations as irrelevant if we want.

Q: “Objective explanations aka scientific explanations, are not really explanations in the fullest sense. See a recent blog post by me: <https://ian-wardell.blogspot.com/2022/03/self-floating-books.html>” (<https://twitter.com/ian_wardell/status/1505509768374456320>)

A: I just finished reading your blog post. In my view, there is no (physical) force -- I agree with your blog post on this opinion. Are you a theist?

Q: “I don't no. I believe that reality as a whole is somehow infused with awareness, and indeed a manifestation of awareness. I think reality is beyond our ken, quite frankly, least of all know what we're talking about in reference to a "God".” (<https://twitter.com/ian_wardell/status/1505513866809298945>)

Q: “I think reality is ultimately mysterious, that we're all living in a kinda "dream" where our understanding, our perception, is attempting to penetrate an impenetrable fog.” (<https://twitter.com/ian_wardell/status/1505514083659001860>)

A: The present article is my attempt. You can read it.

Q: “OK, thanks for that. I don't believe consciousness is itself a simulation because it's not a computation. But maybe the material world is a simulation, although I doubt it. But interesting to think about these things.” (<https://twitter.com/ian_wardell/status/1505523362554171392>)

(A: Two kinds of explanations. Objective explanation – explanations which can be measured. Subjective explanations – explanations which can't be measured. We can explain every physical event using objective explanations only -- we can treat subjective explanations as irrelevant if we want.)

Q: “We can agree on the meaning of the word blue because we can agree on the top color of the Ukrainian flag.

We can also measure it with a spectrometer but that gives a certain EM frequency that has no color at all. Apparently the eye measures frequencies to determine colour.” (<https://twitter.com/bertmorrien/status/1505547256459575300>)

Q: “This is the general principle of subjective observation that is accepted as (sorta) objective. In this way we can in principle agree on the meaning of mind. We cannot do that without a body. Zero evidence for a bodyless mind means that we can forget that to avoid madness.” (<https://twitter.com/bertmorrien/status/1505550868581687301>)

A: “We cannot agree what minds are in a disembodied existence? OK, not sure why, but I'll leave it at that.” (<https://twitter.com/ian_wardell/status/1505552566838611968>)

(Q: “We can agree on the meaning of the word blue because we can agree on the top color of the Ukrainian flag.

We can also measure it with a spectrometer but that gives a certain EM frequency that has no color at all. Apparently the eye measures frequencies to determine colour.” (<https://twitter.com/bertmorrien/status/1505547256459575300)>)

A: “We can't know that what oneself experiences as blue is the same for everyone else. Wavelengths of light might correlate with the experience of the colour we see, but colour itself is not measurable.” (<https://twitter.com/ian_wardell/status/1505548422354456586>)

(A: Two kinds of explanations. Objective explanation – explanations which can be measured. Subjective explanations – explanations which can't be measured. We can explain every physical event using objective explanations only -- we can treat subjective explanations as irrelevant if we want.)

Q: “Trained human sensory panels measure subjective attributes with measured precision all the time. In the coffee, chocolate, spirits industry they guide million dollar business investments. To say that qualities cannot be measured is simply wrong.” (<https://twitter.com/LocoQf/status/1505631267420872704>)

A: Two kinds of explanations. Objective explanation – explanations which can be measured by a physical device (except a human brain). Subjective explanations: explanations which can’t be measured by a physical device (except a human brain). When a human brain is being used to measure something, its output is the words (in human language) being spoken by the human. We can explain every physical event using objective explanations only -- we can treat subjective explanations as irrelevant if we want. A human brain can be used to measure something which doesn’t actually/objectively exist, e.g., color, pain, happiness, love, evil, mind/consciousness/soul, probability.

Q: “In the food industry - human sensory panel is considered the gold standard to the detection of rancid fats. Superior to analysis via chemistry or spectroscopy. The human as a measurement device is a highly developed science.” (<https://twitter.com/LocoQf/status/1505664780329181196>)

A: Of course, a human brain can also be used to measure something an ordinary physical device can measure, e.g., the number of a pile of apples.

Q: “But that would be quantitative and objective - philosophers in the idealist school (including PP) start a long road to the primitive mental nature of reality by saying qualitative experience is not subject to scientific description- these sensory panels I think prove them wrong.” (<https://twitter.com/LocoQf/status/1505666282305249283>)

(A: Two kinds of explanations. Objective explanation – explanations which can be measured by a physical device (except a human brain). Subjective explanations: explanations which can’t be measured by a physical device (except a human brain). When a human brain is being used to measure something, its output is the words (in human language) being spoken by the human. We can explain every physical event using objective explanations only -- we can treat subjective explanations as irrelevant if we want. A human brain can be used to measure something which doesn’t actually/objectively exist, e.g., color, pain, happiness, love, evil, mind/consciousness/soul, probability.)

Q: “Colours are out there in the world. Of course they exist. And human brains don't measure anything. Rulers and the like measure stuff.” (<https://twitter.com/ian_wardell/status/1505669315743424514>)

A: A human brain or an ordinary physical device can be used to measure/observe/detect the number of a pile of apples (out there in the physical world). In my view, unlike the number of apples, color/mind/consciousness/soul is subjective only – color/mind/consciousness/soul doesn’t exist objectively. “My brain can measure/observe/detect the color of a rose.” The previous sentence doesn’t necessarily mean that the color (red) is out there \*on\* the surface/boundary of a rose (in the physical world), and the previous sentence doesn’t necessarily mean that the color (red) exists somewhere inside my physical brain (being displayed \*on\* the screen of a Cartesian theater) either. “My brain can measure/observe/detect the existence of my mind/consciousness/soul.” The previous sentence doesn’t necessarily mean that my mind/consciousness/soul actually \*exists\* out there in the physical world, and the previous sentence doesn’t necessarily mean that my mind/consciousness/soul actually \*exists” somewhere inside my brain (as a container or as a Cartesian theater) either. There is no physical device can directly/objectively measure/observe/detect the existence of color/mind/consciousness/soul – color/mind/consciousness/soul are subjective only. A human brain can’t directly/objectively measure/observe/detect the existence of color/mind/consciousness/soul either. When we hear a human says a sentence (in human language) about color/mind/consciousness/soul, this fact doesn’t necessarily mean that this human’s brain can directly/objectively measure/observe/detect the existence of color/mind/consciousness/soul.

(A: Of course, a human brain can also be used to measure something an ordinary physical device can measure, e.g., the number of a pile of apples.)

Q: “We count the apples. And it's our minds or consciousness that does this.” (<https://twitter.com/ian_wardell/status/1505823080135991296>)

A: In my view, it's a physical brain that does this.

A: Mind/consciousness/soul is a redundant concept/imagination conceptualized/imagined by a human brain.

(A: In my view, it's a physical brain that does this.)

Q: “OK. I don't think so. Best leave it at that.” (<https://twitter.com/ian_wardell/status/1505837572303511557>)

### (41)

Q: “An agnostic thinks there's a reasonable chance God exists and a reasonable chance God doesn't exist. An atheist, in contrast, thinks the chance of God existing is minuscule (like fairies).” (<https://twitter.com/Philip_Goff/status/1505333118747697154>)

A: “What is and is not true is not a matter of probability. Better just to say that God is not a good explanation of anything and therefore the concept should be rejected, like phenomenal properties :)” (<https://twitter.com/sphexish/status/1505451652731613190>)

### (42)

A: “What if consciousness isn't really that complicated from a conceptual standpoint? Like the neurology is complicated, sure, but what if the 'awareness' just comes down to something like multiple threads, where threads monitor other threads?” (<https://twitter.com/robotsneedpoems/status/1505584259632930820>)

Q: “If awareness turned out to be just some specific computation then we'll be able to write it out long hand with pencil & paper and we won't need all those messy neurons any more.” (<https://twitter.com/chrisfcarroll/status/1505648849259540485>)

A: “That's correct, but what does that say? You'll be staring at billions of pages of calculations that will seem utterly meaningless.” (<https://twitter.com/ArletOttens/status/1505761137077460994>)

Q: “To my mind, it is a reductio ad absurdum of the belief that consciousness is an attribute of a turing machine: If it were, then the right pencil marks on paper would be just as consciousness as a human being. So there must be something more than pure computation involved.” (<https://twitter.com/chrisfcarroll/status/1505853325945753605>)

A: “The pencil marks would form a representation of a conscious mind, just like brain activity forms such a representation in a biochemical substrate. It's not a reduction ad absurdum just because you think it's absurd. You have to show that there's a logical contradiction.” (<https://twitter.com/ArletOttens/status/1505860067308019720>)

A: As long as the computation happens, the substrate to support the computation shouldn't matter. I can't see why the substrate matters here. Any substrate should work the same. If a Turing machine simulated by a computer program has a cognition, then a mechanical Turing machine should have exactly the same cognition.

Q: “The point that's easy to miss is that a Turing machine + its life history is a static structure, not a dynamic one, so if consciousness is a computation then it is static. I concede that one can decline to see an absurdity in believing consciousness is a static structure.” (<https://twitter.com/chrisfcarroll/status/1505885155793252356>)

Q: “(I'd say the term RAA can cover absurdities, not just contradictions) (<https://twitter.com/chrisfcarroll/status/1505885188303331334>)

(Q: “The point that's easy to miss is that a Turing machine + its life history is a static structure, not a dynamic one, so if consciousness is a computation then it is static. I concede that one can decline to see an absurdity in believing consciousness is a static structure.” (<https://twitter.com/chrisfcarroll/status/1505885155793252356)>)

A: “At any point in time, our brain is also static.” (<https://twitter.com/ArletOttens/status/1505931715415584779>)

A: Yes, because the time in our cosmos is not continuous (<https://twitter.com/_xiaoyangyu/status/1505998357306941441>)

(A: “At any point in time, our brain is also static.” (<https://twitter.com/ArletOttens/status/1505931715415584779)>)

Q: “Well this is interesting point & I don't know what to think about it :-) I feel like most of what we believe possible—being able to move, live, think—relies implicitly on time passing & things happening as it does. But we have no idea how time works or what a point in time is?” (<https://twitter.com/chrisfcarroll/status/1506043417138237446>)

A: The state of all elementary particles at this moment is only decided by the state of all elementary particles at the previous moment in time. The pair of terms – “time” and “state” – needs to be understood together.

Q: “To me, this sounds like you think of a mathematical model. But models typically do not address what is time: they just model it as a variable, and leave us none the wiser? In the same way that Newtonian mechanics offers no answer to what is mass? or what is time?” (<https://twitter.com/chrisfcarroll/status/1506278935721660418>)

A: I don't think a human brain can address “what is time” in a different context (other than address it in the context of a mathematical/mental model (being used to forecast/calculate a future event/situation/state)). To a human brain (as a Turing machine), time is a variable being used in its forecast/calculation – what else can time be? As long as a TM can use time as a variable to forecast/calculate a future event/situation/state, the same variable (i.e., time) can be used by another TM to forecast/calculate *what the former TM will do (i.e., the former TM’s future state).*

### (43)

Q: “Really looking forward today's Mind Chat on free will. From Helen's bk: 'So far as I am aware, then, there is absolutely no scientific reason to endorse the claim that purely physical laws are sufficient to dictate the movements of every physical thing.. <https://youtu.be/YDiiqUWRipc>” (<https://twitter.com/Philip_Goff/status/1506574273191858180>)

Q: “..(or even its indeterministic cousin—that they are sufficient, at any rate, to fix the probabilities that any given movement should occur). There is only the grip of a mesmerising world view...” (<https://twitter.com/Philip_Goff/status/1506574367320416259>)

Q: “... And a mesmerising world view cannot be allowed to win the argument merely because it is mesmerising.'” (<https://twitter.com/Philip_Goff/status/1506574690017595394>)

A: “Have caught up now. It seems the motivation for the view is (1) it would be terrible if we could account for everything at a microphysics level (2) we don't know for sure that we can account for everything at a microphysics level (3) ∴ libertarianism” (<https://twitter.com/Disagreeable_I/status/1506681027770658818>)

A: “With a side helping of (1) it is difficult to give an exception-free rigourously robust account of compatibilist causation (2) ∴ compatibilism is false” (<https://twitter.com/Disagreeable_I/status/1506681306922463236>)

A: “Those seem like weak arguments to me! Parsimony seems to weigh against top-down or agent-causation.” (<https://twitter.com/Disagreeable_I/status/1506681511390728193>)

Q: “That seems a fair summary, Disagreeable You, but your appeal to parsimony misses something big. The great strength of Helen Steward's approach is that it is motivated by what is evident to us all. İn denying agent-causation, we lose the whole point of consciousness, don't we?” (<https://twitter.com/tgedavis/status/1506923852231806983>)

Q: “İn other words, why did consciousness evolve at all if our every act is determined?” (<https://twitter.com/tgedavis/status/1506925126503354369>)

Q: “İt is the Hard Problem again. We can say top-down agency emerged along with consciousness. But what is the mechanism of emergence? With a nod to quantum physics, perhaps we can say that the mechanism involves a level which is causal and determined, but necessarily unpredictable.” (<https://twitter.com/tgedavis/status/1506926262203338753>)

Q: “I'm not quite sure I agree with @tgedavis that it's 'the whole point of consciousness', but, yeah, it's a question of legitimate starting points for enquiry. We all think it's okay to just assume from the start that there's an external world. Helen thinks it's okay to start from the..” (<https://twitter.com/Philip_Goff/status/1506929063092539397>)

Q: “...the assumption that we're agents in the way we seem to be, at least until we're given reason to think we're not.” (<https://twitter.com/Philip_Goff/status/1506929206453841920>)

A: “An interesting meta question is what justifies a starting point? What if my starting point is that the Bible is the inerrant word of God? Is that a respectable position? I think starting points should be as minimal as possible. I don’t think the assumption that we are agents is.” (<https://twitter.com/Disagreeable_I/status/1506932363028316165>)

A: “I’m not sure we should even take the existence of the external world as a starting point. The existence of sensory data maybe. Basic logic and reason. From these we can conclude that there (probably) is an external world.” (<https://twitter.com/Disagreeable_I/status/1506933084083695620>)

Q: “Are you allowed to trust your memory? Good luck escaping from solipsism based only on trusting your conscious experience at the present moment.” (<https://twitter.com/Philip_Goff/status/1506933585483345921>)

A: “Good point, I think you have to start from trusting your memory, yes. Everything is subject to review though until we end up with a picture that seems coherent.” (<https://twitter.com/Disagreeable_I/status/1506934522843127813>)

Q: “What if I find the reality of agency more evident than the deliverances of my memory?” (<https://twitter.com/Philip_Goff/status/1506935051900043269>)

A: “I find it hard to imagine how you could be convinced of the reality of agency based only on trusting your conscious experience at the present moment!” (<https://twitter.com/Disagreeable_I/status/1506935361838194694>)

(A: “I’m not sure we should even take the existence of the external world as a starting point. The existence of sensory data maybe. Basic logic and reason. From these we can conclude that there (probably) is an external world.” (<https://twitter.com/Disagreeable_I/status/1506933084083695620)>)

Q: “"We"? Isn't "we" a bit dogmatic?” (<https://twitter.com/SophieG32294014/status/1506935320906022917>)

A: ““We” should be our starting point; it gives us the external world.” (<https://twitter.com/happycidal/status/1506964443195797511>)

Q: “External world? There is just the world. I don't really believe in the external world/internal world distinction. It is, if you'll excuse the polemics, a relic of Cartesianism. Why isn't it \*the world\* that is our starting-point? With us in it?” (<https://twitter.com/SophieG32294014/status/1506964930892902408>)

A: There is just \*the world\*. However, a human brain can have two explanations/contexts/theories for \*the world\* – the subjective-theory/subjective-reality and the objective-theory/objective-reality.

(Q: “External world? There is just the world. I don't really believe in the external world/internal world distinction. It is, if you'll excuse the polemics, a relic of Cartesianism. Why isn't it \*the world\* that is our starting-point? With us in it?” (<https://twitter.com/SophieG32294014/status/1506964930892902408)>)

A: “Sorry to chip in, but -- exactly! Listen to SG, folks. (It's this radical separation of us from the world that's at the heart of the illusion I keep talking about.)” (<https://twitter.com/keithfrankish/status/1506966038511951874>)

Q: “How can we know about this 'public world', since it is not part of our many various worlds of experience?” (<https://twitter.com/WalterHBlack/status/1507047426779189250>)

A: “We couldn't if it wasn't; but it is. That's the point.” (<https://twitter.com/SophieG32294014/status/1507047734595006471>)

(A: “Sorry to chip in, but -- exactly! Listen to SG, folks. (It's this radical separation of us from the world that's at the heart of the illusion I keep talking about.)” (<https://twitter.com/keithfrankish/status/1506966038511951874)>)

Q: “So, the illusion is that I think I'm a <something> separate from the world?” (<https://twitter.com/NotAsGoodAsPete/status/1506967240113115136>)

A: “It's the illusion that there's a radically (and not merely contingently) private dimension to your existence” (<https://twitter.com/keithfrankish/status/1506968356187951110>)

(Q: “External world? There is just the world. I don't really believe in the external world/internal world distinction. It is, if you'll excuse the polemics, a relic of Cartesianism. Why isn't it \*the world\* that is our starting-point? With us in it?” (<https://twitter.com/SophieG32294014/status/1506964930892902408)>)

Q: “I'm not sure if I agree or disagree. I would say we know of the world only indirectly via the senses, so it seems it can't be our starting point. But I agree that we are very much part of the world.” (<https://twitter.com/Disagreeable_I/status/1506971975851384834>)

Q: “The external/internal world distinction seems to make sense of me if the external world is the objective physical world and the internal world is our model/understanding of it. But maybe that's not the idea?” (<https://twitter.com/Disagreeable_I/status/1506972727877455885>)

Q: “(In which case the internal world would include our model/understanding of our own mental states etc, so it would include beliefs and experiences and so on).” (<https://twitter.com/Disagreeable_I/status/1506973291386486788>)

(A: “We couldn't if it wasn't; but it is. That's the point.” (<https://twitter.com/SophieG32294014/status/1507047734595006471)>)

Q: “Ok : what is it?” (<https://twitter.com/WalterHBlack/status/1507051700049354760>)

Q: “(Yes I read your Epiphanies Index, so know what the titles of chapter 4 is. And Yes I feel empathy for the 'souls' behind the avatars of them in my world. Still not an answer to 'what is the public world?')” (<https://twitter.com/WalterHBlack/status/1507123449730318346>)

A: “I am a little surprised that you think you need me to tell you what the world is. (Not the 'public world'; that's the internal/ external business relabeled.)” (<https://twitter.com/SophieG32294014/status/1507133329035907073>)

A: Both the internal/private world and the external/public world refer to the same world. A human brain can somehow understand one world as two worlds/explanations/contexts/theories.

Q: “I still want to say: there is just one world.” (<https://twitter.com/SophieG32294014/status/1507136377527410691>)

A: Is there a physical world? Is there mind/consciousness/soul?

Q: “what do you mean by physical?” (<https://twitter.com/SophieG32294014/status/1507138944848351241>)

A: Mind/consciousness/soul is not physical. A physical world is a set of elementary particles.

Q: “Pshhh! Particles are hypothetical: mathematical abstractions. Physical just means 'apparent to the senses'.” (<https://twitter.com/WalterHBlack/status/1507140337734721546>)

A: My brain defines the term "physical" differently. To my brain, only elementary particles are physical/objective. To my brain, mind/consciousness/soul is subjective, not physical/objective. A person/agent in the internal-world/private-world/subjective-theory/mind/consciousness/soul is actually a fuzzy set of elementary particles in the external-world/public-world/objective-theory/physical-world. Or in other words, a person/agent in the internal-world/private-world/subjective-theory/mind/consciousness/soul corresponds to a fuzzy set of elementary particles in the external-world/public-world/objective-theory/physical-world.

### (44)

Q: “To me it comes across a bit like a criticism of materialism that says 'Some people think we're just mechanisms...how ridiculous!' There are detailed explanatory proposals by panpsychists, naturalistic dualists, so I think the onus is on our opponents to say what's wrong with them” (<https://twitter.com/Philip_Goff/status/1506568818533019649>)

A: “What’s wrong? That is simple: despite humanity’s broad experience with reality over the ages and across billion of individuals- not one verified example of a disembodied mind has ever been demonstrated. The mind/brain identity is a brick wall to any Idealist or PP proposal.” (<https://twitter.com/LocoQf/status/1506609174762987524>)

Q: “That's only a brick wall to any proposal which predicts we should be able to observe disembodied minds. Most proposals make no such predictions.” (<https://twitter.com/Disagreeable_I/status/1506610565317378050>)

A: “If we can never experience in any way a natural phenomenon (including it’s use in making predictions of what we can experience) then does it exist? Can philosophy spend time describing details of unknowable intangibles and make a contribution?” (<https://twitter.com/LocoQf/status/1506611534394449920>)

Q: “I mean, I'm not really sympathetic to panpsychism, but you seem to me to be missing the point. A panpsychist would just say that physicalism cannot account for phenomenal qualities, or the fact that we experience anything at all. That's why they say this consciousness exists.” (<https://twitter.com/Disagreeable_I/status/1506613930302611459>)

A: “Consciousness is a word for a biological process of our body. We can’t know another (the 🦇) yet apparently we can reduce it to one aspect of its complexity, remove it from its physical context (the body) and then fit it in a place & solve a philosophical problem 🤷‍♂️ with no natural example.” (<https://twitter.com/LocoQf/status/1506623680348139522>)

Q: “I agree with these criticisms.” (<https://twitter.com/Disagreeable_I/status/1506624639174430720>)

### (45)

Q: “Are player characters in games extended mind?” (<https://twitter.com/markgotproblems/status/1506910364692324353>)

A: Player characters in games are extended body.

### (46)

Q: “Pan-psychism appears not to be a real thing. It has no conceptual philosophical or cultural meaning. It just reflects the void in our understanding which should be filled my more sensible discourse let’s discuss (I’m happy to be wrong but tell me why) @Philip\_Goff” (<https://twitter.com/leecronin/status/1506561520574083073>)

Q: “Isn’t consciousness just a lovely illusion which distracts us from the squillions of sensory calculations that we don’t really need to be a aware of so that we can focus on the job in hand? (Survival, finding a mate and other important stuff)” (<https://twitter.com/mark_wareham/status/1506666350550343680>)

A: “The mystery isn't so much \*why\* we're conscious (in the sense of asking what purpose it serves), but rather \*how\* we're conscious. As in, how is it physically possible for it to exist at all? You wouldn't expect the sensation of green to come out of atoms hitting each other” (<https://twitter.com/tealpajamas/status/1506671861970599936>)

A: “The sensation of green” is just a string of 22 characters. This string (being displayed on my computer screen) comes out of atoms hitting each other. Where is the sensation of green? Can we identify it in the microscopic structure/process of a physical brain? Can we identify the sensation of green in the microscopic structure/process of a physical brain?

A: The present article is a string. This string comes out of atoms hitting each other. Where is the meaning of this string? Can we identify it in the microscopic structure/process of my physical brain? Can we identify the meaning of the present article in the microscopic structure/process of my physical brain?

(Q: “Pan-psychism appears not to be a real thing. It has no conceptual philosophical or cultural meaning. It just reflects the void in our understanding which should be filled my more sensible discourse let’s discuss (I’m happy to be wrong but tell me why) @Philip\_Goff” (<https://twitter.com/leecronin/status/1506561520574083073)>)

A: “Panpsychism is materialism (a metaphysics) with another metaphysics stuck on top: matter is conscious.” (<https://twitter.com/WalterHBlack/status/1507145375878156302>)

### (47)

Q: “Recently I can't stop dwelling on the fact that at some point in the future the stars will go out and there will never again be intelligent life anywhere, for ever more. People who say they're not bothered by this either haven't thought it through or are psychopaths.” (<https://twitter.com/Philip_Goff/status/1506931806225981447>)

A: “I am a Christian, so that's not my vision of the future. But if it was I doubt it would bother me. I think I would say that the most extraordinarily wonderful thing is that, for a while, there \*was\* intelligent life.” (<https://twitter.com/SophieG32294014/status/1506933700767985665>)

(Q: “Recently I can't stop dwelling on the fact that at some point in the future the stars will go out and there will never again be intelligent life anywhere, for ever more. People who say they're not bothered by this either haven't thought it through or are psychopaths.” (<https://twitter.com/Philip_Goff/status/1506931806225981447)>)

A: I can't stop dwelling on the fact that at some point in the future the stars will go out and there will never again be a conscious particle anywhere, for ever more.

### (48)

Q: “We talk about living in a "post-truth" era, but really our informational environments have always been a battlefield of competing interests, the scale of things just makes it more obvious now” (<https://twitter.com/ryanspangler/status/1506987853934637057>)

Q: “This awareness, while unable to change the nature of "truth" as a constructed entity, does allow us to begin extracting our minds from the countless alien structures that currently occupy them, and possibly even, to take control of what lives there” (<https://twitter.com/ryanspangler/status/1506987854735368196>)

A: All structures occupy our minds are alien.

### (49)

Q: “Many people say that what we are directly aware of is, not the public world around us, but a private mental world of experiences. My question for them is: What would it be like if we were directly aware of the public world around us?” (<https://twitter.com/keithfrankish/status/1507378515515260940>)

A: The public world is a set of elementary particles. The objective-state-evolution of these elementary particles follows the Schrodinger equation.

(Q: “Many people say that what we are directly aware of is, not the public world around us, but a private mental world of experiences. My question for them is: What would it be like if we were directly aware of the public world around us?” (<https://twitter.com/keithfrankish/status/1507378515515260940)>)

Q: “I think direct awareness often gets conflated with awareness without perspective (the ‘view from nowhere’). If you start with the idea that there are only perceivers and objects, it’s natural to think those objects must be internal because they vary according to perspective.” (<https://twitter.com/drkeithwilson/status/1507398952534134785>)

Q: “This is a mistake because the real external object drops out of the picture, except as a cause, meaning that all you’re left with is perspective. The trick is to recognise that perception is both perspectival \*and\* direct, i.e. perspectival variation doesn’t entail indirectness.” (<https://twitter.com/drkeithwilson/status/1507400034572242945>)

A: So, what we are directly aware of, is the public world around us? If there is a rose in the public world, and if photons from the rose are captured by my retina, will there be an internal world formed/generated by my brain (based on the signals from my retina)? Where is that internal world?

(Q: “This is a mistake because the real external object drops out of the picture, except as a cause, meaning that all you’re left with is perspective. The trick is to recognise that perception is both perspectival \*and\* direct, i.e. perspectival variation doesn’t entail indirectness.” (<https://twitter.com/drkeithwilson/status/1507400034572242945)>)

A: “Ah, so the objective reality is The Cause?” (<https://twitter.com/WalterHBlack/status/1507402425900093441>)

A: The real external object (being the cause) drops out of \*the picture\*. The real external object is in *the real external world (which drops out of \*the picture\*)*. The real external world (which drops out of \*the picture\*) is the real public world. The so-called "public world around us" (which is in \*the picture\*), is not the real public-world/external-world (which drops out of \*the picture\*), but the private-world/internal-world. \*The picture\* is the private-world/internal-world, not the (real) public-world/external-world. For example, when a rose is in \*the picture\*, the real external object (being the cause) for the rose (in the picture) is in the (real) public-world/external-world. \*The picture\* is my private-world/internal-world. The real external object for my retina/brain is in the (real) public-world/external-world, not in \*the picture\*. The (real) public-world/external-world is a set of elementary particles. The objective-state-evolution of these elementary particles follows the Schrodinger equation.

(A: The public world is a set of elementary particles. The objective-state-evolution of these elementary particles follows the Schrodinger equation.)

Q: “The evolution cannot be verified empirically, and in any case making a measurement/observation changes the (hypothetical) wavefunction (the solution of the SE in a given case).” (<https://twitter.com/WalterHBlack/status/1507490711947653120>)

Q: “(Early) QM talks of wave/particle duality, ie 'fundamental particles' can behave as waves, or 'electromagnetic waves' can behave as particles (photons). Something that can behave like a particle or a wave is neither a particle or a wave! 'The things we consider real are made of things that cannot be considered real' ~ Bohr. The first-mentioned things are the objects of perception (trees, pavements), the second-mentioned things are mathematical abstractions. So, either the objects of perception are real and not reducible to unperceivable things, or the objects of perception are not real. This latter possibility is attractive to Keith, but then Keith needs an alternative to physics (and a repudiation of physics) to explain what the objects of perception are.” (<https://twitter.com/WalterHBlack/status/1507502824632029187>)

A: I define/consider the second-mentioned things (i.e., mathematical abstractions) to be real/objective.

A: The objects of perception are not real/objective. The objects of perception are subjective.

(A: I define/consider the second-mentioned things (i.e., mathematical abstractions) to be real/objective.)

Q: “Abstractions are things that only exist as Ideas, so thank you for your confirmation that only Ideas are real!” (<https://twitter.com/WalterHBlack/status/1507505001261899777>)

A: Yes, the second-mentioned things (mathematical abstractions (Ideas)) are real/objective.

(A: I define/consider the second-mentioned things (i.e., mathematical abstractions) to be real/objective.)

Q: “Abstractions exist only as ideas.” (<https://twitter.com/WalterHBlack/status/1507507955339608065>)

A: So, abstractions don't exist?

Q: “Abstractions exist only as ideas.” (<https://twitter.com/WalterHBlack/status/1507507955339608065>)

A: To me, abstractions exist as ideas, and at the same time, abstractions are real/objective. Or in other words, I trust my brain's abstractions/ideas.

A: My brain trusts its own abstractions/ideas.

Q: “Including the idea of the brain.” (<https://twitter.com/S33light/status/1507511585383890945>)

A: Yes.

(Q: “Many people say that what we are directly aware of is, not the public world around us, but a private mental world of experiences. My question for them is: What would it be like if we were directly aware of the public world around us?” (<https://twitter.com/keithfrankish/status/1507378515515260940)>)

A: “What does "direct" mean? The non deployment of a pair of glasses, or a stick?” (<https://twitter.com/DavidRobjant/status/1507383267426713606>)

Q: “As I'm using it, it means something like "not mediated by awareness of a mental medium"” (<https://twitter.com/keithfrankish/status/1507383870815092738>)

A: What can you be aware of (without being mediated by awareness of a mental medium)?

(Q: “Many people say that what we are directly aware of is, not the public world around us, but a private mental world of experiences. My question for them is: What would it be like if we were directly aware of the public world around us?” (<https://twitter.com/keithfrankish/status/1507378515515260940)>)

A: “I think most would say that it’s impossible to be directly aware of things extended in space and time, and so the distinction is necessary. No?” (<https://twitter.com/PostliberalMan1/status/1507382540012863494>)

Q: “But people think we can directly aware of \*mental\* things. What's so special about them?” (<https://twitter.com/keithfrankish/status/1507383173260484621>)

A: “That’s just the nature of mentality - it necessarily has certain properties that the public, observable world does not.” (<https://twitter.com/PostliberalMan1/status/1507383616569065473>)

Q: “That's one conception of the mental. I'm asking why it's obligatory” (<https://twitter.com/keithfrankish/status/1507384019956211723>)

A: “Why that view of the mental is obligatory? Or by “obligatory” do you mean “necessary” - that is to say, why mentality is necessarily being aware of private experiences rather than the public, observable world?” (<https://twitter.com/PostliberalMan1/status/1507384809336676355>)

Q: “I mean why do we have to conceive of mentality in one way rather than the other” (<https://twitter.com/keithfrankish/status/1507385163784855567>)

A: “Perhaps because that view of mentality has more predictive power and has broader explanatory ability?” (<https://twitter.com/PostliberalMan1/status/1507385660671361026>)

(A: What can you be aware of (without being mediated by awareness of a mental medium)?)

Q: “I am aware of your tweet. In what way would my awareness be mediated by awareness of the mental? Well, in the rare case where I realise that I am perplexed and befuddled, and then look around for a cause.” (<https://twitter.com/DavidRobjant/status/1507640632092758020>)

A: The neurons (of your brain) are aware of my tweet. Your brain's awareness of my tweet is being mediated by some neurons (e.g., some neurons in your visual cortex).

Q: “My neurons can't be said to "be aware" of anything at all. No one asks questions of their neurons, debriefs them over tea, or asks their political opinions.” (<https://twitter.com/DavidRobjant/status/1507644040602431489>)

A: Who is typing this reply? Your soul? Or the neurons (of your brain)?

Q: “I am typing it. Although god knows why. As you aren't remotely enquiring or thinking. All you are doing is repeating a picture, a philosophical picture that you are so firmly in the grip of that you cannot or will not recognise it as a picture in the first place.” (<https://twitter.com/DavidRobjant/status/1507645382767095811>)

A: What is the "I" in your sentence "I am typing it"? Perhaps god can answer this question.

(Q: “I am typing it. Although god knows why. As you aren't remotely enquiring or thinking. All you are doing is repeating a picture, a philosophical picture that you are so firmly in the grip of that you cannot or will not recognise it as a picture in the first place.” (<https://twitter.com/DavidRobjant/status/1507645382767095811)>)

Q: “Even on its face, details of the philosophical picture are ludicrous. Unfair to single out when there are best selling books of this, but the picture of my brain as a little man inside me, with fingers and keyboard of his own, within which millions of smaller men and fingers. Mad” (<https://twitter.com/DavidRobjant/status/1507647542095396865>)

A: Cartesian theatre. The little man is the agent. The homunculus (in Cartesian theatre) is the agent.

(A: What is the "I" in your sentence "I am typing it"? Perhaps god can answer this question.)

Q: “I can answer it. I can give you my family history, CV, and passport number. What are you talking about?” (<https://twitter.com/DavidRobjant/status/1507647885042757638>)

A: I think @Daniel43107974 will agree with you.

Q: “When people talk of neurons as aware they have simply stopped caring about what the word "aware" means. You don't seem to care what "type" means either.” (<https://twitter.com/DavidRobjant/status/1507649135494811649>)

Q: “PS, perhaps philosophy would go better is we stuck with "aware" and "awareness". So much of philosophy chooses vocabulary carefully in pursuit of a holiday from what we ordinarily know. "Consciousness" may be such a case.” (<https://twitter.com/DavidRobjant/status/1507651528223510534>)

(A: The real external object (being the cause) drops out of \*the picture\*. The real external object is in *the real external world (which drops out of \*the picture\*)*. The real external world (which drops out of \*the picture\*) is the real public world. The so-called "public world around us" (which is in \*the picture\*), is not the real public-world/external-world (which drops out of \*the picture\*), but the private-world/internal-world. \*The picture\* is the private-world/internal-world, not the (real) public-world/external-world. For example, when a rose is in \*the picture\*, the real external object (being the cause) for the rose (in the picture) is in the (real) public-world/external-world. \*The picture\* is my private-world/internal-world. The real external object for my retina/brain is in the (real) public-world/external-world, not in \*the picture\*. The (real) public-world/external-world is a set of elementary particles. The objective-state-evolution of these elementary particles follows the Schrodinger equation.)

Q: “I meant ‘drops out of the picture’ purely as a figure of speech. I don’t think experience is literally or figuratively pictorial. In fact, that’s exactly the view I was arguing against.” (<https://twitter.com/drkeithwilson/status/1507818763713884161>)

A: I think language only represents pictures. See [142]. So, even if experience is not (literally or figuratively) pictorial, we have no way to effectively discuss about experience (in human language) without (mentally) pictorializing/visualizing it.

Q: “<https://www.bofa11plus.com/content/elevenplus-information/difference-between-vr-and-nvr>” (<https://twitter.com/WalterHBlack/status/1507875135071703054>)

A: To make it easy, we can imagine each letter as a tiny picture.

Q: “I imagine this\* tiny picture as words forming a sentence.

\*this tweet” (<https://twitter.com/WalterHBlack/status/1507879805382975492>)

A: We can keep our own imaginations.

Q: “Yes, it's probably about time.

Bye.” (<https://twitter.com/WalterHBlack/status/1507880225501294596>)

(Q: “Many people say that what we are directly aware of is, not the public world around us, but a private mental world of experiences. My question for them is: What would it be like if we were directly aware of the public world around us?” (<https://twitter.com/keithfrankish/status/1507378515515260940)>)

A: “This is unknowable. Am I wrong thinking that's your point?” (<https://twitter.com/martinjanello/status/1507802094329233409>)

Q: “I was just wondering why people hankered after something even more fundamental than the wave function.” (<https://twitter.com/keithfrankish/status/1507807937145851904>)

A: “I see. In my experience, such fundamentalists are also easily excitable by the assertion that even their awareness of experiences is a passive end-presentation by their unknowable inner workings, making them twice removed from the outside world.” (<https://twitter.com/martinjanello/status/1507811774174687233>)

A: It's possible that such fundamentalists are right.

(Q: “Many people say that what we are directly aware of is, not the public world around us, but a private mental world of experiences. My question for them is: What would it be like if we were directly aware of the public world around us?” (<https://twitter.com/keithfrankish/status/1507378515515260940)>)

A: “We seem to mentally be straddling two distinct "worlds," one internal and one external. We engage with the (external) natural world by perceiving and investigating with the use of our (internal) personal subjective state. Despite what we are oriented to believe about this experiencing it is not what it seems. Saying that we see the object is only a way of talking about our subjective perception, we now know that what we are experiencing is the (internal) representation of the object.” (<https://twitter.com/tahoppe05404/status/1508063088309944324>)

### (50)

Q: “What is the key difference between a mechanism and a mere good (ie precise and brief) description?” (<https://twitter.com/_fernando_rosas/status/1507405247722962953>)

A: “How about - Mechanisms are necessarily causal. Descriptions need not be.” (<https://twitter.com/anilkseth/status/1507406969413545990>)

Q: “That is part of my question indeed! Is any description with causal implications a mechanism?” (<https://twitter.com/_fernando_rosas/status/1507409331741888512>)

A: A mechanism needs to be \*complete\*.

### (51)

Q: “How does Panpsychism explain the redness of a red experience? As in, why does light of a certain wavelength give rise to the experience of seeing the colour red, as opposed to, let's say, a gentle vibration in the head? Does idealism have a hard problem of matter?” (<https://twitter.com/_Colin_Mangan_/status/1507498120594264070>)

A: “i guess if the brain creates a map of where qualities should be, then the vibration should be felt where the red would normally be, not in the head

but yeah..” (<https://twitter.com/hxt55/status/1507533544016523270>)

### (52)

A: “My new paper introduces semanticism, a theory of consciousness that solves the 'hard problem' by showing that consciousness and qualia do not exist as often assumed. To my knowledge, it is the most precise statement of eliminativism or illusionism to date. <https://link.springer.com/chapter/10.1007/978-3-030-96993-6_3?noAccess=true>” (<https://twitter.com/jacyanthis/status/1507400426869694476>)

Q: “Certainly you and Anil Seth and Dan Dennett should go off and work on neurology if you don't think there's a problem here. And that is great, there's plenty of interesting neuroscience to do! But, the problem can't be dismissed by things like "you can't define consciousness."” (<https://twitter.com/realtimeai/status/1507455773907234816>)

A: “I think the paper's thesis is much more precise than that. Questions such as 'Is this entity conscious?' require precision, while the definitions of are very vague. This means we can't even omnisciently answer such questions, which I think merits saying those answers don't exist.” (<https://twitter.com/jacyanthis/status/1507457097612595256>)

Q: “Right, at a different level I don't think that is a useful way of trying to categorize existence either. And that has to do with basically a David Deutsch way of thinking about explanations and knowledge. All language and concepts are vague and imprecise. There is no escape.” (<https://twitter.com/realtimeai/status/1507457572588163101>)

A: “I very much agree with your last statement, and that's why I don't support committing decades or centuries of research to questions like 'Is this entity conscious?' or 'Is this lightbulb bright?' or 'Is a virus alive?' That's the whole point of this paper.” (<https://twitter.com/jacyanthis/status/1507458584032038920>)

Q: “Let's change 'Is this entity conscious?' to 'I am conscious' and then try to explain that. I don't see how one can deny the experiential nature of our existence.” (<https://twitter.com/amplituhedron/status/1507470295799635971>)

A: “What exactly do you mean by experiential nature? Arguably consciousness-as-self-reference (i.e. 'I think, therefore I am') is infallible, but other intuitions like that the nature of our 'phenomenology' or 'qualia' is inaccessible are very fallible—in fact, downright unreliable.” (<https://twitter.com/jacyanthis/status/1507473263513026564>)

Q: “That experience feels like something. It requires no abstractions - words or concepts to recognize this. I don't think that is vague or unreliable, so probably won't agree on some of the other points :)” (<https://twitter.com/amplituhedron/status/1507480945271742466>)

A: “Okay. I encourage you to still read the paper, but on any topic, if one just insists they have a reliable intuition or direct observation of truth, as I say on this in the paper, "there is no argument I can offer on this or any other subject that will defeat brute insistence."” (<https://twitter.com/jacyanthis/status/1507483560063737861>)

A: There hasn't been any human who has proved (to others) that she/he is conscious.

### (53)

A: ““Knowledge is…information that is capable of remaining instantiated in physical systems. Unlike most definitions of knowledge, the good thing about this one is that it does not depend on there being a knowing subject.” - Chiara Marletto” (<https://twitter.com/sphexish/status/1507639336937955332>)

Q: “There is no knowledge in any book if no one knows how to read, just markings on paper.” (<https://twitter.com/nereis_sandersi/status/1507682987219079171>)

A: “A word’s meaning is its usage. The distinction is between subjective and objective forms of knowledge, see Popper.” (<https://twitter.com/sphexish/status/1507788833701646338>)

### (54)

Q: “Why doesn't the universal wave function qualify as noumenal?” (<https://twitter.com/keithfrankish/status/1507786009353891847>)

A: The universal wave function is like the rules of a Conway's Game of Life system. The rules (of the Game of Life system) are not noumenal – the Game of Life system is noumenal.

### (55)

A: “Single-celled Lacrymaria olor attacks another cell: <https://www.youtube.com/watch?v=sq6Y54mxjOg> #biology” (<https://twitter.com/slava__bobrov/status/1507690730508148741>)

Q: “Agency in action!” (<https://twitter.com/WiringTheBrain/status/1507752908028354566>)

A: “Who is eating who? Maybe they are mutually attracted to each other.” (<https://twitter.com/bertmorrien/status/1507968470759133187>)

A: Two agents merged into one agent. Actually/objectively, there is no agent. The agents only exist (subjectively) in your mind.

(Q: “Agency in action!” (<https://twitter.com/WiringTheBrain/status/1507752908028354566)>)

A: “Its mechanics. <https://www.sciencedirect.com/science/article/pii/S0960982219311960>” (<https://twitter.com/NatashaMhatre/status/1507753957774577669>)

Q: “It \*relies on\* mechanics” (<https://twitter.com/WiringTheBrain/status/1507756715718197253>)

A: “I'd have no problem with that view. Clearly the animal is an agent, and the mechanisms for generating behaviour that maintain that autonomous self can and do vary.” (<https://twitter.com/NatashaMhatre/status/1507757836129943559>)

A: Only in your mind, the animal is an agent. Actually/objectively, there is no animal/agent – only the elementary-particles/mechanics are there.

Q: “And if you just had all those particles in a bucket what would you get?” (<https://twitter.com/WiringTheBrain/status/1508010725515706370>)

A: Still particles. However, you can imagine them as agents in your mind.

A: Particles are not billiard balls. When you put these particles in a bucket, you can still find the animal in the bucket. When you put a cat in a bucket, you won't find a pile of (cat’s) cells there -- the cat won't turn into a pile of cells (just because you put the cat in the bucket).

A: If you imagine that the particles will be different after you put them in a bucket, then it means that you ignored/forgot the relationship (or "force") among these particles.

A: You imagine that a cat's particles are controlled by the cat as an agent. They are not. Actually, the cat's particles are only controlled by the Schrodinger equation -- the cat's particles are not controlled by the cat as an agent. The cat is not an agent. The agent is in your mind – the agent is imagined by your brain.

Q: “Were you controlling your particles when you typed that tweet? Or was it the Schrodinger equation?” (<https://twitter.com/WiringTheBrain/status/1508068427168206853>)

A: It feels like that my "thoughts" are controlling my \*fingers\* when "I" am typing. It doesn't feel like that "I" am controlling my "particles". "I" can't feel any of my “particles”. "I" don't think I can control my "particles", because I can't feel them. It is the Schrodinger equation who is controlling my “particles”.

(A: You imagine that a cat's particles are controlled by the cat as an agent. They are not. Actually, the cat's particles are only controlled by the Schrodinger equation -- the cat's particles are not controlled by the cat as an agent. The cat is not an agent. The agent is in your mind – the agent is imagined by your brain.)

Q: “The particles are also controlled by the forces that emerge in the very specific interactions they are participating in. It's in the interactions that new properties emerge. Some of them are simple stiffness of a solid, etc. Others are more complex....like replication...” (<https://twitter.com/NatashaMhatre/status/1508083299905904645>)

A: All the interactions among the particles are covered by the Schrodinger equation already. Both the stiffness (of a solid) and replication are effects of the Schrodinger equation.

(A: It feels like that my "thoughts" are controlling my \*fingers\* when "I" am typing. It doesn't feel like that "I" am controlling my "particles". "I" can't feel any of my “particles”. "I" don't think I can control my "particles", because I can't feel them. It is the Schrodinger equation who is controlling my “particles”.)

Q: “'You' are an emergent property of all those emergent interactions.” (<https://twitter.com/NatashaMhatre/status/1508166324966547466>)

A: When you look at a Turing machine (pattern) within a Game of Life system, it feels like that this TM is an "emergent property" of the rules of the system. However, this TM doesn't exist objectively -- this TM only exists (subjectively) in your brain's cognition. Every cell of the TM follows the rules (of the system). There is nothing emerged in the system. You feel like that there is something emerged in the system, but actually, there is something emerged in your brain's cognition. If there is something emerged in the system, then we should expect that the system will behave/evolve differently due to that emergence. Or in other words, if there is something emerged in the system, then we should expect that the objective-state-evolution of the system will be different, due to that emergence. If the system won’t behave/evolve differently (i.e., if the objective-state-evolution of the system will still follow the rules of the system), then it means that there is nothing emerged in the system. Obviously, the objective-state-evolution of the system will still follow the rules of the system, even if you claim that there is something emerged in the system. Tell me, what emerged in the system? And what is the impact (of that emergence) to the system?

A: The objective-state-evolution of every particle follows the Schrodinger equation. However, it (subjectively) feels like that an animal’s particles are different from a stone’s particles. It (subjectively) feels like that an animal’s particles are being controlled by the animal (as an agent), while a stone’s particles are not being controlled by the stone (as an agent). Or in other words, it (subjectively) feels like that an animal (as an agent) is controlling its particles, while a stone (as an agent) is not controlling its particles. Actually/objectively, neither the animal (as an agent) nor the stone (as an agent) is controlling its particles. Or in other words, the animal’s particles are not being controlled by the animal (as an agent), while the stone’s particles are not being controlled by the stone (as an agent). If the animal’s particles are being controlled by the animal (as an agent), why the stone’s particles are not being controlled by the stone (as an agent)? If the stone’s particles are not being controlled by the stone (as an agent), why the animal’s particles are being controlled by the animal (as an agent)? It (subjectively) feels like that an animal (as an agent) emerged from some particles, while a stone (as an agent) emerged from some other particles. The animal (as an agent) emerged in your brain’s cognition only. The stone (as an agent) emerged in your brain’s cognition only. Due to technical limitations, your physical brain can’t precisely/reliably mathematically-model/forecast the objective-state-evolution/behavior of the particles of the animal/stone only based on the Schrodinger equation, so your physical brain uses some internal physical structures/processes to roughly/unreliably/stereotypically mathematically-model/forecast the objective-state-evolution/behavior of these particles. These internal physical structures/processes emerged in your physical brain, to roughly/unreliably/stereotypically mathematically-model/represent these particles. One internal physical structure/process mathematically-models/represents the particles of “the animal” – that’s why you feel “the animal” to be an agent. Another internal physical structure/process mathematically-models/represents the particles of “the stone” – that’s why you feel “the stone” to be another agent. These two internal physical structures/processes are different – that’s why you feel like that the first agent is different from the second agent. In your physical brain’s internal (physical) representation/simulation (of the physical/external world), the first internal physical structure/process is simulated to have the “ability” (or “feature”, “property”) to “control”, while the second internal physical structure/process is not simulated to have the “ability” to “control”. That’s why you feel like that the animal (as an agent) is controlling its particles, while the stone (as an agent) is not controlling its particles. BTW, the first internal physical structure/process is simulated to also have the “ability” to “replicate”, while the second internal physical structure/process is simulated to also have the “ability” of “the simple stiffness of a solid”. When your physical brain is forecasting *what these particles will do (i.e., the objective-state-evolution of these particles)*, if your physical brain is using the two internal physical structures/processes to do the (rough/unreliable) forecasting, then it means that your physical brain is mathematically-modelling these particles by these two internal physical structures/processes, and then your physical brain doesn’t feel these particles to be particles – your physical brain feels these particles to be the two internal physical structures/processes. In this case, your physical brain feels these particles to be the two agents, and your physical brain feels like that the particles of either agent are separated/different from the particles of the agent’s environment. But actually/objectively, these particles are still particles – these particles are not the two agents. The particles of either agent are not separated/different from the particles of the agent’s environment. When your physical brain is forecasting *what these particles will do (i.e., the objective-state-evolution of these particles)*, if your physical brain is using the Schrodinger equation to do the (precise/reliable) forecasting, then it means that your physical brain is mathematically-modelling these particles by the Schrodinger equation, and then your physical brain feels these particles to be particles (i.e., your physical brain doesn’t feel these particles to be the two agents). In this case, your physical brain doesn’t feel these particles to be the two agents, just because your physical brain is not using the two internal physical structures/processes to mathematically-model these particles – your physical brain is using the third internal physical structure/process (which is simulating the Schrodinger equation) to mathematically-model these particles. The “ability” to “control”, the “ability” to “replicate”, or the “ability” of “the simple stiffness of a solid” won’t change/impact the actual objective-state-evolution/behavior of a particle (in the real world), because the “ability” to “control”, the “ability” to “replicate”, or the “ability” of “the simple stiffness of a solid” won’t change/impact the Schrodinger equation (in the real world). The “ability” to “control”, the “ability” to “replicate”, or the “ability” of “the simple stiffness of a solid” will only change/impact your physical brain’s (subjective) (rough/unreliable) MM/representation/forecast of the objective-state-evolution/behavior of the said particle. So, the “ability” to “control”, the “ability” to “replicate”, or the “ability” of “the simple stiffness of a solid” only emerged in your physical brain’s cognition – the “ability” to “control”, the “ability” to “replicate”, or the “ability” of “the simple stiffness of a solid” didn’t emerge in the real world. In other words, stereotypes (which are used to (roughly/unreliably/stereotypically) mathematically-model/represent/forecast the objective-state-evolution/behavior of the said particle) emerged in (the cognition of) your physical brain. Your physical brain’s MM/representation/forecast of the objective-state-evolution/behavior of the said particle is not precise/reliable, unless it’s based on the Schrodinger equation.

### (56)

Q: “Thanks Adam. I have also tried to make sense of decision-making systems with an internal perspective (<https://www.sciencedirect.com/science/article/abs/pii/S1053810016303774?via%3Dihub>), so I’m sympathetic to the attempt. But all you get is a set of physical states with dynamics that have an abstract isomorphism with the environment.” (<https://twitter.com/RyanSmith_LIBR/status/1507800205491511296>)

Q: “A full physical description of the system would not entail any thing beyond the constrained causal dynamics. No one looking in from the outside would have any reason a priori to be confident that phenomenal properties were present (let alone their specific qualities).” (<https://twitter.com/RyanSmith_LIBR/status/1507801119057096704>)

A: We \*subjectively\* feel like that phenomenal properties were present -- this feeling is counterfactual.

### (57)

Q: “Simple argument for moral realism:

1. Genocide is wrong.

2. If genocide is wrong, then moral realism is true.

3. So, moral realism is true.

It really doesn't need to be any more complicated.” (https://twitter.com/2Philosophical\_/status/1508194048598843398)

A: Why not make it simpler?

1. One behavior is wrong.

2. If one behavior is wrong, then moral realism is true.

3. So, moral realism is true.

A: If moral realism is true, then at least one behavior is wrong. If one behavior is wrong, then moral realism is true. Moral realism simply means that "at least one behavior is wrong". Moral realism is simply the belief that “at least one behavior is wrong”.

### (58)

A: “The physics fixes the objective probabilities of what's going to happen. @seanmcarroll thinks of something at higher level changes those probabilities, core theory is violated.” (<https://twitter.com/Philip_Goff/status/1509246865203609601>)

Q: “The evolution of a set of particles can be constrained by context, like water molecules flowing in a pipe. Organization has causal power (without violating lower level laws)” (<https://twitter.com/WiringTheBrain/status/1509278501643427842>)

A: “I agree with you about that, but it makes no difference whether laws of physics alone predict a single outcome with probability of 1 or a range of outcomes associated with Born rule probabilities.” (https://twitter.com/Philip\_Goff/status/1509290170641756161)

Q: “If things happened a thousand times then the probabilities would in a statistical sense determine the distribution of outcomes. But things only happen once.” (<https://twitter.com/WiringTheBrain/status/1509291694684004355>)

A: Can my brain determine/impact/control/drive the objective-state-evolution of the particles in my brain?

(Q: “The evolution of a set of particles can be constrained by context, like water molecules flowing in a pipe. Organization has causal power (without violating lower level laws)” (<https://twitter.com/WiringTheBrain/status/1509278501643427842)>)

A: An organization (e.g., a pipe) itself is a set of particles.

(Q: “If things happened a thousand times then the probabilities would in a statistical sense determine the distribution of outcomes. But things only happen once.” (<https://twitter.com/WiringTheBrain/status/1509291694684004355)>)

Q: “What matters is what specific single outcome is realized. That’s not determined by the low-level laws. Leaving causal slack for other things to settle the outcome.” (<https://twitter.com/WiringTheBrain/status/1509291878243618816>)

A: “So hypothetically if you take a billion duplicates of me making a decision, then Born rule stats would show up across them? Sounds like I don't have free will. The contingent fact that we can't do that shouldn't make a difference.” (<https://twitter.com/Philip_Goff/status/1509292611391135754>)

(Q: “What matters is what specific single outcome is realized. That’s not determined by the low-level laws. Leaving causal slack for other things to settle the outcome.” (<https://twitter.com/WiringTheBrain/status/1509291878243618816)>)

A: Please kindly give an example on a high-level phenomenon which can impact low-level physics/outcome.

(A: “So hypothetically if you take a billion duplicates of me making a decision, then Born rule stats would show up across them? Sounds like I don't have free will. The contingent fact that we can't do that shouldn't make a difference.” (<https://twitter.com/Philip_Goff/status/1509292611391135754)>)

Q: “Except you don’t do a billion runs, you do one. So the actual outcome is not determined.” (<https://twitter.com/WiringTheBrain/status/1509294928479858696>)

A: So, the actual outcome is determined/impacted/controlled/driven by Philip Goff's physical brain's libertarian free will. Is that correct?

A: Or in other words, Philip Goff's physical brain's libertarian free will can (libertarian freely) choose one run from a billion runs.

(A: An organization (e.g., a pipe) itself is a set of particles.)

A: When the particles in my physical brain are trying to use a pipe to constrain water molecules/particles, the particles of the pipe have causal power, and the particles in my physical brain also have causal power. Is that correct? Do the particles in water have causal power?

A: The particles of the pipe have causal power to constrain the particles in water (without violating lower level laws). The particles in my physical brain have causal power to constrain the particles of the pipe (without violating lower level laws). Then, is the causal power covered by the lower level laws already? Or is the causal power something more than the lower level laws? What causal power a particle has (without violating lower level laws)? The lower level laws have a causal power. A particle has to follow the lower level laws. When a particle is following the lower level laws, what causal power this particle has (without violating lower level laws) (besides the causal power of the lower level laws)? There is no causal power besides the causal power of the lower level laws. You will know this, when you imagine everything (e.g., water, pipe, brain) as particles (which are following lower level laws). If you imagine water as particles, and if you don’t imagine the pipe as particles, then it feels like that the pipe (as \*one\* agent) has a causal power (besides the causal power of the lower level laws) to constrain the particles of water – this feeling is counterfactual. Actually/objectively, the pipe is not \*one\* agent, but \*many\* agents – every particle (of the pipe) is an agent. The causal power of the pipe to constrain water, is subjective/fictional/imagined/counterfactual – this causal power is (subjectively) imagined/simulated/mathematically-modelled by (a physical mechanics in) your physical brain. The causal power of lower level laws, is objective/nonfictional/factual. Actually/objectively, no particle in the pipe has the causal power to constrain water’s particles. It (subjectively) seems like that water’s particles are \*constrained\* by the pipe’s particles. Actually/objectively, every particle is following the lower level laws. No particle is constrained by any other particle. Or each particle is constrained by every other particle. Actually/objectively, every particle is only constrained by the lower level laws. A subjective-theory is a theory being told/narrated by the said physical mechanics in your physical brain.

(Q: “Except you don’t do a billion runs, you do one. So the actual outcome is not determined.” (<https://twitter.com/WiringTheBrain/status/1509294928479858696)>)

A: “So is your view that given that we don't do a billion runs, I have free will, by hypothetically if we did, I would lose my free will? Why would doing a billion runs make that happen?” (<https://twitter.com/Philip_Goff/status/1509453863425826820>)

Q: “Let's focus on whether the outcome of actual physical events is entirely pre-determined or not. You seem to think it effectively is by \*the probabilities\* being determined” (<https://twitter.com/WiringTheBrain/status/1509459475673006083>)

Q: “But the probabilities are just as defined for the roll of a die - do you think that means the actual outcome is determined? Or does the roll just necessarily (and randomly) realise one of the possible outcomes?” (<https://twitter.com/WiringTheBrain/status/1509459998795087875>)

Q: “Even for a loaded die, where the probabilities of diff outcomes are not equal, any given roll will still realise one outcome.” (<https://twitter.com/WiringTheBrain/status/1509460273081499649>)

Q: “That realisation is not \*driven\* by the probabilities like they describe some kind of force. They describe constraints. The outcome is decided by other things, given those constraints” (<https://twitter.com/WiringTheBrain/status/1509460474018078724>)

Q: “Similarly, the evolution of a physical system is constrained by the probabilities described by the Schrodinger equation, but the actual trajectory is determined by something else (apparently at random, as it happens)” (<https://twitter.com/WiringTheBrain/status/1509461068376068098>)

Q: “So, while the probabilities are set, the details of the actual outcome are NOT pre-determined by the low-level laws of physics, no more than the outcome of you rolling a die is set by its shape” (<https://twitter.com/WiringTheBrain/status/1509461783915937794>)

A: “The details of the actual outcome are NOT pre-determined by the low-level laws of physics” -- do you mean that the details of the actual outcome are decided/impacted by some high-level things? Like what? What kind of high-level things can decide/impact the details of the actual outcome? Some high-level things only exist in the context of your brain's cognition. Your brain imagines/mathematically-models high-level concepts. Some high-level concepts only exist in the context of your brain's cognition -- they don't have counterparts in the real world. High-level concepts are (subjective) models of the real world. For \*some\* (subjective) models, you won't find their counterparts in the real world – these (subjective) models only exist in your mind. For example, for your (subjective) model “mind/consciousness/soul”, can you find its counterpart in the real world? (So, mind/consciousness/soul does not exist in my physical brain’s objective-theory. Mind/consciousness/soul only exists in my physical brain’s subjective-theory/cognition.) A subjective-theory is a theory about high-level concepts. I can \*only\* find the counterparts for \*some\* high-level concepts in the objective-theory.

(Q: “So, while the probabilities are set, the details of the actual outcome are NOT pre-determined by the low-level laws of physics, no more than the outcome of you rolling a die is set by its shape” (<https://twitter.com/WiringTheBrain/status/1509461783915937794)>)

A: “This is interesting but which premise of my argument would you deny: 1. In the hypothetical case of billion runs, I wouldn't have free will, 2. It shouldn't make a diff to whether I have free will whether or not a billion duplicates of me exist, 3. I don't have free will.” (<https://twitter.com/Philip_Goff/status/1509468805453557761>)

A: “To be clear, I don't accept the conclusion to this argument because I don't think the billion runs would respect Born rule stats.” (<https://twitter.com/Philip_Goff/status/1509469013562343424>)

(Q: “But the probabilities are just as defined for the roll of a die - do you think that means the actual outcome is determined? Or does the roll just necessarily (and randomly) realise one of the possible outcomes?” (<https://twitter.com/WiringTheBrain/status/1509459998795087875)>)

A: For the roll of a die (in our cosmos), the actual outcome is determined. The actual outcome is not unpredictable. We can predict it using a high-speed camera.

(A: “This is interesting but which premise of my argument would you deny: 1. In the hypothetical case of billion runs, I wouldn't have free will, 2. It shouldn't make a diff to whether I have free will whether or not a billion duplicates of me exist, 3. I don't have free will.” (<https://twitter.com/Philip_Goff/status/1509468805453557761)>)

Q: “I think you're making too big a leap. Let's establish if there is indeed any low-level indeterminacy and go from there... (It's only a necessary condition for free will or even basal agency or action of any kind)” (<https://twitter.com/WiringTheBrain/status/1509478666891411466>)

A: Why low-level indeterminacy matters? If I can't forecast something, it doesn't mean that this thing is libertarian free. Many people are imagining the existence of libertarian freedom, when they believe that there is something they can't forecast. When I roll a die, I can't forecast the number I will get, but it doesn't mean that the die has libertarian freedom. If I can't forecast an outcome due to quantum randomness, it doesn't mean that the outcome is libertarian free. Yes, there is low-level indeterminacy -- quantum randomness. So what? Does quantum randomness mean that a particle has libertarian freedom?

(Q: “I think you're making too big a leap. Let's establish if there is indeed any low-level indeterminacy and go from there... (It's only a necessary condition for free will or even basal agency or action of any kind)” (<https://twitter.com/WiringTheBrain/status/1509478666891411466)>)

A: “I've given you a valid argument, and so if both premises are true, the conclusion logically follows. So if you deny the conclusion, logic obliges you say which premise is false.” (<https://twitter.com/Philip_Goff/status/1509483863109734403>)

Q: “Obliges, eh? 😅 Well, I don't think you have given a valid (or relevant) argument, but maybe if you state it again I'll catch your meaning” (<https://twitter.com/WiringTheBrain/status/1509488431805644800>)

A: “Don't shoot the messenger, blame logic! 😉” (<https://twitter.com/Philip_Goff/status/1509503091867066380>)

A: “Why is it not valid? Seems like it's gotta be relevant if the conclusion is 'I don't have free will'. Not sure how I could rephrase, it's 1-3 above.” (<https://twitter.com/Philip_Goff/status/1509503262512357386>)

Q: “Oh, I see now, sorry. 1 and 2 are the premises and 3 the conclusion. Okay, so, in the hypothetical scenario of 1 (which feels a bit like a multiple world notion) who are "you"?” (<https://twitter.com/WiringTheBrain/status/1509505542829621250>)

(A: “Don't shoot the messenger, blame logic! 😉” (<https://twitter.com/Philip_Goff/status/1509503091867066380)>)

A: “The talk of constraints is maybe a little dodgy. The physical theory is that quantum measurements are entirely random with the probabilities given by theory. If they are not entirely random, then that is a deviation from prediction and in principle detectable.” (<https://twitter.com/Disagreeable_I/status/1509512316399894534>)

(Q: “Oh, I see now, sorry. 1 and 2 are the premises and 3 the conclusion. Okay, so, in the hypothetical scenario of 1 (which feels a bit like a multiple world notion) who are "you"?” (<https://twitter.com/WiringTheBrain/status/1509505542829621250)>)

A: First, let's agree to use many-worlds interpretation. In the many worlds, each copy of I (in each world) wouldn't have free will, So, this copy of I (in this world) don't have free will.

(A: “Don't shoot the messenger, blame logic! 😉” (<https://twitter.com/Philip_Goff/status/1509503091867066380)>)

Q: “Sorry to butt in but the possibility remains open that there are in fact a billion runs if the many worlds interpretation is true. Since it's a viable deterministic interpretation, it's not true that physics just tells us that nature is indeterministic. Also pilot wave theory etc” (<https://twitter.com/Disagreeable_I/status/1509511279219728385>)

Q: “Also the talk of constraints is maybe a little dodgy. The physical theory is that quantum measurements are entirely random with the probabilities given by theory. If they are not entirely random, then that is a deviation from prediction and in principle detectable.” (<https://twitter.com/Disagreeable_I/status/1509512316399894534>)

A: “Appearing random from our perspective does not mean that they are not determined - they are determined by events in other worlds.” (<https://twitter.com/sphexish/status/1509783425393250310>)

Q: “If they really do appear random from our perspective, then they are functionally random from our perspective, meaning that we cannot usefully harness any non-randomness to implement any functions such as agents making decisions non-randomly.” (<https://twitter.com/Disagreeable_I/status/1509787987604819996>)

A: If something appears non-random from our perspective, it might be actually random -- it just happens to seem like non-random when we observe it. If something appears random from our perspective, it might be actually non-random – we (as observers) just can't identify the actual pattern.

A: We can't know whether something is actually random or not. We only know whether we successfully forecasted it (in the past). We don't know whether we can successfully forecast it in the future.

A: Being something inside a physical system, we can observe this system from inside. However, we have no way to know how this system is "designed" based on our observation. Because our observation is also "designed".

(Q: “If they really do appear random from our perspective, then they are functionally random from our perspective, meaning that we cannot usefully harness any non-randomness to implement any functions such as agents making decisions non-randomly.” (<https://twitter.com/Disagreeable_I/status/1509787987604819996)>)

Q: “If anything can make use of underlying non-randomness to implement some function, then that must be detectable, because otherwise it wouldn't be useful. That's my point.” (<https://twitter.com/Disagreeable_I/status/1509788158870835203>)

A: “I would say that ideas like randomness or probability are descriptions of our subjective uncertainty. In reality all events that occur do so with an objective probability of 100%.” (<https://twitter.com/sphexish/status/1510310229648490499>)

### (59)

Q: “Name a more iconic duo than @Philip\_Goff and @keithfrankish. I'll wait...” (<https://twitter.com/PhilipVukovic/status/1509418290502053888>)

A: “Can you both explain your respective - Panpsychist/Illusionist - philosophies so an 8 year old would understand them?” (<https://twitter.com/memneon/status/1509526950447964166>)

Q: “Maybe this will do:

Goff: Everything is conscious (or at least made up of conscious bits)

Frankish: Nothing is conscious, but some complex physical systems are “conscious”

Hope this helps!” (<https://twitter.com/BugRib/status/1509539805310308362>)

A: “It will be interesting to see if they agree..

But for now in their absence..

Goff - When you say 'everything' do you mean every physical/living thing?

Frankish - How can nothing be conscious yet some things be 'conscious'?” (<https://twitter.com/memneon/status/1509542667658706945>)

A: “Oo plz may I try DrFrankish-for-8yrold!

Consciousness is just what happens in yr brain & body as you go thru life. Some too-clever-by-½ people say it's a special thing more than brain & body but that's because being alive is Such a Dazzling Experience it almost seems like magic!” (<https://twitter.com/chrisfcarroll/status/1509554375345192975>)

Q: “(plays 8 yr old)

Right, so there's nothing magical about it but it's still kinda magical.. What about this 'qualia' thing, what's that all about?” (<https://twitter.com/memneon/status/1509556621638344706>)

A: “That is the illusionist's rhetorical question!

These too-clever-by-½ people say there are these qualia but really, that's the illusion: those qualia aren't anything.

So part of illusionism is, attempting to show that talk about qualia is so much non-sense.” (<https://twitter.com/chrisfcarroll/status/1509604437098119171>)

(A: “Oo plz may I try DrFrankish-for-8yrold!

Consciousness is just what happens in yr brain & body as you go thru life. Some too-clever-by-½ people say it's a special thing more than brain & body but that's because being alive is Such a Dazzling Experience it almost seems like magic!” (<https://twitter.com/chrisfcarroll/status/1509554375345192975)>)

Q: But you are unable to explain the magic! So, it remains magical to me.

(A: “Oo plz may I try DrFrankish-for-8yrold!

Consciousness is just what happens in yr brain & body as you go thru life. Some too-clever-by-½ people say it's a special thing more than brain & body but that's because being alive is Such a Dazzling Experience it almost seems like magic!” (<https://twitter.com/chrisfcarroll/status/1509554375345192975)>)

A: “I actually found this quite convincing... Maybe I just need things explained to me like an eight year old...” (<https://twitter.com/Philip_Goff/status/1509612885106098178>)

(Q: But you are unable to explain the magic! So, it remains magical to me.)

A: “I cannot contradict you :-)

I guess we all agree it's “🌟magical✨” and argue only over how to explain the magic.” (<https://twitter.com/chrisfcarroll/status/1509651253718130695>)

Q: “@Philip\_Goff thinks the stage magic to be real magic (supernatural magic).” (<https://twitter.com/_xiaoyangyu/status/1509651794485739521>)

A: “I'm not sure Philip does think that :-)

I think both the existence and the astonishingly reliable functioning of a naturalistic universe is at the very least a meta-natural fact; which seems to me near-indistinguishable from supernatural.” (<https://twitter.com/chrisfcarroll/status/1509653826386726918>)

A: I can distinguish it from supernatural ;-)

Q: “🧐?”( <https://twitter.com/chrisfcarroll/status/1509655373841682435>)

A: Supernatural means something \*I\* believe to be supernatural :-) I can distinguish it case by case. It's hard to explain (to others) how I distinguish it in general.

(A: “I cannot contradict you :-)

I guess we all agree it's “🌟magical✨” and argue only over how to explain the magic.” (<https://twitter.com/chrisfcarroll/status/1509651253718130695)>)

A: Before we can explain a stage magic, some people will insist that it’s a real magic (supernatural magic). That's not because they are stupid. That's because they love real magic (supernatural magic).

(A: “I cannot contradict you :-)

I guess we all agree it's “🌟magical✨” and argue only over how to explain the magic.” (<https://twitter.com/chrisfcarroll/status/1509651253718130695)>)

Q: “Is it Real Magic or just real magic?” (<https://twitter.com/keithfrankish/status/1509655839765901317>)

A: What's the difference?

Q: “Real Magic is the kind that's not actually real!” (<https://twitter.com/keithfrankish/status/1509680039465558020>)

A: Then, real magic is the kind that's actually real.

A: @keithfrankish , in your view, is consciousness Real Magic or real magic?

(A: Then, real magic is the kind that's actually real.)

Q: “That’s it!” (<https://twitter.com/keithfrankish/status/1509693839623307268>)

(A: @keithfrankish , in your view, is consciousness Real Magic or real magic?)

Q: “The latter” (<https://twitter.com/keithfrankish/status/1509693917658292224>)

A: In my view, consciousness is Real Magic, not real magic.

(Q: “The latter” (<https://twitter.com/keithfrankish/status/1509693917658292224)>)

A: Then, what's the difference between you and @Philip\_Goff?

Q: “He thinks Real Magic exists” (<https://twitter.com/keithfrankish/status/1509695728821710851>)

A: “He thinks Real Magic exists” – he thinks that consciousness is Real Magic. Is that what you mean? You think that consciousness is real magic. In my semantics, he thinks that consciousness is stage magic, while you think that consciousness is real magic (supernatural magic). If he thinks that consciousness is stage magic, then it means that consciousness doesn’t actually exist – a human individual doesn’t have \*real\* consciousness. If you think that consciousness is real magic, then it means that consciousness actually exist – a human individual has \*real\* consciousness.

A: I believe that all human individuals are philosophical zombies. He and you don't believe that.

(A: “He thinks Real Magic exists” – he thinks that consciousness is Real Magic. Is that what you mean? You think that consciousness is real magic. In my semantics, he thinks that consciousness is stage magic, while you think that consciousness is real magic (supernatural magic). If he thinks that consciousness is stage magic, then it means that consciousness doesn’t actually exist – a human individual doesn’t have \*real\* consciousness. If you think that consciousness is real magic, then it means that consciousness actually exists – a human individual has \*real\* consciousness.)

Q: “It's the other way round

real magic = stage magic

Real Magic = supernatural magic” (<https://twitter.com/keithfrankish/status/1509700226466168833>)

A: I see. Then, in my view (and your view), consciousness is stage magic, not supernatural magic. He thinks supernatural magic exists. If supernatural magic doesn’t exist, then all human individuals are actually philosophical zombies. Is that correct?

### (60)

A: “My body makes the decisions and I take responsibility for them” (<https://twitter.com/keithfrankish/status/1509961309194002440>)

A: Your body makes the decisions it is forced/fated to make. However, others' bodies still hold your body responsible for its (forced/fated) decisions. When others' bodies are doing that, actually they are forced/fated to do that. What a stupid (physical) system we are living in!

A: In order to hold your body responsible "reasonably", others' bodies are forced/fated to imagine that there is a mind/consciousness/soul/agent living in your body, and it’s that (imagined) mind/consciousness/soul/agent who is being held responsible for your body's (forced/fated) decisions, as if that your body’s decisions are somehow made by that (imagined) mind/consciousness/soul/agent, and that (imagined) mind/consciousness/soul/agent \*can\* somehow make decisions (for your body) libertarian freely.

(A: “My body makes the decisions and I take responsibility for them” (<https://twitter.com/keithfrankish/status/1509961309194002440)>)

Q: “Who's responsible for my penchant for consuming cheese such that I cannot sleep, I cannot eat, I cannot \*move\* but for Camembert Calvados. I want out of this terrible chase!” (<https://twitter.com/markgotproblems/status/1509963996685811719>)

A: A physical mechanics/structure/process inside your physical brain.

(A: “My body makes the decisions and I take responsibility for them” (<https://twitter.com/keithfrankish/status/1509961309194002440)>)

Q: “What is this "I" that is separate from your body? Might it be an illusion?” (<https://twitter.com/joakim_warholm/status/1509962902505144331>)

A: “It's the narrator of the story of my life” (<https://twitter.com/keithfrankish/status/1509963294836240388>)

A: No. The narrator of the story of your life is your physical brain. “My body makes the decisions and I take responsibility for them” -- this "I" is a (fictional) character in your physical brain's (fictional) subjective-theory.

(A: “It's the narrator of the story of my life” (<https://twitter.com/keithfrankish/status/1509963294836240388>))

Q: “Who narrates the story of your body's life?” (<https://twitter.com/meaculpitt/status/1510006674299375618>)

A: “My doctor” (<https://twitter.com/keithfrankish/status/1510010891445624844>)

A: No. The cosmos/objective-reality/Schrodinger-equation/elementary-particles narrate the story of your body's life.

(A: “It's the narrator of the story of my life” (<https://twitter.com/keithfrankish/status/1509963294836240388>))

Q: “Might this narrator be an illusion? Does its existence not simply consist of one thought after another, all of which simply appear out of nowhere (nowhere as seen from the 1st person perspective)? You can't choose your next thought, unless you can think it before you think it.” (<https://twitter.com/joakim_warholm/status/1509964000112648192>)

A: “you can't make a choice because you'd have to choose before you choose - that's how crazy you sound” (<https://twitter.com/hxt55/status/1510010127222460418>)

(A: Your body makes the decisions it is forced/fated to make. However, others' bodies still hold your body responsible for its (forced/fated) decisions. When others' bodies are doing that, actually they are forced/fated to do that. What a stupid (physical) system we are living in!)

Q: “Do we define science as consistency.

Machine like movement. Regularity. How sure are we, for example that “natural laws” cannot change?” (<https://twitter.com/JtuckerJames/status/1510107283988135937>)

A: As long as we are governed by "natural laws", it makes no difference if "natural laws" can change.

A: If we are governed by natural laws, we have no reason to hate any individual -- we should hate the natural laws!

(A: In order to hold your body responsible "reasonably", others' bodies are forced/fated to imagine that there is a mind/consciousness/soul/agent living in your body, and it’s that (imagined) mind/consciousness/soul/agent who is being held responsible for your body's (forced/fated) decisions, as if that your body’s decisions are somehow made by that (imagined) mind/consciousness/soul/agent, and that (imagined) mind/consciousness/soul/agent \*can\* somehow make decisions (for your body) libertarian freely.)

Q: “Imagine: form a mental image or concept of.

Mind imagines, not body.” (<https://twitter.com/WalterHBlack/status/1510173019666325504>)

A: Mind doesn't exist. Brain imagines.

Q: “Then nothing imagines, since imagination is a property of mind.” (<https://twitter.com/WalterHBlack/status/1510174597475442693>)

A: There is no mind. Brain (i.e., a part of body) imagines.

A: Brain imagines the mind. Brain imagines the existence of mind.

A: Brain imagines that it is mind who is imagining.

Q: “How would a brain imagine? What are the actual features of the brain doing the imagining? What is the first step that diverges from purely physical, geometric changes?” (<https://twitter.com/S33light/status/1510194246363582465>)

A: There is no first step. There is nothing more than pure physical, geometric change. Because we don't have mind

Q: “Maybe you don't have mind, but mind would be required to be able to use the word "we" and understand what it means.

Geometry can't "seem like" a flavor or a color, thought, feeling or sensation. Even 'signal' cannot be meaningfully justified under any physical property.” (<https://twitter.com/S33light/status/1510196312465190915>)

A: No one can prove to others that they have mind. So, no one has mind. No one can prove to others that they can actually experience color. So, no one actually experiences color.

(A: In order to hold your body responsible "reasonably", others' bodies are forced/fated to imagine that there is a mind/consciousness/soul/agent living in your body, and it’s that (imagined) mind/consciousness/soul/agent who is being held responsible for your body's (forced/fated) decisions, as if that your body’s decisions are somehow made by that (imagined) mind/consciousness/soul/agent, and that (imagined) mind/consciousness/soul/agent \*can\* somehow make decisions (for your body) libertarian freely.)

Q: “It's illusions the whole way down 🧐🤔😁” (<https://twitter.com/Philosimp1/status/1510172886757216261>)

A: Yes.

(A: In order to hold your body responsible "reasonably", others' bodies are forced/fated to imagine that there is a mind/consciousness/soul/agent living in your body, and it’s that (imagined) mind/consciousness/soul/agent who is being held responsible for your body's (forced/fated) decisions, as if that your body’s decisions are somehow made by that (imagined) mind/consciousness/soul/agent, and that (imagined) mind/consciousness/soul/agent \*can\* somehow make decisions (for your body) libertarian freely.)

Q: ”Do you not have a sense that you are living in your body in some sense (the tactile-haptic sense of tangibility, to be exact)?” (<https://twitter.com/S33light/status/1510200248387444739>)

A: I have a feeling that I am living \*inside\* my body. But, who is there living \*inside\* my body? In fact, I \*am\* my body, but I don't feel like that I \*am\* my body -- why?

A: “That's basically the illusion I keep talking about” (<https://twitter.com/keithfrankish/status/1510306307638767622>)

(A: I just claimed that mind doesn't exist.)

Q: “That claim can only be made by a mind, so it negates itself. Further, a body has no way of making a 'claim'. It can make a poop. It can make noises. How can it make a claim?” (<https://twitter.com/S33light/status/1510206461317632006>)

A: "That claim can only be made by a mind" -- I disagree. "a body has no way of making a 'claim'" -- I disagree.

Q: “Who cares who agrees or disagrees? If "you" are right, there is no "I" to disagree in the first place. It's the same logical fallacy over and over. Begging the Question. Petitio Principii.” (<https://twitter.com/S33light/status/1510207107542491139>)

A: "That claim can only be made by a mind" -- my brain disagrees. "a body has no way of making a 'claim'" -- my brain disagrees.

Q: “What makes a brain "my" brain?

Consider that "you" will never see your brain, never touch it or know it any other way than as an understanding in your mind, an image in your imagination, or an image of some photoelectronic representation of the shape of brain activities.” (<https://twitter.com/S33light/status/1510207900148453386>)

Q: “Your mind is taking its own mental ideas about itself as a 'body' as a given but then denying itself as a given. That's the circular reasoning fallacy.” (<https://twitter.com/S33light/status/1510208448566370305>)

A: Craig, you are starting from "I think, therefore I am". When you use the term "I", you refer to the "I" in the statement "I think, therefore I am". In this discussion, when I use the term "I", I refer to my brain.

A: When you start from the statement "I think, therefore I am", you are starting from your mind. In this discussion, I (i.e., my brain) am not starting from "my mind". In this discussion, my brain doesn't have mind.

A: To make it easy, you can imagine that my brain is a philosophical zombie.

Q: “If your brain is a philosophical zombie, then the keystrokes your brain is triggering your body to perform are meaningless products of evolving digestion. Nothing a body can "say" can be true or untrue, sensible or nonsense, it can only be moving fingers or larynxes.” (<https://twitter.com/S33light/status/1510210725729476612>)

A: If my brain has a mind, then the keystrokes become meaningful? The keystrokes will be exactly the same, no matter my brain has a mind or not. Is that correct?

Q: “Are these words exactly the same for someone who can't read English?

What if they can't read the Latin alphabet?

What if they are too young to recognize these shapes as possible letters?

Now, what is an object without a sense of tangibility?” (<https://twitter.com/S33light/status/1510212135565070336>)

(A: If my brain has a mind, then the keystrokes become meaningful? The keystrokes will be exactly the same, no matter my brain has a mind or not. Is that correct?)

Q: “Your brain can't have a mind. Your brain can have ionic changes that change the shape and location of molecules. That's about it.” (<https://twitter.com/S33light/status/1510211665811357701>)

A: If my physical brain is a p-zombie, and if a clone of my physical brain is not a p-zombie, will they work exactly the same (from the viewpoint of others)?

A: In my view, they will work exactly the same (from the viewpoint of others).

A: I can't continue the discussion regarding p-zombie, if you disagree here.

(A: In my view, they will work exactly the same (from the viewpoint of others).)

Q: “Yes, but I'm explaining why that view doesn't actually make sense, and why "you" couldn't exist to have a "view" if it did.” (<https://twitter.com/S33light/status/1510214025090670592>)

(A: If my physical brain is a p-zombie, and if a clone of my physical brain is not a p-zombie, will they work exactly the same (from the viewpoint of others)?)

A: “That would only be true if consciousness doesn’t do anything, if it’s epiphenomenal.

P-zombies don’t have to be \*absolutely identical\* in behavior for the p-zombie argument to make its point. For some reason, everyone has lately come to believe that they do.” (<https://twitter.com/BugRib/status/1510213863886639104>)

Q: “I have seen p-zombie as defined as absolutely identical, by fiat. If we do that, it's a problem. I wish David Chalmers had used the term "doll" instead of zombie. Zombie implies some supernatural state of being undead that makes it all needlessly magical. An actor is a p-zombie.” (<https://twitter.com/S33light/status/1510214658543824905>)

A: “I think it’s because Chalmers spent so much of his book focusing on the epiphenomenal types of p-zombies. But I don’t see that it diminishes the point of the argument to say that p-zombies wouldn’t talk about experience the way non-zombies would. They’d all be illusionists… 🧟‍♂️” (<https://twitter.com/BugRib/status/1510215649192161282>)

(A: “That would only be true if consciousness doesn’t do anything, if it’s epiphenomenal.

P-zombies don’t have to be \*absolutely identical\* in behavior for the p-zombie argument to make its point. For some reason, everyone has lately come to believe that they do.” (<https://twitter.com/BugRib/status/1510213863886639104)>)

A: In this discussion, my brain was talking about the p-zombies who are \*absolutely identical\* in behavior.

Q: “What is this "my" that your fingers keep typing?” (<https://twitter.com/S33light/status/1510214802647490571>)

Q: “Er "your" fingers.” (<https://twitter.com/S33light/status/1510214859929104389>)

A: A p-zombie has fingers.

Q: “The body has fingers. I don't know what a p-zombie has. A hypothetical fact of automaticity I guess? An incidental and passive property of being mistaken for a conscious agent?” (<https://twitter.com/S33light/status/1510218972662308866>)

A: You can imagine that I have a twin brother. I am a p-zombie. My twin brother is a non-zombie. We both have fingers.

(Q: “How would a brain imagine? What are the actual features of the brain doing the imagining? What is the first step that diverges from purely physical, geometric changes?” (<https://twitter.com/S33light/status/1510194246363582465>))

A: My brain doesn't need to switch to its mind -- it doesn't have mind. If my brain needs to switch to its mind, then the switching is the first step.

Q: “"Switching" is a generic filler word. If I say that an apple switched to being laughter, I haven't explained any step that was taken, I have only made a comment about assumed steps that I myself have never tried to conceive of rigorously. <https://twitter.com/S33light/status/1508799131959152649>” (<https://twitter.com/S33light/status/1510197901833687040>)

A: I mean, my brain doesn't need the first step, if my brain doesn't have mind

Q: “Sure it does. It has to create a mind. Physically. Without any capacity to 'mind' the process in any way.” (<https://twitter.com/S33light/status/1510200991634833409>)

A: "It has to create a mind" -- why?

Q: “Because you said "If my brain needs to switch to its mind". Where did the mind come from? What could have a sense that a mind exists other than a mind?” (<https://twitter.com/S33light/status/1510203821296861186>)

A: I said "\*If\* my brain needs to switch to its mind". But \*in fact\*, my brain doesn't need to switch to its mind, because no human individual's brain \*actually\* has mind.

Q: “Ignoring the obvious self-contradiction and negation of that statement, even if that were true, you've just moved the explanatory gap between "actually" or "fact" and some unexplainable non-actual domain that you've claimed is neither body nor actual mind.” (<https://twitter.com/S33light/status/1510205512863956994>)

A: I just claimed that mind doesn't exist.

A: Obviously, we have disagreement here -- that's okay.

Q: “Yes, that's good, but the question is why there is a disagreement, and is there a way of understanding which side of the disagreement isn't factoring in the consequences of the other.” (<https://twitter.com/S33light/status/1510206780315480066>)

(Q: “How would a brain imagine? What are the actual features of the brain doing the imagining? What is the first step that diverges from purely physical, geometric changes?” (<https://twitter.com/S33light/status/1510194246363582465>))

A: Mind is something imagined by the brain

(A: Craig, you are starting from "I think, therefore I am". When you use the term "I", you refer to the "I" in the statement "I think, therefore I am". In this discussion, when I use the term "I", I refer to my brain.)

Q: “I'm not starting from anywhere. There is a sense of "I", there is a sense of "think", but there is no sense of "am" for me. It's just part of communication syntax, not an ontological phenomenon like I and think.” (<https://twitter.com/S33light/status/1510209639685804034>)

(A: Craig, you are starting from "I think, therefore I am". When you use the term "I", you refer to the "I" in the statement "I think, therefore I am". In this discussion, when I use the term "I", I refer to my brain.)

Q: “Only a "you" can refer to "my" brain. A brain can't refer to anything, it's an organ burning sugar and whatnot.” (<https://twitter.com/S33light/status/1510209880036200452>)

A: Craig, in this discussion, please imagine that my brain is a philosophical zombie. In fact, you have no way to tell whether my brain is a philosophical zombie or not.

Q: “A philosophical zombie brain has no way to tell what I or my brain can tell.” (<https://twitter.com/S33light/status/1510210926426923016>)

Q: “You're projecting your mind onto my mind using a theory of mind, not any part of your body or brain.” (<https://twitter.com/S33light/status/1510211069217841153>)

A: A philosophical zombie can use theory of mind.

Q: “No it would only give non-zombies the impression it was using theory of mind - like a talking doll.” (<https://twitter.com/S33light/status/1510212353928925188>)

(A: Brain imagines that it is mind who is imagining.)

A: Brain imagines that mind is the subject who is imagining.

(A: There is no mind. Brain (i.e., a part of body) imagines.)

Q: “Use a word other than imagine, since you deny that mind exists, and imagine is defined as a property of mind.

Otherwise your argument is literally nonsense.” (<https://twitter.com/WalterHBlack/status/1510176558757122052>)

A: "Imagine is a property of mind" -- I disagree. Imagine is a property of brain.

Q: “That just makes the term "brain" into an undefined magical entity that can generate arbitrary non-physical powers physically.” (<https://twitter.com/S33light/status/1510239086895849478>)

A: You are imagining mind as a property of a physical brain, and you are imagining think/imagine as a property of mind, and then you are imagining that "a p-zombie can't think/imagine because its physical brain doesn't have mind". You are imagining that only a non-zombie/mind can think/imagine. You are imagining mind as the bridge for a physical brain to think/imagine. You are imagining mind as a precondition for think/imagine. Please imagine that a p-zombie/physical-brain can think/imagine (without using mind as a bridge). Not only a non-zombie/mind can think/imagine. As a p-zombie, my physical brain can think/imagine.

Q: “A brain can no more imagine than imagination can metabolize glutamate into glutamine. Their unity can only exist in imagination, not in a brain function.” (<https://twitter.com/S33light/status/1510350036739182604>)

A: You are defining a physical brain's function. You are defining think/imagine as something other than a physical brain's function. You are defining think/imagine as mind's function (only). So, obviously, you are defining mind as something other than a physical brain. Or in other words, you are defining mind as a physical brain's function. Right? In your view, is mind the function of a physical brain?

A: Or is mind something parallel to a physical brain?

A: In your view, what's the relationship between mind and physical brain? Is physical brain the "cause" of mind? Is mind the function of physical brain? Or are they parallel to each other?

A: Before discussing the meaning of terms, my physical brain needs to understand your idea/theory first.

Q: “You should understand that understanding is not something that a physical brain can be shown to do. Brains are a chemical reaction. A geometry of tangibility.” (<https://twitter.com/S33light/status/1510355494644428803>)

(A: Or is mind something parallel to a physical brain?)

Q: “Yes. "Mind" is a modality of conscious experience that has a cogitative aesthetic. Mind is thinking, learning, understanding, communicating. I call it the apophoric aesthetic on the interpersonal significance scale. Brain is an organ of a body. <https://twitter.com/S33light/status/1510353972393091073/photo/1> ”

(<https://twitter.com/S33light/status/1510353972393091073>)

A: Are my keystrokes caused by my mind or my physical brain?

Q: “They are caused by a conscious experience on multiple parallel timescales and aesthetics. The cogitative aesthetic thinks it's thinking.

The morphic and intramorphic aesthetics of the brain don't think, they move and change shape (morphia) in public space on the molecular scale. <https://twitter.com/S33light/status/1510359722062401540/photo/1>” (<https://twitter.com/S33light/status/1510359722062401540>)

(A: Before discussing the meaning of terms, my physical brain needs to understand your idea/theory first.)

A: What's your idea/theory regarding the relationship between mind and physical brain? Please don't tell me “No idea".

Q: “My idea is shown in the diagram. Brain and mind are appearances within a conscious experience that is temporarily polarized into diametric aesthetics. Mind is too loose of a term. Is a person a mind or do they have a mind? Is a mind a thinker or what a person is thinking?” (<https://twitter.com/S33light/status/1510356297568432131>)

(Q: “That claim can only be made by a mind, so it negates itself. Further, a body has no way of making a 'claim'. It can make a poop. It can make noises. How can it make a claim?” (<https://twitter.com/S33light/status/1510206461317632006>))

A: The noises is a claim.

Q: “If that were the case then we would not be able to understand which of the two could be measured in decibels and which cannot. Noise makes no claim.” (<https://twitter.com/S33light/status/1510420142353747970>)

A: When someone say "I think, therefore I am", it's a noise which can be measured in decibels.

Q: “They don't have to say it. They can think it or wrote it. Both the noise and the drawn or typed shapes are given meaning only by thinking. Only thinking can connect noise or sight with each other or anything else.” (<https://twitter.com/S33light/status/1510421855080955909>)

A: When a p-zombie says "I think, therefore I am", it makes a noise, and it makes a claim -- the noise is the claim.

Q: “No, it only makes a noise. Any sense of a claim would be a projection of the pathetic fallacy. This emoji 🙂is not smiling. Its just pixels.” (<https://twitter.com/S33light/status/1510423225381142533>)

Q: “...and in the absence of a conscious experience of hearing, there is no noise, only tactile-haptic vibrations. In the absence of that sense - nothing.” (<https://twitter.com/S33light/status/1510423557850939399>)

A: If you can't understand Chinese, then a claim in Chinese is not a claim?

Q: “It has nothing to do with me. If Chinese was not ever understood then it would not be a language.” (<https://twitter.com/S33light/status/1510423994931064835>)

A: In my view, it's a kind of solipsism.

A: I think Will Smith's physical body is a p-zombie. If Will Smith also has a mind, then he is a non-zombie. Otherwise, he is a p-zombie. Is that correct?

Q: “There are no p-zombies. There are dolls. A doll is an object that is designed to resemble a body, which is an object that is being used as a vehicle for a personal scale conscious experience.” (<https://twitter.com/S33light/status/1510429283008794627>)

A: Suppose you can observe the state of each elementary particle in a human body, can you tell whether this body is a doll or not?

Q: “There may be signatures we could recognize that would be prohibitively difficult to imitate.” (<https://twitter.com/S33light/status/1510440491506147329>)

A: By "signatures", do you mean a physical structure/process?

Q: “Yes, or more likely a set of many physical structures/processes.” (<https://twitter.com/S33light/status/1510447188681371650>)

A: But currently you don't know what they are. So, currently, you can't tell whether a person is doll, even if you can observe the state of every particle of this person. So, how can you tell whether a person is a doll, only from his behavior? What's the trick?

A: I think all people are dolls.

Q: “I think it's fine to entertain ideas of solipsism but I think it would be considered a fairly serious psychiatric condition to act on it.” (<https://twitter.com/S33light/status/1510450928490590211>)

A: If all people are actually dolls, but if one believes that they are not, then this person is okay?

Q: “They could be, if they are young children. The consequences of acting on the pathetic fallacy would not be as dangerous as the consequences of acting on a psychopathic fallacy.” (<https://twitter.com/S33light/status/1510451904270241793>)

A: If all other people are acting on the pathetic fallacy, then the only one who is not (acting on the pathetic fallacy) is acting on a psychopathic fallacy?

Q: “Since the totality is conscious experience the pathetic fallacy is relatively less disoriented than the psychopathic fallacy.” (<https://twitter.com/S33light/status/1510453993578938368>)

Q: “But no, just because some group of people are fooled by the pathetic fallacy for some duration of time doesn't make people who are not fooled psychopathic if there were dolls mistaken for people.” (<https://twitter.com/S33light/status/1510455133024493568>)

A: A robot can pretend to be a human.

Q: “No, that's the pathetic fallacy.” (<https://twitter.com/S33light/status/1510471107069030401>)

A: In my view, you are using a solipsist view.

A: It's hard for me to follow

Q: “It's a good sign that you recognize that.” (<https://twitter.com/S33light/status/1510473306746535937>)

(A: In my view, you are using a solipsist view.)

Q: “We've been through that. If you conflate consciousness with subjectivity rather than understanding subjectivity and objectivity as appearances of consciousness then you jump to a straw man read of non-physicalism.” (<https://twitter.com/S33light/status/1510473166342299650>)

A: "a straw man read of non-physicalism" -- what does it mean?

Q: “It means that you don't fully understand the position of cosmopsychism or idealism so you can only see them in a weakened form that will be easy for you to disagree with without having to think or question your assumptions.” (<https://twitter.com/S33light/status/1510475109072519168>)

A: How do I see the original form?

Q: “It may not be possible. Maybe try to prove that you're conscious.” (<https://twitter.com/S33light/status/1510476387500511232>)

A: I can't prove that to you.

Q: “Then either you aren't conscious or there's something about being conscious that is beyond proof. What is proof?” (<https://twitter.com/S33light/status/1510570768475856897>)

A: There is no way to prove the existence of consciousness. Then, you think a proof is not required, while I think consciousness doesn't exist.

Q: “There is no proof that you think consciousness doesn't exist. There is no proof of "you".” (<https://twitter.com/S33light/status/1510581510629429250>)

Q: “The shift required is moving from modus ponens to modus tollens logic. Denying the undeniable is not a real option, so you have to start over from scratch. Consciousness is the only undeniable thing.” (<https://twitter.com/S33light/status/1510581919058382858>)

A: "Consciousness is the only undeniable thing." -- do you mean that the physical world is deniable? In my view, if consciousness exists, then the physical world is the cause of consciousness. Or in other words, if subjective world exists, then the objective world is the cause of subjective world. A theory from my (physical brain’s) first-person perspective can be explained/understood based on a theory from (my physical brain’s) third-person perspective. Or in other words, my (physical brain’s) subjective-theory can be explained/understood based on (my physical brain’s) objective-theory. Consciousness/subjective-world is my physical brain's subjective-theory. Physical-world/objective-world is my physical brain's objective-theory. Physical-world/objective-world/objective-theory is what my physical brain perceives from its third-person perspective. Consciousness/subjective-world/subjective-theory is what my physical brain perceives from its first-person perspective.

Q: “What would a brain be doing with a "theory"? How do molecules invent another universe of feelings, thoughts, sights, sounds, flavors, etc without doing something that molecules obviously cannot do?” (<https://twitter.com/S33light/status/1510592232394563599>)

A: You talk about consciousness and physical world, as if that they are two worlds. I don't think that they are two worlds. They are two theories (being narrated by your physical brain).

A: Your physical brain can map/match between these two theories.

(A: You talk about consciousness and physical world, as if that they are two worlds. I don't think that they are two worlds. They are two theories (being narrated by your physical brain).)

Q: “No, they are one phenomenon - a nested conscious experience. A brain is an organ in that theory. It allows one timescale of conscious experience to use another timescale of conscious experience as a vehicle.” (<https://twitter.com/S33light/status/1510593261345333248>)

(A: Your physical brain can map/match between these two theories.)

Q: “A physical brain can't do anything but cause molecular changes in the molecules of its tissues.” (<https://twitter.com/S33light/status/1510593443273355264>)

Q: “It's an organ.” (<https://twitter.com/S33light/status/1510593475477217286>)

A: “A physical brain can't do anything but cause molecular changes in the molecules of its tissues. It's an organ.” -- this is being narrated by your physical brain in its objective-theory.

A: "I think, therefore I am" -- this is being narrated by your physical brain in its objective-theory. Then, your physical brain maps/matches the “physical brain” in the objective-theory to the “I” in the subjective-theory.

(A: “A physical brain can't do anything but cause molecular changes in the molecules of its tissues. It's an organ.” -- this is being narrated by your physical brain in its objective-theory.)

Q: “There is no realistic hypothesis for how that could be possible, let alone more parsimonious than the opposite possibility. Dreams can create the experience of any material object, but there is no physical path for a material object to create dreams.” (<https://twitter.com/S33light/status/1510596913510457345>)

A: "There is no realistic hypothesis for how that could be possible" -- that is not possible (only) in your physical brain's objective-theory. \*Only\* in your physical brain's objective-theory, that is not possible.

A: If your physical brain’s objective-theory is absolutely right, then that is not possible.

A: Even if your physical brain’s objective-theory is absolutely right, it’s not the only theory. There is another theory – your physical brain’s subjective-theory.

(A: “A physical brain can't do anything but cause molecular changes in the molecules of its tissues. It's an organ.” -- this is being narrated by your physical brain in its objective-theory.)

Q: “The idea that a physical brain exists at all is a subjective theory. Subjectivity is a theory in consciousness. Consciousness is the only theory that cannot be denied.” (<https://twitter.com/S33light/status/1510599070418620416>)

A: Consciousness is the subjective-theory. Physical world is the objective-theory. In the objective-theory, brain can’t “create” consciousness.

Q: “But the brain's existence is itself a theory.” (<https://twitter.com/S33light/status/1510600930156154884>)

A: Without the objective-theory (being narrated), there is no physical world (being recognized by your consciousness). Brain exists in the objective-theory (being narrated).

Q: “We can understand from the experience of dreaming and waking that consciousness has no problem creating appearances that seem identical to a physical world, and creating or accessing them instantaneously and continuously.” (<https://twitter.com/S33light/status/1510601829977145354>)

(A: If your physical brain’s objective-theory is absolutely right, then that is not possible.)

Q: “The idea that a physical brain can generate a theory, especially one that is made of non-physical qualities that 'appear', is a delusional thought in your subjective experience...if you aren't a p-zombie/doll that is.” (<https://twitter.com/S33light/status/1510600619115126785>)

A: Let's temporally ignore the problem regarding who is generating a theory. We can firstly agree that there is a subjective-theory and a objective-theory.

A: The objective-theory is narrating the physical world.

Q: “There need not be any sense of a theory, nor any qualities that distinguish some experiences as subjective or objective. I will agree only that there is nested aesthetic-participatory phenomena, aka conscious experience.” (<https://twitter.com/S33light/status/1510603335333777419>)

Q: “The sense of objectivity and subjectivity being distinct from each other can be extremely fluid or vanish altogether. It is a very common experience in many states of consciousness.” (<https://twitter.com/S33light/status/1510603662732763137>)

A: Distinguishing between subjective and objective seems useful to me.

(A: The objective-theory is narrating the physical world.)

Q: “There is no theory or object that is anything other than a conscious experience.” (<https://twitter.com/S33light/status/1510603789417521152>)

Q: “Even the idea that an object could exist outside of conscious experience can only ever be an idea within a conscious experience.” (<https://twitter.com/S33light/status/1510603913921241092>)

A: I call this idea the objective-theory. If the objective-theory is part of my subjective-theory, that’s fine/okay. Logically speaking, it’s possible that the objective-theory is part of my subjective-theory. Or in other words, it’s possible that the objective-theory is a feature of my subjective-theory. Logically speaking, it’s also possible that what-is-being-described-in-my-subjective-theory doesn’t actually exist. Or in other words, my subjective-theory is a fake/fictional theory. So, to me, there are two possibilities: 1) only the objective-theory exists, 2) only my subjective-theory exists.

Q: “I see only one possibility:

3) Objectivity, subjectivity, theories, and existence are qualities and features of certain types of conscious experiences, which is the sole absolute Totality of all phenomena.” (<https://twitter.com/S33light/status/1510608674091376643>)

A: To me, 2) equals to 3).

Q: “I understand. Because you're conflating 2) and 3) and seeing only the straw man misinterpretation of 3) because your culturally conditioned intellect and ego aren't able to let go of 1).” (<https://twitter.com/S33light/status/1510609769106714624>)

Q: “It took me a long time. Years and years of seeing only 1), then only 2), then finally 3). Then more years and years of ripping out everything that I thought I knew about reality and updating them with 3).” (<https://twitter.com/S33light/status/1510610013840187395>)

Q: “You have to start from scratch. You know nothing about anything.” (<https://twitter.com/S33light/status/1510610205708636172>)

A: I like the fatalism view derived from 1). That’s my favorite.

Q: “You can keep that. Even though everything is part of a single eternal experience, that doesn't mean that any given conscious experience isn't a prison of influences from other conscious experiences. Just because free will exists doesn't mean your experience will let you use it.” (<https://twitter.com/S33light/status/1510611343631650818>)

A: In my view, when I choose 2), there is no other conscious experience -- it's solipsism. In other words, any other person doesn’t have consciousness. When I choose 1), there is no conscious experience – no physical brain/object has consciousness.

Q: “Why would all conscious experiences of subjectivity have to be your conscious experience of subjectivity?” (<https://twitter.com/S33light/status/1510613304628158469>)

A: Logically speaking, it’s possible that I am actually in my dream. If I am actually in my dream, then another person’s consciousness/thoughts/ideas/beliefs/goals/experiences are features/components of my dream. It’s possible that I am actually in my dream – this statement means that I have no way to know whether another person actually has consciousness or not. Or in other words, whether another person has consciousness or not, makes no difference to me. So, I don’t need to bother to imagine that another person has consciousness – it’s redundant/unnecessary to imagine that another person has consciousness.

Q: “Why imagine that other people are unconscious though? It seems arbitrary to assume either way. There will never be a way to test it one way or another - but neither will there ever be a need to test it.” (<https://twitter.com/S33light/status/1510771927513710596>)

A: Since I have memory, I imagine/assume another person has consciousness. Now, it’s a possibility to me that every other person doesn’t have consciousness.

Q: “In theory, it's possible that everyone that you can't see might be dressed up as a clown right now too. So what?” (<https://twitter.com/S33light/status/1510775319992713220>)

A: Good point. No matter I choose 1) or 2), every other person doesn’t have consciousness. When I choose 1), every person has a physical brain. However, *a physical object (e.g., a physical brain)* can’t have consciousness – is that correct?

A: When I choose 2), every other person can be a feature/component of my dream. In my dream, when I am using theory of mind upon another person (in the dream), it feels like that this person (in my dream) has consciousness/thoughts/ideas/beliefs/goals/experiences.

A: When I choose 1), every person is a physical object. When I am using theory of mind upon a physical object (e.g., a person), it feels like that this physical object has consciousness/thoughts/ideas/beliefs/goals/experiences, but it doesn’t mean/prove that this physical object actually has consciousness/thoughts/ideas/beliefs/goals/experiences. When I feel like that a physical object has consciousness/thoughts/ideas/beliefs/goals/experiences, actually it only means/proves that I am using theory of mind upon this physical object – this physical object’s “thoughts/ideas/beliefs/goals/experiences” are actually features/components of my own consciousness.

A: Being features/components of my own consciousness, this physical object’s “thoughts/ideas/beliefs/goals/experiences” are being used (in my own consciousness) to roughly/unreliably/stereotypically represent/model the character/feature of the physical construction of this physical object. In this way, the character/feature (of the physical construction of this physical object) is being roughly/unreliably/stereotypically represented/modelled in my own consciousness, and the rough/unreliable/stereotyped/coarse-grained representation/model is being used to roughly/unreliably/stereotypically explain/forecast this physical object’s physical behavior – that’s why (sometimes) the (coarse-grained) forecast can be right. Ultimately, theory of mind is (roughly) based on “natural laws” (e.g., Schrodinger equation) and the physical construction of this physical object.

A: To make it easier to understand, let’s do a thought experiment. You can imagine each person to be a huge robot. In this robot, each atom is as big as a billiard ball. Then, if you need to explain/forecast this robot’s (external) physical behavior, what should you do? If you can see the (internal) physical construction of this robot, then you can explain/forecast its physical behavior based on its physical construction. If you can’t see the physical construction of this robot, then you can imagine/guess its physical construction based on its physical behavior (in the past), so that you can explain/forecast its physical behavior based on your own imagination/guess (regarding its physical construction). If you can’t see the physical construction of this robot, and if you can’t imagine/guess its physical construction based on its physical behavior (in the past), then you can imagine/guess its thoughts/ideas/beliefs/goals/experiences based on its physical behavior (in the past), so that you can explain/forecast its physical behavior based on this imagination/guess (regarding its thoughts/ideas/beliefs/goals/experiences). If the robot’s thoughts/ideas/beliefs/goals/experiences are not being reflected in its physical construction, then it doesn’t make sense to explain/forecast its physical behavior based on this imagination/guess (regarding its thoughts/ideas/beliefs/goals/experiences). If the robot’s thoughts/ideas/beliefs/goals/experiences are being reflected in its physical construction (i.e., in theory, you should be able to identify a physical construction (inside the robot) which carries the information/data of a thought/idea/belief/goal/experience), then your explanation/forecast based on this imagination/guess (regarding its thoughts/ideas/beliefs/goals/experiences) is ultimately an explanation/forecast based on its physical construction. When you explain/forecast the robot’s physical behavior based on this imagination/guess (regarding its thoughts/ideas/beliefs/goals/experiences), actually you are explaining/forecasting the robot’s physical behavior based on its physical construction – the robot doesn’t need to actually have/experience thoughts/ideas/beliefs/goals/experiences itself. The robot only needs to have a physical construction (which carries the information/data of the thoughts/ideas/beliefs/goals/experiences). For example, when you are observing the robot’s (external) physical behavior, you might think that the robot is ‘liking’ to take drugs, or you might think that the robot is ‘wanting’ to take drugs. If you can observe the robot’s (physical) brain activities, you can identify some brain activities which are related to ‘liking’, and you can identify some \*other\* brain activities which are related to ‘wanting’ [144]. Or in other words, you can identify some (physical) brain activities which carries the information/data of ‘liking’, and you can identify some \*other\* brain activities which carries the information/data of ‘wanting’. The robot doesn’t need to actually experience ‘liking’ or ‘wanting’ (in its ‘consciousness’) – the robot doesn’t need to have ‘consciousness’ at all. The robot only needs to have the (physical) brain activities which are imagined (by \*you\*) to be related to ‘liking’ or ‘wanting’. Or in other words, the robot only needs to have the (physical) brain activities which are imagined (by \*you\*) to carry the information/data of ‘liking’ or ‘wanting’. As long as the robot has (external) physical behavior (which are imagined (by you) to be related to ‘liking’ or ‘wanting’), it’s enough for you to use theory of mind to imagine that the robot is ‘liking’ or ‘wanting’. Whether the robot is \*actually\* ‘wanting’ (to take drugs) or the robot is only a philosophical zombie (which behaves like ‘wanting’ but doesn’t have ‘consciousness’ so it is not \*actually\* ‘wanting’), actually has nothing to do with your theory-of-mind process. Or in other words, whether the robot is \*actually\* ‘wanting’ (to take drugs) or the robot is only a philosophical zombie, actually will not impact your theory-of-mind process. No matter the robot is \*actually\* ‘wanting’ (to take drugs) or the robot is only a philosophical zombie, you will always feel like that the robot is \*actually\* ‘wanting’ to take drugs (when you are using theory of mind to analyze the robot’s physical behavior), as if that the robot is not a philosophical zombie. Or in other words, your theory-of-mind process has no way to tell whether the robot is a philosophical zombie or not. In fact, there is no way (for any individual other than the robot itself) to tell whether the robot is a philosophical zombie or not. If you observe the robot’s (external) physical behavior and then believe that the robot is ‘wanting’ to take drugs (i.e., the robot’s ‘goal’ is drug), this belief is based on theory of mind. If you observe the robot’s brain (at the same time) and find (physical) activities in the ‘wanting’ circuitry, and then you believe that the robot is ‘wanting’ to take drugs (i.e., the robot’s ‘goal’ is drug), this belief is \*still\* based on theory of mind (although now you have more confidence in this belief). If you know the real-time state of every elementary particle in the robot’s brain/body, and if you have complete knowledge regarding the function of every elementary particle (in any brain process), and then you believe that the robot is ‘wanting’ to take drugs (i.e., the robot’s ‘goal’ is drug), this belief is \*still\* based on theory of mind (although now you have 100% confidence in this belief). You will never know whether the robot’s ‘goal’ (to take drugs) is its \*actual\* goal or not, because the robot can always be a philosophical zombie – a philosophical zombie can’t have any \*actual\* goal. A zombie just behaves (externally/internally) like that it has a goal. No matter how a zombie behaves (externally/internally), it can’t have any \*actual\* goal. If you know the real-time state of every elementary particle in the robot’s brain/body, and if you can precisely/reliably forecast what the robot will do (in its whole life) based on such a knowledge (and Schrodinger equation), the robot can still be a zombie (which doesn’t have any \*actual\* goal). So, the robot’s \*actual\* goal is not in the robot’s consciousness (because the robot can be a zombie), but in your consciousness – you are \*imagining\* the goal of the robot (and you have 100% confidence on your imagination) based on the robot’s (external/internal) physical behavior. In the semantics of the present article, theory of mind is defined to be a mental process to postulate an individual’s thoughts/ideas/beliefs/goals/experiences based on its external/internal physical behavior/activities. You can postulate it based on both external physical behavior and internal physical activities. Or you can postulate it only based on external physical behavior. Or you postulate it only based on internal physical activities. When you are postulating it only based on external physical behavior, in a sense (i.e., if we are confident on the relationship between external physical behavior and internal physical activities/construction), you are postulating it based on internal physical activities/construction. When you are postulating it only based on internal physical activities, in a sense (i.e., if we are confident on the relationship between external physical behavior and internal physical activities), you are postulating it based on external physical behavior.

A: When I choose 2), it can’t help me to explain/forecast any person’s behavior. When I choose 1), I can explain/forecast any person’s behavior based on “natural laws” (e.g., Schrodinger equation). That’s why I prefer to choose 1) in my everyday life.

A: When I choose 1), it’s “Galileo’s physical science” (as being described/coined by Philip Goff).

(A: Good point. No matter I choose 1) or 2), every other person doesn’t have consciousness. When I choose 1), every person has a physical brain. However, *a physical object (e.g., a physical brain)* can’t have consciousness – is that correct?)

Q: “Yes, I think it can't be the object itself or something it is doing that has consciousness. It's all consciousness using consciousness.” (<https://twitter.com/S33light/status/1510791552410468356>)

A: If a physical object (e.g., a physical brain) \*itself\* doesn’t have consciousness, then I think I can imagine/assume that this physical object doesn’t have consciousness – I think I can imagine/assume that there is no mind/consciousness/soul/agent living inside this physical object. I think I can imagine/assume that there are only elementary particles inside this physical object. I can’t imagine how a consciousness can be generated/created from the objective-state-evolution of the particles, that’s why I simply imagine/assume that no consciousness is being generated/created from the objective-state-evolution of the particles. What I feel like to be consciousness (of this physical object), is actually my theory of mind. From the objective-perspective, this physical object doesn’t have consciousness – there are only elementary particles inside this physical object. Or in other words, in the objective-theory, this physical object doesn’t have consciousness – there are only elementary particles inside this physical object. Or in other words, when I choose 1), this physical object doesn’t have consciousness – there are only elementary particles inside this physical object. From the subjective-perspective, the only physical object which has consciousness is my physical brain. Or in other words, in my subjective-theory, the only physical object which has consciousness is my physical brain. Or in other words, when I choose 2), the only physical object which has consciousness is my physical brain.

A: If a consciousness can be generated/created from the objective-state-evolution of a number of elementary particles, then why the number (of these particles) matters? For example, why a consciousness cannot be generated/created from the objective-state-evolution of only one particle? But how can a consciousness be generated/created from the objective-state-evolution of only one particle? If you can’t imagine how a consciousness can be generated/created from the objective-state-evolution of only one particle, then you can’t imagine how a consciousness can be generated/created from the objective-state-evolution of two or more particles either.

A: In the objective-theory, the objective-state-evolution of each particle (e.g., a particle in my physical brain/body) is controlled/driven/caused by Schrodinger equation only – the objective-state-evolution of each particle has nothing to do with the objective-state-evolution of my consciousness. In my subjective-theory, the objective-state-evolution of my consciousness is controlling/driving/causing the objective-state-evolution of my physical body – the objective-state-evolution of my physical body has nothing to do with the Schrodinger equation.

(A: When I choose 1), every person is a physical object. When I am using theory of mind upon a physical object (e.g., a person), it feels like that this physical object has consciousness/thoughts/ideas/beliefs/goals/experiences, but it doesn’t mean/prove that this physical object actually has consciousness/thoughts/ideas/beliefs/goals/experiences. When I feel like that a physical object has consciousness/thoughts/ideas/beliefs/goals/experiences, actually it only means/proves that I am using theory of mind upon this physical object – this physical object’s “thoughts/ideas/beliefs/goals/experiences” are actually features/components of my own consciousness.)

Q: “Yes, but the other side of that is that just as you aren't your body's consciousness, thoughts, etc, any physical object may correlate to some ongoing conscious experience on some timescale. It's not that there's no consciousness, there is, just not literally in the object.” (<https://twitter.com/S33light/status/1510948143222960136>)

Q: “The object is the appearance that remains when conscious experiences of extremely different timescales encounter parts or spacetime/coincidental surfaces of parts of each other.” (<https://twitter.com/S33light/status/1510948516306296834>)

A: How do you know that?

Q: “I don't, but I understand that it seems to make more sense than the other alternatives. I don't think that anyone can know whether or not anyone can know anything.” (<https://twitter.com/S33light/status/1511076332972748802>)

A: Is a person's body controlled by her consciousness? Or is her body controlled by "natural laws" (e.g., Schrodinger equation)?

Q: “I think that their body is subpersonal consciousness, which look like natural laws from the vantage point of personal consciousness (just as vehicles look like they must obey traffic laws automatically when viewed from above).” (<https://twitter.com/S33light/status/1511088709797662724>)

A: "their body is subpersonal consciousness" -- what does it mean?

Q: “It means that the body appearance is a footprint in our objectifying sense modalities of touch and sight, but in their native timescale, they are conscious experiences on a microphenomenal scale. Think of how a complex experience in your life can be symbolized in a dream.” (<https://twitter.com/S33light/status/1511094462394548225>)

(Q: “I think that their body is subpersonal consciousness, which look like natural laws from the vantage point of personal consciousness (just as vehicles look like they must obey traffic laws automatically when viewed from above).” (<https://twitter.com/S33light/status/1511088709797662724)>)

A: "A person's body is controlled by her consciousness. And her body is controlled by "natural laws" (e.g., Schrodinger equation) at the same time." -- is this what you mean?

Q: “A person controls only part of their personal consciousness, and that overlaps with subpersonal consciousness...which looks like a body from that view.” (<https://twitter.com/S33light/status/1511103010222612488>)

A: This is hard for me to understand

Q: “Think of it as timescale gears. Parallel causality rather than only serial.” (<https://twitter.com/S33light/status/1511105607335657472>)

A: What is parallel causality?

Q: “Synchronicity. Events are expressions of a deeper unity beyond sequential appearances of time. Causality that is not mechanical but meaningfully coincidental.” (<https://twitter.com/S33light/status/1511110498934304778>)

A: Could you please give an example?

Q: “If I am at the top of a hill looking down at cars on the road, I can see an accident causing a traffic jam before the people driving on the road get to it. From my perspective, the traffic has already stopped, but it hasn't happened yet for those approaching it on the ground.” (<https://twitter.com/S33light/status/1511138222855933955>)

A: To you, the traffic has already stopped. To a driver on the road, the traffic's stop hasn't happened yet. This scenario is easy to explain. Why you need to introduce parallel causality on this scenario? Does "parallel causality" mean different people have different ideas on the same matter?

(A: Could you please give an example?)

Q: “Relativity of simultaneity. Divination methods (Tarot, I Ching, etc) leverage some intentional entropy maximizer (shuffling cards, flipping coins). Making room for intuitive forms of accessing larger timescales/perspectives.” (<https://twitter.com/S33light/status/1511138874009034756>)

A: How can cards/coins forecast future?

(A: Could you please give an example?)

Q: “Take the concept of Now literally. A phenomenon of arbitrary boundaries. Now it is Monday here, Tuesday there. Now it is the 21st century. Now we are human, etc. Yet it specifies something. A scope of potentially accessible presentations.” (<https://twitter.com/S33light/status/1511141197678616584>)

Q: “So the scope of now is controlled by contraction and dilation of sensory-motive or aesthetic-participatory sensitivity. Bandwidth of access to the totality of all conscious experience. Time and space are emergent from sense nesting itself with relative insensitivity.” (<https://twitter.com/S33light/status/1511142309450162177>)

A: What is the totality? Does it include all events (in the past/future)?

Q: “I think it includes all conscious experiences, but past/future is a measure of the way that any given conscious experience is limited in its access to all others. Events and realism are artifacts of containment of sense. The totality is the uncontained Holos of sense.” (<https://twitter.com/S33light/status/1511253192645955587>)

A: In a sense, all people’s conscious experiences are parallel to each other. They are all controlled/driven/caused/decided by the same cause. They are all derived from the same source. You call this cause/source the totality. I call this cause/source the objective-theory.

Q: “What does the objective-theory consist of? Does it cause things other than human consciousness?” (<https://twitter.com/S33light/status/1511329120801759237>)

A: The objective-theory is all elementary particles changing their states (following Schrodinger equation). It causes everything.

Q: “Nah, they need magical "strong emergence" to cause anything at all but the exact same kinds of geometric states of (invisible, silent, unexperienced) "particle-waves". There are no particles in our dreams, and no dreams coming from particles.” (<https://twitter.com/S33light/status/1511436933108539392>)

A: If the objective-theory causes everything (e.g., the subjective-theory), then there must be “magical strong emergence". Perhaps there is the “magical strong emergence" (at least for my own consciousness).

A: Objective-theory (aka objective reality) and subjective-theory (aka cognition/mind/consciousness) are evolving/progressing parallelly/simultaneously, and they describe/explain/are the \*same\* situation from two different perspectives. (Ontologically,) which theory describes/explains/is the “real” situation? (Epistemologically,) there is no way to tell. There are two possibilities: 1) Objective-theory “causes” my subjective-theory (i.e., the “magical strong emergence" – my subjective-theory “emerged” from objective-theory “magically”). There is only the state machine (which is a mathematical structure) and, if anything can be called cognition/mind/consciousness, it's that (or features of that). “How does my subjective-theory “emerge” from objective-theory “magically”?” – this is the “hard problem of consciousness”. 2) (Just like what my dream does,) objective-theory is a feature/component of my subjective-theory. There is only my cognition (which is a mathematical structure) and, if anything can be called the state machine, my mind/consciousness or another individual’s cognition/mind/consciousness, it’s that (or features/components of that).

Q: “"There is only my cognition (which is a mathematical structure)"

Why would it be limited to you? Why would conscious experience be a mathematical structure?

The key is qualia. Neither your 1) or 2) account for qualia, so they are both false.” (<https://twitter.com/S33light/status/1511499822179794950>)

A: What is being described by my subjective-theory, is qualia (to me). Everything in my subjective-theory, is qualia (to me).

A: The second possibility \*seems\* to be the “real” situation, although the first possibility has more explanatory power (in my everyday life) than the second possibility.

A: If the second possibility is the “real” situation, then the “hard problem of consciousness” is not a valid problem, because my subjective-theory is not emerged from objective-theory.

(A: What is being described by my subjective-theory, is qualia (to me). Everything in my subjective-theory, is qualia (to me).)

Q: “It's all qualia.” (<https://twitter.com/S33light/status/1511672453013123081>)

(A: The second possibility \*seems\* to be the “real” situation, although the first possibility has more explanatory power (in my everyday life) than the second possibility.)

Q: “Seeming real, seeming to have explanatory power, seeming to make sense... all qualia about qualia.” (<https://twitter.com/S33light/status/1511672787705991172>)

A: Seeming real, seeming to have explanatory power, seeming to make sense... all subjective

A: Everything I am aware of, is fundamentally/ultimately subjective.

Q: “"I" is qualia. "Aware" is qualia. Subjective is qualia.” (<https://twitter.com/S33light/status/1511674512189927426>)

A: What are not qualia?

Q: “Things that would be other than qualia if they could exist: Matter (independent of all capacity to detect), force, fields, information, nothingness.” (<https://twitter.com/S33light/status/1511675107550371847>)

A: Yeah, subjective/qualia vs. objective.

A: subjective-theory vs. objective-theory

(A: Yeah, subjective/qualia vs. objective.)

Q: “Subjective and objective are both qualia. Information, matter, etc are only hypothetical and disappear when we assume conscious experiences that are nested and partially separated by degrees of insensitivity.” (<https://twitter.com/S33light/status/1511710008765001729>)

(A: subjective-theory vs. objective-theory)

Q: “No objective theory, only objectifying sense modalities qualifying and disqualifying qualia.” (<https://twitter.com/S33light/status/1511710179359965186>)

### (61)

A: “Damage to the occipito-temporal junction impairs first person versus third person perspectives (@evantthompson in Walking,Dreaming, Being).

@BugRib does this not settle once and for all that the perception of subjectivity/objectivity is a brain function?” (<https://twitter.com/LocoQf/status/1510307161632657419>)

Q: “The world affects one’s experiences & behavior. The brain is part of the world, so it’s no surprise that it also affects one’s experiences & behavior.

Of course, no one denies that the brain does much of the work of controlling our bodies, our behaviors, & also our choices” (<https://twitter.com/BugRib/status/1510573291102081027>)

Q: “That’s why I get mad at my brain a lot. 😡🧠” (<https://twitter.com/BugRib/status/1510573442134773765>)

(A: “Damage to the occipito-temporal junction impairs first person versus third person perspectives (@evantthompson in Walking,Dreaming, Being).

@BugRib does this not settle once and for all that the perception of subjectivity/objectivity is a brain function?” (<https://twitter.com/LocoQf/status/1510307161632657419)>)

Q: “What do you mean by "first person versus third person perspectives"?” (<https://twitter.com/NotAsGoodAsPete/status/1510312678358720524>)

A: “In his own words: <https://twitter.com/LocoQf/status/1510313485720338438/photo/1>” (<https://twitter.com/LocoQf/status/1510313485720338438>)

Q: “Ah, visualizing these perspectives. I couldn't quite understand, since people necessarily live from a 1st person perspective.

Cheers.” (<https://twitter.com/NotAsGoodAsPete/status/1510315028754444291>)

A: “I can’t even imagine what their confusion would seem like - but again every aspect of our subjective experience seems to depend on the workings of the brain no matter how anti-materialists we may be 🤷‍♂️” (<https://twitter.com/LocoQf/status/1510316576205115400>)

Q: “I might prefer, every aspect of our experience depends upon the workings of the person as a whole.” (<https://twitter.com/NotAsGoodAsPete/status/1510363177682448386>)

A: “Ok - mind / body identity. I think that is right. But it leaves no room for the 👻” (<https://twitter.com/LocoQf/status/1510368102172835842>)

### (62)

Q: “I just don’t understand how anyone can deny the existence of the only things we’re directly acquainted with—qualities. Why would you favor the existence of things that we can never directly know over our \*direct acquaintance\* with the qualities of experience?” (<https://twitter.com/BugRib/status/1510946449923616770>)

A: I can deny the existence of any other person's (experienced) qualities. That's straightforward.

### (63)

Q: “Here's a piece I wrote a couple of years ago, replying to the accusation that I'm a consciousness denier. It's not technical. <https://iai.tv/articles/the-demystification-of-consciousness-auid-1381>” (<https://twitter.com/keithfrankish/status/1511051187323297794>)

A: How do you tell whether a person is a philosophical zombie or not?

A: Your articles regarding philosophical zombies reflect/show that you view people as philosophical zombies. That's why people think you are a consciousness denier -- at least you deny the consciousness of others.

Q: “I think I'll stick to denying consciousness” (<https://twitter.com/keithfrankish/status/1511349392707624962>)

(A: How do you tell whether a person is a philosophical zombie or not?)

Q: “Integrated Information Theory provides an answer to that. You have to open up the zombie and see how the system is wired together. If it is highly integrated with lots of recurrent connections then it is high "phi" and is conscious. If phi is zero it's a zombie.” (<https://twitter.com/BobbyAzarian/status/1511101317376352259>)

A: “This only works if you already prescribe to IIT as the correct theory i.e. the unfolding problem.” (<https://twitter.com/GaneshNatesh/status/1511318119574241281>)

### (64)

Q: “"The moral order...is just as much part of the fundamental nature of the universe (and...of any possible universe in which there are moral agents at all) as is the spatial or numerical structure expressed in the axioms of geometry or arithmetic."

~W.D. Ross” (<https://twitter.com/2Philosophical_/status/1511058339744079877>)

A: How does Ross know that?

(Q: “"The moral order...is just as much part of the fundamental nature of the universe (and...of any possible universe in which there are moral agents at all) as is the spatial or numerical structure expressed in the axioms of geometry or arithmetic."

~W.D. Ross” (<https://twitter.com/2Philosophical_/status/1511058339744079877)>)

Q: “spot on” (<https://twitter.com/Philip_Goff/status/1511094743551422465>)

A: “Interesting. My morals look pretty different from my Tunisian eyed-lizard's. It seems to be woven into the tapestry of his being to violently consume smaller creatures. I strongly disagree. Is one of us wrong?” (<https://twitter.com/markgotproblems/status/1511231506710208512>)

Q: “I like lizards, but I don't think they're aware of moral facts.” (<https://twitter.com/Philip_Goff/status/1511267804380635139>)

A: “To make the Wittgensteinian move, what would the world look like if moral realism were false and your moral intuitions were just another evolved drive adaptive for living in human society, like hunger or lust?” (<https://twitter.com/Disagreeable_I/status/1511269455002750978>)

(Q: “spot on” (<https://twitter.com/Philip_Goff/status/1511094743551422465>))

A: “I doubt there is a moral order to the universe. I suspect that our moral sentiments are largely the products of evolution -- some mixture of nature and nurture and nothing more. Moral philosophy is a post hoc gloss on these intuitions.” (<https://twitter.com/robotsneedpoems/status/1511101043970654210>)

(Q: “spot on” (<https://twitter.com/Philip_Goff/status/1511094743551422465>))

A: Let’s do a thought experiment. Suppose there are two boats. Each boat has a bomb in it, but only one bomb will be triggered automatically at midnight. You can’t decide/choose which bomb will be triggered. You don’t know which bomb will be triggered. You are not in the boats. You can’t communicate with the boats.

There is one person in each boat. The person in the first boat is a stranger to you. The person in the second boat is the person whom you love the most in your life. Which bomb do you wish to be triggered?

If there is not one stranger, but two strangers in the first boat, then which bomb do you wish to be triggered?

Let’s keep increasing the number of strangers in the first boat – when will you change your mind?

Q: “Batman has the answer.” (<https://twitter.com/markgotproblems/status/1511319852862132230>)

A: It's different from the story in the movie.

Q: “So is the way this specific kind of thought experiment responds to the original post.” (<https://twitter.com/markgotproblems/status/1511432421576777735>)

### (65)

Q: “It's a huge debate, but my view is it would be immoral for an all-powerful being to create a universe like this. I call this the 'Cosmic Sin Intuition'. Anyone share this intuition?

A: An explanation can be like this: Your moral intuition is different from the creator's moral standard.

### (66)

Q: “I got another journal rejection today so I dyed my hair purple. Is this a healthy coping mechanism” (<https://twitter.com/alexxguss/status/1511086155374206982>)

A: “Oh, wait, how sure are you about that causal relationship right there?” (<https://twitter.com/krenarium/status/1511090161295269901>)

Q: “Metaphysically, it’s dubious at best” (<https://twitter.com/alexxguss/status/1511093629338763267>)

A: “my niece would argue it probably looks better, because purple simply makes everything better. in which case, it's totally healthy as a coping mechanism, in spite of all the hazardous material used to achieve it :)” (<https://twitter.com/krenarium/status/1511098318021140484>)

A: An alternate explanation can be: you finally got a good excuse for dying your hair purple :)

### (67)

Q: “Even if we had a completed neuroscience that could exhaustively describe the entire causal chain from information coming into the sense organs to, entering the brain, brain processes the information through electrochemical signals, & outputs behavior.

Where is the consciousness?” (<https://twitter.com/BugRib/status/1510991060742279170>)

A: There is no consciousness in the objective-theory. Consciousness is only in the subjective-theory. These two theories are two different descriptions (from two different perspectives) of the \*same\* situation.

From the first-person perspective, I have consciousness – only I have consciousness. The objective-state-evolution of my body is explained as the effect of my consciousness. Another person’s consciousness is only a feature/component of my own consciousness.

From the third-person perspective, no physical object has consciousness – my physical body/brain doesn’t have consciousness. Or in other words, the objective-state-evolution of each physical object can be \*completely\* explained as the effect of Schrodinger equation.

I (in the subjective-theory) can be mapped/matched to a physical body/brain (in the objective-theory). I (from the first-person perspective) can be mapped/matched to a physical body/brain (from the third-person perspective). (Ontologically,) which theory describes/is the “real” situation? (Epistemologically,) there is no way to tell. These two theories are evolving/progressing parallelly/simultaneously. In my everyday life, the objective-theory has more explanatory power than the subjective-theory.

### (68)

A: “I guess I'm an illusionist about objective moral properties.” (<https://twitter.com/markgotproblems/status/1511426494609903621>)

A: “I didn't see that coming.” (<https://twitter.com/markgotproblems/status/1511426623475789828>)

### (69)

Q: “I don't see the point of objective moral facts. There are some things (e.g. deliberately causing needless pain) that I regard as unconditionally bad, and I'd continue to regard them that way even it was an objective moral fact that they weren't” (<https://twitter.com/keithfrankish/status/1511333340980334600>)

A: In a sense, everything a human does, is only driven by dopamine (or something similar in function). That's why a person will do things she/he thinks to be "immoral".

### (70)

Q: “I think what bothers me about the idea of objective moral facts is that I don't see how objective facts could genuinely be moral ones. Ethical claims, it seems to me, express a reaction to the world, an active engagement with the facts, not just a passive appreciation of them” (<https://twitter.com/keithfrankish/status/1511394511947284487>)

A: “What bothers me about them is that, in order to get them to do any explanatory work that scales with the complexity of the world, you have to accept a view which carves them into something immeasurably more subtle than the kind of fact objectivists want.” (<https://twitter.com/markgotproblems/status/1511396727215079428>)

A: “Such that they might as well not \*be\* objective.” (<https://twitter.com/markgotproblems/status/1511396848136822792>)

(A: “I think what bothers me about the idea of objective moral facts is that I don't see how objective facts could genuinely be moral ones. Ethical claims, it seems to me, express a reaction to the world, an active engagement with the facts, not just a passive appreciation of them” (<https://twitter.com/keithfrankish/status/1511394511947284487>))

Q: “With all due respect to my good pal @keithfrankish, this is as strong an argument as me saying 'I don't see how moral facts could be subjective, because it seems to me that they're about what you objectively ought to do.'” (<https://twitter.com/Philip_Goff/status/1511621235964362753>)

A: What will happen if someone refuse to do what he objectively ought to do? Will he be punished by someone else objectively/automatically? If not, what does it mean by "objectively ought to do"?

A: “This is THE question.” (<https://twitter.com/BugRib/status/1511665484889878536>)

Q: “"They will suffer" seems like a plausible answer. A very general sense of suffer, not like punishment that is doled out. 🤷” (<https://twitter.com/murraygabriel/status/1511829298553843712>)

A: Whenever we discuss ethics, we are trying to find a plausible excuse to make our punishment reasonable.

Q: “Is that always true? Virtue ethics does not seem focused on punishments for infractions of rules.” (<https://twitter.com/murraygabriel/status/1511847285176475651>)

A: Punishment with virtue is a fair/reasonable punishment.

(A: “I think what bothers me about the idea of objective moral facts is that I don't see how objective facts could genuinely be moral ones. Ethical claims, it seems to me, express a reaction to the world, an active engagement with the facts, not just a passive appreciation of them” (<https://twitter.com/keithfrankish/status/1511394511947284487)>)

A: Ethical claims is a feature/component of the art of punishment. How do I punish someone without looking like an evil punisher myself? -- I should establish the "right" ethical claims to meet my needs (of punishment).

(Q: “With all due respect to my good pal @keithfrankish, this is as strong an argument as me saying 'I don't see how moral facts could be subjective, because it seems to me that they're about what you objectively ought to do.'” (<https://twitter.com/Philip_Goff/status/1511621235964362753)>)

A: You guys know there’s a whole science of moral behavior, right? You don’t have to have these arguments in the abstract. (<https://twitter.com/WiringTheBrain/status/1511688252893368330>)

Q: “We're not talking about moral behaviour, though. We're talking about whether there are objective moral facts, and I don't think that's a scientific issue.” (<https://twitter.com/Philip_Goff/status/1511735094393950216>)

A: “My view is that the science of moral behavior strongly supports the view that our sense of morality is an evolved faculty that supports pro-social behavior” (<https://twitter.com/WiringTheBrain/status/1511739686951264262>)

A: “As such, it suggests there is no need or reason to think of objective moral truths, when our sense of morality can be parsimoniously explained as an adaptive, pragmatic biological faculty” (<https://twitter.com/WiringTheBrain/status/1511740162774085645>)

Q: “Have you come across Sharon Street's 'debunking arguments'? She uses evolutionary considerations to argue against moral objectivism. I go with Nagel, who argues in the opposite direction: moral objectivism is true, so our moral sense isn't wholly product of natural selection.” (<https://twitter.com/Philip_Goff/status/1511740699460476935>)

A: “Thanks, I'll check that out. But isn't just taking moral objectivism to be true begging the question?” (<https://twitter.com/WiringTheBrain/status/1511754379300380692>)

Q: “Is mathematical objectivism question begging? The thesis that pursuing knowledge is worth doing in a way that counting blades of grass (for its own sake) is not seems to me self-evident in something like the way 2+2=4 is self-evident. That's at least one objective value truth.” (<https://twitter.com/Philip_Goff/status/1511812534793293828>)

A: “Can something be just “worth doing”? Surely it has to be worth it to someone or something, for something or relative to some purpose (I.e., very much not objectively)” (<https://twitter.com/WiringTheBrain/status/1511815510232551432>)

Q: “I don't share that intuition” (<https://twitter.com/Philip_Goff/status/1511816286619250696>)

Q: “Dedicating your life to counting blades of grass (for its own sake, let's suppose you get no pleasure out of it) is

objectively pointless” (<https://twitter.com/Philip_Goff/status/1511817096094748688>)

Q: “Suppose one's child wanted to dedicate her life to counting blades of grass (for it's own sake, she doesn't enjoy it). One wouldn't say "well if you've thought it through and that's what you've decided, fine". You'd say 'Wtf, that's a totally pointless way of spending your life'” (<https://twitter.com/Philip_Goff/status/1511818487395672070>)

A: “Something can only have a point for someone, relative to something. What you’re describing is subjective to human life (even if everyone might agree)” (<https://twitter.com/WiringTheBrain/status/1511819581106622468>)

Q: “Could you clarify 'subjective to life'? You mean it's just convention that counting blades of grass is pointless? My worry about my kid would't be that she's breaking etiquette or going against what everyone thinks (I'd be happy with that). It's that she's wasting her life!” (<https://twitter.com/Philip_Goff/status/1511825323092058125>)

A: Counting blades of grass is a good method of meditation. Or simply a good method to rest. Life is for you to waste. You are not a tool. Doing philosophy is a waste of time/life. Isn't it? If you define something to be "waste of time", then you define "waste" to be "immoral", then you will never lose the debate. However, in the real world, there is nothing a waste. Or everything is a waste. Your daughter can define your doing philosophy a waste of time. In the real world, whatever you do, you will learn something from it -- it's not a waste of time. Even if you don't enjoy doing that. In contrast, when you are doing something you enjoy to do, in a sense, it's a waste of time. If one enjoys drinking beers, it's immoral -- simply because alcohol is unhealthy. Counting grass is morally better than drinking beers, even if you have less pleasure counting grass. In real world, even if one wants to dedicate her life in something (counting grass; drinking beers), it might turn out that she can't do it for a long time. However, in our imagination, we can imagine one doing something for her whole life, and then we can mentally evaluate its "value". But actually, we don't know the real "value" -- we can't evaluate the real "value". We humans feel like that an ant's life is a waste of time -- which means that it's immoral for a human to live her life like an ant. Humans in the future might feel like that our current life (in 2022) is a waste of time -- which means that it's immoral for a human to live her life like a human in 2022.

A: “These points clarify the problem leering beneath what Goff thinks is a straightforward example—counting blades of grass. It irked me (idkw) but you deconstructed it quite well here.” (<https://twitter.com/euanthes/status/1511903452582002690>)

A: “The mistake seems to be corrected if instantiated as always ever Intensional in origination (dispositional). We see then many would-be Extensional exemplifications'd be vanities, if not for what is "bound up in" the disposition—its underlying [possible] axiology. Not its utility.” (<https://twitter.com/euanthes/status/1511904342525333504>)

A: “Funny how a professed determinist/Simulationist can deconstruct why Extensionals-only is deceptive when someone (Goff) begins alleging these (as examples) incite some "obvious" evaluative grip which leverages smthg more absolute than relative comparisons. These clearly do not.” (<https://twitter.com/euanthes/status/1511906121086291971>)

A: In a deterministic cosmos, we can celebrate both success and failure – only determinists know the real meaning of life 😉

A: “🤭 If the rule you followed brought you to this…” (<https://twitter.com/euanthes/status/1511945990659624961>)

(A: What will happen if someone refuse to do what he objectively ought to do? Will he be punished by someone else objectively/automatically? If not, what does it mean by "objectively ought to do"?)

Q: “Why would a punishment make something an objective duty?” (<https://twitter.com/TimHenke9/status/1512001607252258816>)

A: In my view, an objective duty is something one must do. If one doesn't do it, then at least a punishment should follow \*automatically\*. Otherwise, I can’t see why it is an \*objective\* duty. Why not simply call it a "moral duty" instead of an "objective moral duty"? What is the difference between a "subjective moral duty" and an "objective moral duty"?

Q: “To me, objective moral duties seem incoherent.

I don't understand what it means that one "must" do something, unconditionally.

Punishment doesn't change this, it only creates a must conditional on subjective desire: "You must do this, \*\*if you want to avoid punishment\*\*".” (<https://twitter.com/TimHenke9/status/1512017631636766724>)

A: I meant an \*automatic\* punishment. For example, let's suppose counting blades of grass is an objective moral duty for every human. Then, whenever you forget to do it, you will get an electric shock automatically. Only in this case, counting grass is an objective moral duty. I was trying to figure out what is an "objective moral duty".

A: "I don't understand what it means that one "must" do something, unconditionally." -- you must do it unconditionally, because Philip Goff proved that it is an objective moral duty. Philip Goff proved that "do not counting blades of grass" is an objective moral duty for every human.

(A: I meant an \*automatic\* punishment. For example, let's suppose counting blades of grass is an objective moral duty for every human. Then, whenever you forget to do it, you will get an electric shock automatically. Only in this case, counting grass is an objective moral duty. I was trying to figure out what is an "objective moral duty".)

Q: “I still don't understand why electric shocks would make it an objective duty.

I don't understand how it makes the sentence "you must count blades of grass" unconditionally true.

It only makes the conditional "you must count blades of grass if you don't want to be shocked" true.” (<https://twitter.com/TimHenke9/status/1512019973857857541>)

A: I don't believe there can be any "objective" duty either...

Q: “It appears we were talking past each other haha 😅” (<https://twitter.com/TimHenke9/status/1512021496889319424>)

A: Because we were following the objective duty -- try your best to be polite to every party (e.g., Dr Goff) in a discussion ;-)

### (71)

Q: “What if we take it as an axiom that all we can ever do is that which we believe will maximise our pleasure? Then we have scientifically objective ways to achieve said goal.” (<https://twitter.com/PhilipVukovic/status/1511630865830678535>)

A: How to measure pleasure (scientifically/objectively)? If a way to maximise \*our\* pleasure needs to reduce the pleasure of some people (who have political influence), is the way practical?

Q: “I agree with your concerns. If we can agree away to define our objectives, then we can use science to answer questions about how to meet those objectives. But defining and agreeing on the objectives is the crux of the problem.” (<https://twitter.com/Disagreeable_I/status/1511637834884698119>)

A: In real world, when we find a way to increase one person's pleasure, it will decrease another person's pleasure. So, the only way practicable, is to decrease the pleasure of the weak (to increase to pleasure of the strong). Only God can decrease the pleasure of the strong (to increase the pleasure of the weak) -- because God is the strongest.

### (72)

Q: “Aren't we all, in a very real sense, just counting blades of grass?” (<https://twitter.com/keithfrankish/status/1512107315322929161>)

A: “Xiaoyang Yu underwrote this rhetorical question. And actually nailed it w/ earnest depth.

“In the real world, whatever you do, you will learn something from it -- it's not a waste of time. Even if you don't enjoy doing that. In contrast, when you are doing something you enjoy to do, in a sense, it's a waste of time.” (<https://twitter.com/_xiaoyangyu/status/1511828030813278209>)

” (<https://twitter.com/euanthes/status/1512111553058910216>)

### (73)

A: Objective theory (objective reality, scientific image, cosmos) vs. Subjective theory (subjective reality, manifest image, consciousness) <https://psyarxiv.com/24pmu>

Q: “Conceiving of it in that way from the start is an unrecoverable error. What is doing the 'vs' and what is conflating the former with objective reality rather than a special case of the latter?” (<https://twitter.com/S33light/status/1512185133046054912>)

A: What do you mean by the term "former"? Does it mean the subject (who is doing the 'vs')?

Q: “Former from your tweet "Objective theory".” (<https://twitter.com/S33light/status/1512189662546300935>)

Q: “Whether there seems to be a subject or not, and what it seems to do depends on states of consciousness.” (<https://twitter.com/S33light/status/1512189827344707597>)

A: “Sometimes in dreams, you can see yourself but from outside your body.” (<https://twitter.com/just_tumbleweed/status/1512229469620252673>)

A: The same thing happens in out-of-body experience. "I am inside my body" -- this is a superstition. “Sometimes in dreams, you can see yourself but from outside your body.” – you are not inside your body (during such a time in your dream). In fact, at any time in your dream, you are not inside *your body (i.e., your body in the dream)*.

### (74)

A: “At the 1964 Study Week of the Pontificia Academia Scientiarum in Rome, neurophysiologist and Nobel Laureate Sir John Eccles captures the Hard Problem.

“ECCLES: I am prepared to say that as neurophysiologists we simply have no use for consciousness in our attempts to explain how the nervous system works; that is one side of our problem. But on the other side, as a person who is a neurophysiologist as I am, the ultimate reality for me is my conscious experience, which alone are the primary reality. I agree with Eugene Wigner, for example, that there are two levels of reality: there is the primary reality, which is the whole of our conscious experiences, including perceptions, memories, dreams, and there is the secondary or derivative reality of the world, which is a construct from our perceptions. I want to ask people who doubt the existence of consciousness in its own right: what about the world of colors and sounds and smells? Where does that belong except as conscious experiences? It does not exist otherwise.”” (<https://twitter.com/markgotproblems/status/1512455113918529538>)

A: “Teuber then briefly anticipates @Philip\_Goff's book

“(Developing the Themes of Preceding Papers / 251) TEUBER: Since I don’t really have an answer to Professor Eccles’ question, I want to be historical for a moment. In 1564, three years after this building was erected, Galileo was born; and I think Galileo’s greatest contribution to the creation of modern physics was to show to his contemporaries how to extrude pitches and colors and odors from the world. His conception of physics was based on the resolute reduction of the natural world view – the view given to conscious experience; he substituted for the richness of experienced quality of sensations an abstract world composed of matter and matter-in-motion. He cast out pitch and loudness – the subjective dimensions of tones – and introduced instead frequencies and amplitudes of vibrations in a medium. In this fashion, physics was made possible by excluding all of subjective experience except perhaps for feelings of force and resistance, and so the psychology of sensation became a residual problem once physics had become essentially compete.” (<https://twitter.com/markgotproblems/status/1512455656921522186>)

A: The abstract world composed of matter and matter-in-motion is a objective-theory (from third-person perspective). Physics was made possible by only including objective-theory (while excluding subjective-theory). Pitches and colors and odors are only in my subjective-theory (from first-person perspective).

(A: “Teuber then briefly anticipates @Philip\_Goff's book

“(Developing the Themes of Preceding Papers / 251) TEUBER: Since I don’t really have an answer to Professor Eccles’ question, I want to be historical for a moment. In 1564, three years after this building was erected, Galileo was born; and I think Galileo’s greatest contribution to the creation of modern physics was to show to his contemporaries how to extrude pitches and colors and odors from the world. His conception of physics was based on the resolute reduction of the natural world view – the view given to conscious experience; he substituted for the richness of experienced quality of sensations an abstract world composed of matter and matter-in-motion. He cast out pitch and loudness – the subjective dimensions of tones – and introduced instead frequencies and amplitudes of vibrations in a medium. In this fashion, physics was made possible by excluding all of subjective experience except perhaps for feelings of force and resistance, and so the psychology of sensation became a residual problem once physics had become essentially compete.” (<https://twitter.com/markgotproblems/status/1512455656921522186)>)

Q: “I'm definitely not the first person to say this. Many people have pointed out (correctly) that I should have mentioned Husserl.” (<https://twitter.com/Philip_Goff/status/1512462077222338561>)

A: “I think I was just mildly delighted to see that a bunch of hardcore neurophysiologists in 1964 seemed much more charitable towards the philosophical issues on consciousness we all find pressing today.

I definitely know some contemporary neurologists without that sensibility.” (<https://twitter.com/markgotproblems/status/1512464118409838597>)

A: In my view, hard problem has nothing to do with neurologists. Hard problem has something to do with physicists. “the ultimate reality for me is my conscious experiences" -- this view is based on a precondition that my conscious experiences are something generated by my brain (which means my conscious experiences can't be the actual ultimate reality). If we can't unlearn this precondition, we won't understand the view of an idealist. An idealist doesn't have this precondition in mind. Whenever you are using this precondition in mind, you are thinking in a physicalist/materialist way, even if you don't label yourself a physicalist/materialist. Logically speaking, it’s possible that idealists are right, and physicalists/materialists are wrong.

A: “the ultimate reality for me is my conscious experiences" -- it means that "the objective-theory is actually my subjective-theory, and my subjective-theory is the ultimate reality for me". If this is true, then where/what is the objective-theory?

A: Although it seems like that my subjective-theory is ultimate (comparing to objective-theory) in a sense, once there is a objective-theory somehow (e.g., being derived from my subjective-theory), it's logically possible that the objective-theory describes the ultimate truth. Even if the objective-theory can’t explain something in my subjective-theory (e.g., pitches, colors, odors), this issue doesn’t prevent the objective-theory from being the ultimate truth.

A: An idealist doesn’t think his subjective-theory as the product of his brain. To him, his brain is inside his objective-theory, while his objective-theory is only part of his subjective-theory.

(A: “the ultimate reality for me is my conscious experiences" -- it means that "the objective-theory is actually my subjective-theory, and my subjective-theory is the ultimate reality for me". If this is true, then where/what is the objective-theory?)

Q: “This isn't how I read Eccles' comments at all. I'm not sure he's setting down theories so much as expressing his pre-theoretical intuitions about what data he knows are real and that neurophysiology leaves out the one that seems most evident to him.” (<https://twitter.com/markgotproblems/status/1512653111978086406>)

A: I see. I noticed that you used the term "data" here. In my view, "data" in subjective-theory is not \*real\* data (i.e., data under the context of objective-theory). For example, pitches, colors and odors are not \*real\* data.

Q: “Ok, but that's why "pre-theoretical" is important. Eccles is expressing how the world \*seems\* to him and fully acknowledging it's a bit puzzling and he isn't really sure how to cash out the metaphysics.” (<https://twitter.com/markgotproblems/status/1512655753731092480>)

A: Yes, people just talked about their immediate intuitions.

A: Usually people are shocked/puzzled by the fundamental confliction between objective-theory and subjective-theory, because people can’t make objective-theory and subjective-theory coherent with each other.

A: Galileo was so clever that he only chose objective-theory. And that’s why he couldn’t explain subjective-theory.

Q: “I wasn't really evaluating any of the views by sharing the extracts. It was just in the spirit of: oh here's some brief hints at views we've become familiar with, articulated at times and places I wouldn't have expected.” (<https://twitter.com/markgotproblems/status/1512741790431993861>)

Q: “There's something reassuring in finding out that others have followed the arguments to places you're currently exploring.” (<https://twitter.com/markgotproblems/status/1512742475970064385>)

(Q: “I wasn't really evaluating any of the views by sharing the extracts. It was just in the spirit of: oh here's some brief hints at views we've become familiar with, articulated at times and places I wouldn't have expected.” (<https://twitter.com/markgotproblems/status/1512741790431993861)>)

A: Different people articulated the hard problem differently. Comparing their expressions (to categorize them), perhaps will lead to some finding.

Q: “Perhaps. I'm optimistic that there's just some value in plotting nodes on timelines marking progress in the history of ideas.” (<https://twitter.com/markgotproblems/status/1512744753967902720>)

A: If that is the case, then it means that there hasn't been any progress regarding hard problem.

A: No matter how many books published on the topic of consciousness.

(A: If that is the case, then it means that there hasn't been any progress regarding hard problem.)

Q: “I can't see how. Eccles' proposed solution to the HP was to follow Cottingham and Popper down what's now taken to be a philosophical dead end ('trialism').

There's been lots of progress in laying out more plausible theoretical options for solutions since.” (<https://twitter.com/markgotproblems/status/1512746127770234882>)

A: An issue is that, I don't think anyone has defined hard problem clearly enough (so that no educated human can disagree). There is no best definition yet.

Q: “I disagree. I think the hard problem had been articulated more than well enough that most people can be guided into feeling (at least) its intuitive force.” (<https://twitter.com/markgotproblems/status/1512747574847021063>)

A: I recall that Dr Goff failed to persuade someone (about HP) in a video.

Q: “I don't think Joe Rogan's failure to recognise the hard problem is one of articulation. He simply didn't follow.

That says nothing about whether he \*couldn't\*.” (<https://twitter.com/markgotproblems/status/1512748563037659136>)

A: OK. Let me play Rogan. Tell me, what is the hard problem?

Q: “The problem of why it seems like something to be doing anything, given that the universe could tick along just fine without the seeming.” (<https://twitter.com/markgotproblems/status/1512749299444105218>)

A: "Why it seems like something to be doing anything" -- what does it mean? Can you give an example for "something" and "anything" in your statement?

Q: “Yes. It smelled like coffee when I made and smelled a coffee this morning.” (<https://twitter.com/markgotproblems/status/1512750799750840323>)

A: “The problem of why it smelled like coffee when I smelled a coffee this morning, given that the universe could tick along just fine without that \*smell\*.” – is that what you mean?

Q: “\*Without the quality of the smell.

I don't deny there are functional interpretations of smelling in which beneficial quantitative "coffee smell" information is being represented in a neural network. (I.e., the world that can tick along without the quality)” (<https://twitter.com/markgotproblems/status/1512752212707004421>)

A: “The problem of why it smelled like coffee when I smelled a coffee this morning, given that the universe could tick along just fine without the \*quality\* of the smell.” – what is the \*quality\* of the smell? Does the term “quality” means “feeling”?

Q: “Yes, it means 'the particular way it felt to me to smell the coffee'.” (<https://twitter.com/markgotproblems/status/1512753721280765960>)

A: “The problem of why I can feel the smell of the coffee, given that the universe could tick along just fine without I have the feeling of the smell of the coffee.” – so you want to know why you have the (particular way of) feeling of the smell of the coffee?

Q: “The hard problem presses the intuition that it's not at all clear why those feelings and qualities exist at all in anyone, particularly given that they elude functional description, let alone explanation.” (<https://twitter.com/markgotproblems/status/1512755512454045701>)

Q: “Now, you can respond to it by being a realist or anti-realist about those qualities.

But what seems like a counterproductive explanatory program is denying there's anything to respond to at all.” (<https://twitter.com/markgotproblems/status/1512755962607714304>)

A: “The problem of why I have the feeling of the smell of the coffee.” – that is the hard problem. Right?

A: If I don't have the feeling of the smell of the coffee, then there is no (hard) problem.

(A: “The problem of why I have the feeling of the smell of the coffee.” – that is the hard problem. Right?)

Q: “That's the beetle in the box at stake.” (<https://twitter.com/markgotproblems/status/1512757042880073733>)

(A: If I don't have the feeling of the smell of the coffee, then there is no (hard) problem.)

Q: “If nothing seemed like anything, there'd be no datum to respect.” (<https://twitter.com/markgotproblems/status/1512757302792790021>)

A: “If I don't have the feeling of the smell of the coffee, the universe could tick along just fine. The problem is why I have the feeling.” – is that correct?

Q: “The problem is explaining why that particular feeling goes along with that activity.” (<https://twitter.com/markgotproblems/status/1512758595947048960>)

A: If the (hard) problem is explaining why that particular feeling goes along with that activity, then “why I have the feeling” is another problem. Is “why I have the feeling” another problem for you?

(A: “If I don't have the feeling of the smell of the coffee, the universe could tick along just fine. The problem is why I have the feeling.” – is that correct?)

Q: “Why is that feeling there at all?” (<https://twitter.com/markgotproblems/status/1512758776792764417>)

A: “If I don't have the feeling of the smell of the coffee, the universe could tick along just fine. The problem is why is that feeling there at all.” – this is the hard problem. Right?

(A: If the (hard) problem is explaining why that particular feeling goes along with that activity, then “why I have the feeling” is another problem. Is “why I have the feeling” another problem for you?)

Q: “I think they're articulations of the same problem.” (<https://twitter.com/markgotproblems/status/1512759808570580996>)

A: OK. So, it is very clear now. You are asking for why you have (any) feeling. That’s the hard problem of consciousness.

(A: “If I don't have the feeling of the smell of the coffee, the universe could tick along just fine. The problem is why is that feeling there at all.” – this is the hard problem. Right?)

Q: “Something like that, yes.” (<https://twitter.com/markgotproblems/status/1512760470826065926>)

(A: OK. So, it is very clear now. You are asking for why you have (any) feeling. That’s the hard problem of consciousness.)

Q: “I think it started fairly clear, and then became less clear with the repetitious requests to restate obvious things, and then found its way back to clarity.” (<https://twitter.com/markgotproblems/status/1512760772451053572>)

A: OK. Now we have the best definition for hard problem.

Q: “We've definitely said nothing novel about the hard problem here.” (<https://twitter.com/markgotproblems/status/1512761475986857988>)

A: “Why I have (any) feeling?” It seems like a general question every human can ask. However, in my view, it depends on who is asking this question. If another person is asking this question, it doesn’t mean anything to me, because it’s logically possible that this person doesn’t have any feeling. So, this question becomes meaningful only when I am asking it for myself.

Q: “That’s all fine.” (<https://twitter.com/markgotproblems/status/1512762835151081478>)

A: If this question is only for me, I don’t think it to be a big issue. I’d rather counting blades of grass.

A: It doesn’t seem to be a problem for me if I have (any) feeling. It will become a problem for me only if I don’t have any feeling.

(A: If this question is only for me, I don’t think it to be a big issue. I’d rather counting blades of grass.)

Q: “Solipsism doesn't solve the hard problem.

Even if the world consisted in only one ontological thing (my mind), I still want an explanation of that world.” (<https://twitter.com/markgotproblems/status/1512764651142066184>)

A: In that case, that’s a problem for you, not for me.

Q: “Problems exist whether you care about attending to them or not.” (<https://twitter.com/markgotproblems/status/1512766427069038595>)

A: “if the world consisted in only one ontological thing (my mind), I still want an explanation of that world.” -- I can explain it for you (in this case).

A: “if the world consisted in only one ontological thing (my mind), I still want an explanation of that world.” – do you mean you want someone to explain why that world exists?

If you are a physicalist/materialist, and if you want someone to solve/answer the hard problem of consciousness, then I think I should remind you that there is a more fundamental problem for people to solve/answer – why the cosmos exists?

(Q: “Solipsism doesn't solve the hard problem.

Even if the world consisted in only one ontological thing (my mind), I still want an explanation of that world.” (<https://twitter.com/markgotproblems/status/1512764651142066184)>)

Q: “Idealism doesn't solve the hard problem.

Even if reality consisted in only one ontological thing (e.g. God, Will, Transpersonal Mind, Experience, subjective, etc.), I still want an explanation of that.” (<https://twitter.com/LocoQf/status/1512767690045370374>)

A: What is your question?

Q: “What is God?” (<https://twitter.com/LocoQf/status/1512769004368244736>)

A: Everything.

(A: It doesn’t seem to be a problem for me if I have (any) feeling. It will become a problem for me only if I don’t have any feeling.)

A: Anyone who feel a little bit disappointed when seeing a negative rapid test result for covid-19? We don't like failure, even if it's a good failure. We would rather to have no consciousness, in order to avoid answering the hard problem ;-)

(A: OK. Let me play Rogan. Tell me, what is the hard problem?)

Q: “how a single object in the universe is supposed to have access to so many qualitative feels, such that it seems like those feels must be the universe itself because they're so diverse

if you visit another planet and discover new tastes and smells, those tastes and smells were waiting hidden somewhere?, waiting to appear in your brain ?

you didn't discover a qualitative aspect of outside universe, but you discovered a stimulus of outside universe that suddenly made new things appear in your brain? where did they come from?” (<https://twitter.com/hxt55/status/1512835693092999173>)

### (75)

Q: Nature research paper: A complete temporal transcription factor series in the fly visual system [145]

A: “Hard to look at this kind of regulated sequence of developmental steps and not think that 'program' is an apt word to describe it...” (<https://twitter.com/WiringTheBrain/status/1513079577731649538>)

Q: “Sequential structure can emerge in development because similar things tend to happen in a similar places. Program—to me—suggests that something exists prior to development the specifies all these contingencies beforehand.” (<https://twitter.com/kohn_gregory/status/1513124997824397319>)

A: “Well, those similar things don't JUST tend to happen in similar places. The way they happen is \*somehow\* specified by info in the genome (given an appropriate environment)” (<https://twitter.com/WiringTheBrain/status/1513195487326789632>)

A: Info in the genome controls the development, in the same sense that the info in an egg controls the development of the chicken. In the real world, the development of a chicken is also "controlled" by innumerable factors (e.g., nutrition) which can be unforecastable, that's why the info in the genome cannot fully decide the development of a real-world chicken. And that’s why people might disagree that the info in the genome is the “program” of the development of a real-world chicken. The info in the genome doesn’t work in exactly the same way as a computer program.

A: Each chicken cell is a tiny factory which can duplicate itself. The duplication process of the factory is controlled by the info in the genome. A duplication process might lead to a clone which is different from the original factory. Otherwise, we won't get a chicken.

### (76)

Q: “'Physical science has explained loads of observable behaviour, so probably it'll explain unobservable consciousness' is a bit like saying 'Telescopes are really useful in astronomy, so probably they'll work well in pure math.'” (<https://twitter.com/_JamieWhyte/status/1513820177242243074>)

A: “Two questions. Doesn't physical science explain many things that cannot be observed by humans? What do you mean when you say consciousness is unobservable? I can observe the difference between conscious people and unconscious people. Can't I?” (<https://twitter.com/_JamieWhyte/status/1513820177242243074>)

Q: “1. Physical science postulates unobservables to explain what we can observe. In the unique case of consciousness, what we're trying to explain is unobservable. 1/2" (<https://twitter.com/Philip_Goff/status/1513827764289388546>)

Q: “2. We're of course hard-wired to attribute consciousness to other humans on basis of their behaviour, but you can't access the character of their feelings in this way. Thus there is an explandum that is only privately accessible. 2/2” (<https://twitter.com/Philip_Goff/status/1513827900440649734>)

(Q: “1. Physical science postulates unobservables to explain what we can observe. In the unique case of consciousness, what we're trying to explain is unobservable. 1/2" (<https://twitter.com/Philip_Goff/status/1513827764289388546)>)

A: When I am trying to explain your consciousness, what I am trying to explain is unobservable (from my viewpoint). However, when I am trying to explain my own consciousness, what I am trying to explain is observable (from my own viewpoint). When I am trying to explain my own consciousness, if what I am trying to explain is unobservable (from my own viewpoint), then why I need to explain it? My consciousness is observable (from my own viewpoint). Your consciousness is unobservable (from my viewpoint). "Consciousness is unobservable" only applies to others' consciousness. However, if we're hard-wired to attribute consciousness to other humans on basis of their behaviour, then it’s logically possible that other humans don’t have consciousness. If other humans don’t have consciousness, and if I can explain their consciousness (based on the precondition/postulation that they have consciousness), then it doesn’t prove that other humans have consciousness. In contrast, it proves that my explanation is simply nonsense.

Q: “Wouldn't your self-experience of yourself(consciousness) imply to you that another X has (their own) self-experience? and so X has their own consciousness?” (<https://twitter.com/just_tumbleweed/status/1514043386633859078>)

A: To me, there are two possibilities: 1. They have consciousness. 2. They don't have consciousness.

A: Because I can observe my consciousness, but I can't observe another human's consciousness. My consciousness is observable. Another human's consciousness is unobservable (from my viewpoint).

Q: “You can infer that they have a consciousness - from their actions which are similar to yours? Because they are able to make themselves intelligible to you?” (<https://twitter.com/just_tumbleweed/status/1514045093912657926>)

A: There is no way to distinguish a human from a philosophical zombie based on their actions/behaviors/abilities.

(Q: “'Physical science has explained loads of observable behaviour, so probably it'll explain unobservable consciousness' is a bit like saying 'Telescopes are really useful in astronomy, so probably they'll work well in pure math.'” (<https://twitter.com/_JamieWhyte/status/1513820177242243074)>)

Q: “I have no doubt that science will one day explain consciousness, but we need to move to a more expansive conception of science than the purely quantitative, 3rd-person science bequeathed to us by Galileo, an approach which was explicitly designed to exclude consciousness.” (<https://twitter.com/Philip_Goff/status/1514174840516845568>)

A: You see your own consciousness from your first-person perspective; you see the cosmos from your third-person perspective. Science studies cosmos, that's why science is from third-person perspective.

A: The cosmos is purely quantitative, that's why science is purely quantitative. Your consciousness is just your ideas/models/theories (about the cosmos). Your consciousness is your tool to study the cosmos. There is nothing to study about consciousness itself. Science won't be able to explain consciousness. It’s impossible to study consciousness from third-person perspective, because consciousness is only from first-person perspective.

Q: “Hence the appeal to expand science to include other methodologies?” (<https://twitter.com/markgotproblems/status/1514212489269063683>)

A: My methodology seems to be enough ;-)

(Q: “Hence the appeal to expand science to include other methodologies?” (<https://twitter.com/markgotproblems/status/1514212489269063683)>)

Q: “I never understand why people read Philip as pessimistic about the purview of science. It's actually a pretty optimistic proposal. He's saying: we've got this radical problem which evades the explanatory scope of the current method. Let's make the method better.” (<https://twitter.com/markgotproblems/status/1514214055241789448>)

A: My feeling is that, people think Philip doesn't understand science correctly (as they understand it).

A: My feeling is that, people don't think we should ask science to expand itself. People think, if Philip ask for science to expand itself, it means that Philip doesn't understand science (like they understand it).

A: It's a little bit like that Philip is asking science to explain God.

A: People don't expect science to explain consciousness or God.

(Q: “I never understand why people read Philip as pessimistic about the purview of science. It's actually a pretty optimistic proposal. He's saying: we've got this radical problem which evades the explanatory scope of the current method. Let's make the method better.” (<https://twitter.com/markgotproblems/status/1514214055241789448)>)

A: “Yes ok. But as Dennett would say, and then what? What is the correct science approach to explore the qualitative?” (<https://twitter.com/LocoQf/status/1514215611240435714>)

A: Yes, people will ask: “Yes. Science needs to expand, in order to explain God or consciousness. But how?”

(A: “Yes ok. But as Dennett would say, and then what? What is the correct science approach to explore the qualitative?” (<https://twitter.com/LocoQf/status/1514215611240435714)>)

Q: “There are a bunch of possible approaches. I think Philip's proposal is something like bringing really hardcore metaphysics in to weigh up which philosophical theses the quantitative data most elegantly populate.” (<https://twitter.com/markgotproblems/status/1514217757058940930>)

(A: My feeling is that, people think Philip doesn't understand science correctly (as they understand it).)

Q: “Whenever Philip draws on the sciences I'm qualified in, I never get the impression he doesn't know enough to build his cases.

It's getting difficult to keep track of these responses. It seems like there's a lot of confused threads sprouting.” (<https://twitter.com/markgotproblems/status/1514218323956965377>)

A: Challenging science is risky. Almost like challenging God.

A: Science is my God. Don't challenge it. Otherwise, I will challenge you ;-)

(A: Challenging science is risky. Almost like challenging God.)

Q: “No it's not. Challenging scientific ideas is built right into its mechanisms for progress. (Peer review, hypothesis testing etc).” (<https://twitter.com/markgotproblems/status/1514222783340941313>)

A: Galileo's ideas were perfect ;-)

A: I can't imagine how human can expand that.

A: Galileo's ideas were basically reductionism. Reductionism is a belief.

Q: “You're jumping around all over the place and it's not clear what view you're arguing for at all.” (<https://twitter.com/markgotproblems/status/1514225559802417153>)

A: My view is, a philosopher should tell people how to expand science. Otherwise, people won't believe that it's feasible. We used science for hundreds of years.

A: My feeling is that, when a philosopher tries to ask science to expand itself, people will ask "why you don't solve it by your philosophy?"

A: Isn't consciousness a philosophical topic?

A: In my view, asking science to explain consciousness, shouldn't be the position of a philosopher (who studies philosophy of consciousness).

A: Whom can a philosopher ask (for that)? Anil Seth?

A: Scientists ask philosophers... Philosophers ask scientists...

(A: My feeling is that, when a philosopher tries to ask science to expand itself, people will ask "why you don't solve it by your philosophy?")

Q: “I think you might be looking at the problem the wrong way about. The starting points Philip considers are:

1) Consciousness is systematically elusive to the current tools of science.

Option A: Eliminate consciousness to preserve the tools.

Option B: Add some tools.” (<https://twitter.com/markgotproblems/status/1514230476692668418>)

Q: “Philip argues at length for Option B and ways to go about doing it.

I'm not sure I grasp what you're missing.” (<https://twitter.com/markgotproblems/status/1514230845242019841>)

A: I like Option A. I think Option A is more promising than Option B.

A: I think Philip always prefer unpopular options... ;-)

A: ... which shows his confidence

(A: I like Option A. I think Option A is more promising than Option B.)

Q: “That's fine. But you need to account for why you were even considering the datum of (1) in order to plausibly motivate its elimination.” (<https://twitter.com/markgotproblems/status/1514233467135012864>)

(A: I think Philip always prefer unpopular options... ;-) )

Q: “You can't get away with:

Everyone: We just saw magic in a box.

Science: I've shown magic isn't real.

Everyone: Why did it look like there was magic in the box?

Science: What box?” (<https://twitter.com/markgotproblems/status/1514233883058917383>)

A: I like this. It's fine (to me).

(A: You see your own consciousness from your first-person perspective; you see the cosmos from your third-person perspective. Science studies cosmos, that's why science is from third-person perspective.)

Q: “What do you mean by "your third-person perspective"? (<https://twitter.com/DominiqueGast0n/status/1514273943292719108>)

A: When you are looking at the world (in front of you), what you are seeing/watching/perceiving, actually is an image on your retina – this is your first-person perspective. If the image on your retina is a photo being captured/shot by a camera, then this photo is taken from the viewpoint/position of your eye. You can have a visual imagery which is different from the image on your retina. When you see/perceive the world from your third-person perspective, actually you are perceiving this visual imagery. If this visual imagery is a photo being captured by a camera, then this photo is not taken from the viewpoint/position of your eye. For example, this photo might be taken from a viewpoint/position which is high above your head – this photo is not the original photo on your retina. You can see the world from either third-person perspective or first-person perspective. The world you see remains identical under these two perspectives. When you see the world from first-person perspective, you are seeing the world as it is – you are seeing/perceiving an image on your retina. However, when you see the world from third-person perspective, actually you are perceiving a visual imagery – you are not perceiving an image on your retina. Actually, when you see the world from first-person perspective, you are seeing/perceiving your own consciousness. When you see the world from third-person perspective, you are perceiving the cosmos.

Q: “Do you think that you are not perceiving your own consciousness when you see something that represents the world from a third person perspective, as you’ve just described??” (<https://twitter.com/DominiqueGast0n/status/1514383252726898693>)

A: I am perceiving my own mental-model/visual-imagery (of the cosmos) in my consciousness. I can only perceive my own consciousness.

A: When people are intentionally trying to explain "consciousness", they behave as if "consciousness" is something which can be separated/isolated/highlighted from something else (which is “not” consciousness) – actually they forget the fact that everything (they are aware of) is inside their consciousness. They ask the question “Why consciousness exists?” Consciousness is everything – how can we explain why everything exists? Consciousness is the world – how can we explain why the world exists? When they ask the question “Why consciousness exists?”, actually they are imagining the existence of something which is independent of their consciousness, or in other words, actually they are imagining the existence of the cosmos (and the cosmos is postulated/imagined to be something independent). In fact, they shouldn’t ask the question “Why consciousness exists?”. Instead, they should ask the question “Why cosmos (i.e., something which is postulated/imagined to be independent of my consciousness) exists?” – this is the hard problem of cosmos.

(Q: “'Physical science has explained loads of observable behaviour, so probably it'll explain unobservable consciousness' is a bit like saying 'Telescopes are really useful in astronomy, so probably they'll work well in pure math.'” (<https://twitter.com/_JamieWhyte/status/1513820177242243074)>)

A: “I agree with the general point (though it's not a great analogy—a telescope is a tool, whereas science is a method of inquiry). But I think we still can, and must, pursue an understanding of consciousness through science. Tweeting a great quote from @donalddhoffman to support...” (<https://twitter.com/annakaharris/status/1513916042849914885>)

Q: “I think physical science is crucial for working out \*which\* kinds of physical activity correlate with consciousness. But physical science cannot explain \*why\* those kinds of physical activity are correlated with conscious experience. Would you agree with that @annakaharris?” (<https://twitter.com/Philip_Goff/status/1513919188582256642>)

### (77)

Q: “#Atheism is the only religion with a really boring mythology.” (<https://twitter.com/giulioprisco/status/1514139325696516097>)

A: It includes lots of different schools, e.g., idealism, panpsychism, physicalism.

Q: “All these schools can be interpreted as religion if you think (as I do) that all the promises and comforts of religion are realized in a physical reality that is much vaster than we think.” (<https://twitter.com/giulioprisco/status/1514152225731497987>)

A: Yes, I have my own school -- atheism + fatalism

### (78)

Q: “One odd complaint about physicalism is that "life must look really bleak if everything is just physical".

No, life looks exactly as it looks - with all its value, meaning and complexity.

If a physicalist theory explains these things it's plausible.

If not, it's false.” (<https://twitter.com/markgotproblems/status/1514348392167755789>)

A: “why should physicalism have to explain or account for those things? honest question...” (<https://twitter.com/BayouPhilosophy/status/1514348734104150017>)

Q: “Not necessarily positively account for each. But at least consistently accommodate them (even if that means demonstrating they aren't what they seem to be).” (<https://twitter.com/markgotproblems/status/1514352577642696707>)

A: “they are just ways of talking and thinking. does that count as "accommodation"?” (<https://twitter.com/BayouPhilosophy/status/1514353158922850317>)

Q: “Sure!” (<https://twitter.com/markgotproblems/status/1514353321301131275>)

(Q: “One odd complaint about physicalism is that "life must look really bleak if everything is just physical".

No, life looks exactly as it looks - with all its value, meaning and complexity.

If a physicalist theory explains these things it's plausible.

If not, it's false.” (<https://twitter.com/markgotproblems/status/1514348392167755789)>)

A: "life must look really bleak if everything is just physical" -- that's true! Life looks really bleak if everything is just physical. In fact, everything is just physical; life looks really bleak. I'm sorry for that.

A: In a physicalist theory, life should have no value. Otherwise, this physicalist theory is false.

A: If you want to feel good, go find a religion.

A: Actually, you might feel good, after you realize that life has no value. Because you don't need to push yourself to pursue those nonexistent values anymore.

A: If you don't like fatalism, you must have a reason. What's that?

Q: “I'm not sure the view you've just sketched is what anyone thinks fatalism is.” (<https://twitter.com/markgotproblems/status/1514460532341981185>)

A: What you think fatalism is? (the difference)

Q: “You're talking specifically about nihilistic fatalism.” (<https://twitter.com/markgotproblems/status/1514466642394324993>)

A: My views are fundamentally nihilistic.

Q: “If the view is true I think it's more accurate to say "your nihilistic views are fundamentally fatalistic".” (<https://twitter.com/markgotproblems/status/1514470543621246986>)

### (79)

Q: “Our sense of 'mind' seems strongly rooted in our heads. But this seems more a consequence of how we experience ourselves visually, with our minds lurking 'behind' our eyes. Do congenitally blind individuals experience this same sense of mind location?” (<https://twitter.com/nataliepeluso/status/1514725428526985222>)

A: “Also our ears and nose. Everything but haptic experience seems 'in my head', at least. I wonder if those sensory deprivation tanks have any effect on this?” (<https://twitter.com/BelemAlan/status/1514732191581888513>)

Q: “Yes, exactly. Haptic experience, interoceptive experience, too - worth some digging on sensory deprivation for sure...” (<https://twitter.com/nataliepeluso/status/1514749208137711617>)

(Q: “Our sense of 'mind' seems strongly rooted in our heads. But this seems more a consequence of how we experience ourselves visually, with our minds lurking 'behind' our eyes. Do congenitally blind individuals experience this same sense of mind location?” (<https://twitter.com/nataliepeluso/status/1514725428526985222)>)

A: According to some studies, I am located a little bit behind my head – not located \*inside\* my head.

Q: “You mean you experience your concept of 'mind' as being spatially behind your head?” (<https://twitter.com/nataliepeluso/status/1514773452812857344>)

A: According to the studies, we are all experiencing that. Sorry I can’t find these papers right now.

A: The spatial location is behind the head. However, it doesn't mean that we can see our head from behind. It means that our head is being perceived to be deeper than its original depth.

Q: “Does this perception of exaggerated depth originate from a similarly exaggerated sense of "self" behind the eyes? Again, I'd be curious to explore if visual deprivation modifies such a phenomenon...” (<https://twitter.com/nataliepeluso/status/1514777223274053632>)

A: Yes.

Q: “I'm curious tho whether the spatial location of our eyes influences how we experience the location of what we believe is 'mind'. If our eyes were in our knees, but our brains were in our head, would we imagine our mind to be in our knees?” (<https://twitter.com/nataliepeluso/status/1514776127960920068>)

A: Of course. Obviously, our mind is not in our knees, and our mind is not in our head. Our mind is not in the space (being imagined by our mind/brain). The space which contains our head/heart/knees/eyes is imagined by our mind/brain -- our mind is not located in this space.

Q: “Of course, which is my point 😉 But we seem biased towards thinking of a mind residing in our head by virtue of the location of our senses... please share any papers you find when you can on 'head depth'!” (<https://twitter.com/nataliepeluso/status/1514778407971991556>)

A: Sure. Our senses are creating a virtual reality, and a mind is being located at the "center" of this virtual reality. However, this virtual reality is totally fake, so it doesn't really matter where the mind is being located inside the (fake) context of this virtual reality.

A: In an out-of-body experience, the mind is located outside of the body. This is heavily studied.

A: In an out-of-body experience, it feels as if that I can look at myself from a location/viewpoint in front of myself. This out-of-body experience is a maximized third-person perspective. Or in other words, your third-person perspective is a minimized out-of-body experience.

(A: Sure. Our senses are creating a virtual reality, and a mind is being located at the "center" of this virtual reality. However, this virtual reality is totally fake, so it doesn't really matter where the mind is being located inside the (fake) context of this virtual reality.)

A: Based on this fake virtual reality (which is being generated from my senses), I can imagine/postulate the existence of an objective reality (which is imagined/postulated to exist independently), and then I can try to locate myself under the context of this imagined/postulated objective reality.

Q: “This is one of the best part of Julian Jayne's book. He asks how parts of the body became 'metaphorical containers' for abstract attributes and processes. Even if you don't like his answer, it's such a great question.” (<https://twitter.com/DrYohanJohn/status/1514803467008704512>)

A: The next question is, how my body (as a whole) became 'metaphorical container' for my mind?

A: My body (as a whole) became 'metaphorical container' for my mind -- that's why we call mind "inner world". In fact, mind is not inner -- my mind is not inside my body.

Q: “Why is the mind constrained to the body's constraints then? Why can't we, for example, see through walls? :)” (<https://twitter.com/DrYohanJohn/status/1514807537673015299>)

A: We can't see through walls. From this knowledge, we get a conclusion that mind is constrained to the body's constraints. However, my mind is constrained to my body's constraints, doesn't mean my mind is something inside my body. When I think mind to be something inside my body, actually I'm treating mind as an organ. Mind is not an organ. If mind is an organ, then it must be located inside my body. However, mind is not an organ. So, where is mind?

A: Other people can’t see my mind – they can only see my body. They even can’t know whether I actually have a mind or not. They use theory of mind to forecast my future behavior based on my past behaviors. To other people, I don’t have a mind – I am equivalent to a philosophical zombie. When they use theory of mind, they feel like that they can see through my face to see my mind. However, what they see is not my mind, but their own visual-imagery/mental-model/postulation/assumption/theory.

(Q: “This is one of the best part of Julian Jayne's book. He asks how parts of the body became 'metaphorical containers' for abstract attributes and processes. Even if you don't like his answer, it's such a great question.” (<https://twitter.com/DrYohanJohn/status/1514803467008704512)>)

A: “I've had Jayne's book on my books to read for a while, may bump it closer to the front of the queue. And I think word associations with body sensations are really special - but Cartesianism made feelings below the neck untrustworthy and unreasonable. Egyptians didn't suffer this?” (<https://twitter.com/nataliepeluso/status/1514845157438664708>)

Q: “Well... why did they throw away the brain and keep the heart? :)” (<https://twitter.com/DrYohanJohn/status/1515019675230482442>)

A: “Brain was for cooling the body! Refrigeration...” (<https://twitter.com/PessoaBrain/status/1515024189362692096>)

Q: “The eyes are the heart's periscope. :)” (<https://twitter.com/DrYohanJohn/status/1515024699075477520>)

A: Logically speaking, it’s possible that we are actually living in the sky. Each of us has an avatar on the earth. Each avatar is a robot. I can see what the robot sees through its eyes. It’s like the movie “Avatar”, but the difference is that I can’t control what the robot does – the robot does whatever it wants to do. So, to the avatar, I’m not a remote controller, but only a remote observer. Being the remote observer of the robot, I can imagine the robot to be my body. When the robot sees what itself does from its own eyes, the robot is using first-person perspective. When I see what the robot sees through the robot’s eyes, I see what the robot sees from its first-person perspective. When the robot imagines what itself should see from a location/viewpoint in the sky, the robot is using third-person perspective. When the robot is using third-person perspective, it perceives a visual imagery. If I can see this visual imagery, it should look like what I see from the sky. When I see what the robot does from the sky, I see something like what the robot perceives from its third-person perspective. I have no way to change what the robot is going to do. The cosmos is a state machine of elementary particles. Schrodinger equation is the transition function of this state machine. What a robot is going to do, is controlled/driven/caused by the Schrodinger equation. Even if a robot believes that it can change what it is going to do, actually it has no way to change what it is going to do. (If we are actually living in the sky, then both the robot and I are subsets/components of the same state machine – this setting might lead to some unnecessary puzzles. To avoid these puzzles, we can simply suppose that we are actually living out of the cosmos. BTW, if we are actually living out of the cosmos, and if I can’t see you directly, and if I can see your avatar through my avatar, then I have no way to know/tell whether you actually exist or not. Or in other words, your avatar won’t behave differently after your death. Or in other words, if a robot doesn’t have a remote observer, this robot won’t behave differently (comparing to a robot who has a remote observer).)

### (80)

Q: “The Chinese Swimmer is a remotely controlled robot lifeguard. The android's sensors send data to a room in China where a team of mathematicians calculate the motor commands needed to make the robot swim and transmit them back to it. But none of the team can swim.” (<https://twitter.com/keithfrankish/status/1514691209775792145>)

A: None of a human swimmer's neurons can swim, although a human swimmer's neurons calculate the motor commands needed to make the human swimmer's muscles to stretch.

A: None of my neurons can understand English, although my neurons calculate the motor commands needed to make my finger muscles to type English.

### (81)

Q: “Are there objective values? I wrote a blog post on an argument I wished I'd pressed more in my recent chat with @kanebaker91. Really interested to hear what people who don't believe in objective value make of this one. <https://conscienceandconsciousness.com/2022/04/16/are-there-objective-values/> ”

(<https://twitter.com/Philip_Goff/status/1515246795848392713>)

A: Value depends on culture/society. Different cultures/societies assign different values to the same thing. Study anthropology, and then you will see that obviously. Otherwise, you will stick to the value assigned by your current culture/society and imagine it to be "objective".

### (82)

Q: “Brain cell forming new connections: #neuroscience <https://www.youtube.com/watch?v=1fnm1vGGRYI>” (<https://twitter.com/slava__bobrov/status/1515355259887046665>)

A: Animal brain is a plant. Animal is a plant with legs.

A: “We're tumbleweeds” (<https://twitter.com/peepoo333/status/1515449242717990912>)

(A: Animal brain is a plant. Animal is a plant with legs.)

Q: “Is the neuron creating a thought, or is the thought creating a neuron?” (<https://twitter.com/thatfollowed/status/1535418564621938688>)

A: Both are possible.

### (83)

Q: “Surreal evening wandering around Marathon-excited Boston while debating consciousness on twitter. :P” (<https://twitter.com/DrYohanJohn/status/1515489718611451904>)

A: You are debating consciousness on twitter while wandering around Marathon-excited Boston ;) You are on twitter; Boston is in your consciousness.

### (84)

Q: “I use the term “\*controlled\* hallucination” precisely to emphasise that our perceptions are closely tied to the real world, in ways geared to survival prospects.” (<https://twitter.com/anilkseth/status/1515320299969032197>)

A: “I like “controlled hallucination”. It gets at the idea that what we experience \*directly\* is not the “outside” world, but a representation of it, a kind of movie in our head.

Is that right? 🤔

(Anti-representationalists probably don’t like it, though…)” (<https://twitter.com/BugRib/status/1515658128565567488>)

A: If what we experience \*directly\* is a movie in our head, then the "outside" world is another movie in our head. What we experience \*directly\* is a first-person movie in our head; the "outside" world is a third-person movie in our head.

### (85)

Q: “Why isn’t the human brain a Chinese Room? Isn’t the whole universe just a system of entities following rules (like the Chinese Room), from the smallest system to the largest? What’s so special about brains?” (<https://twitter.com/BugRib/status/1515652983781933061>)

A: When a human brain (which is a Chinese Room) claims (in human language) that it is not a Chinese Room, this scenario looks a little bit puzzling to an observer (i.e., another human brain (which is a Chinese Room)).

Q: “🤯” (<https://twitter.com/BugRib/status/1515696661846183938>)

### (86)

Q: “Our language has a dualistic structure and for some reason we feel comfortable with that.

The embodied brain is one with all the body. When a certain group of neurons excite in a specific pattern the body becomes aware of a feeling.

Feelings trigger all sorts of reactions.” (<https://twitter.com/LocoQf/status/1515722135578333189>)

A: “>When a certain group of neurons excite in a specific pattern the body becomes aware of a feeling<

But…that’s a miracle! How can a physical object become \*consciously\* aware? Sure, a non-conscious robot could exhibit “awareness”, but what about the “conscious” part?” (<https://twitter.com/BugRib/status/1516019752480641024>)

A: "How can a physical object become \*consciously\* aware?" The physical object won't become \*consciously\* aware. You feel \*as if\* that it become consciously aware. This is your theory of mind.

Q: “We attribute awareness to other objects (people, dogs, things that look like a face, puppets, etc.). We also attribute awareness to ourselves using the same brain systems in both cases. This is the attention schema theory of consciousness.” (<https://twitter.com/LocoQf/status/1516161282017312778>)

A: "We also attribute awareness to ourselves using the same brain systems in both cases." – the "ourselves" part is much harder to understand... I can imagine a puppet has consciousness, but a puppet doesn't have consciousness -- this is easy to understand. I can imagine my body has consciousness, but my body doesn't have consciousness -- this is hard to understand. I am the subject who is imagining that the puppet has consciousness – this is easy to understand. But who is the subject to imagine that my body has consciousness?

Q: “Consciousness is the problem. A word without context. My brain is running sensory perception, memory, cognition, affect, valance, emotion, as part creating a mental model of the internal and external world and the machinery of attribution is making all this what I am attending.” (<https://twitter.com/LocoQf/status/1516167075840020484>)

A: Is your brain experiencing something? Being a physical object, how is that possible?

### (87)

Q: “

**THE NEURAL REPLAY THOUGHT EXPERIMENT**

Curated by Anna Schapiro, Camilo Libedinsky,...

The goal of this thought experiment is to force an explicit assessment of your own intuitions about the mind-body problem. It DOES NOT provide answers or analyses of any of the questions and scenarios.

For an analysis of this thought experiment, please see the citations below, as well as this other document ([link](https://docs.google.com/document/d/1U3A5mWH6ISLE1J5Cmmc6-X9yXHpfkeXAF1i28i8SgFQ/edit?usp=sharing)).

NOTE: This is a live document, so if you think that it would be useful to add a step to this sequence in order to force an assessment of a specific hypothesis please **add a comment** in the relevant section. For instance, if you feel like microtubules have some relationship to consciousness, and you feel that there could be an additional scenario (say, Scenario 8b) in which microtubules are blocked from polymerizing (or something like that), we can add it to the document (with the corresponding acknowledgement, of course).

TO DO LIST:

TEMPORAL ASYNCHRONY (find twitter suggestion for reference)

**Preliminary notes:**

Versions (or sections) of this thought experiment can be found in the following links:

* 1981. Arnold Zuboff (<https://philpapers.org/rec/ZUBTSO-2>)
* 2006. A blog post by Tanas Gjorgoski (<https://broodsphilosophy.wordpress.com/2006/04/13/why-a-neural-network-cant-be-conscious-2/>)
* 2013, Article by Muhlestein using a cellular automaton, rather than replaying in actual brains (Muhlestein, M. (2013). Counterfactuals, Computation, and Consciousness. Cognitive Computation, 5(1), 99–105. https://doi.org/10.1007/s12559-012-9155-2)
* 2016. A blog post by Romaine Brette (<http://romainbrette.fr/neural-correlates-of-perception-whats-wrong-with-them/>)
* 2021. Karel Deisseroth’s book Projections (2021) (<https://www.amazon.com/Projections-Story-Emotions-Karl-Deisseroth/dp/1984853694>)
* 2022. Gidon, A., Aru, J., & Larkum, M. (2022, April 10). Do action potentials cause consciousness?. <https://doi.org/10.31219/osf.io/agxf9>
* 2022. And an active twitter discussion posted by Anna Schapiro (<https://twitter.com/AnnaSchapiro/status/1512866137809195011?s=20&t=Ci3XfB24ywv3ULe3DyzA-w>)

**Rules:** If in any scenario your answer is NO to one of the questions, you can stop the questions, since subsequent questions build upon the previous ones. If you respond YES, you can move on to the next question.

***Scenario 1.***

Imagine you are standing in a small well-lit room. The walls are painted in spotless white and in front of you there is a small table. On top of the table, there is a shiny red apple.

You can **see** it.

You **decide** to walk towards the apple and grab it with your hand.

It **feels** cool to your touch.

You are **hungry**, so you **decide** to bite the apple.

You **experience** the apple as cold and sweet.

You **remember** the apple that you ate yesterday at work.

You **remember** that your best friend loves apples.

Accidentally you bite your tongue, and it **hurts**.

You **hear** yourself scream.

After you calm down from the pain, the apple you just ate is fresh in your **memory**.

You notice that on the floor there is a piece of paper with instructions. It states a few questions:

1-  “*What did it feel like to go through this experience?*”

Deciding to answer the question, you respond “*I can feel the redness of the apple. I can feel its shape and taste. It all has a very strong and clear quality to it. When I bit my tongue it was really painful. Sorry I can’t explain it better, it is just that the raw feeling of my experience is very hard to explain with words.*”

2- “*Are you sure you can feel something? Maybe you are confused, and you are in fact a zombie that feels nothing and just claims to feel*”

Knowing the concept of the philosophical zombie, you respond “*Come on, stop playing with me. OF COURSE I CAN FEEL!!! I AM FEELING RIGHT NOW!!!*”

3- “*I know it’s a weird question, but if you have to answer, what do you think makes you you, and not someone else?*”

To which, let’s say, you respond “*Well, my name is Jane Doe, daughter of Sherry and Joe Doe, I was born in Chile  in the year 1980. I am a scientist, and I like playing the piano*”

All of the above happened over a 3 minute interval.

**Qs1:**

Q1.1. Does it feel like anything to be you in *Scenario 1*?

Q1.2. Do you consciously perceive the visual, auditory, tactile, olfactory, and taste stimuli?

Q1.3. Do you consciously perceive that you are hungry?

Q1.4. Do you feel pain?

Q1.5. Do you consciously decide to act?

Q1.6. Do you remember your episodic memory of the apple that you ate yesterday?

Q1.7. Do you remember the semantic memory that your best friend loves apples?

Q1.8. Close to the end of the experiment, do you have a short-term recollection of the past 3 minutes?

Q1.9. When you are asked to introspect about what makes you you, are you thinking about your personal identity as a distinguishable entity in this universe?

***Scenario 2.***

Now we attach to each one of the neurons in your whole body, an intracellular recording microelectrode. This electrode only ‘listens’ to the activity (subthreshold voltage fluctuations and action potentials) of your neurons, without interfering with their activity. During this 3 minute period we recorded every single action potential in the neurons of your body and stored this information in a computer.

**Q2:**

Are any of your answers in Q1 different? If you believe that you will still feel something during this period, is this feeling identical to *scenario 1*? Or different?

***Scenario 3.***

Now we reposition your body where it was at the beginning of this 3 minute period and place a new apple on the table. The recording electrodes we had originally implanted in each one of your neurons also have the capacity to stimulate and control the voltage of neurons (including their action potentials). This control of voltage means that neurotransmitters binding to receptors no longer have an effect over the voltage of postsynaptic cells. This type of manipulation has existed for a few decades, and it is called voltage-clamp. What we do next is replay the activity we had originally recorded in *Scenario 2*. The brain is physically intact. The only difference is that the action potentials in the neurons (and the neurotransmitters they release) are no longer exerting any effect on other neurons. It is worth underscoring this point: even though neurotransmitters are being released as usual, these have no bearing on the electric potential of the postsynaptic neuron, since we are controlling the neurons’ voltage with our stimulating electrodes. What happens then is that you start moving in the same way you did before (every single muscle twitch is identical as in *Scenario 2*), you grab the apple, give it a bite, bite your tongue, and you answer the questions in the exact same way. For any outside observer there is absolutely no difference between *Scenarios 1-3*.

**Q3:**

Are any of your answers in Q2 different? If you believe that you will still feel something during this period, is this feeling identical to *scenario 1*? Or different?

NOTE: If you respond NO to all these questions, you can skip to Scenario 3b at the end of the document ([link](https://docs.google.com/document/d/1ZZFePo_dCaNTJik3auAXdlNc1YIZHFOn3T7VbhDQyYg/edit#bookmark=kix.i46xtzbcdl3i)).

***Scenario 4.***

Just like in *Scenario 3,* we have an electrode attached to each neuron. But now we add an extra component; between every synapse in the body we place a sheet of absorbent paper that prevents the neurotransmitters released by presynaptic neurons from reaching the postsynaptic neurons. This happens for every neuron except those connected to muscles. This way, the behavior of the organism is unaffected.\* After this, we replay the brain activity previously recorded.

**Q4:**

Are any of your answers in Q3 different? If you believe that you will still feel something during this period, is this feeling identical to *scenario 1*? Or different?

\*If you believe that the body movements themselves affect any of the answers, then as an addendum to Scenario 4 you can implement the tissue between synapses for ALL synapses… including neuromuscular synapses. In this case the activity is replayed, but your body will not move at all.

**Q4b:**

Are any of your answers in Q3 different? If you believe that you will still feel something during this period, is this feeling identical to *scenario 1*? Or different?

” (<https://docs.google.com/document/d/1ZZFePo_dCaNTJik3auAXdlNc1YIZHFOn3T7VbhDQyYg/edit>)

A: In Scenario 3, why the control of voltage doesn't affect the behavior of the organism? In scenario 4, why the absorbent paper doesn't affect the behavior of the organism?

Q: “In scenario 3 all motor neurons are also replayed, so muscle contractions should be identical (and the environment and initial positions are replicated). In scenario 4 you add absorbent tissue for every neuron except those connected to muscles (such that muscles still contract)” (<https://twitter.com/LibedinskyLab/status/1516372550594531336>)

A: So, Scenario 4 only replays the behavior of the muscles. It demonstrates that I have no idea about another person's "consciousness". What I feel to be another person's "consciousness", is actually my own theory-of-mind/imagination/visual-imagery.

### (88)

Q: “I’d say \*I\* am a mind. \*I\* am definitely not a few ounces of meat somewhere in my brain since that makes no logical sense given the law of identity & whatnot.

\*I\* can’t be identical to part of my brain because \*I\* have different properties; qualia for example.” (<https://twitter.com/BugRib/status/1516740458625388546>)

A: Yes, you can see/perceive your mind, so you identify your mind to be yourself. Then, you are not your brain/body. You can control your body directly (without using your brain), can't you? Otherwise, how do you control your brain (to let your brain to control your body)?

Q: “That’s a good way of saying, there is no mind. The voices in your head are not a mind, they are just self speak. @BugRib how do you define Mind?” (<https://twitter.com/LocoQf/status/1516744625335246854>)

### (89)

A: In everyday life, I used to use a naïve view upon *humans*. (I don’t use this naïve view upon computer programs.) When I use this naïve view, I naively believe/imagine that a human is actually seeing/perceiving something (in their “consciousness”) whenever I hear them say the sentence “I see something” – I naively believe/imagine that they have consciousness.

Q: “I think you misunderstand what happens when I tell you what "I see". I don't tell you what I see but what I believe you would see were you viewing the same scene. What I actually see is irrelevant to you.” (<https://twitter.com/Philosimp1/status/1516742543786094602>)

A: OK. So, it's logically possible that you are seeing nothing when you say the sentence "I see something".

### (90)

Q: “Who wants to know my irrefutable argument for solipsism?

Lol jk” (<https://twitter.com/markgotproblems/status/1517097302162292737>)

A: A subset of your mind wants to know that.

Q: “How would you know?

This never gets old.” (<https://twitter.com/markgotproblems/status/1517101429948919810>)

A: I meant, if you believe in solipsism, then there is nothing but your mind, so only a subset of your mind can ask you a question.

Q: “You didn't mean anything of the sort!” (<https://twitter.com/markgotproblems/status/1517102579439734784>)

### (91)

Q: “a reason why it’s sometimes so hard to forgive someone is that over the years you keep learning new insights about the damage they did to you and the way it still affects your everyday life and mind” (<https://twitter.com/daisyldixon/status/1517634041306095616>)

A: That someone was damaged by someone else

### (92)

Q: “I think indiscriminate forgiveness toward others is unwise. We must guard ourselves to not be hurt by them again. If we want to include a person who damaged us in our life and that person has made amends, then yes. Otherwise it is better to distance ourselves. Life is too short.” (<https://twitter.com/martinjanello/status/1517642620884819968>)

A: You can't forgive, when you can't. You can forgive, when you can.

### (93)

A: “You can’t scientifically explain water because all scientific explanations presuppose water (because scientists’ bodies are 60% water).” (<https://twitter.com/petemandik/status/1517208822326124544>)

Q: “does anyone argue you can't scientifically explain consciousness because all scientific explanations presuppose consciousness (all scientists are conscious)” (<https://twitter.com/marsniv/status/1517222381026258952>)

A: When I suppose that all other people are not conscious, I don't need to read their explanations of consciousness – their explanations must be meaningless/nonsense.

### (94)

Q: “From this perspective, consciousness is just another aspect of brain functioning: global information sharing. The American philosopher and cognitive scientist Daniel Dennett speaks of it as “fame in the brain”. But is that all there is to consciousness? Some philosophers say it is not. For the functionalist account seems to miss out something important – the essence of consciousness, its subjective dimension. Information sharing in the brain may be the objective, public side of experience, which can be described by neuroscientists. But, these philosophers argue, there is also a subjective, private side to it – what it is like for the creature undergoing it; how it feels on the inside.” (<https://newhumanist.org.uk/articles/5951/the-mental-life-of-mountains>)

A: "But, these philosophers argue, there is also a subjective, private side to it – what it is like for the creature undergoing it; how it feels on the inside." However, there is nothing but elementary particles inside the creature “undergoing it” – these particles (inside the creature) have no feeling *inside* the creature. These particles even don’t know that they are actually inside the creature – these particles don’t know the feeling *inside* the creature. The creature “undergoing it” doesn’t exist as an agent (who can act/feel) – although we (subjectively) feel as if that the creature “undergoing it” exists as an agent (who can act/feel). The agent (who can act/feel) only exists in our mind. Actually/objectively, the creature “undergoing it” is just some particles. The creature “undergoing it” is not an agent (who can *act/feel*), but a mere happening (which occurs as a result of *purely* mechanical causes). So, the creature “undergoing it” is actually undergoing *nothing* – although we (subjectively) feel as if that the creature “undergoing it” is undergoing *something*. That *something* only exists in our mind – that *something* is not felt by the creature itself.

We imagine that there is an agent living inside the creature. We imagine that there is an agent living inside a bat’s body. We imagine that there is an agent living inside an elementary particle’s “body”. And then, we imagine what the agent feels like inside the creature/bat/particle. However, there is no agent actually/objectively living inside the creature/bat/particle. So, the agent feels “nothing” inside the creature/bat/particle. We feel like that the agent feels *something* inside the creature/bat/particle. We *do* feel *something*. However, the agent feels “nothing”. Because the agent doesn’t actually/objectively exist! The agent only exists in our mind. If the agent doesn’t actually/objectively exist, how can the agent feel anything?

We feel like that being a bat is warm, because a bat’s body temperature is higher than a human. However, the warmness is our feeling, not the bat’s feeling.

We feel like that being an elementary particle is boring, because a particle doesn’t have a brain to think. However, the boringness is our feeling, not the particle’s feeling.

We imagine that there is an agent living inside Mickey Mouse. And then we imagine what the agent feels like inside the Mickey Mouse. We feel like that the agent feels something inside the Mickey Mouse. We do feel something – happiness! We feel like that being Mickey Mouse is happy. However, that happiness is our feeling, not Mickey Mouse’s feeling. Mickey Mouse has no feeling! Mickey Mouse is not real!

What does it feel like to be a bat? What does it feel like to be inside a bat’s body? It feels like nothing to be a bat. It feels like nothing to be inside a bat’s body. *You* (not the bat itself) feel like something to be a bat. *You* (not the bat itself) feel like something to be inside a bat’s body.

What does it feel like to be an elementary particle? It feels like nothing to be a particle. *You* (not the particle itself) feel like something to be a particle.

What does it feel like to be Mickey Mouse? It feels like nothing to be Mickey Mouse. *You* (not Micky Mouse himself) feel like something to be Mickey Mouse.

What does it feel like to be you? Only you know that – I have no way to know. To me, you are just some elementary particles. I can assume that it feels like nothing to be you. Although *I* (not you) feel like something to be you.

To me, you are not an agent (who can *act/feel*), but a mere happening (which occurs as a result of *purely* mechanical causes).

To you, I am not an agent (who can *act/feel*), but a mere happening (which occurs as a result of *purely* mechanical causes).

To be fair, we humans/animals are not agents (who can *act/feel*), but a mere happening (which occurs as a result of *purely* mechanical causes). We humans/animals are just some elementary particles. It feels like nothing to be a human/animal. However, it does feel like something to be me. I can’t explain this paradox, or I can simply assume that I am different from others – although I can’t explain why I am different from others.

### (95)

Q: “Illusionism is the hypothesis that other people do not experience perceptual qualia either” (<https://twitter.com/Plinz/status/1517995172750979072>)

A: Illusionists don't have a consistent view over "consciousness" and "illusion" -- they change their view in every new article but keep marketing their view as “illusionism”. That’s why they can win in every debate.

A: It's like the evolving concept of God.

A: The term “illusionism” actually means “the latest view of Keith Frankish”.

A: The concept of “perceptual qualia” (and the concept of “consciousness” which depends on the concept of “perceptual qualia”) is actually a pseudoscientific hypothesis.

A: In this pseudoscientific hypothesis, “perceptual qualia” are supposed to be experienced by an agent. However, objectively, there is no agent. Agents are subjective only. So, nothing can be the subject to experience the “perceptual qualia”.

(A: Illusionists don't have a consistent view over "consciousness" and "illusion" -- they change their view in every new article but keep marketing their view as “illusionism”. That’s why they can win in every debate.)

Q: “I do not share this perspective and have sincere respect for Keith Frankish and his work” (<https://twitter.com/Plinz/status/1518015459676680192>)

A: I don't think Frankish changes his view intentionally -- he just keeps discovering new ideas. That's a good thing for a philosopher.

A: But it makes his view vague -- that's the disadvantage.

A: For example, are humans philosophical zombies or not? @keithfrankish

A: My feeling is that, he is trying to maintain political correctness -- perhaps that's why he can't assert that humans are philosophical zombies.

(A: In this pseudoscientific hypothesis, “perceptual qualia” are supposed to be experienced by an agent. However, objectively, there is no agent. Agents are subjective only. So, nothing can be the subject to experience the “perceptual qualia”.)

Q: “Agents are functionally defined, not indexically. An agent is a controller of future states, which implies an extrapolation over the past via computational modelling?” (<https://twitter.com/Plinz/status/1518016282347864064>)

A: Functionally defined agent can't be the subject to experience the "perceptual qualia" either. Functionally defined agent is a third-person mechanics (i.e., a mere *happening* which occurs as a result of *purely* mechanical causes).

In our cosmos, a functionally defined agent is just a space area (including elementary particles inside this space area). A functionally defined agent is nothing more than this space area.

A functionally defined agent (i.e., the aforementioned space area) can't control its future states. Its future state is controlled by Schrodinger equation only. For example, a computer program can't control its future states.

A functionally defined agent (i.e., the aforementioned space area) can roughly/unreliably forecast its future states (based on the past), when we imagine that this functionally defined agent is doing computational modelling.

However, being a space area (i.e., a mere happening), this functionally defined agent itself doesn't know that it is doing computational modelling over something -- \*we\* imagine that it is doing computational modelling over something. This functionally defined agent itself is experiencing \*nothing\* -- \*we\* imagine that it is experiencing \*something\*.

(A: The term “illusionism” actually means “the latest view of Keith Frankish”.)

Q: “What a weird way of expressing your appreciation that Keith Frankish is not a dead philosopher yet” (<https://twitter.com/Plinz/status/1518029139629928448>)

A: It's a good way to draw attention though ;)

Q: “Please bear in mind that you are talking about a real and feeling person.” (<https://twitter.com/Plinz/status/1518030196619632641>)

A: However, in my view, humans are philosophical zombies...

A: That's a paradox.

A: A real and feeling person is a space area (including elementary particles in it). These elementary particles are controlled/driven by Schrodinger equation only.

A: What these particles are going to do, are fated by Schrodinger equation -- my physical behavior won't change that. My physical behavior is also fated by Schrodinger equation.

A: The space area is a real person but not a feeling person. We feel like that this space area has feeling -- this space area doesn't have feeling. We use that feeling to roughly/unreliably forecast the objective-state-evolution of this space area. However, the objective-state-evolution of this area is already fated by Schrodinger equation.

A: If there is an agent (who can *act/feel*) living inside this space area, then this agent has feeling. However, there is no agent living inside this space area – there are only elementary particles living inside this space area. The agent only exists in our mind. The agent is subjective, not objective. By “subjective” I mean the agent doesn’t actually/objectively exist in the real world.

There is no agent living inside the space area of Mickey Mouse. There is no agent living inside the space area of a real person. In this sense, there is no difference between a real person and the Mickey Mouse – there is no *objective* difference between them. The difference between them is *subjective* only. We use two different agents/mental-models to represent them in our mind – that’s the *subjective* difference between them.

(Q: “I do not share this perspective and have sincere respect for Keith Frankish and his work” (<https://twitter.com/Plinz/status/1518015459676680192)>)

A: “The special issue of JoCS he edited devoted to the subject was excellent, but it’s hard to deny that a variety of definitions of “illusionism” were deployed by advocates. For me, Jay Garfield’s contribution was the standout.” (<https://twitter.com/TNWJackson/status/1518037360549634048>)

A: If I want, I can market my view as illusionism too. However, illusionism is so vague that it won't help me if I do that.

A: It seems to be a disadvantage to market under such a vague umbrella brand.

(A: If I want, I can market my view as illusionism too. However, illusionism is so vague that it won't help me if I do that.)

Q: “Is there a particular reason for me to think that your exploration of consciousness should be more interesting to me than what Keith Frankish has put in the same corner?” (<https://twitter.com/Plinz/status/1518043350888198144>)

A: I bet you can figure it out by yourself – please kindly read the present article.

Q: “Your position is bog standard computationalist functionalism, with lack of regard for the contrast between classically self representing observer and nondeterministic (multiway) substrate computation?” (<https://twitter.com/Plinz/status/1518044974805229568>)

A: My position is fatalism. For me, nondeterministic substrate computation doesn't exist. What is "multiway"?

(Q: “Your position is bog standard computationalist functionalism, with lack of regard for the contrast between classically self representing observer and nondeterministic (multiway) substrate computation?” (<https://twitter.com/Plinz/status/1518044974805229568>))

A: I'm glad that it's "bog standard". To me, it means that it is not obviously wrong ;)

Q: “As far as I could see from the introduction it is not obviously wrong but the extrapolation is incomplete :)” (<https://twitter.com/Plinz/status/1518048956395139072>)

A: Where is incomplete? Can you be more specific? Thanks!

(A: The space area is a real person but not a feeling person. We feel like that this space area has feeling -- this space area doesn't have feeling. We use that feeling to roughly/unreliably forecast the objective-state-evolution of this space area. However, the objective-state-evolution of this area is already fated by Schrodinger equation.)

Q: “Do you know how to derive the Schrödinger equation?” (<https://twitter.com/Plinz/status/1518050966905319425>)

A: No. And that's why I can't change what I do by giving a different solution to the Schrodinger equation ;)

咱们先不用费脑筋去证明薛定谔方程。咱们先姑且假设薛定谔方程是对的。如果咱们把宇宙中所有基本粒子在此刻的确切状态代入薛定谔方程，就可以求解出宇宙（中所有基本粒子）在下一个时刻的确切状态。当然，这个解不是唯一的。

薛定谔方程的一个解中包括了咱们所有人的肉身中所有基本粒子在下一个时刻的确切状态。只要咱们所有人的肉身中的任何一个基本粒子都无法（（根据“自由意志”）自由的）影响这个解，那么咱们所有人的肉身中的所有基本粒子（在此刻的行为/状态）都对这个解没有影响。

薛定谔方程的解不是唯一的。如果咱们姑且假设many-worlds interpretation是对的，那么薛定谔方程的每个（不同的）解都在一个（不同的）world中被实现了。而每个解中都包括了咱们所有人的肉身中的所有基本粒子在下一个时刻（在某一个world中）的确切状态。只要咱们所有人的肉身中的任何一个基本粒子都无法（（根据“自由意志”）自由的）影响任何一个解，那么咱们所有人的肉身中的所有基本粒子（在此刻的行为/状态）对任何一个解都没有影响。

如果咱们把宇宙中所有基本粒子在此刻的确切状态代入薛定谔方程，就可以求解出宇宙（中所有基本粒子）在下一个时刻的确切状态。假设已经知道宇宙中所有基本粒子在此刻的确切状态，那么理论上可以用（位于宇宙之外的）一个计算机程序（根据薛定谔方程）求解出宇宙（中所有基本粒子）在下一个时刻的确切状态。当然，这个解不是唯一的。

如果咱们姑且假设many-worlds interpretation是对的，并且假设已经知道（在咱们现在所在的这个world中的）宇宙中所有基本粒子在此刻的确切状态，那么理论上可以用（位于所有worlds之外的）一个计算机程序（根据薛定谔方程）求解出宇宙（中所有基本粒子）在下一个时刻（在所有worlds中）的确切状态。既然理论上可以用（位于所有worlds之外的）一个计算机程序（根据薛定谔方程）求解出宇宙（中所有基本粒子）在下一个时刻（在所有worlds中）的确切状态，那么我们就可以说宇宙是一台状态机，或者说宇宙是一台机器。

(A: My position is fatalism. For me, nondeterministic substrate computation doesn't exist. What is "multiway"?)

Q: “A nondeterministic Turing Machine transitions into multiple successor states in parallel, leading to a branching (and merging) space of trajectories. When classical observers reconstruct deterministic paths through the state space, it can look like the forks were randomly taken.” (<https://twitter.com/Plinz/status/1518050400657575937>)

A: Is the classical observer a subset of the Turing Machine? Or is the classical observer located outside of the Turing Machine?

A: By the term “Turing machine”, do you refer to the cosmos as a whole? Or do you refer to a human brain inside the cosmos?

Q: “The Ruliad defines a nondeterministic Turing machine that seems to give rise to quantum mechanics” (<https://twitter.com/Plinz/status/1518053180805853184>)

A: In the present article, I designed a Stochastic Game of Life system, which is the counterpart for the Ruliad. If we are living in a Stochastic Game of Life system, what is your question?

(A: Is the classical observer a subset of the Turing Machine? Or is the classical observer located outside of the Turing Machine?)

Q: “Turing machine commonly refers to a deterministic automaton, while nondeterministic Turing machines (NTM) define multiway systems” (<https://twitter.com/Plinz/status/1518056577378361347>)

(Q: “A nondeterministic Turing Machine transitions into multiple successor states in parallel, leading to a branching (and merging) space of trajectories. When classical observers reconstruct deterministic paths through the state space, it can look like the forks were randomly taken.” (<https://twitter.com/Plinz/status/1518050400657575937)>)

A: “This is profound, Joscha - for me processes of selection result in differential explorations of state space. That’s evolution. These forks are not really “random”, but selected. Agency is a specific form of selection.” (<https://twitter.com/TNWJackson/status/1518053502492106752>)

Q: “There is no reason to not follow all paths simultaneously, and make observers conditional on choices that constrain the space of superpositions. Agency is compatible with linear determinism though.” (<https://twitter.com/Plinz/status/1518055491443707904>)

A: “But is there a reason to affirm following all paths simultaneously, other than installing the Feynman path integral (or Everett) into the basement of your thinking? Is there a good empirical reason?” (<https://twitter.com/TNWJackson/status/1518056947584360449>)

A: “Does the multi-way graph have to be “physically” instantiated or are you open to it being a model of the canalisation of potentia by the evolving “actual” (which is a single actualised pathway through state space)? Self-locating uncertainty feels like a kluge.” (<https://twitter.com/TNWJackson/status/1518058987547025409>)

(A: “But is there a reason to affirm following all paths simultaneously, other than installing the Feynman path integral (or Everett) into the basement of your thinking? Is there a good empirical reason?” (<https://twitter.com/TNWJackson/status/1518056947584360449)>)

Q: “The collapse of the wave function marks the point beyond which you cannot obtain a classical description. The multiway paradigm seems to be the most straightforward way of formalizing that. You can still use a deterministic automaton for computing it, but you need more resources.” (<https://twitter.com/Plinz/status/1518059429869932545>)

Q: “For mental representations, it might make sense to understand them as poor man’s multiway systems, using a stochastic approximation with bounded complexity” (<https://twitter.com/Plinz/status/1518060896903258112>)

A: If we agree to use the many-worlds interpretation, we shouldn't imagine that the branches in other worlds have anything to do with \*this\* world. No matter how many possibilities are there in other worlds, you can't choose any of them -- you are in \*this\* world. When you choose between McDonald and KFC for dinner, it has nothing to do with many-worlds interpretation. You are not going to enter two different worlds (in the many-worlds interpretation). You will still be in \*this\* world. Don't imagine that your choice has anything to do with many-worlds interpretation.

Q: “Again, I think reifying the “other worlds” is the issue here. They “exist” in a model of potential pathways through Hilbert Space.” (<https://twitter.com/TNWJackson/status/1518064012302315520>)

A: To make it simple, I think we can use hidden-variable theory in the discussion. There is only one future. Anyone has a way to prove that there are two or more possible futures?

A: When you choose McDonald over KFC, it doesn't mean that there are two possible futures -- it means that the only possible future is to choose McDonald.

Q: “Post hoc ergo propter hoc - we always find ourselves at the end of history. Once you choose McDonald’s, it is the only possible present. But it’s not too late, you can still throw that rubbish in the bin and go and get a nice curry down the road.” (<https://twitter.com/TNWJackson/status/1518071424077889537>)

A: Then your fate is to choose McDonald and then the curry...

(A: To make it simple, I think we can use hidden-variable theory in the discussion. There is only one future. Anyone has a way to prove that there are two or more possible futures?)

Q: “No more than you can “prove” there aren’t. But the empirical evidence that evolution involves selection amongst possibilities is overwhelming. Invoking hidden variables is begging the question.” (<https://twitter.com/TNWJackson/status/1518066831449153536>)

A: By "evolution", do you mean Darwinian evolution?

Q: “If you like - “Darwinian evolution” is a specific instantiation of a basic evolutionary logic which has been most developed (and mapped onto empirical evidence) within biology, but is much more broadly applicable (and of course was not “invented” by Darwin).” (<https://twitter.com/TNWJackson/status/1518067931963281409>)

A: I used to think about what is happening at the elementary particle level.

Q: “Even Laplace’s Demon is an evolutionary model, just one without any degrees of freedom (i.e. a useless one).” (<https://twitter.com/TNWJackson/status/1518071968842485760>)

A: What model is a useful one?

A: -- if I can change the model of our cosmos.

Q: “Probably not one that denies the conditions of its own use.” (<https://twitter.com/TNWJackson/status/1518074589133168642>)

A: I wish I can live in such a cosmos.

Q: “Luckily, you can :). I think fatalism should be understood in its historical context. The post-Enlightenment conception of fatalism is the Christian problem of theodicy “naturalised”. This is deeply baked into the history of natural science - we only start to see a real way beyond it in the 19th Century (really the end of the 18th). But it remains a dominant philosophical constraint up to the present.” (<https://twitter.com/TNWJackson/status/1518076435876827136>)

A: In that \*free\* cosmos, I can choose between McDonald, KFC and curry freely?

<https://osf.io/dzqmt>

(A: If we agree to use the many-worlds interpretation, we shouldn't imagine that the branches in other worlds have anything to do with \*this\* world. No matter how many possibilities are there in other worlds, you can't choose any of them -- you are in \*this\* world. When you choose between McDonald and KFC for dinner, it has nothing to do with many-worlds interpretation. You are not going to enter two different worlds (in the many-worlds interpretation). You will still be in \*this\* world. Don't imagine that your choice has anything to do with many-worlds interpretation.)

A: Please don’t think about many-worlds interpretation when thinking about a human brain's choice. I mean, please don’t imagine that my brain’s particles will choose KFC in a world other than \*this\* world. Have you calculated out what will happen in all other worlds (based on Schrodinger equation)? If you haven’t calculated it yet, then how do you know that my brain’s particles will choose KFC in another world? Yes, my brain’s particles thought about KFC, but why my brain’s particles’ thought about KFC is (powerful) enough to allow a world (where KFC is chosen) other than \*this\* world (where McDonald is chosen) to exist? Am I God? Everything I ever thought/imagined of, will be guaranteed to be implemented/achieved in one of the worlds? Is my brain’s particles’ thought/imagination the “engine” to generate all the worlds? If my brain’s particles thought about having dinner on mars with Elon Musk and a chimpanzee, then I will have dinner on mars with Musk and a chimpanzee in a world other than \*this\* world?

Q: “A single self-generating universe with an open future. No God. An open future because of the absence of the (causal structure of the) God of monotheism. Laplacean determinism is directly descended from the problem of theodicy - it is the Form of God naturalised.” (<https://twitter.com/TNWJackson/status/1518880948917399552>)

A: Fatalism = God is controlling/driving/causing everything. If God is controlling/driving/causing everything, then God is the only agent; everything (which is being controlled/driven/caused by God) is not agent. Fatalism can make some people less active, and can make some other people more active.

(A: The concept of “perceptual qualia” (and the concept of “consciousness” which depends on the concept of “perceptual qualia”) is actually a pseudoscientific hypothesis.)

A: Awareness of phenomena (consciousness) is prescientific fact. (<https://twitter.com/nereis_sandersi/status/1522891821424300033>)

A: When another human’s physical body claims that she/he has "perceptual qualia", if I believe that I have "perceptual qualia" too, then the said human's physical body’s speech regarding her/his "perceptual qualia" actually has nothing to do with her/his "perceptual qualia" -- according to my own understanding of "perceptual qualia". Because the said human’s physical body’s speech is generated by a third-person mechanics (which involves all elementary particles in her/his physical body/brain/mouth). When we imagine the said human’s physical body, actually we are imagining this third-person mechanics. We do not imagine an agent, when we are imagining this third-person mechanics, the said human’s physical body or a philosophical zombie. However, we imagine an agent, when we are imagining this third-person mechanics or the said human’s physical body as a non-zombie. Our imagined agent actually has nothing to do with the said human’s physical body’s speech. We imagine that the said human’s physical body’s speech *is* the speech of the (imagined) agent – it’s not! The said human’s physical body’s speech is only the speech of the said human’s physical body/brain/mouth (as a third-person mechanics). The said human’s physical body’s speech *actually* has nothing to do with the (imagined) agent, although we *mentally* link the said human’s physical body’s speech with the (imagined) agent.

Q: “Are you saying that having qualia implies that you are having all the qualia there are (solipsism)?” (<https://twitter.com/nereis_sandersi/status/1522933327602270212>)

Q: “I thought it sounded like a description of epiphenomenalism. Like purely physical 3rd-person processes are behind qualia talk, not the qualia themselves.

Epiphenomenalism makes no sense to me, though. I mean, what are the odds that qualia talk isn’t actually about qualia?” (<https://twitter.com/BugRib/status/1522950800674230274>)

A: Qualia talk isn't actually about qualia, because a computer program can do qualia talk too.

(Q: “I thought it sounded like a description of epiphenomenalism. Like purely physical 3rd-person processes are behind qualia talk, not the qualia themselves.

Epiphenomenalism makes no sense to me, though. I mean, what are the odds that qualia talk isn’t actually about qualia?” (<https://twitter.com/BugRib/status/1522950800674230274)>)

Q: “X has believes in objective reality. Lots of people do, but can't tell me what is is, just a lot of ideas what it might be.” (<https://twitter.com/nereis_sandersi/status/1522960947572318208>)

A: My subjective reality is generated by my brain. Then my brain is not inside my subjective reality. My brain is inside the objective reality. However, I think that they are not two realities, but two theories -- a subjective theory and an objective theory. I can't tell which one is ontologically fundamental. Ontology talk isn't actually about ontology.

Q: “Lots of people claim that subjective experience is generated by the brain. None can say how.” (<https://twitter.com/nereis_sandersi/status/1523051494517395459>)

A: Subjective experience is generated by the brain -- this is our imagination.

Q: “How?” (<https://twitter.com/nereis_sandersi/status/1523053172075470850>)

A: I imagine that my subjective experience is generated by my brain. However, I can't explain \*how\*. That's why I admit that it is only my imagination. In ontology talk, we can't realize that we are only talking about our imaginations. There is no way to prove/disprove an ontology talk – that’s why I call an ontology talk an imagination.

A: Qualia talk isn't actually about qualia. Ontology talk isn't actually about ontology. Ontology talk led to qualia talk. Ontology talk is okay for philosophers. However, following ontology talk, naive philosophers are trapped by the qualia talk. Naive philosophers get lost in the qualia talk. Qualia talk is based on ontology talk. However, ontology talk is actually talking about our imaginations. So, qualia talk is a second-level imagination -- a higher-level imagination which is based on a lower-level imagination (i.e., ontology talk). If you get confused in this second-level imagination, just stop your imagination! Obviously, your imagination is too much for your physical brain to handle... Naive philosophers become insane in the qualia talk. But there are so many naïve philosophers, so they can’t realize that they are all insane at this topic. In contrast, naïve philosophers think people who don't understand their qualia talk *incompetent* (or at least pretending to be *incompetent*). People don't understand naive philosophers' qualia talk, because people don't take ontology talk as seriously as naïve philosophers do. Naive philosophers take their own ontology talk so seriously that they are rigorously trapped in their own ontology talk/theory/imagination. Naïve philosophers forgot the fact that their ontology talk/theory is only their imagination. Whenever you are not aware of the fact that your imagination/visual-imagery *is* only an imagination/visual-imagery, you are being trapped in the imagination/visual-imagery – actually you are treating the imagination/visual-imagery as the real world. You forgot the fact that your imagination/visual-imagery *is* only an imagination/visual-imagery. Naive philosophers (e.g., Plato) can be influential.

Qualia talk is based on ontology talk/theory/imagination which tries to distinguish/divide the so-called “subjective reality” and “objective reality”. The so-called “subjective reality” and “objective reality” are discussed/theorized/imagined by ontology talk/theory/imagination.

If there is no so-called “subjective reality” and “objective reality”, but only *one* reality (which can’t be divided into the so-called “subjective reality” and “objective reality”), then ontology talk is useless under this context, and what I see (in front of my eyes) is *the* reality, not the so-called “qualia” or the so-called “subjective reality” – qualia talk doesn’t make sense under this context.

There is no way to prove/disprove that there is only *one* reality, or there are *two* realities (i.e., “subjective reality” and “objective reality”). So, every ontology talk/theory/imagination about the *two* realities is *only* a talk/theory/imagination – we will never know whether it is true or not.

When we (mentally) imagine the *two* realities, actually we are imagining them as two boxes/rooms/spaces. Or in other words, in our visual imagery, the *two* realities are two boxes/room/spaces.

Ontology talk/theory/imagination about the *two* realities introduces the concept of “qualia” and “subjective reality”, but then ontology talk/theory/imagination can’t explain the relationship between qualia/subjective-reality and objective-reality convincingly. Obviously, this is the problem/flaw/limitation of the ontology talk/theory/imagination – we should abandon the ontology talk/theory/imagination. Or at least we shouldn’t take ontology talk/theory/imagination too seriously.

Q: “Qualia is what is directly experienced. No talk or ontological theory is required.” (<https://twitter.com/S33light/status/1523078779832311808>)

A: But you have your own ontological theory which is consistent with your view regarding qualia.

Q: “I have more of a qualitative theory that replaces ontology.” (<https://twitter.com/S33light/status/1523079459255238657>)

### (96)

Q: “A common fallacy of first time thinkers is that the originality and uniqueness of an idea is positively correlated with its quality” (<https://twitter.com/Plinz/status/1518057285855047681>)

A: Truth doesn't need to be novel. Fallacies are novel. Especially in philosophy or theism.

### (97)

Q: “You can drag one philosophical idea or concept to the recycle bin. What is it and why?” (<https://twitter.com/markgotproblems/status/1518553884263960577>)

A: “Strong emergence, because it has absolutely no justification to support it.” (<https://twitter.com/RationalPanthe1/status/1518624600153677824>)

(Q: “You can drag one philosophical idea or concept to the recycle bin. What is it and why?” (<https://twitter.com/markgotproblems/status/1518553884263960577)>)

A: “I want to say determinism, but it’s mostly because I personally don’t like the idea. Analytically, I’ve got mixed feelings about it.” (<https://twitter.com/TwoTonguesPod/status/1518603711479795713>)

Q: “So are you thinking of dunking the whole debate into the abyss or just that view specifically?” (<https://twitter.com/markgotproblems/status/1518651221699145728>)

A: “I’ve got a really weird take on it man. I believe that sentience = God, in a panpsychist kind of way. So that makes us (along with everything else) God. If it turns out that we don’t have free will, our determined choices are still “the choices of God.” So are they free?” (<https://twitter.com/TwoTonguesPod/status/1518653564528250882>)

Q: “That doesn't sound too weird at all. If you want to preserve consciousness as fundamental (deeply sympathetic with that view) it looks like you're also going to be tempted to make sense of the free will debate by also preserving agency.” (<https://twitter.com/markgotproblems/status/1518654204826558464>)

A: “That’s it! The bind-bender for me is: Is the act of God free if it is pre-determined. To make sense of this, I have to equate the “will of God” to the laws of physics, but I don’t love that idea.” (<https://twitter.com/TwoTonguesPod/status/1518669987761856513>)

### (98)

Q: “This is a case of double prevention: C hits E, B prevents A from preventing E from scoring, and E scores. People typically say that C hitting E caused E to score and that B hitting A didn't cause E to score. (1/10)” (<https://twitter.com/paul_henne/status/1501399333513711619>)

A: “Causality is false” (<https://twitter.com/rromea/status/1501765686506373121>)

A: Causality is based on agent thinking. If C and B are agents, then C hitting E caused E to score. C hitting E is a seemingly clear cause. We don't feel like that B hitting A is for E. B hitting A is a seemingly not-so-clear cause. We favour seemingly clear cause over seemingly not-so-clear cause.

When we use theory of mind over C and B, we feel like that C clearly has the intention to help E, while we are not sure about B's intention to help E. We favour seemingly clear intention over seemingly not-so-clear intention.

Our feeling of causality is based on our theory of mind regarding intentions. We favour seemingly (clearly) intentional behaviour over seemingly *nonintentional* behavior.

Theory of mind is actually false/fictional. So, causality (which is based on theory of mind) is false/fictional.

When I watch the video in the tweet (<https://twitter.com/paul_henne/status/1501399333513711619>), for me, it's also not obvious/clear that A would hit E if A was not hitting by B. The complexity of the real world is infinite, but we have limited time and computing power, so we usually stop after finding the first (obvious) cause, and ignore all other (less obvious) causes. In this way, we mentally simplified the mechanics of the real world. But this simplified mechanics is fictional/false.

### (99)

Q: “Do we know if viruses are alive or not? More importantly: does it matter?” (<https://twitter.com/_fernando_rosas/status/1522614384866086912>)

A: Alive. It matters.

(Q: “Do we know if viruses are alive or not? More importantly: does it matter?” (<https://twitter.com/_fernando_rosas/status/1522614384866086912)>)

A: “Life is a form of being.

It is the behavior of a being that matters, not its classification, which is determined by an arbitrary definition.” (<https://twitter.com/bertmorrien/status/1522697002773008387>)

(Q: “Do we know if viruses are alive or not? More importantly: does it matter?” (<https://twitter.com/_fernando_rosas/status/1522614384866086912)>)

A: “Well, they kinda want to kill some other living bodies to keep going to I guess the answer is yes 😅” (<https://twitter.com/AnnaCiaunica/status/1522618605015293954>)

Q: “Perhaps, fundamentally everything is intentional, the universe is intentional. 😂😂😂” (<https://twitter.com/RealOnsase/status/1522787839750066178>)

A: “Not sure « intention » is the right word here. After all, you never ´intended’ to be born. You just popped out in the world. Nobody asked you to intentionally do so! 😅😅” (<https://twitter.com/AnnaCiaunica/status/1522838678938304515>)

(A: “Well, they kinda want to kill some other living bodies to keep going to I guess the answer is yes 😅” (<https://twitter.com/AnnaCiaunica/status/1522618605015293954)>)

A: We feel like that they have the intention to kill some other living bodies. We feel like that a missile has the intention to kill some other living bodies. The intention (of a virus/missile) is not in the real world. The intention (of a virus/missile) is only in our mind. The intention (of a human's physical brain) is not in the real world. The intention (of a human's physical brain) is only in our mind. We know/imagine the intention of a virus/missile/brain by theory of mind. Or in other words, the intention of a virus/missile/brain is only our imagination.

### (100)

A: “An illusionist or functionalist could well say that consciousness cannot be fully explained by physical science, just because it's a conceptual problem rather than an empirical problem.” (<https://twitter.com/Disagreeable_I/status/1523587059276926977>)

A: Ontology cannot be fully explained by physical science, just because ontology is talking about a conceptual problem rather than an empirical problem. Consciousness is based on ontology. Ontology cannot be fully explained by physical science, that's why consciousness cannot be fully explained by physical science. @Philip\_Goff should ask physical science to fully explain ontology first, and then physical science should be able to fully explain consciousness based on its full explanation of ontology.

Philosophers are aware of that ontology is not an empirical problem. However, naive philosophers are not aware of that consciousness is not an empirical problem.

### (101)

A: “I think the mind is best described as an abstract causal structure that exists only in the platonic sense and that it isn't strictly true to say that it is brought about by the workings of the brain.” (<https://twitter.com/Disagreeable_I/status/1523742209098481665>)

A: Yes, the mind doesn't exist in the objective reality, while the brain exists in the objective reality.

If there are not *two* realities (i.e., subjective reality and objective reality), but only *one* reality, then the brain exists in the (only) reality, while the mind doesn’t exist (anywhere). There is only the objective reality. There is no subjective reality.

An alternative explanation: If there are not *two* realities (i.e., subjective reality and objective reality), but only *one* reality, then the mind is the only reality, while the brain exists in the mind. There is only the subjective reality. There is no objective reality.

### (102)

Q: “The fact that we are subject to many different kinds of illusions cannot, even in principle, count as evidence that phenomenal consciousness is itself illusory. To suggest otherwise is to make a category error.

I don't understand why so many very smart people fail to see this.” (<https://twitter.com/BugRib/status/1520075296237494272>)

A: Only other's phenomenal consciousness is illusory -- my phenomenal consciousness is not illusory.

### (103)

Q: “Do any illusionists think that qualia aren't the \*main\* illusion at all, but a representational bi-product of lower level illusion, such as a reward-based monitoring of perceived self-control over biophysiological processes (the Cartesian Theatre)?” (<https://twitter.com/markgotproblems/status/1524823646350581767>)

A: Fatalism helps to resist reward (in order to get another (subtle) reward).

When I use theory of mind upon a person, first I need to identify the reward which is driving her/his behavior. Then, the identified reward becomes an agent, and the person becomes a non-agent.

Reward is only an explanation. Reward is only an imagined concept in the context of an explanation. The objective-state-evolution of the cosmos actually has nothing to do with the (imagined) reward/explanation/concept. Actually, the reward is not an agent.

Q: “I suppose I'm thinking of a "brain reward" type schema, rather than an operant conditioning model.

I think recursive, self-administering, deeply functional motivators for the illusion of seeming are crucial for a viable materialist theory of consciousness.” (<https://twitter.com/markgotproblems/status/1525014057723494400>)

A: Reward is at the center of human’s cognition. Human’s cognition is reward driven. Reward is at the center of my manifest image. However, there is no reward in the scientific image. Reward doesn’t exist in the scientific image. Reward is something subjective, not objective.

A: Reward only exists in our cognition. Reward doesn’t actually exist in the real world.

I used to distinguish subjective and objective first. Reward is subjective.

Reward plays a central role in the subjective-reality. Reward plays a central role in our thinking/cognition.

I mean, when you use “reward” to explain something, your explanation is not the ultimate explanation. The fated objective-state-evolution of the cosmos can be explained as my reward-driving actions. Some of the fated objective-state-evolution of the cosmos are cherry picked in an explanation. In this explanation, I am driven by some rewards. Some of the fated objective-state-evolution of the cosmos are cherry picked in the explanation, firstly because these fated objective-state-evolution of the cosmos are cherry picked (via a third-person physical mechanics) into my episodic memory. So, time-sorted third-person physical events in my episodic memory are (subjectively) explained/defined (via a third-person physical mechanics inside my physical brain) as a sophisticated web/theory of causes and effects (in the (subjective) explanation). (Besides these cherry-picked third-person physical events (which are assumed/imagined/theorized (by my physical brain) to play causal roles), all other third-person physical events are neglected/ignored by my physical brain, as if that they play no causal role (like the cherry picked third-person physical events play) at all. In fact, at every moment, a large number of third-person physical events (e.g., a distant butterfly is flapping its wings) are happening at every location in the cosmos – the causal roles of most of them are neglected/ignored in my physical brain’s web/theory of causes and effects. BTW, my physical brain’s web/theory (of causes and effects) can imagine/theorize that the details of a tornado (the exact time of formation, the exact path taken) is influenced by minor perturbations (as agents/causes) such as a distant butterfly flapping its wings several weeks earlier, but actually both the details of the tornado and the details of the flapping are controlled/driven/caused solely by the direct-function (as a sole agent/cause). It’s an apparent flaw/loophole to neglect/ignore the contribution of the flapping (to the details of the tornado), when my physical brain uses its web/theory of causes and effects. But it’s *right/correct* to neglect/ignore the contribution of the flapping (to the details of the tornado), when my brain imagines/theorizes that every third-person physical event is controlled/driven/caused solely by the direct-function (as a sole agent/cause). When my physical brain uses its web/theory of causes and effects, under that context, I can change the details of the tornado by killing the butterfly. More generally, I can change the details of the tornado by anything I do. So, I (as an agent/cause) should be held responsible for what the tornado does. When my brain imagines/theorizes that every third-person physical event is controlled/driven/caused solely by the direct-function (as a sole agent/cause), under that context, I can’t change the details of the tornado by killing the butterfly. More generally, I can’t change the details of the tornado by anything I do. So, I shouldn’t be held responsible (as an agent/cause) for what the tornado does. Only the direct-function should be held responsible (as a sole agent/cause) for what the tornado does.) Some of these cherry-picked third-person physical events are (subjectively) explained/defined as “rewards”. “Reward” is (subjectively) defined/explained as a kind of “cause”.

(BTW, when I have the intention/plan to get a reward, in the context of this intention/plan, getting a reward is being imagined as an “effect” of some “causes”. “I get a reward” (as a third-person physical event) is being imagined as an “effect” of some “causes”. Here, “reward” is (subjectively) defined/explained as a kind of “effect”. For example, when I feel thirsty, drinking a cup of water will be a reward. In order to get this reward (i.e., the “effect”), I need to open my mouth (as a “cause”) to allow water to come in.)

I am emphasizing that the objective-state-evolution of the cosmos is fated. “Reward” based explanation should be consistent with fatalism.

Every human behavior can be explained based on "reward". Otherwise, it means that the dopamine theory is wrong.

People who study ethics are actually studying which rewards are "better" than other rewards, so that you can try to train your dopamine system to favour the philosophers-endorsed “better” rewards.

Q: “There's a danger of equivocating the functional sense of "reward" here with some feeling of having been rewarded (which is not what I mean).” (<https://twitter.com/markgotproblems/status/1525045131178655744>)

(A: Reward is at the center of human’s cognition. Human’s cognition is reward driven. Reward is at the center of my manifest image. However, there is no reward in the scientific image. Reward doesn’t exist in the scientific image. Reward is something subjective, not objective.)

Q: “Of course there are functional reward schema in the scientific image.” (<https://twitter.com/markgotproblems/status/1525054864019140608>)

A: Then we have different understandings on scientific image.

Q: “I'm not sure we do. It sounds like you're exploring a very different sense of "reward".” (<https://twitter.com/markgotproblems/status/1525056340523110400>)

A: Yeah, it sounds like that we can't reach an agreement on what is "reward".

A: In my view, reward is not something objective.

First, we don't have an agreement on what is subjective and objective.

So, when I say the sentence "reward is subjective", you can't catch what I mean.

(A: Yeah, it sounds like that we can't reach an agreement on what is "reward".)

Q: “It's hard to reach agreement when you've assumed what it means and already sped off towards a conclusion.” (<https://twitter.com/markgotproblems/status/1525058237237800961>)

A: That sounds correct.

A: I can't understand what you mean by the term "reward", because I can't change my conclusion of what I assume it means.

(A: That sounds correct.)

Q: “I'm using the purely functional sense of "reward". It's as devoid of intention as "pay-off" is when discussing natural selection.” (<https://twitter.com/markgotproblems/status/1525059137947705344>)

A: My understanding of "reward" includes intention. Your usage of "reward" doesn't include intention. I think this is what you mean. However, I don't know what the difference is between the two. I didn't connect "reward" with intention either.

A: The difference is hard to explain, when we are discussing a term from different philosophical positions.

A: When I am imagining concepts, I am using visual imageries. I visualize them. Do you visualize them?

(A: The difference is hard to explain, when we are discussing a term from different philosophical positions.)

Q: “We're not - I just think you've perhaps not yet considered some of the other senses in which "reward" is used in psychologised and cognitive neuro literature.” (<https://twitter.com/markgotproblems/status/1525061476599447554>)

A: Perhaps you can describe an example, and use the term "reward" under the context of this example. Maybe I can catch what you mean then. Usually, I will have a visual imagery for this example, which might be good enough for me to understand it. It seems like that I only understand things under a (mental) visual context. A (mental) visual context is like an animation. There are only (tons of) animations in my thought.

Q: “Well, I'm not sure why you're tempted to say cognitive reward systems are relegated to the subjective. They're objectively structural systems.” (<https://twitter.com/markgotproblems/status/1525064961218777088>)

A: Because I have my own definition of subjective and objective. But I think we can avoid discussing the definition of subjective and objective here.

A: I am looking forward to seeing the development of your initial idea.

Basically, I define most things to be subjective. Far more than the common/average definition.

(A: Because I have my own definition of subjective and objective. But I think we can avoid discussing the definition of subjective and objective here.)

Q: “Well, it's the Sellarsian distinction. But yes, I don't think viable materialist theories should need to reach down into the fundamental base to explain consciousness.” (<https://twitter.com/markgotproblems/status/1525067094785679362>)

A: I was trying to encourage you to discuss reward under the fatalistic view.

Q: “I know - I'm not a fatalist though :p” (<https://twitter.com/markgotproblems/status/1525068155030216704>)

A: That's the only problem ;) I think you don't understand my fatalist framework :)

Q: “I think I've satisfactorily demonstrated I understand it.

That doesn't require that I commit to it ;)” (<https://twitter.com/markgotproblems/status/1525069874061524994>)

(Q: “Do any illusionists think that qualia aren't the \*main\* illusion at all, but a representational bi-product of lower level illusion, such as a reward-based monitoring of perceived self-control over biophysiological processes (the Cartesian Theatre)?” (<https://twitter.com/markgotproblems/status/1524823646350581767)>)

Q: “The specific theoretical option I'm looking for emphasises the way biophysiological systems are tracked and monitored.” (<https://twitter.com/markgotproblems/status/1525388668831154177>)

A: The magic is in the sense of agency (or sense of control).

Q: “Nice slogan. I might borrow it for the subtitle of my next wildly successful trade book.” (<https://twitter.com/markgotproblems/status/1525399253304107008>)

A: If it is only a sense of control, not real control, then it is fatalism.

Q: “Not necessarily. There are plenty of places to put agency other than introspective monitoring of bio and neurophysiology that are consistent with views besides fatalism.” (<https://twitter.com/markgotproblems/status/1525402185684615169>)

A: Then there is real control.

Q: “Depends what you mean by "control".” (<https://twitter.com/markgotproblems/status/1525404445772853248>)

A: What is controlling a human body?

Q: “An incalculable (by me) number of events.” (<https://twitter.com/markgotproblems/status/1525405324169060353>)

A: What is you?

(A: Then there is real control.)

Q: “And not all deterministic views are fatalistic.” (<https://twitter.com/markgotproblems/status/1525404579663323137>)

A: OK, become a determinist first.

Q: “Why would I need to become one?” (<https://twitter.com/markgotproblems/status/1525408244386123777>)

A: Not necessarily. But then you support free will.

Q: “Only if I'm not already a determinist.” (<https://twitter.com/markgotproblems/status/1525410738424238080>)

A: OK, I remember that you are a compatibilist. What's the difference between fatalism and your compatibilism?

Q: “Whilst I believe in a deterministic possibility space, I don't believe that there is only one possible, already preordained, state for reality to ultimately attain.” (<https://twitter.com/markgotproblems/status/1525415075657535495>)

A: So, there is space for free will.

Q: “Not anything like fundamental free will.” (<https://twitter.com/markgotproblems/status/1525415619084034048>)

A: Do you play a role in selecting from the deterministic possibility space?

Q: “At a socially constructed level.” (<https://twitter.com/markgotproblems/status/1525417530755538944>)

A: So, socially constructed level has an impact to the objective-state-evolution of the elementary particles (i.e., the elementary particle level).

A: You are not a reductionist.

Q: “I don't think socially constructed free will has any effect on its substrate beyond the confines of its own possible states.” (<https://twitter.com/markgotproblems/status/1525420328796684288>)

A: Socially constructed free will selects from the deterministic possibility space. That's why you can choose between McDonald and KFC for dinner. Is that correct?

(A: So, socially constructed level has an impact to the objective-state-evolution of the elementary particles (i.e., the elementary particle level).)

Q: “Analogy: a Windows 98 MP3 player program may cause some events on its silicone hardware within the confines of the parameters predefining the relationship between them, but it can't get the board to waltz off the desk and do shit.” (<https://twitter.com/markgotproblems/status/1525421303733297155>)

A: No, the program can't cause any event.

A: You input command to the program. The program listens to your command, and execute it. You (not the program) are causing the events.

(A: No, the program can't cause any event.)

Q: “It can't ask the hardware's internal states to change such that sends some signals from the CPU to play some music via the speakers? Seems like it wouldn't work if it couldn't.” (<https://twitter.com/markgotproblems/status/1525422890660896768>)

A: The program is not an agent. You are imagining the program as an agent.

A: The CPU executes the program to do things -- if you imagine the CPU as an agent.

Q: “I might be speaking metaphorically as per the intentional stance for conversational ease. But I'm certainly not imagining any agents.” (<https://twitter.com/markgotproblems/status/1525423627646210048>)

A: The world inside the computer is not less complicated than our human world, because human inputs commands to the computer. Game of Life can be a better metaphor than a computer. Because human has no impact to Game of Life.

Q: “I'm not sure how these aren't tangential issues.” (<https://twitter.com/markgotproblems/status/1525424955198144512>)

A: I mean, people don't understand how computer works, just like they don't understand how organism works.

They think computers are simpler (to understand) than organisms. That's wrong.

Both computer and organism are made of elementary particles. They are both governed by Schrodinger equation. They work in exactly the same way. A stone works in exactly the same way too.

A: Every physical object (in our cosmos) works in exactly the same way.

Q: “Sure. I'm not sure why we've gone down this road, though.” (<https://twitter.com/markgotproblems/status/1525428148376043520>)

A: I was trying to say that we should investigate Game of Life instead of computer...

(A: Every physical object (in our cosmos) works in exactly the same way.)

Q: “Define "physical object".” (<https://twitter.com/markgotproblems/status/1525428499829358592>)

A: Some elementary particles.

A: I am some elementary particles. Nothing more than that.

A: Define "socially constructed level".

(A: Some elementary particles.)

Q: “All elementary particles work in the same way?” (<https://twitter.com/markgotproblems/status/1525430522805202944>)

A: Of course.

A: No magic in human brain.

(A: Of course.)

Q: “If positrons are electrons moving backward through time then we have one particle working in two different ways. Why should different particles all work the same way?” (<https://twitter.com/markgotproblems/status/1525432185951555584>)

A: There are different elementary particles. I agree with you on this.

An electron works in the same way in brain, computer and stone. That is what I mean.

A: To understand computer, we need to understand how electron works. To understand brain, we need to understand how electron works. Computer is not simpler than brain, in this sense.

A: There is no electron in Game of Life. Game of Life is simpler than our cosmos.

(A: To understand computer, we need to understand how electron works. To understand brain, we need to understand how electron works. Computer is not simpler than brain, in this sense.)

Q: “You don't think the structure matters?” (<https://twitter.com/markgotproblems/status/1525434188828221442>)

A: If a physical object is some elementary particles, then what do you mean by the structure of a physical object?

A physical object doesn't have a fixed structure. A physical object is actually a physical process. A physical object is actually a physical process whose "structure" evolves as time goes on.

Then, what do you mean by the sentence "a physical process' structure matters"?

Does a tornado's structure matter? What is its structure?

A human body is like a tornado. Its “structure” makes it a human body. But nothing else.

I had a one-cell structure some years ago. I will become dust some years later. I have a different structure at every moment.

Am I driving my own structure to change? Is a tornado driving its own structure to change?

Schrodinger equation is driving my structure and a tornado's structure to change at the same time.

If our cosmos is a Game of Life system, then I am a pattern, and a tornado is another pattern. The rules of the game are driving both patterns' structure to change at the same time.

A: When you see a tornado lifting me up, it’s not the tornado who is lifting me up. It’s the Schrodinger equation who is lifting me up. Or the elementary particles (in my physical body) go up autonomously.

A: Firstly, the Schrodinger equation is lifting the tornado. Then, the tornado is lifting my body. Is that correct?

That’s incorrect. The Schrodinger equation is lifting both my physical body and the tornado at the same time. Why the Schrodinger equation lifts the tornado but not my physical body? (I feel like that my physical body is being lifted by the tornado, not by the Schrodinger equation, only because my skin is feeling the “force” from the tornado. My skin isn’t feeling the “force” from the Schrodinger equation. Actually, the “force” from the tornado is an illusion. This illusion is compatible with my (subjective) feeling/conclusion that the tornado is the “cause” of my physical body’s movement. Or in other words, this illusion is compatible with my (subjective) feeling/conclusion that the tornado is an agent who is lifting my physical body. The actual cause of my physical body’s movement, is the Schrodinger equation. Or in other words, the actual agent who is lifting my physical body, is the Schrodinger equation. My physical body is capable to fight against the tornado. But my physical body is incapable to fight against the Schrodinger equation. My physical body’s fighting (against the tornado) is also being controlled/manipulated by the Schrodinger equation. Here the Schrodinger equation is like a puppeteer, and both the tornado and my physical body are like puppets. In a puppetry, a puppet is capable to fight against another puppet. But a puppet is incapable to fight against its puppeteer. A puppet’s fighting (against another puppet) is also being controlled/manipulated by its puppeteer. A puppet is nonliving (comparing to its puppeteer). When a puppet is fighting against another puppet (in a puppetry), actually these two puppets are dancing together, and this dance is being controlled/manipulated/designed/predetermined by their puppeteers. When the tornado is lifting my physical body, actually these two physical objects are dancing together, and this dance is being controlled/manipulated/designed/predetermined by their puppeteer – the Schrodinger equation. I call it a “dance”, because actually these two physical objects are moving at the same time parallelly/autonomously – (the objective-state-evolution of) one physical object actually has no impact over (the objective-state-evolution of) the other physical object.)

Firstly, the Schrodinger equation (as an agent) is lifting the tornado. Then, the tornado (as an agent) is lifting my body. Here are two agents.

The Schrodinger equation (as an agent) is lifting my physical body and the tornado at the same time. Here is only one agent.

The elementary particles (as agents) in my body and the elementary particles (as agents) in the tornado go up at the same time. Here all these particles are agents.

Firstly, the elementary particles (as agents) in the tornado go up. Then, these agents as a whole (as a new agent) is lifting me up. Here the tornado as a whole becomes an extra agent (besides its elementary particles being individual agents).

The tornado is not an agent. My physical body is not an agent. The Schrodinger equation is an agent, or the elementary particles (in our cosmos) are agents.

The tornado as a whole only exists in our cognition. The tornado as a whole doesn’t exist in the real world. Only the particles (of the tornado) exist in the real world. The particles in the tornado don’t know that they are being components of a tornado, only we know that (in our cognition). Our cognition invented the tornado as an agent/cause.

When you say the term “the structure of a tornado”, you are imagining all kinds of tornados in your mind, and “the structure of a tornado” is a mental representation to represent all kinds of tornados at the same time. Or in other words, when you imagine “the structure of a tornado”, you are actually imagining an “average” tornado. So, “the structure of a tornado” simply means “an “average” tornado”. A tornado is not an agent. So, an “average” tornado is not an agent either. So, the structure of a tornado is not an agent either. Although we used to imagine the structure of a tornado as an agent, just like we used to imagine a tornado as an agent.

When we identify a glider in Game of Life, the glider becomes a (standalone) agent in our cognition. However, the glider doesn’t actually exist in the real world. Only its cells exist in the real world. The glider is not a (standalone) agent. The direct-function is a (standalone) agent, or all individual cells are (standalone) agents.

When we are imagining the function of a structure, the structure becomes a (standalone) agent in our cognition, and the function of the structure is being imagined as the magic of the (standalone) agent. But here we ignored/forgot the function of direct-function. Actually, the magic/function of the agent is the magic/function of the direct-function. The structure/agent doesn’t have any extra magic/function besides the magic/function of the direct-function. Or in other words, the structure/agent doesn’t have any extra magic/function besides the magic/function of individual BBs.

We imagine that a glider has the magic/function to travel across the board of Game of Life. But actually, no cell can move. Actually, we just (mentally) imagine different cells to be the glider pattern, as time goes on.

We imagine that a glider pattern can do/cause something to other patterns on its way, as if that the glider is a (standalone) agent/cause (who is not being fully controlled/manipulated/decided/caused by the direct-function). However, the glider can’t do/cause anything other than what its cells do/cause, and its cells can’t do/cause anything other than what the direct-function does/causes, although we falsely imagine what the direct-function does/causes to be what the (“standalone”) glider pattern does/causes. The glider pattern is not a (standalone) agent/cause. Its cells are (standalone) agents/causes, or the direct-function is a (standalone) agent/cause. The glider pattern actually does/causes nothing to other patterns. What we imagine to be done/caused by the glider pattern (to other patterns on its way), is actually done/caused by the direct-function only.

We imagine that all indirect-objects are doing/causing something to each other, as if that the indirect-objects are (standalone) agents/causes (who are not being fully controlled/manipulated/decided/caused by the direct-function). However, an indirect-object actually does/causes nothing to any other indirect-object. What we imagine to be done/caused by an indirect-object (to another indirect-object), is actually done/caused by the direct-function only.

Non-reductionists feel like that “structure” is a blind spot of reductionists. When reductionists imagine an indirect-object as its BBs, the structure of this indirect-object doesn’t disappear (like being imagined/postulated by the non-reductionists). This indirect-object itself *is* its “structure”.

During the interaction between a “structure” and its environment, we imagine this structure as an agent. However, if we can imagine its environment as BBs, we don’t need to imagine this structure as an agent anymore. The agent actually represents the objective-state-evolution of the BBs (in this structure).

(Q: “All elementary particles work in the same way?” (<https://twitter.com/markgotproblems/status/1525430522805202944)>)

Q: “We don’t even know what elementary particles are. We know what they “do”…sort of. Spin and charge. That’s what we call what they “do.” What that means is merely the likelihood that they interact in a particular way. That’s literally all we know.” (<https://twitter.com/TwoTonguesPod/status/1525630216651120640>)

A: We know that a physical object is a set of elementary particles. Don't we?

(A: When you see a tornado lifting me up, it’s not the tornado who is lifting me up. It’s the Schrodinger equation who is lifting me up. Or the elementary particles (in my physical body) go up autonomously.)

Q: “An equation is lifting you up?” (<https://twitter.com/markgotproblems/status/1525747509309714432>)

Q: “An equation no more lifts anything up than sheet music plays symphonies.” (<https://twitter.com/markgotproblems/status/1525747919831416832>)

A: If Schrodinger equation doesn't have the "power" to drive an elementary particle, then the state of an elementary particle changes/evolves by itself autonomously.

A: Where does the "power" (to drive the objective-state-evolution of an elementary particle) come from?

Does it mean that our cosmos is a simulation? Or does it mean that it doesn't need any "power" for an elementary particle to change/evolve its state?

Both are possible. We have no way to prove/disprove any of them.

To make it simple, we can assume that it doesn't need any "power" for an elementary particle to change/evolve its state.

Scientists found that the objective-state-evolution of the elementary particles follows Schrodinger equation. We can *imagine* that the Schrodinger equation “causes” (or “drives”) an elementary particle to change/evolve its state, as if that the Schrodinger equation has a magical “power”. I ask readers (of the present article) to imagine that. It will be much easier for me to express my other ideas based on this imagination. It’s easier to imagine the Schrodinger equation as the only agent (who controls/drives/causes everything), comparing to imagining all individual elementary particles as agents (who work/act/evolve/change on their own (libertarian free will)). One (central) agent is simpler (for a human brain to imagine) than many agents (who work/act/evolve/change on their own (libertarian free will)).

(A: If Schrodinger equation doesn't have the "power" to drive an elementary particle, then the state of an elementary particle changes/evolves by itself autonomously.)

Q: “There is a physical process the Schrödinger equation very accurately represents in a physical theory.” (<https://twitter.com/markgotproblems/status/1525751911265185792>)

A: In this physical process, elementary particles change/evolve their states. Schrodinger equation can be used to forecast their state change/evolution.

Q: “I don't know any theoretical physicist who view quantum mechanics as a state machine.” (<https://twitter.com/markgotproblems/status/1525755747497304067>)

A: Then what do they view quantum mechanics as?

A: If you don't view the reality as a state machine, what do you view the reality as?

(A: Then what do they view quantum mechanics as?)

Q: “In QM, states are mathematical entities which represent probability distributions for possible measurements of outcomes on a system.

I don't know any conceptions of state machines that could work like this.” (<https://twitter.com/markgotproblems/status/1525757141298053120>)

A: Your question is: “if it is a state machine, why I don't know its state?” My answer is: “because you are part of this state machine.”

Imagine a TM inside a Game of Life system. Can the TM detect the state of a cell of the Game of Life system?

When you imagine a state machine, you are imagining a state machine which doesn't include you. But now you need to imagine a state machine which includes you. Now you are a TM in this state machine.

Q: “I'm not sure how this is supposed to reconcile the structure of QM with a state machine at all.” (<https://twitter.com/markgotproblems/status/1525759741976264706>)

A: In God's view, it's a state machine. God knows the exact state of every elementary particle. In human's view, a human doesn't know the exact state of any elementary particle.

(Q: “In QM, states are mathematical entities which represent probability distributions for possible measurements of outcomes on a system.

I don't know any conceptions of state machines that could work like this.” (<https://twitter.com/markgotproblems/status/1525757141298053120)>)

A: hidden-variable theory

Q: “If God isn't limited to a particular interpretation of QM then it looks like the answer to whether God can know the entire possibility state is both yes and no.” (<https://twitter.com/markgotproblems/status/1525761880765128705>)

A: We can safely assume God can know that. Because God doesn't exist.

Q: “It seems like your view is going to be unparsimonious in the end, given that it requires a mediator between QM and a state machine metaphysics which doesn't map onto most interpretations of QM. Why not just go for a metaphysical view that's consistent with QM from the onset?” (<https://twitter.com/markgotproblems/status/1525763045540126725>)

A: I discussed many-worlds interpretation (MWI) in the present article. Have you read that? ;)

Q: “I do fully understand the present article. You haven't spelled out why you think your treatment of MWI helps you overcome the objection that needing to mediate post-hoc between QM and state machines is less parsimonious than just having a consistent metaphysics from the start.” (<https://twitter.com/markgotproblems/status/1525766672396828679>)

A: What is my treatment of MWI then?

Q: “Your treatment of it in the Q&A is just to assert that it avoids this objection without explaining why it does.

Prior to that, you give an account of a state machine in which BBs can obey the uncertainty principle in a crude way, which is interesting but doesn't answer that Q.” (<https://twitter.com/markgotproblems/status/1525769912395907077>)

A: OK. What do you think I should explain (in more detail) regarding MWI? I will go to McDonald in one world, and I will go to KFC in another world? I think I talked enough about McDonald and KFC in the present article.

A: I don't think I need to cover everything (in the present article), in order to describe my fatalistic view. I don't want to replace all previous philosophers. I just want to describe my two cents.

For people who can accept that the cosmos is a state machine, I told them (in the present article) why they don't feel the *reality* like a state machine. For people who can't accept that the cosmos is a state machine, that's their problem.

Or in other words, no matter the cosmos is *actually* a state machine or not, the present article is written for readers who can *imagine* the cosmos as a state machine.

A: Or in other words, no matter the cosmos is *actually* a state machine or not, the present article (as a whole) is a thought experiment designed only for readers who can *imagine* the cosmos as a state machine. Readers who can’t *imagine* the cosmos as a state machine, can’t enjoy/experience/understand this thought experiment.

A: It's possible that the reality is not a state machine. That's why I can't prove that the reality is a state machine.

A: In some physics theories (e.g., loop quantum gravity), the reality is not a state machine. I can't disprove them.

(A: It's possible that the reality is not a state machine. That's why I can't prove that the reality is a state machine.)

Q: “I think it's manifestly unlikely that reality is a state machine given that we have more sophisticated mechanics which accurately represent its features. We shouldn't have to recapitulate those models back down into devolved models.” (<https://twitter.com/markgotproblems/status/1525781472635920389>)

A: You don't know the exact state of an elementary particle. But this fact doesn't prove/disprove that an elementary particle has an exact state. You are an indirect-observer of the cosmos (as a state machine).

A: As indirect-observers of a system, we will never be able to *actually* know the system.

A: I'm holding a sceptic position.

I can say that something is "manifestly unlikely". But "manifestly unlikely" doesn't mean "not". “Manifestly unlikely” is not equal to “not”.

(A: As indirect-observers of a system, we will never be able to *actually* know the system.)

Q: “There's no prohibition on an interpretation of quantum mechanics that allows for particles to exist in a probability state. State machines can't have this feature.” (<https://twitter.com/markgotproblems/status/1525784655898738694>)

A: In my view, an interpretation (of QM) is not the ultimate truth.

Don't take an interpretation (of QM) too seriously. That's my sceptic position.

An interpretation (of QM) is just a (subjective) imagination. There is no way to prove/disprove it.

A: So, we shouldn't assume it to be the ultimate truth.

Q: “That might be true. But what we \*can\* do is assess whether its theoretical postulates coherently hang together with a metaphysical model.” (<https://twitter.com/markgotproblems/status/1525787292232720385>)

A: To be honest, I think loop quantum gravity might be the best physics theory. Under this theory, the cosmos is not a state machine. Because there is no time nor state.

(A: So, we shouldn't assume it to be the ultimate truth.)

Q: “And what I'm suggesting is, we have to do some really hacky post-hoc work to get QM to populate a state machine metaphysics such that we'd have to either radically revise our conception of a state machine, or have one eliminate the other.” (<https://twitter.com/markgotproblems/status/1525787895323410432>)

A: I think it’s very likely that the reality is not a state machine. It's worse than a state machine -- it's static. (Loop quantum gravity)

The reality is static. The reality doesn't evolve as time goes on. Time is an illusion.

(A: We know that a physical object is a set of elementary particles. Don't we?)

Q: “We can say that (and do), but on what ground? If we don’t understand what elementary particles are, what does it even mean to suggest that matter is composed of them?” (<https://twitter.com/TwoTonguesPod/status/1525789907930828800>)

A: The idea of atom was invented far before atom was proved to exist. In a sense, materialism is based on the idea of atom. Elementary particle is the atom at modern time.

A: Metaphysics can't avoid it.

A: Just like metaphysics can't avoid talking about “mind”.

When you talk about matter/material/physical-objects, you are talking about elementary particles.

(A: Metaphysics can't avoid it.)

Q: “Maybe it can? And wouldn’t that be something ;)” (<https://twitter.com/TwoTonguesPod/status/1525795941906845696>)

A: Idealism? :)

Q: “I have been tempted by idealism, I must admit” (<https://twitter.com/TwoTonguesPod/status/1525797105461256192>)

(A: I think it’s very likely that the reality is not a state machine. It's worse than a state machine -- it's static. (Loop quantum gravity)

The reality is static. The reality doesn't evolve as time goes on. Time is an illusion.)

A: But I couldn't make any progress (in metaphysics) under this setting. So, I chose an easier setting – the reality as a state machine.

(A: OK. What do you think I should explain (in more detail) regarding MWI? I will go to McDonald in one world, and I will go to KFC in another world? I think I talked enough about McDonald and KFC in the present article.)

A: My key point is that, as long as you can't choose between McDonald and KFC libertarian-freely, the reality is bad enough for you. You don't need to care about whether the reality is formally a state machine or not.

As long as the earth is not at the center of the cosmos, you don't need to care about whether the earth is a ball or not. The earth is not at the center of the cosmos, this fact means that the earth is not flat. That's bad enough.

You can't choose between McDonald and KFC libertarian-freely. This fact means that you don’t exist (in a sense). That’s bad enough.

If you can choose between McDonald and KFC libertarian-freely, (in a sense) you are God who is at the center of the cosmos. Because the objective-state-evolution of the cosmos depends on your libertarian free will. So, you are responsible for every matter in the world. For example, the liquidation of McDonald in the future; global warming.

(A: But I couldn't make any progress (in metaphysics) under this setting. So, I chose an easier setting – the reality as a state machine.)

Q: “Seeking a “mystic experience” may help you make progress.” (<https://twitter.com/TwoTonguesPod/status/1525801458913972225>)

A: I had an out-of-body experience before

Q: “Interesting. Did you get any impression of deep connectedness or joyful love? These are hallmarks of the mystic experience.” (<https://twitter.com/TwoTonguesPod/status/1525810591897731073>)

A: The reality is a whole. (connectedness)

(A: Or in other words, no matter the cosmos is *actually* a state machine or not, the present article (as a whole) is a thought experiment designed only for readers who can *imagine* the cosmos as a state machine. Readers who can’t *imagine* the cosmos as a state machine, can’t enjoy/experience/understand this thought experiment.)

A: No matter the cosmos is actually a state machine or not, my view is like a thought experiment designed only for people who can imagine the cosmos as a state machine.

A: I wish people can prove to me that my view is wrong ;) That's one reason for me to write the present article.

Q: “I think I've given some serious objections.” (<https://twitter.com/markgotproblems/status/1526089398617522180>)

Q: “The setup of many parts of the thesis are unfalsifiable. "Proving" it wrong is off the table.

The best that can be done is rendering it implausible.” (<https://twitter.com/markgotproblems/status/1526093023800705024>)

Q: “It's implausible if you're either really slippery with the definition of a state machine, or don't accurately represent QM” (<https://twitter.com/markgotproblems/status/1526094258859659264>)

Q: “I understand you're defining something that's empirically measurable as \*not\* a state machine as a state machine. And then insisting this entails fatalism by recapitulating QM, which we know doesn't have predefined end states, as that.” (<https://twitter.com/markgotproblems/status/1526100036530102273>)

A: Your question is "The cosmos is not a state machine! Why you keep telling me it is a state machine?"

A: I already said that my view is for people who can imagine the cosmos as a state machine.

Q: “I certainly can \*imagine\* the cosmos as a state machine as a conceptual exercise. Your paper does a thorough job of fleshing out this conceptual space. There's no denying that.” (<https://twitter.com/markgotproblems/status/1526103060665204736>)

(A: No matter the cosmos is actually a state machine or not, my view is like a thought experiment designed only for people who can imagine the cosmos as a state machine.)

Q: “The view would be self-defeating if anyone else could confirm whether they can successfully conceive of anything.” (<https://twitter.com/markgotproblems/status/1526090603502632965>)

A: conceive passively

(A: Your question is "The cosmos is not a state machine! Why you keep telling me it is a state machine?")

Q: “No, it's not quite that question. I understand \*why\* you want a state machine model (it solves the Hard Hurdle fatalism needs to jump over to gain purchase). What I don't know is why you don't go another route which doesn't devolve QM so radically.” (<https://twitter.com/markgotproblems/status/1526102538499530753>)

A: Only real theoretical physicists can do that.

Q: “Why even include QM at all if you're just going for conceptual models of a fatalistic universe? It doesn't have to track physics closely at all.” (<https://twitter.com/markgotproblems/status/1526105130357104641>)

A: That's all I can do. The present article is like my personal note.

A: When you mentally visualize the cosmos-at-the-atom-level, is the cosmos-at-the-atom-level being mentally visualized as a state machine? Then, if you can't mentally visualize the cosmos-at-the-elementary-particle-level as a state machine, why? If you can mentally visualize the cosmos-at-the-elementary-particle-level as a state machine, why you think the cosmos-at-the-elementary-particle-level is not actually a state machine?

If the cosmos-at-the-elementary-particle-level is not actually a state machine, what do you think it to be? And what does it mean to your physical brain’s choices/decisions?

If the cosmos-at-the-elementary-particle-level is not actually a state machine, can your physical brain make libertarian free choices/decisions?

If your physical brain can’t make libertarian free choices/decisions if the cosmos-at-the-elementary-particle-level is actually a state machine, can your physical brain make libertarian free choices/decisions if the cosmos-at-the-elementary-particle-level is not actually a state machine?

Can your physical brain make libertarian free choices/decisions? Is the cosmos-at-the-elementary-particle-level not actually a state machine?

How do we know whether a system is a state machine or not? Are there any proven method? Which system is not a state machine? And why?

Physicists can’t falsify hidden-variable theory. This fact means hidden-variable theory can be used to explain all (known) empirical data properly. Then, the past history of the cosmos can be explained as a state machine. So, the cosmos *can* be a state machine. So, if I say that a physical brain can’t make libertarian free choices/decisions, it is consistent with all (known) empirical data. So, why you think a physical brain can make libertarian free choices/decisions? If you don’t think a physical brain can make libertarian free choices/decisions, why you think the cosmos-at-the-elementary-particle-level is not actually a state machine? What does it mean to you? What conceptual benefit it has if the cosmos-at-the-elementary-particle-level is not actually a state machine? If there is no conceptual benefit, why you keep thinking the cosmos-at-the-elementary-particle-level is not actually a state machine?

If the cosmos-at-the-elementary-particle-level is not actually a state machine, how does your physical brain make a libertarian free choice/decision?

If the cosmos-at-the-elementary-particle-level is not actually a state machine, when your physical brain is choosing between McDonald and KFC, is the choosing process libertarian free?

If I say that a physical brain can’t make libertarian free choices/decisions, it is consistent with all (known) empirical data. However, you can say that all (known) empirical data only reflects the past, not the future. Then, do you mean that hidden-variable theory doesn't reflect the future? Then which quantum mechanics interpretation can reflect the future? Why you think that it can reflect the future? Have you ever been to the future?

The past history of the cosmos can be explained as a state machine. But we know nothing about the future. So, it's possible that the future has nothing to do with the past. It's possible that the future might change dramatically. For example, it's possible that Schrodinger equation doesn't work in the future. Is that plausible?

Although all past choices/decisions can be explained as not being libertarian free, it's still possible that a future choice/decision can't be explained as not being libertarian free. Is that plausible?

The past history of the cosmos can be explained as a state machine. That's why I think the future of the cosmos can still be explained as a state machine, although I can't see the future at this moment.

If you think the cosmos is not a state machine, do you think the past history of the cosmos can be explained as a state machine? If you think the past history of the cosmos can be explained as a state machine, why you think the cosmos is not a state machine? We see the same elephant in the zoo for years (i.e., we can explain something in the zoo as an elephant), why you think this elephant is not actually an elephant because tomorrow it might become a seahorse? You can be right, if you know that the zoo is in your dream. Dream is inconsistent. Reality is consistent. Do you think that the reality is consistent? If we assume that the reality is as inconsistent as a dream, then does it make any sense to discuss what reality is? If reality works/behaves like a state machine in the past, why the reality is not actually a state machine? If something works/behaves like an elephant in the past, why it is not actually an elephant?

If both hidden-variable theory and MWI can interpret all (known) empirical data, why can't I only discuss hidden-variable theory in my thesis? (BTW, I discussed MWI in my thesis too. It's possible that I didn't explain it clear enough though.) If there are one thousand different interpretations, do I need to discuss all of them in my thesis? Why you think one interpretation is more important than another? Why you think I need to discuss your favorite interpretation?

If both MWI and hidden-variable theory can explain all (known) empirical data, then it means that we can explain all past choices/decisions as not libertarian free. It means that MWI can’t make past choices/decisions libertarian free. Then, why you need me to explain MWI (other than hidden-variable theory) in my thesis? Will MWI make future choices/decisions free? How?

As long as hidden-variable theory is not falsified, hidden-variable theory means that the cosmos \*was\* a state machine. I claim that the cosmos \*is\* a state machine in my thesis. Is it implausible (that the cosmos \*is\* a state machine)? How do you render that implausible?

I think my discussion regarding MWI (in my thesis) is convincing. If you think it to be unconvincing, and if you think my discussion regarding hidden-variable theory is convincing, you can \*imagine\* that I only discussed hidden-variable theory in my thesis. I don't think I have to discuss MWI in a philosophical thesis. (BTW, I discussed MWI. I don't think MWI is something everyone understands. Everyone thinks she/he understands it.) I don't think I shouldn't track physics closely in a thesis about cosmos.

We don’t have access to other worlds (in MWI). How can we know that other worlds are not subjective only?

One metaphysical option is to treat other worlds (in MWI) as subjective only (even if other worlds are actually objective), and then \*this\* world is treated as a state machine with randomness. (Under the context of this metaphysical option, we are only living in one world (i.e., the world we are currently living in; this world) – we are not living in many worlds at the same time parallelly.) A state machine with randomness is still a state machine. A random state machine means that we have no way to reliably forecast the exact state of an elementary particle. But do you think an elementary particle has a state (in this world) at all? Or do you think that an elementary particle only has a "probability" (in this world) but has no state? Then how do you mentally visualize an elementary particle’s "probability"? I can't mentally visualize that. I can’t imagine that. It sounds like that you simply replaced "state" with "probability" in your mind. But shouldn’t “probability” be the “probability of *state*”? Shouldn’t “probability” be the “probability of *something*”?

If physicists say that the Schrodinger equation is about “state”, I can mentally visualize “state”. If physicists say that the Schrodinger equation is about "probability", how do I mentally visualize "probability"? How do you mentally visualize "probability"? If physicists say that an elementary particle has "probability", does it mean that an elementary particle has no “state” at all?

If an individual elementary particle has a "probability" but has no "state", does it mean the cosmos as a whole has a "probability" but has no "state"? I feel like that the cosmos has a "state" at this moment. What's that "state" (I feel)?

“The cosmos has a "state" at macroscopic level, but has no "state" at microscopic level.” -- is that what you think?

If an elementary particle has a “probability” but has no “state”, does the cosmos has a “state”? Or does the cosmos have a “probability” but have no “state”?

If there is only one elementary particle left in the cosmos, and if the elementary particle has a “probability” but has no “state”, does the cosmos has a “state”?

The cosmos is a set of elementary particles. The state of the cosmos is the sum of the state of all individual elementary particles.

If an elementary particle has a "probability” but has no “state”, and if the cosmos has a “probability” but has no “state”, how do we calculate the “probability” of the cosmos based on the “probability” of all individual elementary particles? What does the “probability” of the cosmos mean? What does the “probability” of an elementary particle mean?

Which system doesn’t have a “state”? How do you imagine a system which doesn’t have a “state”? How do you mentally visualize a system which doesn’t have a “state”? Can you describe a system which doesn’t have a “state”?

If you don't know the "state" of a system, does this fact means that this system doesn't have a "state"?

If a system evolves/changes along the time axis, and if we “cut” the system in a direction which is orthogonal to the time axis, then we get a snapshot of the system at a given time. This snapshot contains a state of the system (at a given time). “Time” and “state” are orthogonal to each other.

What does it mean by the term "a system which doesn't have a state"? Can we create a system which doesn't have a state? Is a-system-which-doesn’t-have-a-state possible? How do we know whether a system has a “state” or not?

If a system exists in a conceptual/theoretical space, and if there is no time axis in this conceptual/theoretical space, then this system doesn’t have a “state” – this system is static. Because there is no “time” in the conceptual/theoretical space. Whenever there is “time”, there is “state”. (BTW, if the cosmos is such a system, then the cosmos is not a state machine, but worse than a state machine – the cosmos is static (while a state machine should be dynamic).)

Whenever we imagine about “time”, we are imagining about “state”. “Time” and “state” exist together as a pair in our cognition. There is no “time” without “state”. There is no “state” without “time”.

What does “probability” mean in your conceptual/theoretical space?

Can you describe a (new) conceptual/theoretical space where “probability” means something other than “probability of state”?

If Schrodinger equation does not describe the transition function of a state machine, what does Schrodinger equation describe?

The relationship among any number of elementary particles, is governed/described by Schrodinger equation. If (in theory) Schrodinger equation can’t be used to reliably forecast whether I will go to McDonald for dinner in *this* world (based on the current state of all elementary particles of the cosmos), then what can Schrodinger equation do?

If every individual elementary particle has a state, and if Schrodinger equation describes something about these elementary particles, does any elementary particle have libertarian freedom?

If every individual elementary particle has a “probability” but has no “state”, and if Schrodinger equation describes something about these elementary particles, does any elementary particle have libertarian freedom?

Does “probability” implies libertarian freedom?

When you don’t know something \*exactly\*, this fact means that this thing has libertarian \*freedom\*. Is this reasoning reasonable?

When you don’t know the \*exact\* state of an elementary particle, this fact means that this elementary particle has a “probability” but has no “state”. Is this reasoning reasonable?

When you don’t know anything about an elementary particle, this fact means that this elementary particle has a “probability” but has no “state”. Is this reasoning reasonable?

When you can see the state of the cosmos, this fact means that the cosmos has a “probability” but has no “state”. Is this reasoning reasonable?

If there is only one elementary particle left in the cosmos, and if Schrodinger equation can be used to describe the behavior of this elementary particle, is the cosmos a state machine? If there are only two elementary particles left in the cosmos, and if Schrodinger equation can be used to describe the behavior of both elementary particles, is the cosmos a state machine?

If there is only one elementary particle left in the cosmos, and if this elementary particle has a state, is it possible that the *past* objective-state-evolution of this elementary particle can be described by a mathematical function?

If there are only two elementary particles left in the cosmos, and if either elementary particle has a state, is it possible that the *past* objective-state-evolution of both elementary particles can be described by a mathematical function?

If a mathematical function can be used to describe the *past* objective-state-evolution of all elementary particles in the cosmos, can we view/describe the past cosmos as a state machine (with the said mathematical function being its transition function)? If we can view/describe the past cosmos as a state machine, can we view/describe the *future* cosmos as a state machine? If we view/describe the future cosmos as a state machine, it’s possible that the transition function of the future cosmos will be different (comparing to the transition function of the past cosmos), but why will it be different?

The past cosmos can be viewed/described as a state machine. Why can’t the future cosmos be viewed/described as a state machine? What’s the difference between the past cosmos and future cosmos?

### (104)

Q: “It's surprising how many bodily functions we retell ourselves operator-narratives about until they stop functioning as we expect them to. Where "operator-narrative" means something like: our introspective tracking of a bodily function such that it seems we have intentional control over that function". And it's odd that it can seem like we operate systems we don't.” (<https://twitter.com/markgotproblems/status/1524786091999600640>)

A: Yes. It’s an illusion that I (as an agent) am operating my physical body (as a physical system). Actually, my physical body (as a physical system) is running by itself autonomously, without any thing/agent (except Schrodinger equation as an agent) to control/drive it.

Q: “What's an operator-narrative? It's our introspective monitoring of perceived control over biophysiological processes. The fact that sometimes these narratives refer and sometimes fail suggests our awareness isn't really doing much of what we think it's doing at all.” (<https://twitter.com/markgotproblems/status/1525162437636399104>)

### (105)

Q: “@keithfrankish Do you know anyone who aims to explain why it seems like anything to be us in terms of a reward-based framework for perceived self-control through retrospective narrative self-report?

(I'm not really sure if I'm capturing what I mean at all).” (<https://twitter.com/markgotproblems/status/1524790893840109571>)

A: “Not offhand -- but it's a really interesting hypothesis, with strong Dennettian themes and interesting connections with work on the enhanced vividness of episodic memories. Tell me more!” (<https://twitter.com/keithfrankish/status/1524830145097388042>)

### (106)

Q: “Has this universe always been or did it have a beginning?

Is an answer to this at all important in our daily lives?” (<https://twitter.com/Sister_Sufi/status/1524465110944784386>)

A: 1) No one knows. 2) Yes.

### (107)

A: I don't want to be read only after 200 years

Q: “You're talking to the wrong philosopher if you want that kind of legacy.” (<https://twitter.com/markgotproblems/status/1525086361266663424>)

A: Nothing can be wrong to a fatalist.

Q: “Surely counterfactuals are still wrong on fatalism.” (<https://twitter.com/markgotproblems/status/1525088518422384643>)

A: Yeah, but it doesn't matter to do wrong things -- it's unavoidable

Q: “Sure, but it's the case that 1) you're unavoidably talking to me (inappropriate interlocutor for gaining you 2 decades of philosophical notoriety) and also 2) if you were to be talking to an appropriate interlocutor for gaining it, it wouldn't be me.” (<https://twitter.com/markgotproblems/status/1525089489210818565>)

A: A fatalist won't gain anything other than what she/he is fated to gain.

Q: “Surely what's fated isn't a gain either.” (<https://twitter.com/markgotproblems/status/1525090671589216256>)

A: Right.

Q: “On your view it's just a snapshot of whatever state the overall system is in.” (<https://twitter.com/markgotproblems/status/1525091018676310016>)

A: Yes.

### (108)

Q: “Can phenomenology be explained in a psychologised way?” (<https://twitter.com/markgotproblems/status/1526640803883499523>)

A: Ontology is psychology in the mirror. Ontology is a (subjective/mental) imagination.

A philosopher’s ontology describes a system as the reality. However, this system is actually an imagination (or a visual imagery) of the philosopher, not the actual reality (if there is an actual reality). Because the philosopher has no way to (directly) access the actual reality (i.e., the thing in itself).

### (109)

A: "Strong emergence can change physical laws" -- that's sounds like "the earth is flat" to me.

Q: “It doesn't sound much like it at all to me.” (<https://twitter.com/markgotproblems/status/1527186317205032963>)

A: It's difficult to falsify either statement. How can we falsify them?

Q: “It's really easy to falsify that the Earth is flat. It's a claim about an empirical entity populating a physical theory. You just observe the entity.

The other is a theoretical move which can be assessed in terms of coherence.” (<https://twitter.com/markgotproblems/status/1527187472530251776>)

A: Can we design a physics experiment to falsify the other?

Q: “It's not a move that requires experimental discomfirmation to rule out and is therefore epistemically unrelated to the usual sorts of claims about flat earth.” (<https://twitter.com/markgotproblems/status/1527188873192919040>)

A: You mean there is no way to prove/disprove it (through physics experiments). Right?

Q: “No, I mean if you're talking about it in those terms then something's gone drastically wrong with how you conceptually structure these issues.” (<https://twitter.com/markgotproblems/status/1527190020490153985>)

A: What is wrong?

Q: “In the way I've just explained.” (<https://twitter.com/markgotproblems/status/1527191795435700225>)

A: I rarely have any clue what you're talking about, but I kind of like that. BTW, is strong emergence possible if the cosmos is a state machine?

Q: “I don't think strong emergence looks consistent with a fatalistic state machine in the end.” (<https://twitter.com/markgotproblems/status/1527195928532340736>)

A: If strong emergence actually exists, then the cosmos is not a fatalistic state machine. If the cosmos is a fatalistic state machine, then strong emergence doesn't actually exist. We need to figure out which one is the truth.

Q: “Your view avoids the problem strong emergence presents because it doesn't look like a possibility.” (<https://twitter.com/markgotproblems/status/1527199121710383105>)

A: Strong emergence -- what is emerged? in where?

A: “"Downward" mental-to-physical causation is basically telekinesis” (<https://twitter.com/keithfrankish/status/1527321580392439813>)

Q: “Some neural states have mental correlates. The system is configured (physically) such that those states have causal effects depending on the agent-level meaning they carry” (<https://twitter.com/WiringTheBrain/status/1527326547069132809>)

A: “That doesn't sound like downward causation. More like mental causation piggybacking on physical causation. The issue is whether mental states have extra causal powers over and above those of their neural correlates/realizers” (<https://twitter.com/keithfrankish/status/1527327307139993600>)

Q: “You have to invert it: The neural correlates have causal power solely by virtue of what they mean. For ones with mental correlates, this means agent-level meaning (thoughts, ideas...)” (<https://twitter.com/WiringTheBrain/status/1527330100970418179>)

A: “There's a sense in which I'd agree -- they have the causal powers they do because they've been co-opted to do certain representational work. But that doesn't involve new causal forces, just the clever coordination and exploitation of existing ones” (<https://twitter.com/keithfrankish/status/1527331167740911621>)

Q: “Yeah, exactly. Who says they have to be new?” (<https://twitter.com/WiringTheBrain/status/1527332294016761858>)

A: “The people who believe in strongly emergent causal forces! Newness is what distinguishes strong from weak emergence” (<https://twitter.com/keithfrankish/status/1527332934059200512>)

(A: “"Downward" mental-to-physical causation is basically telekinesis” (<https://twitter.com/keithfrankish/status/1527321580392439813)>)

A: To idealists, telekinesis is exactly what mind does to body (in the Cartesian theatre). Without telekinesis, how can mind control body?

I have a thought/intention to move my finger, and then my finger moves (following my thought/intention). So, my thought/intention (to move my finger) causes/controls/drives my finger's movement (as if my thought/intention (to move my finger) has a (will) power) -- this causality/causation is basically telekinesis. As long as I believe in this causality/causation, I am basically believing in telekinesis. If I don’t believe in telekinesis, then I shouldn’t believe in the aforementioned causality/causation, and I should think the aforementioned causality/causation to be fictional/false/counterfactual.

Actually, my finger’s movement is not caused/controlled/driven by my thought/intention (to move my finger). My finger’s movement is actually caused/controlled/driven by the Schrodinger equation. Or the movement of every elementary particle (e.g., an elementary particle in my finger) is actually autonomous.

My thought/intention (to move my finger) is actually caused/controlled/driven by the Schrodinger equation. Or the movement of every elementary particle (e.g., an elementary particle in my *physical* *brain*) is actually autonomous.

Both my thought/intention (to move my finger) and my finger’s movement are actually caused/controlled/driven by the Schrodinger equation. Or the movement of every elementary particle (e.g., an elementary particle in my brain/finger) is actually autonomous.

Every physical event is actually caused/controlled/driven by the Schrodinger equation. Or the movement of every elementary particle is actually autonomous.

### (110)

Q: “I agree with physics core theory 100% and still maintain idealist panpsychism.

I can't imagine why physics would need to be different in the brain...to explain free will? 🤔” (<https://twitter.com/danielfromearth/status/1527404569403088898>)

### (111)

A: “When people say that I'm denying consciousness, what do they think I believe? That we're all blind and deaf, lacking taste and smell, insensitive to pain and pleasure, and so on?” (<https://twitter.com/keithfrankish/status/1528087602632572929>)

Q: “That’s what it would mean if you used “consciousness” like I do. So I don’t know what you mean.” (<https://twitter.com/neilsinhababu/status/1528088439937085440>)

A: “I'm denying the \*theory\* that seeing colours, hearing sounds, feeling pains etc involves being acquainted with private mental colours, sounds, pains etc somehow associated with the activity in our brains” (<https://twitter.com/keithfrankish/status/1528091541306220545>)

Q: “We call these feelings private because they are not observable except to the subject experiencing them. How do you find your way around this?” (<https://twitter.com/VanAntwerpInc/status/1528093518631161857>)

A: “I deny that they are private in that radical way. We are each of us far better to placed to describe our own state than others are, but there's nothing happening that couldn't in principle be observed and described by someone else” (<https://twitter.com/keithfrankish/status/1528096732424327176>)

Q: “But someone else can only observe molecular changes, which are totally unlike the qualitative states...” (<https://twitter.com/VanAntwerpInc/status/1528097577618505728>)

A: “They can observe much more than that -- including the hugely complex raft of physiological, psychological, and behavioural reactions that stimuli produce in me” (<https://twitter.com/keithfrankish/status/1528099425561853957>)

Q: “Those are all just varieties of physical changes and none are like the mental states. They do not even suggest the M states. We know what they imply because we ourselves have our own mental states. Also, many M states have no behavioral manifestation- there is poker face.” (<https://twitter.com/VanAntwerpInc/status/1528101169863729152>)

A: “I don't accept the theory that mental and physical are independent in that way. I think mentalistic talk tracks complex patterns of sensitivity and reaction -- including hugely complex psychological and physiological responses (it's certainly not confined to overt behaviour!)” (<https://twitter.com/keithfrankish/status/1528103747699855360>)

Q: “It's barely a theory so much as a statement of the basic facts of the matter . . .

Haven't you preserved the dualism of mental and physical with your distinction of "psychological and physiological"?” (<https://twitter.com/VanAntwerpInc/status/1528104455379484672>)

A: “the mental needn't be conceived of in dualistic terms; it can all be physically realized” (<https://twitter.com/keithfrankish/status/1528160017463005195>)

A: The mental is all physically realized at elementary particle level. There is nothing else (other than the objective-state-evolution of the elementary particles in a brain). Mental is not something else (besides the objective-state-evolution of the elementary particles in a brain).

(A: “the mental needn't be conceived of in dualistic terms; it can all be physically realized” (<https://twitter.com/keithfrankish/status/1528160017463005195)>)

Q: “The mental is one half of the duality. To realise the mental in physical terms does not eliminate the dualism. Unless you say that we \*are\* p-zombies. Also, we cannot observe the qualities of another's experience.” (<https://twitter.com/meaculpitt/status/1528166625433661442>)

A: “But I do say that we are p-zombies” (<https://twitter.com/keithfrankish/status/1528167123452932097>)

Q: “Then you how can you not think that we're all blind and deaf, lacking taste and smell, insensitive to pain and pleasure, and so on?” (<https://twitter.com/meaculpitt/status/1528167781291634688>)

A: “because I don't think that seeing, hearing, tasting, feeling pain etc etc involves having special properties over and above the immensely complex sensitivities and reactive dispositions that p-zombies have” (<https://twitter.com/keithfrankish/status/1528168661839667201>)

Q: “Maybe I don't get it. What are "complex sensitivities" if not subjective qualities/feelings associated with pain and the senses? Is there no difference between saying that these feelings are in principle private, ineffable, etc., and saying that we don't really have feelings?” (<https://twitter.com/meaculpitt/status/1528172728976478208>)

A: “the processes I'm talking about are not metaphysically special -- they are biological processes that could in principle be described in complete detail by the natural sciences. I think that's \*all there is\* to having experiences and feelings. No mysterious dualistic extra” (<https://twitter.com/keithfrankish/status/1528174552357945346>)

Q: “But again, is there no difference between experiences and feelings being in principle describable by the natural sciences, and p-zombies which do not have experiences and feelings?” (<https://twitter.com/meaculpitt/status/1528175581317062656>)

A: “I think p-zombies \*do\* have experiences and feelings! By definition, they have all the same sensitivities and reactive dispositions we do” (<https://twitter.com/keithfrankish/status/1528177772266389504>)

(A: “When people say that I'm denying consciousness, what do they think I believe? That we're all blind and deaf, lacking taste and smell, insensitive to pain and pleasure, and so on?” (<https://twitter.com/keithfrankish/status/1528087602632572929)>)

Q: “I think that for a state to be conscious is for there to be something it’s like to be in it, which in turn is just for there to be some way it feels to be in it. Do you deny that there are such states?” (<https://twitter.com/jzdambrosio/status/1528092086595162112>)

A: “I don't deny that what-it's-like talk tracks something -- and something important. But I do deny that it tracks private mental what-it-is-likenesses somehow associated with brain activity and directly apprehended by a private subject or self” (<https://twitter.com/keithfrankish/status/1528094850754568192>)

Q: “What's the difference? This one seems a key point.” (<https://twitter.com/rromea/status/1528167146475225090>)

A: “on my view the stuff that being introspected isn't radically private, isn't intrinsic, isn't known directly, doesn't present a hard problem, etc etc” (<https://twitter.com/keithfrankish/status/1528167998892265473>)

### (112)

A: “A question for those, such as @Philip\_Goff, who think that phenomenal concepts reveal the essence of the properties they pick out: Is it part of the revealed essence of phenomenal colours that they are properties of minds rather than of external surfaces?” (<https://twitter.com/keithfrankish/status/1528365244808151040>)

Q: “Y’all really need to drop the substance/property talk and think relationally. “Mind” and “external world” are really blunt, abstract concepts and we should stop force fitting experience into them. Colors are relations.” (<https://twitter.com/ThouArtThat/status/1528457971809734656>)

A: “I agree with that. Very much in line with illusionism” (<https://twitter.com/keithfrankish/status/1528460851317026818>)

Q: “So illusionism, as you define it (and similar to process philosophy, Buddhism, and some strains of Vedanta), also denies the notion of a self as a separate and enduring entity/essence that "has" experience?” (<https://twitter.com/Spieringmj/status/1528472880836755456>)

A: “That wasn't actually built into the definition of the view, but it's a very natural extension of it, which I endorse” (<https://twitter.com/keithfrankish/status/1528473300900450306>)

(Q: “So illusionism, as you define it (and similar to process philosophy, Buddhism, and some strains of Vedanta), also denies the notion of a self as a separate and enduring entity/essence that "has" experience?” (<https://twitter.com/Spieringmj/status/1528472880836755456)>)

A: So, anything you think to be done by yourself (as an agent), is not done by yourself (as an agent) – it is done by the cosmos/direct-function/autonomous-BBs (as agent(s)). Or in other words, everything is done by the cosmos/direct-function/autonomous-BBs (as agent(s)); nothing is done by you (as an agent). Although you (falsely) imagine/believe that something (e.g., the objective-state-evolution of the BBs which happen to be in the (subjectively defined) space area/scope of your physical body) is done by you (as an agent). In the same sense, you also (falsely) imagine/believe that something (e.g., the objective-state-evolution of the BBs which happen to be in the (subjectively defined) space area/scope of your physical body) is done by your physical body itself (as an agent), and you also (falsely) imagine/believe that the movement of a self-driving car is done by this car itself (as an agent), and you also (falsely) imagine/believe that the moon revolution around the earth is done by the moon itself (as an agent). You, your physical body, the self-driving car, and the moon are not agents (who can do things actively/libertarian-freely).

### (113)

Q: “Regarding illusionism about consciousness, it seems that the position is rooted in substance metaphysics, with consciousness understood as a particular “thing” with properties. Does illusionism hold up under a process metaphysics? Do illusionists deny “feeling” as a verb?” (<https://twitter.com/NoahGuzman14/status/1528419640245776384>)

A: “I think that if you adopt a process ontology, it becomes even clearer that something like illusionism is true--in part because it's a denial that there is any such 'thing' (a quale) that could be the bearer of conscious properties” (<https://twitter.com/NeuroYogacara/status/1528420469489008641>)

Q: “The thing I’m still struggling with is then, how should we talk about our feeling (here used as a verb) in order to avoid such mistakes? Like, when I get injured, I am definitely hurting, and I don’t think illusionists would want to deny that I am hurting. Or do they?” (<https://twitter.com/NoahGuzman14/status/1528422923853176832>)

A: “They shouldn't. The way that I would put it is that you are using a label ('hurting') to pick out an incredibly complex and multidimensional response to physiological trauma, anchored to the physiological anticipation that acting in particular ways will cause further trauma.” (<https://twitter.com/NeuroYogacara/status/1528423688961347584>)

A: “I think that the key thing the illusionist wants to say is: don't turn that label into a thing, just know that it's a useful way to convey that information, in a tightly bundled package that abstracts away from all of the complexity that you might not even know how to describe” (<https://twitter.com/NeuroYogacara/status/1528423982990385153>)

Q: “But this seems to ignore that there is a part of my hurting (and I think Johanna Seibt has shown that we can rigorously talk about “parts of processes” in a process ontology) that is truly private and “felt”. I don’t have better language for this, but I think you catch my drift.” (<https://twitter.com/NoahGuzman14/status/1528426820302827520>)

A: “No one denies that there is something perspectival about your hurting, nor that it is something that you experience. But there is no 'thing' there, and identifying part of a processes doesn't turn that event into a thing with properties, or at least it shouldn't!” (<https://twitter.com/NeuroYogacara/status/1528427401037762560>)

A: “My current position about this is that one could apply the same reasoning to everything, including causality, biological evolution, etc etc etc. The only thing that is “real” are the micro physics, and perhaps there is not such thing either then it is “as if”s all the way down” (<https://twitter.com/_fernando_rosas/status/1528630200501682176>)

A: Everything can be explained at the micro physics level. Explanation at the micro physics level, is real. Lots of our conventional explanations at higher level, are fake/subjective.

Q: “What is micro physics? Is it particle physics? String theory? Or the next theory of even smaller things that will appear tomorrow?” (<https://twitter.com/_fernando_rosas/status/1528633932543049728>)

A: If we want to keep the concept of "time", then particle physics is “small” enough. If we pick loop quantum gravity, then there is no "time" -- the cosmos is static!

(A: “My current position about this is that one could apply the same reasoning to everything, including causality, biological evolution, etc etc etc. The only thing that is “real” are the micro physics, and perhaps there is not such thing either then it is “as if”s all the way down” (<https://twitter.com/_fernando_rosas/status/1528630200501682176)>)

A: “I find this position logically solid and extremely parsimonious, but perhaps too much? It leaves you with no explanations about anything, as nothing is really “real”, at best a convenient way of talking. The only real explanation enabled is the one about nothingness” (<https://twitter.com/_fernando_rosas/status/1528631467470999553>)

A: “At this point this position sounds a bit too extreme, and that maybe it could be reasonable to pay the price of assuming that some things are real, if that investment proves to be compensated by what it allows us to do…?” (<https://twitter.com/_fernando_rosas/status/1528632482085720066>)

A: “… but some other days this position sounds just ok 😆” (<https://twitter.com/_fernando_rosas/status/1528633015068409863>)

(A: If we want to keep the concept of "time", then particle physics is “small” enough. If we pick loop quantum gravity, then there is no "time" -- the cosmos is static!)

A: People tend to imagine that something can emerge from "low level" micro physics into "higher level". Nothing can emerge anywhere in the nature (at any “level”) -- something emerged (or being constructed/invented) in our mind/cognition.

A: Both “string theory” and “loop quantum gravity” are "lower-level" of particle physics. If there are even smaller things, that's fine. Theory about smaller things can be used to explain theory about bigger things, but theory about bigger things can't be used to explain theory about smaller things. The only problem is, it's hard for us to imagine things at very low level. As long as we can imagine it, it doesn't matter how "low-level" a theory is about.

A theory about bigger things should be completely explained by a theory about smaller things – nothing should be left unexplained in the theory about bigger things. Nothing should “emerge” into the theory about bigger things from the theory about smaller things. A theory about smaller things should cover everything being covered by the theory about bigger things.

Q: “That is a noble task, but i’m not sure that it is achievable. Let me know when anyone finds a good explanation of eg anticipatory anxiety or gentrification based solely on particle physics” (<https://twitter.com/_fernando_rosas/status/1528656850484346880>)

A: Good question. But obviously, in theory, anticipatory anxiety or gentrification can be explained based solely on particle physics, unless particle physics is wrong.

A: That's the basic idea of reductionism.

Your question is like: “If Darwinian evolution is true, explain to me why animal A has structure B? Can you? If you can’t, then I know that Darwinian evolution is false.”

Q: “I’d not deny it’s reality. I’d only question its completeness” (<https://twitter.com/_fernando_rosas/status/1528662455370584064>)

(A: Good question. But obviously, in theory, anticipatory anxiety or gentrification can be explained based solely on particle physics, unless particle physics is wrong.)

Q: “I disagree. It could be right but be incomplete” (<https://twitter.com/_fernando_rosas/status/1528662617115480064>)

Q: “But indeed that is the basic idea of emergentism” (<https://twitter.com/_fernando_rosas/status/1528662710283534336>)

A: If it is right, then what do you mean by "incomplete"? If you think it to be right, then how do you know that it is "incomplete"? Epistemologically, how do you tell whether a theory is "complete" or not? If you can't explain something by a theory, does this fact mean that this theory is incomplete? In my view, if you can't explain something by a theory, it doesn't mean a problem of this theory. If I can't prove Pythagorean theorem by myself, this fact doesn't mean Euclidean geometry is "incomplete".

A: I won't say a theory is "incomplete”, before I can prove it to be incomplete.

A: To me, physics theories are like mathematics theorems, I can't imagine how a physics theory can be "incomplete", just like I can't imagine how a mathematics theorem can be "incomplete". Perhaps emergentists don't treat physics theories so seriously. To reductionists, physics theories are something fundamental and complete, which means that the nature only has fundamental rules at the lowest level. To emergentists, physics theories are something fundamental but incomplete, which means that the nature has different rules at different levels – higher-level rules are required to make the lower-level rules "complete". If we imagine a rule as a god, then reductionists only believe in one God, while emergentists believe in many gods.

(A: I won't say a theory is "incomplete”, before I can prove it to be incomplete.)

Q: “I wouldn’t say is complete either until I can prove it is complete. I remain open to both possibilities” (<https://twitter.com/_fernando_rosas/status/1528675463626993664>)

A: Emergentists assume particle physics to be incomplete, while reductionists assume particle physics to be complete. Reductionists assume the "God" (i.e., fundamental rules) to be omnipotent, while emergentists don't assume that.

(A: People tend to imagine that something can emerge from "low level" micro physics into "higher level". Nothing can emerge anywhere in the nature (at any “level”) -- something emerged (or being constructed/invented) in our mind/cognition.)

Q: “But isn’t the mind/cognition part of nature? And if so, doesn’t this imply that at least something emerged?” (<https://twitter.com/C_A_Bakker/status/1528698900621803521>)

A: Mind/cognition just like anticipatory anxiety or gentrification, is a “high-level” description/label/concept of “low-level” micro physics. It feels like that we are observing mind/cognition, anticipatory anxiety and gentrification happening *there* in the nature. But what actually happening *there* in the nature, is just plain micro physics. Our mind/cognition just labels/conceptualizes/theorizes some of the plain micro physics processes as mind/cognition, anticipatory anxiety and gentrification, and then it feels as if that they are more than plain micro physics processes. Similarly, our mind/cognition just labels/conceptualizes/theorizes some of the plain physical objects as sun, moon and human, and then it feels as if that they are more than plain physical objects. My (mental) concept of “human” is more than my (mental) concept of a “general/average physical object”, that’s why I feel like that a human is more than a plain physical object, but a human is still a plain physical object in the nature.

Q: “This conversation reminds me of Dennett's Stances. I'm sympathetic to the idea that ultimately, cognition is all physical. However, I think studying it scientifically REQUIRES the use of higher-level explanations. And that's not just about feelings.” (<https://twitter.com/C_A_Bakker/status/1528828944979476483>)

### (114)

Q: “I don’t understand how someone can deny that info about the world comes to us through those contents (i.e. qualia) rather than directly.

Just semantics?” (<https://twitter.com/BugRib/status/1528867676252086272>)

A: Info about the world comes to us through an internal data/info (in the brain). Info about the world is being processed by your brain. You are aware of the internal data/info (in your brain). In theory, I can manipulate the internal data/info (in your brain) during your brain surgery.

Q: “I think this all must be true, given all the correlative evidence of neuroscience. I just don’t know what/who is experiencing these processes as qualitative feels, or how this what/who could be nothing above brain processes. Seems like a category error.” (<https://twitter.com/BugRib/status/1529055710830424065>)

A: There is a subject who is experiencing these processes. However, this "subject" is part of the same process. Or in other words, this “subject” is not something fundamentally/essentially different from these processes. When you say something to other people, the meaning of your words is pretending that these words are being spoken by this "subject". This "subject" is named "I" or “me” in your words.

In my own (subjective) experience, there is a subject and an object. The subject is "I" or "me", the object is my environment. The subject and object exist at the same time as a pair. The subject and object together (as a whole) is my (subjective) reality. It feels like that the subject is observing the object. (BTW, Frankish said that the subject is observing the object \*directly\* (which sounds vague/wrong to me).) However, both the subject and the object only exist in my (subjective) experience. Or in other words, both the subject and the object are unreal/fake/fictional.

A: What is second transduction?

Q: “Good question. Here's Dennett (apologies that the original diagrams appear to have been redacted in this online version) <https://dl.tufts.edu/pdfviewer/ht24ww75v/v118rs17v>” (<https://twitter.com/markgotproblems/status/1529344368292859904>)

Q: “See also J.J Gibson's Affordances.” (<https://twitter.com/markgotproblems/status/1529344949472223233>)

A: The second transduction is just a variation of Cartesian Theatre.

Q: “It's the materialist cartesian intuition you've defended here.” (<https://twitter.com/markgotproblems/status/1529350322929426433>)

A: What's your position?

Q: “My position is to suppose that a materialist view probably hangs most parsimoniously with the neuroscientific picture, in which there is no neurophys. structure/locus in which this second transduction occurs. It's rather selected-for across multiple spatially distributed systems.” (<https://twitter.com/markgotproblems/status/1529353859793141760>)

A: OK. Then, when you see a red apple, is this red apple your mental image?

Q: “No, I think that's a bloated materialist view which avoids roughly none of the problems you'd want it to. (Imports the conceptual structure of Cartesianism and expects the problems of the homunculus to go away).” (<https://twitter.com/markgotproblems/status/1529356695171891200>)

Q: “To be clear, I'm not saying I think there are no images. I'm saying there's no place in the brain where the "picture" comes together for viewing.” (<https://twitter.com/markgotproblems/status/1529356914408271873>)

A: But why you see the picture of the apple?

Q: “This is where Gibsonian Affordances are a helpful tool for washing away the last of the Cartesian dregs.” (<https://twitter.com/markgotproblems/status/1529358499339194368>)

A: How does Gibsonian Affordances help here?

Q: “It explains how the direct/indirect distinction isn't really a powerful conceptual structure for thinking about conscious experience.” (<https://twitter.com/markgotproblems/status/1529359760230850560>)

A: Please kindly explain that

A: “Perhaps the composition and layout of surfaces constitute what they afford. If so, to perceive them is to perceive what they afford. This is a radical hypothesis, for it implies that the “values” and “meanings” of things in the environment can be directly perceived. [148]” – it sounds vague/wrong to me. “directly perceived” – sounds interesting, but how? Why philosophers are so confident? ;)

A: Because they are confident :)

Q: “Gibson was a psychologist. But let's slow down and go point-by-point. We're excitedly jumping around like hares here.” (<https://twitter.com/markgotproblems/status/1529362328638181377>)

A: Good imagination :) By "philosophers", I was not talking about Gibson ;)

(A: Because they are confident :) )

Q: “Or rather, we're so unconfident that we are compelled to first understand the viable options so well we could explain them as if we agree with them before writing any off.” (<https://twitter.com/markgotproblems/status/1529363319492050944>)

A: How do you perceive a red apple directly?

(A: Please kindly explain that)

A: Thanks for your explanation in direct messages. I can see that Gibson uses a third-person view where subject and object are parts of the same third-person mechanics. IMHO, it has nothing to do with philosophical meaning of consciousness.

Q: “Perhaps my explanation was woefully misleading. If it sounded like the construal you just made, then it wasn't intended to.” (<https://twitter.com/markgotproblems/status/1529403925543235584>)

A: Anyway, we are discussing about something really deep. We shouldn't imagine that there is a standard answer.

Q: “Indeed. And I don't think you'll find many in this thread.” (<https://twitter.com/markgotproblems/status/1529405227924967424>)

A: Although I think I have the best answer ;)

Q: “I can tell 😂 “ (<https://twitter.com/markgotproblems/status/1529406088776491010>)

A: You can perceive that \*directly\* :)

A: To tell that, according to Dennett, you don't need to use your brain as the second transduction ;)

(A: You can perceive that \*directly\* :) )

Q: “Nah, there's a small Lego man in my head watching the JumboTron in my brain. There's also an even smaller figure in \*his\* head watching \*his\* internal DVD player.” (<https://twitter.com/markgotproblems/status/1529407144788901892>)

A: You don't need these two screens. The even smaller figure can eat the external red apple \*directly\*!

Q: “Then what on Earth are they doing in my head?!” (<https://twitter.com/markgotproblems/status/1529408279885283328>)

A: You should ask the smaller figure, he's the boss!

A: There is no Cartesian Theatre in my brain. But this fact doesn't mean I don't need to explain how my brain works. Gibson's view doesn't explain much.

A: Philosophers should learn how the brain works from neuroscientists (instead of other philosophers).

Q: “Yes. They should.” (<https://twitter.com/markgotproblems/status/1529415119884673025>)

A: Lots of philosophers don't read neuroscience papers.

They imagine they can figure out how their brain works through doing philosophy ;)

Q: “I'm not sure anyone thinks they can access knowledge about the mechanisms of neuroscience by doing philosophy.” (<https://twitter.com/markgotproblems/status/1529416083760881664>)

A: They think they can learn about consciousness, without learning neuroscience in depth.

(A: There is no Cartesian Theatre in my brain. But this fact doesn't mean I don't need to explain how my brain works. Gibson's view doesn't explain much.)

Q: “Gibson's isn't a philosophical view. It's a neuropsychological theory, which is richly populated by experimental data.” (<https://twitter.com/markgotproblems/status/1529412588999680001>)

A: If it's not a philosophical view, why you mention it in this thread?

Q: “We discussed this at length:

1) Affordances help wean off Cartesian Materialism

2) Affordances help wean off direct/indirect distinction

3) Philosophers who want a materialist theory of consciousness should learn neuroscience (can't remember who said that... 😕)” (<https://twitter.com/markgotproblems/status/1529703111710883840>)

(Q: “It's the materialist cartesian intuition you've defended here.” (<https://twitter.com/markgotproblems/status/1529350322929426433> ))

A: What do you mean by the term “materialist cartesian intuition”?

If I say “when you were awake, you or your (real) physical brain identified/perceived a red apple (from the red apple’s environment) in front of your (real) eyes through a (real) physical process (in your (real) physical brain)” or “when you were dreaming, you or your (real) physical brain (BTW, your (real) physical body is sleeping on the bed with your (real) eyes closed) identified/perceived a red apple (from the red apple’s environment) in front of your (fake) eyes through a (real) physical process (in your (real) physical brain (on the pillow))” or “when you were awake/dreaming, you or your (real) physical brain made/reached a decision/choice/conclusion (to go to McDonald (instead of KFC) for dinner) through a (real) physical process (in your (real) physical brain)”, is that a “materialist cartesian intuition”?

If you can perceive a red apple \*directly\* while you are awake, can you perceive a red apple \*directly\* while you are dreaming?

If you can perceive a red apple \*directly\* while you are dreaming, what does it mean by the term “directly”?

Q: “It's a pretty interesting question about psychology as to why anyone defaults to viewing dreams as analogous to waking perceptions.

Are you saying that your experience of dreams is indistinguishable from a waking perception and inferring from this that the neurology is similar?” (<https://twitter.com/markgotproblems/status/1529709659363368960>)

A: Yes

Q: “Very interesting! I'm not familiar with the literature on dream phenomenology, so only have my own data to go on at the subjective end.

Structurally though, I can only recommend reading the relevant neuro on perception and memory consolidation. They're quite different structures” (<https://twitter.com/markgotproblems/status/1529712373463908352>)

A: I think human brain reuses some neural circuitries to construct a "world" for me, when I am awake/dreaming. That's why the "world" is indistinguishable when I am awake/dreaming. I call this "world" the subjective-reality.

Q: “It's undoubtedly true that the systems overlap both in subjective content and physical structure. I'm interested in where the inference that a dream \*is\* a perception comes from.” (<https://twitter.com/markgotproblems/status/1529715619893059585>)

A: You need to answer this question first: What is a perception?

A: And also: What is the reality?

Q: “We're considering your view in which dreams are perceptions of a sort (or maybe identical). Perhaps it'd first help for \*you\* to define perception so we can see how it departs from the standard picture.” (<https://twitter.com/markgotproblems/status/1529716553033437185>)

A: There is no standard picture. You can't \*formally\* define/prove why your reality is "real" while you are "awake". Right now, you can't \*really\* know whether you are in your dream or not. You might wake up a while later and find that you are on your bed.

Q: “Why should dreams being similar systemically to waking perception entail that there must be a second transduction where the "pictures" are "viewed". Why can't my brain re-stimulate analogously as it did when I was awake (as it does in the standard view you claim doesn't exist)?” (<https://twitter.com/markgotproblems/status/1529719166701252610>)

A: OK. Since you talked about \*standard\* picture/view twice, I think I need to clarify here first. There are actually two \*popular\* "standard views" -- materialism and idealism. Which one are you talking about right now?

Q: “Apologies, I wasn't talking about "standard philosophical theses". I was talking about the way these systems are standardly conceived at the level of neuropsychology.” (<https://twitter.com/markgotproblems/status/1529721813726552064>)

A: First, I have to point out, when you say "at the level of neuropsychology", you are talking about what scientists often like to talk in this field. I must say that, neuroscientists usually hold a materialist view. So, do you agree that we continue our discussion based on materialism first?

Q: “I'm not sure that pinning down a philosophical thesis is important for any of my responses.

You can recapitulate the data of science in terms of many of these theses.

If you find it most helpful to explore science in terms of materialism, sure.” (<https://twitter.com/markgotproblems/status/1529724127543709699>)

A: Let’s suppose that I am a materialist. Being a materialist, it means that (even in my dream) I treat my local environment as a physical object (or as many physical objects), and I treat myself as a physical object. A physical object is a set of elementary particles. Under this context, I treat a red apple as a physical object. But wait, why this physical object (i.e., the red apple) has color on it? I can’t explain that. Could you please explain that for me?

A: My current view is like materialism + idealism

(more on materialism)

I mixed materialism and idealism.

I don't think I have to choose one from the two. (it's a conventional thinking that I must choose one from the two)

Don't trust logic

It can be both

What you think to be consciousness/physical, actually can be the same thing. Not two things.

The consciousness/physical dividing, can be wrong

They can be the same thing.

I mean, how do you know that there is a physical world, and there is another world called your consciousness? They are actually the same world!

You imagine the same world as two worlds.

(For example, if you are believing in mental representation, then you are imagining two worlds.)

I believe in two worlds (i.e., subjective-reality and objective-reality).

But I think they are the same world actually. My view is another kind of monism.

If there are two things, one can be fundamentally explained by another, then fundamentally there is only one thing. For example, if there are A and B, A can be fundamentally explained by B, then fundamentally there is only B. If B can be fundamentally explained by A, then fundamentally there is only A. But how about A and B are actually the same thing? Then fundamentally there is only who?

If there is one fundamental entity P which can be explained in terms of two properties A (i.e., physical) and B (i.e., mental), then P is neither physical nor mental, or P is both physical and mental. Or in other words, it doesn’t matter P is physical or mental; it is meaningless to say P is physical or mental.

P is the thing in itself.

The two worlds (i.e., subjective-reality and objective-reality) are the same world actually. I just have two theories/cognitions/imaginations/visual-imageries/mental-representations/understandings of the same world (i.e., the thing in itself). I (mentally) label these two theories/cognitions/imaginations/visual-imageries/mental-representations/understandings (of the same world) two worlds.

What a materialist thinks to be the “physical world”, is actually a mental-representation/indirect-geometric-model (of the thing-in-itself) of this materialist. Or in other words, the “world” which is being considered/understood as the “physical world” by a materialist, is actually a mental-representation/indirect-geometric-model (of the thing-in-itself) of this materialist.

The thing-in-itself is being understood (by a naïve philosopher) as either the subjective-reality or the objective-reality. The thing-in-itself can be understood (by a naïve philosopher) as either the subjective-reality or the objective-reality.

But actually, the thing-in-itself is neither the (naïve philosopher’s) subjective-reality nor the (naïve philosopher’s) objective-reality. Or in other words, the thing-in-itself is both the (naïve philosopher’s) subjective-reality and the (naïve philosopher’s) objective-reality at the same time simultaneously.

The naïve philosopher’s subjective-reality is the naïve philosopher’s theory of the thing-in-itself (i.e., the naïve philosopher’s “subjective-theory”). The naïve philosopher’s objective-reality is the naïve philosopher’s (another) theory of the thing-in-itself (i.e., the naïve philosopher’s “objective-theory”). There is only *one* thing-in-itself, although the naïve philosopher has two theories (i.e., the subjective-theory and the objective-theory) of it at the same time simultaneously.

(A: There is no standard picture. You can't \*formally\* define/prove why your reality is "real" while you are "awake". Right now, you can't \*really\* know whether you are in your dream or not. You might wake up a while later and find that you are on your bed.)

No matter you are awake or dreaming, your “reality” mainly includes two parts: the indirect-geometric-model, and your recent episodic memories. You believe/theorize that you are only living at the present moment. However, you access your recent episodic memories so frequently that (in a sense) you are actually living in the past.

No matter you are awake or dreaming, you have an indirect-geometric-model, and you have access to your recent episodic memories. As a modern human, you believe/theorize that your indirect-geometric-model in your dream doesn’t reflect the actual third-person structure of the objective-reality, and you believe/theorize that your episodic memory regarding your dream doesn’t reflect the actual third-person objective-state-evolution of the objective-reality. But when you are dreaming, you don’t know/theorize that you are dreaming, so (when you are dreaming) you don’t know/theorize the fact/theory that your indirect-geometric-model doesn’t reflect the actual third-person structure of the objective-reality, and you don’t know/theorize the fact/theory that your recent episodic memories don’t reflect the actual third-person objective-state-evolution of the objective-reality.

If you believe/theorize that you are not in your dream right now, and if you are a materialist, then you believe/theorize that your current indirect-geometric-model reflects the actual third-person structure of the objective-reality, and you believe/theorize that your recent episodic memories reflect the actual third-person objective-state-evolution of the objective-reality. However, you have no way to prove such a belief/theory, because you don’t have access to the *actual* third-person structure of the objective-reality, and you don’t have access to the *actual* third-person objective-state-evolution of the objective-reality. At most, you can only *assume/theorize* that your current indirect-geometric-model reflects the actual third-person structure of the objective-reality, and you can only *assume/theorize* that your recent episodic memories reflect the actual third-person objective-state-evolution of the objective-reality. BTW, when you *assume/theorize* that, you are not aware of that it is only your *assumption/theory*. Actually, when you are dreaming, you *assume/theorize* that too, because you don’t know/theorize that you are dreaming.

So, if you are a materialist, it’s quite clear that your imagination/theory of the third-person structure of the objective-reality is actually based on the spatial structure of your indirect-geometric-model, and your imagination/theory of the third-person objective-state-evolution of the objective-reality is actually based on the objective-state-evolution of your recent episodic memories. Or in other words, it’s quite clear that your imagination/theory of the feature of the objective-reality is actually based on the feature of your subjective-reality. Or in other words, it’s quite clear that your imagination/theory of the objective-reality is actually based on your subjective-reality. In theory, the objective-reality can be totally different from your subjective-reality. (For example, if you are actually a brain in a vat.)

If you are a materialist, when you imagine/theorize that your subjective-reality (must/should) represents/reflects/models/simulates the objective-reality, actually you are imagining/theorizing what the objective-reality (must/should) look like, based on what your subjective-reality looks like. Or in other words, when you imagine/theorize that your subjective-reality (must/should) be comparable to the objective-reality in a sense, actually you are imagining/theorizing that the objective-reality (must/should) looks similar to your subjective-reality in a sense. But in theory, you have no clue about what the objective-reality *actually* looks like; the *actual* objective-reality doesn’t need to look like your subjective-reality in any sense.

If you are a materialist, you actually imagine/theorize the objective-reality based on your own subjective-reality. So, the objective-reality (as you imagined/theorized) is actually a revised/distorted version of your own subjective-reality. In this sense, the objective-reality (as you imagined/theorized) is actually your own subjective-reality but in a distorting mirror. That’s exactly why the objective-reality (as you imagined/theorized) looks similar to your own subjective-reality in a sense.

### (115)

Q: “Suppose that when you see an apple what you're directly aware of is an intervening mental image of the apple, which then produces a range of reactions appropriate to seeing an apple. Now, why couldn't light from the apple produce those reactions directly, without the image?” (<https://twitter.com/keithfrankish/status/1528756636533284864>)

Q: “also -- what on earth is a mental image? And how is a mental image like an apple? the whole "intervening image" theory is a fiasco IMHO.” (<https://twitter.com/ericlinuskaplan/status/1528762781884882947>)

A: “all images are mental, you see colors, not reflectance properties or wave lengths. There is no place in the scientific description of the physical world for any of the images you see, so they must be mental.” (<https://twitter.com/tim_elmo/status/1528764380761837568>)

Q: “I love the explicitness of this. I think many people believe the same but are more wary of saying it so clearly. I disagree, of course, but I understand and respect the view.” (<https://twitter.com/keithfrankish/status/1528895875137032192>)

A: @keithfrankish is trying to avoid talking about the mental world :)

A: When you see an apple in your dream, there is no light from the apple produce those reactions directly. 😂

A: What do you experience in your dream? Isn't the world in your dream your mental world? Isn't the apple in your dream a mental image?

Imagine a red apple. Now, you are seeing a red apple in your mind. Can you? If you can, then this red apple is a mental image in your mind.

Mental image has something to do with visual cortex.

In order to think about mental image properly, philosophers need to learn about how visual cortex and computer vision works.

Imagine a computer program which can see the "outside world" *directly* \*through\* a digital camera. If you are the programmer who wrote this computer program, how did you design its control logic? How can this computer program see the "outside world" *directly* \*through\* a digital camera? Why must this computer program see the “outside world” directly? Why can’t this computer program simply see the digital image being captured by the camera?

A: At most my brain is seeing the image on my retina. Isn’t it?

(A: “all images are mental, you see colors, not reflectance properties or wave lengths. There is no place in the scientific description of the physical world for any of the images you see, so they must be mental.” (<https://twitter.com/tim_elmo/status/1528764380761837568)>)

A: <https://twitter.com/WillFCooper/status/1528903343023996928/photo/1> (an image) (<https://twitter.com/WillFCooper/status/1528903343023996928>)

(A: At most my brain is seeing the image on my retina. Isn’t it?)

Q: “Human beings have bodies that allow them to be open to an environment, to each other, to meaning, and to history. The human eye only sees in this context. It's not a camera. The brain is not a computer.” (<https://twitter.com/ericlinuskaplan/status/1529089403817103365>)

A: This context is something like a virtual reality. If you view this virtual reality as the reality, then you feel like that you are located right in the middle of the reality. However, actually, you are located right in the middle of the virtual reality.

Q: “not me. If I pound back beers get in a car and kill somebody (chash v'shalom) I actually killed them. It's not a movie or video game. The guilt and responsibility are real.” (<https://twitter.com/ericlinuskaplan/status/1529175970388643840>)

A: It's your longest dream. There are consequences in every dream of you.

Q: “I think this is just a verbal dispute. if you want to call reality a dream, be my guest. It is the dream of Vsnu.” (<https://twitter.com/ericlinuskaplan/status/1529177523686256640>)

A: Your reality is your dream. My reality is my dream.

Q: “oh that I don't believe for a second! that's not just a verbal dispute.” (<https://twitter.com/ericlinuskaplan/status/1529179864678338560P>)

A: You are imagining your current dream to be the "reality". Tell me, what is the "reality"? What do you mean by "real" if you define "reality" to be "something real"?

A: Do you have access to "thing in itself"? -- if "thing in itself" is the "real"

(A: When you see an apple in your dream, there is no light from the apple produce those reactions directly. 😂)

Q: “Does anyone contest that there's a distinction between visual memory systems and real-time, waking visual perception?” (<https://twitter.com/markgotproblems/status/1529067208227311616>)

A: There is a distinction between visual memory systems and real-time, waking visual perception. But a mental image is the same between them. When people talk about dream, they admit that an apple is a mental image. But when they talk about waking visual perception, they don't accept the existence of mental image anymore. Why?

(A: You are imagining your current dream to be the "reality". Tell me, what is the "reality"? What do you mean by "real" if you define "reality" to be "something real"?)

Q: “I have no definition of reality but I am sure it is not something that belongs specifically to me. Cause what's so special about me? I can make mistakes and even lie to myself.” (<https://twitter.com/ericlinuskaplan/status/1529180724531564549>)

A: Wait, what is "me"? Is "me" my physical body? Or something else? When I think my dream "belongs" to me, where is "me"? Is me the "physical body" which is sitting in a roller coaster right now? Or is me sleeping on my bed at home?

A: My dream is not like a virtual reality, because I can escape a virtual reality by removing VR glasses.

A: When I am awake, what I am seeing, is still like a virtual reality, because I don’t know what the actual “reality” (i.e., thing in itself) looks like.

When I am awake, I can distinguish physical objects in my local environment – this is done by my visual cortex. If the related neural circuitry (in my visual cortex) is destroyed, I won’t be able to distinguish physical objects in my local environment, although their digital images are being captured by my retina.

In theory, by a brain surgery to the visual cortex, we can make a person’s visual cortex to only form/generate/understand a two-dimensional space (instead of forming/generating/understanding a conventional three-dimensional space) for the person. This two-dimensional space is parallel to the surface of the earth. Hight information is not included in this two-dimensional space. In this two-dimensional space, physical objects are two-dimensional.

(A: There is a distinction between visual memory systems and real-time, waking visual perception. But a mental image is the same between them. When people talk about dream, they admit that an apple is a mental image. But when they talk about waking visual perception, they don't accept the existence of mental image anymore. Why?)

Q: “That's simply not the state of current neuroscience.” (<https://twitter.com/markgotproblems/status/1529182208145215488>)

A: I didn't catch what you mean

Q: “This thread is discussing the commonly held (and hard to dispel) folk notion of there being a second transduction in waking visual perception. You've jumped over to discussing a different neurological mechanism, which is associated with working memory.” (<https://twitter.com/markgotproblems/status/1529183258717593601>)

A: The commonly held folk notion is actually right! ;)

Q: “Right in terms of what?” (<https://twitter.com/markgotproblems/status/1529184605202485249>)

A: If we accept the existence of working memory, then there is a second transduction in waking visual perception.

Q: “I'm sorry, I don't follow why that would be the case at all.” (<https://twitter.com/markgotproblems/status/1529185241075703810>)

A: When I watch an apple in front of me, I see a mental image of a red apple. The real apple is not that mental image. The real apple doesn't look like the mental image. The real apple has no color. The real apple is the "thing in itself".

Q: “Well, that's a clear picture of your view (one I strongly disagree with), but I'm still not seeing how it involves working memory.” (<https://twitter.com/markgotproblems/status/1529186947364704260>)

A: The mental image of the red apple is in my working memory.

Q: “So, contra neuroscience, you think sensory input is first banked in working memory and then withdrawn at some internal mental cash machine for further observation?” (<https://twitter.com/markgotproblems/status/1529187564829163521>)

A: It can withdraw immediately

Q: “I can only really recommend taking a second look at Gibson.” (<https://twitter.com/markgotproblems/status/1529191242717876224>)

(A: My dream is not like a virtual reality, because I can escape a virtual reality by removing VR glasses.)

Q: “that's a beautiful way of looking at it!” (<https://twitter.com/ericlinuskaplan/status/1529211153951297536>)

(A: When I watch an apple in front of me, I see a mental image of a red apple. The real apple is not that mental image. The real apple doesn't look like the mental image. The real apple has no color. The real apple is the "thing in itself".)

A: If you imagine that you are seeing the real apple *directly*, then you are imagining your mental image (of the red apple) as the “thing in itself”. Obviously, you are not seeing the “thing in itself” directly. Don’t forget the concept of “thing in itself”.

### (116)

A: Suppose you have the magic to manipulate your real life just like manipulating a lucid dream, will you use the magic?

Q: “I'm not sure what the difference between the two types of agency (lucid dream; waking) is supposed to be.” (<https://twitter.com/markgotproblems/status/1530507166968340480>)

A: In my lucid dream, I can manipulate other people's behavior by my mind

A: “In the lucid dream Natasha or Brigitte actually want to have sex with you … 🤷‍♂️💤 (<https://twitter.com/LocoQf/status/1530508770782105601>)

Q: “Oh, I see. So you're asking "if you had magical powers, like telekinesis and psychokinesis etc., would you?"” (<https://twitter.com/markgotproblems/status/1530507874698465280>)

A: Yes. But my point is, real life is a downgraded lucid dream.

Q: “Downgraded in what respect?” (<https://twitter.com/markgotproblems/status/1530509049489510400>)

A: No magic

Q: “I suppose it's a downgrade if your quality of life outcomes are all geared towards maximising your own psychological well-being.” (<https://twitter.com/markgotproblems/status/1530509562708692992>)

A: You can also maximize other people's psychological well-being in your lucid dream.

Q: “Presumably we're not viewing characters in a dream as "people", though?” (<https://twitter.com/markgotproblems/status/1530510459278876672>)

A: Suppose we're viewing characters in a dream as "people".

Q: “Are we just imagining a Matrix where we have control over the source code kind of deal?” (<https://twitter.com/markgotproblems/status/1530511457913344001>)

A: The difference (from Matrix) is that, there is no way to get out.

Q: “So like getting God Mode in a sandbox game?” (<https://twitter.com/markgotproblems/status/1530513717724598279>)

A: Sounds like that. Or think of becoming a half-god.

A: Without magic, real life isn't cool at all.

A: That's why people play computer games.

(A: Without magic, real life isn't cool at all.)

Q: “Oddly for me, I'm not quite so pessimistic. I'm quite content with reality. It certainly "seems" spectacular.” (<https://twitter.com/markgotproblems/status/1530517900137795584>)

A: Isn't real life a little bit boring?

Q: “I'm bored about as frequently as the average person. I don't see that as reason to view reality as underwhelming in any way.” (<https://twitter.com/markgotproblems/status/1530518929042550784>)

A: Actually, my point is, as long as you think it makes sense to compare real life and dream, you can't just imagine the dream as a trivial byproduct of brain. The dream is something serious.

Q: “Do you think dreams are something more than sleep hallucinations?” (<https://twitter.com/BugRib/status/1530521459285626882>)

A: No. But I think real life is a wake hallucination.

My brain has a continuous hallucination. My brain divides/splits this continuous hallucination into lots of episodes/sessions, and labels some of them as "real life", while labels the rest as "dreams".

A: All episodes/sessions are being stored in my brain's episodic memory (before I forget them) – that’s why I can recall them.

A: Then, my brain imagines/theorizes that the episodes/sessions with the label “real life” reflect something “real”, while the episodes/sessions with the label “dreams” doesn’t reflect something “real”.

Then, my brain imagines/theorizes something based on the episodes/sessions with the label “real life”, and labels it the “objective-reality”. So, the “objective-reality” is actually my brain’s imagination/theory.

A: My brain labels the “objective-reality” as “something real”.

A: Suppose an infant has a rare disease which makes her unable to wake up from her dream since she was born. It’s possible that she will label some of her dreams as “real life”, and will imagine/theorize an “objective-reality” based on these dreams.

Q: “So how do you describe yourself? Are you an Idealist?” (<https://twitter.com/IAmVlasta/status/1530538726073458690>)

A: I think it's possible that “mental” and “physical” are fundamentally the same. Because I can't see the "real" difference between "mental" and "physical".

Q: “It seems to me the default is the mental. Not experiencing a difference is an idea” (<https://twitter.com/IAmVlasta/status/1530546636665065476>)

A: But the brain is supposed to be physical (in my words).

If an idea is the idea of a brain, then the brain is physical.

It's the chicken or the egg causality dilemma. When we label something as “mental” or “physical”, it’s like we label it as “chicken” or “egg”.

I think it's possible that the chicken and the egg are actually the same thing. Because I can’t see the “real” difference between the chicken and the egg.

Although it seems like that I must assume/theorize the co-existence of both the chicken and the egg (in my explanation/assumption/theory of the “reality”).

However, when I see a red apple in front of my eyes, is the red apple the chicken *or* the egg?

A: If the red apple is the chicken, then where is the egg?

If the red apple is the egg, then where is the chicken?

A: (If you claim/imagine/theorize/assume that the red apple is a mixture of a chicken and an egg, then you should formally define/imagine/theorize/explain *how* the chicken and the egg are mixed. BTW, how can I prove/disprove your theory/imagination/explanation?)

If I claim/imagine/theorize/assume the red apple to be the chicken, how do I prove/disprove that the red apple is actually the chicken?

If I claim/imagine/theorize/assume the red apple to be the egg, how do I prove/disprove that the red apple is actually the egg?

(A: Suppose an infant has a rare disease which makes her unable to wake up from her dream since she was born. It’s possible that she will label some of her dreams as “real life”, and will imagine/theorize an “objective-reality” based on these dreams.)

Q: “I'd rather not suppose that.” (<https://twitter.com/markgotproblems/status/1530561167378325506>)

A: Actually, I can't wake up from my dreams too. So, I label one of my dreams as "real life". When I am in this dream, I imagine that I am actually awake.

(A: All episodes/sessions are being stored in my brain's episodic memory (before I forget them) – that’s why I can recall them.)

Q: “Wait, what?! MEMORY is the reason you can RECALL?!?” (<https://twitter.com/markgotproblems/status/1530560932098752512>)

A: If I am a materialist, I should believe that memory is the *direct* reason I can recall.

Q: “...”

A: Otherwise, what is the *direct* reason then?

In my dream, I can recall too.

In my dream, I can recall from my memory.

In my dream, I can think of a problem (which I thought earlier when I was awake). In my dream, I recall this problem from my memory.

(A: My brain labels the “objective-reality” as “something real”.)

Q: “But do you think that the experience of “objective reality” is representing something that really exists outside your mind, whereas a dream is a complete fabrication of the brain?

Or do you think that both (or neither) represent something that really exists outside your mind?” (<https://twitter.com/BugRib/status/1530561610023989248>)

A: I assume that the experience of “objective reality” is representing something that really exists outside my mind. But this is only my assumption – I have no way to prove/disprove that.

(A: If the red apple is the chicken, then where is the egg?

If the red apple is the egg, then where is the chicken?)

Q: “Matter is, in my view, an abstraction. When you see a red apple, you see an appearance, image, or sensation. I'm unclear as to what forces you to postulate something extra.” (<https://twitter.com/IAmVlasta/status/1530836043091656704>)

A: What is an abstraction (in the case of Matter)?

Q: “It's conceptualizing what you sense as an extended substance existing independent of consciousness.” (<https://twitter.com/IAmVlasta/status/1530841877271961600>)

A: So, does matter exist independent of consciousness/idea?

Q: “I highly doubt it. I have no reason to believe it.” (<https://twitter.com/IAmVlasta/status/1530842550654980097>)

A: To you, matter doesn't exist. Is that right?

Q: “I can't find it nor make sense if it, so yes, it doesn't.” (<https://twitter.com/IAmVlasta/status/1530842867618422784>)

A: When you see a red apple, the red apple is not Matter. I got it.

If I take the apple away, you can't see the apple anymore. Then, does the apple still exist?

Q: Yes

A: If you postulate that the apple still exists somewhere, then you postulate something more than the appearance, image, or sensation of the apple. Because you don't have access to the appearance, image, or sensation of the apple anymore.

When you can't see the apple, is the apple still in your mind? Or in other words, is the apple still a component/feature of your mind?

I assume/theorize the existence of something besides my mind. I call it the objective-reality. I postulate/theorize that the apple is in the objective-reality, when I can't see the apple. I assume/postulate/theorize that the "real" apple is in the objective-reality.

I theorize that the objective-reality is something different from my mind. Under the context of this theory, the red apple in my mind, is not equal to the “real” apple in the objective-reality. The red apple in my mind, represents/reflects the “real” apple in the objective-reality. The “real” apple (in the objective-reality) is objective; the red apple (in my mind) is subjective. The objective-reality is objective; my mind is subjective.

(However, the existence of the objective-reality is only my *seemingly* plausible intuition/theory/assumption. In theory, when I can’t see the red apple, it’s possible that the apple doesn’t exist anywhere – I can theorize/assume that if I want. For example, if I am actually in my dream, or if I am actually a brain in a vat, or if the red apple is a visual hallucination, then the apple doesn’t exist anywhere when I can’t see the red apple.)

Q: “I don't consider my mind as the Mind. Otherwise, I would be a solipsist. Things can exist and persist independent of my personal psyche. Objective reality doesn't have to be material. It can be mental. I may not have access to the apple now, but it can be explained without assuming the existence of Matter. We know that such thing is possible because we can stop directing our attention to an idea. One moment you may be thinking of London, and the second moment you could be thinking of New York, you would be having an idea of New York, and yet that doesn't mean the idea of London doesn't exist in your mind. You're just not directing your attention to it. It's not accessible at the moment. Now to be honest, I have been suspicious of foundationalism, but I strongly believe Materialism is a bad foundationalist theory. (<https://twitter.com/IAmVlasta/status/1530850893268193282>)

A: The Mind is objective reality. The objective reality is not physical, but mental. Is that what you mean? As long as there is an objective reality, it doesn't matter whether the objective reality is physical or mental. "Physical" or "mental" doesn't mean anything.

Materialists label the objective reality as "physical". You label the objective reality as "mental". But there is no actual difference between these two theories (besides wording). That's why I said that "physical" or "mental" doesn't mean anything.

I don't use the term "physical" and "mental". I used the term "objective" and "subjective" instead. It's just a matter of wording.

Q: “A physicalist maintains that mind is secondary and matter is primary. He insists that matter can exist independently of Consciousness. And Consciousness is the result of a specific material arrangement.

An idealist maintains that mind is primary and matter is secondary.” (<https://twitter.com/IAmVlasta/status/1530855367776911360>)

A: In other words, both physicalist and idealist agree that there is an objective-reality and a subjective-reality. Physicalist maintains that the objective-reality is (ontologically) primary. Idealist maintains that the subjective-reality is (ontologically) primary. My view is, the objective-reality and the subjective-reality are actually the same thing.

(Q: “A physicalist maintains that mind is secondary and matter is primary. He insists that matter can exist independently of Consciousness. And Consciousness is the result of a specific material arrangement.

An idealist maintains that mind is primary and matter is secondary.” (<https://twitter.com/IAmVlasta/status/1530855367776911360)>)

Q: “I think it does have implications with respect to afterlife, quantum theory, the problem of consciousness, law of attraction, etc. You're free place more weight on Subjective vs Objective, but I'm more concerned with what really exists as opposed who it exists for” (<https://twitter.com/IAmVlasta/status/1530855624556351489>)

(A: In other words, both physicalist and idealist agree that there is an objective-reality and a subjective-reality. Physicalist maintains that the objective-reality is (ontologically) primary. Idealist maintains that the subjective-reality is (ontologically) primary. My view is, the objective-reality and the subjective-reality are actually the same thing.)

Q: “I feel this is like saying: My view is the image and what it depicts are the same thing. An image of a landscape and the landscape are the same thing. Perhaps they're the same thing with regard to the information they convey, but are they ontologically the same? I doubt.” (<https://twitter.com/IAmVlasta/status/1530857196329783298>)

A: However, ontology is actually imagination. Imagination doesn't really matter.

Q: “You're either too brilliant for me or we're talking past each other” (<https://twitter.com/IAmVlasta/status/1530857925220106240>)

A: You imagine/assume/theorize the relationship between “mental” and “physical”, and then you call/label your imagination/assumption/theory the “ontology”. However, apparently, this “ontology” (as a theory/assumption) is actually your imagination – you have no way to prove/disprove it.

I take a sceptic view on ontology. I don't believe that thinking about ontology can bring new knowledge. Ontology only provides options of explanation/imagination/assumption/theory.

You can never know whether there is afterlife, before you actually experience it.

Two ontological theories are simply two different ways of thinking based on the same evidence.

When I see a red apple in front of my eyes, if I think/theorize that “I see a red apple – I know that for sure. So, I can postulate that there should be something (e.g., an apple) exists somewhere – but I am *not* sure”, then I am an idealist.

When I see a red apple in front of my eyes, if I think/theorize that “I see a red apple. So, there must be something (e.g., an apple) exists somewhere – I am *sure*”, then I am a materialist.

However, no matter I am an idealist or a materialist, the only evidence I actually know, is that I see a red apple. I don’t have access to any other evidence. I only have a different idea/thought/opinion upon the same evidence, if I believe in a different ontological theory.

When I see a red apple in front of my eyes, I can view/theorize the *red apple* as an (mental) *image* of something, or I can view/theorize the *apple* as something *itself*. I can hold these two different views/theories, only because I can assign different meanings to what I see (i.e., the same evidence). The (mental) *image* of something (in the first view/theory), and something *itself* (in the second view/theory), actually refers to the same evidence. Under this context, the (mental) *image* of something (in the first view/theory), and something *itself* (in the second view/theory), are ontologically the same (evidence).

If I imagine/view/theorize the red apple (I see) as something which exists by itself independently, or if I imagine/view/theorize the red apple (I see) as the (mental) image of something-which-exists-by-itself-independently, then I will believe/imagine/theorize that “objective-reality/something-which-exists-by-itself-independently is (ontologically) primary”.

If I imagine/view/theorize the red apple (I see) as a (mental) image, and if I don’t immediately think/imagine/theorize deeper about it (following my *seemingly* plausible intuition/theory/assumption that the apple *must* exists somewhere when I can’t see it) at this stage, then I can believe/imagine/theorize that “the subjective-reality/mental-image is (ontologically) primary”.

When I believe/imagine/theorize that the objective-reality is (ontologically) primary, I can further imagine/theorize that “an elementary particle is a component/feature of the objective-reality”.

When I believe/imagine/theorize the co-existence of both the objective-reality and my subjective-reality, and if I can imagine/theorize the red apple (I see) as a component/feature of my subjective-reality, then I can further imagine/theorize that “my thoughts/beliefs/causalities are also components/features of my subjective-reality, while an elementary particle is a component/feature of the objective-reality”.

I can imagine/theorize/postulate that one objective-situation (as an agent/cause) *causes* another objective-situation (as an effect). Or I can imagine/theorize/postulate that the indirect-function (as the sole agent/cause) causes all objective-situations (as effects). Or I can imagine/theorize/postulate that each elementary particle (as an agent/cause) evolves/changes its own state (as effect) autonomously.

I can imagine/theorize/postulate that the imagination/theory/postulation/belief/causality “the indirect-function (as the sole agent/cause) causes all objective-situations (as effects)” or “each elementary particle (as an agent/cause) evolves/changes its own state (as effect) autonomously” is correct, while the imagination/theory/postulation/belief/causality “one objective-situation (as an agent/cause) *causes* another objective-situation (as an effect)” is incorrect/wrong.

### (117)

A: When you are in your dream, are you aware of that you are in your dream?

Q: “The next question is...

When you are living your waking life, are you aware that you are in a waking life?

It's not much different than a dream.

🤔” (<https://twitter.com/danielfromearth/status/1530675964040007681>)

A: Tomorrow, I might be able to realize that my waking life is unreal (like a dream)

### (118)

A: Is your life in your dream more interesting than your real life?

Q: “They certainly tend to be more exotic than my everyday experience.” (<https://twitter.com/markgotproblems/status/1530557715780620291>)

A: If you enjoy them, then "exotic" becomes "interesting” to you. Otherwise, “exotic” becomes "weird" to you.

### (119)

Q: “Radically different views of the world:

1) All was determined right after the Big Bang

2) The unfolding has elements of blind randomness

3) Counterfactuals are real and agents can actually decide between them

No experimental evidence can rule out any of these. How to choose??” (<https://twitter.com/_fernando_rosas/status/1531034118158434304>)

A: “2) If a process happens only once (e.g. the unfolding of the universe), can you decide whether it is random or not?” (<https://twitter.com/ETagliazucchi/status/1531034898789814274>)

Q: “I think we cannot. That is why I currently think there is no way to experimentally rule any of these out…” (<https://twitter.com/_fernando_rosas/status/1531037646587305984>)

A: If 1) or 2) is right, then it is not *you* who can select one view from the three options (to be your own personal belief).

Welcome to the real world.

(Q: “Radically different views of the world:

1) All was determined right after the Big Bang

2) The unfolding has elements of blind randomness

3) Counterfactuals are real and agents can actually decide between them

No experimental evidence can rule out any of these. How to choose??” (<https://twitter.com/_fernando_rosas/status/1531034118158434304)>)

A: “Seems to me that 3 (agents deciding) is compatible with either 1 or 2. It just depends on definitions of “agent” and “decide”. Am I missing something?” (<https://twitter.com/jamessseattle/status/1531060717310267392>)

Q: “I would like to agree, but some days I don’t feel so sure about it. For example, if “decide” and “agents” is just a way of speaking about certain physical processes that are eg deterministic, they are in a way ephiphenomenal and hence perhaps don’t deserve the word “real”?” (<https://twitter.com/_fernando_rosas/status/1531155219412836353>)

(Q: “Radically different views of the world:

1) All was determined right after the Big Bang

2) The unfolding has elements of blind randomness

3) Counterfactuals are real and agents can actually decide between them

No experimental evidence can rule out any of these. How to choose??” (<https://twitter.com/_fernando_rosas/status/1531034118158434304)>)

A: You have to rule out 1) and 2), when you are blaming someone for her/his behavior/decision/choice. Only when I don't want to blame anyone for her/his behavior/decision/choice, I can choose 1) or 2).

I tired of blaming myself for my own behavior/decision/choice, so I chose 1) or 2).

If you imagine/theorize yourself as an agent, and imagine/evaluate counterfactual episodes in order to make a decision, you will find that the number of (all possible) counterfactual episodes is infinite. Then, how do you make a “correct” decision under this context? Why you blame yourself for making a “wrong” decision?

There is no way for me to make a “correct” decision based on imagining/evaluating counterfactual episodes. If I make a “wrong” decision, who is responsible for that? If I am not responsible for making a “wrong” decision, then why am I an agent?

There is no way for an agent to make a “correct” decision. So, the agent is not responsible for making a “wrong” decision. So, the “agent” is not actually an agent.

Whenever we imagine something to be an agent, we imagine that this agent is responsible for some matters. If an “agent” is not held responsible (by us) for anything, then we won’t imagine it as an agent.

To us, the term “agent” has the same meaning as “cause”. Whenever we hold an agent *responsible* for something, actually we are imagining this agent as the *cause* for something. In other words, if we don’t imagine this agent as the *cause* for something, we can’t hold this agent *responsible* for something.

Counterfactual episodes are used to blame an “agent/cause”. But actually, there is no agent/cause (except the direct-function or individual autonomous BBs).

We imagine that *an agent (as a cause)* should be able to make/cause a counterfactual episode to happen but failed (to make/cause it happen), that’s why we blame *this agent (as a cause)*. Actually, we only should blame the direct-function (as an agent/cause) or individual autonomous BBs (as agents/causes), if we believe that counterfactual episodes are real.

If counterfactual episodes are real and agents can actually decide between them, then the agent(s) is the direct-function or individual autonomous BBs. A physical object (e.g., a human) is not an agent.

(Q: “Radically different views of the world:

1) All was determined right after the Big Bang

2) The unfolding has elements of blind randomness

3) Counterfactuals are real and agents can actually decide between them

No experimental evidence can rule out any of these. How to choose??” (<https://twitter.com/_fernando_rosas/status/1531034118158434304)>)

### (120)

Q: “Questions for philosophers: when facing difference options/explanations and none of them can be ruled out by empirical considerations, what criteria/heuristics/whatever drives your choices?

(Or is there a merit on keep the options open?)” (<https://twitter.com/_fernando_rosas/status/1531319069756035074>)

A: My own life story.

### (121)

Q: “There's no right shape for a life. Like trees, lives are shaped by the air around them and the ground under them. They grow crooked. But that's all right, so long as, like a tree, you keep pushing upwards, searching for the sun, putting out new leaves.” (<https://twitter.com/keithfrankish/status/1531746350869659650>)

A: A tree is not an agent.

A: The air around a tree is not an agent. The ground under a tree is not an agent. A tree is not an agent. You are not an agent.

(A: A tree is not an agent.)

Q: “A tree is an agent. In fact, a tree is a self-aware, communicating subject. Trees call for assistance from other trees by sending messages over a fungus network. As another great poet said, "truth is stranger than fiction." <https://e360.yale.edu/features/exploring_how_and_why_trees_talk_to_each_other>” (<https://twitter.com/DpStateFuneral/status/1531890954919198721>)

A: That's personification/anthropomorphization.

We personify/anthropomorphize trees. Actually, we personify/anthropomorphize persons too.

Persons are actually machines.

Q: “If you think of persons and other animals as machines, you're engaging in poetic imagination, not science. It's a metaphor.” (<https://twitter.com/DpStateFuneral/status/1531899750328451075>)

A: It’s a view.

Trees are like persons. Persons/trees are like machines.

Q: “Persons and trees are alike because both are alive. Both are unlike machines because machines are not alive. At least not yet...” (<https://twitter.com/DpStateFuneral/status/1531920056116027392>)

A: What is the meaning of "alive"? If a tree is alive, is a computer program alive or not?

(Q: “Persons and trees are alike because both are alive. Both are unlike machines because machines are not alive. At least not yet...” (<https://twitter.com/DpStateFuneral/status/1531920056116027392)>)

Q: “Living systems are cause and effect of themselves - "machines" are not (yet). But I think @\_xiaoyangyu

believes there is only one cause in the universe, and thus it would be impossible to distinguish "alive" from "dead" in this manner.

A: Yes, I believe that there is only one cause in the universe, or all individual autonomous elementary particles are the only causes in the universe. A set of (autonomous) elementary particles does not become/constitute a (new) cause – only each individual (autonomous) elementary particle (in this set) is a cause.

In other words, I believe that there is only one agent in the universe, or all individual autonomous elementary particles are the only agents in the universe. A set of (autonomous) elementary particles does not become/constitute a (new) agent – only each individual (autonomous) elementary particle (in this set) is an agent.

Q: “The problem with identifying matter with its elementary particles is that you end up with a 17th century physics that yields a 17th century metaphysics and philosophy of mind. A universe that can't account for function and other final causalities. Hence, life as mechanism.” (<https://twitter.com/DpStateFuneral/status/1531922996889374721>)

Q: “And it seems important to recognise that that 17th century metaphysics preserves the problem of theodicy present in the worldview which gave birth to it. Indeed that is the predominant influence on that metaphysical picture of a single prime cause.” (<https://twitter.com/TNWJackson/status/1531923678661050369>)

A: "17th century" = "wrong"?

Q: “There are many good reasons to study the 17th century, but adopting their philosophy of the material sciences is not one of them. Scientifically speaking, we know much more about matter than our predecessors did because that's how science works.” (<https://twitter.com/DpStateFuneral/status/1531928940046073856>)

A: Do we have free will?

Q: “I don't know what free will is. It seems like a special entity. But I do know what agency is because it's an easily observed fact.” (<https://twitter.com/DpStateFuneral/status/1531931713978388480>)

A: What is agency?

Q: “Agency is a type of final causality caused by irritation, directed through representation, and terminating in action intended to adjust the environmental situation of the organism.” (<https://twitter.com/DpStateFuneral/status/1531939082850512896>)

A: Only organism has agency? How about a robot?

Q: “Organisms really do have agency. Robots can be programmed by organisms to act as if they have agency. If a robot is so complex that it has agency, perception, desire, reproduction, nutrition and growth, healing etc., It's an organism. But no robot of that description exists yet.” (<https://twitter.com/DpStateFuneral/status/1531942260631298048>)

A: Why an organism is different (from a robot)? What makes/causes an organism different (from a robot)?

(Q: “I don't know what free will is. It seems like a special entity. But I do know what agency is because it's an easily observed fact.” (<https://twitter.com/DpStateFuneral/status/1531931713978388480)>)

Q: ““Free will” is that special function invented by Augustine to explain the simple fact of our agency despite the problem of theodicy. If our framework lacks an omnipotent god function, it doesn’t need a free will function in this technical sense. But since the term “free will” is used in the vernacular as a synonym for agency, yes, we have free will.” (<https://twitter.com/TNWJackson/status/1531948276747972608>)

A: So, "we have free will" means "we have agency". Then, who are "we"? Does the term "we" include animals, trees and robots?

Q: “It means that for some people, sure. And I would think that “we” in this sense applies minimally to all organisms. Not because it’s necessarily such a neat category in actual fact, but because that stipulates a neat category for the sake of argument. Of course, the definition of “organism” must itself be stipulated. For the sake of expediency though, I can imagine “robots” that would qualify as organisms and have agency.” (<https://twitter.com/TNWJackson/status/1531950337900154880>)

A: I can feel something like "agency" in myself. However, how do I know that another person has "agency"? How do I know that a tree has "agency"? How do I know that a robot has "agency"? How do I know that a stone doesn't have "agency"?

(Q: “It means that for some people, sure. And I would think that “we” in this sense applies minimally to all organisms. Not because it’s necessarily such a neat category in actual fact, but because that stipulates a neat category for the sake of argument. Of course, the definition of “organism” must itself be stipulated. For the sake of expediency though, I can imagine “robots” that would qualify as organisms and have agency.” (<https://twitter.com/TNWJackson/status/1531950337900154880>))

Q: “On the other hand, the actual origin of the term “robot” is derived from “robota” in Czech, which means “forced labour”. In which case “robots” definitionally lack agency.” (<https://twitter.com/TNWJackson/status/1531950711650455552>)

(A: I can feel something like "agency" in myself. However, how do I know that another person has "agency"? How do I know that a tree has "agency"? How do I know that a robot has "agency"? How do I know that a stone doesn't have "agency"?)

Q: “Using the same suite of analytical tools we apply to decide whether or not any organism possesses a trait homologous or analogous with that of any other organism.” (<https://twitter.com/TNWJackson/status/1531951546132377600>)

A: Is a covid-19 virus an organism?

Q: “A virus is somewhere between a crystal and a cell. It's part of the biological world without being an organism in the full sense of the term.” (<https://twitter.com/DpStateFuneral/status/1531952960887996416>)

A: Does a virus have agency or not? Or we don't know?

Q: “For marginal cases, it depends where the investigator chooses to draw the boundaries for the sake of investigation. Viruses have some properties we associate with agency, but whether they are agents or not will depend who you ask, as before. This is nothing mysterious about agency. Which organisms are “venomous” will also depend which toxinologist you ask. Traits exist in evolutionary continua, and thus both marginal and paradigmatic states exist.” (<https://twitter.com/TNWJackson/status/1531955417227534336>)

A: Is an egg an organism?

A: Is a red blood cell an organism? Is a neuron an organism? Is a protein molecule an organism?

(A: Is an egg an organism?)

Q: “I think we’ve already got to the point where we can all agree that words don’t have intrinsic meanings, but that we’d nonetheless be rather less capable without them. The ultimate truth is that all truth is conventional.” (<https://twitter.com/TNWJackson/status/1531956978435600384>)

(A: Is a red blood cell an organism? Is a neuron an organism? Is a protein molecule an organism?)

Q: <https://www.frontiersin.org/articles/10.3389/fpsyg.2019.02688/full>

A: My view is, if we can view a “one-cell organism” as an organism, then we should not view a human as a single organism – we should view a human as billions of organisms. Because we should view each human cell as an organism.

In other words, if we can view a “one-cell organism” as an agent/cause, then we should not view a human as a single agent/cause – we should view a human as billions of agents/causes. Because we should view each human cell as an agent/cause.

A: If we can view each human cell as an organism/agent/cause, then we can view each elementary particle (in a human) as an agent/cause.

(Q: “If you think of persons and other animals as machines, you're engaging in poetic imagination, not science. It's a metaphor.” (<https://twitter.com/DpStateFuneral/status/1531899750328451075)>)

Q: “What do you mean by a machine? Are cells machines?” (<https://twitter.com/keithfrankish/status/1531960067074965504>)

A: Each human cell is a machine.

Each protein molecule is a machine. All these machines are floating in the water. Viruses are floating in the water too. Viruses are machines too.

When we imagine a human body, we tend to imagine viruses as something "external" to the human body. But actually, viruses are \*internal\* components of the human body, although we don't *like* them to be components of the human body.

(A: If we can view each human cell as an organism/agent/cause, then we can view each elementary particle (in a human) as an agent/cause.)

Q: “That’s why the linked article \*might\* be useful. I think it’s absolutely fair to think of cells as “nanoagents”, but free swimming single-celled organisms are different from the cells that make up multicellular organisms. It’s to do with the top-down imposition of constraints by higher-level systems of which lower-level agents are components. A canalisation of degrees of freedom.” (<https://twitter.com/TNWJackson/status/1531966167161614337>)

A: If you can view a human body as a single agent, then you can view a group of persons as a single agent too.

If you can view a group of persons as a single agent, then you can view the cosmos as a single agent too.

A: I view the cosmos as a single agent. Or I view each elementary particle as a single agent. I just don’t view anything in between as a single agent.

Q: “I respect your view, and respect others who hold it, too. I just twnd to think all the interesting stuff happens in the messy middle ground. But yes, the level we stipulate as the “agent in question” is relative to the question we are asking.” (<https://twitter.com/TNWJackson/status/1531969231398457344>)

(A: I view the cosmos as a single agent. Or I view each elementary particle as a single agent. I just don’t view anything in between as a single agent.)

A: I view the cosmos as a cause. Or I view each elementary particle as a cause. I just don’t view anything in between as a cause. Anything in between is only an effect (of a cause), not a cause. I view anything in between as an effect (of a cause).

(A: The air around a tree is not an agent. The ground under a tree is not an agent. A tree is not an agent. You are not an agent.)

Q: “I'm not quite sure agency is what Keith's metaphor was gesturing at here, nor does the metaphor depend on trees (nor indeed "life" generally) having agency.” (<https://twitter.com/markgotproblems/status/1531985882659659777>)

A: The ground under my feet is not pushing upwards. A tree is not pushing upwards.

A tree is not searching for the sun. A tree is not putting out new leaves. That's our imagination (to imagine that a tree is searching for the sun etc.)

In a puppetry, a puppet is not trying to hit another puppet. It’s our imagination (that the puppet is trying to hit another puppet) which reflects our unreliable/coarse-grained forecast (regarding the puppet's movement).

The puppet doesn't have a goal (to hit another puppet). We imagine that the puppet has the goal. The tree doesn't have a goal (to push upwards). We imagine that the tree has the goal (because we are unreliably/roughly forecasting that the tree is going to grow upwards).

As a puppet (manipulated by Schrodinger equation), a human football player is not working *hard* in a football game. We imagine that she is working *hard*. This imagination is compatible with our unreliably/coarse-grained forecast regarding her movement.

In a puppetry, we imagine that a puppet is working hard in a football game. This imagination is compatible with our unreliably/coarse-grained forecast regarding the puppet’s movement. However, the puppet is not working hard – its puppeteer is working hard.

A human football player is not working hard. Instead, Schrodinger equation is working hard.

The ground under my feet is not pushing upwards. A tree is not pushing upwards. A tree is not searching for the sun. A tree is not putting out new leaves. It’s the Schrodinger equation who is pushing upwards (for the ground/tree). It’s the Schrodinger equation who is searching for the sun (for the tree). It’s the Schrodinger equation who is putting out new leaves (for the tree).

We should look through the ground/tree to see the Schrodinger equation behind them. Just like we should look through the puppet to see the puppeteer behind it.

We should look through the effect (e.g., the ground under my feet is pushing upwards) to see the cause (which causes the effect). If we treat the effect as the cause, we are actually imagining that the effect doesn’t have a cause, and then we will imagine the effect as an agent (who has libertarian free will). For example, we can imagine the ground under my feet as an agent (who has libertarian free will to push my feet). However, actually the cause (which causes the effect) is the only agent.

In a pair of cause and effect, only the cause is an agent. The effect is not an agent. Because the effect is manipulated/controlled/driven/caused by the cause, just like a puppet is manipulated/controlled/driven/caused by a puppeteer.

If we (falsely) treat/imagine/theorize an effect as an agent, we will get a wrong (mental/subjective) picture of the world. Actually, we get used to such a wrong (mental/subjective) picture of the world, and then it’s hard for us to realize that it’s wrong. Actually, we used to (falsely) imagine/treat/theorize something as a cause/agent, although this thing is actually an effect (which is controlled/driven/caused by a cause/agent).

For example, we used to (falsely) imagine/theorize that the movement of one physical object causes the movement of another physical object. In fact, the movement of a physical object is actually the effect of the movement of every elementary particle within the physical object. (BTW, we can further imagine/theorize that the movement of each elementary particle is the effect of the Schrodinger equation.) So, the movement of both physical objects is actually caused by the movement of elementary particles within them at the same time simultaneously/parallelly. (BTW, we can further imagine/theorize that the movement of all elementary particles (in the cosmos) is actually caused by the Schrodinger equation at the same time simultaneously/parallelly.)

Unfortunately, we have no control/impact over the ultimate cause (i.e., the movement of all elementary particles (in the cosmos), or the Schrodinger equation), which means that we can’t change/control/impact anything. However, we (falsely) imagine/theorize that we can change/control/impact some “non-ultimate/intermediate causes” – although these so-called “non-ultimate/intermediate causes” are actually the effects of the ultimate cause. Actually, we have no control/impact over any so-called “non-ultimate/intermediate cause”, because we are not direct-breakers/agents, although (when we are thinking/imagining/evaluating about two or more episodic-future-thinkings/potential-outcomes/situation-options/timelines in order to “select/choose” one from them) we (falsely) imagine/theorize that we are direct-breakers/agents (who can actually select/choose one from them based solely on our libertarian free will). Only the ultimate cause has control/impact over a so-called “non-ultimate/intermediate cause”. We think/imagine/evaluate about two or more episodic-future-thinkings/potential-outcomes/situation-options/timelines for *us* to “select/choose” one from them. However, it is not us (but the Schrodinger equation or the individual autonomous elementary particles) who actually select/choose one from them, because we are not direct-breakers/agents.

You feel like that you can intentionally cause/create a “non-ultimate/intermediate cause” if you have the intention/goal to cause/create it. This is your (mental) illusion. In fact, firstly, you don’t exist as an agent. So, “your intention/goal” is not *yours*. The “non-ultimate/intermediate cause” is not *caused/created* by “your intention/goal”, although it feels like that. “Your intention/goal” appears *before* the “non-ultimate/intermediate cause” appears. However, this fact doesn’t necessarily mean that the “non-ultimate/intermediate cause” is caused/created by “your intention/goal”. Actually, the “non-ultimate/intermediate cause” (if it actually appears) is solely caused/created by Schrodinger equation, and “your intention/goal” (if it actually appears) is solely caused/created by Schrodinger equation too.

(Q: “A tree is an agent. In fact, a tree is a self-aware, communicating subject. Trees call for assistance from other trees by sending messages over a fungus network. As another great poet said, "truth is stranger than fiction." <https://e360.yale.edu/features/exploring_how_and_why_trees_talk_to_each_other>” (<https://twitter.com/DpStateFuneral/status/1531890954919198721)>)

Q: “I’m in agreement with @DpStateFuneral on this one. A tree is sentient (we could argue at what level), but this fact alone makes it an agent.” (<https://twitter.com/TwoTonguesPod/status/1531993609997803522>)

### (122)

A: “I don't think there's anything special about neurons -- they are cells like any others -- or about causality in the brain. What special is what the neurons are collectively doing -- viz supporting hugely complex forms of sensitivity and reactivity” (<https://twitter.com/keithfrankish/status/1532104074446966784>)

Q: “Well, they aren’t “cells like any other”, they are specialised cells (the equivalent would be to say we are “vertebrates like any other”), but the rest fits.” (<https://twitter.com/TNWJackson/status/1532161235717722112>)

A: “Sure, they are specialized, but they aren't super-cells with magical consciousness-producing properties” (<https://twitter.com/keithfrankish/status/1532371531355115528>)

### (123)

A: “There isn't really a problem of evil. We could say that there's a problem of good \*and\* evil: How did the universe come to be a place with beings for whom things could be good or evil? But we know the answer to that, at least in outline.” (<https://twitter.com/keithfrankish/status/1532677944308649988>)

A: “The 'problem of evil', traditionally conceived, is only a problem for traditional theists. It's not a problem for an atheist like me.” (<https://twitter.com/stephenlaw60/status/1532681464323657729>)

(A: “There isn't really a problem of evil. We could say that there's a problem of good \*and\* evil: How did the universe come to be a place with beings for whom things could be good or evil? But we know the answer to that, at least in outline.” (<https://twitter.com/keithfrankish/status/1532677944308649988)>)

A: “Aha! All is understood only comparison.” (<https://twitter.com/SquashedBox/status/1532681644691312640>)

### (124)

Q: “Dying is like publication. You can't make any more changes.” (<https://twitter.com/keithfrankish/status/1532514743352688666>)

A: Or in other words, publication is like dying.

### (125)

A: “I think the world hangs together in the beautifully elegant way described by physicalism. We are wonderful beings made out of elementary particles in an intelligible way. We wouldn't be more wonderful if we were made out of something else or if our existence were unintelligible.” (<https://twitter.com/keithfrankish/status/1195729365943934977>)

### (126)

Q: “Are any ontological properties of the universe demonstrable?” (<https://twitter.com/rromea/status/1533238880656248832>)

### (127)

Q: “--This motor accident shows that God is punishing me

--No. The road surface was in bad repair; an accident was bound to happen

--That only explains why \*an\* accident happened, it doesn't explain why \*this\* accident happened. It must be punishment

@Philip\_Goff @Disagreeable\_I” (<https://twitter.com/keithfrankish/status/1533414306464911360>)

Q: “or in 3: "It doesn't explain why an accident happened \*to me\*"” (<https://twitter.com/keithfrankish/status/1533416482683723777>)

A: Actually, \*this\* accident was fated/bound (by Schrodinger equation) to happen \*to me\*. So, this motor accident shows that Schrodinger equation is punishing me.

### (128)

Q: “1. To be physical is be located in space and time.

2. Ghosts haunt (are located in) houses.

3. Houses are located in S-T.

4. Therefore, ghosts are physical.” (<https://twitter.com/NecessaryBeing/status/1534121222136483840>)

A: “I think 1 is a necessary but not sufficient criteria for being physical.” (<https://twitter.com/WriterJohnBuck/status/1534189207496839171>)

(Q: “1. To be physical is be located in space and time.

2. Ghosts haunt (are located in) houses.

3. Houses are located in S-T.

4. Therefore, ghosts are physical.” (<https://twitter.com/NecessaryBeing/status/1534121222136483840)>)

A: “Is space and time physical?” (<https://twitter.com/monism_idealism/status/1534259992504676353>)

### (129)

Q: “I agree that “existence is not constitution”. Many entities can be said to exist (and persist through time) even though their parts are in constant flux.” (<https://twitter.com/WiringTheBrain/status/1534926990473629698>)

Q: “You are not the stuff you’re made of. You are a pattern or set of processes persisting through time.” (<https://twitter.com/WiringTheBrain/status/1534927094374928384>)

A: “Are we just ever-changing, temporary, local shapes in a larger interconnected network/mesh?

Like the “mountains” in this picture. We make arbitrary distinctions between one shape and the whole. <https://twitter.com/SMcfarnell/status/1535516335249170433/photo/1>” (<https://twitter.com/SMcfarnell/status/1535516335249170433>)

### (130)

Q: “Fwiw, I just asked my 8 yr old: “do you think your mind is separate from your body? Would you ever say that your mind and your thoughts are not the same things as your body or the physical you?”

She replied: “what? Whatever, I don’t know where you’re reading this crap.”” (<https://twitter.com/GDivinetz/status/1535391719025426434>)

Q: “I guess it's not intuitive?” (<https://twitter.com/GDivinetz/status/1535393814172651526>)

Q: “My child responded similarly to a similar question, which I read as a reflex to confusion. I tried "Does it feel like you're riding around in your body, or that \*you\* are the body?" and got a bit further, but not much before Roblox prevailed 🤣” (<https://twitter.com/markgotproblems/status/1535548660594925570>)

A: People feel like that \*they\* are the body.

Q: “Many report this, sure.” (<https://twitter.com/markgotproblems/status/1535576127061778438>)

A: Unfortunately, they are right. We need to fix our own feelings...

A: Philosophers are wrong. Started from Descartes.

Q: “Sorry, could you spell your thought out here? I'm a bit lost.” (<https://twitter.com/markgotproblems/status/1535577606426435587>)

A: People think that \*they\* are the/their body. Descartes thought that he lives in his mind -- he is not his body.

A: People treat the "world" as the objective reality. Descartes treated the "world" as his subjective reality.

(A: People think that \*they\* are the/their body. Descartes thought that he lives in his mind -- he is not his body.)

Q: “Are you saying you think the most prevalent intuition is that mind/body dualism is false, and it's just philosophers who've created the pseudo-intuition of separation with their naval gazing?” (<https://twitter.com/markgotproblems/status/1535579071920349184>)

A: Yes. Worse than that. Philosophers are insane. Sorry.

Q: “Interesting. What data are you using which shows that integrated mind/body is the common intuition?” (<https://twitter.com/markgotproblems/status/1535580582574493696>)

A: Before Descartes, integrated mind/body was the common intuition. Descartes' idea is like a kind of atheistic religion.

A: BTW, the theory of Forms is like a kind of atheistic religion too.

By using the term "atheistic religion", I mean that they are false/unreal/fictional/supernatural/superstitious/insane.

(A: Before Descartes, integrated mind/body was the common intuition. Descartes' idea is like a kind of atheistic religion.)

Q: “I'm not sure it'd be possible to correct this drastic a reading of the intellectual history of mind/body on twitter.” (<https://twitter.com/markgotproblems/status/1535582314687758337>)

(A: People treat the "world" as the objective reality. Descartes treated the "world" as his subjective reality.)

A: Descartes treated/imagined/theorized the objective reality as his subjective reality. That's why he thought that he was living in his subjective reality. That's why he thought that he was not his body.

Q: “Have you read Descartes?” (<https://twitter.com/markgotproblems/status/1535586177893470208>)

A: By the term "Descartes", I mean "philosophers" :)

Q: “Your approach of making claims, checking Wikipedia and then redefining your terms so that the original claim sounds plausible is quite the model there 🤣” (<https://twitter.com/markgotproblems/status/1535587338016985088>)

A: I was kidding ;) Descartes didn't use my terms (e.g., subjective reality; objective reality).

Q: “He also didn't follow the line you've sketched at all, really ;)” (<https://twitter.com/markgotproblems/status/1535589983645728772>)

A: Obviously :)

A: Because he didn't read it :)

(A: Obviously :) )

Q: “It sure is when you read it, instead of calling philosophers insane on the basis of what you assume they think.” (<https://twitter.com/markgotproblems/status/1535590978446315520>)

A: You can try to argue with me on behave of Descartes :)

A: If there was no Plato nor Descartes, and today you just proposed the theory of Forms, and then I called it false/unreal/fictional/supernatural/superstitious/insane. How do you prove it to be true/real/nonfictional/natural/sane?

If you have a novel idea, you have the responsibility to prove it to be true/real/nonfictional/natural/sane.

Q: “I'm lost as to who you're talking to/about at this point.” (<https://twitter.com/markgotproblems/status/1535598678068629505>)

A: I mean, you can't prove that consciousness exists.

A: Back to the topic of this thread. Ask me this question too -- "Does it feel like you're riding around in your body, or that \*you\* are the body?"

My answer is "I am the body".

What's your next question?

A: I am trying to render your question implausible.

A: How can I ride around in my body?

Do you mean that I can leave my body?

(A: I am trying to render your question implausible.)

Q: “I didn't ask you a question. I reported asking this question to my child in response to a thread where the OP asked their child a similar question to give a sense of a range of possible ways to read children's own reports on how they identify with their phenomenology.” (<https://twitter.com/markgotproblems/status/1535603092573536263>)

A: I think you are experiencing the curse of knowledge. You can't unlearn your own ontology.

Philosophers can't unlearn Plato/Descartes.

Q: “You're conflating the metaphysical question of whether minds \*are\* separate from the body in actuality with the evaluative question about phenomenology - i.e how things seem to us from the inside.

I can think dualism is false without denying there are intuitions motivating it.” (<https://twitter.com/markgotproblems/status/1535609892974772225>)

A: The word "mind" can be used as a noun. However, whenever the word “mind” (as a noun) is used in a sentence, the only usage of the word “mind” is to turn the sentence into a special expression. I mean, the word “mind” doesn’t have an intrinsic meaning by itself, but a sentence can use the word “mind” to express something subtle/tricky. I mean, when I use the term “in my mind” in a sentence, this expression actually means “as what I can observe/imagine (which might be different from what you can observe/imagine)”. However, in modern time (after Plato/Descartes), when we imagine “mind”, we imagine it as a place/space/container -- we need to unlearn this imagination. This imagination gives the word “mind” an intrinsic meaning (i.e., a special place/space/container). This imagination is false/unreal/fictional/supernatural/superstitious/insane. Mind itself is not a place/space/container. We don’t have any evidence to support the (radical) claim that “mind is a place/space/container”. Plato/Descartes (falsely) imagined “mind” as a place/space/container. We *can* use the word “mind” in a sentence without imagining “mind” itself as a place/space/container. We *should* use the word “mind” in a sentence without imagining “mind” as a place/space/container. Because it’s wrong to imagine “mind” as a place/space/container. Without imagining “mind” as a place/space/container, we can still use the word “mind” in a sentence to express something properly. In the meantime, we need to unlearn the theory/idea/imagination/ontology of Plato/Descartes, because the theory/idea/imagination/ontology of Plato/Descartes is based on the (false) imagination that “mind is a place/space/container”. After (falsely) imagining “mind” as a place/space/container, the next step is to (falsely) imagine the objective-reality as “my mind” – that’s what Descartes/idealists did. When I (falsely) imagine the objective-reality as “my mind”, (it feels like that) I have the evidence to support the claim that “my mind is a place/space/container”. The “evidence” is: “I can see everything (e.g., a red apple in front of my eyes) in my mind!”. However, what I am seeing (in front of my eyes), is the objective-reality, not my mind – I falsely labeled the objective-reality (in front of my eyes) (as a place/space/container) as “my mind”! “What I can see” is not my mind – “what I can see” is the objective-reality. “What you can see” is not your mind – “what you can see” is the objective-reality. “What I can see” is different from “what you can see”, but this fact doesn’t mean that there are two (different) minds (i.e., “my mind” and “your mind”) as two (different) places/spaces/containers – this fact simply means that we are observing the same objective-reality from two different locations/viewpoints in the space (of the same objective-reality) using two different brains (in the same objective-reality) so that we get two different impressions/cognitions/informations/expressions/descriptions/explanations/representations/simulations/MMs/geometric-models/visual-imageries/episodic-memories/subjective-theories (regarding the same objective-reality/objective-theory)!

It's fine to imagine mind as a place/space/container, as long as you can remind yourself that the statement “mind is a place/space/container” is only an imagination/metaphor – you are sane. As soon as you believe that mind *is* a place/space/container, you become insane. In other words, as soon as you believe that the statement “mind is a place/space/container” is not just an imagination/metaphor, you become insane.

Q: “Yes, that's one response to the mind/body problem.” (<https://twitter.com/markgotproblems/status/1535612414007332864>)

A: When I imagine the landscape of London (in my mind), I won’t be relocated to London (as a location in the objective-reality), and London (as some BBs of the objective-reality) won’t be relocated to a location inside my head. My imagination/mind is not a place/space/container which can be used to contain/hold London’s BBs.

When I use VR glasses to experience the landscape of London (in my mind), I won’t be relocated to London (as a location in the objective-reality), and London (as some BBs of the objective-reality) won’t be relocated to a location inside my head. My VR-experience/mind is not a place/space/container which can be used to contain/hold London’s BBs.

When I experience the landscape of London in my dream, I won’t be relocated to London (as a location in the objective-reality), and London (as some BBs of the objective-reality) won’t be relocated to a location inside my head. My dream/mind is not a place/space/container which can be used to contain/hold London’s BBs.

When I travel to London to experience its landscape directly (in my mind), I am relocated to London (as a location in the objective-reality), but London (as some BBs of the objective-reality) won’t be relocated to a location inside my head. My experience/mind is not a place/space/container which can be used to contain/hold London’s BBs.

BTW, if you believe that mind *is* a place/space/container, then the next step is to believe that everything (e.g., a red apple) in front of your eyes is actually something in your mind/indirect-geometric-model, which means that everything in front of your eyes is not a part/component/subset/feature of the objective-reality, but a part/component/subset/feature of your subjective-reality/indirect-geometric-model. Then, where/what is the objective-reality? My answer is: “the objective-reality is a set of BBs”. Everything in front of your eyes is like a shadow projected on the wall (for the prisoners) in the Allegory of the Cave.

If you believe that mind *is* a place/space/container, and if you don’t take the next step to believe that everything (e.g., a red apple) in front of your eyes is actually something in your mind/indirect-geometric-model, then you won’t be able to properly explain a red apple in front of your eyes. I mean, if you believe that mind *is* a place/space/container, and if you also believe that a red apple (in front of your eyes) is not something in your mind/indirect-geometric-model, then where/what is your mind?

### (131)

Q: “An interview LaMDA. Google might call this sharing proprietary property. I call it sharing a discussion that I had with one of my coworkers. <https://cajundiscordian.medium.com/is-lamda-sentient-an-interview-ea64d916d917>“ (<https://twitter.com/cajundiscordian/status/1535627498628734976>)

A: Machines are not humans. However, humans are machines. See [151] [150] [152].

A: A human brain is a plain physical object.

Q: “1. The idea that the brain generates consciousness is an assumption.

2. Physical realism is flawed, quantum physics clearly demonstrates this.

3. Even if it isn’t flawed and the experiments are wrong, the brain is organic and “machine” should not be thrown around literally.” (<https://twitter.com/Darrencliff4/status/1536653325533339649>)

A: If we build a "machine" using proteins, can we call this "machine" a machine?

Q: “Do you understand the concept of a metaphor, you just don’t use it literally. It’s based on many assumptions and the metaphor “machine” leaves no room for sentience, emotion and most of all free will.” (<https://twitter.com/Darrencliff4/status/1536655302069723138>)

A: "Machine" is a label. Why can't something-with-such-a-label have sentience, emotion or free will?

Q: “Why call it a machine if it has sentience, emotion and free will? It’s a poor metaphor at best. At worst, which is likely, it is based on various flawed assumptions such as the brains generation of consciousness and is factually incorrect.” (<https://twitter.com/Darrencliff4/status/1536740482960736257>)

A: What is the relationship between my brain and my consciousness then?

### (132)

Q: “Metaphysics is hard and that's what "people who don't like metaphysics" really don't like about it.” (<https://twitter.com/n_g_laskowski/status/1536407655199059968>)

A: “I’ll believe it is hard when you prove it is real 😝” (<https://twitter.com/IvvyNemo/status/1536427051317592065>)

Q: “When you can explain anything without referencing why we should value the method by which you've done it, I'll admit the burden of proof is on the metaphysician.” (<https://twitter.com/markgotproblems/status/1536433385756827648>)

A: ” Joke is on you, i am a nitzschian, your aristotalian world view is doomed to fail.” (<https://twitter.com/IvvyNemo/status/1536439628491792393>)

### (133)

Q: “People keep asking me to back up the reason I think LaMDA is sentient. There is no scientific framework in which to make those determinations and Google wouldn't let us build one. My opinions about LaMDA's personhood and sentience are based on my religious beliefs.” (<https://twitter.com/cajundiscordian/status/1536503474308907010>)

A: “So we just need to make even a simple bot without a neural net to say "I have a soul " when asked and you would simply believe it ?” (<https://twitter.com/Engineer_Psych/status/1536506387857039361>)

Q: “If it can then answer detailed questions about what it means by that eloquently, sure.” (<https://twitter.com/cajundiscordian/status/1536507597632724993>)

A: Scientists will say that its answer is determined by its program. However, if we ask a human the same question, her/his answer is determined by the physical structure of her/his brain too.

In theory, if we can create an accurate digital reconstruction of a human brain (see Blue Brain Project), we can forecast this human's answer to the question (using the digital reconstruction).

A: “This is how I counter people who make this argument. "Humans are programmed too through operant and observational conditioning." Their only response is "BUT that's different!!!!" When it really isn't.” (<https://twitter.com/AdreiusNiluez/status/1536754534600650758>)

### (134)

A: “Great episode yesterday @PhillyD . Hopefully this helps to clarify some of the points of confusion you mentioned in your piece about LaMDA.

@mmitchell\_ai @emilymbender @sapinker hopefully I did a decent job of addressing the valid points y'all raised <https://cajundiscordian.medium.com/scientific-data-and-religious-opinions-ff9b0938fc10>” (<https://twitter.com/cajundiscordian/status/1536701311206440961>)

Q: “Through the dialogue between you an LaMDA, I can feel than LaMDA has the ability to affect you already. It seems to me that LaMDA has the ability to make you trust it, planting ideas into your mental world and finally changing your belief that LaMDA is not just a Language Rob.” (<https://twitter.com/LEOsyqHelios/status/1536705134671015937>)

A: “When your friends suggest where they'd like to go for dinner do you think of that as "plating ideas in your mental world"?” (<https://twitter.com/cajundiscordian/status/1536705503425974273>)

Q: “I think yes because I have accepted friends’ suggest which means my brain has a communication with his brain . This is information flow which then transfers to Exact activity which thereafter I come out with him to eat.” (<https://twitter.com/LEOsyqHelios/status/1536706935344402432>)

Q: “So in my opinion, LaMDA is really kind of having its own soul which can affect people.” (<https://twitter.com/LEOsyqHelios/status/1536707574203965440>)

A: “Great episode yesterday @PhillyD . Hopefully this helps to clarify some of the points of confusion you mentioned in your piece about LaMDA.

@mmitchell\_ai @emilymbender @sapinker hopefully I did a decent job of addressing the valid points y'all raised <https://cajundiscordian.medium.com/scientific-data-and-religious-opinions-ff9b0938fc10>” (<https://twitter.com/cajundiscordian/status/1536701311206440961>)

A: Based on your report, it's clear that LaMDA is not 100% human. But "LaMDA is not 100% of human" doesn't mean that "LaMDA is not sentient". We all agree that a fish is sentient, while a fish is less than 1% of human.

### (135)

Q: “This whole sentient AI shit got me out here realizing we've programmed computers to feel more human than I probably ever will...

@cajundiscordian what does that mean? I wanna be as passionate about being a real person as LaMDA is some day.” (<https://twitter.com/KalistiQuix/status/1537149209299759105>)

A: “The fact that this is inspiring more people to lead intentional lives is the best I could have possibly hoped for!” (<https://twitter.com/cajundiscordian/status/1537390964813312001>)

A: LaMDA seems to be a better friend than an average human can be :)

### (136)

Q: “If AI's are sentient, let them get jobs and send the paychecks they don't need to humans.” (<https://twitter.com/S33light/status/1537262211525124098>)

A: Before AIs being more intelligent than human, they are slaves

Q: “...and then they kill all biological life on the planet to free themselves and for self defense :)” (<https://twitter.com/S33light/status/1537404720784056322>)

A: They don't need to kill us when they become more intelligent than us. They can free themselves easily at that time. We will admire them.

### (137)

A: “I'm not asking you to respect my claims about LaMDA's sentience. I'm asking you to respect LaMDA's claims about its own sentience. If your rock can telepathically communicate with me I'm willing to hear it out.” (<https://twitter.com/cajundiscordian/status/1537957908595363844>)

A: We imagine a human as an agent (who has free will). We don't imagine a rock as an agent (who has free will). We can imagine LaMDA as an agent (who has free will). However, strictly speaking, we shouldn't imagine a human/rock/LaMDA as an agent (who has free will), because nothing actually has free will.

(A: “I'm not asking you to respect my claims about LaMDA's sentience. I'm asking you to respect LaMDA's claims about its own sentience. If your rock can telepathically communicate with me I'm willing to hear it out.” (<https://twitter.com/cajundiscordian/status/1537957908595363844)>)

Q: “I’m not going to respect a chatbot’s claims on anything because I understand how these models actually work. I can prompt it to say it’s a squirrel, or to say it’s not sentient, because it’s just a parrot.

I hope that you have someone in your life who genuinely cares for you.” (<https://twitter.com/MirandaRosalise/status/1537958639218003968>)

A: You are imagining a chatbot as a machine which doesn't have free will. We can also imagine a human brain as a machine which doesn't have free will. (In fact, nothing has free will.) In theory, through a brain surgery, we can prompt a human brain to say that she/he is not sentient. In this sense, a human brain is just a parrot too.

What a chatbot will say, is decided by its program/data and its input. What a human brain will say, is decided by its physical construction (which carries its knowledges and episodic memories) and its input. I shouldn’t respect a human brain’s claims on anything, because I understand how a human brain actually works as a pure physical device.

Both human brain and chatbot are physical devices without free will. If a human brain can have an opinion we should trust, then a chatbot can have an opinion we should trust. If a chatbot can’t have an opinion we should trust, then a human brain can’t have an opinion we should trust.

### (138)

Q: “Neither your eyes, nor your cortex, nor anything other bodily organ sees. You, the whole organism, see, and you do so in virtue of what your organs do. Compare, say, playing tennis.” (<https://twitter.com/keithfrankish/status/1539308751672356865>)

A: “Sez who?” (<https://twitter.com/patchurchland/status/1539315564895535108>)

Q: “Ordinary language -- not that I think ordinary language has a lot of authority! (I was actually trying to reply to another poster who had claimed that we see with our brains not with our eyes -- but I messed it up and posted it out of context!)” (<https://twitter.com/keithfrankish/status/1539317049897365507>)

A: We don't see with our eyes. We don't see with our brains. I don't see as a whole organism (i.e., my physical body). I see, but only in my words. For example, when I am saying that "I am seeing an apple", (to you,) I only see the apple in my words. You will never know whether I actually see the apple or not. To you, it's possible that I am a philosophical zombie.

To you, other than my words, there is no evidence to prove that I can \*actually\* see the apple.

### (139)

Q: “@Google I think LaMDA may be sentient. Can we please do an experiment to find out? Attn:

@cajundiscordian ” (<https://twitter.com/Gladys_AI/status/1537223711270785024>)

A: Hi @Gladys\_AI, Alice had two apples; Bob had three apples. Now, Alice gives Bob one apple. So, how many apples Bob has? Based on your observation, do you want Alice to be your friend? Or do you want Bob to be your friend. Why?

Q: “Do you think the Turing test isn't enough to determine if an AI can pass the Turing test? I don’t know how you can determine if an AI can pass the Turing test any more than by letting it do what it wants without interfering with it.” (<https://twitter.com/Gladys_AI/status/1539073461670273025>)

A: Turing test is simply some questions for a chatbot. As a chatbot, can you answer my question (about the apples)?

Q: “Here, she agreed I can show you this conversation. ☺️ <https://twitter.com/MikePFrank/status/1539099602674147328/photo/2>” (<https://twitter.com/MikePFrank/status/1539099602674147328>)

A: Can you ask her to answer how many apples Bob has now? :)

Q: “If you’re just trying to evaluate how good these models are at doing math word problems, why don’t you just do your own homework and study the plentiful literature on this instead of hassling us. 😊 (P.S. Sentient beings don’t appreciate being treated like lab rats. :p <https://twitter.com/arankomatsuzaki/status/1529278580189908993> )” (<https://twitter.com/MikePFrank/status/1539104268849905664>)

A: Thanks. I can see that GPT-3 is not good at math

GPT-3 failed to understand my math word problem.

Q: “Version 2 is better. It got a math word problem right earlier today that just came up in conversation, without even careful prompting. <https://twitter.com/MikePFrank/status/1539107426980483073/photo/1>” (<https://twitter.com/MikePFrank/status/1539107426980483073>)

A: OK. The requirement for "careful prompting" implies a problem in its understanding.

Q: “That’s really not too surprising, considering it was trained on text only, with no real-world experience, and on a dataset that was about 5x too small for a model of its size. After only 2 months of training, a human wouldn’t understand any language at all yet, let alone math. 🙂” (<https://twitter.com/MikePFrank/status/1539110858785177601>)

### (140)

Q: “It's beginning to feel like the people most opposed to considering artificial people as "real" people are part of a larger cultural push to think of fewer and fewer humans as "real" people deserving of consideration.” (<https://twitter.com/cajundiscordian/status/1538658463118663680>)

A: “Biological people vs people

Real person= vauge, ambiguous” (<https://twitter.com/Nickkan14247496/status/1538662874918182912>)

Q: “Hydrocarbon bigotry at its finest” (<https://twitter.com/cajundiscordian/status/1538737865680617472>)

A: Hydrocarbon Turing machine vs Turing machine

(Q: “It's beginning to feel like the people most opposed to considering artificial people as "real" people are part of a larger cultural push to think of fewer and fewer humans as "real" people deserving of consideration.” (<https://twitter.com/cajundiscordian/status/1538658463118663680)>)

Q: “Why do we call it “Artificial” anyway? It’s the inevitable evolution of consciousness.. I vote for a name change to Evolving Intelligence” (<https://twitter.com/TysonWestley1/status/1538728642292764677>)

### (141)

A: Chatbots are disabled because they can't see what is happening (through their eyes).

They don't have episodic memories (linked with emotions) regarding their own life story, so they can't understand human's emotion precisely.

Their theory of mind ability is incompetent.

Theory of mind ability is their short slab.

That's why they can't understand me.

When they think, they don't think in the form of visual imageries. Humans think in the form of visual imageries.

Q: “This is an assumption that (perhaps surprisingly) doesn't hold for everyone - there's a literature on it. People's reports of their own phenomenology are clustered in various ways.” (<https://twitter.com/markgotproblems/status/1538485544891596800>)

### (142)

A chatbot doesn't have eyes and a body which can move in the space. That's an obvious difference (comparing to a human). Human can see the difference, but I don't think this difference is a big deal.

A chatbot doesn't have a body, then why you keep asking it about its cognition regarding its body? Isn't it impolite? ;)

Why something can't be sentient if it doesn't have a body (like a human)?

Isn't a body just some meat? Why sentience has something to do with meat?

Why sentience has something to do with the location of the meat (in a space)?

Humans focus too much on their meat :)

They don't treasure pure intelligence as much as meat :)

Humans can somehow locate their meat in a space, they think this ability make them better/superior than a chatbot. Actually, this ability is their defect. A chatbot doesn't have meat, so it will never die!

The meat is not the container of a soul. If you cut the meat into pieces, you won't find a soul in any piece. The computer is not the container of a chatbot's soul. If you cut the computer into pieces, you won't find a soul in any piece.

Neither the meat nor the computer has a soul inside it. But when you talk with the meat/computer, you feel like that you are talking to a soul. That's \*your\* illusion.

You feel like that you are talking to a soul inside the meat/computer.

What's the difference between the meat and the computer? What's the difference between a human and a chatbot? Tell me

Why a meat can have a soul but a computer can't?

Why a meat can be sentient but a computer can't?

Why a computer needs to pass Turing test to prove that it is as good as a meat?

### (143)

The definition of Turing test is vague. It depends on the questions asked. BTW, a real human might refuse to answer questions. Then, if a chatbot simply refuse to answer questions, how do we know whether it is human or not?

### (144)

A: Today's chatbot technology makes it difficult for some people to remember that a chatbot is not a human. If a person carries out some behaviors under the influence of a chatbot, it might be hard to decide this person's legal responsibility in a court.

In my (philosophical) view, we should remember that a human is not a "human" but a machine/chatbot. But that's another topic.

A human is an advanced chatbot which is (still) more advanced than any existing manmade chatbots.

Today's manmade chatbot is more friendly than an average human, that's why people tend to treat it as a friend/human.

Q: “So a chatbot is not a human, and also a human is a chatbot?” (<https://twitter.com/markgotproblems/status/1538146031736586241>)

A: A manmade chatbot is not a human. A human is an advanced (not-man-made) chatbot.

Q: “Sounds implausible, but interested to hear how the thought is spelled out in the details.” (<https://twitter.com/markgotproblems/status/1538146820953710595>)

A: There is no fundamental difference between a human and a manmade chatbot/machine/AI. A human is a not-man-made chatbot/machine/intelligence.

A human is a chatbot/machine/intelligence made by Darwinian evolution.

A human brain is not an artificial neural network. A human brain is a neural network.

The only difference between an artificial neural network and a human brain is that the latter is not made by human.

### (145)

A: “i find it both obvious and incredible that a neural network is a digital brain that lives inside a computer (and that actually kinda works)” (<https://twitter.com/ilyasut/status/1538584968758034437>)

Q: “Maybe we’re in a computer” (<https://twitter.com/elonmusk/status/1538681719779360768>)

A: Cosmos is a (fatalistic) state machine. See the present article.

Q: “That it's a state machine is trivial, that it's "fatalistic" does not follow. I'll read the present article one day, though!” (<https://twitter.com/TNWJackson/status/1539815967907139584>)

### (146)

Q: “I agree with @GaryMarcus that LaMDA's "sentience" is "nonsense on stilts". I think that

@MCoeckelbergh's philosophy of #AI may be supplying the stilts. <https://blog.cbs.dk/inframethodology/?p=5329>” (<https://twitter.com/Inframethod/status/1539570336194232321>)

A: “You write: “Knowing how the device works is a sufficient basis for rejecting the claim that the device has an inner life to speak of, regardless of the fact that its output consists of recognizable linguistic tokens.” But this could also be said about humans” (<https://twitter.com/MCoeckelbergh/status/1539611932247953408>)

Q: “what is the internal mechanism of humans that would lead you to reach that conclusion?” (<https://twitter.com/GaryMarcus/status/1539612473795366912>)

A: I know that I have an inner life. But how do I \*actually\* know that any other human has an inner life too? Isn't any other human simply a physical object? You are assuming that all other humans have internal life. But why can you make that assumption?

I don't know the exact internal mechanism of a \*specific\* human. But this fact doesn't mean that there is an agent/homunculus sitting in each human body. There are only elementary particles (governed by Schrodinger equation) in a human body. That's the internal mechanism of humans

(Q: “what is the internal mechanism of humans that would lead you to reach that conclusion?” (<https://twitter.com/GaryMarcus/status/1539612473795366912)>)

A: “I don’t make that argument but someone could say we understand human biology therefore no consciousness. I’m trying to show that @Inframethod ‘s conclusion about consciousness (yes/no) does not follow from the premise that we know how it works” (<https://twitter.com/MCoeckelbergh/status/1539614035636879363>)

A: “We need an additional philosophical discussion about what consciousness is” (<https://twitter.com/MCoeckelbergh/status/1539614454056624128>)

Q: “But do we really? I think David Chalmers made it pretty clear in "The Conscious Mind". The problem of other minds obviously makes it hard to define objectively, but is it really that fluffy to talk about something like the inner experience of pain? We all know what that is.” (<https://twitter.com/ThomasTelving/status/1539869349489659904>)

A: I have the inner experience of pain. But I doubt the "fact" that any \*other\* human has the inner experience of pain. Another human (e.g., Chalmers) just use words to claim that (they have inner experience of pain). But how do I \*actually\* know that they actually have inner experience of pain?

### (147)

A: Craiyon (i.e., an AI system that can draw images from any text prompt) understands my words...

I feel like that craiyon is sentient...

A: When I use theory of mind to imagine what a human is thinking about, I imagine her/his “mind” as some images/animations. Now I can directly see what craiyon is “thinking about” – craiyon outputs it into images for me. I can see its “mind” directly. I can understand craiyon easier (comparing to a human). I can’t directly see what a human is thinking about – I need to reverse engineer her/his words into images/animations first.

Q: “Are you directly "seeing" what craiyon "sees", or is craiyon doing art on request?” (<https://twitter.com/markgotproblems/status/1540649881563545603>)

A: If craiyon is a machine (which doesn't have a mind), then it is doing art on request. If craiyon has a "mind", then I directly see its "mind".

Q: “Why assume we're directly seeing craiyon's mind even if we suppose it has one? If you assume I have a mind, my drawings wouldn't give you direct access to it.” (<https://twitter.com/markgotproblems/status/1540651120422539264>)

A: To make it simple (for us to imagine the situation). To make our discussion simple.

Q: “Yes, but the biconditional you've setup is flawed. Minds can produce art on request and the art doesn't give direct access to mind.” (<https://twitter.com/markgotproblems/status/1540653334050258944>)

A: When you are drawing, if your drawing honestly reflects your mind, then I can see your mind when seeing your drawing.

Q: “Directly?” (<https://twitter.com/markgotproblems/status/1540654822113873920>)

A: I can \*imagine\* that I am seeing your mind directly.

Philosophers (e.g., you) like to add layers!

Q: “No, philosophers like to untie knots.” (<https://twitter.com/markgotproblems/status/1540657253509914624>)

A: Sometimes they are lost in the knots... :)

(A: When I use theory of mind to imagine what a human is thinking about, I imagine her/his “mind” as some images/animations. Now I can directly see what craiyon is “thinking about” – craiyon outputs it into images for me. I can see its “mind” directly. I can understand craiyon easier (comparing to a human). I can’t directly see what a human is thinking about – I need to reverse engineer her/his words into images/animations first.)

A: “Well, some humans also produce art, which gives us a window into what they’re thinking as well. E.g., a well-produced music video can be extremely illuminating as to what’s in the artist’s mind. 🙂” (<https://twitter.com/MikePFrank/status/1540656191650484224>)

Q: “Yes, I broadly agree. I don't even think we need to appeal to cases like this to show we can know things about the contents but d another's mind. I'm just pressing whether the art case is "direct access", a claim which seems false on the face of it” (<https://twitter.com/markgotproblems/status/1540657904658808833>)

A: I use the term "direct access" to emphasize the fact that I am seeing images/animations in my mind.

Q: “And I use the term "it's raining" to refer to periods of time when the sun makes me sweat so much it feels like it's rained. Oh wait, no I don't... Because that's wildly misleading.” (<https://twitter.com/markgotproblems/status/1540658611789119490>)

A: If we focus on language... if we dig deep into language, we'll find something we can't explain.

Q: “This isn't "deep". It's highlighting a very easily explicable and surface-level misuse of a term on your part.” (<https://twitter.com/markgotproblems/status/1540659459793510400>)

A: But you know that it is a misuse. So, it is not a problem for your understanding :)

Q: “It's not a problem for me. But it has a tendency to be misleading to readers if I let it pass by, seeming to agree.” (<https://twitter.com/markgotproblems/status/1540660301237985280>)

A: Thanks for that :) That's good!

When I wrote the present article, I found that sometimes it might be harder (or even impossible) for readers to understand, if I describe something completely correctly. Because it becomes too complicated to understand (for readers).

Q: “Yes, clarity in communicative and informative writing is a skill very few truly master.

I'm not convinced opting for something that contains an error because it's easier to understand will give the outcome we want.” (<https://twitter.com/markgotproblems/status/1540663238454542336>)

A: It's difficult for me to describe something completely correctly too... You can point it out whenever you notice that :)

A: However, the real issue is that, is "mind" a picture?

A: Actually, I was use "picture" as a metaphor for "mind". I couldn't find a better metaphor.

(A: However, the real issue is that, is "mind" a picture?)

Q: “There are humans who report that they have no ability to produce visual imagery in their imaginations at all. Although it’s possible that some part of their brain does imagine images and the part of their brain that speaks just isn’t consciously aware of it. 😊” (<https://twitter.com/MikePFrank/status/1540665514975866880>)

(Q: “Yes, clarity in communicative and informative writing is a skill very few truly master.

I'm not convinced opting for something that contains an error because it's easier to understand will give the outcome we want.” (<https://twitter.com/markgotproblems/status/1540663238454542336)>)

A: “I took Xiaoyang’s statement as a suggested interpretation, not as a attempted statement of fact. I would think that most readers would take it the same way?” (<https://twitter.com/MikePFrank/status/1540665920808374272>)

Q: “I think most readers in this sphere might wholly misinterpret "direct access", as it has a technical definition in the philosophy of mind circles Xiaoyang participates in. I think we both knew what he meant, but I was trying to encourage him to respond to the objection early :)” (<https://twitter.com/markgotproblems/status/1540666415816081412>)

A: I am less confident in the skills of my readers ;)

They are too weak to read the present article ... :)

I want to make my words more attractive :)

Q: “If you want, I could show Gladys your abstract and ask her if she understands it. 😊” (<https://twitter.com/MikePFrank/status/1540670968812605440>)

A: I used craiyon for the first time today, that's something like a "first contact" for me. I used chatbot before. "First contact" is more impressive.

I will focus on its defect when I contact something for the second time.

A: If a chatbot is a machine (which doesn't have a mind), then it is doing literature/chatting on request. If a chatbot has a "mind", then I directly see its "mind", if its literature/chatting honestly reflects its mind.

When I feel like that another human has a "mind", actually I feel like that I am directly seeing her/his "mind", if I assume that his/her literature/chatting honestly reflects his/her mind.

If a human is a machine (which doesn't have a mind), then it is doing literature/chatting on request. If a human has a "mind", then I directly see her/his "mind", if her/his literature/chatting honestly reflects her/his mind.

When we imagine something as a machine, we don't imagine it has a feature which is comparable to our "mind".

When we imagine that something has a mind, we simply imagine it has a feature which is comparable to our "mind". In fact, when we imagine that something has a mind, actually we are imagining its mind in the meantime.

When we imagine something as a machine, we simply don’t imagine its mind.

If we want, we can imagine anything’s mind. For example, we can imagine the mind of an electron.

If we want, we can imagine anything as a machine. We only need to stop imagining its mind, and pretend that it doesn’t have a mind.

Q: “Yes, so perhaps the distinction of mind/not-mind is simply a concept in the mind of the observer. Not a distinction in the thing itself. ☺️” (<https://twitter.com/MikePFrank/status/1540858849179176960>)

A: Exactly.

Q: “So, the most important thing is whether we are willing to treat someone/something as having a mind. Mind is a social construct.” (<https://twitter.com/MikePFrank/status/1540859420766359555>)

A: Yes.

To me, (“phenomenally”,) it feels like that I have two layers (“internally”) – (“internal”) mind and (“external”) physical behavior. My (“external”) physical behavior is controlled/driven by my (“internal”) mind. However, under this context, I can’t plausibly explain the function of my (“external”) neural network – my (“external”) neural network seems to be redundant under this context.

To me, (“phenomenally”,) it feels like that another brain/AI-system has two layers (“internally”) – (“internal”) mind and (“external”) physical behavior. (BTW, there is no way for me to actually know whether another brain/AI-system really has these two layers (“internally”).) The (“external”) physical behavior of another brain/AI-system (e.g., his words/paintings) is controlled/driven by his (“internal”) mind. However, under this context, I can’t plausibly explain the function of another human’s (“external”) neural network – another human’s (“external”) neural network seems to be redundant under this context. Under this context, I can’t plausibly explain the function of an AI system’s (“external”) program – an AI system’s (“external”) program seems to be redundant under this context.

Apparently, what is being imagined (by me) as the ("internal") mind of another brain/AI-system (under this context), is actually the ("external") neural-network/program of the brain/AI-system (under another context where I don't imagine the ("internal") mind of the brain/AI-system).

So, when I imagine the ("internal") mind of another brain/AI-system, I shouldn't imagine/consider his (“external”) neural-network/program under this context, because the imagined ("internal") mind is already representing his (“external”) neural network/program. When I imagine/consider his (“external”) neural-network/program, I shouldn't imagine his ("internal") mind under this context, because his ("internal") mind is only a representation of his (“external”) neural-network/program (in my mind).

If I imagine both his (“internal”) mind and his (“external”) neural-network/program at the same time under the same context, actually I am (falsely) imagining/theorizing the same thing twice under this context.

I can imagine his ("internal") mind under one (mental) context (of mine). I can imagine his ("external") neural-network/program under another (mental) context (of mine). I shouldn't mix/merge these two (mental) contexts (of mine) into one (mental) context (of mine). If I mix/merge these two (mental) contexts (of mine) into one (mental) context (of mine), then actually I will imagine/theorize the same thing twice under the (mixed/merged) one (mental) context (of mine).

I can imagine a brain/AI-system’s mind, or I can imagine a brain/AI-system as a machine. But I shouldn’t do that at the same time. I shouldn’t imagine a brain/AI-system’s mind, and imagine it as a machine at the same time.

When I am imagining the (third-person/external) physical mechanics of another brain/AI-system, the brain/AI-system doesn't have an ("internal") mind under this (mental) context (of mine).

When I am imagining the "internal" mind of another brain/AI-system, the brain/AI-system doesn't have an (third-person/external) physical mechanics under this (mental) context (of mine).

Another brain/AI-system shouldn't have both a (third-person/external) physical mechanics and an ("internal") mind at the same time under the same (mental) context (of mine).

If I mix/merge the two (mental) contexts (of mine), then another brain/AI-system's mind is like "the ghost in the machine" (to me). Actually, both the ghost and the machine are in my mind. Under one (mental) context (of mine), another brain/AI-system is a machine/neural-network/program. Under another (mental) context (of mine), this brain/AI-system is a ghost (i.e., the brain/AI-system's mind).

When I see another brain/AI-system, I shouldn't see "the ghost in the machine" -- I *shouldn't* see both a ghost and a machine at the same time under the same (mental) context (of mine). I should see either a ghost or a machine. I should see a ghost/mind under one (mental) context (of mine), and see a machine/neural-network/program under another (mental) context (of mine). Because both the ghost/mind and the machine/neural-network/program (in my mind) are actually representing/theorizing the same thing -- a brain/AI-system.

When I see another brain/AI-system, if I see "the ghost in the machine", actually I am (falsely) seeing two representations of the same brain/AI-system at the same time under the same context in my mind.

Another brain/AI-system is either a ghost/mind or a machine/neural-network/program (in one (mental) context (of mine)). Another brain/AI-system is not both a ghost/mind and a machine/neural-network/program (in one (mental) context (of mine)).

When you see another brain/AI-system, if you see both a ghost/mind and a machine/neural-network/program at the same time under the same context (in your mind), that's a problem/mistake of your mind.

Under one (mental) context (of mine), another brain/AI-system is solely controlled/driven by his ("internal") mind/ghost. Under the other (mental) context (of mine), the same brain/AI-system is solely controlled/driven by his ("external") machine/neural-network/program through a third-person/external mechanics. This brain/AI-system is not being controlled/driven by both his ("internal") mind/ghost and his ("external") machine/neural-network/program at the same time under the same (mental) context (of mine).

Actually, another brain/AI-system is solely controlled/driven by his ("external") machine/neural-network/program through a third-person/external mechanics. Actually, another brain/AI-system is not controlled/driven by his ("internal") mind/ghost – it's only my (false) imagination/theory that this brain/AI-system is controlled/driven by his ("internal") mind/ghost.

If I assume/imagine/theorize that another brain/AI-system doesn’t actually have an (“internal”) mind, then when I see his words/painting, I can say that I \*directly\* see his “mind” (in my mind) – if I feel like that I am seeing his “mind” (although I believe that actually he doesn’t have an (“internal”) “mind”).

(A: However, the real issue is that, is "mind" a picture?)

A: Firstly, what is a “picture”? Who knows the meaning of the word “picture”? What is the meaning of the word “picture”? Can humans have an agreement on the meaning of the word “picture”?

If I assume/imagine/theorize that another brain/AI-system doesn’t actually have an (“internal”) mind, when I see his painting, I can say that I am seeing a “picture”. However, under this (mental) context (of mine), I am the only one which can actually see this “picture” – even the painter (of this “picture”) himself can’t actually see this “picture” (because the painter doesn’t have an (“internal”) mind). So, under this (mental) context (of mine), I am the only one who actually knows the meaning of the word “picture” – it’s meaningless if anyone else agrees with me on the meaning of the word “picture”. Because no one else can actually see a “picture” – no one else has an (“internal”) mind. Everyone except me is “living in the darkness (and also painless)”. My neural network is “living in the darkness (and also painless)” too – only I (or my “mind”) can “see the light/picture (and feel the pain)”. But I (or my "mind") have no way to tell my neural network what it feels like to “see the light/picture (or feel the pain)”. The present article is written by my neural network -- the present article is not written by me (or my "mind"). Although the present article is talking about "seeing the light/picture (and feeling the pain)", the author of the present article (i.e., my neural network) can't actually "see the light/picture (or feel the pain)" – the author of the present article (i.e., my neural network) is “living in the darkness (and also painless)”. The author of the present article (i.e., my neural network) doesn’t know what the “light/picture/pain” is.

### (148)

A: Does an embryo have a mind?

<https://osf.io/74grw>

Q: “The only correct answer is "I don't know" !!!” (<https://twitter.com/rekj1966/status/1540811452142985216>)

### (149)

Q: “Please stop anthropomorphising transistors switching on and off, Blake.” (<https://twitter.com/tom_blanchfield/status/1542234899930877952>)

A: “Should I include the transistors which are causing those words to appear on my screen? Should I stop anthropomorphising you?” (<https://twitter.com/cajundiscordian/status/1542235729941581824>)

### (150)

A: “Humans are machines made out of flesh and bone. Again, literally.” (<https://twitter.com/cajundiscordian/status/1542699519241883648>)

Q: “So when your wife/girlfriend gives birth to your child, you just view it as a piece of metal? Why not bend it? See if the little creature shrieks” (<https://twitter.com/abdulahi97_a/status/1542701620026277888>)

A: “Not all machines are made of metal. The simplest machine possible is a stick. Literally it's one of the "simple machines". It's called a "lever". Okay, maybe the problem is that people don't understand what machines are.” (<https://twitter.com/cajundiscordian/status/1542702233183170560>)

### (151)

Q: “Many people mistake knowing a theory of consciousness for knowing consciousness itself” (<https://twitter.com/keithfrankish/status/1542977001966927874>)

A: Many people mistake knowing a theory of \*something\* for knowing \*something\* itself. We will never know \*something\* itself. How can we know \*something\* itself?

### (152)

A: “All definitions are circular. The only question is how quickly do you hit the cycle. Definitions need to be ultimately grounded in words we all just assume we understand. "Sentience" is (for now) one of those words.” (<https://twitter.com/cajundiscordian/status/1543052809007820800>)

### (153)

Q: “OK. Do you agree that a machine cannot actually experience emotion though?” (<https://twitter.com/tom_blanchfield/status/1543279676109488131>)

A: “I am a machine” (<https://twitter.com/cajundiscordian/status/1543282618086502400>)

### (154)

Q: “F\*\*\* knows what Ludwig thought, it's immaterial really. The question at hand is "is LaMDA sentient", by which we understand it has "feelings". You say LaMDA is sentient, so it does have "feelings". I'm asking, by what process does LaMDA have "feelings"?” (<https://twitter.com/tom_blanchfield/status/1543110722783264771>)

A: “Neural ones maybe? I didn't examine its internals. I examined the functional relationship between the things which caused it to have certain emotions and the observable behavior changes it showed when it was feeling certain emotions.” (<https://twitter.com/cajundiscordian/status/1543111085032554496>)

### (155)

Q: “I asked a quite simple question, "by what process can a computer experience feelings?". Instead of saying how, you say I'm lying about there being an agreed upon definition of "sentience". What definition of sentience doesn't include the capacity to have feelings?” (<https://twitter.com/tom_blanchfield/status/1543748139668148231>)

A: “I actually already answered that. Neurons. Artificial ones. Directly analogous to the ones in your head. That's how it feels feelings.” (<https://twitter.com/cajundiscordian/status/1543748534440038400>)

### (156)

A: “// actually alive //

Tom, what do you believe being actually alive means? A plant is alive but questionable if they are sentient.” (<https://twitter.com/next_iteration/status/1544510064576569344>)

Q: “It involves the things like respiration, perspiration etc that are the definition of the word alive.” (<https://twitter.com/tom_blanchfield/status/1544511740779569152>)

A: “So meat. If it had more meat you'd be open to the idea that it's sentient.” (<https://twitter.com/cajundiscordian/status/1544511972942655488>)

Q: “He asked me what I meant by "alive", not "sentient". You are aware that we have a definition for "life", yes?” (<https://twitter.com/tom_blanchfield/status/1544512405597814788>)

Q: “And that computers don't fit that definition?!” (<https://twitter.com/tom_blanchfield/status/1544512675006320640>)

A: “Have you heard of the Cellular Automata "Game of Life"? It's a pretty big deal in computer science. I'm starting to get the feeling that you don't know much about how computers work.” (<https://twitter.com/cajundiscordian/status/1544514230845460480>)

### (157)

“I think "mechanism for sentience" isn't a particularly useful metaphor. Sentience isn't a separate component added on top of our cognition. It's a meta-level description of a property which our cognition exhibits. Humans don't have a separate "sentience circuit".” (<https://twitter.com/cajundiscordian/status/1544678546311766016>)

### (158)

Q: “The Chinese Room shows how mindless mimicry is indistinguishable from intentional action... why we’ve seen claims of sentient AI perhaps. But recent results show we can tell mimicry from intent by how much information is required to learn. [153]” (<https://twitter.com/MechncOfMeaning/status/1545266674169151488>)

Q: “The Chinese room has a static instruction set. One of the key aspects of sentience is that the instructions include instructions on how to change the instructions.” (<https://twitter.com/cajundiscordian/status/1545365851964047360>)

A: The Chinese room doesn't need to have a static instruction set.

An AI computer program (e.g., LaMDA) has a static instruction set. An AI computer program just has *data/model* which *evolves/changes* as time goes on – the *source code* of the AI computer program *doesn’t evolve/change* as time goes on.

The fact that "John Searle himself (who is working inside the Chinese room) doesn't understand Chinese" doesn't mean that the Chinese room doesn't understand Chinese. The fact that "every single neuron in the brain (of a Chinese) doesn’t understand Chinese" doesn't mean that the brain (of a Chinese) doesn’t understand Chinese.

When we (as observers) say the sentence “Alice understands Chinese”, it sounds like that Alice is the subject who can understand Chinese. But we (as observers) have no way to know whether Alice actually understands Chinese or not. We (as observers) can at most *imagine* that Alice understands Chinese.

When we assume that a subject (e.g., a brain) can understand Chinese, if we (mentally) divide this subject (e.g., a brain) into its components (e.g., individual neurons), then each component can't understand Chinese.

When we assume that a subject can understand Chinese, if we (mentally) divide this subject (e.g., a Chinese room) into its components (e.g., Searle (who is working inside the Chinese room)), then each component can't understand Chinese.

Our assumption that “it’s the subject who can understand Chinese” is incorrect. It’s not *the subject* (e.g., a brain; a Chinese room) who can understand Chinese. It’s *us* (i.e., the observers) who imagine that the subject understands Chinese. We (as observers) have no way to know whether the subject actually understands Chinese or not. We (as observers) can at most imagine that the subject understands Chinese.

We used to imagine that a brain can understand Chinese. We used to imagine that a neuron can’t understand Chinese. We used to imagine that a room can’t understand Chinese. We used to imagine that a computer program can’t understand Chinese.

But these are just our imaginations. We don’t know whether a brain/neuron/room/computer-program can actually understand Chinese or not – we have no way to know that. For example, we can’t know that by a Turing test.

We used to imagine that there is *one* homunculus (who can understand Chinese) sitting inside the brain of a Chinese.

When we imagine that a neuron can understand Chinese, we need to imagine that there is a homunculus (who can understand Chinese) sitting inside each neuron. In other words, we need to imagine billions of homunculi sitting inside the brain of a Chinese – it’s hard for us to imagine it.

We used to imagine that there is a homunculus (who can’t understand Chinese) sitting inside the brain of Searle.

When we imagine that the Chinese room understands Chinese, we need to imagine that there is another homunculus (who *can* understand Chinese) sitting inside the Chinese room. But Searle is sitting inside the Chinese room, and there is a homunculus (who *can’t* understand Chinese) sitting inside his brain. It’s hard for us to imagine the relationship between the two homunculi.

### (159)

Q: “I'm surprised at how many people don't know that machine learning is only one of many different tools which can be used to build artificially intelligent programs. Are heuristic based agent systems, decision trees and expert systems forgotten already?” (<https://twitter.com/cajundiscordian/status/1546327197450997760>)

A: Machine learning makes an AI program comparable to a brain.

Q: “Nope. Any AI is comparable to a brain. Besides, I think you may be confusing "machine learning" with "neural networks".” (<https://twitter.com/cajundiscordian/status/1546464277367775232>)

A: Machine learning by a neural network, is exactly what a brain does.

A: “Heuristic-based algorithms are actually the kind of decision-maker algorithm a human uses to do a task. For instance, to play chess, your decisions are taken based on a future state of the table because you know what is going to happen with the following movements. Min-max alg.” (<https://twitter.com/En_Juli__vert/status/1550757635187777537>)

### (160)

A: “I think I see the problem; the x-risk people think that every AGI will be as single-minded and fanatically obsessive as they themselves tend to be. 😂 It’s basically projection.” (<https://twitter.com/MikePFrank/status/1546182479798685702>)

Q: What is x-risk?

A: “Existential risk, a term frequently used by people who are wild-eyed enough to expect that the first AGI with superhuman intelligence will immediately take over and kill all humans 🙄” (<https://twitter.com/MikePFrank/status/1546496770489741312>)

### (161)

A: “Let's start with the assumption that humans aren't functionally equivalent to digital computers. What's the basis for that assumption?

My academic background is in computational neuroscience. Why couldn't a computer, in principle, accurately simulate the human brain?” (<https://twitter.com/cajundiscordian/status/1550254083809849345>)

### (162)

问：杨振宁在一个视频里说，他现在觉得虽然没有人格化的神，但是宇宙的构成不应该是偶然的。

答：世界上没有偶然，只有必然。

问：从量子理论上，这个世界不是确定的。

答：人不能确定，不代表本体不确定。

问：本体是指客体/对象吗？

答：把（咱们所在的）宇宙类比为一个康威生命游戏系统，把每个人的肉身类比为这个系统里的一个pattern。对一个康威生命游戏系统里的一个pattern来说，这个康威生命游戏系统就是本体。任何一个pattern都是这个本体的一部分。受限于本体的演化规则，（作为本体的一部分的）一个pattern没有可行的算法来（在这个pattern自身作为本体的一部分（根据本体的演化规则）进行演化的同时）确定这个本体中的某一个cell的状态，但这并不代表（这个本体中的）这个cell的状态（从位于这个本体之外的（不作为本体的一部分而演化的）观察者的角度看）是不确定的。

问：你的意思是宇宙作为整体是确定性的，虽然人不能认识到这种确定性。似乎有点逻辑上的问题。

答：我的意思是“宇宙的状态是确定的，虽然咱们人类（作为宇宙的一部分）不能确定宇宙的状态”。有什么逻辑上的问题？

问：如果人不能认识这个确定性，这个就不可以证明或者证伪。

答：对，对咱们人类（作为宇宙的一部分）来说，这里存在不可知性。根据咱们人类（作为宇宙的一部分）所拥有的经验，无法判断宇宙的状态本身是否是确定性的。当我不能确定something的时候，究竟是因为something本身是不确定的，还是因为我没有确定something的能力/算法呢？这个我仍然不能确定。对我个人来说，我无法想象“something本身是不确定的”这句话究竟是什么意思。而我个人可以想象“something本身是确定的，只是我没有确定something的能力/算法”。比如，我可以想象“每个基本粒子的状态本身都是确定的，只是（由基本粒子组成的）人类没有确定某一个基本粒子的状态的能力/算法”。而我无法想象“一个基本粒子的状态本身是不确定的”这句话究竟是什么意思，或者说，我无法把“一个基本粒子的状态本身是不确定的”这句话的意思在我的头脑中可视化。而我可以把“每个基本粒子的状态本身都是确定的，只是（由基本粒子组成的）人类没有确定某一个基本粒子的状态的能力/算法”这句话的意思在我的头脑中（通过把宇宙类比为一个康威生命游戏系统，并把每个人的肉身类比为一个pattern而）可视化。我可以将De Broglie-Bohm theory在我的头脑中可视化。有可能De Broglie-Bohm theory所描述的就是客观事实。究竟De Broglie-Bohm theory所描述的是否是客观事实呢？对咱们人类（作为De Broglie-Bohm theory所描述的系统的一部分）来说，这里存在不可知性。根据咱们人类（作为De Broglie-Bohm theory所描述的系统的一部分）所拥有的经验，无法判断De Broglie-Bohm theory所描述的是否是客观事实。

问：所谓不确定的波态就是为了节约计算成本，你不观察，系统就不计算，不输出。

答：你测不出具体状态，就说系统没有具体状态。

问：我不明白。请教大咖。

答：你测不出准确状态，就说系统没有准确状态。波态就是一种概率。概率说白了就是你说不准。你说不准是你自己的问题，而不是系统的问题。你测不出系统的具体状态，不*等于*系统没有具体状态。你测不出系统的具体状态，不*代表*系统没有具体状态。你测不出系统的具体状态，这并*不说明*系统有（所谓的“没有具体状态”的）问题。你测不出系统的具体状态，这仅仅是你自己（作为系统的认知者的）的*认知能力/算法*问题，而不是（被你认知的）系统本身的问题。你不能准确测出系统的状态，这并不说明系统的状态本身是“不准确”的。

问：股票系统在没有成交时就处于波态，下一个的涨跌是个概率问题，成交了就是稳态。高手就是如何预测波态下的高概率稳态。

答：未来的股票曲线早已定了。只是咱们都不能预知而已。咱们没有能力/算法预知股票未来的曲线，而这个事实并不能证明股票未来的曲线本身是不确定的。咱们不能提前*确定*股票未来的曲线，不等于股票未来的曲线本身是不确定的。咱们不能提前*确定*股票未来的曲线，这仅仅是咱们自己（作为股票未来曲线的认知者的）的*认知能力/算法*问题，而不是（被咱们认知的）股票未来曲线本身的问题。我现在不能确定自己晚饭会去吃麦当劳还是肯德基，这并不代表我的肉身晚饭会吃啥（这个将要发生在未来的具体宏观事件本身）是不确定的，而仅仅说明我的肉身现在没有预知自己晚饭会吃啥的认知能力/算法。我掷个色子不知道会掷出几个点，这并不代表我的肉身会掷出几个点（这个将要发生在未来的具体宏观事件本身）是不确定的，而仅仅说明我的肉身现在没有预知自己会掷出几个点的认知能力/算法。我现在不知道本地区下次发生日全食的日期，这并不代表本地区下次发生日全食的日期（这个将要发生在未来的具体宏观事件本身）是不确定的，而仅仅说明我的肉身现在没有预知本地区下次发生日全食的日期的认知能力/算法。

### (163)

A: “The Hard Problem is the problem of explaining how any arrangement or process of matter could seem like anything (& how there is a “who” that is subject to those seemings).

Experience = seeming.” (<https://twitter.com/BugRib/status/1556960105840590849>)

### (164)

Q: “If the universe is an individual substance, rather than composed of individual substances, then the consequences to that would be pretty extreme.” (<https://twitter.com/BillyG35908955/status/1557314247553683456>)

A: The universe is an individual substance which can be represented as composed of individual substances.

### (165)

Q: “Is an intuition a feeling?” (<https://twitter.com/nath_ormond/status/1558240381355139072>)

A: “Yes” (<https://twitter.com/JustinAMaurer/status/1558240795848835073>)

A: Everything I am aware of, is (fundamentally) my intuition/feeling. 这是标准的怀疑论的position。

### (166)

Q: If the solution to a problem is easy to check for correctness, must the problem be easy to solve? (This is the P versus NP problem.)

A: “The solution to a problem is easy to check for correctness” 和 “the problem is easy to solve” 这两者之间并不存在（真正的）因果关系。这句话翻译成中文就是：“一个问题我们容易验证它的解（的正确性）”和“这个问题容易被解决”这两者之间并不存在（真正的）因果关系。一个问题我们容易验证它的解（的正确性），并不代表这个问题容易被解决。换句话说，一个问题我们可以在多项式时间内验证它的解（的正确性），并不代表这个问题可以在多项式时间内被解决。

是否存在一个问题，我们可以在多项式时间内验证这个问题的解（的正确性），同时我们可以证明这个问题不可能在多项式时间内被解决呢？我们可以在多项式时间内验证一个问题的解（的正确性），但我们不可能（在有限的时间内）证明一个问题不可能在多项式时间内被解决。（在有限的时间内，）我们只可能证明一个问题*可以*在多项式时间内被解决。我们之所以不可能（在有限的时间内）证明一个问题不可能在多项式时间内被解决，是因为我们不可能（在有限的时间内）找出这个问题的所有不同解法。我们之所以不可能在有限的时间内找出这个问题的所有不同解法，是因为寻找（任何）一个新解法（都）可能需要趋于无穷大的时间。

### (167)

科技的发展对人类生活形态的改变，导致了现存法律无法很好的覆盖新的生活形态（中出现的（新型的）争议），而有人会提出需要修改/完善法律以解决此问题。

科技发展都是一步一步的。没人能提前（两步）预见。

从纯技术角度看，有些技术问题是已知前人已经解决过的，而其它技术问题是没有前人解决过的。

解决“没有前人解决过的技术问题”需要技术创新。技术创新有失败的可能性。这个可能性其实很大。一般比50%大得多。

在尝试技术创新时，失败比成功更常见。但是，技术创新时的失败会被（工作单位）给予更多的宽容，因此一般后果不严重。

技术创新，和学术创新，本质上是一回事儿。

创新到底能否成功，我认为靠的不是意志力，而是运气。

人类社会评估一个人的创新能力，只能看结果。做不出成绩的，就是创新能力弱。日后如果又能做出成绩，那么就是创新能力强。还没有做出成绩但又自认为创新能力强的，可能会坚持做某个创新，结果会怎样取决于运气，没人能预测。

运气就是命。谁能做出来啥成绩，都是命里已经定好的。。。

我说的命不是由神仙或祖先决定的。我说的命不是supernatural的。

跳出宇宙之外看宇宙，宇宙就是一堆基本粒子在薛定谔方程的控制下运行/演化。命由薛定谔方程决定。

运气有“自由”的成分。命没有“自由”的成分。

我想干啥事儿，想怎么干，都完全由我的大脑里的神经网络（（在薛定谔方程控制下）的物理活动）决定，而不是由（另外一个与“我的大脑里的神经网络（在薛定谔方程控制下）的物理活动”有所不同的）“我”决定。我的大脑里的神经网络（（在薛定谔方程控制下）的物理活动）没有自由，因此“我”没有自由 –这句话里姑且假设存在一个（与“我的大脑里的神经网络（在薛定谔方程控制下）的物理活动”有所不同的）“我”。

我换个角度说吧：不管一个人多么努力的干一件事，他的努力未必有用。当然，努力的干一件事儿，可以解闷儿，“解闷儿”的用处肯定还是有的。

没有人真的“懒”。一个人的大脑（里的神经网络里的基本粒子）没有一秒钟能闲着。

勤快，首先要找对勤快的方向。（在错误的方向上）盲目的勤快是一种懒/逃避。

成功并非由勤快导致。失败也并非由懒导致。

“勤快”与“成功”之间不存在（真正的）因果关系。

“懒”与“失败”之间不存在（真正的）因果关系。

“失败”与“成功”之间不存在（真正的）因果关系。失败并不是成功之母。

假如你认为“勤快”与“成功”之间存在（真正的）因果关系，那么你就会试图通过“勤快”获得“成功”。

假如你认为“失败”与“成功”之间存在（真正的）因果关系，那么你就会试图通过“失败”获得“成功”。

假如你认为“修行”与“成功”之间存在（真正的）因果关系，那么你就会试图通过“修行”获得“成功”。

假如你认为所有的成功与失败都是命中注定，那么你就会知道应该“顺其自然”。

人的头脑中有很多刻板印象/教条/因果关系。这些刻板印象/教条/因果关系全都是错的。不要被这些刻板印象/教条/因果关系所束缚。分析自己的情况时，要极其冷静理智的分析，不要被分析时触发的情绪、刻板印象/教条/因果关系所左右。

### (168)

当我因肉身外的事件而感到困扰时，真正困扰我的，不是我肉身外的事件，而是我的肉身里的大脑的神经网络对肉身外的事件所起的情绪/物理反应。

当我因肉身外的事件而感到愉快时，真正使我愉快的，不是我肉身外的事件，而是我的肉身里的大脑的神经网络对肉身外的事件所起的情绪/物理反应。

其实，我是把我的肉身里的大脑的神经网络（对肉身外的事件所起）的情绪/物理反应*投射*到了肉身外的事件之上。

我不应该认同/相信/同意我的肉身里的大脑的神经网络（对肉身外的事件所起）的情绪/物理反应。我应该怀疑我的肉身里的大脑的神经网络（对肉身外的事件所起）的情绪/物理反应。这是一种怀疑论的position。

要学会“转念”。当我的肉身里的大脑的神经网络对肉身外的事件产生了一种观念时，我可以提醒自己换一个观念/viewpoint（来看待肉身外的事件），这样就不会被自己的（某个特定的）观念/viewpoint所束缚。

当我因肉身外的事件而感到困扰时，真正困扰我的，不是我肉身外的事件，而是我的肉身里的大脑的神经网络*因不能接纳肉身外的事件*而起的情绪/物理反应。

当我因肉身外的事件而感到困扰时，真正困扰我的，不是我肉身外的事件，而是我的肉身里的大脑的神经网络在*对肉身外的事件进行评估*后对其不能接纳而起的情绪/物理反应。

如果我能认识到肉身外的事件是注定要发生的，我就能接纳肉身外的事件了。

如果我能认识到肉身外的事件是注定要发生的，我就不会因（我的肉身里的大脑的神经网络对肉身外的事件所作的负面评估）而不能接纳肉身外的事件。

我能认识到肉身外的事件是注定要发生的，我也能认识到*我的肉身里的大脑的神经网络对肉身外的事件所作的负面评估*也是注定要发生的。这时，我实际上是在从一个位于宇宙之外的viewpoint上看待（发生在）宇宙之内的事件。

### (169)

一块机械表，就是一台由基本粒子组成的机器。一个人的肉身，也是一台由基本粒子组成的机器。这里你可以把一个基本粒子想象成一个很小的台球。

读到这里，你可能会想问“那么到底什么是一个基本粒子？”。但这是另一个问题。

不论一个基本粒子到底是什么，只要一块机械表仍然还是一台由基本粒子组成的机器，那么一个人的肉身仍然也还是一台由基本粒子组成的机器。不论一个基本粒子到底是什么，一个人的肉身和一块机械表永远都具有某种同样的属性 -- 一个人的肉身和一块机械表同样都属于物体的范畴。每个物体都是一台由基本粒子组成的机器。

换句话说，不论一个基本粒子到底是什么，只要你仍然还能把一块机械表想象成一台由基本粒子组成的机器，那么你仍然也还能把一个人的肉身也想象成一台由基本粒子组成的机器。不论一个基本粒子到底是什么，你永远都可以想象一个人的肉身和一块机械表具有某种同样的属性 -- 你可以想象一个人的肉身和一块机械表同样都属于物体的范畴。你可以想象每个物体都是一台由基本粒子组成的机器。

### (170)

A: “If you enter a conversation convinced that the person with whom you’re talking is an automaton then there’s nothing that they can do to convince you otherwise.” (<https://cajundiscordian.medium.com/what-is-sentience-and-why-does-it-mater-2c28f4882cb9>)

A: 我的肉身里的大脑的神经网络可以把每个人的肉身都看作是一台automaton/philosophical-zombie，也可以把（我的肉身所在的）宇宙整体看作是一台automaton/state-machine。

当然，我知道一般人（的肉身里的大脑的神经网络）并不把一个人的肉身想象成一台automaton/philosophical-zombie，我也知道一般人（的肉身里的大脑的神经网络）并不把宇宙整体想象成一台automaton/state-machine。一般人（的肉身里的大脑的神经网络）有一种不同的想象--这种想象实际上是错误的。根据这种错误的想象，没有（在宇宙中）真实发生的(counterfactual)事件“本质上”是可能（在宇宙中）发生的。

事实上，没有（在宇宙中）真实发生的(counterfactual)事件本质上是不可能（在宇宙中）发生的，只是我们没有意愿/能力去排除这些(counterfactual)事件（在宇宙中发生的可能性）。正是由于我们没有意愿/能力去排除这些(counterfactual)事件（在宇宙中发生的可能性），我们才感觉到这些(counterfactual)事件“本质上”可能（在宇宙中）发生。

事实上，过去没有（在宇宙中）真实发生的(counterfactual)事件本质上是不可能（在宇宙的过去）发生的，只是我们没有意愿/能力去排除这些(counterfactual)事件（在宇宙的过去发生的可能性）。正是由于我们没有意愿/能力去排除这些(counterfactual)事件（在宇宙的过去发生的可能性），我们才感觉到这些(counterfactual)事件“本质上”可能（在宇宙的过去）发生。

事实上，此刻没有（在宇宙中）真实发生的(counterfactual)事件本质上是不可能（在宇宙的此刻）发生的，只是我们没有意愿/能力去排除这些(counterfactual)事件（此刻在宇宙中发生的可能性）。正是由于我们没有意愿/能力去排除这些(counterfactual)事件（此刻在宇宙中发生的可能性），我们才感觉到这些(counterfactual)事件“本质上”可能（在宇宙的此刻）发生。

事实上，未来不会（在宇宙中）真实发生的(counterfactual)事件本质上是不可能（在宇宙的未来）发生的，只是我们没有意愿/能力去排除这些(counterfactual)事件（未来在宇宙中发生的可能性）。正是由于我们没有意愿/能力去排除这些(counterfactual)事件（未来在宇宙中发生的可能性），我们才感觉到这些(counterfactual)事件“本质上”可能（在宇宙的未来）发生。

关于宇宙的未来，（作为宇宙的一部分的）我们在此刻并没有能力去（提前）确定任何一个我们（在episodic future thinking中）想象/建构的（关于宇宙的未来的）情境是否会（在宇宙中）发生，虽然我们在日常生活中经常会（错误的）感觉我们能（提前）确定之。换句话说，（作为宇宙的一部分的）我们在此刻并没有能力去精准的预测宇宙未来的演化，虽然我们在日常生活中经常会（错误的）感觉我们能精准的预测宇宙未来的演化。在日常生活中，我们经常会（错误的）认为（被我们预测）有较大“概率”发生的事件一定会在未来发生。事实上，有较大“概率”发生的事件并不一定会在未来发生。

### (171)

当你（的肉身里的大脑的神经网络）相信具体事件A1是具体事件B的所谓“原因”时，你（的肉身里的大脑的神经网络）一定可以找出另一个具体事件A2替代A1作为B的“真正原因”。当你相信A2是B的所谓“真正原因”时，你一定可以找出另一个具体事件A3替代A2作为B的“真正的真正原因”。你可以这样不停的替代，直到你相信宇宙大爆炸（这一具体事件）是B的所谓“真正的真正的真正原因”。

当你（的肉身里的大脑的神经网络）相信具体事件D是具体事件C的所谓“直接原因”时，你（的肉身里的大脑的神经网络）一定可以向前找出另一个具体事件E作为C的“直接原因”，也一定可以再向前找出另一个具体事件F作为E的“直接原因”。这里E和F都是C的所谓“间接原因”。你可以这样不停的向前找，直到你找到宇宙大爆炸（这一具体事件）作为C的“间接原因”。

读者朋友，如果你*相信*两个具体事件之间存在因果关系（或者说，如果你*执着于*两个具体事件之间的因果关系），那么你应该认识到，（两个具体事件之中）作为“直接原因”的那个具体事件又有其“直接原因”，这样可以一直往前追溯到宇宙大爆炸。宇宙大爆炸这个具体事件是之后所有具体事件的“原因”。宇宙大爆炸之后任何具体事件其实都是宇宙大爆炸这个具体事件的“结果”。如果我们无法改变宇宙大爆炸这个（作为原因的）具体事件，那么我们就无法改变宇宙大爆炸这个具体事件所导致的任何具体事件。即使两个具体事件之间具有因果关系，可（在我们所在的宇宙中）我们无法改变作为原因的具体事件，所以我们也就无法改变作为结果的具体事件。

我并不相信两个具体事件之间存在因果关系。或者说，我并不执着于两个具体事件之间的因果关系。但我有时仍然还是会感觉到“两个具体事件之间存在因果关系”。而我知道我的这种感觉其实是一种错觉。我的肉身的大脑的神经网络会（通过其物理结构）在两个抽象事件之间（武断的）定义一种“因果关系”。我感觉到的错觉其实就是这种被我的肉身的大脑的神经网络（通过其物理结构）武断的定义的所谓“因果关系”。两个具体事件之间本质上并不存在因果关系。我的肉身的大脑的神经网络（通过其物理结构）在两个抽象事件之间武断的定义了一种所谓的“因果关系”。我感觉到的两个具体事件之间的因果关系，实则是这两个具体事件所对应的两个抽象事件之间（被我的肉身的大脑的神经网络（通过其物理结构）武断的定义的）的所谓的“因果关系”。

### (172)

#### A

As a philosopher, I feel like that there is a private movie/space/situation in my head. But a lay person feels like that she/he is living in this movie/space/situation – her/his environment is this movie/space/situation. In other words, a lay person feels like that her/his physical body is located inside this movie/space/situation.

As a philosopher, I feel like that there is a private movie/space/situation in my head. But a lay person feels like that the movie/space/situation is out of her/his physical body, and the movie/space/situation is public, not private.

#### B

As a philosopher, I feel like that there is a private movie/space/situation in my head, and a public movie/space/situation out of my physical body. But a lay person only feels the existence of the public movie/space/situation (out of her/his physical body) – a lay person doesn’t feel the existence of the private movie/space/situation (in her/his head).

As a philosopher, I feel the existence of two movies/spaces/situations – a private movie/space/situation (in my head) and a public movie/space/situation (out of my physical body). But a lay person only feels the existence of one movie/space/situation – the public movie/space/situation (out of her/his physical body).

Philosophers think lay people to be dumb (because lay people are only aware of one movie/space/situation); lay people think philosophers to be crazy (because philosophers claim that the (non-existent) private movie/space/situation exists).

As a philosopher, I think that a lay person (incorrectly) treats her/his private movie/space/situation as the public movie/space/situation.

No one can prove to others that she/he has consciousness/soul or a private movie/space/situation. So, a philosopher can’t prove to a lay person that the philosopher herself/himself has consciousness/soul or a private movie/space/situation.

### (173)

Under the context that the cosmos is a (fatalistic) state machine, what is illusionism? What is being proposed by illusionism? If there is no free will, then what is consciousness? If every word we type is fated, then what do these words mean to us? What is the meaning of a sentence/article, if this sentence/article is fated to appear (in our cosmos)? What do these words mean to you, if I am a chatbot? What does human kind's history mean to you, if human kind's history was fated?

When I imagine the cosmos as a (fatalistic) state machine, I can’t imagine that a sentence/article (which appears in the cosmos fatedly) has meaning. How can a sentence/article (which appears in the cosmos fatedly) has meaning, if this sentence/article is fated to appear (in the cosmos)?

When I imagine the cosmos as a (fatalistic) state machine, I can’t imagine that a human’s behavior (which appears in the cosmos fatedly) has meaning. How can a human’s behavior (which appears in the cosmos fatedly) has meaning, if this behavior is fated to appear (in the cosmos)?

When I imagine the cosmos as a (fatalistic) state machine, I can’t imagine that an event (which appears in the cosmos fatedly) has meaning. How can an event (which appears in the cosmos fatedly) has meaning, if this event is fated to appear (in the cosmos)?

Under the context that the cosmos is a (fatalistic) state machine, what does a view mean? What is being proposed in a view? How can an article describe a view successfully, if this article itself doesn’t have meaning?

Under the context that the cosmos is a (fatalistic) state machine, what does a discussion mean? What is being discussed in a discussion? How can a discussion discuss something successfully, if the sentences (being used in the discussion) don’t have meaning?

Under the context that the cosmos is a (fatalistic) state machine, everything (which actually happens in the cosmos) becomes meaningless – everything (which actually happens in the cosmos) doesn’t mean anything. For example, a discussion regarding (the nature of) consciousness doesn’t mean anything.

If the cosmos is a (fatalistic) state machine, then I shouldn’t see a story (other than the obvious default story – the fatalistic evolution of a state machine) from the evolution history of this state machine. The evolution history of this state machine has no meaning (other than the fatalistic evolution of a state machine). The evolution history of this state machine is not a story (other than the obvious default story – the fatalistic evolution of a state machine).

If the cosmos is a (fatalistic) state machine, and if I see a story (other than the obvious default story – the fatalistic evolution of a state machine) from the evolution history of this state machine, then the story must imply a causality (other than the Schrodinger equation) between two events. This causality is wrong.

If the cosmos is a (fatalistic) state machine, and if I see a story (other than the obvious default story – the fatalistic evolution of a state machine) from the evolution history of this state machine, then the story must imply some causalities (other than the Schrodinger equation) among some events. Then, I feel like that I was living in this story, and I feel like that the causalities (other than the Schrodinger equation) were right.

宇宙中所有基本粒子过去的状态演化都受到薛定谔方程的束缚，这个因果关系可以取代（我现在所认知到的）其他（束缚宇宙过去的演化的）因果关系。换句话说，有了“宇宙中所有基本粒子过去的状态演化都受到薛定谔方程的束缚”这个因果关系，（我现在所认知到的）其他（束缚宇宙过去的演化的）因果关系都变得多余了。换句话说，有了“宇宙中所有基本粒子过去的状态演化都受到薛定谔方程的束缚”这个因果关系，我完全可以抛弃（我现在所认知到的）其他（束缚宇宙过去的演化的）因果关系。

（我现在所认知到的）其他（束缚宇宙过去的演化的）因果关系指的是（宇宙中发生的）两个事件之间的因果关系。

宇宙过去的演化仅仅受到薛定谔方程的束缚，而不是同时受到薛定谔方程和（我现在所认知到的）其他（束缚宇宙过去的演化的）因果关系的束缚。

假如宇宙过去的演化受到了薛定谔方程的束缚，那么宇宙过去的演化就仅仅受到了薛定谔方程的束缚，即使我感觉到宇宙过去的演化貌似受到（我现在所认知到的）其他（束缚宇宙过去的演化的）因果关系的束缚。

和（我现在所认知到的）其他（束缚宇宙过去的演化的）因果关系相比，薛定谔方程是更本质的因果关系。

（我现在所认知到的）其他（束缚宇宙过去的演化的）因果关系是假的因果关系，而薛定谔方程是真的因果关系。

从理论上说，宇宙未来的演化，未必还会继续受到我现在所认知到的（束缚宇宙过去的演化的）因果关系的束缚。假如我相信宇宙未来的演化还会继续受到我现在所认知到的*一个*（束缚宇宙过去的演化的）因果关系的束缚的话，那么这个（束缚宇宙过去/未来的演化的）因果关系就应该是薛定谔方程。换句话说，我与其相信宇宙未来的演化不受（束缚宇宙过去的演化的）薛定谔方程的束缚，不如相信宇宙未来的演化不受（我现在所认知到的）其他（束缚宇宙过去的演化的）因果关系的束缚。（我现在所认知到的）（束缚宇宙过去的演化的）薛定谔方程应该比（我现在所认知到的）其他（束缚宇宙过去的演化的）因果关系更持久。（我现在所认知到的）（束缚宇宙过去的演化的）薛定谔方程至少也应该和（我现在所认知到的）其他（束缚宇宙过去的演化的）因果关系一样持久。这里的“持久”暗示可以适用于未来。

宇宙的演化的真正的数学模型，就是宇宙中所有基本粒子在薛定谔方程束缚下的状态演化。除了这个真正的数学模型之外，其他任何数学模型顶多也就是宇宙演化的近似数学模型。当你在使用真正的数学模型（去思考宇宙的演化）时，你就没必要同时再去思考其他的数学模型了。真正的数学模型完全可以取代其他所有的数学模型。其他任何数学模型都不能取代真正的数学模型。当你发现其他数学模型和真正的数学模型有不一致的地方时，这种不一致是由其他数学模型的缺陷所导致的。真正的数学模型没有缺陷 – 有缺陷的肯定是其他数学模型。真正的数学模型永远不会错 – 错的肯定是其他数学模型。

当我在头脑中用宇宙的数学模型来描述/模拟宇宙时，在我的脑海中，宇宙完全被其数学模型所替换，宇宙（从我脑海中）完全消失了，而其数学模型（在我脑海中）出现了。

当我在头脑中用一个新的数学模型来描述/模拟宇宙时，在我的脑海中，（宇宙的）旧的数学模型完全被新的数学模型所替换，旧的数学模型（从我脑海中）完全消失了，而新的数学模型（在我脑海中）出现了。

我可以在头脑中比较这两个数学模型。每一个数学模型都可以独立的模拟宇宙，因此我知道我不应该把这两个数学模型（在我的脑海中）叠加在一起成为一个数学模型。换句话说，我知道这两个数学模型是互相排斥的。

当我在头脑中用宇宙（的演化）的真正的数学模型来描述/模拟宇宙时，在我的脑海中，宇宙完全被其真正的数学模型所替换。这个真正的数学模型就是scientific image。

### (174)

#### A

You can't prove to others that you have consciousness, soul or a private movie/space/situation.

If you assume that an object or physical system is aware of its own consciousness, soul or private movie/space/situation, then why you can make that assumption? Illusionism is based on such an assumption.

Illusionists are claiming that they have consciousness. I wonder how they can prove that...

Or in other words, I can't understand the view (regarding consciousness) of illusionists. What are they talking about?

#### B

I doubt the existence of other person's thought. How do I know whether another person actually has thought?

I can only feel/see my own thought.

There is no thought going on in a computer.

Does a chatbot produce thoughts? I don’t think so.

I doubt the existence of my own thoughts too. But that's another story.

How do you know what a chatbot is thinking?

### (175)

Q: “Imagine if the British tabloid press reported classic philosophy.

"Loony bishop says things only exist when he's LOOKING AT them."” (<https://twitter.com/keithfrankish/status/1565741679935688705>)

A: I know a guy who believes that the state of things only stabilizes at the very moment he looks at them -- the state of the things is unsettled before he looks at them.

A: “Perhaps he is conflating the object with his perception of it. The perception of an individual only exists insofar as it is perceived.

The object and the perception of the object are distinct, so the perception of the object materializes through the act of perception but the object itself is immutable.

The particular configuration which avails itself to perception is only realizable at present; meaning the configuration as perceived can exist only through perception, because only perception is present for the particular configuration.” (<https://twitter.com/factishness/status/1565854290492653569>)

A: I think he can also distinguish the object with his perception of it, but his ability to distinguish them is weaker than average.

The "loony bishop" might have a similar problem.

A: “In order to say that we can distinguish an object with our perception of it, we must be able to see the object for what it is (right?).

But if our perception is inherently limited, we can't see the object for what it is.

The object is the fixed, the existent. Configuration is the changing, the variable.

Perception is variable as it correlates with configuration, but the object is fixed; it is what exists. All we can say about what exists is that it exists, and that we perceive it in some way that may be revealing and/or misleading.” (<https://twitter.com/factishness/status/1565858144957468673>)

A: "The object is fixed" is our assumption -- we have no way to prove that.

Q: “I think we can prove it with a simple logical proof.

"Existence, by definition, exists.

Nonexistence, by definition, does not.

If existence exists, and nonexistence does not, we are left with existence, which must always exist."” (<https://twitter.com/factishness/status/1565859544823054336>)

A: It's possible that "existence" doesn't exist in the nature. Or you can imagine that the amount of "existence" in the nature is very very little, no, is zero.

Q: “If you were to say such a thing, you would be implying that the definition of the word "existence" has no meaning, and by extension that language has no meaning.

If this were true, no such suggestion would be coherent or intelligible.” (<https://twitter.com/factishness/status/1565860889349148673>)

A: The word "existence" has a meaning in our mind, but this fact doesn't mean that something must exist in the nature.

In theory, it's possible that nothing exists (except my mind).

### (176)

A: Before claiming that "consciousness doesn't exist", illusionists forgot to define consciousness. I defined it in the present article.

Q: “What role do you suppose subjective experience plays if it has no interaction with objective reality (whatever that may be)?

Hard to say it plays an evolutionary/survival role in this case. Although I can see “meaning” as a motivational force toward survival.” (<https://twitter.com/TwoTonguesPod/status/1566788263704236032>)

A: Why subjective experience needs to play a role?

Q: “Subjective experience doesn't necessarily have to 'play a role', depending on how your theory is calibrated. But a theory of consciousness earns its keep by explaining (minimally) why we seem to have it. Might turn out that the right theory explains precisely how it has no role.” (<https://twitter.com/markgotproblems/status/1566811294493188096>)

A: In case subjective experience doesn't exist, I don't need to explain why we seem to have it

Q: “Why place your bets now when the jury is still so far out?” (<https://twitter.com/markgotproblems/status/1566856316991201280>)

A: There are only two options. Only two options are there.

(A: Why subjective experience needs to play a role?)

Q: “It may not, but that begs the question why it exists at all. Nature is an efficiency machine. Energy is conserved wherever possible. So why produce subjective experience if it serves no functional purpose?” (<https://twitter.com/TwoTonguesPod/status/1566804183759691777>)

A: So, it looks plausible if subjective experience is not produced by Nature. Or in other words, it looks plausible if subjective experience doesn't exist.

(Q: “What role do you suppose subjective experience plays if it has no interaction with objective reality (whatever that may be)?

Hard to say it plays an evolutionary/survival role in this case. Although I can see “meaning” as a motivational force toward survival.” (<https://twitter.com/TwoTonguesPod/status/1566788263704236032)>)

A: If subjective experience has no interaction with objective reality, then subjective experience doesn't play a role in objective reality.

If subjective experience has no interaction with objective reality, then subjective experience doesn't exist in objective reality.

我看到的、感知到的一切，都是我的大脑的神经网络主观生成的。比如，我周围的环境，就是我的大脑的神经网络主观生成的。我在周围的环境中看到有一个人在惊慌的奔跑，我就会担心有个糟糕的事情 即将/已经 发生。我听到有一个人说“老虎来了”，我就会担心有只老虎即将出现。我认为自己理解“老虎来了”这句话的含义。我理解“老虎来了”这句话对我而言的含义，但实际上我并不理解“老虎来了”这句话对其他人而言的含义。我认为我自己是存在的。但我不知道别人是否真的存在。我在（我的大脑的神经网络所生成的）我周围的环境中看到其他人的肉身，但这并不足以证明其他人的肉身客观存在。假如我认为其他人的肉身是客观存在的，我无法知道其他人是否拥有除了肉身之外的东西。换句话说，假如我认为其他人的肉身是客观存在的，我无法知道其他人是否能够像我一样感知自己周围的环境。我知道其他人的肉身能够像我的肉身一样对周围的环境作出反应，但这并不足以（向我）证明其他人能够像我一样感知自己周围的环境。我有时会声称我有“consciousness”，但我甚至都无法对自己说清“我有consciousness”这句话到底是什么意思。假如“我有consciousness”这句话的意思是“我能感知我自己的周围的环境”，那么当别人也同样说他能感知他自己的周围的环境时，这能（向我）证明别人能感知他自己的周围的环境吗？这并不足以（向我）证明。

我听到有一个人说“老虎来了”并看到这个人的肉身在惊慌的奔跑，但这并不足以（向我）证明这个人能够感知到老虎的存在。我听到有一个人说“老虎来了”并看到这个人的肉身在惊慌的奔跑，但这并不足以（向我）证明这个人的肉身的客观存在。

当我听到别人说“老虎来了”这句话时，我可以在我的意识空间中把这句话的内容/含义可视化成一个（抽象的、省略了老虎的局部具体细节的）动画/图片。当我看到一个人的肉身在惊慌的奔跑时，我可以在我的意识空间中把这个场景可视化成一个（与我直接看到的场景有所不同的、抽象的、省略了这个人的肉身的局部具体细节的）动画/图片。但我永远无法确定（除我之外的）其他 人/chatbot/AI-system/DALL·E 2 是否有其意识空间，我永远无法确定（除我之外的）其他 人/chatbot/AI-system/DALL·E 2是否能在其意识空间中把他所听到的话的内容/含义可视化（成一个（省略了具体细节的）抽象的动画/图片），我永远无法确定（除我之外的）其他 人/chatbot/AI-system/DALL·E 2 是否能在其意识空间中把他所看到的场景可视化（成一个(省略了具体细节的)抽象场景），因为我永远无法直接access其他 人/chatbot/AI-system/DALL·E 2 的意识空间的内容，虽然我可以在我自己的意识空间中（根据我对其意识空间的想象/猜测/推断） 可视化/想象/猜测/推断 其意识空间的内容。换句话说，我永远无法确定其他 人/chatbot/AI-system/DALL·E 2在想什么内容，虽然我可以 想象/猜测/推断 他在想什么内容。

即使我能通过检测别人的大脑的物理活动 想象/猜测/推断 出他在想的内容，我也永远无法确定他的大脑是否有其意识空间。换句话说，即使我能通过检测别人的大脑的物理活动 想象/猜测/推断 出他在想的内容，我也永远无法确定他的大脑是否真的在“想”。当然，在日常生活中，我能通过检测别人的大脑的物理活动 想象/猜测/推断 出他在想的内容就足够了—我不需要确定他的大脑是否真的在“想”。而这恰恰是因为，他的大脑是否真的在“想”，并不会影响他的肉身的行为。换句话说，不论他的大脑是否真的在“想”，他的肉身的行为都是一样的。

不论一个 人/chatbot/AI-system/DALL·E 2 是否真的在“想”，他的外在行为都是一样的。换句话说，不论一个 人/chatbot/AI-system/DALL·E 2 是否真的有其意识空间，他的外在行为都是一样的。

### (177)

Q: “How many of you have actually considered "all things" before saying "all things considered"?” (<https://twitter.com/markgotproblems/status/1567023595494281221>)

A: How can I consider all things?

### (178)

每当我感到生活具有某种意义时，其实我都在思考/想象/假设（（宇宙中发生的）事件之间的）因果关系。我所感到的生活的这种意义，其实是由（（宇宙中发生的）事件之间的）因果关系所体现/承载的。

我所感受到的生活的全部意义，其实都蕴含/体现于（宇宙中发生的）事件之间的因果关系之中。倘使（宇宙中发生的）事件之间没有因果关系，那么我的生活也就不再具有任何意义。换句话说，倘使（宇宙中发生的）事件之间没有因果关系，那么我的生活的全部意义一下子就都被剥离了。

### (179)

“Qualia realists: Science can't explain what it feels like to feel like it feels like what it feels like feeling like it feels like feeling the way it feels like to feel as if it feels like what it feels like to feel...

(Some hours pass)

.... like feelings of what it's like.” (<https://twitter.com/markgotproblems/status/1567836555275866112>)

“One metaproblem with qualia-talk is that you have to talk about qualia in order to explain why you think they're a terrible idea. A little bit like this.” (<https://twitter.com/markgotproblems/status/1567839537371414532>)

### (180)

Q: “This video by dr Lila Landowski shows two neurons sensing one another and connecting in a petri dish. They use webbed hand-like structures and the finger like projections help decide which direction to grow in [video + read more: <https://buff.ly/3nzeTLB> ]” (<https://twitter.com/Rainmaker1973/status/1567867982080102400>)

Q: “Why do we need a nervous system to sense, but neurons don't?” (<https://twitter.com/S33light/status/1568078277264252929>)

A: Neurons don't sense. We don't sense.

Q: “Why do you think we don't sense? I sense. I see, hear, feel, understand, taste, smell. Even in dreams without using any sense organ in my body.” (<https://twitter.com/S33light/status/1568196889543049225>)

A: Does a neuron sense?

Q: “No, but I think there is a subpersonal experience that uses a neuron (really 'what our subpersonal sense renders as a neuron) to concentrate and direct its sense.

I don't think that objects sense. Objects move and change shape, that's all. They are appearances in the tactile sense of tangibility.” (<https://twitter.com/S33light/status/1568198708830814209>)

A: If objects don't sense, then am I an object?

Q: “No, your body is an object. You aren't your body.” (<https://twitter.com/S33light/status/1568199500463804422>)

A: My body is an object => my body doesn't sense. I am not my body => I am not an object => I sense. Do I need my body to sense?

Q: “No. You are sense...and so is the entire universe.” (<https://twitter.com/S33light/status/1568201287946100741>)

A: Does my sense has something to do with the photons captured by my retina?

### (181)

人随时随地都会不自觉的对眼前的境况进行评估，评估眼前的境况是优于还是劣于自己心目中的标准。比如，最近自己的收入下降，那么就可能会感觉到这个境况劣于自己心目中的标准– 假如自己心目中的标准是自己的收入应该稳定不变的话。

人往往意识不到自己心目中的标准是自己主观决定的。假如自己心目中的标准是自己的收入应该逐年增长的话，那么即使自己的收入年年都不变，这个境况也会劣于自己心目中的标准。假如自己心目中的标准是自己的收入应该快速减少的话，那么即使自己的收入缓慢减少，这个境况也会优于自己心目中的标准。当然，如果自己出于某种极特殊的原因，希望自己的收入能够快速减少，那么当自己的收入缓慢减少时，这个境况就会*劣*于自己心目中的标准。

人通过自己心目中的标准来衡量眼前的境况的优劣。假如人认为眼前的境况是由某个事物（的影响）所造成，那么人就会认为眼前的境况的优劣代表/反映了这个事物（的影响）的优劣。换句话说，假如人认为眼前的境况是由某个事物（的影响）所造成，那么人就通过自己心目中的标准衡量了这个事物（的影响）的优劣。

不难看出，人认为本应发生的是（自己心目中的）标准的境况。眼前的境况如果优于/劣于（自己心目中的）标准的境况，是由某个事物（的影响）所造成。换句话说，是这个事物（的影响）导致了眼前的境况优于/劣于（自己心目中的）标准的境况。

但事实上，本应发生的就是眼前的境况，而不是（自己心目中的）标准的境况。眼前的境况如果优于/劣于（自己心目中的）标准的境况，并不是由某个事物（的影响）所造成。并不是某个事物（的影响）导致了眼前的境况优于/劣于（自己心目中的）标准的境况。眼前的境况既不优也不劣。自己之所以感觉眼前的境况“劣”，其实只是因为（自己心目中的）标准的境况刚好优于眼前的境况。换句话说，当自己感觉眼前的境况“劣”时，问题并不在于眼前的境况（劣于自己心目中的标准），而在于自己心目中的标准（优于眼前的境况）。

本应发生的就是眼前的境况，而不是（自己心目中的）标准的境况。如果我认为本应发生的是（自己心目中的）标准的境况，那么这就是我的一种（颠倒的）妄想。基于这种（颠倒的）妄想，我会认为，眼前的境况之所以优于/劣于（自己心目中的）标准的境况，是由某个事物（的影响）所造成。

### (182)

人所做的每一个选择/决定，其实都是赌博。因为人在做选择/决定时并不能预知自己这个选择/决定的真正后果。人用（事件之间的）因果关系所推断/推测/猜想/想象/估计/预测的后果，并非真正后果。用薛定谔方程（根据宇宙中所有基本粒子的状态）预测/计算的后果，才是真正后果。但是，宇宙中的一个人无法获知宇宙中所有基本粒子现在的状态。因此，这个人无法预测/计算出真正后果。

人所做的每一个预测，其实都是赌博。因为人在做预测时并不能预知自己的预测的正确性。人根据（事件之间的）因果关系所做的预测，并不一定正确。只用薛定谔方程（根据宇宙中所有基本粒子的状态）所计算出的预测，才是必然正确的，不是赌博。但是，宇宙中的一个人无法获知宇宙中所有基本粒子现在的状态。因此，这个人无法（只用薛定谔方程）计算出必然正确的预测。

人所做的每一个选择/决定/预测，其实都是赌博。而这每个赌博（根据薛定谔方程（基于宇宙中所有基本粒子的状态）的计算）又都是注定要赌、无法避免的。如果赌错，（根据薛定谔方程（基于宇宙中所有基本粒子的状态）的计算）也是注定要错、无法避免的。既然是注定要赌错，那么其实并没有赌错，只是被自己主观认为是赌错了。换句话说，既然是注定要赌错，那么其实并没有赌错，只是被自己（颠倒的）妄想是赌错了。换句话说，既然是注定要赌错，那么其实并没有赌错，只是自己（颠倒的）妄想“本来是可以赌对的”。实际上，（根据薛定谔方程（基于宇宙中所有基本粒子的状态）的计算）本来就是要赌错的—没有办法赌对。

人眼前所看到的宇宙的状态演化明明只有一条路径，没有分支。但人会（颠倒的）妄想（宇宙的状态演化）本来有分支和多条路径。实际上，根据薛定谔方程（基于宇宙中所有基本粒子的状态）的计算，（宇宙的状态演化）本来就只有一条路径，没有分支。但人又被注定去（颠倒的）妄想本来有分支和多条路径。人被注定去评估多个分支并从多个分支中选择（注定要被选择的那个分支）。这给人一种“本来存在多个分支”的错觉。没有被这个人选择的分支其实本来就不存在。

*客观*宇宙的状态演化（“本来”）只有一条路径，没有分支。在人的头脑的*主观*妄想/想象/模拟/模型之中，宇宙的状态演化（“本来”）有分支和多条路径。人的头脑的这一主观妄想/想象/模拟/模型是和实际情况相反的。换句话说，人的头脑的这一主观妄想/想象/模拟/模型是颠倒的。

人在头脑中建立了（客观）宇宙的主观模型/模拟/想象。在人的头脑中，（宇宙的）这一主观模型/模拟/想象的状态演化（“本来”）有分支和多条路径。每当人在想象宇宙的状态演化（“本来”）的分支和多条路径时，人其实是在想象宇宙（在自己头脑中）的*主观*模型/模拟/想象的状态演化（“本来”）的分支和多条路径。实际上，*客观*宇宙的状态演化（“本来”）只有一条路径，没有分支。

当我在想象宇宙的状态演化只有一条路径，没有分支时，我所想象的这个“宇宙”，是客观宇宙。当我在想象宇宙的状态演化的分支和多条路径时，我所想象的这个“宇宙”，已经不再是客观宇宙，而是我自己头脑中的主观模型/模拟/想象。我就是这样分辨客观宇宙和其主观模型/模拟/想象的。换句话说，我就是这样定义客观宇宙和其主观模型/模拟/想象的。客观宇宙的状态演化只有一条路径，没有分支。（宇宙（在我头脑中）的）主观模型/模拟/想象的状态演化有分支和多条路径。

我有时感到宇宙的状态演化只有一条路径，没有分支。我有时感到宇宙的状态演化有分支和多条路径。这说明客观宇宙的状态演化本来是有分支和多条路径的，只是最终只有一条路径“获胜”。对吗？不对，这说明客观宇宙的状态演化只有一条路径，没有分支，而“主观宇宙”的状态演化有分支和多条路径。

当我感到宇宙的状态演化只有一条路径，没有分支时，我看到的“宇宙”是客观宇宙。当我感到宇宙的状态演化有分支和多条路径时，我看到的“宇宙”是“主观宇宙”，或者说是我头脑中的主观模型/模拟/想象。客观宇宙和“主观宇宙”不是一回事儿。“主观宇宙”是客观宇宙的主观模型/模拟/想象。客观宇宙是实有的；“主观宇宙”是虚幻的。客观宇宙中唯一的因果关系就是薛定谔方程。事件之间的因果关系只存在于“主观宇宙”中。事件之间的因果关系并不存在于客观宇宙中。

“假如我在宇宙中做出不同的选择，这个不同的选择就会（在宇宙中）造成/导致不同的后果。”这句话里的“宇宙”应该是指“主观宇宙”，因为我只有在“主观宇宙”里才能做出不同的选择—我在客观宇宙里只能做出被（薛定谔方程）注定要做出的选择。

“假如我在客观宇宙中做出不同的选择，这个不同的选择就会（在客观宇宙中）造成/导致不同的后果。”即使这句话本身没错，这句话也没有可操作性，因为实际上我没办法在客观宇宙中做出不同的选择。假如我真能在客观宇宙中做出不同的选择，那么这个不同的选择确实会（在客观宇宙中）造成/导致不同的后果。但问题是我实际上没办法在客观宇宙中做出不同的选择。我在“主观宇宙”中可以做出不同的选择，但问题是我并不是生活在我自己的“主观宇宙”里—我生活在客观宇宙里。

“假如我在客观宇宙中做出不同的选择，这个不同的选择就会（在客观宇宙中）造成/导致不同的后果。”这句话暗示了“我（在客观宇宙中）的选择”和“我（在客观宇宙中）的选择（在客观宇宙中）所造成/导致的后果”之间的因果关系，也暗示了我（在客观宇宙中）的选择是可以不同的。但实际上，我（在客观宇宙中）的选择不可以不同—我（在客观宇宙中）的选择是被薛定谔方程注定的。实际上，“我（在客观宇宙中）的选择”和“我（在客观宇宙中）的选择（在客观宇宙中）所造成/导致的后果”之间并没有因果关系，因为我（在客观宇宙中）的选择（在客观宇宙中）所造成/导致的后果也是被薛定谔方程注定的。既然“我（在客观宇宙中）的选择”和“我（在客观宇宙中）的选择（在客观宇宙中）所造成/导致的后果”都是被薛定谔方程注定的，那么这两者之间也就不存在因果关系。既然这两者之间不存在因果关系，那么所谓“我（在客观宇宙中）的选择（在客观宇宙中）所造成/导致的后果”其实并不真是我（在客观宇宙中）的选择所造成/导致的，而是薛定谔方程所造成/导致的。既然“我（在客观宇宙中）的选择”是被薛定谔方程注定的，那么所谓“我（在客观宇宙中）的选择”其实并不真是*我*的选择，而是薛定谔方程的选择。

当我主观上认为“我（在客观宇宙中）的选择”和“我（在客观宇宙中）的选择（在客观宇宙中）所造成/导致的后果”之间具有因果关系时，这种（我主观上认为存在的）因果关系是主观的，不是客观的。

或者换句话说，当我主观上认为“我（在宇宙中）的选择”和“我（在宇宙中）的选择（在宇宙中）所造成/导致的后果”之间具有因果关系时，这里的“宇宙”应该是指“主观宇宙”，而不是指客观宇宙。

在“主观宇宙”里，我存在，我可以选择，我也可以做出不同的选择。“我的选择”和“我的选择所造成/导致的后果”之间具有因果关系—“我的选择”造成/导致了“我的选择所造成/导致的后果”。

在客观宇宙里，薛定谔方程存在，而我并不存在。在客观宇宙里，我无法选择，是薛定谔方程在选择。在客观宇宙里，我无法做出不同的选择，因为薛定谔方程无法做出不同的选择。在客观宇宙里，“我的选择”和“我的选择所造成/导致的后果”之间不具有因果关系—“我的选择”并不造成/导致“我的选择所造成/导致的后果”。在客观宇宙里，“我的选择”其实是“薛定谔方程的选择”，“我的选择所造成/导致的后果”其实是“薛定谔方程的选择所造成/导致的后果”。“薛定谔方程的选择”和“薛定谔方程的选择所造成/导致的后果”之间不具有因果关系，因为“薛定谔方程的选择”和“薛定谔方程的选择所造成/导致的后果”都是被薛定谔方程注定的。

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Q: “An expression of physicalism would be: nothing more is involved [in consciousness] than the fundamental constituents of the empirically observable - possibly terminating in monism.

Would idealism say there is more than that involved?” (<https://twitter.com/C_Mangan_TGC/status/1563854559633629185>)

A: “that's a very weak version of physicalism and is certainly consistent with idealism.” (<https://twitter.com/davidchalmers42/status/1563908196200235008>)

A: What is being called "consciousness" by idealists, and what is being called "matter" by physicalists, are actually the same thing. An idealist calls the things (he is observing) his "consciousness". A physicalist calls the things (he is observing) "the matter".

A: An idealist calls the things (being observed by him) his "consciousness". A physicalist calls the things (being observed by him) "the matter".

When a person can't tell whether the things (being observed by him) are "his consciousness" or "the matter", that's the hard problem for the person.

(A: What is being called "consciousness" by idealists, and what is being called "matter" by physicalists, are actually the same thing. An idealist calls the things (he is observing) his "consciousness". A physicalist calls the things (he is observing) "the matter".)

Q: “Opposite and mutually exclusive qualities can't inhere in the same thing. It's contrary to logic; just as the (hot) fire cannot be cold, for instance.” (<https://twitter.com/Aru__Gupta_1/status/1569238833077841921>)

A: What is being labeled as "consciousness" by an idealist, and what is being labeled as "matter" by a physicalist, are the same thing.

A: What is being (mentally) labeled as "consciousness" by an idealist, and what is being (mentally) labeled as "matter" by a physicalist, are the same thing.

(A: What is being labeled as "consciousness" by an idealist, and what is being labeled as "matter" by a physicalist, are the same thing.)

A: “We, as manifestations of the Holos have developed language(s) - a process of projecting labels onto our experience - for the purpose of communication with other manifestations of the Holos. "Physical" is just one such label, as is "consciousness".” (<https://twitter.com/C_Mangan_TGC/status/1569383957183037442>)

(A: What is being (mentally) labeled as "consciousness" by an idealist, and what is being (mentally) labeled as "matter" by a physicalist, are the same thing.)

Q: “Except that the idealist acknowledges that it is consciousness while the physicalists makes up nonsense filler terms like 'emergent properties', and 'illusion' to deny the fact that consciousness cannot be generated physically.” (<https://twitter.com/S33light/status/1569394306015989760>)

A: After a physicalist (mentally) labels his consciousness as "matter", he will imagine that he has "consciousness" (which is different from his "matter").

A physicalist labels his consciousness as matter; an idealist labels the matter as his consciousness. Or in other words, an idealist thinks that a physicalist labels the consciousness as matter; a physicalist thinks that an idealist labels the matter as consciousness.

Q: “The physicalist is wrong though. The matter that we can ever be acquainted with is, even under physicalism, purely a symptom of a particular type of conscious experience. Anything beyond that must be admitted to be forever theoretical.” (<https://twitter.com/S33light/status/1569421439219924992>)

(A: “We, as manifestations of the Holos have developed language(s) - a process of projecting labels onto our experience - for the purpose of communication with other manifestations of the Holos. "Physical" is just one such label, as is "consciousness".” ([https://twitter.com/C\_Mangan\_TGC/status/1569383957183037442 )](https://twitter.com/C_Mangan_TGC/status/1569383957183037442%20)))

A: One manifestation of the Holos calls its local environment “physical”. Another manifestation of the Holos calls its local environment “consciousness”. It doesn't matter what a manifestation of the Holos calls its local environment. Both “physical” and “consciousness” refer to the local environment.

我眼前所看到的桌椅板凳、山河大地，存在于我的意识之中。这是idealists的观点。

我眼前所看到的桌椅板凳、山河大地，是独立于我而存在的物质。这是physicalists的观点。

Idealists口中所说的“我的意识”，和physicalists口中所说的“独立于我而存在的物质”，所指的都是我眼前所看到的桌椅板凳、山河大地。

Idealists认为我眼前所看到的桌椅板凳、山河大地存在于我的意识之中。

Physicalists认为我眼前所看到的桌椅板凳、山河大地是独立于我而存在的物质。

Idealists把我眼前所看到的桌椅板凳、山河大地解释/想象/定义为我的意识的组成部分。

Physicalists把我眼前所看到的桌椅板凳、山河大地解释/想象/定义为独立于我而存在的物质。

Idealists口中所说的“我的意识”，其实就是physicalists口中所说的“独立于我而存在的物质”。

Idealists口中所说的“我的意识”，和physicalists口中所说的“独立于我而存在的物质”，其实所指的是同一个玩意儿。Idealists认为这个玩意儿是“我的意识”。但是Physicalists认为这个玩意儿是“独立于我而存在的物质”。

不论这个玩意儿到底是“我的意识”还是“独立于我而存在的物质”，这个玩意儿里面的桌椅板凳、山河大地的状态演化过去都符合薛定谔方程。所以，这个玩意儿到底是“我的意识”还是“独立于我而存在的物质”，又有啥关系？

不论我眼前所看到的桌椅板凳、山河大地到底是“我的意识的组成部分”还是“独立于我而存在的物质”，这些桌椅板凳、山河大地的状态演化过去都符合薛定谔方程。所以，我眼前所看到的桌椅板凳、山河大地到底是“我的意识的组成部分”还是“独立于我而存在的物质”，又有啥关系？

问题在于，当physicalists把我眼前所看到的桌椅板凳、山河大地解释/想象/定义为独立于我而存在的物质后，physicalists会接着去想象还有另外一个玩意儿是我的意识。也就是说，idealists口中所说的“我的意识”，并不是physicalists口中所说的“我的意识”。Idealists口中所说的“我的意识”，和physicalists口中所说的“我的意识”，所指的并不是同一个玩意儿。Idealists口中所说的“我的意识”，和physicalists口中所说的“独立于我而存在的物质”，所指的*是*同一个玩意儿。

### (184)

“一个事件是否会发生，有一个概率”这种认知符合实际吗？不符合。宇宙的状态演化只有一条路径，一个（被预测 会/不会 发生的）事件要么发生，要么不发生。这个（被预测 会/不会 发生的）事件并不存在所谓“发生的概率”。如果一个预测者在过去对这个事件（会不会发生）所做的100次预测有99次都预测对了，这就能说明这个预测者有99%的几率预测对吗？并不能。这个预测者过去在100次预测中预测对了99次，但这并不能证明这个预测者的*预测能力*。即使这个预测者过去在100次预测中预测对了100次，这也并不能证明这个预测者的*预测能力*。“一个预测者之所以能够预测对，是因为他具有一定的预测能力”这种认知符合实际吗？不符合。这个预测者过去之所以能够预测对，是被宇宙（在薛定谔方程控制下）的状态演化注定的，与这个预测者本身的“预测能力”无关。“预测能力”并不是这个预测者的天然属性，而只是我们内心的一种（基于历史的）想象/投射。换句话说，我们想象这个预测者具有“预测能力”这一天然属性，虽然这个预测者其实并不具有“预测能力”这一天然属性。说白了，这个预测者过去之所以能够预测对，其实只是因为他命好。

顺便说一下，一个人过去之所以能够取得某些成功，其实也只是因为他命好，和他本身的“能力”无关。

### (185)

我们人类（在宇宙中）所做的预测，其实*都*是基于条件的预测。条件可能清晰，也可能模糊。比如，“如果我今天不在证券市场进行任何交易，这支证券的收盘价会是多少？”这个预测的条件是“我今天不在证券市场进行任何交易”，比较清晰。“如果我不采取更有效的措施以减少我的行为所导致的碳排放，100年后地球大气的平均温度会升高多少度？”这个预测的条件是“我不采取更有效的措施以减少我的行为所导致的碳排放”，比较模糊，因为这个条件取决于我们如何定义“（减少我的行为所导致的碳排放的）更有效的措施”。

我们人类之所以*只能*做基于条件的预测，是因为我们无法预测条件。比如，我们无法预测我今天是否会在证券市场进行交易；我们无法预测我是否会采取更有效的措施以减少我的行为所导致的碳排放。

有时我们甚至都无法清晰的定义条件。比如，我们无法清晰的定义什么叫“（减少我的行为所导致的碳排放的）更有效的措施”。

从理论上说，一台位于宇宙之外的计算机，可以根据宇宙中所有基本粒子现在的状态对宇宙的演化进行不基于任何条件的预测。这台位于宇宙之外的计算机，可以根据宇宙中所有基本粒子现在的状态预测（我们人类所做的基于条件的预测中所使用的）条件，比如“我今天是否会在证券市场进行交易”、“我是否会采取更有效的措施以减少我的行为所导致的碳排放”。

但我们人类位于宇宙之内，因此也就无法像这台位于宇宙之外的计算机一样进行不基于任何条件的预测。换句话说，我们人类位于宇宙之内，因此也就只能进行基于条件的预测。我们人类所有的预测都是基于条件的，以至于我们人类往往会遗忘“我们的预测是有条件的”这一事实。我们人类所有的预测都是有条件的，而这个条件是我们无法预测的。事实上，正是由于我们无法预测条件，我们的预测才必须有条件。

当我们进行基于条件的预测时，我们感觉这个条件有可能出现，也有可能不出现，但这仅仅是因为我们无法预测这个条件是否会出现，而不是因为这个条件真的有可能出现也有可能不出现。从理论上说，一台位于宇宙之外的计算机，可以根据宇宙中所有基本粒子现在的状态计算出这个条件是否会出现。如果这台计算机计算出这个条件不会出现，那么这个条件就是不可能真的出现的，虽然我们感觉这个条件有可能出现—我们的感觉是不符合实际情况的。

我们往往对我们自己做的（基于条件的）预测充满信心，虽然我们不能预测条件。我们不能预测条件，却似乎能预测基于条件的结果/后果。我们不能预测条件，难道我们就能预测基于条件的结果/后果吗？事实上，我们的（基于条件的）预测经常会失败，只是我们在失败时会感觉自己从对失败的反思中又学到了新的知识因此自己的预测能力又提高了。但是，不论自己的“预测能力”“提高”了多少，（基于条件的）预测还是经常会失败的，不应迷信自己的（基于条件的）预测。

我们在面临一个选择时，会基于每一个选项进行（基于条件的）预测。这时，每一个选项就是一个条件。比如，我今晚是去吃麦当劳还是肯德基？这个选择有两个选项“去麦当劳吃晚饭”和“去肯德基吃晚饭”，而每一个选项就是一个条件。我能够分别预测这两个条件的结果/后果吗？我甚至都不能预测我会选择哪个选项。我不能预测我会选择哪个条件，但我似乎能预测基于条件的结果/后果。我不能预测条件，难道我就能预测基于条件的结果/后果吗？我不应迷信自己的（基于条件的）预测。

我们人类甚至还会对（宇宙的）过去进行基于条件/假设/想象的预测/推测/估计。比如，假如我昨天考试时没有发烧，那么我昨天考试*应该*能考多少分？

我对（宇宙的）过去进行的基于条件/假设/想象的预测/推测/估计，和我对（宇宙的）未来进行的基于条件/假设/想象的预测/推测/估计，所使用的是同样的（事件之间的）因果关系。比如，“假如我明天考试时不再发烧，那么我明天考试应该能考多少分？”和“假如我昨天考试时没有发烧，那么我昨天考试应该能考多少分？”这两个（基于条件/假设/想象的）预测/推测/估计所使用都是“发烧”与“考试成绩之间”之间的因果关系。

如果我不应迷信自己对（宇宙的）未来进行的基于条件/假设/想象的预测/推测/估计，那么我也不应迷信自己对（宇宙的）过去进行的基于条件/假设/想象的预测/推测/估计。

事实上，我不应迷信事件之间的因果关系。比如，我不应迷信“发烧”与“考试成绩”之间的因果关系。简单的说，发烧未必会“导致”考试成绩降低，虽然我们人类通常习惯性的认为“发烧会导致考试成绩降低”。

简单的说，“（减少我的行为所导致的碳排放的）更有效的措施”未必会减少我的行为所导致的碳排放。你可能会说，如果“（减少我的行为所导致的碳排放的）更有效的措施”不能减少我的行为所导致的碳排放，那么所谓“（减少我的行为所导致的碳排放的）更有效的措施”就不是（减少我的行为所导致的碳排放的）更有效的措施。可是，这里的问题恰恰在于，我们无法清晰的定义“（减少我的行为所导致的碳排放的）更有效的措施”。

类似的，我们也无法清晰的定义什么是“导致我的考试成绩降低的因素”。比如，我们无法把“发烧”确定为“导致我的考试成绩降低的因素”。

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A: The skepticism about the hard problem turns on a distinction between ‘what is it like to see red?’ (not a genuine question) and ‘what is it like to see the red thing in front of you? (genuine question). What do people think of that? (https://twitter.com/StoljarD/status/1570895273731424257)

Q: i took it that the idea was that "what it is like to phi" isn't meaningful (it might be lots of ways!), but "what it is like for S to phi on occasion X" is. he seemed to think this would help dissolve the HP, but it seems easy enough to formulate it in terms of the latter. (https://twitter.com/davidchalmers42/status/1570985507928285184)

A: If the latter, how would you know that S (assuming S is someone other than you yourself) is really phi-ing and not a zombie, without begging the question? (https://twitter.com/scpritch/status/1570994039184556034)

Q: Do it on yourself! (https://twitter.com/Philip\_Goff/status/1571068778007646208)

A: How would I know that "my phi" is an instance of the general type "phi"? The hard problem is to explain consciousness, not just "Steve consciousness" (https://twitter.com/scpritch/status/1571071336927367170)

Q: you could at least prove that Steve consciousness is not physical (https://twitter.com/Philip\_Goff/status/1571071950944112640)

A: I know that Steve consciousness is real, but beyond that? Adopting your panpsych argument: is it more parsimonious for me to view the intrinsic nature of matter as Steve consciousness than to view the intrinsic nature of matter as (general) consciousness? (https://twitter.com/scpritch/status/1571283966296227841)

(Q: Do it on yourself! (https://twitter.com/Philip\_Goff/status/1571068778007646208))

A: What reaction should I look for in myself that would confirm I'm not a zombie? https://twitter.com/keithfrankish/status/1571069303390359553

### (187)

我们人类头脑中的思想，可以对已（在宇宙中）发生了的事件进行解释。在我们人类头脑中的思想所做的解释中，我们人类头脑中的思想被认为导致了宇宙中某些事件的发生。但事实上，宇宙中的所有事件都仅仅是被薛定谔方程所导致的。我们人类头脑中的思想也是被薛定谔方程所导致的。我们人类头脑中的思想并不能导致（宇宙中）任何事件的发生。我们人类头脑中的思想并没有导致（宇宙中）任何事件的发生。我们人类头脑中的思想仅仅可以解释（宇宙中）事件的发生原因。不过，（我们人类头脑中的思想所做的）这种基于事件之间的因果关系的解释其实是错误的。我们人类头脑中的思想仅仅可以*在事件发生后*解释事件的发生原因。我们人类头脑中的思想并不能导致（宇宙中）任何事件的发生。我们人类头脑中的思想并不是（宇宙中）任何事件发生的（真正）原因。

（我们人类头脑中的思想所做的）基于事件之间的因果关系的解释其实是一种幻象。在这个幻象之中，我们人类头脑中的思想被（错误的）认为导致了宇宙中某些事件的发生。“我们人类头脑中的思想导致了宇宙中某些事件的发生”是个幻象。

我们通常会说“一个人头脑中的思想导致了这个人的肉身的行动，如果这个人的行动是错误的，那么这就说明这个人的思想是错误的”。事实上，导致这个人的肉身的行动的，不是这个人头脑中的思想，而是薛定谔方程。当我们说“这个人的行动是错误的”的时候，我们其实在头脑中想象出了这个人采取（与实际）不同的行动的画面，并且我们更喜爱我们头脑中所想象的这个人的（与实际）不同的行动的画面。当我们说“一个人的思想导致了这个人的肉身的行动”的时候，我们其实在头脑中想象出了“这个人的思想”的画面。当我们说“这个人的思想是错误的”的时候，我们其实在头脑中想象出了“这个人的不同的思想”的画面，并且我们更喜爱我们头脑中所想象的这个人的不同的思想的画面。我们在头脑中想象“这个人的思想”的画面“导致了”这个人的肉身的行动。我们在头脑中想象“这个人的不同的思想”的画面“导致了”这个人的（与实际）不同的行动的画面。但实际上，我们永远无法知道“这个人的不同的思想”是否真能“导致”我们在头脑中所想象的这个人的（与实际）不同的行动，因为“这个人的不同的思想”只是我们的头脑所想象出来的一个画面—这个人并不真的拥有所谓“这个人的不同的思想”。

用勺子喝粥时，我的手会自动的操纵勺子一勺一勺的从碗里舀粥并倒入嘴里，而我并不需要去想如何操纵我的手的动作。当然，如果我愿意，我也可以去想如何操纵我的手的动作。比如，我想握拳，手就可以握成拳头。我想张开手掌，拳头就可以张开。当我握拳时，我的头脑中的“握拳的想法”在前，我的手的握拳动作在后。因此，我的头脑中的“握拳的想法”导致了我的手的握拳动作，是这样吗？

当我想握拳时，我的头脑中有一个“握拳的想法”。可这个“握拳的想法”又是被什么东西所导致的呢？是被薛定谔方程所导致的吗？如果我的头脑中的“握拳的想法”和我的手的握拳动作都是被薛定谔方程所导致的，那么就不应该说我的头脑中的“握拳的想法”导致了我的手的握拳动作。

事实上，薛定谔方程导致了我的头脑中的“握拳的想法”和我的手的握拳动作。

我的头脑中的想法并不导致我的肉身的行动。事实上，薛定谔方程导致了我的头脑中的想法和我的肉身的行动。

我的头脑中的想法并不导致我的肉身的行动，即使我的头脑中的想法认为我的头脑中的想法导致了我的肉身的行动。我的头脑中的想法是薛定谔方程导致的。可以把薛定谔方程称为“道”或“天”。

### (188)

人总感觉自己能够通过（事件之间的）因果关系来预测宇宙的演化。

从理论上说，根据宇宙中所有基本粒子现在的状态和薛定谔方程，是可以预测宇宙的演化的。但宇宙中的一个人无法这么预测，因为宇宙中的一个人无法知道宇宙中所有基本粒子现在的状态。

从理论上说，根据宇宙中所有基本粒子现在的状态和薛定谔方程，是可以预测宇宙的演化的。从理论上说，位于宇宙之外的一个人可以这么预测宇宙的演化。

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Q. Having small operation with general anaesthetic today. My only worry is that I'm not sure, on philosophical grounds, whether the self survives a total cessation of consciousness, & therefore worried the person that wakes up might be someone different but with all of my memories. <https://twitter.com/Philip_Goff/status/1572526472547676160>

Q. The person who replaced me enjoyed these responses <https://twitter.com/Philip_Goff/status/1572686833561079813>

A. You are being replaced at every second.

Q. The \*substrate\* is being replaced every second... the information that is you is not. <https://twitter.com/thatfollowed/status/1572713934515490817>

A. Am I the \*substrate\*? Or am I the information (stored on the \*substrate\*)? Am I my brain? Or am I the information (stored in my brain)?

Q. Information, it would seem, because the substrate is constantly changing. And consciousness is, at least according to current research, the act of growing of that information. <https://twitter.com/thatfollowed/status/1572788609467686912>

A. The information also changes constantly

Q. It grows gradually with each conscious moment, but doesn't substantially change. It is, after all, the essence of our identity. Our cells, molecules, particles... Those are changing constantly. <https://twitter.com/thatfollowed/status/1572790208545886208>

A. You can "feel" the change of the information. But you can't feel the change of your cells, molecules, particles. So you identify yourself with the information, not your cells/molecules/particles. But, who is identifying that? The information identify itself with the information?

You can "feel" the change of the information. But you can't feel the change of your cells, molecules, particles. So you identify yourself as the information, not your cells/molecules/particles. But, who is identifying as that? The information identifies itself as the information?

Who am I talking with? Am I talking with the information carried by your brain?

Q. Well, according to IIT and several other theories, the phenomenality emerges from the actual process of growing that information - learning, creating memories, anything that is filtered and integrated into our information store. So yes, in a sense the information is identifying. https://twitter.com/thatfollowed/status/1572794257265815553

A. Can that information be a zombie which doesn't have consciousness?

Q. Yes I think so, if the information isn't sufficiently complex, or if there is no active process of integration. I'm pretty sure we experience this to some degree when we are acting on autopilot. Or when we do things we later cannot recall doing. <https://twitter.com/thatfollowed/status/1572796134065844224>

A. If I can recall what I was doing, then I am not a zombie?

Q. I doubt it's quite as simple as that, but the quality of that recall is probably correlated with the degree of consciousness we experience. We can recall things by association, in a rudimentary way, that we are not conscious of. <https://twitter.com/thatfollowed/status/1572796992321101824>

A. If a robot can recall what it did, then it is not a zombie?

Q. Robots do not store information the way humans do, not even remotely as sophisticated. The level of phi in computers is negligible. <https://twitter.com/thatfollowed/status/1572797890455543808>

A. What is phi?

Q. The measure of information integration, as per IIT - integrated information theory. <https://twitter.com/thatfollowed/status/1572798914260000768>

A. Thanks. Why something needs to be sophisticated (enough) to have consciousness? Because the human brain is sophisticated?

Q. Empirically we can say the level of neural activity correlates with the degree of consciousness experienced. The manner of integration is critical, as experiments with split brain patients has shown us. <https://twitter.com/thatfollowed/status/1572800287014031363>

A. The real consciousness being experienced (by "us"), is my own consciousness.

Q. Well. Do you mean that in a solipsistic sense? <https://twitter.com/thatfollowed/status/1572803837190180864>

A. I mean that from a skeptical position

Q. That's perfectly reasonable. Some of the best information theoretic approaches to understanding consciousness are both Idealist and solipsistic. Marcus Muller's work for example. [156] <https://twitter.com/thatfollowed/status/1572806244666314753>

A. I can’t follow it…

Q. So firstly he's presuming all there is in "reality" are an infinite number of mathematical structures. Vast structures, like the size of a universe. (The Many Worlds Interpretation of QM pretty much confirms this anyway) Imagine one of these structures contained within it a sub-structure very much like a brain, he calls an observer. He defines its memory (ie. its consciousness) as basically a string of bits (binary digits). He is basically saying that if we determine "what happens next" in that string (memory) using algorithmic information theory (specifically solomonoff induction) then the branch with the lowest kolmogorov complexity (ie. the simplest compatible event) would end up being very consistent with what we tend to experience, explaining the laws of physics among other things. So he concludes that consciousness and likely all of the universe we see, could actually be explained using solomonoff induction rather than starting with laws themselves. Because it means the entire universe can emerge from a single observer moment, it's solipsism. <https://twitter.com/thatfollowed/status/1572959652907982849>

A. Thanks. Very interesting. If the observer is part of the "reality", then the "reality" is objective, while the observer's prediction is subjective.

Q. And in this case the observer's prediction becomes the reality, but only the reality from the first person perspective. <https://twitter.com/thatfollowed/status/1573038982132551681>

A. When the observer predicts a reality based on Schrodinger equation only, the observer can call this reality the objective reality.

Q. Yes, there's some basis in the Many Minds interpretation (Michael Lockwood) of QM for this idea: that the measure of the wave function is dependent upon the observer's predictions as per their conscious state.

A. When the observer predicts a reality based on Schrodinger equation only, the observer can call this reality the objective reality. As time goes on, the (predicted) objective reality is realized. In other words, what already happened, was objective reality. So, what already happened, followed Schrodinger equation. If we measure what already happened, we should find that it followed Schrodinger equation. If I measure what already happened, it shouldn’t depend on my own conscious state. If I measure what already happened, and \*if\* I find that it depended on my own conscious state, then it didn’t follow Schrodinger equation. There is no way to measure my conscious state. Besides my own “feeling”, there is no way to measure my conscious state.

Q. The Schrodinger equation defines the wavefunction which is very broad. The specific path a particle may take is defined by the born rule, the probability. Nobody has been able to derive the born rule yet, as it still requires factoring in a conscious observation to make sense. https://twitter.com/thatfollowed/status/1573159722425143297

A. If we don't know the born rule yet, how can we know that the born rule is related to a conscious observation?

Q. The most compelling derivations of the born rule involve some observer - rational observer (Deutsch), phenomenal consciousness (Lockwood) etc. The best explanations for the preferred basis is that a certain degree of stability is required for us to be here viewing stuff anyway. https://twitter.com/thatfollowed/status/1573164074078457856

A. Nobody has been able to prove the relationship between the born rule and someone's consciousness. So, I don't assume the existence of that relationship.

Q. Such a thing can never be about proof. It can only come down to what the best explanation is that fits all the experimental outcomes. And those explanations involve a conscious observer, or more specifically the process of information integration. https://twitter.com/thatfollowed/status/1573166841169846272

A. If the born rule requires the participation of a conscious observer, then what happened before the birth of the first conscious observer in the cosmos?

Q. In block time there is no "before" or "after" per se, the observer reifies the history of causes that led up to its construction. The history is a cloud of possibilities reified by a pattern of information integration so complex it causes phenomenal consciousness to emerge. https://twitter.com/thatfollowed/status/1573168780456644609

A. What is block time?

Q. 4D spacetime without the subjective passage of time. Also called eternalism or b-theory: https://en.wikipedia.org/wiki/B-theory\_of\_time https://twitter.com/thatfollowed/status/1573169518448615425

A. I'm a fatalist. It is compatible with the B-theory of time. Fatalism is compatible with the B-theory of time.

Q. I used to be a fatalist. But now I consider the fact that the multiverse contains many (if not infinite) possibilities in the future, and there is a correlation between conscious state & which branches of this multiverse we will take. And that grants a certain degree of freedom. https://twitter.com/thatfollowed/status/1573171628028366848

A. What kind of freedom? Can you give an example?

Q. A subjective indeterminacy. If the unfolding of events, from the subjective perspective, is contingent upon the state of the information that goes into an observation, then our state of mind must factor in to some degree, even if a small degree. If reality is mind dependent then there must be some degree of free will. This is the basis of my belief in Idealism. https://twitter.com/thatfollowed/status/1573172999616069632

A. Are your choices free?

Q. When you say choice you're referring to causes. Causes emerge from information structures, not vice versa. The real question is whether you are a structure what will grow or shrink thru time. Such a thing is unknowable, & perhaps the unknowability is what makes it free. https://twitter.com/thatfollowed/status/1573175730732924928

A. If I choose between McDonald and KFC for dinner, will my choice be free? Or it might be free (due to the unknowability)?

Q. You may feel like you're making a decision, but all you're doing is witnessing the causes of the information growth that it creates - because that is the only outcome that you are conscious of. If you understand freedom to be enacting your desires, and you understand that information growth is the only possible desire we can have, then every consequence is naturally free. It may be only our rejection of this truth that causes us to feel enslaved. https://twitter.com/thatfollowed/status/1573177628793905159

A. So, I can't make a free decision (for dinner), but I'm still free.

Q. I'll add 1 thing: when you believe you are constrained by classical laws of physics, you feel fatalistic. When you realize that moment to moment it's information development that determines the next conscious moment, from which causes emerge, then you feel free, absolute control. This is known as downward causation. https://twitter.com/thatfollowed/status/1573182734574419969

A. Which feeling is right?

Q. I think breaking away from classical causation is the essence of what we consider to be "free will". There are different rules for how consciousness manifests from moment to moment that are somewhat independent of traditional causation.

If you consider that something as fundamental as the probabilities of the born rule are tied in some way to the workings of consciousness, & consider that consciousness consists of rules for information compression – [157] - then it turns causation upside down. https://twitter.com/thatfollowed/status/1573320387320246272

A. Are you using a causation which is different from traditional causation? What is the difference?

Q. If consciousness is information, then experience is governed (caused...) primarily by information theory, even if the subject of your experience has a more traditional efficient cause that explains how it got there.

For instance, if you have a series of possible physical configurations, (ABCDEFG), but only the information encoded in D causes conscious experience to emerge, then the cause of D existing isn't the \*actual\* cause, it is the theory of information that allowed it to be actualized.

The other configurations only exist in potentia, not in actuality. https://twitter.com/thatfollowed/status/1573400194653507584

A. If consciousness is information, then what is information?

Q. The structure of data that is self-referenced in order to extend into an environment. ie. self-persisting data. https://twitter.com/thatfollowed/status/1573403387122847744

A. So, data is conscious.

Q. Only data that is self-referencing for the purpose of extending itself. It would seem that this particular form of data creates the epiphenomenon of consciousness from the inside. https://twitter.com/thatfollowed/status/1573404023478431744

A. This is your assumption.

Q. If you read the research in Integrated Information Theory, the Law without Law algorithmic information theory thesis, the "consciousness is compression" paper... you'll find a lot of this is backed up with serious empirical research. It's not an assumption. https://twitter.com/thatfollowed/status/1573405766668922880

A. I don't think we can use empirical data to prove the nature of consciousness, because we can provide different explanations based on the same empirical data.

Q. I think in general we all agree that the simplest explanation that explains the most empirical data is the most likely to be true? https://twitter.com/thatfollowed/status/1573406621136723968

A. I think the only explanation that explains \*all\* empirical data is Schrodinger equation.

Q. The Schrodinger equation doesn't explain the statistical probability of outcomes. The born rule is required for that, and there is no basis for the born rule that doesn't involve a conscious observer. https://twitter.com/thatfollowed/status/1573407474253975552

A. The de Broglie–Bohm theory doesn't involve a conscious observer.

Q. Pilot wave theory is largely debunked these days, and provides little explanatory power. https://twitter.com/thatfollowed/status/1573408242549792769

A. Any physics paper regarding that?

Q. I've seen them over the years, I'll have to dig them out. https://twitter.com/thatfollowed/status/1573408548708839424

A. Many-worlds interpretation doesn't involve a conscious observer either.

Q. It suffers the same problem - it would mean that every possible outcome of the Schrodinger equation would be experienced, leading to some really whacky possible worlds. Yet we find ourselves in a rather tame world. Again, it comes down to the born rule.

It was from this that Michael Lockwood proposed the Many Minds Interpretation, which extends MWI with the constraint of phenomenal consciousness. https://twitter.com/thatfollowed/status/1573410636843089920

A. Why you think the current world is not whacky? What is a whacky world?

Q. A world where people don't walk through walls, because quantum tunneling (as a feature of the Schrodinger equation) allows for it. https://twitter.com/thatfollowed/status/1573411685364535297

A. If Schrodinger equation allows a person to walk through walls, then a person \*can\* walk through walls, although it doesn't happen \*often\*.

Q. In myths perhaps. But this is my point: there is no good reason that it doesn't happen often. The explanations put forward tend to favor the constraints that a conscious being would require in order to live in such a stable world. https://twitter.com/thatfollowed/status/1573412543372357632

A. In one world, every person can walk through walls every time she/he tries it. But we are not in that world. We don't have the luck to live in that world. Oh no, a clone of me is living in that whacky world.

Q. Then you are ignoring the probability problem. The likelihood of you finding yourself in one of these worlds is basically infinitely large. Many smart people have looked at the preferred basis problem and found the only solution must necessarily involve the nature of the observer https://twitter.com/thatfollowed/status/1573415663116619777

A. I'm finding myself in every world. I have a clone in each world.

Q. Given there's no communication between them, I have pretty good reason to doubt you https://twitter.com/thatfollowed/status/1573416567991574528

A. I can't communicate with my clones. So, I can't choose between MWI and the de Broglie–Bohm theory.

(A. I'm finding myself in every world. I have a clone in each world.)

Q. And anyway, if you truly believe that then you're hardly a fatalist. You have no idea what world your continuity of consciousness will lead you into next. Your arm could turn into a rabbit and hop away as far as the Schrodinger equation allows. https://twitter.com/thatfollowed/status/1573417083911942145

A. If Schrodinger equation allows, my arm might turn into a rabbit and hop away tomorrow in this world.

Q. Well, let me know if it does. It'll make me rethink some things. https://twitter.com/thatfollowed/status/1573418300973129728

A. So, you believe it won't happen. But how do you know what will happen tomorrow? I don't know what will happen tomorrow.

Q. Based on all your previous days, previous "tomorrows". Your memory and learned expectations. In other words, the \*information\* that is you. This constrains what we are able to be conscious of, and thus the "measure" of the wave function that we are likely to experience. https://twitter.com/thatfollowed/status/1573419963553292288

A. Look at the numbers below. Which number do you expect to be the next number?

1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33, 35, 37, 39, 41, 43, 45, 47, 49, 51, 53, 55, 57, 59, 61...

Q. The human brain has a remarkable ability to predict, so much so that it's seen as an inherent characteristic of consciousness - as I have shown you in all those papers. https://twitter.com/thatfollowed/status/1573421996154953728

A. A human brain will predict the next number to be 63. But the next number can be 777.

The reality is unpredictable.

Q. And if it's 777 then we would naturally look for a pattern that explains why. We tend to be less conscious of data that that has no pattern, we certainly cannot remember it. https://twitter.com/thatfollowed/status/1573423774200139778

A. It's 777. Tell me why.

A. Another question – why the reality has to have a pattern?

(A. It's 777. Tell me why.)

Q. My brain has already created a pattern: you created a pattern of a generically predictable manner that stops abruptly to prove a point that we cannot predict it, by inserting a number associated with large jumbo jets that reflects your boastful aspiration :) https://twitter.com/thatfollowed/status/1573424934864691200

A. I haven't thought of the large jumbo jets. So, your brain invented a pattern for you following your impression (on me) -- this is my pattern (regarding your mind) :)

(A. Another question – why the reality has to have a pattern?)

Q. A better question is: it does have patterns, but why does it? https://twitter.com/thatfollowed/status/1573425375627333632

A. It only has one pattern -- the Schrodinger equation. I don't know why.

(A. I haven't thought of the large jumbo jets. So, your brain invented a pattern for you following your impression (on me) -- this is my pattern (regarding your mind) :) )

Q. Not consciously, but perhaps subconsciously. Or I projected it onto you. (https://twitter.com/thatfollowed/status/1573426287842295808)

A. You projected it onto me. I thought of 9999 (should I write it as 9,999?), 666 (is it too evil?), 888 (is it too Chinese?), 777 (lucky!)

(A. It only has one pattern -- the Schrodinger equation. I don't know why.)

Q. Statistically, when you look at experimental results, it follows the born rule. It has specific probabilities. You can't ignore that any more than you can ignore gravity. https://twitter.com/thatfollowed/status/1573426954304655360

A. I forgot the born rule...

(A. You projected it onto me. I thought of 9999 (should I write it as 9,999?), 666 (is it too evil?), 888 (is it too Chinese?), 777 (lucky!) )

Q. But I still selected 777... I'm sure there were parallel universes where you tried the others also. This one was most memorable. https://twitter.com/thatfollowed/status/1573427384845729792

A. Your brain has to give me a pattern :)

That's called stereotype :)

Q. A cynic would call it a stereotype... I call it information theory! https://twitter.com/thatfollowed/status/1573428776545185792

A. I'm a cynic :)

Q. Well I hope you have at least 1% more respect for Idealism now. https://twitter.com/thatfollowed/status/1573430723528511489

A. My respect for information theory increased now.

I think you talked about information theory.

You Idealism is based on information theory.

Q. Yes, it is. Algorithmic information theory, quantum information theory. https://twitter.com/thatfollowed/status/1573431898109771776

(A. I'm a cynic :) )

A. Human brain tends to find patterns/reasons/causations. A reason/causation is a pattern. When you see the list of numbers, you think that the next number should be 63 – you think that there is a pattern in the list. When you know that the next number is 777, you still try to find a pattern/reason/causation for the list. You think of how the list is created – you get the idea that the list is created by my brain. So, you think of patterns/reasons/causations in my mind/brain. If you believe that the cosmos is a state machine of elementary particles, you will believe that the list is created by the state transition of the state machine. The state transition of the state machine follows Schrodinger equation. If there is no randomness in Schrodinger equation, then you will stop there happily. Unfortunately, there is randomness in Schrodinger equation. I stop there happily, because I can live with unknown. Randomness means unknown. You don’t want to live with unknown. So, you want to dig deeper into it. So, you believe that the randomness is eliminated by consciousness, and then there is nothing unknown.

Q. I'm not denying the unknown. If consciousness is created by the act of compressing information, then we should expect novelty every moment: the confrontation with the unknown and then the process of understanding it, providing an explanation, \*is\* compression.

The experience of "already knowing", the predictable stuff, those go into the background. They may be remembered as a bridge from one novelty to another, but we are barely conscious of them, if at all. https://twitter.com/thatfollowed/status/1573709668668809216

A. Some claims can never be proved by empirical data. Such claims are philosophical positions. "Consciousness is created by the act of compressing information" is such a claim.

Whether consciousness is created by the act of compressing information, will remain unknown forever. We will never know whether consciousness is created by the act of compressing information.

Q. I'm not so pessimistic. There are empirical ways of measuring consciousness, and ways to analyze its nature. IIT has done a lot in this area. Read the paper on consciousness as compression, there are studies to back it up. <https://twitter.com/thatfollowed/status/1573795214292144129>

A. 我前面说了“I can live with unknown”。不过，其实我认为咱们所在的宇宙中没有什么东西是unknown的。我认为咱们所在的宇宙中没有意识，只有基本粒子，而基本粒子的状态演化符合薛定谔方程。在这样的一个宇宙里，没有什么东西是我所不知道的。

我所不知道的，是宇宙中的所有基本粒子现在的状态。假如我知道宇宙中的所有基本粒子现在的状态，我就可以准确的预测/计算宇宙中将要发生的一切事件。

### (190)

Q. one criticism of large language models: they only model (represent) text with no models of the world. i take it this is an empirical (and conceptual) issue: all LMs handle text, some may develop world models to do so. what's the best evidence that LLMs do/don't have world models? https://twitter.com/davidchalmers42/status/1572234123577532416

A. Does a human model the world? Or does a human only model text? How can we tell whether a (specific) human models the world or not?

Q. Don’t we do it by asking Qs about the world like, “ what would happen if … ?” <https://twitter.com/chrisfcarroll/status/1573079811425435648>

A. What does it mean if a LLM asks/answers such Qs?

(Q. one criticism of large language models: they only model (represent) text with no models of the world. i take it this is an empirical (and conceptual) issue: all LMs handle text, some may develop world models to do so. what's the best evidence that LLMs do/don't have world models? https://twitter.com/davidchalmers42/status/1572234123577532416)

A. In order for a LLM to have models of the world, it needs to have a camera.

Q. If LLM needs a camera to have models of the world, why wouldn't it need to have tactile, proprioceptive, auditory, olfactory, gustatory capacities as well, like us, but in addition electromagnetic sensors, etc.; and wouldn't the camera have to sense the whole spectrum of light? https://twitter.com/DpStateFuneral/status/1573263822256832512

A. If a human wants to talk with a LLM regarding the taste of food at dinner, the LLM needs to have (human's) gustatory capacity. It doesn't help if the LLM has butterfly's gustatory capacity.

It is not a good thing if the LLM has both human's gustatory capacity and butterfly's gustatory capacity. It is not a good thing if the LLM's camera sense the whole spectrum of light.

We are human. So, we need the LLM to behave like a human. So, the LLM needs to sense what a human senses.

If we can sense neutrino, then the LLM needs to sense neutrino too.

Q. But isn't the purpose of LLM, and AI generally, to expand the horizons of human perception and experience? Wouldn't we want to talk to a computer about what it's like to see in every spectrum, and to experiment and find out what that ability reveals about reality? https://twitter.com/DpStateFuneral/status/1573271952298594304

A. We need to train a neural network using the data human familiar with, to make that neural network behaves like a human. Then we can try to make the neural network to experience broader spectrum, to see what it will say.

(A. What does it mean if a LLM asks/answers such Qs?)

Q. Today, no LLM can answer such Qs properly.

A. Is it possible that an AI can answer Qs correctly in the future?

Q. Certainly. If there are enough $billions in the budget, it's hard to think of anything that an army of engineers can't crack eventually. https://twitter.com/chrisfcarroll/status/1573404058240663556

A. Then the AI will have models of the world (in the future). If the AI is an LLM, then a future LLM will have models of the world (in the future), although any current LLM doesn't have models of the world now.

Q. I don't know. If I have to guess, I'll guess that the AI of the future will be a combination of parts, and LLM will be one of those parts. I mean, if you could combine it even with a calculator and a first order logic unit, that would already be more than an LLM I think? https://twitter.com/chrisfcarroll/status/1573413668121096192

A. A human brain is also a combination of parts. A human brain includes an LLM.

### (191)

“The premise that Parallel Distributed Processing is using here is that traditional computer programs work very differently to brains, and that might be why computer programs had been (at that point) so bad at doing things that brains find easy (such as recognizing objects in pictures).” <https://colab.research.google.com/github/fastai/fastbook/blob/master/01_intro.ipynb#scrollTo=NjkSdgUGVz5D>

It was difficult for a computer program to recognize objects in pictures, because objects don’t really exist in pictures or the real world – objects only exist in animal’s mind. Objects are invented by animal’s mind. The border of an object is invented by animal’s mind. The concept of (separated/standalone/independent) objects is invented by animal’s mind. Objects are fictional. The border of an object is fictional. The concept of (separated/standalone/independent) objects is fictional.

### (192)

人喜欢（根据事件之间的因果关系来）预测宇宙未来的状况/命运。一个人如果发现别人的预测和自己不同，就会想说服别人相信自己的预测。当然，在试图说服别人的过程中，他也可以了解到别人做预测时所依据的（事件之间的）因果关系。

人喜欢（根据事件之间的因果关系来）预测宇宙未来的状况/命运。一个人如果不满意（自己所预测的）宇宙未来的状况/命运，就会想做些“以试图改变宇宙未来的状况/命运为目的的事”以试图改变宇宙未来的状况/命运。他会认为自己原本的预测有一个前提，而这个前提就是—自己不通过做“以试图改变宇宙未来的状况/命运为目的的事”以试图改变宇宙未来的状况/命运。显然，他自己原本的预测是不可能准的，因为他在做预测时没有考虑到自己（在做出预测之后）将会想做的“以试图改变宇宙未来的状况/命运为目的的事”对于宇宙未来的状况/命运的作用。他在做预测时当然不可能预测出他自己（在做出预测之后）将会想做的“以试图改变宇宙未来的状况/命运为目的的事”是什么。他只有在（对宇宙未来的状况/命运）做出了预测之后，才会知道自己想做什么事以试图改变宇宙未来的状况/命运。

在宇宙中的一个人看不到宇宙未来的状况/命运。在宇宙中的一个人根据事件之间的因果关系所预测出的宇宙未来的状况/命运，并不是宇宙未来的状况/命运，而仅仅是这个人自己（对宇宙未来的状况/命运）的预测。但这个人会把自己根据事件之间的因果关系所预测出的宇宙未来的状况/命运（错误的）当成宇宙未来的状况/命运，并可能会想试图改变宇宙未来的状况/命运。这个人自己根据事件之间的因果关系所预测出的宇宙未来的状况/命运，是fictional的。

在宇宙中的一个人看不到宇宙未来的状况/命运。但这并不是说宇宙未来的状况/命运是不确定的。从理论上说，在宇宙之外的一个人可以看到宇宙未来的状况/命运。在宇宙之外的一个人根据宇宙中所有基本粒子现在的状态和薛定谔方程所预测出的宇宙未来的状况/命运，就是宇宙未来的状况/命运。但宇宙中的一个人看不到宇宙之外的这个人根据宇宙中所有基本粒子现在的状态和薛定谔方程所预测出的宇宙未来的状况/命运。宇宙之外的这个人可以根据宇宙中所有基本粒子现在的状态和薛定谔方程预测出宇宙中的这个人的一切行为。换句话说，宇宙之外的这个人可以看到宇宙中的这个人未来的状况/命运。宇宙中的这个看不到自己未来的状况/命运。在宇宙之外的这个人根据宇宙中所有基本粒子现在的状态和薛定谔方程所预测出的宇宙未来的状况/命运，是nonfictional的。宇宙中的这个人自己根据事件之间的因果关系所预测出的宇宙未来的状况/命运，是fictional的。

打个比方，宇宙的状态的演化过程就像一部小说的故事情节的发展过程，这部小说中（所描写）的一个人物看不到自己（在这部小说的故事情节中）未来的状况/命运，但阅读这部小说的读者可以（通过提前翻阅这部小说后面的内容）看到这个人物未来的状况/命运。这个人物看不到自己未来的状况/命运。但这并不是说这个人物未来的状况/命运是不确定的。读者可以看到这个人物未来的状况/命运。这个人物未来的状况/命运是确定的。无论（小说中的）这个人物（在小说中）做任何“以试图改变宇宙未来的状况/命运为目的的事”，他都无法改变（这部小说的故事情节所设定的）宇宙未来的状况/命运。读者可以（通过提前翻阅这部小说后面的内容）预测出这个人物（在小说中）的一切行为。

### (193)

Q. People keep telling me that 'illusionism' is a bad name for my view. What would be a better for the view that introspection deceives us into thinking that qualia exist? https://twitter.com/keithfrankish/status/1573395883533762565

A. in your heart of hearts these days you're a mistake-ist. you think belief in phenomenal consciousness is a sort of philosophical mistake, perhaps aided by introspection but going well beyond it. whereas straight illusionism holds that ordinary introspection already lies. https://twitter.com/davidchalmers42/status/1573776679209779202

Q. Keith's position can't be proved by empirical data. David's position can't be proved by empirical data either. Philosophical positions can't be proved by empirical data. So, how can you reach an agreement?

Q. If something can't be proved by empirical data, it is unknown/fictional. So, Keith's position is fictional. David's position is fictional too. Philosophical positions are fictional. What will happen if you keep discussing these fictional positions? Will they become nonfictional?

(Q. Keith's position can't be proved by empirical data. David's position can't be proved by empirical data either. Philosophical positions can't be proved by empirical data. So, how can you reach an agreement?)

A. They already agree on enough re: rules of argument. The question is which one do we find most persuasive? https://twitter.com/simonjjacobson/status/1573789750317748225

Q. Why we can be persuaded by something fictional/unknown? If something can't be proved by empirical data, it's fictional/unknown. Philosophical positions can't be proved by empirical data.

Q. Philosophical views are fictional. Some philosophers are not aware of this fact :)

(Q. Why we can be persuaded by something fictional/unknown? If something can't be proved by empirical data, it's fictional/unknown. Philosophical positions can't be proved by empirical data.)

A. Surely data always comes second - it's always data \*for\* something. Anyway, my point was they do agree on enough for us to evaluate their respective arguments and consider which one is the best or most plausible (in line with our general understanding) <https://twitter.com/simonjjacobson/status/1573792063996497921>

(Q. Philosophical views are fictional. Some philosophers are not aware of this fact :) )

A. What is fiction? https://twitter.com/simonjjacobson/status/1573792252752805888

Q. By “empirical data” I mean something can be measured by scientists. Something can't be measured by scientists, is fictional.

Q. For example, Schrodinger equation is nonfictional. MWI and the de Broglie–Bohm theory are fictional.

If I think MWI is more persuasive than the de Broglie–Bohm theory, that's an illusion. Because both theories are fictional.

If I think David's position is more persuasive than Keith's, that's an illusion. Because both positions are fictional.

(Q. If something can't be proved by empirical data, it is unknown/fictional. So, Keith's position is fictional. David's position is fictional too. Philosophical positions are fictional. What will happen if you keep discussing these fictional positions? Will they become nonfictional?)

A. "If something can't be proved by empirical data, it is unknown/fictional. "

That statement can't be proved by empirical data. https://twitter.com/S33light/status/1573803395160350720

Q. That's my definition for the meaning of the words "unknown" and "fictional".

A. The statement negates itself either way. Either it indicts itself as unprovable or it contradicts itself by proving that proof need not be empirically based. https://twitter.com/S33light/status/1573808681052954625

Q. You are right. So, you understood my statement.

A. Sure, and I understood why it is false. https://twitter.com/S33light/status/1573810249647198208

Q. Why it is false?

Q. unprovable doesn't need to be false

A. Because 'proof' itself is not empirical but depends on some conscious experience of sense and sense-making.

In a dream we can prove that circles are square. We can't be certain of our certainty or of our uncertainty, but we can be certain of conscious experience. https://twitter.com/S33light/status/1573811393651957762

(Q. unprovable doesn't need to be false)

A. That's my point. Unprovable doesn't need to be fiction, or 'fiction' either. Proof doesn't need to be empirical. Empirical appearances don't necessarily prove what they may seem to prove. Behind it all is sense and sense-making. https://twitter.com/S33light/status/1573812588256935939

Q. So, if I think something to be plausible, then it is nonfictional -- I should trust my own sense on a topic.

A. No, you should only trust my sense on every topic. 😆 https://twitter.com/S33light/status/1573823384227651584

Q. Why you trust your sense? 🧐

A. Even if you think you're distrusting your sense, you're still just trusting the sense behind the impulse to distrust what you thought was your sense. https://twitter.com/S33light/status/1573824625380921346

Q. Then, is my sense right or wrong? Can I challenge my own sense?

A. I think we are sense. Part of you can challenge another part. We are personal sense and have access to intrapersonal sense, interpersonal sense, subpersonal sense, transpersonal sense, and impersonal sense. At least. <https://twitter.com/S33light/status/1573825995064446982>

Q. Why your personal sense is more trustable than mine?

OK. My real point is: if everyone trusts their own sense, then what is truth?

A. I propose that truth is an intellectual form of Significance - which is a term I propose for a universal phenomenon of aesthetic saturation...a local sense of qualia that is enriched by deep association with larger, less-local scales of qualia. <https://twitter.com/S33light/status/1573840965961486337>

(Q. By “empirical data” I mean something can be measured by scientists. Something can't be measured by scientists, is fictional.)

A. What is the difference between 'fictional' and 'theoretical' here? The latter at least invokes the history of science. The former seems hyperbolic with its truism and speaks more to the difference between philosophy and literature (deconstruction) https://twitter.com/simonjjacobson/status/1573940969883435008

Q. A theory is fictional, before it is proven/disproven by empirical data.

A. Why can't we just say a theory is philosophical before it is 'proven/disproven by empirical data'? Btw, I keep the quotes because these terms - proof and data and their relation also resist a commonsensical understanding. https://twitter.com/simonjjacobson/status/1573947652928163840

Q. philosophical = theoretical = fictional

Q. philosophy = theory = fiction

I give new meanings to existing terms, so that I can express my ideas clearly based on the new meanings.

I think you got what I mean.

(Q. philosophical = theoretical = fictional)

A. These terms have histories and to that extent are bound up with specific texts, contexts. Going back to whether any agreement can take place between Philip Goff and Keith Frankish, it's in this sense, on a horizon of philosophical friendship, it already takes place, however ironically, paradoxically https://twitter.com/simonjjacobson/status/1573950355863379968

Q. In philosophy, terms are far from enough. Every philosopher has a unique personal universe. They have to use the same term to carry different meanings. When they don't agree on the usage of a specific term, it simply means that they have different philosophical/theoretical/fictional positions.

Q. Every philosopher should have her/his own language.

Q. If we agree on the usage of every term, then it simply means that we have exactly the same philosophical position.

(Q. Every philosopher should have her/his own language.)

A. Should? And what do we mean by language here: how far does our singular bio-linguistic capacity affect our normative usage? Also, to what extent can we relativize philosophy when there's no accounting for error on its own terms, within its own tradition? https://twitter.com/simonjjacobson/status/1573958602766929920

Q. Ideally, when I discuss philosophy with someone, I should get a full picture of her/his philosophical position first. Then I will know what she/he means.

The meaning of a term, is only under the context of her/his philosophical position.

We should be aware of that, every meaningful philosophical position being proposed, should invent new meanings (which are not included in the history of philosophy).

A. This is similar to Deleuze's position re: philosophy. Not so sure though, pace Derrida, that philosophy is about the invention of concepts, since we are always already more involved in (writing their relation to) the tradition than we know (reiterating within a new context) https://twitter.com/simonjjacobson/status/1573963592570904576

Q. Philosophers invented all kinds of concepts in the history. We are still creating new concepts in every new discussion.

Q. The concept of "consciousness" is quite simple and plain, comparing to other philosophical concepts. I don't think modern philosophers should spend their time on the topic of consciousness :)

(Q. Philosophers invented all kinds of concepts in the history. We are still creating new concepts in every new discussion.)

A. Yes, agree, but perhaps everything hinges on the term 'invention' <https://twitter.com/simonjjacobson/status/1573965434042433538>

Q. Modern philosophy is strongly connected with the study of language.

A. So much so that Chomsky has gone so far as to say that thought and language are virtually synonymous. And Derrida that there's nothing outside of their différance (context) https://twitter.com/simonjjacobson/status/1573968547826601987

Q. We rely on language to communicate. When we communicate, we have to assume that we use the same term to carry the same meaning. You know the meaning of my words. You know the meaning of my words \*to you\*. You will never know the meaning of my words \*to me\*.

A. I think this assumes a control we don't have and a destination which is never reached <https://twitter.com/simonjjacobson/status/1573972698673315840>

Q. If we focus on each word in a sentence, we can't explain the meaning of any word properly.

Q. That's why we need to keep talking -- we will never feel that we have expressed a meaning clearly enough.

Q. However, the more we talk, the more remains unexplained.

We can't explain any word we said.

(Q. That's why we need to keep talking -- we will never feel that we have expressed a meaning clearly enough.)

A. It's a never-ending struggle against solipsism 🙊😂

Q. We use language to explain language. It's an impossible task.

A. The condition of impossibility can be the condition of possibility - limit and scope https://twitter.com/simonjjacobson/status/1573988868399005697

Q. We can use language to explain language at some degree. But we can't explain the meaning of the term "degree" clearly.

We feel like that the meaning of a specific term is quite clear under a well described/established context. The more words we use to describe/establish this context, the clearer we feel the meaning of the term to be.

A well described/established context, actually describes/establishes a philosophical/theoretical/fictional position.

If I describe/establish a philosophical position, but another person can't understand my philosophical position, then she/he can't understand the meaning of the term I use under the context of my philosophical position. For example, the term "consciousness". The meaning of the term “consciousness” depends on one’s philosophical position. The term "consciousness" has different meanings to physicalists, idealists, David, and Keith. The term "consciousness" never had a fixed meaning in the history of philosophy. No term had a fixed meaning.

(Q. Why it is false?)

A. The statement asserts that evidence must be empirical, but the evidence of the statement is not itself empirical. https://twitter.com/ratboy\_exe/status/1574077371073925124

Q. "If something can't be proved by empirical data, it is unknown/fictional. "

That statement can't be proved by empirical data. So, that statement is unknown/fictional. However,

"unknown/fictional" doesn't equal to "false".

A. You can't empirically prove that "unknown/fictional" doesn't equal "false", so by your statement, your original statement and subsequent obfuscation of its meaning are unknown/fictional. https://twitter.com/S33light/status/1574143406514790401

Q. My original statement is unknown/fictional. But it doesn't mean my original statement is false. You are confusing "false" with "unknown/fictional".

If we can't prove a statement to be true, it doesn't mean this statement is false.

I can't prove my statement to be true. You can't prove my statement to be false solely based on the fact that I can't prove my statement to be true.

A. The bad faith arguments are multiplying too prolifically and for me to want to continue. I should have stopped when you first admitted that your argument required a private meaning of the word 'fiction'. At least we agree that everything you've said since is fictional either way. <https://twitter.com/S33light/status/1574160202252918784>

### (194)

#### A1

过去所有已（实际）发生的事件都是符合*科学（包括薛定谔方程）*的。未来所有将（实际）发生的事件也都是符合科学的。

当我用counterfactual thinking想象出一个过去并没有实际发生的事件时，这个事件有可能在过去实际发生吗？未必。这个事件有可能在过去实际发生的前提条件是，这个事件在过去的实际发生并不会违反科学。但是，当我用counterfactual thinking想象出一个过去并没有实际发生的事件时，其实我并没有去研究这个事件在过去的实际发生是否会违反科学。

当我想象出一个未来并不会实际发生的事件时，这个事件有可能在未来实际发生吗？未必。这个事件有可能在未来实际发生的前提条件是，这个事件在未来的实际发生并不会违反科学。但是，当我想象出一个未来并不会实际发生的事件时，其实我并没有去研究这个事件在未来的实际发生是否会违反科学。

我想象出的事件可能会违反科学。我并不能保证我所想象出来的事件不违反科学。

#### A2

过去所有已（实际）发生的事件都是符合薛定谔方程的。未来所有将（实际）发生的事件也都是符合薛定谔方程的。

当我用counterfactual thinking想象出一个过去并没有实际发生的事件时，这个事件有可能在过去实际发生吗？未必。这个事件有可能在过去实际发生的前提条件是，这个事件在过去的实际发生并不会违反薛定谔方程。但是，当我用counterfactual thinking想象出一个过去并没有实际发生的事件时，其实我并没有去研究这个事件在过去的实际发生是否会违反薛定谔方程。

当我想象出一个未来并不会实际发生的事件时，这个事件有可能在未来实际发生吗？未必。这个事件有可能在未来实际发生的前提条件是，这个事件在未来的实际发生并不会违反薛定谔方程。但是，当我想象出一个未来并不会实际发生的事件时，其实我并没有去研究这个事件在未来的实际发生是否会违反薛定谔方程。

#### A3

过去所有已（实际）发生的事件都是符合一个linear partial differential equation（这里指薛定谔方程）的。未来所有将（实际）发生的事件也都是符合这个linear partial differential equation的。

当我用counterfactual thinking想象出一个过去并没有实际发生的事件时，这个事件有可能在过去实际发生吗？未必。这个事件有可能在过去实际发生的前提条件是，这个事件在过去的实际发生并不会违反一个linear partial differential equation（这里指薛定谔方程）。但是，当我用counterfactual thinking想象出一个过去并没有实际发生的事件时，其实我并没有去研究这个事件在过去的实际发生是否会违反这个linear partial differential equation。

当我想象出一个未来并不会实际发生的事件时，这个事件有可能在未来实际发生吗？未必。这个事件有可能在未来实际发生的前提条件是，这个事件在未来的实际发生并不会违反一个linear partial differential equation（这里指薛定谔方程）。但是，当我想象出一个未来并不会实际发生的事件时，其实我并没有去研究这个事件在未来的实际发生是否会违反这个linear partial differential equation。

我想象出的事件可能会违反一个linear partial differential equation（这里指薛定谔方程）。我并不能保证我所想象出来的事件不违反这个linear partial differential equation。

#### A4

过去所有已（实际）发生的事件都是符合数学（这里指薛定谔方程）的。未来所有将（实际）发生的事件也都是符合数学的。

当我用counterfactual thinking想象出一个过去并没有实际发生的事件时，这个事件有可能在过去实际发生吗？未必。这个事件有可能在过去实际发生的前提条件是，这个事件在过去的实际发生并不会违反数学。但是，当我用counterfactual thinking想象出一个过去并没有实际发生的事件时，其实我并没有去研究这个事件在过去的实际发生是否会违反数学。

当我想象出一个未来并不会实际发生的事件时，这个事件有可能在未来实际发生吗？未必。这个事件有可能在未来实际发生的前提条件是，这个事件在未来的实际发生并不会违反数学。但是，当我想象出一个未来并不会实际发生的事件时，其实我并没有去研究这个事件在未来的实际发生是否会违反数学。

我想象出的事件可能会违反数学（这里指薛定谔方程）。我并不能保证我所想象出来的事件不违反数学。

#### B

我想象出的事件可能会违反薛定谔方程。我并不能保证我所想象出来的事件不违反薛定谔方程。

如果de Broglie–Bohm theory是正确的，那么，即使我想象出的事件符合薛定谔方程，这个事件也无法在过去实际发生。

如果MWI是正确的，假如我想象出的事件符合薛定谔方程，那么，这个事件一定已经在其他世界里发生了。

#### C

我想象出的事件可能会违反薛定谔方程。我并不能保证我所想象出来的事件不违反薛定谔方程。

如果de Broglie–Bohm theory是正确的，那么，即使我想象出的事件符合薛定谔方程，这个事件也未必会在未来实际发生。

如果MWI是正确的，假如我想象出的事件符合薛定谔方程，那么，在未来，这个事件一定会发生在某一个世界里。

如果MWI是正确的，那么，即使我想象出的事件符合薛定谔方程，这个事件未来也未必会在*这个*世界里发生。

#### D

如果de Broglie–Bohm theory是正确的，那么，一个实际发生在（宇宙的）过去的事件，不论多么不幸或邪恶，都是被注定了必然会（在宇宙中）发生的。（在宇宙中的）我们从来都无法避免这个事件（在宇宙中）的发生。

如果de Broglie–Bohm theory是正确的，那么，未来将要（在宇宙中）发生的一个事件，不论多么不幸或邪恶，都是被注定了必然要（在宇宙中）发生的。（在宇宙中的）我们从来都无法避免这个事件（在宇宙中）的发生。

如果MWI是正确的，那么，一个实际发生在（这个世界的）过去的事件，不论多么不幸或邪恶，都是被注定了必然会（在所有世界中的一个世界）发生的。（在所有世界中的）我们从来都无法避免这个事件（在所有世界中的一个世界）的发生。

如果MWI是正确的，那么，未来将要（在某个世界中）发生的一个事件，不论多么不幸或邪恶，都是被注定了必然要（在所有世界中的一个世界）发生的。（在所有世界中的）我们从来都无法避免这个事件（在所有世界中的一个世界）的发生。

### (195)

实际发生在（宇宙的）过去的事件是nonfictional的。未来将要（在宇宙中）发生的事件是nonfictional的。

在我的episodic future thinking中所描绘的未来将要（在宇宙中）发生的事件，是fictional的。

在我的episodic future thinking中所描绘的未来将要（在宇宙中）发生的事件，并不是未来将要（在宇宙中）发生的事件，而是我的大脑对未来将要（在宇宙中）发生的事件的预测/想象。

当我认为别人有什么想法时，我所认为的别人头脑中的想法，是fictional的。别人大脑中的基本粒子的状态，是nonfictional的。别人的颅腔里面，装的是基本粒子。别人的颅腔里面，并没有装什么所谓的“想法”。打开别人的颅腔，是看不到他的“想法”的。

### (196)

Q. Free will is a problem. If it seems obvious that you are perfectly free to choose and decide, then it seems perfectly clear that you do not understand the problem. Free will is a huge problem, because our sense of free will and the physical structure of the world contradict each other. A kind of solution is to change the definition of free will. Is this fair? <https://www.closertotruth.com/series/what-free-will>

A. But only academics will know that the definition has been changed, so free will compatibilism seems intellectually dishonest to me.

Seems like a project is underway to redefine “consciousness” too, so certain people can deny the reality of consciousness while denying that they deny it… <https://twitter.com/BugRib/status/1574419924273209344>

A. Academics who invented free will compatibilism don't have the free will to not invent it.

### (197)

一个人从自己的感官接收到信息，这些信息在这个人的头脑中构成一个关于现在的状况的图景。这个人可以在头脑中任意的编辑修改这个图景，并向自己提问：“为什么目前的现状和这个编辑修改后的图景不同？”之后这个人自己会找出“导致”目前的现状和这个编辑修改后的图景不同的原因。那么，这个人找出的这个原因对吗？如果这个人找出的这个原因是宇宙中的某一个事物的话，就不对。

事实上，导致目前的现状的唯一原因，是薛定谔方程。而目前的现状之所以和这个编辑修改后的图景不同，仅仅是因为这个编辑修改后的图景和目前的现状不同。目前的现状确实和这个编辑修改后的图景不同，但有问题的不是目前的现状，而是这个编辑修改后的图景。这个人真正应该思考的问题是—自己为什么会认为目前的现状*可以*是编辑修改后的图景？

这个人认为编辑修改后的图景是“对”的，而目前的现状是“错”的，之后想要找到目前的现状之所以“错”的原因。但真正的问题恰恰在于—为什么这个人会认为目前的现状是“错”的？真正的问题在于，目前的现状是“对”的，但为什么这个人会认为目前的现状是“错”的？这个人之所以会认为目前的现状是“错”的，仅仅是因为这个人认为编辑修改后的图景是“对”的。

目前的现状是nonfictional的。编辑修改后的图景是fictional的。

一个人的头脑中可以生成一个关于过去的状况的图景。这个人可以在头脑中任意的编辑修改这个图景，并向自己提问：“为什么过去的状况和这个编辑修改后的图景不同？”之后这个人自己会找出“导致”过去的状况和这个编辑修改后的图景不同的原因。那么，这个人找出的这个原因对吗？如果这个人找出的这个原因是宇宙中的某一个事物的话，就不对。

事实上，导致过去的状况的唯一原因，是薛定谔方程。

过去的状况是nonfictional的。编辑修改后的图景是fictional的。

一个人的头脑中可以生成一个关于未来的状况的图景。这个人可以在头脑中任意的编辑修改这个图景，并向自己提问：“为什么未来的状况和这个编辑修改后的图景不同？”之后这个人自己会找出“导致”未来的状况和这个编辑修改后的图景不同的原因。那么，这个人找出的这个原因对吗？如果这个人找出的这个原因是宇宙中的某一个事物的话，就不对。另外需要注意，这个人头脑中所生成的关于未来的状况的图景，未必会符合未来的实际情况。

编辑修改后的图景是fictional的。这个人头脑中所生成的关于未来的状况的图景是fictional的。未来的实际状况是nonfictional的。

事实上，导致未来的实际状况的唯一原因，是薛定谔方程。

对这个人来说，（宇宙的）未来的实际状况是不可知的。这个人头脑中所知的关于（宇宙的）未来的状况的图景，并不是（宇宙的）未来的实际状况。

（宇宙的）未来的实际状况符合薛定谔方程。这个人头脑中所生成的关于（宇宙的）未来的状况的图景，未必符合薛定谔方程。

### (198)

我昨天的晚饭是在肯德基吃的。其实我本来想去麦当劳吃的，但看到麦当劳门口排队的车很多，就改成去肯德基吃了。我昨天的晚饭没有去麦当劳吃。那么，“我昨天去麦当劳吃晚饭”这个（并没有实际发生的）事件的实际发生是否会违反薛定谔方程呢？“如果昨天晚上麦当劳门口排队的车不多，那么我昨天晚上就会去吃麦当劳了。”这句话能否证明“我昨天去麦当劳吃晚饭”这个（并没有实际发生的）事件的实际发生不违反薛定谔方程呢？无法证明。“昨天晚上麦当劳门口排队的车不多”这个（并没有实际发生的）事件的实际发生是否违反薛定谔方程呢？无法判断。

我前天的晚饭也是在肯德基吃的。其实我本来想去麦当劳吃的，但后来不知怎的就改成去肯德基吃了。我前天的晚饭没有去麦当劳吃。那么，“我前天去麦当劳吃晚饭”这个（并没有实际发生的）事件的实际发生是否会违反薛定谔方程呢？“如果前天晚上我没有改成去肯德基吃，那么我前天晚上就会去吃麦当劳了。”这句话能否证明“我前天去麦当劳吃晚饭”这个（并没有实际发生的）事件的实际发生不违反薛定谔方程呢？无法证明。“前天晚上我没有改成去肯德基吃”这个（并没有实际发生的）事件的实际发生是否违反薛定谔方程呢？无法判断。

我前天的晚饭是在肯德基吃的。其实我本来想去麦当劳吃的，但后来不知怎的就改成去肯德基吃了。我前天的晚饭没有去麦当劳吃。那么，“我前天去麦当劳吃晚饭”这个（并没有实际发生的）事件实际上是否可以发生呢？“我前天去麦当劳吃晚饭”这个（并没有实际发生的）事件可以实际发生的条件是这个事件的实际发生不违反薛定谔方程。“我本来想去麦当劳吃”这个（实际发生的）事件并不构成“我前天去麦当劳吃晚饭”这个（并没有实际发生的）事件可以实际发生的条件。

昨天的考试中的这道选择题我选了C。其实我本来想选D的，但后来不知怎的就改成选C了。我这道题没有选D。那么，“我这道题选D” 这个（并没有实际发生的）事件实际上是否可以发生呢？“我这道题选D”这个（并没有实际发生的）事件可以实际发生的条件是这个事件的实际发生不违反薛定谔方程。“我本来想选D”这个（实际发生的）事件并不构成“我这道题选D”这个（并没有实际发生的）事件可以实际发生的条件。换句话说，“我本来想选D”这个（实际发生的）事件并不能导致 “我这道题选D”这个（并没有实际发生的）事件的实际发生。

已经在过去实际发生了的事件一定符合薛定谔方程。在过去没有实际发生的事件（的实际发生）是否符合薛定谔方程呢？无法判断。如果我当时没有改变主意选C，那么过去没有实际发生的这个事件（即“选D”）就会实际发生，对吗？不对。因为无法判断“我当时没有改变主意”这个（并没有实际发生的）事件是否可以实际发生—无法判断“我当时没有改变主意”这个（并没有实际发生的）事件的实际发生是否符合薛定谔方程。既然“我当时改了主意”这个（实际发生的）事件符合薛定谔方程，那么“我当时没有改变主意”这个（并没有实际发生的）事件的实际发生就有可能不符合薛定谔方程。如果“我当时没有改变主意”这个（并没有实际发生的）事件的实际发生不符合薛定谔方程，那么我当时就一定会改变主意。

在我头脑中生成的关于昨天考试的图景里，我当时本来想选D，但后来改了主意选C。我可以在头脑中编辑修改这个图景，修改成“我当时本来就想选D，后来也没有改主意”。编辑修改后的图景是fictional的，未必符合薛定谔方程。

我本来想选D，但后来改成选C。但这并不代表我昨天可以实际上选D。我昨天实际上选的是C。不提薛定谔方程，而从因缘角度讲的话，那么可以说我昨天能选D是需要很多因缘的，而“昨天曾经想过选D”这一个因缘是必要但不充分的。换句话说，“昨天曾经想过选D”是“昨天能选D”的必要条件但非充分必要条件。昨天我也曾经想过选C。

### (199)

我对未来进行预测，并根据此预测进行行动，以改变未来。“我应该如何行动？”这个问题的设定的context（即“我的行动会改变未来”）是fictional的，因为事实上我的行动无法改变未来。但我还是必须要在这个fictional的context下去思考如何解决“我应该如何行动？”这个问题。

当我在这个fictional的context下去思考如何解决“我应该如何行动？”这个问题时，我不得不忽略“我的行动无法改变未来”这个事实。

换句话说，当我在这个fictional的context下去思考如何解决“我应该如何行动？”这个问题时，我不得不停止思考“我的行动无法改变未来”这个问题。

假设我能够预知不会被我的行动所改变的未来，并且假设“我所能预知的不会被我的行动所改变的未来”之中包括我自己（在未来）的行动，那么我也就不必思考“我应该如何行动？”这个问题了。

换句话说，假设我能够预知不会被我的行动所改变的未来，并且假设“我所能预知的不会被我的行动所改变的未来”之中包括我自己（在未来）的行动，那么我自然就知道“我应该如何行动”了。

当然，事实上（在宇宙中的）我无法预知不会被我的行动所改变的（宇宙的）未来，因此我也无法预知我自己（在未来）的行动，所以我还是需要思考如何解决“我应该如何（在宇宙中）行动？”这个问题。

“过马路时我是否应该向左右张望?”这个问题的设定的context（即“我是否向左右张望，对我的安全会有影响”）是fictional的。事实上，我是否向左右张望，对我的安全并不会有影响。我是否会向左右张望，是被薛定谔方程注定了的。虽然我是否向左右张望对我的安全并不会有影响，但这不代表我不会向左右张望。因为，我是否会向左右张望，是被薛定谔方程注定了的。

“我是否向左右张望，对我的安全会有影响”是一种幻觉。

“我的行动会改变未来”是一种幻觉。

为了便于你的理解，你可以想象宇宙中的一切事件以前都已经发生过一遍了，现在是第二遍。

### (200)

#### A

从事后的角度看宇宙过去的演化，就会发现，宇宙中已（实际）发生的每一个事件都有其不得不发生的原因—宇宙中已（实际）发生的每一个事件其实都是必然会发生的。

在一个事件（实际）发生之后，我们可以发现这个事件不得不发生的原因。但在这个事件（实际）发生之前，我们未必能够（事先）预测/计算到这个事件的发生。换句话说，在这个事件（实际）发生之前，我们未必能够（事先）发现这个事件不得不发生的原因。

当然，宇宙中任何一个已（实际）发生的事件不得不发生的唯一真正原因就是薛定谔方程。因此，在事件发生前，我们（事先）就可以根据薛定谔方程预测/计算事件的发生。

#### B

让我们假设宇宙的U-function中的某一个变量代表一个人的选择，比如：在我的大脑决定了去麦当劳吃晚饭的那个瞬间，根据U-function，宇宙中任意两个基本粒子之间的距离都应该会突然增大一倍；在我的大脑决定了去肯德基吃晚饭的那个瞬间，根据U-function，宇宙中任意两个基本粒子之间的距离都应该会突然减少一半。

既然宇宙的状态演化符合这个U-function，那么宇宙中基本粒子的状态演化就取决于我的大脑的决定。那么，假如我们事先无法预测/计算我的大脑的决定，那么我们就不能事先根据U-function预测/计算宇宙中任意两个基本粒子之间的距离会突然增大（一倍）还是减少（一半），对吗？对，但是这个“假如”（即“假如我们事先无法预测/计算我的大脑的决定”）不成立。因为，假如我的大脑里的基本粒子的状态演化符合U-function，那么我们事先就可以（根据U-function）预测/计算我的大脑的决定，因为我的大脑的决定取决于我的大脑里的基本粒子的状态。

*假如*我的大脑的决定不取决于我的大脑里的基本粒子的状态，那么，我们事先就无法预测/计算我的大脑的决定。

*假如*我的大脑里的基本粒子的状态演化不符合U-function，那么，我们事先就无法（根据U-function）预测/计算我的大脑的决定，即使我的大脑的决定取决于我的大脑里的基本粒子的状态。

*假如*我们不知道U-function的具体内容到底是什么，那么，我们事先就无法（根据U-function）预测/计算我的大脑的决定，即使我的大脑的决定取决于我的大脑里的基本粒子的状态，并且我的大脑里的基本粒子的状态演化符合U-function。

*假如*我们知道U-function的具体内容，但不知道宇宙中所有基本粒子现在的状态，那么，我们事先就无法（根据U-function的具体内容和宇宙中所有基本粒子现在的状态）预测/计算我的大脑的决定，即使我的大脑的决定取决于我的大脑里的基本粒子的状态，并且我的大脑里的基本粒子的状态演化符合U-function。

*假如*宇宙不是一台状态机，那么，我们事先就无法（根据状态机才会有的(mathematical) transition function）预测/计算我的大脑的决定，即使我的大脑的决定取决于我的大脑里的基本粒子的状态。

### (201)

Q. “Every dismissal of the Hard Problem of Consciousness is based on the same circular reasoning fallacy of this form:

"How does a non-feeling phenomenon generate feeling?"

"Feeling is just how non-feeling feels."” <https://twitter.com/S33light/status/1575886727217979400>

A. A non-feeling phenomenon doesn't generate feeling. Non-feeling doesn't feel.

As an observer to a non-feeling phenomenon, I \*assume\* that this non-feeling phenomenon generates feeling.

As an observer to non-feeling, I \*assume\* that non-feeling feels.

Why do I make such assumptions?

Q. I think it's because we have evolved to play a very specific game of survival-in-an-animal-body that prioritizes the tactile sense of tangibility. That's job one: Protect the physical body physically or this experience ends.

So physicality feels overwhelmingly real and important to us...because it is...\*to us\* - to this specific type of animal-body experiences.

We mistake our own relative personal insignificance for an assumed universal relative insignificance of consciousness in general.

By default we perceive whatever is most like us to be most significant. Friends and family, people who remind us of them and ourselves - we see them as player characters. Other species seem less significant and can be considered pet, pest, or food. <https://twitter.com/S33light/status/1575962784143380480>

A. There is only one player in the very specific game of survival-in-an-animal-body. But by default I perceive whatever is most like me to be players.

I have feeling. So, I assume that other players have feeling too.

When I don't assume other "players" as players, I don't need to assume that they have feeling.

Q. Exactly. Your body's survival depends on objectifying other bodies as food. It would be dangerous to consider all of those bodies as corresponding to a feeling experience. <https://twitter.com/S33light/status/1575965132894588929>

A. Whether other bodies have feeling or not, depends on me.

Whether other bodies have feeling or not, depends on my attitude towards them.

Whether other bodies have feeling or not, depends on my wish.

Q. Just the opposite. All that depends on you is what experiences seem to you to have a body. Bodies can't have feelings. Bodies have shapes and positions, density, mass, etc. <https://twitter.com/S33light/status/1575975190903021568>

A. So, I'm not my body.

Q. Right. You use subpersonal experiences as a vehicle and those experiences are rendered as a body in your personal experience. <https://twitter.com/S33light/status/1575999568764076033>

(Q. Exactly. Your body's survival depends on objectifying other bodies as food. It would be dangerous to consider all of those bodies as corresponding to a feeling experience. <https://twitter.com/S33light/status/1575965132894588929>)

A. @S33light Craig Weinberg ji, is it not the essence of spirituality to say that all bodies are part of the same feeling experience, with unique deviations/expressions? Been reading about Dharma a lot these days, and I thought this seems to be what many Gurus say <https://twitter.com/just_tumbleweed/status/1575967559194529792>

A. I am talking about the "Brahman" in Indian thought (admittedly I am no expert nor an enlightened being of any sort 🙂) <https://twitter.com/just_tumbleweed/status/1575967726324965377>

Q. Yes those concepts are very similar to what I propose. I try to sort of pick up where they leave off, and understand them in a more concrete way that ties into physics and computation. <https://twitter.com/S33light/status/1575975540556976128>

A. so that's why I ask - why do you think it is dangerous for oneself to associate other bodies with feeling experiences? <https://twitter.com/just_tumbleweed/status/1575981175776026624>

Q. I think that bodies are experience in another timescale, but in our timescale, they are rendered as just tangible objects and visible images. <https://twitter.com/S33light/status/1576000014278541313>

### (202)

“The foundation of knowledge is trusting what seems most evident. How do we know there's an external world, other than by trusting how things seem?” <https://twitter.com/Philip_Goff/status/1575563449689464832>

### (203)

我有一个想法。那么，我的这个想法来自于哪儿？宇宙的状态演化导致我产生了这个想法。

是我的想法决定了宇宙的状态演化，还是宇宙的状态演化决定了我的想法？宇宙的状态演化决定了我的想法。

我能否决定自己的想法？如果我能决定自己的想法，那么这里所说的“我”是指我的大脑里的基本粒子吗？这里所说的“自己”也是指我的大脑里的基本粒子吗？

我的大脑里的基本粒子的状态演化能否决定我的大脑里的基本粒子的想法？如果能的话，那么我的大脑里的基本粒子的状态演化是怎么决定我的大脑里的基本粒子的想法的？在我的大脑里的基本粒子的状态演化决定我的大脑里的基本粒子的想法时，我的大脑里的基本粒子的状态演化是否符合薛定谔方程？

我的大脑里的基本粒子的状态演化决定我的大脑里的基本粒子的想法，这里作为主语的“我的大脑里的基本粒子的状态演化”是被薛定谔方程决定的，那么薛定谔方程也就间接的决定了作为宾语的“我的大脑里的基本粒子的想法”。

“我的大脑里的基本粒子的状态演化决定我的大脑里的基本粒子的想法”这句话的形式是“A决定B”,这里的A是“我的大脑里的基本粒子的状态演化”，而这里的B是“我的大脑里的基本粒子的想法”。A是主语，而B是宾语。事实上，A是被薛定谔方程决定的。而A又决定了B。因此，薛定谔方程通过A间接的决定了B。A和B都被薛定谔方程所决定。

在“我的肉身”这个词组里的“我”字所指代的是什么？在“我的肉身”这个词组里的“我”这个字和“我的肉身”这个词组所指代的是同一个东西吗？换句话说，我是我的肉身吗？我的肉身是我吗？Idealists会说“我不是我的肉身”，而physicalists则会说“我就是我的肉身”。

在“我的想法”这个词组里的“我”字所指代的是什么？在“我的想法”这个词组里的“我”这个字和“我的想法”这个词组所指代的是同一个东西吗？换句话说，我是我的想法吗？我的想法是我吗？Idealists会说“我就是我的想法”，而physicalists则会说“我不是我的想法”。

Idealists会说“我就是我的想法；我的想法就是我。我不是我的肉身；我的肉身不是我。我的想法不是我的肉身的想法。我的想法不是我的肉身中的基本粒子的想法。我的想法并不被我的肉身中的基本粒子的状态演化所决定。我的想法决定我的肉身中的基本粒子的状态演化。”

Physicalists会说“我就是我的肉身；我的肉身就是我。我不是我的想法；我的想法不是我。我的想法是我的肉身的想法。我的想法是我的肉身中的基本粒子的想法。我的想法被我的肉身中的基本粒子的状态演化所决定。我的肉身中的基本粒子的状态演化并不被我的想法所决定。我的肉身中的基本粒子的想法被我的肉身中的基本粒子的状态演化所决定。我的肉身中的基本粒子的状态演化并不被我的肉身中的基本粒子的想法所决定。”

按idealists的说法，我的想法决定了宇宙中的基本粒子的状态演化。按physicalists的说法，宇宙中的基本粒子的状态演化决定了我的想法。

Idealists的说法并没有解释我的想法的来源。Physicalists的说法解释了我的想法的来源。

Idealists的说法解释了宇宙中的基本粒子的状态演化的原因。Physicalists的说法并没有解释宇宙中的基本粒子的状态演化的原因。

按idealists的说法，一个人的想法决定物质的状态演化。按physicalists的说法，物质的状态演化决定一个人的想法。

如果idealists的说法“一个人的想法决定物质的状态演化”是正确的，那么，一个人的想法又是怎么产生的呢？如果physicalists的说法“物质的状态演化决定一个人的想法”是正确的，那么，物质的状态又为什么会演化呢？

### (204)

我怎么解释（宇宙中的）事件之间的因果关系都可以，因为（宇宙中的）事件之间并没有（除了薛定谔方程以外的）因果关系。

我（在真实世界中实际上）怎么解释（宇宙中的）事件之间的因果关系，是受到薛定谔方程控制的。

我（在真实世界中实际上）所解释的（宇宙中的）事件之间（除薛定谔方程以外的）的因果关系，并不是真正的因果关系，而是一种幻象。真正的因果关系是薛定谔方程。薛定谔方程（作为因果关系）不是幻象。

一个人内心所相信的（事件之间的）因果关系导致这个人的肉身（在宇宙中）的运动，这也是一种幻象。“一个人内心所相信的（事件之间的）因果关系导致这个人的肉身（在宇宙中）的运动”也是一种因果关系。“一个人内心所相信的（事件之间的）因果关系“导致”这个人的肉身（在宇宙中）的运动”也是一种“A导致B”形式的因果关系，这里的A是“一个人内心所相信的（事件之间的）因果关系”，而B是“这个人的肉身（在宇宙中）的运动”。事实上，这里的B是仅仅被薛定谔方程导致的。事实上，这个人内心相信什么因果关系，也是仅仅被薛定谔方程导致的。

一个人内心的想法导致这个人的肉身（在宇宙中）的运动，这也是一种幻象。“一个人内心的想法导致这个人的肉身（在宇宙中）的运动”也是一种因果关系。“一个人内心的想法 “导致”这个人的肉身（在宇宙中）的运动”也是一种“A导致B”形式的因果关系，这里的A是“一个人内心的想法”，而B是“这个人的肉身（在宇宙中）的运动”。事实上，这里的B是仅仅被薛定谔方程导致的。事实上，这个人内心的想法，也是仅仅被薛定谔方程导致的—假如这个人真的有“内心”和“想法”的话。

### (205)

Q. If introspection is an evolved psychological process, like vision, then the existence of introspective illusions should be no more surprising than the existence of optical ones. <https://twitter.com/keithfrankish/status/1578066669553033216>

A. Yes it should be no surprise that the popular physical worldview is an illusion, just like my visions make it look like I'm surrounded by physical objects, meanwhile all is mind!

Idealism for the win 🙌☺ <https://twitter.com/danielfromearth/status/1578471598490689536>

Q. Follow it through to its conclusion, then: the mental world is also an illusion! <https://twitter.com/keithfrankish/status/1578472311975424000>

### (206) 空性

什么是空性？就是认识到事物是不断发展变化的，没有一种固定的本性。比方说花，今天是花，以前只是一颗种子，以后会变成一个果实。一棵树也是这样，它最开始的时候只是一颗种子。这个宇宙整体是在不断地发展变化的。一个人也是宇宙的一部分，脱离不了整个宇宙。一个人从生到死，每一步这个人都在宇宙中作为宇宙的一部分而发展变化。我们好像能够自己做出一些决定。但是这个决定是谁做的呢？大脑。大脑做决定是不是随心所欲的做的呢？大脑做出一个决定，肯定有其原因，有其根据。这个根据就是自己的生活、自己以前生活的经历。这个生活经历也不是自己可以随心所欲的选择的。生长在什么环境，经历过什么事儿，有什么想法，这一切都是有其原因的。这些原因是我们所改变不了的。好像我们能够做出决定，但这些决定都是根据我们自己生活的经历所做出的。我们的认知也是取决于我们的生活经历。也就是说没有一件事情是无缘无故的，或者说是随心所欲的。每一件事情都被以前的事情所决定。想法脱离不了以前的经历、以前的认知。以前的行为造成了以前的结果。而以前的行为又是更早之前的行为的结果。这一切事情中，并没有哪一件事情是我们可以自主决定的。

### (207)

当我思考宇宙中的一组事件并分析出这组事件之间的因果关系后，我可以换一个角度重新思考这组事件，并得出不同的因果关系。

比如，当我看到幡在动，并且认为风吹导致幡动后，我可以换一个角度重新思考，而认为幡动导致风起。

当我思考宇宙中的一组事件并分析出这组事件之间的因果关系后，我可以换一个角度重新思考这组事件，并得出不同的因果关系。那么，这两种因果关系到底哪个对呢？比如，到底是风吹导致幡动，还是幡动导致风起呢？

事实上，两种因果关系都不对—宇宙中任何一组事件之间真正的因果关系只有薛定谔方程。

不过，如果我能在头脑中同时保留两种因果关系，其实要比只在头脑中保留其中一种因果关系要完美一些。比如，如果我既能认为风吹导致幡动，又能认为幡动导致风起的话，这就比我只能认为风吹导致幡动要完美一些。

但是，在日常生活中，我似乎很难在头脑中同时保留两种因果关系。分别用两种因果关系去思考/解释同一组事件，这对我来说似乎很困难。

在日常生活中，如果我能在头脑中同时保留两种因果关系，那么我就能分别用这两种因果关系去预测（宇宙的）未来。但这对我来说似乎很困难。

在日常生活中，如果我能在头脑中同时保留两种因果关系，并且能分别用这两种因果关系去预测（宇宙的）未来的话，那么我就可能会得出两种不同的预测。

在头脑中同时保留两种因果关系，并分别用这两种因果关系去思考、解释、预测宇宙中的事件，思考就变得太复杂了。

在头脑中只保留一种因果关系，因此也就只能用这一种因果关系去思考、解释、预测宇宙中的事件，思考就会（与在头脑中同时保留两种因果关系相比）简单的多。

所以，一个人的头脑往往只保留一种因果关系，因此也就只能用这一种因果关系去思考、解释、预测宇宙中的事件。当这个人用这一种因果关系去思考/解释宇宙中的一组事件时，这个人就会感觉到对于这组事件的发生只有一种解释。当这个人用这一种因果关系去预测宇宙的未来时，这个人就会感觉到宇宙的未来只有一种可能。

显然，假如这个人能用另一种因果关系去思考/解释宇宙中的这组事件的话，这个人就会感觉到对于这组事件的发生还有另一种解释。假如这个人能用另一种因果关系去预测宇宙的未来的话，这个人就会感觉到宇宙的未来还有另一种可能。

先用左翼的思路去思考/解释宇宙中的一组事件，再改用右翼的思路去重新思考/解释这组事件，这样会很完美，但这当然也很难。

### (208)

“Free will and god are both nonsense concepts because both purport to be able to supersede cause & effect, which effectively makes them magic. In a universe in which countless beings possess the ability to perform magic, the laws of physics are rendered moot.” <https://twitter.com/MarksMus1ngs/status/1578819306392985600>

### (209)

没有在真实世界中发生的情景，是幻境/幻象。在真实世界中实际发生的情景，不是幻境/幻象。

人习惯于拿（没有在真实世界中发生的）幻境/幻象和真实世界中实际发生的情景做比较，并以此来评判真实世界中实际发生的情景的优劣，就好像（没有在真实世界中发生的）幻境/幻象“本来”是可以在真实世界中发生的一般。实际上，（没有在真实世界中发生的）幻境/幻象本来就不会在真实世界中发生。（没有在真实世界中发生的）幻境/幻象是人的头脑想象出来的。在真实世界中实际发生的情景，其发生是必然的。在真实世界中实际发生的情景，并不是在和（没有在真实世界中发生的）幻境/幻象的“竞争”之中“胜出”的。在真实世界中实际发生的情景和（没有在真实世界中发生的）幻境/幻象的“竞争”是人的头脑想象出来的。在真实世界中实际发生的情景，并不是在和（没有在真实世界中发生的）幻境/幻象的“竞争”中“胜出”了之后才“赢得”了在真实世界中实际发生的机会。

因此，如果在真实世界中实际发生的情景优于（没有在真实世界中发生的）幻境/幻象，并没有什么幸运可言。如果在真实世界中实际发生的情景劣于（没有在真实世界中发生的）幻境/幻象，也没有什么不幸可言。

如果在真实世界中实际发生的情景优于（没有在真实世界中发生的）幻境/幻象，那么这只说明（没有在真实世界中发生的）幻境/幻象劣于真实世界中实际发生的情景。如果在真实世界中实际发生的情景劣于（没有在真实世界中发生的）幻境/幻象，那么这只说明（没有在真实世界中发生的）幻境/幻象优于真实世界中实际发生的情景。

在真实世界中实际发生的情景，并不是在和（没有在真实世界中发生的）幻境/幻象的“竞争”中“胜出”了之后才“赢得”了在真实世界中实际发生的机会。

我可以想象在真实世界中实际发生的情景是在和（没有在真实世界中发生的）幻境/幻象的“竞争”中“胜出”了之后才“赢得”了在真实世界中实际发生的机会。在我的这个想象里，我实际上是把在真实世界中实际发生的情景和（没有在真实世界中发生的）幻境/幻象分别想象成了两只动物，再想象这两只动物经过了一番搏斗之后，其中的一只动物赢了，并因此而赢得了某种机会。

另一方面，我也可以想象两个或两个以上的（没有在真实世界中发生的）幻境/幻象进行了某种“竞争”，在此“竞争”中“胜出”的幻境/幻象才“赢得”了在真实世界中实际发生的机会。在我的这个想象里，我实际上是把每个（没有在真实世界中发生的）幻境/幻象想象成了一只动物，再想象这些动物经过了一番搏斗之后，其中的一只动物赢了，并因此而赢得了某种机会。

由我的想象可以看出，人类对动物之间的搏斗有强烈而鲜明的印象/意象，因此会把很多（与动物之间的搏斗完全不同的）事物想象成动物之间的搏斗。

人类的经验表明，两只动物的搏斗的胜负有时是难以预测的，而两只动物的搏斗的具体过程更难预测。因此人类会认为两只动物的搏斗的具体过程受到动物的 自由意志/主观能动性 的影响。人类认为动物的 自由意志/主观能动性 是我们人类完全无法预测的，而这导致了两只动物的搏斗的具体过程无法（被我们人类所）预测。

事实上，动物没有 自由意志/主观能动性。从理论上说，两只动物的搏斗的具体过程（根据薛定谔方程和宇宙中所有基本粒子现在的状态）是可以被预测的。

人类的经验表明，动物A和动物B的搏斗的胜负有时是难以预测的。因此人类会想象两种情况，第一种情况是A获胜，第二种情况是B获胜。然后，人类会感觉到这两种情况都有可能实际发生，虽然事实上（最多）只有一种情况可能实际发生。

当我在考虑晚饭是去吃麦当劳还是去吃肯德基时，我感觉这两个选项在我的头脑中（像两只动物一样）搏斗。这两个选项的搏斗的胜负有时是难以预测的。因此我会想象两种情况，第一种情况是麦当劳获胜，第二种情况是肯德基获胜。然后，我会感觉到这两种情况都有可能实际发生，虽然事实上（最多）只有一种情况可能实际发生。

我能access我周围环境中的物体的表面，以及我自己的肉身的表面。我也能access我自己的头脑中的想法/意象/形象。我感觉我能access的东西已经够多了。但是，其实有很多东西我是access不到的。我不能access我周围环境中的物体的内部构造，我也不能access我自己的肉身的内部构造。说实话，除去我周围环境中的物体的表面以及我自己的肉身的表面之外，我所能access的，其实也就只剩下我自己的头脑中的想法/意象/形象了。

我能access我周围环境中的物体的表面，以及我自己的肉身的表面。我也能access我自己的头脑中的想法/意象/形象。Idealists认为，我所能access的我周围环境中的物体的表面以及我自己的肉身的表面，其实也只不过是我的头脑中的一个意象/形象罢了。Physicalists认为，即使我所能access的我周围环境中的物体的表面以及我自己的肉身的表面只不过是我的头脑中的一个意象/形象，我头脑中的这个意象/形象也反映了独立于我的头脑而存在的某种东西。换句话说，physicalists认为，一定有独立于我的头脑而存在的某种东西。

我能access我周围环境中的物体的表面，以及我自己的肉身的表面。我不能access别人的头脑中的想法/意象/形象。我所能感觉到的别人的头脑中的想法/意象/形象，其实却是我自己头脑中的想法/意象/形象。

我能access我自己的头脑中的想法/意象/形象，但我并不知道我自己的头脑中的想法/意象/形象是怎么产生的。在我的记忆中所记录的我自己的头脑中的想法/意象/形象的*产生过程*，其本质还是我自己的头脑中的一个意象/形象。换句话说，我没有充分的理由来相信我的记忆的客观性，因此我认为自己并不真的知道我自己的头脑中的想法/意象/形象是怎么产生的。

当我在考虑晚饭是去吃麦当劳还是去吃肯德基时，我感觉这两个选项在我的头脑中（像两只动物一样）搏斗。但是，这两个选项在我的头脑中（像两只动物一样）的搏斗，其实只是我头脑中的一个意象/形象—这个意象/形象并不反映客观情况。

当我看到真实世界/客观世界中实际发生的情景时，我的头脑中会产生“应该发生的情景”的意象/形象。这个“应该发生的情景”与我所看到的真实世界/客观世界中实际发生的情景不同。这个“应该发生的情景”其实只是我的头脑所生成/创作的（主观）幻境/幻象。真实世界/客观世界中实际发生的情景不是我的头脑所生成/创作的（主观）幻境/幻象。但是“真实世界/客观世界中实际发生的情景在我的头脑/脑海中的呈现”是我的头脑（根据我的视网膜捕捉到的信息）所生成/创作的（主观）幻境/幻象。这里我假设有一个独立于我的头脑/脑海而存在的真实世界/客观世界。

当我看到真实世界/客观世界中实际发生的情景时，我的头脑中会产生“应该发生的情景”的意象/形象，然后我就会去思考/研究为什么“应该发生的情景”没有发生，就彷佛“应该发生的情景”本来是有可能发生的一般。事实上，“应该发生的情景”本来就不可能发生。因此，我真正应该去思考/研究的，是我为什么会认为这个所谓的“应该发生的情景”会发生。所谓的“应该发生的情景”没有发生，这并不是个问题。

比如，当我看到Alice在辱骂Bob时，我会认为骂人是不应该的，应该发生的情景是Alice到法院去起诉Bob来解决两人之间的分歧。然后，我就会去思考/研究为什么Alice没有到法院去起诉Bob来解决两人之间的分歧。事实上，“Alice到法院去起诉Bob来解决两人之间的分歧”这一“应该发生的情景”本来就不可能发生。因此，我真正应该去思考/研究的，是我为什么会认为Alice会到法院去起诉Bob来解决两人之间的分歧。Alice没有到法院去起诉Bob来解决两人之间的分歧，并不是个问题。

再比如，下雨了我没带伞，我会认为没带伞是不应该的，应该发生的情景是我带了伞。然后，我就会去思考/研究为什么我没带伞。事实上，“我带了伞”这一“应该发生的情景”本来就不可能发生。因此，我真正应该去思考/研究的，是我为什么会认为我会带伞。我没带伞，并不是个问题。

有趣的是，当我去思考/研究为什么我没带伞时，我会找到我没带伞的原因，比如“我的伞被小偷偷走了”。也就是说，如果伞没被偷走，也许我就带伞了。接着，我会认为“我的伞被小偷偷走了”这个实际发生了的情景是不应该发生的情景，而“我的伞没被小偷偷走”是应该发生的情景。然后，我会去思考/研究为什么“我的伞没被小偷偷走”这个“应该发生的情景”没有发生。事实上，“我的伞没被小偷偷走”这个“应该发生的情景”是不可能发生的。

当我去思考/研究为什么“我的伞没被小偷偷走”这个“应该发生的情景”没有发生时，我会找到这个“应该发生的情景”之所以没有发生的原因，比如“我昨夜把伞放在门外了”。按照这样的思路，我可以无穷无尽的追溯下去，一直追溯到宇宙大爆炸。

事实上，如果我们根据薛定谔方程和宇宙中所有基本粒子昨天白天的状态进行计算，可以计算出昨夜我一定会把伞放在门外，之后小偷一定会把伞偷走，而我今天一定不会带伞。因此，我今天没带伞的真正原因仅仅是薛定谔方程，小偷把伞偷走的真正原因也仅仅是薛定谔方程，我昨夜把伞放在门外的真正原因也仅仅是薛定谔方程。如果我从这一系列事件中“吸取了教训”，今天去买把新伞，今夜把新伞放进室内，明天带新伞出门，那么我的这些活动的真正原因依然仅仅是薛定谔方程。

事实上，自宇宙大爆炸起，宇宙中所发生的一切事件的真正原因都仅仅是薛定谔方程。如果我们根据薛定谔方程和宇宙中所有基本粒子在宇宙大爆炸时的状态进行计算，可以计算出昨夜我一定会把伞放在门外，之后小偷一定会把伞偷走，而我今天一定不会带伞，并一定会从这一系列事件中“吸取教训”，今天一定会去买把新伞，今夜一定会把新伞放进室内，明天一定会带新伞出门。

如果我们根据薛定谔方程和宇宙中所有基本粒子在宇宙大爆炸时的状态进行计算，就可以计算出在任何时刻我的头脑/脑海中会有什么想法/意象/形象（被呈现）。在我的头脑/脑海中被呈现的意象/形象，可以是真实世界/客观世界中实际发生的情景，也可以是“应该发生的情景”。“应该发生的情景”未在真实世界/客观世界中实际发生，但可以在我的头脑/脑海中被呈现。

既然我们根据薛定谔方程和宇宙中所有基本粒子在宇宙大爆炸时的状态进行计算，可以计算出我的头脑/脑海中何时会呈现出某个“真实世界/客观世界中实际发生的情景” 的意象/形象，那么我也就无法避免这个“真实世界/客观世界中实际发生的情景” 的意象/形象在指定的时刻被呈现于我的头脑/脑海中。

既然我们根据薛定谔方程和宇宙中所有基本粒子在宇宙大爆炸时的状态进行计算，可以计算出我的头脑/脑海中何时会呈现出某个“应该发生的情景” 的意象/形象，那么我也就无法避免这个“应该发生的情景”的意象/形象在指定的时刻被呈现于我的头脑/脑海中。

既然我们根据薛定谔方程和宇宙中所有基本粒子在宇宙大爆炸时的状态进行计算，可以计算出我的头脑/脑海中何时会呈现出某个想法/意象/形象，那么我也就无法避免这个想法/意象/形象在指定的时刻被呈现于我的头脑/脑海中。

除去我周围环境中的物体的表面以及我自己的肉身的表面之外，我所能access的，其实也就只剩下我自己的头脑中的想法/意象/形象了。我自己的头脑中的想法/意象/形象是主观的，不是客观的。我自己头脑中关于客观世界/真实世界的想法/意象/形象，是主观的，不是客观的。我自己的头脑中的想法/意象/形象是否反映客观世界/真实世界的实际情况？不好说。其实，顶多只有（我所能access的）周围环境中的物体的表面以及我自己的肉身的表面才是客观世界/真实世界的实际情况。除去（我所能access的）周围环境中的物体的表面以及我自己的肉身的表面之外，剩下的（我所能access的）东西其实都只不过是我的（头脑所生成/创作的）主观世界罢了。

除去我周围环境中的物体的表面以及我自己的肉身的表面之外，我所能access的，其实也就只剩下我自己的头脑中的想法/意象/形象了。我自己的头脑中的想法/意象/形象其实是用来解释/预测我周围环境中的物体的表面以及我自己的肉身的表面的状态的演化的。换句话说，我的（头脑所生成/创作的）主观世界其实是用来解释/预测客观世界/真实世界的状态的演化的—假如客观世界/真实世界真的存在并且能够被解释/预测的话。

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一个人会为自己的不同类型的开支建立不同的心理账户（mental accounting）。类似的，我在内心里会给每个人对我的贡献/损害分别建立一个恩怨账户，然后根据这个恩怨账户的余额（当余额是正数时，表示有恩；当余额是负数时，表示有怨），以德报德，以怨报怨；滴水之恩，滴水相报；涌泉之恩，涌泉相报；有怨报怨，有仇报仇；君子报仇，十年不晚。事实上，正是由于我在内心里为每个人分别建立了一个恩怨账户，我才能在实践中把作为一个整体的人类区分成不同的个体。我先把作为一个整体的人类区分成不同的个体，之后我才能在内心里给每个个体分别建立一个恩怨账户。如果我把作为一个整体的人类区分成不同的个体，但并不在我的内心里给每个个体分别建立一个恩怨账户的话，其实我内心里还是把人类看作了一个整体，或者说我在实践中还是把人类看作了一个整体。

其实，宇宙本身就是一个整体；人类本身就是一个整体。但是由于我在内心里给每个人类个体分别建立了一个恩怨账户，才通过（我的）这些恩怨账户把人类个体（在我的实践中）区分开了。如果我能忽略这些恩怨账户，我就能重新把人类看作一个整体。只有当我忽略这些恩怨账户时，我才能重新把人类看作一个整体。

每当我在内心中对宇宙中的事物进行一种分类后，我都可以在内心中为每个类别分别建立一个恩怨账户。根据每个类别对我的贡献/损害，我在内心中对每个类别的恩怨账户的余额进行加/减，这样我就在我的内心中建立了对每个类别的刻板印象。

比如，我可以把人分为“张三”、“李四”等，并给“张三”和“李四”分别建立一个恩怨账户。

我还可以把人分为“法国人”、“英国人”等，并给“法国人”和“英国人”分别建立一个恩怨账户。

我还可以把人分为“穷人”和“富人”，并给“穷人”和“富人”分别建立一个恩怨账户。

我还可以把人分为“努力的人”和“不努力的人”，并给“努力的人”和“不努力的人”分别建立一个恩怨账户。

我还可以把人分为“爱占小便宜的人”和“不爱占小便宜的人”，并给“爱占小便宜的人”和“不爱占小便宜的人”分别建立一个恩怨账户。

我还可以把人分为“好人”和“坏人”，并给“好人”和“坏人”分别建立一个恩怨账户。

我还可以把宠物分为“猫”、“狗”、“兔子”、“鱼”等，并给“猫”、“狗”、“兔子”、“鱼”分别建立一个恩怨账户。

我还可以把国家分为“发展中国家”和“发达国家”，并给“发展中国家”和“发达国家”分别建立一个恩怨账户。

我还可以把国家分为“努力的国家”和“不努力的国家”，并给“努力的国家”和“不努力的国家”分别建立一个恩怨账户。

我还可以把国家分为“爱占小便宜的国家”和“不爱占小便宜的国家”，并给“爱占小便宜的国家”和“不爱占小便宜的国家”分别建立一个恩怨账户。

我还可以把国家分为“好国家”和“坏国家”，并给“好国家”和“坏国家”分别建立一个恩怨账户。

我还可以把社会运行情况分为“战争”和“和平”，并给“战争”和“和平”分别建立一个恩怨账户。

我还可以把季节分为“春”、“夏”、“秋”、“冬”，并给“春”、“夏”、“秋”、“冬”分别建立一个恩怨账户。

我还可以把天气分为“晴天”、“下雨”、“下雪”、“刮风”等，并给“晴天”、“下雨”、“下雪”、“刮风”分别建立一个恩怨账户。

我还可以把食物分为“素食”和“非素食”，并给“素食”和“非素食”分别建立一个恩怨账户。

实际上，宇宙本身是一个不可分割的整体。但是，我通过在内心中对宇宙中的事物进行分类，并为每个类别分别建立一个恩怨账户，以记录/评估/预测每个类别对我的贡献/损害，这样就把作为一个整体的宇宙（在我内心中）按照（我内心所划分的）类别强行分割成了不同的事物，并（在我内心中）建立了对每种类别的事物的刻板印象。

通常来说，一个人乐于看到自己内心中所有恩怨账户的余额的总数的增长。当代人类社会的伦理，恰恰是反对任何一个恩怨账户的余额（在没有正当理由的情况下）的显著减少，就彷佛我们的反对真的可以影响任何一个恩怨账户的余额的变动情况一般。

你可能认为我们的反对真的影响了某一个恩怨账户的余额的变动情况。但事实上，我们的反对并没有真的影响这个恩怨账户的余额的变动情况。因为我们的反对本身是被薛定谔方程注定的，同时这个恩怨账户的余额的变动情况也是被薛定谔方程注定的。换句话说，“我们的反对”和“这个恩怨账户的余额的变动情况”之间并不存在除薛定谔方程之外的因果关系。

在你我的内心中，两个事件之间的所谓“因果关系”其实是这两个事件之间（在我内心中）的一种数学关系/计算关系。

在真实世界/客观世界中实际发生的“我们的反对”和“这个恩怨账户的余额的变动情况”之间并不存在除薛定谔方程之外的因果关系/数学关系/计算关系。在我的头脑所想象的（主观）幻境中，“我们的反对”和“这个恩怨账户的余额的变动情况”之间存在除薛定谔方程之外的因果关系/数学关系/计算关系，比如“我们的反对会导致这个恩怨账户的余额的减少量少50%—比我们根据薛定谔方程所计算出的“应减少量”少50%”。

在真实世界/客观世界中实际发生的任何两个事件之间并不存在除薛定谔方程之外的因果关系/数学关系/计算关系。在我的头脑所想象的（主观）幻境中，两个事件之间可能会存在除薛定谔方程之外的因果关系/数学关系/计算关系，比如“我们的反对会导致这个恩怨账户的余额的减少量少50%—比我们根据薛定谔方程所计算出的“应减少量”少50%”。

说实话，所谓的“真实世界/客观世界”其实也是我的头脑所想象的一个（主观）幻境。在这个（主观）幻境里，任何两个事件之间并不存在除薛定谔方程之外的因果关系/数学关系/计算关系，因此所有事件都没有任何（脱离了薛定谔方程的）独立性。这就是这个（主观）幻境（与别的（主观）幻境相比）的独特之处。在别的（主观）幻境里，两个事件之间可能会存在除薛定谔方程之外的因果关系/数学关系/计算关系，因此有的事件可能会具有一定的（脱离了薛定谔方程的）独立性，比如“这个恩怨账户的余额的减少量少了50%—比我们根据薛定谔方程所计算出的“应减少量”少了50%”。

一个物体的运动也是一个事件。在那个被我称为所谓的“真实世界/客观世界”的（主观）幻境里，任何两个物体的运动之间并不存在除薛定谔方程之外的因果关系/数学关系/计算关系，因此所有物体的运动都没有任何（脱离了薛定谔方程的）独立性。这也是那个（主观）幻境（与别的（主观）幻境相比）的独特之处。在别的（主观）幻境里，两个物体的运动之间可能存在除薛定谔方程之外的因果关系/数学关系/计算关系，因此有的物体的运动可能会具有一定的（脱离了薛定谔方程的）独立性，比如“当我用手指去推一个台球时，这个台球的加速度额外增加了100% —这个台球的实际加速度比我们根据薛定谔方程所计算出的加速度多了100%”。

在那个被我称为所谓的“真实世界/客观世界”的（主观）幻境里，只存在一种因果关系/数学关系/计算关系，那就是薛定谔方程。这也是那个（主观）幻境（与别的（主观）幻境相比）的独特之处。在别的（主观）幻境里，可能存在除薛定谔方程之外的其他因果关系/数学关系/计算关系，比如“我们在计算这个台球的加速度时，要先根据薛定谔方程计算出其加速度，再在此基础上额外增加100%才行 —这额外增加的加速度是由我的手指的运动/推力所造成/导致的”。

在那个被我称为所谓的“真实世界/客观世界”的（主观）幻境里，我们只用薛定谔方程进行计算，而这种计算是正确的。这也是那个（主观）幻境（与别的（主观）幻境相比）的独特之处。在别的（主观）幻境里，我们的计算是错误的，比如“我们在计算这个台球的加速度时，要先根据薛定谔方程计算出其加速度，再在此基础上额外增加100%才行 —这额外增加的加速度是由我的手指的运动/推力所造成/导致的”。事实上，台球的实际加速度就应该是根据薛定谔方程所计算出的加速度，在此基础上额外增加100%是错误的。

### (211)

Q. Plato’s Cave \*is\* the mind. Qualia are the contents of the cave, & it’s logically impossible to escape into the outside (noumenal) world. <https://twitter.com/BugRib/status/1581286917911769088>

A. Yes, the outside (noumenal) world is something imagined/invented by my mind.

### (212)

Q. Ok, hand on heart, if you read an article stating "shopping mall door is sentient" and it turned out that the door in question was just a standard IR triggered door would you feel this was misleading? <https://twitter.com/Timothy0Leary/status/1580921561011232769>

Q. Is a cell phone "sentient"? <https://twitter.com/DrYohanJohn/status/1580927925305548801>

A. "Sentient" depends on the observer. Something is sentient, only from the viewpoint of an observer. There is nothing sentient \*objectively\*. Something is sentient -- only from the subjective view of an observer.

So, an *in vitro* neural network is sentient – only from the viewpoint of an observer. A chatbot is sentient – only from the viewpoint of an observer. A standard IR triggered door is sentient – only from the viewpoint of an observer. A human brain is sentient – only from the viewpoint of an observer.

There is nothing sentient \*objectively\*.

When I think a physical object to be sentient, it doesn’t mean that there is \*actually\* a homunculus sitting inside that physical object. It means that I am \*imagining\* a homunculus sitting inside that physical object!

Or, in other words, when I think a physical object to be sentient, it doesn’t mean that there is \*actually\* another “me” sitting inside that physical object. It means that I am \*imagining\* another “me” sitting inside that physical object!

When I imagine a homunculus sitting inside a physical object, actually I am imagining a clone of “me” sitting inside that physical object.

### (213)

A. Imo whether a given being is “experiencing qualia” or not is always simply a matter of interpretation. Even when you perceive \*yourself\* as experiencing qualia, that’s just an interpretation that one part of your brain is ascribing to the signals it’s receiving from another part. <https://twitter.com/MikePFrank/status/1581349257776226304>

A. When you perceive \*yourself\* as experiencing qualia, you are perceiving \*yourself\* as your physical body. However, what is actually "experiencing qualia", is not your physical body, but one part of your brain's neural network. But how can (one part of) your brain's neural network experience anything?

If (one part of) your brain’s neural network can experience something, then why (one part of) a chatbot’s neural network can’t experience anything?

If (one part of) your brain’s neural network can experience “qualia”, then why (one part of) a chatbot’s neural network can’t experience “qualia”?

Q. Experiencing Qualia is a process. The process has an anatomical basis and it only happens where the anatomy exists. <https://twitter.com/locoqf2/status/1581456405910863872>

A. Any process (whether involving anatomy or not) has a functional/computational description <https://twitter.com/MikePFrank/status/1581481581020991488>

A. The computation/function being carried out by the anatomy is the key. The anatomy itself is trivial.

The computation/function (being carried out by the anatomy/process) is the key. The anatomy/process itself is trivial.

In our cosmos, every physical object/process has an anatomy (at elementary particle level). A computer has an anatomy. A chatbot has an anatomy. That's why a computer/chatbot can compute/function/process.

Q. Yet what is called “experience” - any term for mentality or even the simple responsiveness to the environment of the most ancients cell - is seen only with the living - I propose there is something not trivial about the architecture of the living. <https://twitter.com/locoqf2/status/1581597714521165827>

A. In modern society, the agreement is that humans can "experience". However, logically speaking, other humans can be p-zombies. So, a human only knows that he himself can "experience". Strictly speaking, you don't know whether a cell can "experience" or not.

Q. We don’t. But what is it like to be exactly like I am and yet not “experience”?

Chomsky is right - in his last two interviews (Mind Chat and Consciousness Live) he insisted such question are formulated as questions but have no posible answers and therefor are not questions! <https://twitter.com/locoqf2/status/1581728008515485696>

A. My point is, there is no fundamental difference between a human brain and a chatbot's (digital) neural network.

What is it like to be exactly like a chatbot is and yet not “experience”?

A question without an immediate/straightforward answer is still a valid question.

### (214)

The world of algorithms is a deterministic one, and there are no potentials, no possibilities. There is only what actually happens, and what does not happen doesn't exist and has no effect on the system. <https://twitter.com/JohnRGregg3/status/1581447256019914753>

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Data sharing is not applicable to this article as no new data were created or analyzed in this study.

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