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The Nature of Consciousness and its Meaning

Abstract

Consciousness may not only be a problem how to know the brain but also a problem how to understand what known.

Understanding is always an ontological system created as the explanation of what known by us. And, if all brains, including human brains, may be defined as the mind, consciousness must be part of our understanding of the mind.

The author argues that no mind may exist if not be a life or lives, no life may exist if not be a mind or a part of it, and, if it is the mind that needs to be explained, it must finally and fundamentally be explained as a life or a living system.

An ontological definition of life is proposed first in this article, which is also applicable to fields such as physics, biology, psychology, and sociology. Based on an analysis of two kinds of lives and their relationship with matter and energy, a living system is modeled as the organization of two system relations, which explains not only consciousness but also wakefulness, emotion, intelligence, language and mind-body relationship. And finally, a semantic theory is reached, which takes lives as the only meaning of all symmetrical and conservative changes, such as the location changes or form changes of consciousness, or the state changes of memories.

The concept of life, the model of living systems and the semantic theory together provide a framework for us to understand what and how consciousness is, why there is consciousness, where and when consciousness occurs.

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Introduction

Consciousness has not been proved to be the truth. Neither its subjectivity nor its objectivity has been proved to be the truth about human beings. And it seems to me, studies based on either or both of them are all doubtful.

Human brains are structurally different not only from non-human brains but also from each other. Even the same brain is not identical to itself across time. No evidence supports the notion that consciousness is the unique emergence dependent on a particular structure of the human brain.

Brain mapping may never reveal the nature of consciousness, just as a city map may never tell us what is happening there, and just as the structures of a lamp may never explain the nature of light.

Consciousness may not be explained by impulses moving along nerves, neurotransmitters released from synapses, changes in electroencephalogram, or changes in regional blood flow and oxygen consumption, as those changes may occur in any brain of any animal.

And, if not confused or conflated with the differences in their structural complexity, neuroscience may never prove that consciousness occurs only in human brains, only in brains, only among neurons, or only to living organisms.

No matter how much we know our own brains scientifically, David Chalmers' hard problem [(1)] may never be solved if it is not a scientific problem but an ontological one.

An ontology is always a special system created as the explanation of what known. The laws of motion, the equations in electromagnetism, the relativity and the wave function, for example, are all such systems.

The mind must be the system if consciousness is part of an ontological system.

The mind as life

There may be neither consciousness nor its meaning if there is no mind at all.

From a narrower understanding, the mind is the same as a human brain [(2)], and, from a broader understanding, the mind might be all the brains, including human brains.

However, there is still a problem. The problem is: the mind is not the same as a human mind, a human mind

not the same as a human brain, one human brain not the same as another, and a human brain's present not the same as its past or future.

More than 2500 years ago, Aristotle had a better definition of the mind, and he said: "What has soul in it differs from what has not, in that the former displays life" (*On the Soul*, Book II, Ch. 2). And it seems to me that one may even argue:

$$\text{Mind} = \text{Life} \qquad \text{(Eq. 1)}$$

That is, no mind may exist if not be a life or lives, and no life may exist if not be a mind or a part of it. Life may be all the mysteries of the mind, and the mind also all the mysteries of life. If it is the mind that needs to be explained, it must finally and fundamentally be explained as a life or lives. If the question is about the origin of the mind, a life or lives must be the ultimate answer. In other words, life must be the only attribute of mind, and mind also the only attribute of life, and therefore, consciousness, intelligence, emotion and language must be the properties of every living system.

The identity of mind and life may be found not only from all animals and plants but also from all the living cells that compose them. And mental events may be identified as cells' detecting an external stimulus, intermediating its systematic processes, and making a reaction to it. The differences between a body cell and the brain should not be understood as the differences between a life and a mind.

At least, life is a better definition of the mind, better than human brains, better than all the brains, better than all biological systems, better than consciousness, emotion, intelligence and languages, especially better than a soul, a self or an ego.

We should neither believe nor deny this identity before we really understand what life is.

The life as OC

If the question is about what the mind is, the identity of mind and life means that both birth and death are also parts of the same question and its answer. For example, we may never understand what a human brain is if we only try to explain it with physical particles, waves and fields, since those particles, waves and fields that make up a living brain were not born before and will also not die after its death.

Ontologically, mind or life may only be understood as the oneness, the unity or the interdependency of different changes.

There are two categories of changes in reality, the O changes, such as return changes or circular changes, and the C change, such as a one-way change or an irreversible change. C is the open of an O change, and O the close of a C change. For example, we become younger every morning after one night's sleep and older every evening after one day's work, which are together O changes, but we may never become children again, which is then the C change.

Quantum fluctuation may also be understood as the O changes. And parity non-conservation in weak interaction or spontaneous symmetry breaking is then the C change.

Ontologically, a life may only be understood as the oneness, the unity or the interdependency of O changes and a C change, which may be called OC. [3, 4]

$$\text{Life} = \text{OC} \qquad \text{(Eq. 2)}$$

Etymologically, the O of OC may be understood as Parmenides' "one", or Leucippus' and Democritus' "ones", and the C as Heraclitus' "change".

The O changes may also be understood as the activities to create a "self", and the C change the activity to transcend the "self". Life is therefore oneness, unity or interdependency of the creation and the transcendence. And OC is then the only reason why everything must be created but nothing may remain forever, no matter if it is a particle, a molecule, an organism, a human, a society, a planet or a cosmos.

Creating a "self" is the return or circular changes between relative energy and relative matter. And transcending the "self" is either the one-way or irreversible change from an absolute energy to an absolute matter, or the change from an absolute matter to an absolute energy. [3, 4]

Neither OC is everything, nor are both matter and energy. Any matter or energy is absolute only because of the C of OC, and relative only because of the O of OC. Life as life, no known energy or matter might be its ontological limitation. And the possibility that life may arise from non-life does not exclude the possibility that all known energy and matter may have been created by lives existing before them.

The OC might therefore mean an ontology against both absolutism and relativism, against absolutism with its O and against relativism with its C.

The truth as truth is always the O of OC, and the C determines, however, that the O is never an absolute truth or absolute truths. And OC negates the possibility that we may ever have a theory of everything.

The OC might therefore be the ontological basis of Gödel's incompleteness theorem. [5]

The OC is a better explanation of the time as time, better than the second law of thermodynamics.

If “free will” is the question, OC is then its ontological answer, in which O is freedom and C the will.

An organism’s reproduction, growth, metabolism and adaptation to the environment are all OC changes. Every society, including different human societies, is nothing more or less than an OC.

OC is the explanation of both adaptation and diversity. Ontologically, natural selection is the O changes or their results. However, the C of OC determines that natural selection has always a directionality, and therefore a species or a society exists neither accidentally nor teleologically.

The OC as living system

The C is not only the open of an O change or O changes, and it is also the directionality of the open.

Lives may be divided into two categories according to the contrary directions of their C changes. The one with its C toward absolute energy may be called a spring life, and the one with its C toward absolute matter an autumn life. [3, 4]

Therefore, a mind may exist as either a spring life or an autumn life. So is a person in a human society, or a human society in an ecosystem on the Earth.

Because of the C of OC, all lives are asymmetric or non-conservative changes. A spring life consumes absolute matter and creates absolute energy, and an autumn life does the opposite. For example, the fire from burning wood, coal or oil may be understood as a spring life. All plants that consume solar energy are then autumn lives. And, though generating energy through the decomposition of food in their bodies, all animals are autumn lives too.

The birth of lives is the creation of the relation between C and O changes, and the death the termination of either the changes or their relation. The C of OC is the necessity between its birth and death.

Both birth and death are ontological changes, and also the ontological deficiency in panpsychism. [6]

An artificial life, no matter if it is hard, soft or wet, is not really a life if it is not a mind, if it is neither a spring life nor an autumn life, or if it is immortal. And the Synthia made by J. Craig Venter and his team is only some changes in the complexity of an OC, but not really a new life created. [7]

The absolute matter may be the birth of a spring life or the cold death of an autumn life, and the absolute

energy the birth of an autumn life or the heat death of a spring life. [3, 4] All the so-called non-living matters, such as protons, neutrons or atomic nuclei, are such absolute matter, the remains of some dead autumn lives deeply frozen by our environment.

Though mind and life are the same thing, the same thing may still be called with different names. So, a life as a living system may be called a mind, and a mind as a part of a living system may be called a life. For example, a bacterium, a plant or an animal may be either a life if in relation to its environment, or a living system if in relation to its interacting and interrelated parts.

A mind, as a living system, is always composed of both spring and autumn lives, and, as a part of a living system, may be either a spring life or an autumn life. This superposition or superstate is the core relation between consciousness and its meaning.

$$\text{System} = \text{Life}^2 \qquad \text{(Eq. 3)}$$

Natural selection is a system's selection of its parts. In other words, it is a mind's selection of its lives.

It is alone autumn lives' mission to create systems or to create the complexity of OC. All systems are created by autumn lives, and a system will degrade if no autumn life as its part. Autumn life is therefore the key for us to understand the emergence of a system and its the complexity.

As a living system, a human body or brain is mainly dominated by autumn lives, and, therefore, the cold death is also our destiny.

$$\text{Human} = \text{Autumn life} \qquad \text{(Eq. 4)}$$

This may explain why we always need a special system between what we know and what we do, and why the creation of systems is almost all we have been doing.

The living system as unity of two system relations

Since spring life and autumn life are related by the changes of their death and birth, a mind, as a system of different lives, is always organized with two kinds of system relations together, both MEM system relation and EME system relation. The absolute energy is the E in a system relation, and the absolute matter the M. And an MEM system relation always begins with a spring life and ends with an autumn life, and a EME system relation the contrary.

A system relation is the irreversible causation between spring and autumn lives. And still, system relations

may be dominated by either the spring life or the autumn life.

In addition to life changes, there are two other changes in system relations, the form change and the location change, both of which may be called quale changes. [8] Quale changes are symmetric or conservative changes of the absolute matter or the absolute energy. To know is, for example, a quale change, and to understand a life change, and to think a unification of both changes. And it seems to me that consciousness is more like a quale in form change than in location change.

Physics is all about quale changes.

The absolute energy may undergo location changes and form changes in a EME system relation, so may the absolute matter in an MEM system relation.

The human brain's activities may never be explained only with different neurotransmitters and nerve impulses, since impulse moving along a nerve or neurotransmitter released from a synapse is only the location change, and that nerve impulse converting into neurotransmitter or vice versa is only the form change.

Though both are made of both system relations, a human brain is still the main EME system relation of a human body, and the rest of the body the main MEM system relation of the brain. This, however, is not a relation only between a brain and the rest of a biological body.

Mind-Body = EME-MEM (Eq. 5)

A living system, no matter how complex or simple, is always a unity of both EME and MEM system relations. And no agency, whether individual or collective, is not such a unity.

The M as intelligence

OC is the ontological incompleteness of any entity or system. Therefore, ontologically, nothing exists as a world outside a living system or as a self inside.

A soul in a human body or a subjective ego in the brain is not an ontological explanation, and neither is the observer of all our senses, the one that introspects our thoughts or feelings, the knower, thinker or planner, the decision-maker or manager of memories, or the initiator or commander of all our voluntary movements.

Ontologically, there is nothing subjective or objective in system relations or mind-body relationships. The E, the M and both lives are together the only explanation of consciousness, emotion, intelligence, language and their meaning.

The M in EME system relation may be understood as the structures of a brain, a body or a society. All the structures may also be understood as either its hereditary memories or its acquired memories. And both hereditary and acquired memories may be understood as the complexity of a living system.

There are both memories even in a fertilized egg or an embryo. It is the C of OC, not the O, that determines memories to be either hereditary or acquired. Relatively, all the gene-determined structures in a human mind may therefore be understood as its hereditary memories, and the environment-determined structures as its acquired memories.

Roughly speaking, the longer the time from its birth to its maturity, the more acquired memories that might be found in the mind of an animal.

The E is the same universally, so are both lives. All the differences among all the living systems are only the differences of their M.

M = the particularity of a system, or the E and lives in the system (Eq. 6)

Therefore, the M in EME system relation is the only one that may explain the differences in intelligence among different brains. In other words, intelligence is nothing more or less than the structures of a living system. All the structures of our cosmos are all its intelligence. So are all the structures of a society or a human body or a particle. So are all the structures of a human brain.

Contrary to what Descartes thought [(9)], there is no intelligence without structure, or no structure in system relations is not a kind of intelligence. The O of OC is the unique essence of intelligence.

Intelligence may also be understood as the complexity of a living system against the uncertainty of its environment. All the hereditary structures are the intelligence for a living system to deal with what may occur postnatally, and all the acquired structures the intelligence for a living system to deal with what may occur later.

The intrinsic complexity makes all the differences. Not the E, not the lives, the M alone, especially the acquired memory, is the basis of our personal identities or the answer to Kant's question: "What is the human being?"

Every property is based on certain complexity. Nothing possesses the same properties if not in the same complexity. If mental or social properties are a kind of emergence, so are all the physical properties.

Emergence means always the difference of the M.

The complexity of our brains, bodies and societies must be the only biological basis of our words, grammars, numbers, forms, logics, physical laws and theological concepts, or the only reason why we, but not others, created them. And tools, machines, computers, internet and AI are all parts of our complexity.

During the development of our cosmos, during the development of a human society, during the development of a human body, a special intelligence always emerges when certain structures occur, and fades away when those structures disappear or are changed. This may also be the explanation of infantile amnesia or childhood amnesia.

Based on different complexity may always arise different species. Human beings are nothing more or less than the emergence of certain complexity.

Hereditary memory is hereditary intelligence, and acquired memory acquired intelligence. Every living system has memories, and therefore has certain intelligence. The only difference is that our brains have more acquired memories or acquired intelligence than any other systems. As probably the most complex structures in the universe, human cerebral cortex must be the very basis for us to have more acquired intelligence.

Hereditary intelligence determines a system's hereditary behaviors, and acquired intelligence acquired behaviors. One loses his humanity when one loses his acquired behaviors, and his complete existence when one loses his hereditary behaviors.

Instincts are hereditary behaviors, intuitions acquired behaviors, and both quale changes.

The C or the directionality of autumn lives determines that hereditary behavior is the center of our acquired behaviors, and earlier acquired behavior the center of later acquired behaviors.

Human beings are not born the same. No hereditary or acquired intelligence from different persons is exactly the same. And it is a part of the human complexity for us to deal with uncertainty in the future.

Ontologically, the M or intelligence has nothing to do with consciousness, even both are parts of our understanding of the mind. In other words, the unique complexity of our brains never explains the ontological essence of our consciousness.

The E as consciousness, emotion or waking state

Only lives may communicate with each other, and egos or selves not.

The E is the only thing communicated through the EME system relation, and the M the only thing

communicated through the MEM system relation.

All the changes that occur during the communication between lives are quale changes, either or both of the location change and the form change. The cosmos, as a system or systems, is full of qualia. An electron appears as different qualia when it flows through the different structures of a conductor, or when the conductor changes from one state to another. So does it when the E passes through different biological, mental or social structures, and their different states. In other words, qualia are the motion of the same E through different M.

The collapse of a superposition state may also be understood as a quale emerged when a quantum state communicates with a measuring instrument. So might be the quantum contextuality.

Ontologically, every living system, even every subsystem, may have its own qualia. A special quale is always a special system's definition of the E that goes through it. In other words, it is the M of a system, not the system's environment, that defines the E that goes through it.

Therefore, the qualia of our senses and feelings exist only because of the memories in our brains or bodies. And our qualia are always parts of our intelligence.

The M in EME system relation may undergo state changes. Those state changes are conservative changes determined by the E of MEM system relation. If the M in EME may be understood as the strings of a musical instrument, the state is then their tension, and the state change is the change in their tension.

Different emotions, including different passions, are all such states or state changes.

The abnormality in the M, rather than the E itself, might be the cause of psychiatric consciousness.

The alternation of wakefulness and sleep is the most fundamental activity of all living systems with an intrinsic mind-body relationship, which is another example of such state change.

The alternation of wakefulness and sleep may also be found from many cells, organs and systems in our bodies. For example, the myocardial refractory period may be understood as the period of cardiac cells' sleep, even though it lasts only for 250 MS. The period between two refractory periods may be understood as those cells' waking state, and the action potential as the qualia of their communication. Both the communication and the waking state together may be understood as cardiac cells' consciousness. Though different in their complexity, there is no ontological difference between the consciousness among those cardiac cells and the consciousness among neurons in our brains.

Consciousness may be defined as those quale changes in the EME system relation based on the waking state of the M. And therefore, consciousness is always a part of the mind-body relationship. [10]

The M in EME system relation may be understood as the center of the activities of a mind. And consciousness always arises between the first E and the M. And thinking is the cyclical processes in which the second E is feedbacked as the first E, and goes though the M again.

All the communicating activities in our brains, bodies or societies are carried out through both system relations. A biological communication is always a duet of both conservative changes, both the quale changes of the E and the state changes of the M.

The change of our skeletal muscles is, for example, such duet change, both quale change controlled by the brain through pyramidal tracts and state change through extrapyramidal tracts.

Though positioned differently in EME system relation, both our consciousness and behavior are the same as duet changes. A behavior may be understood as an explicit consciousness, and a consciousness as an implicit behavior, even though the same duet may never be both explicit and implicit. [11, 12]

Attention is the duet as either consciousness in our brains or behavior of our sensory or motor organs.

The autumn life as cause or effect of the E or the M

Ontologically, nothing exists as a world or a self.

However, the O changes of an OC, such as all the duet changes in a living system, may be understood as the OC or the system has a self and its own world.

No such a world may ever be created without the creation of a self, and no such a self may be created without the creation of a world. The world and the self are always created in a living system as one and the same word. And to create a living system is always the same as to create such a dynamic word between all its receptors and effectors.

There is no absolute boundary or proportion between the world and the self. A greater self in the word is the basis of our morals and morality.

Both our subjectivity and objectivity are always created as one and the same word in our minds. And no such a word is real or unreal, and no world or self is real or unreal.

Both Husserl's "intentionality" and Heidegger's "Dasein" may be taken as such a word. Neither solipsism nor intersubjectivity is a complete word.

Introspection, recollection, reflection or self-awareness is nothing more or less than the creation of such a dynamic word. A cognitive subject may be the object of its cognition is the proof that neither the world nor the self is any experience or sentience.

Though every living system, such as a person or a human society, has its own word, there is no causality between any self and any world in any word. Neither the world is the meaning of the self, nor the self the meaning of the world.

This word and its meaning are never one or the same.

The meaning may be either its cause or its effect, either the birth or the death in this word, but never the word itself, let alone any quale or duet that emerges in the word or during the communication.

An effect may become its cause if in symmetrical or conservative changes, but never in life changes since the C of OC is irreversible. Therefore, a cause as a cause, or an effect as an effect, is neither the O nor the C, but always an OC or a life change.

Lives = the meaning of all symmetrical or conservative changes (Eq. 7)

Lives are therefore the only cause and/or effect of all other changes in our brains, bodies and societies. In other words, neither the E nor the M conveys or contains any information. Information is only the determination of lives to the E or M.

The word is meaningless if it has nothing to do with lives. Our consciousness, intelligence, emotion, thinking, behavior and language are all meaningless if they have nothing to do with our lives.

Artificial intelligence is meaningful only if there are human lives as its cause or effect.

Ontologically, the autumn life, as both the effects of the E and the causes of the M, is our final truth and certainty, and also the final truth and certainty of our consciousness.

Conclusion

It might be concluded:

1. Ontologically, the concept of consciousness is a part of our understanding of the mind.

2. A human mind may be understood as either an autumn life or a system dominated by autumn lives.

3. As a system, the mind is the E, the M and both lives organized in MEM and EME system relations.

4. Consciousness is the qualia of the E in EME system relation, while attention, emotion and wakefulness are all states of the M.

5. Only lives may be either the cause or the effect of our consciousness.

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