**Gabriel Vacariu (2020) Unbelievable similarities - selected authors (Sean Carroll, Frank Wilczek, Carlo Rovelli, Kastner, Kauffman et all, Lee Somlin, Markus Gabriel)**

**from much bigger manuscript**

**(Gabriel Vacariu, (June 2020 to 2014) The UNBELIEVABLE SIMILARITIES between the ideas of some people (2011-2016) and my ideas (2002-2008) in physics (quantum mechanics, cosmology), cognitive neuroscience, philosophy of mind, and philosophy (this manuscript would require a REVOLUTION in international academy environment!) here**

<https://www.academia.edu/s/0c1502ea90> **;**<https://www.researchgate.net/publication/340621608_April_2020_2014_Gabriel_Vacariu_UNBELIEVABLE_similarities_odf> <https://philpapers.org/rec/VACAT-2>

**(During last 4 years, I have sent this updated manuscript to thousands of people from many countries in each year! They have no chances!!!)**

All my main ideas (the mind-brain problem, main problems of cognitive science and quantum mechanics, Einstein’s relativity vs. quantum mechanics, etc.) from my ***Springer’s*** book (2016) can be found in my **PhD thesis (2007), UNSW (Sydney,** Australia, officially posted on university’s website, FREE, by the university’s Staff in 2007) <https://www.unsworks.unsw.edu.au/primo-explore/fulldisplay?vid=UNSWORKS&docid=unsworks_5143&context=L>

**PHYSICS, COGNITIVE NEUROSCIENCE, PHILOSOPHY (‘REBORN DINOSAURS’[[1]](#footnote-0))**

* (2016) Did **Sean Carroll**’s ideas (California Institute of Technology, USA) (within the wrong framework, the “universe”) plagiarize my ideas (2002-2010) (within the EDWs framework) on quantum mechanics, the relationship between Einstein relativity and quantum mechanics, life, the mind-brain problem, etc.?
* (2016) The unbelievable similarities between **Frank Wilczek**’s ideas (Nobel Prize in Physics) and my ideas (2002-2008, etc.) (Philosophy of Mind and Quantum Mechanics)
* (2017-2019 - 2019) Strong similarity between **Carlo Rovelli**’s ideas (Italy) in three books (2015, 2017) to my ideas (2002-2008) + commentary February 2018!
* (2016) **Kastner +** (2017) R. E. **Kastner**, Stuart **Kauffman**, Michael **Epperson** “Taking Heisenberg’s Potentia Seriously”: Quite similar ideas to my ideas (2008) +
* (2017) A trick: Unbelievable similarities between **Lee Smolin**’s ideas (2017) and my ideas (2002-2008)
* (2013 + 2017) Did **Markus Gabriel** (Bonn University) plagiarize my ideas?
* **(2016) Did Sean Carroll (California Institute of Technology, USA) (within the wrong framework, the “universe”) plagiarize my ideas (2002-2010) (within the EDWs framework) on quantum mechanics, the relationship between Einstein relativity and quantum mechanics, life, the mind-brain problem, etc.?[[2]](#footnote-1)**

**This document is about Carroll M. Sean (2016), *The Big Picture: On the Origins of Life, Meaning, and the Universe Itself*, Dutton**

In this paper, I will show you how it is possible a great (more exactly popular) physicist furnishes us answers to great and difficult philosophical and cognitive neuroscience questions, but reading just few papers and books on these topics! Also, I emphasize that in his previous book from 2012 (I quoted this book in my book 2016 about “Dark matter…), he did not investigate any of these topics! Amazing, isn’t it? Incredible many people have worked many centuries and the last decades on these questions and they have not been able to furnish answers to these questions. However, an amazing physicist furnishes answers to these old and difficult questions only in one book (there are no other articles or books on these questions published by Sean Carroll)! This incredible accomplishment indicates the huge difference between Physics and Philosophy or Cognitive (Neuro)science! The idea is that if you want to solve rapidly some great problems (and reading very few texts on those topics) on philosophy (of mind) and cognitive (neuro)science, you need to be only physicist! Otherwise, clearly you waste your time… Amazing it is the fact that in the book from 2016 there are many topics on which Sean Carroll had never investigated until writing this book. For instance, these topics are some that belong to the Philosophy of mind and Cognitive Neuroscience! More amazing, many of these topics are investigated in my books from 2008 and 2010! JUST COINCIDENCES, of course… Anyway, the books and articles mentioned by Carroll on these topics are very few; probably a physicist does not need many lectures on the mind-brain problem in order to solve it, since Carroll comes with a new approach to this problem (that it is quite similar to my EDWs perspective but placed within the “world”, the unicorn world) but placed within the “universe” (this word appearing, inevitable, even in the title of his book)! (Nice prevention…) Even at the beginning, it has to be clear that Sean Carroll strongly emphasizes he works within the “world”, “universe”, cosmos” (or, as I called, the “unicorn world”). However, many of my ideas (2002, 2005, 2008, 2010, etc.) can be found in his book within this “world”. Many of my ideas seem, just seem to be “reconstructed” within the unicorn world.[[3]](#footnote-2)

Working within the “world”, he uses “different ways of speaking” (a very close notion to Goodman’s “a different descriptions” of the same unique world, notion that I investigated in my book from 2008). During this paper, I will introduce paragraphs from my books (mainly 2008, 2010) in different fonts, like the following:

Goodman is among the first philosophers that relativise the image/representation/ description/picture of the world. For me the structure and the ideas of his article “The Way the World Is” are important. (Goodman 1978) The main parts of the article are: The way the world is given; the way the world is to be seen; the way the world is to be described; and the way the world is. In the first part he rejects the notion of the “given”: “The question is not *what* is given but *how* it is given. Is it given as a single whole or is it given as many small particles?” (Goodman 1978, p. 25) and in the next two parts he relativises the ways in which we see and describe the world. And thus in the end his conclusion is “There are many different equally true descriptions of the world … None of them tell us *the* way the world is, but each of them tells us *a* way the world is.” (Goodman 1978, p. 30) (in Vacariu 2008, p. 301)

Amazing, in some paragraphs, Carroll writes that these levels really exist! However, as I indicated many times in my works, the existence of these “levels” would lead to some very strong ontological contradictions! Only replacing the “unicorn world” (the “world”) with the EDWs, we can avoid these (and other) ontological contradictions.

Carroll wants to introduce a new framework, the “poetic naturalism”: “naturalism” because there is only one world, the “natural world”, and “poetic” because it “reminds us that there is more than one way of talking about the world.”[[4]](#footnote-3) (Carroll 2016, p. 9) Let me investigates, under the EDWs perspective, his main ideas that appear in the Introduction. Carroll continues with the above statement with this one:

We find it natural to use a vocabulary of ‘causes’ and ‚reasons why’ things happen, but those ideas aren’t part of how nature works at its deepest levels. They are emergent phenomena, part of how we describe our everyday world. The difference between the everyday and deeper descriptions arises from the arrow of time, the distinction between past and future that can ultimately be traced to the special state in which our universe began near the Big Bang. (Carroll 2016, p. 9)[[5]](#footnote-4)

However, within the EDWs perspective, any kind of “emergence” is rejected! (See Vacariu 2008, etc.) Also, “levels” (either ontological, organizational or epistemological) is a wrong notion. “Time” and “space” do not even exist. (See Vacariu and Vacariu 2016b)

‘Complexity,’ we begin to see how those connections come about. The emergence of complex structures isn’t a strange phenomenon in tension with the general tendency of the universe toward greater disorder; it is a natural consequence of that tendency. In the right circumstances, matter self-organizes into intricate configurations, capable of capturing and using information from their environments. The culmination of this process is life itself.” (p. 9)[[6]](#footnote-5)

I wrote about coincidence in my work 2010 regarding Stuart Kauffman’s ideas. Obviously, just a coincidence… However, “complexity” is a wrong notion that fits perfectly the unicorn world. (Against Kauffman’s “complexity” in biology, see Vacariu and Vacariu 2010)

We’ll discuss quantum field theory, the basic language in which modern physics is written. We will appreciate the triumph of the Core Theory, the enormously successful model of the particles and forces that make up you, me, the sun, the moon, the stars, and everything you have ever seen, touched, or tasted in all your life. There is much we don’t know about how the world works, but we have extremely good reason to think that the Core Theory is the correct description of nature in its domain of applicability. (p. 10)

Obviously, Carroll believes that the “Core Theory” of quantum mechanics is the “correct description of nature in its domain of applicability! My question is: “Does the Core Theory describe certain phenomena that really exist or does Carroll talk only about a “description”? A correct “description” of what? Of a noumena? As we showed in our previous works, quantum theory (an alternative) is quite wrong since all these approaches have been constructed within the unicorn world. (See Vacariu 2008, etc.)

The most difficult problem is a philosophical one: how is it even possible that inner experience, the uniquely experiential *aboutness* of our lives inside our heads, can be reduced to mere matter in motion? Poetic naturalism suggests that we should think of “inner experiences” as part of a way of talking about what is happening in our

brains. But ways of talking can be very real, even when it comes to our ability to make free choices as rational beings. (p. 10)[[7]](#footnote-6)

In this paragraph, we can clearly see that Carroll (a popular physicist) become a philosopher! The “inner experience” is not “what is happening in our brains”. This alternative was introduced, firstly, by Searle, but as we showed in our previous works, this approach (the brain produces “consciousness” is quite wrong since it is a mixture of EDWs.)

Part I of Carroll’s book is “Cosmos”. However, “cosmos”, i.e., “universe’, “world”, “reality” does not exist, so his framework is still the old one, which we have showed in my works that it is completely wrong. Even the title of the first chapter (“The fundamental nature of reality”) is quite wrong: there is no “fundamental” “level” of reality since the “universe” does not exist. In this chapter, Carroll writes about the philosophical notions of “ontology” and “epistemology” (and other religious notions, for instance “God”).

The broader ontology typically associated with atheism is *naturalism*—there is only one world, the natural world, exhibiting patterns we call the “laws of nature,” and which is discoverable by the methods of science and empirical investigation. There is no separate realm of the supernatural, spiritual, or divine; nor is there any cosmic teleology or transcendent purpose inherent in the nature of the universe or in human life. “Life” and “consciousness” do not denote essences distinct from matter; they are ways of talking about phenomena that emerge from the interplay of extraordinarily complex systems. Purpose and meaning in life arise through fundamentally human acts of creation, rather than being derived from anything outside ourselves. Naturalism is a philosophy of unity and patterns, describing all of reality as a seamless web. (p. 14)

Indeed, as Gabriel Vacariu showed in his paper (on his webpage), God cannot even exist. However, “life” (“mind”, “consciousness”) is an EDW than the “universe” (that is the macro-EW, the micro-EW, the wave-EW, and so on). We can talk about such “web” only within the unicorn world! The next paragraph is very similar to the main idea of EDWs perspective:

The last five hundred or so years of human intellectual progress have completely upended how we think about the world at a fundamental level. Our everyday experience suggests that there are large numbers of truly different *kinds of stuff* out there. People, spiders, rocks, oceans, tables, fire, air, stars—these all seem dramatically different from one another, deserving of independent entries in our list of basic ingredients of reality. Our “folk ontology” is pluralistic, full of myriad distinct categories. And that’s not even counting notions that seem more abstract but are arguably equally “real,” from numbers to our goals and dreams to our principles of right and wrong. (p. 14)

These “different kinds of stuff” (which seem more abstract but are arguable equally ‘real’”!) sends directly to the EDWs![[8]](#footnote-7) A very similar example like this one “People, spiders, rocks, oceans, tables, fire, air, stars” appears in Vacariu 2008 or 2016![[9]](#footnote-8)

Making an analogy with the mind-brain relationship, Place introduces two examples: “This table is an old packing case” and “Lighting is an electric discharge”. Being directly interested in such analogies, I introduce more details relating to Smarts comments on these analogies. For the objection that “sensation” does not mean the same as “brain process”, Place indicates that “this table” (or lighting, in the second case) does not mean the same as “this old packing case” (or “motion of electric charges”, in the second case). In different ways, we can distinguish that something is a table (lighting) or an old packing case (motion of electric charges). However, these “different ways” do not “prevent the table being identical to the old packing case”. (Smart 2004, p. 2) “Sensation” and “brain processes” differ in meaning but they have the same reference. (Smart 2004, p. 2) (Vacariu 2008, p. 162)

And

For example, we can try to find only the approximate correspondences between the entities and laws of the quantum and macroscopic worlds. (Vacariu 2008, p. 151, footnote 37)

The macroscopic objects (the planets, the stones, or the elephants) are in the macro-EW and the microscopic objects (the electrons, the protons, etc.) are in the micro-EW.1 Nevertheless, living entity corresponds to a subjectivity that is, somehow, somehow, equivalent to an “I”. The elephant has its viewpoint but also the subjectivity, i.e., an “I”(equivalent to the human “I”) that corresponds to its organs and their functions. (Vacariu and Vacariu 2010, p. 172)

However, our “folk ontology” is not “pluralistic” (we do not talk about “distinct categories”) but EDWs: in this sense, the “pluralistic view” is quite wrong, since an EW does not exist for any EDWs! Moreover, the “fundamental level” does not even exist since it would appear immediately the question “Fundamental for what?”! Therefore, Carroll’s main idea is quite wrong:

At a fundamental level, there aren’t separate “living things” and “nonliving things,” “things here on Earth” and “things up in the sky,” “matter” and “spirit.” There is just the basic stuff of reality, appearing to us in many different forms. (Carool 2016, p. 15)

Again, the idea of “**appearing to us in many different forms**” is incredible similar to the main idea of EDWs perspective! These are exactly the EDWs!

The subject can use different tools of observation for external entities. For instance, from one side, using her eyes, a subject can observe a table. On the other side, with the help ofan electron microscope, she can observe the micro-particles that compose” or are “identical” with the table at another ontological “level”. The question is, what does “compose” or“identical” or “levels” mean? What really exists, the table or the microparticles? Do both a planet and the process of gravity produced by it really exist? The notions of “composition” or “identical” or “levels” do not preserve the continuity of the partition. In order to avoid the realism-antirealism debate, the notion of the “world” and its principal characteristic, unicity, need to be changed. The microparticles and macroparticles and their corresponding forces (that differ from each other) really exist, but not in the same unique world. They belong to different worlds and the problem is that there is only one spatio-temporal framework (with different metrics). Therefore it can be said that the micro- and macro-particles belong to epistemologically different worlds. (Vacariu 2008, pp. 104-105)

It is exactly the same idea that we can find, many times, in Carroll’s book but within the unicorn world! However, there is no “fundamental level”, there is no “basic stuff of reality” which appear “to us in many different forms” (again Goodman, here). It seems as if Carroll’s borrows Kant’s philosophy (and Goodman) in dealing with “reality”, but as Gabriel Vacariu showed, even Kant’s view is wrong. Few pages later, Carroll believes that

As knowledge generally, and science in particular, have progressed over the centuries, our corresponding ontologies have evolved from quite rich to relatively sparse. To the ancients, it was reasonable to believe that there were all kinds of fundamentally different things in the world; in modern thought, we try to do more with less. (p. 18)

I mention again that “corresponding ontologies” is one of the most important and used notions of the EDWs perspective.

Moreover, an observer cannot pay attention simultaneously to an entity and its organizationally different parts. Avoiding the unicorn-world, a researcher, as an observer, can try to see only the *correspondences* between the entities that belong to EDWs described by different concepts.11 For instance, we can find only the rough correspondences between mental states/processes and neural patterns of activation that belong to EDWs. In the next section, from an epistemological viewpoint, we have to emphasize the role of the conditions of observation in *defining* all epistemologically different entities. (Vacariu 2008, p. 113)

Does not the reader have the feeling that this paragraph is from Carroll’s book (2016)? No, it is not, it is from my book 2008! However, Carroll’s “corresponding ontologies” requires the EDWs perspective and not the “universe”/”Cosmos”. Within the unicorn world, these “corresponding ontologies” produce strong ontological contradictions! He continues writing that

We would now say that Theseus’s ship is made of atoms, all of which are made of protons, neutrons, and electrons—exactly the same kinds of particles that make up every other ship, or for that matter make up you and me. There isn’t some primordial “shipness” of which Theseus’s is one particular example; there are simply arrangements of atoms, gradually changing over time. That doesn’t mean we can’t talk about ships just because we understand that they are collections of atoms. It would be horrendously inconvenient if, anytime someone asked us a question about something happening in the world, we limited our allowable responses to a listing of a huge set of atoms and how they were arranged. If you listed about one atom per second, it would take more than a trillion times the current age of the universe to describe a ship like Theseus’s. Not really practical. It just means that the notion of a ship is a derived category in our ontology, not a fundamental one. It is a useful *way of talking* about certain subsets of the basic stuff of the universe. We invent the concept of a ship because it is useful to us, not because it’s already there at the deepest level of reality. Is it the same ship after we’ve gradually replaced every plank? I don’t know. It’s up to us to decide. The very notion of “ship” is something we created for our own convenience.

That’s okay. The deepest level of reality is very important; but all the different ways we have of talking about that level are important too. (p. 18)

Obviously, everybody has used this “Theseus’s ship”: indeed, we cannot “talk about ships just because we understand that they are collections of atoms”. This idea is quite close to the EDWs perspective. However, working within the unicorn world, Carroll is forced to become a kind of pragmatist, a “useful way of talking”[[10]](#footnote-9). Within the EDWs perspective, the notion of “ship” is not a “derived” category”, it is a fundamental one within the macro-EW (in which the atoms do not even exist!). “That’s” NOT “okay” since it produces strong ontological contradictions, and moreover, the “deepest level of reality” and other “levels” do not exist, but EDWs exist! Carroll continues writing that

our fundamental ontology, the best way we have of talking about the world at the deepest level, is extremely sparse. But many concepts that are part of nonfundamental ways we have of talking about the world—useful ideas describing higher-level, macroscopic reality—deserve to be called “real.” The key word there is “useful.” (pp. 19-20)

What does it mean the “deepest level” in the first sentence? Is just a way of “talking”? Than all “levels” are “ways of talking” so I cannot talk with a person, for instance Sean Carroll since “he” is just a “level”, i.e., a “way of talking”, no more or less! However, “our fundamental ontology” does not really exist, and “many concepts” are “fundamental” but not in “ways we have talking about the world”, but, as Carroll emphasizes, these many concepts (for instance ideas describing the “macroscopic reality”) are “real”. Incredible close to EDWs perspective! However, the “key word” is not “useful” but EDWs! Carroll has to replace his unicorn world with EDWs perspective to reach the best way of thinking… It seems that Carroll was still the prison of the unicorn world in writing his book!

Essentially, naturalism is the idea that the world revealed to us by scientific investigation is the one true world. The poetic aspect comes to the fore when we start talking about that world. It can also be summarized in three points:

1. There are many ways of talking about the world.

2. All good ways of talking must be consistent with one another and with the world.

3. Our purposes in the moment determine the best way of talking.

A poetic naturalist will agree that both Captain Kirk and the Ship of Theseus are simply ways of talking about certain collections of atoms stretching through space and time. The difference is that an eliminativist will say “and therefore they are just illusions,” while the poetic naturalist says “but they are no less real for all of that.”(p. 20)

Apparently, it seems that Carroll returns to old “way of talking” that we can find in the analytic philosophy (Quine, Goodman, etc.) in which the “language” (or different linguistic frameworks” for Carnap, see Vacariu 2008) became the main source of defining the reality. (Against the analytic philosophy, see Vacariu 2008) However, the last words of this paragraph send us again to the EDWs![[11]](#footnote-10) In the next paragraph, Carroll informs us that there “is such an underlying reality”, and certain “emergent” or “‘effective’ descriptions” (pp. 20-21), i.e., about the “higher-level vocabulary”. “Higher-level vocabulary” reminds us, immediately about the “higher level” in philosophy of mind (I investigated many essential notions of philosophy of mind in Vacariu 2008, Vacariu and Vacariu 2010, etc.) Carroll’s “poetic naturalism” is indeed quite close to the analytic philosophy, which paradoxically, it was completely against any “poetic” way of describing the “world”![[12]](#footnote-11)

Carroll writes about Lewis’s “possible worlds”[[13]](#footnote-12), but these “worlds” are completely different than the EDWs! Carroll insists in writing that “there is one world, there are “many ways of talking” about it. We refer to these ways as “models” or “theories” or “vocabularies” or ‘stories’; it doesn’t matter.” (p. 70) So, in the end, Carroll remains within the unicorn world; if, Carroll were an electron, the wave-vocabulary or the macro-vocabulary would not exist! In this way we have to understand that he strongly emphasizes the notion of “emergence”:

One pivotal word enables that reconciliation between all the different stories: *emergence*. Like many magical words, it’s extremely powerful but also tricky and liable to be misused in the wrong hands. A property of a system is “emergent” if it is not part of a detailed “fundamental” description of the system, but it becomes useful or even inevitable when we look at the system more broadly. A naturalist believes that human behavior emerges from the complex interplay of the atoms and forces that make up individual human beings. Emergence is ubiquitous. (p. 70)

As we emphasizes above, the notion of “emergence”, one of the most important notion for Carroll in explaining the “Cosmos”, is quite wrong. We can admit the existence of “emergence” only within the unicorn world. In my book 2008, I dedicated a sub-chapter to the notion of emergence and I analyzed the main kinds of “emergence”. In my EDWs framework, any kind of emergence is a strong ontological contradiction! Carroll introduces a comparison of “two ways of thinking about air”: “discrete molecules” or “smooth fluid”:

Describing the air in terms of its macroscopic fluid properties such as temperature and density is also a perfectly legitimate way of talking. Just as there are equations that can tell us how the individual molecules bump into one another and move over time, there are separate equations that tell us how the fluid parameters evolve over time. (p. 72)

What does it mean “a perfectly legitimate way of talking”? We are just “talking”, don’t we? We made such analogy using many examples, but the most common is that of a “table”. However, at page 82, Carroll writes:

What is real, and what is not, doesn’t seem like an intractable problem at first glance. The table in front of you is real; unicorns are not. But what if that table is made of atoms? Would it be fair to say that the atoms are real, but not the table?

That would be a certain construal of the word “real,” limiting its applicability to only the most fundamental level of existence. It’s not the most convenient definition we can imagine. One problem is that we don’t, as yet, actually have a full theory of reality at its deepest level. If that were our standard for true existence, the only responsible attitude would be to say that nothing that human beings have ever contemplated is actually real. It’s a philosophy with a certain Zen purity, but it’s not very helpful if we would like to use the concept of “real” to distinguish certain phenomena from others. Wittgenstein would say that it doesn’t make sense to talk that way.

A poetic naturalist has another way out: something is “real” if it plays an essential role in some particular story of reality that, as far as we can tell, provides an accurate description of the world within its domain of applicability. Atoms are real; tables are real; consciousness is undoubtedly real. (A similar view was put forward by Stephen Hawking and Leonard Mlodinow, under the label “model-dependent realism.”) (p. 82)

“Table” and “atoms”, the “unicorn”, Hawking and Mlodinow’s work, and many other concepts and ideas are investigated in my previous works. Carroll rejects the acceptance only of the “most convenient way of talking” that we “can imagine” (since we do not have a “full theory of reality at its deepest level”), therefore, “it’s not very helpful if we would like to use the concept of ‘real’ to distinguish certain phenomena from other”! We find again an idea that sends us directly to the EDWs perspective! Let me introduce another paragraph:

So the fluid description and the molecular description are two different ways of talking about the air, both of which—at least in certain circumstances—tell very precise and useful stories about how air behaves. This example illustrates a number of features that commonly appear in discussions of emergence:

* The different stories or theories use utterly different vocabularies; they are different ontologies, despite describing the same underlying reality. In one we talk about the density, pressure, and viscosity of the fluid; in the other we talk about the position and velocity of all the individual molecules. Each story comes with an elaborate set of ingredients—objects, properties, processes, relations—and those ingredients can be wildly different from one story to another, even if they are all “true.”
* Each theory has a particular *domain of applicability*. The fluid description wouldn’t be legitimate if the number of molecules in a region were so small that the effects of particular molecules were important individually, rather than only in aggregate. The molecular description is effective under wider circumstances, but still not always; we could imagine packing enough molecules into a small enough region of space that they collapsed to make a black hole, and the molecular vocabulary would no longer be appropriate.
* Within their respective domains of applicability, each theory is *autonomous*—complete and self-contained, neither relying on the other. If we’re speaking the fluid language, we describe the air using density and pressure and so on. Specifying those quantities is enough to answer whatever questions we have about the air, according to that theory. In particular, we don’t need to ever refer to any ideas about molecules and their properties. Historically, we talked about air pressure and velocity long before we knew it was made of molecules. Likewise, when we are talking about molecules, we don’t ever have to use words like “pressure” or “viscosity”—those concepts simply don’t apply.)

The important takeaway here is that stories can invoke utterly different ideas, and yet accurately describe the same underlying stuff. This will be crucially important down the line. Organisms can be alive even if their constituent atoms are not. Animals can be conscious even if their cells are not. People can make choices even if the very concept of “choice” doesn’t apply to the pieces of which they are made. (Carroll 2016, pp. 71-72)[[14]](#footnote-13)

Amazing, exactly these ideas have been published in all our previous articles and books! My “ED ontologies” means exactly Carroll’s “different ontologies” that appears in the first paragraph! All such “stories” are “true”! *Exactly as Goodman and Fodor working within the “universe”, maybe Carroll is not aware about the ontological contradictions of these statements!* However, Carroll’s “domain of applicability” (which refer to entities that “really exist”, don’t they?) are, in fact, the EDWs. And Carroll “autonomy”[[15]](#footnote-14) mirrors exactly the main idea of EDWs perspective: One EW does not exist for any EDW. However, within the EDWs perspective, there is quite wrong to believe that “utterly different ideas” “accurately describe the same underlying stuff”![[16]](#footnote-15)

Caroll writes that “but what matters is not the existence of a hierarchy but the existence of different ways of talking that describe the same underlying world, and are compatible with each other when their domains of applicability overlap”. (p. 78) These “different ways of thinking” are constructed within the unicorn world and, therefore, produce strong ontological contradictions!

I introduce another paragraph from Carrolls’ book that seems to be written under the EDWs perspective:

I can imagine focusing on one particular atom that currently resides as part of the skin on the tip of my finger. Ordinarily, using the rules of atomic physics, I would think that I could predict the behavior of that atom using the laws of nature and some specification of the conditions in its surroundings—the other atoms, the electric and magnetic fields, the force due to gravity, and so on. A strong emergentist will say: No, you can’t do that. That atom is part of you, a person, and you can’t predict the behavior of that atom without understanding something about the bigger person-system. Knowing about the atom and its surroundings is not enough.

That is certainly a way the world could work. If it’s how the world actually does work, then our purported microscopic theory of the atom is simply *wrong*. The nice thing about theories in physics is that they are very clear about what information is needed to predict the behavior of an object, and also clear about what the predicted behavior actually is. There’s no ambiguity in what that atom is supposed to do, according to our best theory of physics. If there are situations in which the atom behaves otherwise, such as when it’s part of the tip of my finger, then our theory is wrong and we have to do better. (p. 81)

We wrote exactly these ideas in our works from 2002, 2003, 2005, 2008, 2010, etc. However, Carroll did not explain to his colleagues what it means “strong emergence”! What does it mean “person-system”? Also, Carroll did not explain this notion at all (even if it appears just one time in his book, from what I saw reading it)! The same with the next expression: “That is certainly a way the world could work”: what does it mean it? Does not mean exactly my EDWs??? I have the impression that, in order to understand Carroll’s book, the reader has to reader, firstly, my books 2008 and 2010! Another paragraph:

Illusions are just mistakes, concepts that play no useful role in descriptions at any level of coarse-graining. When you are crawling across the desert sands, out of water and not completely in your right mind, and think you see a lush oasis with palm trees and a pond in the distance—that’s an illusion (probably), in the sense that it’s actually not there. But if you get lucky and it really *is* there, and you scoop up liquid water into your hand, that liquid is real, even if we have a more comprehensive way of talking that describes it in terms of molecules made of oxygen and hydrogen.

Consciousness is not an illusion, even if we think it is “just” an emergent way of talking about our atoms each individually obeying the laws of physics. If hurricanes are real—and it makes sense to think that they are—even though they are just atoms in motion, there is no reason why we should treat consciousness any differently. To say that consciousness is real isn’t to say that it’s something over and above the physical world; it’s emergent, and it’s also real, just like almost every other thing we’ve encountered in our lives. (pp. 82-83)

Exactly the same ideas can be found in my previous works! Wait a moment: if Carroll talks about “different ways of talking”, then who can he writes that “consciousness is not an illusion”, but continues writing “even if we think it is ‘just’ an emergent way of talking about our atoms each individually obeying the laws of physics”? And he tells us that “it makes sense to thing that” “hurricanes are real”! And the last sentence seems, indubitable, as if being written under the EDWs perspective: consciousness is “also real, just like almost every other thing we’ve encountered in our lives”! Does the reader what more details to notice the UNBELIEVABLE similarities between my ideas and Carroll’s ideas, but also some strong ontological contradictions because Carroll selected, officially, to work within the “universe” framework? Anyway, there are only coincidences and coincidences, but strong contradictions between his own ideas written in this book: for instance the ideas in the next paragraph strongly contradict the ideas in the above paragraph:

Poetic naturalism sits in between: there is only one, unified, physical world, but many useful ways of talking about it, each of which captures an element of reality. Poetic naturalism is at least consistent with its own standards: it tries to provide the most useful way of talking about the world we have. (p. 83)

Does Carroll talk about something that really exist or only about “different ways of talking”? I really do not understand… Does Carroll realize that there are strong ontological contradictions in believing in “one world” but “different vocabularies” which just describe it? Than what does really exist in the universe? We don’t know, answered Carroll, but we can “interpret”, don’t we, Mr. Carroll? The next paragraph:

The most seductive mistake we can be drawn into when dealing with multiple stories of reality is to mix up vocabularies appropriate to different ways of talking. Someone might say, “You can’t truly *want* anything, you’re just a collection of atoms, and atoms don’t have wants.” It’s true that atoms don’t have wants; the idea of a “want” is not part of our best theory of atoms. There would be nothing wrong with saying “None of these atoms making up you want anything.”

But it doesn’t follow that *you* can’t have wants. “You” are not part of our best theory of atoms either; you are an emergent phenomenon, meaning that you are an element in a higher-level ontology that describes the world at a macroscopic level. At the level of description where it is appropriate to talk about “you,” it’s also perfectly appropriate to talk about wants and feelings and desires. Those are all real phenomena in our best understanding of human beings. You can think of yourself as an individual human being, *or* you can think of yourself as a collection of atoms. Just not both at the same time, at least when it comes to asking how one kind of thing interacts with another one. (pp. 83-84)

Reading these ideas I had the impression again that Carroll is a philosopher, not a physicist! Moreover, exactly the same is claimed by Carnap in his paper (1050) and appears in my book 2008. In this context, take a look at a part of the content of my book:

6.1 A glance at logical positivism .................................................. 285

6.2. Carnap’s linguistic frameworks ............................................... 289

6.3. Carnap vs. Gödel or syntactic vs. semantic .................................. 292

6.4. Carnap vs. Quine or rational reconstruction vs. naturalized

epistemology ....................................................................... 295

6.5. Quine’s ontological relativity ............................................. 296

6.6. Goodman’s relativity ........................................................ 298

6.7. Putnam and the rejection of the “thing-in-itself” .......................... 299

6.8. Friedman’s relative constitutive a priori principles....................... 301

6.9. Some notions from quantum mechanics ....................................... 305

In these sections, and in many parts of my books, I wrote exactly the same idea but referring to EDWs and not to “different ways of talking”.

We can say that Carnap has relativised ontology precisely because of the elimination of the Kantian constitutive part (mainly the intuitions) but for preserving the unicorn-world. Otherwise, the constitutive part would require the absolute correspondence (or one-to-one relationship) between “reality” and a unique linguistic framework. In the EDWs perspective, the extended Kantian constitutive parts, which correspond to EDWs, discard the reduction of an object’s existence to linguistic entities. Because of the constitutive different interactions, all epistemologically different objects exist in EDWs without any help from our linguistic rules and entities. Missing constitutive elements, the linguistic frameworks are simply “conventions” (Poincare) because they explain the same “world. (Vacariu 2008, p. 291)

Anyway, it is for the first time in my life when I read such a philosophical book written by a popular physicist (in USA). And I have read many books and articles published by many physicists… During entire Carroll’s book, I found incredible many similar ideas that I have published in my previous works! Incredible many ideas! Again, Carroll inserts these ideas within the old framework of the unicorn world and this movement produces strong ontological contradictions! Carroll misses one further step: all these very similar ideas to my ideas need to be placed within the EDWs perspective and not within the “Universe”.

Next, there are several very short chapters regarding important questions that I furnished answers in my works: in Chapter 17, Carroll asks “Who am I?” (one of the main question in the EDWs perspective). However, this question is a philosophical question (and recently for people working in cognitive neuroscience, see Vacariu 2016c). But, as an amazing thinker, Carroll comes with a solution to this Cartesian question and his answer is a pragmatic one:

Poetic naturalism sees things differently. Categories such as “male” and “female” are human inventions—stories we tell because it helps us make sense of our world. The basic stuff of reality is a quantum wave function, or a collection of particles and forces—whatever the fundamental stuff turns out to be. Everything else is an overlay, a vocabulary created by us for particular purposes. (102)

Does Carroll talk about “vocabularies”? What does, then mean that these “categories” help us to “make sense of our world”? And what does it mean that the “basic stuff of reality” is a “quantum wave function”, or a collection of particles and forces”? Is one part, the second part or both parts? If there is both parts (waves and particles), there would be strong ontological contradictions and, moreover, a contradiction to Bohr’s complementarity (I am sure Carroll knows about it).

Chapter 18, Carroll asks about God, starting with the paragraph written by Nietzsche (the same paragraph being mentioned by me in my paper “God cannot even exist”, at my webpage – just coincidence, of course it is not forbidden for anybody to write something about exactly the same notions and many authors that I investigated in my books, we are “talking” only about coincidences, many coincidences). “In any of those worlds, diligent seekers of true ontology would quite rightly take those aspects of reality as evidence for God’s existence. It follows, as the night the day, that the absence of these features is evidence in favor of atheism. (p. 106) I reached the same conclusion, but using strong arguments constructed within the EDWs perspective. Again just coincidence, no more or less.

Chapter 20 is about “Quantum realm”. Let me investigate in more details. At page 114, Carroll writes that:

When you shake an electron, it emits electromagnetic waves—that’s the origin of much of the light you actually see in your daily life, whether it’s from the sun or from an incandescent bulb. Some electrons were heated up, started shaking, and lost energy by radiating light. In our hydrogen atom, that orbiting electron carries a certain amount of energy, depending on how close it is to the proton—the closer it gets, the less energy it has. So an electron that is far away from the proton, but still bound to it, has a relatively large energy. And it’s being “shaken,” simply by the fact that it’s orbiting around. We therefore expect the electron to give off light and in the process lose energy and spiral closer and closer to the proton. (We expect the same thing for planets moving

around the sun, which lose energy by gravitational radiation—but gravity is such a weak force that the net effect is negligible.)

When should this process stop? In a Newtonian world, the answer is simple: when the electron is sitting right on top of the proton. Every electron orbiting around every nucleus of every atom should very rapidly spiral to the center, so that every atom in the universe should collapse to the size of a nucleus in less than a billionth of a second. There should be no molecules, no chemistry, no tables, no people, no planets.

That would be bad. Also, it’s not what happens in the actual world. (pp. 114-115)

Obviously, the reader, who knows my EDWs perspective, will have the feeling, again, that this paragraph (like many others from Carroll book) is from my books, but I guarantee all these paragraphs are from Carroll’s book published in 2016! It mirrors exactly the micro-EW of microparticles (where we cannot find any molecules, tables people or planets that belong to the macro-EW)! I wrote many times exactly this idea in my articles and books from 2002 to 2010 and later! However, Carroll denies that the “world” is exactly as he mentioned in this two paragraphs. Thus, he continues with:

We can get an idea about what does happen by considering cases when the electron in the hydrogen atom actually does lose energy by giving off an electromagnetic wave. When you collect the emitted light, you notice something funny right off the bat: you only ever see certain discrete wavelengths. Newtonian mechanics predicts that we should see all sorts of waves with any wavelength you can imagine. What we observe, instead, is only certain allowed wavelengths emitted at each transition.

That means the electron in the atom can’t just be in any old orbit. There must only be some special orbits it can be in, with fixed amounts of energy. The reason we observe only certain wavelengths in the emitted light is that the electrons are not gently spiraling inward but spontaneously leaping from one allowed orbit to another, emitting a packet of light to make up the difference in energy between them. The electron is doing “quantum jumps.” (p. 115)

At this moment, Carroll asked about the very important notion, “quantum jumps” related to the notion of “measurement” or “observation”. (p. 115) He rejects, obviously, comparing the orbit of an electron around the nucleus with that of a planet around the sun. He introduces the (un)famous “superposition of all possible measurement outcome, knows as the wave function of the system”. (p. 115) “Quantum mechanics tells us the *probability* that, upon observing a quantum system with a specified wave function, we will see any particular outcome. We don’t lack perfect predictability because we have incomplete information about the system; it’s just the best quantum mechanics allows us to do.” (p. 116) He writes also about Schrödinger’s equation, the “collapse” of the wave function and the probabilities of results. (p. 117) Carroll writes that

The simplest possibility is that the quantum wave function isn’t a bookkeeping device at all, nor is it one of many kinds of quantum variables; the wave function simply represents reality directly. Just as Newton or Laplace would have thought of the world as a set of positions and velocities of particles, the modern quantum theorist can think of the world as a wave function, full stop.

The difficulty with this robust brand of straightforward quantum realism is the measurement problem. If everything is just wave function, what makes states “collapse,” and why is the act of observation so important? (pp. 118-119)

First of all, there is here the “world as a wave function” considered by modern quantum theorist. However, Carroll introduces immediately the “measurement problem” and the “collapse”. Does the reader understand where all these ideas lead to? Exactly to the EDWs the wave-EW and the microparticles-EW!

From an EWDs perspective, we can explain the “nonlocality”of the microparticles. The main idea is that, following Einstein’s idea above of the rigidity objects, we have to accept that the entities of each EW are “rigid”, i.e., any entity – except the “I” − exists only at its “surface”. Epistemologically different interactions represent the synthetisations of the manifolds into epistemologically different entities. However, the difference is that, in analyzing the macro-objects, we do not ignore the microforces because these two kinds of particles belong to EDWs. For instance, the planets, the waves and the microparticles are “rigid” objects. Their interactions determined their own existences only at their “surface”! The quantum states are all “rigid” objects. A quantum wave and a quantum particle are rigid entities. The “non-locality” of two electrons *corresponds* in fact to the “rigidity” of a wave. The rigidity means the indivisibility of the wave (that belong to the EW2) and the fact that the wave is not composed of (but corresponds to) various microparticles (that belong to the EW1). The movement of an electron corresponds to the movement of the wave. In the EW1, action upon one electron does not act simultaneously on the other electron, because in any EW there is no signal that passes the speed of light. But acting on an electron, we act on the corresponding waves, even if we do not observe this process.

Only the “rigidity” (indivisibility) of the wave (that belongs to EW2) means that the signal takes place simultaneously at both particles! However, I strongly emphasize that the EDWs are not “parallel worlds” or “many-worlds” or “multiverse” (quantum

mechanics or hyperspace). The idea of the hyperverse is completely different to these notions from theoretical physics. (Vacariu 2008, pp. 318-319)

Amazing, in Chapter 21, Carroll introduces Everett’s alternative and “entanglement”:

A resolution was suggested in the 1950s by a young physicist named Hugh Everett III. He proposed that there is only one piece of quantum ontology—the wave function—and only one way it ever evolves—via the Schrödinger equation. There are no collapses, no fundamental division between system and observer, no special role for observation at all. Everett proclaimed that quantum mechanics fits perfectly comfortably into a deterministic Laplacian view of the world.

But if that’s right, why does it seem to us that wave functions collapse when we observe them? The trick, in modern language, can be traced to a feature of quantum mechanics called *entanglement*. (p. 119)

These questions seem asked under the EDWs perspective! With my EDWs perspective, I managed exactly these problems!

From bats and human beings, we have to move to electrons and planets (see again Vacariu 2008) and finally to cells and neural patterns. In this way, we extend the position of the “observer” from human beings and bats to cells, electrons and planets. From the human

viewpoint, all macroentities belong to the macro-EW, while microparticles to the micro-EW. (Vacariu and Vacariu 2010, p. 200)

The next concept is “entanglement”. The next statements seem again as taken from some of my books (2008 or 2010):

The state of Earth can therefore be entangled with the state of Mars. For big macroscopic things like planets this possibility isn’t realized in a demonstrable way, but for tiny things like elementary particles it happens all the time. Say we have two particles, Alice and Bob, each of which could be spinning either clockwise or counterclockwise. The wave function of the universe could assign a 50 percent probability to Alice spinning clockwise and Bob counterclockwise, and another 50 percent to Alice spinning counterclockwise and Bob clockwise. We have no idea what answer we would get were we to measure the spin of either particle; but we know that once we measure one of them, the other is definitely spinning the other way. They are entangled with each other.

Everett says that we should take the formalism of quantum mechanics at face value. Not only is the system you’re going to observe described by a wave function, but *you* are described by a wave function yourself. That means that you can be in a superposition. When you make a measurement of a particle to see whether it’s spinning clockwise or counterclockwise, Everett suggests, the wave function doesn’t collapse into one possibility or the other. It evolves smoothly into an entangled superposition, part of which has “the particle is spinning clockwise” and “you saw the particle spinning clockwise,” while the other of which has “the particle is spinning counterclockwise” and “you saw the particle spinning counterclockwise.” Both parts of the superposition actually exist, and they continue to exist and evolve as the Schrödinger equation demands.

At last, then, we have a candidate for a final answer to the critical ontological question “What is the world, really?” It is a quantum wave function. At least until a better theory comes along.

Everett’s bare-bones approach to quantum mechanics—just wave functions and smooth evolution, no new variables or unpredictable collapses or denials of objective reality—has been dubbed the *Many-Worlds Interpretation*. The two parts of the wave function of the universe, one in which you saw the particle spinning clockwise and the other in which you saw it spinning counterclockwise, subsequently evolve completely independently of each other. There is no future communication or interference between them. That’s because you and the particle become entangled with the rest of the universe, in a process known as *decoherence*. The different parts of the wave function are different “branches,” so it’s convenient to say that they describe different worlds. (There’s still one “world” in the sense of “the natural world,” described by the wave function of the universe, but there are many different branches of that wave function, and they evolve independently, so we call them “worlds.” Our language hasn’t yet caught up to our physics.)

There’s a lot to love about the Everett/Many-Worlds approach to quantum mechanics. It is lean and mean, ontologically speaking; there’s just the quantum state and its single evolution equation. It’s perfectly deterministic, even though individual observers can’t tell which world they are in before they actually look at it, so there is necessarily some probabilistic component when it comes to people making predictions. And there’s no difficulty in explaining things like the measurement process, or any need to invoke conscious observers to carry out such measurements. Everything is just a wave function, and all wave functions evolve in the same way.

There are, of course, an awful lot of universes. (Carroll 2016, pp. 119-120)

It has to be clear that Everett’s alternative is something completely different than my EDWs perspective. (For more details, see Vacariu 2008) However, Carroll indicates two ways of interpreting Everett’s alternative. Investigating the first interpretation we have this paragraph:

Which isn’t to say that there aren’t very good reasons to be concerned about Everettian quantum mechanics. According to Everett, the branching of the wave function into different parallel worlds isn’t an objective feature; it’s simply a convenient way of talking about the underlying reality. But what exactly determines the best way of drawing the line between universes? Why do we see the emergence of a reality that is well approximated by the rules of classical mechanics? These are perfectly respectable questions—though ones that seem quite answerable to partisans of Many-Worlds. (p. 120)

Carroll wants to reject Everett’s interpretation to quantum mechanics! I have exactly this rejection in my book from 2008! For me, it is more important what Carroll write regarding the second interpretation:

The other important takeaway is a feature common to all interpretations of quantum mechanics: what we see when we look at the world is quite different from how we describe the world when we’re not looking at it. As human knowledge has progressed over the centuries, we have occasionally been forced to dramatically rearrange our planets of belief to accommodate a new picture of the physical universe, and quantum mechanics certainly qualifies as that. In a sense it is the ultimate unification: not only does the deepest layer of reality not consist of things like “oceans” and “mountains”; it doesn’t even consist of things like “electrons” and “photons.” It’s just the quantum wave function. Everything else is a convenient way of talking. (p 121)

Again, reading this paragraph, like many others in this book, I had the impression of reading some of my books (mainly that from 2008). However, instead of considering the ultimate unification of being the “wave function” (or “fields” as he writes on page 122[[17]](#footnote-16)) and about “convenient way of talking” (again we see here Goodman, who is not mention by Carroll), we have to understand that the wave function *corresponds* to those microparticles. So, essentially, it is the “”correspondence that is one of the most important notions in the EDWs perspective. Carroll believes in the wave but introduces “observation”/”measurement” for getting “convenient way of talking”! Then when using the electronic microscope, what do we observe exist or not? Carroll answer in his entire book is a strong contradiction! In Carroll’s paradigm, at the “deepest layer of reality”, he believes in the wave, than his body and “soul” are just “convenient ways of talking”! (Regarding his ideas about the “soul”, see below.) So, regarding many Carroll’s ideas (that are in his book 2016) are either unbelievable similar to my ideas or produce very strong ontological contradiction within his framework, the “Universe”. In the next Chapter 22, the first paragraph is this one:

Quantum mechanics is, as far as we currently know, the way the universe works. But quantum mechanics isn’t a specific theory of the world; it’s a framework within which particular theories can be constructed. Just as classical mechanics includes the theory of planets moving around the sun, or the theory of electricity and magnetism, or even Einstein’s theory of general relativity, there are an enormous number of particular physical models that qualify as “quantum mechanical.” If we want to know how the world really works, we need to ask, “The quantum mechanical theory *of what*?”(p. 122)

Again, even if Carroll preserves the framework of the “world” (not to be accused of plagiarizing my ideas), I had the feeling of reading another paragraph from my book 2008! What does it mean “quantum mechanics is … the way the universe works”? Again we have that expression “universe works” but the meaning of this expression is completely different than the meaning of “way of talking”! Is it about something that really exist (first expression) or only about “way of talking”? The next sentence of this paragraph contradicts the first sentence: “quantum mechanics” is not a “theory of the world” but just a framework.

Why then he writes (in other part of his book) that he prefers “Everett’s many-worlds” in interpreting quantum realm? It is, again, a “contradiction in terms” and it happens many time such contradictions in Carroll’s book. Moreover, as I emphasize analyzing Carroll’s book, there are many ontological contradictions in his statements just because he works within the unicorn world, the “world”/”universe.[[18]](#footnote-17) What about the relationship between “particles” and “field in Carroll book?

It’s easy enough to accept that the forces of nature arise from fields filling space. It was our old friend Pierre-Simon Laplace who first showed that Newton’s theory of gravity could be thought of as describing a “gravitational potential field” that was pushed around by, and in turn pulled back on, objects moving through the universe. Electromagnetism, the theory put together in the nineteenth century by Scottish physicist James Clerk Maxwell and his contemporaries, provides a unified description of electric and magnetic fields.

But what about the particles? Particles and fields seem like they’re diametrically opposed to each other—particles live at one spot, while fields live everywhere. Surely we’re not going to be told that a particle like an electron comes out of some “electron field” filling space? That is exactly what you are going to be told. And the connection is provided by quantum mechanics.

The fundamental feature of quantum mechanics is that what we see when we look at something is different from how we describe the thing when we’re not looking at it. When we measure the energy of an electron orbiting a nucleus, we get a definite answer, and that answer is one of a specific number of allowed outcomes; but when we’re not looking at it, the state of the electron is generally a superposition of all those possible outcomes.

Fields are exactly the same way. According to quantum field theory, there are certain basic fields that make up the world, and the wave function of the universe is a superposition of all the possible values those fields can take on. If we observe quantum fields—very carefully, with sufficiently precise instruments—what we see are individual particles. For electromagnetism, we call those particles “photons”; for the gravitational field, they’re “gravitons.” We’ve never observed an individual graviton, because gravity interacts so very weakly with other fields, but the basic structure of quantum field theory assures us that they exist. If a field takes on a constant value through space and time, we don’t see anything at all; but when the field starts vibrating, we can observe those vibrations in the form of particles (pp. 122-123)

What does it mean “when we look at something” that is “different from how we describe the thing when we’re not looking at”? Does this “something” really exist or is just a “way of talking” about the “universe”? However, in the last paragraph, a part of a sentence contradicts the idea of “way of talking” since there are, “according to quantum field theory” certain “basic fields that make up the world”! In the next sentence seems to be exactly from my books: “If we observe quantum fields—very carefully, with sufficiently precise instruments—what we see are individual particles.” The reader has to compare Carroll’s above paragraph with the following one from my book 2008:

The EDWs perspective offers a simple explanation of the infamous property of non-locality. For instance, let us take the example of measuring the spin or polarization of two particles that both belong to EW1. These particles that initially represent one system are later *separated*. According to the Copenhagen interpretation, the spin of particle 1 has no value until it is measured. Before measurement, there is a superposition of various states of that particle produced by the “unitary” evolution of the wave function that corresponds to that particle. The act of observing produces the collapse of the wave function and the observer sees the particle in one definite classical state.

The measurement of the spin of the first particle (let us say, “up” state) that produced a collapse of the wave function has an instantaneous effect on the spin of the second particle (“down” state). Under the Copenhagen interpretation, this instantaneous

effect represents action-at-a-distance or faster than light transmission that, according to Einstein’s special theory of relativity, is not possible. Einstein and his colleagues claimed that quantum mechanics is incomplete because it does not take into account certain “hidden variables” of reality. On the other side, Bell’s inequality assumes Einstein’s condition of locality as true. The experiments that involve the measurement of correlated photons (their polarization is detected) show that Bell’s inequality is violated. The consequence of these experiments is that the system of those two particles has a nonlocality property. According to the EDWs perspective, those two particles are in EW1 (the micro- or quantum-EW). I strongly emphasize here that the space of this EW is the whole of cosmic space! In this space, micro-particles interact/“observe” other micro-particles and nothing else. In EW1, the property of the non-locality of those two particles does not exist. The “non-locality” (that is in fact the continuity) is a property of a wave that belongs to EW2. Again, I strongly underline that the space of this EW2 is also the whole of cosmic space! The difference between two EDWs is given not by their spatiotemporal frameworks (that is the same with different metrics for all EDWs except the mind-EW) but by their entities and the interactions among them. (Vacariu 2008, pp. 313-315)

Even the notion of “superposition” seems to have exactly the same meaning constructed, by Carroll in the universe (the unicorn world, as I called), while I constructed it within the EDWs.

We will see in this section that the relationship between Bohr’s correspondence principle (the relation between micro- and macro-particles) and the idea of complementarity (the relation between the wave and the particle) is indeed the key element in quantum mechanics. However, I will try to show that the superposition of wave and particle, the relationship between micro- and macro-objects, and Hilbert space which represents the superposition of several positions of a particle before measurement are the main interrelated problems imposed by the unicorn-world on quantum mechanics. (Vacariu 2008, p. 306)

Therefore, because the notion of superposition has almost the same meaning, either it produces strong ontological contradiction, or we are simple “talking” using “words, words, words” and not explaining the “way the universe work”! Such statements (and many others, of course) (regarding, for instance, the wave or “field theory” and the particles) produce strong ontological contradiction:

The ordinary stuff out of which you and I are made, as well as the Earth and everything you see around you, only really involves three matter particles and three forces. Electrons in atoms are bound to the nucleus by electromagnetism, and the nucleus itself is made of protons and neutrons held together by the nuclear force, and of course everything feels the force of gravity. Protons and neutrons, in turn, are made out of two kinds of smaller particles: up quarks and down quarks. They are held together by the strong nuclear force, carried by particles called gluons. The “nuclear force” between protons and neutrons is a kind of spillover of the strong nuclear force. There’s also a weak nuclear force, carried by W and Z bosons, which lets other particles interact with a final kind of fermion, the neutrino. And the four fermions (electron, neutrino, up and down quarks) are just one generation out of a total of three. Finally, in the background lurks the Higgs field, responsible for giving masses to all the particles that have them. (p. 123)

I ask again Sean Carroll: what does it mean this “ordinary stuff”? Within this framework, the “world”, it cannot be something real, otherwise there would be strong ontological contradiction with his idea that the wave/field is the “deepest reality”: what really exist in your “world”: the ordinary stuff” (the table, the planets, your body), the microparticles (protons and neutrons) or the wave/field? Carroll is aware about this problem:

In the previous chapter we concluded that “what the world is” is a quantum wave function. A wave function is a superposition of configurations of stuff. The next question is “What is the stuff that the wave function is a function *of*?” The answer, as far as the regime of our everyday life is concerned, is “the fermion and boson fields of the Core Theory.”

We don’t need nearly all of the Core Theory to describe almost all of our everyday lives. (p. 125)

Obviously, we “don’t need nearly all of the Core Theory to describe almost all of our everyday lives”! However, within his framework, “almost all of our everyday lives” are just illusions, since the “deepest level of reality is the wave”, aren’t they Mr. Carroll? The answer to this question is furnished by Carroll just a paragraph later:

We can be confident that the Core Theory, accounting for the substances and processes we experience in our everyday life, is *correct*. A thousand years from now we will have learned a lot more about the fundamental nature of physics, but we will still use the Core Theory to talk about this particular layer of reality. From the perspective of poetic naturalism, there is one story of reality we can tell with confidence, in a well-defined domain of applicability. We can’t be metaphysically certain of this; it’s not something we can prove mathematically, since science never proves things. (. 125)

His “perspective of poetic naturalism” (in reality, a kind of “constructive naturalism” that is almost identical to my EDWs perspective) uses different “layers of reality” (we have in this paragraph, “particular layer of reality”) that really exist, otherwise, again, talking about the body of Sean Carroll (that we can observe with our eyes) is just a description or a “way of talking”! I strongly emphasize that any good philosopher would claim that, within the “universe”, these “layers of reality” produce strong ontological contradictions! It is quite impossible to talk about the existence of all these “layers of reality” at the same place, at the same time! Carroll mentions that The Core Theory (quantum mechanics, the physics of particles and waves) is a very well-known and accepted theory.

Quantum field theory doesn’t knock down buildings lying in its path; it knocks down our speculations about what kinds of things can happen in physical reality. The claim we’re making is pretty audacious:

**Claim:** The laws of physics underlying everyday life are completely known.

An assertion like that invites a great deal of skepticism. It’s bombastic, self-congratulatory, and it doesn’t seem that hard to think of plausible ways in which our understanding could be dramatically incomplete. It sounds an awful lot like all the many times throughout history when some great thinker or another boasted that the quest for perfect knowledge was nearly complete. Every one of which turned out to be hilariously premature.

But we’re not claiming that all the laws of physics are known, only a restricted set that suffices to describe what happens at the level underlying everyday life. (p. 127)

What does it mean “underlying” in the first statement? Do these “levels of reality” really exist in the same “world”, “universe”? Then we have strong ontological contradiction. It seems that Prof. Sean Carroll needs a course of “Ontology” at one department of philosophy! The reason is that we cannot *posit* different “layers of reality” within the same place at the same time. It is meaningless to consider, for instance, that the “table exists” and the “amalgam of microparticles exists” at the same place, at the same time! It is abosolutely necessary the reader to think all these problems (and many others) within the EDWs perspective and to reject completely the notion of the “universe”/”world”! Carroll continues:

The logic behind our audacious claim is simple:

1. Everything we know says that quantum field theory is the correct framework for describing the physics underlying everyday life.

2. The rules of quantum field theory imply that there can’t be any new particles, forces, or interactions that could be relevant to our everyday lives. We’ve found them all.

Could quantum field theory not apply in the appropriate regime? Of course. As good Bayesians, we know better than to set our credences all the way to zero even for the most extreme options. In particular, quantum field theory could fail to completely describe human behavior, since *physics* could fail to describe human behavior.

There could be a miraculous intervention, or some inherently nonphysical phenomenon that affects the behavior of physical matter. No amount of scientific progress will ever rule that out entirely. What we can do is show that physics by itself is fully up to the task of accounting for what we see.

Einstein’s *special relativity* (as opposed to general relativity) is the theory that melds space and time together and posits the speed of light as an absolute limit on the universe. Let’s say you want to invent a theory that simultaneously embraces these three ideas:

1. Quantum mechanics

2. Special relativity

3. Sufficiently separated regions of space behave independently from one another (pp. 127-128)

Again, we have the feeling that these statements (as many other statements in Carroll’s book) have been written under the DWs perspective not within the framework of the “universe” which produces strong ontological contradictions!

What is the relation between general theory of relativity and quantum mechanics from the EDWs perspective? It seems that the EDWs perspective can reveal that quantum mechanics

(describing those three fundamental forces acting on the microscopic scale) and general theory of relativity (describing gravitational force among large-scale objects/structures like planets, galaxies, etc.) are incompatible. Gravity is caused by massive objects that warp the surrounding space. Thus, gravity is a property of space. The search for gravitons, the microparticles that cause the gravity, is meaningless from an EDWs perspective. If we ignore the constitutive principles of both theories (that reflect, for us, the form of the epistemologically different interactions among the epistemologically different entities), we can think that the mass of a planet is the sum of the corresponding micro-particles’ masses, and then we can *think* that the gravity of the planet corresponds to the sum of all gravities produced by all those micro-particles (or by gravitons). Nevertheless, we would use empty notions in Kantian sense.18 More than this, we cannot even think that a wave is the sum of “its” microparticles. As we saw above, in an EW, a wave is indivisible. Each theory has different constitutive principles that “secure its empirical content” (Friedman). (Or Bohr’s principle of complementarity

secures the empirical content of two EDWs.) In this case, the constitutive principles of each theory (or Bohr’s principle of complementarity) *individuate* epistemologically different entities (waves, micro- and macro-objects) that belong to EDWs. Each planet constitutively interacts with other planets; in the other EW, each electron constitutively interacts with other micro-particles. Trying to relate general theory of relativity and

quantum mechanics (that means to put planets and electrons in the same EW) is impossible because the constitutive principles corresponding to each theory are totally different and each theory explains its own EW.19 It is also true that, because of Bohr’s principle of complementarity, we cannot consider that the microparticles and the waves belong to the same EW. (Vacariu 2008, pp. 317-319)

Or this one:

From my perspective, the planets are indeed irreducible primitives because, according to Einstein’s general theory of relativity, gravity is caused by massive objects that warp the surrounding space, gravity being a property of space. As we saw above, ignoring microphysical forces, Einstein adopted a perspective on the relationship between this necessary geometry and the entities as “practically rigid bodies”. (Friedman 2001, p. 114) Within EDWs, we do not “ignore any forces” and each EW has its own irreducible primitives! Planets and macro-objects are the irreducible primitives in the macro-EW and microparticles are irreducible primitives in the micro-EW. The “theory of everything” is the “theory of the unicorn-world”! (About “superposition” and the many-worlds interpretation from Putnam’s paragraph, see below.) (Vacariu 2008, pp. 310-311)

Does the reader need more clarification regarding the UNBELIEVABLE similarities between my ideas (2005-2010) and Carroll’s idea (just this book, 2016)? At page 130, Carroll writes about the relationships between “graviton”, “everyday lives” and quantum realm: at the level of microparticles, gravity is very weak (which “is light and stable enough to be produced, but gravity is such a weak force that any gravitons we might make in a particle accelerator will be swamped by the huge number of other particles produced. And yet, gravity does affect our everyday lives.” (p. 130)). This view contradicts the view that the “search for new forces is greatly abetted by the fact that ordinary objects are made only of three kinds of particles: protons, neutrons, and electrons.” (p. 131) it seems that we have here, again, a clear image of EDWs and not “layers” that would produce strong ontological contradictions! The paragraph at the end of this chapter (Chapter 23) clarifies all these inquiries:

The result is that, if a new force stretches for more than a tenth of a centimeter—which it would have to, if you wanted to use it to bend spoons or reach from Saturn to the time and place of your birth —it would have to be substantially weaker than the force of gravity. That doesn’t sound so weak, but keep in mind that gravity is extraordinarily feeble; every time you jump in the air, the puny electromagnetic forces in your body are overcoming the combined gravitational force of the entire Earth. To say that a force is as weak as gravity is to say that it is about one billionth of a billionth of a billionth of a billionth the strength of electromagnetism. An even weaker force would be completely negligible in everyday circumstances.

Here in our daily environment, the world of people and cars and houses, we have a complete inventory of the particles and forces and interactions that are strong enough to have any noticeable effect on anything. That’s a tremendous intellectual achievement, one of which the human race can be justifiably proud. (p. 132)

Again, I draw the attention that these paragraphs are not from my book published in 2008 and posted on Internet in the same year but from Carroll’s book published in 2016! The reader can see *my paragraphs* just the last above from Vacariu 2008, (pp. 310-311) However, Carroll emphasizes many times that he works within the “universe” and he just “talks” about “how the universe works”!

At page 133, Carroll claims that “But how do we know, even if we can’t directly see new particles or fields, that they can’t exert some subtle but important influence on the particles that we do see? The answer can be traced to another feature of quantum fields, an idea called *effective field theory*” that is an “emergent approximation to a deeper theory”: an “An effective theory describes the macroscopic features that emerge out of a more comprehensive microscopic description.” (p. 133) This is again a pragmatic position that is, however, quite close to my EDWs perspective. Working within the unicorn world, Carroll is forced to use the notion of “emergence” which anyway produces strong ontological contradictions that he tries to avoid them informing us that he talks about “different ways” the “world works”! In in my book 2016, I indicated that any kind of “emergence” is meaningless.

Effective theories are extremely useful in a wide variety of situations. When we talked about describing the air as a gas rather than as a collection of molecules, we were really using an effective theory, since the motions of the individual molecules didn’t concern us. Think about the Earth moving around the sun. The Earth contains approximately 1050 different atoms. It should be nearly impossible to describe how something so enormously complex moves through space—how could we conceivably keep track of all of those atoms? The answer is that we don’t have to: we have to keep track of only the single quantity we are interested in, the location of the Earth’s center of mass. Whenever we talk about the motion of big macroscopic objects, we’re almost always implicitly using an effective theory of their center-of-mass motion.

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Replace this “useful” position with EDWs and you reach my alternative to the relationship between the microparticles and the waves or between the micropartices and the macroparticles. Again and again, the second paragraph sends directly to the EDWs! We can only “talk” about the “macroscopic objects” and the microscopic particles” in order to avoid any ontological contradiction within the “universe”. There are only “different ways of talking” about “different layers” that really exist in the same “universe” (that is, at the same place, in the same time!). However, for physicist Carroll there are, of course, no ontological contradictions! The same happens for the relationships between protons and electrons vs. quarks up and down:

For example, we know that protons and neutrons are made out of up quarks and down quarks, held together by gluons. The quarks and gluons, zipping around at high energies inside the protons and neutrons, are short-wavelength field vibrations. We don’t need to know anything about them to talk about protons and neutrons and how they interact with each other. There is an effective field theory of protons and neutrons that works perfectly well, as long as we don’t zoom in so closely that we can see the individual quarks and gluons. (p. 134)

In my book from Springer (2016), I indicated exactly the same alternative: in this case there are not EDWs, but the whole-parts relationships within the same micro-EW. (For this relationship, see Vacariu 2016) And here, another paragraph from the same Carroll’s book that contains INCREDIBLE similar ideas to my ideas (from 2008 or 2010):

This simple example highlights important aspects of how effective theories work. For one thing, notice that the actual entities we’re talking about—the ontology of the theory—can be completely different in the effective theory from that of a more comprehensive microscopic theory. The microscopic theory has quarks; the effective theory has protons and neutrons. It’s an example of emergence: the vocabulary we use to talk about fluids is completely different from that of molecules, even though they can both refer to the same physical system.

Two features characterize how wonderfully simple and powerful effective field theories are. First, for any one effective theory, there could be many different microscopic theories that give rise to it. That’s multiple realizability in the context of quantum physics. Consequently, we don’t need to know all the microscopic details to make confident statements about macroscopic behavior. Second, given any effective theory, the kinds of dynamics it can have are generally extremely limited. There simply aren’t that many different ways that quantum fields can behave at low energies. Once you’ve told me what particles are in your theory, all I need to do is measure a few parameters like their masses and interaction strengths, and the theory is completely specified. It’s like the planets orbiting the sun; it doesn’t make a single whit of difference that Jupiter is a hot gas giant and Mars is a cold rocky planet; they both move on orbits such that their centers of mass are obeying Newton’s laws.

This is why we’re so confident the Core Theory is basically correct in its domain of applicability. Even if there were something utterly different at the microscopic level—not a field theory at all, perhaps not even space or time as we understand them—the emergent effective theory would still be an ordinary field theory. The fundamental stuff of reality might be something wholly distinct from anything any living physicist has ever imagined; in our everyday world, physics will still work according to the rules of quantum field theory. (134)

I strongly emphasize that these paragraphs are almost IDENTICAL to many paragraphs that I wrote in my books 2008 and 2010 (I mentioned above some of these paragraphs)! Carroll’s “effective theory” mirrors exactly my EDWs perspective! He writes about the “ontology of the theory”, that is HIS “effective theory”!!! Carroll moves from the “microscopic theory” that “has quarks” to the “effective theory” that has “protons and neutrons” (an example of “emergence”, or different “vocabularies” “we use to talk” about “fluids” and “molecules”, “even though they can both refer to the same physical system”!

Another question, Mr. Carroll: what is the “same physical system”? Is this a kind of Kant’s noumena, isn’t it? So, all other things written by Sean Carroll are just “words, words, words”, aren’t them? Obviously, Carroll’s “effective theory” is really “wonderful”: it is related to many “different microscopic theories” (i.e., multiple realizability in the context of quantum physics”), but “we don’t need to know all the microscopic details to make confident statements about macroscopic behavior”!!! So, the Core Theory is “basically correct” in “its domain of applicability” (nothing else than “words, words, words”, of course,) just for avoiding the ontological contradictions in which we would be placed with Carroll’s “effective theory”!

Carroll’s diagram (p. 135) mirrors directly my EDWs perspective, but introducing the “underlying reality” (Kantian noumena) (which, in my EDWs perspective, means EDW than waves-EW or microparticles-EW that we actually know). For Carroll, “everyday experience”, quantum realm, and cosmology are all “different domains of applicability”, but what are these “domains of applicability” if not exactly my EDWs perspective? What does it mean “domains” and “applicability” in this expression? Do these “words” have certain ontological backgrounds or are we just speaking? Of course, this is not plagiarism, since clearly “domains of applicability” is not the same expression as “EDWs”. It does not matter that their meaning is ALMOST the same… Carroll introduces even “supervenience” (specifying that this is a notion of “philosophers” even if he does not mention the name of anyone – so we can conclude he found this word in a philosophical vocabulary…):

Another way of conveying the same idea is to think about which phenomena depend on which other phenomena—what *supervenes* on what, as the philosophers would say. This is shown in the next figure. Astrophysical phenomena depend on the Core Theory, but also on new physics. And everything, of course, depends on the same underlying reality. (p. 135)

This is exactly the position of my EDWs perspective related to the micro- and the macro-ED entities, but being constructed within the unicorn world, Carroll introduces the unknown “underlying reality”! Again, Carroll preserves Kantian noumena, but all the other parts of “his” framework are identical to my EDWs perspective. The above paragraph continues with this one:

But crucially, the emergent phenomena we see in our everyday lives do *not* depend on dark matter or other new physics. Moreover, they only depend on underlying reality through their dependence on the Core Theory particles and interactions. That’s the power of effective field theory. All sorts of microscopic quantum-gravitational craziness could be breaking out deep within the underlying reality, but none of that matters for the behavior of chairs and cars and central nervous systems; it’s all subsumed in the effective field theory of the Core Theory. (p. 135)

In the first sentence, we have clearly another idea that is very important in my EDWs perspective: “emergent phenomena” (that is the macro-entities) “do *not* depend on dark matter and other new physics” and not on the “underlying reality”! This statement seems to be exactly as one of my main principles written under the framework of the “universe”! Just an appearance, no more or less. I quote again my paragraphs from Vacariu 2008:

What is the relation between general theory of relativity and quantum mechanics from the EDWs perspective? It seems that the EDWs perspective can reveal that quantum mechanics

(describing those three fundamental forces acting on the microscopic scale) and general theory of relativity (describing gravitational force among large-scale objects/structures like planets, galaxies, etc.) are incompatible. Gravity is caused by massive objects that warp the surrounding space. Thus, gravity is a property of space. The search for gravitons, the microparticles that cause the gravity, is meaningless from an EDWs perspective. If we ignore the constitutive principles of both theories (that reflect, for us, the form of the epistemologically different interactions among the epistemologically different entities), we can think that the mass of a planet is the sum of the corresponding micro-particles’ masses, and then we can *think* that the gravity of the planet corresponds to the sum of all gravities produced by all those micro-particles (or by gravitons). Nevertheless, we would use empty notions in Kantian sense.18 More than this, we cannot even think that a wave is the sum of “its” microparticles. As we saw above, in an EW, a wave is indivisible. Each theory has different constitutive principles that “secure its empirical content” (Friedman). (Or Bohr’s principle of complementarity

secures the empirical content of two EDWs.) In this case, the constitutive principles of each theory (or Bohr’s principle of complementarity) *individuate* epistemologically different entities (waves, micro- and macro-objects) that belong to EDWs. Each planet constitutively interacts with other planets; in the other EW, each electron constitutively interacts with other micro-particles. Trying to relate general theory of relativity and quantum mechanics (that means to put planets and electrons in the same EW) is impossible because the constitutive principles corresponding to each theory are totally different and each theory explains its own EW.19 It is also true that, because of Bohr’s principle of complementarity, we cannot consider that the microparticles and the waves belong to the same EW. (Vacariu 2008, pp. 317-319)

At page 136, Carroll has a schema which explains the relationships between the “underlying reality” (Kantian noumena) and the Core Theory” (microparticles and their forces), the dark matter (new physics), “higher-level macro-phenomena of everyday life” and “Astrophysics and Cosmology”. Under that schema, it is written:

Different ways of talking about the world, and how they relate to each other. Solid arrows indicate how one theory depends on another; for example, astrophysics depends on the Core Theory and also on dark matter and dark energy. Dashed arrows show dependencies that could have existed but don’t; everyday life does not depend on dark matter, and depends on underlying reality only through the Core Theory. (p. 136)

Between the “Core theory”, dark matter and “underlying reality” there are “solid arrows”, while between the “higher-level macro-phenomena of everyday life” and the “underlying reality” there are “dashed arrows”, for instance. Working within the “universe”, Carroll introduces, of course, the dependence between the unknown “underlying reality (Kant’s noumena) and micro-particles/forces but there is no dependence on the macro-objects and the “underlying reality”. Constructed under the unicorn world, this it is the only possibility that remains to Carroll to put together all these “vocabularies”! “And eventually it was—by special relativity, general relativity, and quantum mechanics. Newtonian theory is a good approximation in a certain domain of applicability, but ultimately it breaks down and we need a better description of reality.” (p. 136) However, supporting the concept of “emergence” (which he does not mention), Carroll it is very close to Anderson’s position investigated by me (in details) in Vacariu 2008 but situated by me in the EDWs perspective!

There are a million ways to misinterpret “The laws of physics underlying everyday life are completely known.” While it’s an undeniably bold claim, it would be easy to mistake it for something even more grandiose than it actually is, and then dismiss that exaggerated claim. It certainly does not imply that we know all of physics. Nor does it, by any wild stretch of the imagination, imply that we know *how everything works* at the level of the everyday. Nobody in their right mind thinks that we have, or are close to having, complete theories of biology or neuroscience or the weather, or for that matter of the flow of electricity through ordinary materials. Those phenomena need to be *compatible* with the Core Theory, but the phenomena themselves are emergent. As we discussed in chapter 12, understanding emergent phenomena is a matter of discovering new knowledge—finding those patterns (where they exist) that allow us to describe simple behaviors out of many underlying moving parts. (p. 137)

Again, the reader that knows my EDWs perspective will have the feeling that many such paragraphs were written by Carroll under the EDWs perspective! My question is the following: of course, we do not have “complete theories of biology or neuroscience” (if a physicist claims such statement, it means he read many books/articles from these domains; otherwise, how can he claim such statements?) Again, do these “emergent phenomena” really exist, i.e., do these phenomena have a real ontology? If yes, there would be a strong ontological contradiction within the “universe”; if these emergent phenomena are just “different vocabularies”, then Sean Carroll’s body (like any planet and the gravity its produces) is just a “vocabulary”, no more or less![[19]](#footnote-18) Carroll emphasizes many times the “underlying reality” but he writes about “emergent phenomena as if these entities really exist. In this way, he either remains in the realm of “words, words, words” (which, in many paragraphs, he shows us that he wants to avoid them) or produces strong ontological contradiction!

The most straightforward loophole would be if quantum field theory were just flat-out wrong in the domain that includes everyday life. For example, if there were physical effects that stretched from one particle to another, but not via anything like a quantum field. This seems very unlikely, on general grounds; once you accept the basic principles of relativity and quantum mechanics, you are more or less forced into accepting quantum field theory. In regions where gravity is strong, like the Big Bang and black holes, field theory may very well break down. There aren’t any black holes in your living room, happily. But for the sake of completeness, we should admit that it’s always a possibility. (pp. 137-138)

Obviously, even if the ideas from these paragraphs (like many other paragraphs from Carroll’s book 2016) are very similar to my ideas (2002-2010), of course it is not a PLAGIARISM since Carroll’s idea are constructed, officially, under the “universe” and my ideas are constructed under the EDWs! However, Carroll’s ideas either are just “words, words, words” or produce strong ontological contradictions! The next paragraph suggests exactly my EDWs perspective to the quantum mechanics:

But because we don’t all agree on the correct formulation of quantum mechanics, it’s conceivable that none of the most popular alternatives is correct. We can imagine that the correct theory of quantum mechanics will ultimately tell us that wave functions don’t really collapse randomly, for example; perhaps there are subtle features of quantum measurement that have thus far eluded experimental detection, but will end up playing an important role in how we come to understand biology or consciousness. It’s possible. (p. 138)

Is it just “possible”? In fact, according to my EDWs perspective, the wave does not “really collapse randomly”, but belongs to an EDW than the particle! In the same way, we have to “understand biology and consciousness”. Incredible! It seems to be here exactly my applications of my EDWs approach to quantum mechanics[[20]](#footnote-19) and to the brain-body problem and to organism-life problem in my books exactly as it is suggested by Carroll in this paragraph. (Again, there are enormous such ideas in Carroll’s book. Apparently, it seems as if Carroll read my books/articles before writing his book. Just apparently, of course…) The reader has to read also the following paragraph:

That’s a universe that is not evolving in time—the quantum state itself simply *is*, unchanging and forever. But in any one part of the state, it *looks like* one moment of time in a universe that is evolving. Every element in the quantum superposition looks like a classical universe that came from somewhere, and is going somewhere else. If there were people in that universe, at every part of the superposition they would all think that time was passing, exactly as we actually do think. That’s the sense in which time can be emergent in quantum mechanics. Quantum mechanics allows us to consider universes that are fundamentally timeless, but in which time emerges at a coarse-grained level of description. (p. 141)

Replace the “coarse-grained level of description” with EDWs and you will have the feeling this paragraph was written under the EDWs perspective! Just a feeling, of course… The expression “it looks like” is written italic! Why? Because it is very important, of course. Why? Because every “element in the quantum superposition looks like a classical universe that came from somewhere, and is going somewhere else.”! However, this is exactly my interpretation of quantum states under the EDWs perspective! Exactly the same meaning…

In Chapter 26, the popular physicist Sean Carroll deals with the mind-body problem! “Body and Soul” (p. 145). Even if Carroll is having not many lectures on this topic (from the bibliography of his book 2016 – I don’t know other Carroll’s works on this topics), he is able to furnish us the solution to this great and eternal problem for philosophers and more than half of century for cognitive neuroscientists. Amazing, isn’t it? Carroll starts writing certain information about the debate between Princess Elisabeth and Descartes’ dualism, as he called, substance dualism.[[21]](#footnote-20) (It is for the first time, I see a popular physicist writing about the debate between Descartes and Princess Elisabeth!) This debate is very important topic in my book 2008 (first chapter). Obviously, just coincidence, again: as physicist, Carroll did not spend many time reading stupid things on the mind-brain problem. He knew exactly what articles/books had to read in order to discover himself the correct answer to this eternal but difficult question, the mind-body problem! (Anyway, it has been eternal for philosophers and cognitive neuroscientists, but not for a physicist like Sean Carroll!) Carroll emphasizes the problematic notion of “interaction” between the “body” and the “soul”[[22]](#footnote-21) showing that Descartes’ answer to this problem is not correct.[[23]](#footnote-22) Then he quotes Ryle (but he did not indicate where he read Ryle):

For the moment, Elisabeth’s questions remain unanswered. Twentieth-century British philosopher Gilbert Ryle criticized what he called “the dogma of the Ghost in the Machine.” As Ryle saw it, thinking of the mind as a separate kind of thing from the body was one big mistake, not just in how the mind works but in what it fundamentally is. We certainly don’t have a comprehensive understanding of how matter in motion gives rise to thought and feeling. But from what we do understand, that seems like a much simpler task than making sense of how the mind could be a completely distinct category of existence. (p. 150)

I wrote about Ryle in my book 2008 exactly in the same context! Just another coincidence, no more or less. There are so many coincidences! I cannot enumerate all….

I strongly emphasize that Carroll is a real genius: there are many philosophers who have worked on the mind-brain problem many centuries and the last decades (Descartes, Spinoza in the past or Ned Block, Chalmers, Searle, today), the last group reading many books and articles on this topic, but have not found the real solution to the mind-brain problem. Amazing, a professor in physics, Prof. Sean Carroll, reading just few articles and books, found the solution to the eternal mind-brain problem! This means to be genius: to work in one area all your life but to answer to very difficult questions of other areas reading just few books/articles on those topics!

Carroll writes that having “the brain function as a kind of electromagnetic tractor beam would not violate the laws of physics, but it doesn’t work for more mundane reasons.” (p. 153) It seems as if Carroll is talking about “mundane” or “everyday life” as being exactly my macro-EW! Obviously, Carroll did not offer too much information about “oscillations”. How can a physicist who has not read anything about “oscillations” can claim such things? Of course, we have to accept that, as physicist, Carroll has great intuitions in cognitive neuroscience and philosophy! The secret is that an electromagnetic apparatus is a physical device! So, this is the possible answer: only a physicist was possible to find the correct answer to the mind-brain problem! In my book 2012, I dedicated one chapter only to “oscillations” in the brain, and within the EDWs perspective, I wrote exactly the same conclusion! My questions: what readings does Carroll have on this topic, “oscillations”? Reading his bibliography, I did not see any… But a genius does not need readings, does he?

At page 152, Carroll writes that

To address this issue seriously, we wouldn’t necessarily need to have a “Soul Theory” that is as rigorous and well developed as the Core Theory of physics. We would, however, need to be specific and quantitative about how the Core Theory could possibly be changed. There needs to be a way that “soul stuff” interacts with the fields of which we are made—with electrons, or photons, or something. Do those interactions satisfy conservation of energy, momentum, and electric charge? Does matter interact back on the soul, or is the principle of action and reaction violated? Is there “virtual soul stuff” as well as “real soul stuff,” and do quantum fluctuations of soul stuff affect the measurable properties of ordinary particles? Or does the soul stuff not interact directly with particles, and merely affect the quantum probabilities associated with measurement outcomes? Is the soul a kind of “hidden variable” playing an important role in quantum ontology? (p. 152)

If the reader has read at least my book 2008, she will have the sensation that this paragraph is from my book! But it is not. Carroll writes about the interactions between “soul stuff” and “fields” made of microparticles, but he questions if these interactions would not violate the principle of action and reaction! This is exactly one of the most important principles of my EDWs: the interactions constitute the entities, the entities determine the interactions: there are EDWs with ED entites and ED laws, no more or less! He introduces even the expression of “quantum ontology”, but he does not write to many things about this “ontology” (in the previous chapters dedicated to quantum theory)!

If the particles and forces of the Core Theory are what constitute each living being, without any immaterial soul, then the information that makes up “you” is contained in the arrangement of atoms that makes up your body, including your brain. There is no place for that information to go, or any way for it to be preserved, outside your body. There are no particles or fields that could store it and take it away.

This perspective can seem strange, because on the surface there appears to be some kind of “energy” or “force” associated with being alive. It certainly seems as if, when something dies, there is some *thing* that is no longer present. Where, it seems natural to ask, does the energy associated with life go when we die?

The trick is to think of life as a *process* rather than a substance. When a candle is burning, there is a flame that clearly carries energy. When we put the candle out, the energy doesn’t “go” anywhere. The candle still contains energy in its atoms and molecules. What happens, instead, is that the process of combustion has ceased.

Life is like that: it’s not “stuff”; it’s a set of things happening. When that process stops, life ends. Life is a way of talking about a particular sequence of events taking place among atoms and molecules arranged in the right way. That wasn’t always so obvious; the nineteenth century saw the flowering of a doctrine known as *vitalism*, according to which life is associated with a certain kind of spark or energy, labeled by French philosopher Henri Bergson as *élan vital* (life force). This idea has since gone the way of other similar nineteenth-century doctrines that posited new substances that we now recognize as simply ways of talking about the motions of ordinary matter. “Phlogiston,” for example, was supposed to be a kind of element that was contained within flammable bodies, and released during the process of combustion…

Over and over, something that we once thought of as a distinct kind of substance has been revealed to be a particular property of ordinary matter in motion. Life is no different. (p. 154)

Obviously, **again and again**, I had the impression of reading some paragraphs in one of my books each being posted on Internet immediately after published! Of course life is not “stuff” but a “process”, but what kind of “process”? is “life” a “way of talking” about a particular sequence of events taking place among atoms and molecules arranged in the right way or macro-parts? Does the reader understand something from these paragraphs within the Carroll’s “universe”, the unicorn world? But finally “life” is nothing more than a “particular property of ordinary matter in motion”! It is clear that Carroll does not talk about EDWs, isn’t it? He talks about “different ways of talking” that refer to “emergent phenomena”, but he does not specify exactly what kind of emergence is his “emergence”.

There is a much more profound implication of accepting the Core Theory as underlying the world of our everyday experience. Namely: there is no life after death. We each have a finite time as living creatures, and when it’s over, it’s over.

The reasoning behind such a sweeping claim is even more straightforward than the argument against telekinesis or astrology. If the particles and forces of the Core Theory are what constitute each living being, without any immaterial soul, then the information that makes up “you” is contained in the arrangement of atoms that makes up your body, including your brain. There is no place for that information to go, or any way for it to be preserved, outside your body. There are no particles or fields that could store it and take it away.

This perspective can seem strange, because on the surface there appears to be some kind of “energy” or “force” associated with being alive. It certainly seems as if, when something dies, there is some *thing* that is no longer present. Where, it seems natural to ask, does the energy associated with life go when we die? (p. 154)

These paragraphs mirror exactly the existence of EDWs, that is the “correspondence” (my notion) between “particles and forces of the Core Theory” (the “arrangement of atoms that makes up your body, including your brain” and life! And the next sentence seems to be written under the EDWs perspective: “There are no particles or fields that could store it and take it away.” Of course, you cannot “take it away” since there are EDWs!

For avoiding considering “life” as an EW, Carroll considers “life” as being a “process” not a substance! “Life is a way of talking about a particular sequence of events taking place among atoms and molecules arranged in the right way.” (p. 154) So, “Carroll’s life” is just a way of talking! He is forced to reach such conclusions just because he works within the universe, the unicorn world! He ends this section with this sentence: “Over and over, something that we once thought of as a distinct kind of substance has been revealed to be a particular property of ordinary matter in motion. Life is no different.” (p. 154) What does it mean a “particular property of ordinary matter in motion”? Is this a kind of strong or weak emergence? Carroll does not ask himself these questions just because he cannot give a correct answer within the “Universe”/“world”, that is the unicorn world. But we have to believe that Carroll’s life is a property of the microparticles in motion, no more or less. Who would be able to believe this and many other Carroll’ statements that we can find in his book from 2016? It is clear Carroll’s book is a great work, isn’t it?

If we are collections of interacting quantum fields, the implications are enormous. It’s not just that we can’t bend spoons, and not even that our lives truly end when we die. The laws of physics governing those fields are resolutely impersonal and non-teleological. Our status as parts of the physical universe implies that there is no overarching purpose to human lives, at least not any inherent in the universe beyond ourselves. The very notion of a “person” is ultimately a way of talking about certain aspects of the underlying reality. It’s a good way of talking, and we have good reason to take seriously all of the ramifications of that description, including the fact that human beings have individual purposes and can make decisions for themselves. It’s when we start imagining powers or behaviors that contradict the laws of physics that we go astray.

If the world we see in our experiments is just a tiny part of a much bigger reality, the rest of reality must somehow act upon the world we do see; otherwise it doesn’t matter very much. And if it does act upon us, that implies a necessary alteration in the laws of physics as we understand them. Not only do we have no strong evidence in favor of such alterations; we don’t even have any good proposals for what form they could possibly take.

The burden for naturalists, meanwhile, is to show that a purely physical universe made of interacting quantum fields is actually able to account for the macroscopic world of our experience. (p. 155)

Again, other paragraphs that seems to be taken from my books! Carroll insists in indicating us that a “person” is a “way of talking”, a “good one” (!) about “certain aspects of reality”, so we “have to take seriously” (!) “all the ramifications of that description (the underlying reality).

I made exactly the same analogy, just considering one of us being a particle and not a “field”! The “laws of physics” are “impersonal and non-teleological”. Why? “Person” is a “way of talking” about “certain aspects of underlying reality”. So, as a person, Sean Carroll is just a “way of talking”? In any case, he assures us that “it’s a good way of talking” but this way of talking has “individual purposes and decisions for themselves![[24]](#footnote-23) So, Carroll writes about an individual person that has certain real properties! *The second paragraph mirrors exactly my EDWs: in my language, Carroll wanted to write: there is no interactions between EDWs!* Moreover, regarding the next sentence, I raised exactly the same question regarding not the “quantum field” but the quantum particles and the “macroscopic world”! What kind of “world” is this “macroscopic world”? Is it not, in reality, about the EDWs and Carroll has forgotten to write this expression? “The rest of reality” acts “upon the world we see” and implies “a necessary alteration in the laws of physics as we understand them”!!! The “powers” and “behaviors” contradict the laws of physics! This expression mirrors exactly my EDWs! What does the reader wants more to see the UNBELIEVABLE similarities between my ideas (2002-2010) and Carroll’s ideas (2016, only in this work!).

In Chapter 28, Carroll asks “How in the world did something as organized as a *human being* ever come to be?” (p. 158) His answer: “entropy”[[25]](#footnote-24) and “emergence”. However, again, he does not explain what kind of emergence is about (strong or weak, and many other forms) writing that it is about a “collective structures” that “can live and evolves, and have goals and desires.” It is again clear that Carroll talks about a kind of “weak emergence”, but in order to avoid the ontological contradictions, we cannot claim that human bodies and minds really exist: what really exists is that “collective structure”. So, Sean Carroll’s body does not exist, he is just a “collective structure”, but where do we place “life”, obviously a “process”? The universe is quite complex! Writing about “complexity"[[26]](#footnote-25), Carroll writes that the

real world features interactions both on short ranges, when particles bump into each other, and on ones that stretch over longer ranges, like the influence of gravity or electromagnetism. When we see complex structures arise as the universe expands and cools, what we’re seeing is an interplay between competing influences. The expansion of the universe draws things apart; mutual gravitational forces pull them together; magnetic fields push them sideways; collisions between atoms shove matter around and allow it to cool down. (p. 164)

We have here, again, exactly the image of EDWs: the micro-EW (particles) on “short ranges”, and longer ranges” of “gravity” or “electromagnetism”! Why does Carroll writes “or” between “gravity” and “electromagnetism”? Only within the EDWs perspective, someone can use it without reaching ontological contradictions. Than Carroll writes again about the “levels of reality” in explaining the relationship between “quantum fields and particles” and “human beings”. (p. 164) So, another paragraph that looks as if it was written under the EDWs perspective:

The rich and multifaceted aspects of the emergent layers of our world are not nearly so accommodating to the curious scientist. Once we start dealing with chemistry, biology, or human thought and behavior, all of the pieces matter, and they matter all at once. We have made correspondingly less progress in obtaining a complete understanding of them than we have, for example, on the Core Theory. The reason why physics classes seem so hard is not because *physics* is so hard—it’s because we understand so much of it that there’s a lot to learn, and that’s because it’s fundamentally pretty simple. (p. 164)

Does the reader want more details from Carroll’s book to see the incredible many SIMILARITIES between his ideas (2016) and my ideas (2002-2010)???

Chapter 29 is about “life”, of course since Carroll, as a great physicist, decides to answer to all important questions of physics, philosophy, cognitive neuroscience and biology. He wants to teach us what “life” is, even if there is no definitive answer to this notion. Carroll has to deal with all the main concepts and problems that can also be found in my books! “The ‘correct’ definition of life, one that we’re going to discover through careful research, doesn’t exist. The life-forms with which we are familiar share a number of properties, each of which is interesting and many of which are remarkable.” (pp. 166-167) I wrote exactly the same idea in my books 2008, 2010. Everybody who worked in biology (or at least has read certain books of biology) knows that a correct definition of “life” does not exist yet.[[27]](#footnote-26) How did Carroll know that there are many definitions of “life” but no one is correct? Who told him this? I wrote this idea in my book, but here we have just another coincidence, of course.

Then Carroll deals with thermodynamics and life, something, finally, that cannot be found in my works! However, let me introduce another paragraph that seems to be written by Carroll under the EDWs perspective:

Our human-scale world is relatively calm and predictable. Throw a ball on a day with good weather, and you can estimate with some confidence how far it will travel. Cells, by contrast, operate at the scale of nanometers, billionths of a meter. Conditions in that world are dominated by random motions and noise—what biophysicist Peter Hoffmann has dubbed a “molecular storm.” Just from ordinary thermal jiggling, molecules inside our bodies bump into one another trillions of times a second, in a maelstrom that puts ordinary storms to shame. Scaled up to human size, living in the equivalent of the cell’s molecular storm would be like trying to throw a ball that was constantly being bombarded by other balls, each of which carried hundreds of millions of times the energy that your arm could impart.

It doesn’t seem like a hospitable environment for any microscopic sporting events, or for the delicate operations that are part of the cellular ecosystem. How do cells manage to do any kind of organized activity under such conditions? (p. 174)

Of course, this paragraph is not plagiarism of one of my paragraphs from my books/articles:

From the EDWs perspective viewpoint, [Bickle]“molecular and cellular cognition” is an expression that partially reflects a mixture of EDWs. Molecular and cellular entities and processes on one side and cognition on the other side belong to EDWs. (Vacariu and Vacariu 2010, pp. 225-226)

Or

As we saw in Chapter 1, the conglomerations of microparticles in the micro-EW correspond to planets in the macro-EW. The planets are not composed by microparticles. Therefore, there is *no continuity between the microparticles and the macroparticles* but they belong to EDWs. We have to apply the same rule to the “transformation” from the non-living to living

entities. A living entity is not composed of the non-living entities and their processes. It is even meaningless to sustain such idea. A conglomeration of some non-living entities (being the micro- or the macro-entities that belong to EDWs) *corresponds*, in special conditions, to the living entities. According to the actual definition, the basic living entity is a cell. Similar to the relationship between the mind and the brain (body), there are two viewpoints for answering this question: the human being and the living entity

itself. To us, as external observers, the proteins of a cell, the cell itself, an insect or an animal belong all to the macro-EW.

We saw above that the “I” (= the implicit knowledge) is an EW. So, the same thing has to be applied to a cell, an insect or an animal. For instance, the subjectivity of a cell is an “I” that is the implicit knowledge that corresponds to the molecules and their activity. (Vacariu and Vacariu 2010, pp. 251-252)

However, it seems that exactly this idea was constructed within the EDWs perspective! How can Carroll manage the “human-scale world” and the cell-world if not within the EDWs perspective? Are these “worlds” just “different ways of talking”??? I don’t believe that Carroll would support this idea! In fact he speaks about “worlds” that have their own ontologies, that is about the EDWs!

Writing about life and cell, Carroll quotes one paragraph from Friston: “The internal states (and their blanket) will appear to engage in active Bayesian inference. In other words, they will appear to model—and act on—their world to preserve their functional and structural integrity, leading to homeostasis [preserving stable internal conditions] and a simple form of autopoiesis [maintaining structure through self-regulation].” It is clear: I plagiarized Friston! However,

For Kauffman, the catalytic systems “may be the natural source of the order. Order in organism is self-organized and spontaneous.” (2000, p. 2) *Self-organization* is an essential notion for Kauffman in explaining life. Self-organization refers only to internal entities

(and their interactions) of an organism or a cell (Kauffman) or to the relationship between the organism and its environment (for instance, the dynamical system approach in cognitive science). (Vacariu and Vacariu 2010, p. 249)

Carroll continues: “This is a speculative and new set of ideas, not an established picture of how we should think about the function of cells and membranes. It’s worth remarking on because it shows how the concepts we’ve been talking about—Bayesian reasoning, emergence, the second law—come together to help explain the appearance of complex structures in a world governed by simple, unguided laws of nature.” Obviously, we have here the “world” of cells and membranes, the emergence and complexity of the world. Later, he writes about “catalysis” and other biological processes related to life. I investigated all these notions in Vacariu and Vacariu 2010, section 6.2. Just coincidence…

At page 194, we can find another paragraph that reminds us about the EDWs perspective: “The reality of biology here on Earth is, unsurprisingly, more complicated than the simplest statement of natural selection. Like any way of talking about the world, Darwin’s theory works only within its domain of applicability.” Does the reader have the felling this paragraph was written under the EDWs perspective? Obviously, in my book 2010, we wrote that life and the organism belong to EDWs and obviously, Darwin’s selection is available only within the world of organisms (that is the macro-EW). Exactly the same idea, in almost the same context. For instance, I quote a paragraph from my work

We cannot reduce life to DNA or RNA systems alone.1 An amalgam of cells that produces life is a collectively autocatalytic system. In all his books, Kaufman underlines that life is not a property of a single molecule but a collective property of a system formed of many various entities (molecules).2 (For instance, 1995, p. 10) As a whole, life is an “emergent”, holistic process, while its parts are just “chemicals”. “Autocatalytic” processes would be the micro-forces that bind the microparticles. Life is not in the same EW where the molecules or cells are! From the EDWs perspective, the “collectively

autocatalytic systems of molecules” and their activity *correspond* to life. Making an analogy, this sentence has to replace Kaufman’s verdict that “life emerges from a collectively autocatalytic system of atoms”. Life and “collectively autocatalytic systems of molecules” are or belong to EDWs. More exactly, life is an EW, the life-EW and the “collectively autocatalytic systems of molecules” belong to macro-EW. (Vacaru and Vacariu 2010, p. 246)

At page 199, Carroll talks about “genetic algorithms”. Together with Dalia Terhesiu, in 2002, we investigated certain notions analyzed also by Carroll: “self-organization”, life, emergence, levels, but also about cellular automata (related to genetic algorithms).

Let me introduce a long paragraph (but I emphasize this paragraph is from Carroll’s book not from one of my books!):

A common concern among skeptics of evolution is how it is supposed to lead to the creation of new *kinds of things* out of the mindless motion of matter. “Purposes” are one obvious example. We say, without apparent embarrassment, things like “The purpose of the giraffe’s long neck is to help it reach fresh leaves near the treetops.” Another example is “information.” DNA is said to carry genetic information; the optic nerve carries information from the eye to the brain. Then there is consciousness itself. The concern is that these concepts represent a radical break from the mere Laplacian working out of the laws of physics. How could evolution, which itself is ultimately purely physical, bring these utterly new kinds of things into existence?

It’s a natural thing to worry about. The process of evolution is unplanned and unguided. Whether or not genetic information gets passed on to future generations depends only on the conditions of its immediate environment and random chance, not on any future goals. How can an intrinsically purposeless process lead to the existence of purposes?

But this worry is a little strange, at least in the hands of anyone who accepts that natural selection provides an explanation for more prosaic things like gills and eyeballs. These kinds of organs are “utterly new” in their own way. There is no general principle along the lines of “new kinds of things cannot naturally arise in the course of undirected evolution.” Things like “stars” and “galaxies” come to be in a universe where they formerly didn’t exist. Why not purposes and information?

In poetic naturalism, the appearance of “truly new” concepts as one theory emerges from another is the least surprising thing in the world. As time passes and entropy increases, the configuration of matter in the universe takes on different forms, enabling the emergence of different higher-level ways of talking. The appearance of something like “purpose” simply comes down to the question “Is ‘purpose’ a useful concept when developing an effective theory of this part of reality in this particular domain of applicability?” There may be any number of interesting and challenging technical issues to be addressed, but there is no obstacle to the emergence of all kinds of new concepts along the way. (p. 206)

Really, “Things like “stars” and “galaxies” come to be in a universe where they formerly didn’t exist.”? When these “things didn’t exist”? However “purposes and information” are just traits of humans, another “way of talking”, isn’t it, Mr. Carrol?

Do you want more details about Carroll’s “original” ideas that we can find in this book? “The configuration of matter in the universe takes on different forms, enabling the emergence of different higher-level ways of talking” is nothing else that my EDWs! What does Carroll understand by these “configurations” in the same world: are these “different forms” just “different higher-level ways of talking”, that is these “forms” belong to a certain vocabulary that is “different” than other vocabularies? Do these “different forms” have an ontological background? Obviously, working within the unicorn world, Carroll reaches strong ontological contradictions! However, I believe Carroll is aware about such ontological contradictions, but if he were inserting the idea of EDWs, he would be accuses officially of plagiarism. Another paragraph:

There is a similar story to tell about “information.” It’s worth thinking about, as it will come up again when we start talking about consciousness. If the universe is just a bunch of stuff obeying mechanistic physical rules, how can one thing ever “carry information” about anything else? How can one configuration of atoms be “about” some other configuration?

Words like “information” are a useful way of talking about certain things that happen in the universe. We don’t ever need to talk about information—we can take the “option 4” viewpoint and just talk about the quantum state of the universe inexorably evolving through time. But the fact that information is an effective way of characterizing certain physical realities is a true and nontrivial insight onto the world. (pp. 207-208)

It seems that Carroll strongly emphasizes that he works within the unicorn world. Trying to avoid to be accused of plagiarizing my ideas, other people (for instance, Nortoff) who published incredible similar ideas to my ideas did exactly the same thing! (About these similarities, see my webpage) Replace the “universe” with EDWs and you may understand, only if you wish, that maybe Carroll refers to “information” (i.e., an effective way of characterizing certain physical realities”) as belonging to the mind of a human being which is exactly an EDW than the atoms, and this EW that is the life-EW, as I wrote in my books). Obviously, this is not plagiarism…

We tend to use the word “information” in multiple, often incompatible, ways. In chapter 4 we talked about conservation of information in the fundamental physical laws. There, what we might call the “microscopic information” refers to a complete specification of the exact state of a physical system, and is neither created nor destroyed. But often we think of a higher-level macroscopic concept of information, one that can indeed come and go; if a book is burned, the information contained in it is lost to us, even if not to the universe.

The macroscopic information contained in a book is relative to the environment in which it is embedded. When we talk about the information contained in the book you are currently reading, what we mean is that these words are *correlated* with certain ideas that you get upon reading them. You read the word “giraffe,” and the notion of a certain kind of long-necked African ungulate appears in your mind. The same holds for the information contained in a strand of DNA: it is correlated with the synthesis of certain proteins in the cell. It is this connection with one configuration of matter (a book or a DNA strand) and something else in the universe (the image of a giraffe, or a useful protein molecule) that lets us talk about the existence of information. Without those correlations—if there isn’t, and never will be, anyone around to read the book, or any RNA molecules that can read the DNA and go off to make protein—there is no point in talking about information. (pp. 209-210)

My paragraph:

Since cognition and life have the same hyperontological status, we could claim that *life does not emerge from cells exactly as cognition does not emerge from neurons*. If live is not an entity and does not emerge from the cells, where can we find it? From the EDWs perspective, life *corresponds* to the cells and their activity. As we will see below, a living cell is not composed of non-living molecules but corresponds to them and their activity. Then we can assert life that *corresponds* to a cell or an organism; life, on one side, and cell/organism, on the other side, are or belong to EDWs. Moreover, an organism corresponds to its cells and their processes or a cell corresponds to “its” molecules (DNA, RNA, proteins, enzymes and their chemical processes). As we saw during the whole book, it is a contradiction to consider that a cell is identical to or composed of or emerge from “its” molecules and their activity. (Vacariu and Vacariu 2010, pp. 242-243)

The “information” is indeed “incompatible since one EW does not exist for any EDW. Then Carroll compares the “microscopic information” that “refers to a complete specification of the exact state of a physical system” to the “macroscopic information contained in a book”! This “macroscopic information” “is relative to the environment in which is embedded!!! This is one of the main ideas in the EDWs perspective! Moreover, the italic word “correlated” has exactly the same meaning as in my works: the meaning of “giraffe” is “correlated” with “the synthesis of certain proteins in the cell”! Clearly, I do not accuse Carroll of plagiarism, I only emphasize these incredible strong similarities between my ideas (2002-2010) and Carroll’s ideas (only in his book 2016)!

In the next paragraph, working within the unicorn world, we can find unavoidable ontological contradictions:

As the universe evolves from this very specific configuration to increasingly generic ones, correlations between different parts of the universe develop very naturally. It becomes useful to say that one part carries information about another part. It’s just one of the many helpful ways we have of talking about the world at an emergent, macroscopic level. (p. 209)

In the first statement, “correlations” means exactly “correspondences”, one of the most important notions of the EDWs perspective! No Carroll, within the “universe”, it is not “naturally” at all to talk about the existence of “microscopic level”, “macroscopic level” and the “meaning of words”! I emphasize that we have not to make a confusion between these “levels” (that is my EDWs) and the “multiverse”. Carroll mentions exactly what is the “multiverse”:

The only real question is whether it is reasonable to imagine that we do live in a multiverse in the first place. The terminology can be confusing; naturalism says there is only one world, but that “world” can include an entire multiverse. In this context, what we care about is a *cosmological multiverse*. That means there are literally different regions of space, very far away and therefore unobservable to us, where conditions are quite different. We call these regions “other universes,” even though they are still part of the natural world. (p. 214)

I rejected the notion of the “multiverse” in Vacariu 2008, Chapter 6. However, the same problem of “ontological contradiction” appears regarding the notion of “consciousness”:

Consciousness is not a single brain organ or even a single activity; it’s a complex interplay of many processes acting on multiple levels. It involves wakefulness, receiving and responding to sensory inputs, imagination, inner experience, and volition. Neuroscience and psychology have learned a great deal about what consciousness is and how it functions, but we are still for away from any sort of complete understanding. (p. 222)

Does consciousness exist in the brain? Is it part of the brain? Does it “emerge” out of the entire brain or only some parts of it? Maybe the physicist Sean Carroll will be able to answer this question! Within the unicorn world, Carroll cannot avoid the ontological contradiction: consciousness (the mind, in fact) and the brain are not “different levels” or “different ways of speaking”, as Carroll would indicate in the unicorn world! After offering details about “small-world networks” (!), Carroll writes that

We could study the brain in exquisite detail, characterizing every neuron and mapping every connection, and still not convince ourselves that the brain accounts for the *mind*, the actual thinking of a human being. Back in chapter 26 we talked about Princess Elisabeth’s objections to Descartes’s picture of an immaterial soul interacting with the physical body, perhaps through the pineal gland. As interesting as those objections were, they don’t necessarily close the deal until we can directly connect what happens in the brain to what we think of as our identities as persons. Over the years psychology and neuroscience have made great strides in doing just that. (pp. 232-233)

Again, I had the feeling that this paragraph was written by somebody within the EDWs perspective! In my book 2008 (and all other books), I investigated exactly the same topic, having the same conclusion but within the EDWs perspective! Then, the paragraphs that follow are really incredible:

We’ve already seen that memories are physically encoded in the brain. It’s unsurprising, then, that our sensory perceptions are likewise encoded there. This is obviously true in some crude way, as the magnetic fields sticking out of my head demonstrated. But scientists have made advances recently in extracting quite detailed images of what patients are seeing, just by looking at what their brains are doing. By using fMRI images to determine what parts of the brain are firing when subjects are looking at images, or watching videos, neuroscientists can construct a template from which they can reconstruct images directly from the fMRI data, without “cheating” by knowing what the subjects are watching. It’s not mind reading, at least not yet; we can make crude representations of what people are looking at, but not what they are imagining inside their heads. Perhaps that’s just a matter of time. None of this will necessarily convince a determined Cartesian dualist who wants to believe in immaterial souls. Of course, they will admit, *something happens* in the brain as we think and perceive the world. But that’s not *all* that happens. The experiencing, the feeling, the actual soul of a person—that’s something else entirely. Perhaps the brain is like a radio receiver. Altering it or damaging it will change how it plays, but that doesn’t mean that the original signal is being created inside the radio itself. (p. 232)

Carroll does not mention any article or chapter about the fMRI! My question is from where did Carroll know about fMRI results? From where does Carroll know that “memories are physically encoded in the brain”? And what does it mean “encoded”? Amazing, did Carroll read something about the “reconstruction images” using fMRI? In my books (2012 and 2014), I wrote about the amazing researches of Gallant’s team (2014, Chapter 3: The best achievements in cognitive neuroscience today: the fMRI experiments of Gallant’s team”)! The last sentence of the above paragraph “Of course, they will admit, *something happens* in the brain as we think and perceive the world. But that’s not *all* that happens. The experiencing, the feeling, the actual soul of a person—that’s something else entirely. Perhaps the brain is like a radio receiver. Altering it or damaging it will change how it plays, but that doesn’t mean that the original signal is being created inside the radio itself.” Sends directly to my EDWs perspective, since in my book from Springer (officially written 2016, but it was posted in November 2015 on webpage!), it is written this:

“That’s what’s so nice about empiricist cognitive science: You can drop out for a couple of centuries and not miss a thing.” (Fodor 2001) Fodor’s statement mirrors the empirical and theoretical research in cognitive neuroscience in particular much better than it does cognitive science in general. “Looking for consciousness in the brain is like looking inside a radio for the announcer.” (Nassim Haramein) (Vacariu 2016, p. 99)

Few lines later Carroll writes that

Damaging the brain, on the other hand, can change who a person is at a fundamental level… Consider what’s known as the Capgras delusion. Patients suffering from this syndrome have damage to the part of the brain that connects two other parts: the temporal cortex, associated with recognizing other people, and the limbic system, which is in charge of feelings and emotions. A person who develops Capgras delusion will be able to recognize people they know, but will no longer feel whatever emotional connection they used to have with them. (It is the flip side of prosopagnosia, which involves a loss of the ability to recognize people.)

…

That leaves us either with physicalism—the world, including people, is purely physical—or some newfangled form of non-Cartesian dualism. To clean up that final question, we need to think more about what it means to be a conscious, experiencing person. (p. 232)

Again I had the sensation of reading some paragraphs from my books! These “newfangled form of non-Cartesian dualism” is nothing more than my EDWs perspective! “We need to think more” of physicalism means we have to think about “my EDWs perspective”, Mr. Sean Carroll? The next page, Carroll writes about Turing test and Searle’s Chinese Room in details. I investigate this topic in my book from 2008. Just coincidence, of course. Carroll’s answer seems to be constructed within the EDWs perspective:

If the world is purely physical, then what we mean by “understanding” is a way of talking about a particular kind of correlation between information located in one system (as instantiated in some particular arrangement of matter) and conditions in the external world. Nothing in the Chinese Room example indicates that we shouldn’t think that way, unless you are already convinced we shouldn’t.

That’s not to downplay the difficulty in clarifying what we mean by “understanding.” A textbook on quantum field theory contains information about quantum field theory, but it doesn’t itself “understand” the subject. A book can’t answer questions that we put to it, neither can it do calculations using the tools of field theory. Understanding is necessarily a more dynamic and process-oriented concept than the mere presence of information, and the hard work of defining it carefully is well worth doing. But as Turing suggested, there’s no reason why that hard work can’t be carried out at a purely operational level—referring to how things actually behave, rather than invoking inaccessible properties (“understanding,” “consciousness”) that are labeled as unobservable to outsiders from the start. (pp. 235-236)

Again, reading this paragraph, I had the impression of being from one of my books! Of course, the “understanding” cannot be founded within the “physical world”! Carroll introduces “information” and “understanding” and “consciousness” belong to a different “level”! Again, I ask: “Do these levels have an ontological background or these “levels” are simply “ways of talking” (see Goodman)? Working within the unicorn world, Carroll has to believe that these levels do not really exist. If these levels exist, within the unicorn world, there would be strong certain ontological contradictions! However Carroll furnishes the answer:

The one system we generally agree is conscious is a human being—mostly the brain, but we can include the rest of the body if you like. A human can be thought of as a configuration of several trillion cells. If the physical world is all there is, we have to think that consciousness results from the particular motions and interactions of all those cells, with one another, and with the outside world. It is not supposed to be the fact that cells are “cells” that matters, only how they interact with one another, the dynamic patterns they carve out in space as they move through time. That’s the consciousness version of multiple realizability, sometimes called *substrate independence*—many different substances could embody the patterns of conscious thought. (p. 236)[[28]](#footnote-27)

And

We should judge a conception of what consciousness really is on the basis of whether it provides a useful way of talking about the world—one that accurately fits the data and offers insight into what is going on. (p. 237)

“Useful way of talking about the world”? Does Carroll want to tell us that “consciousness” is a useful way of talking about the world? I don’t believe even Carroll believes in this statement! Carroll continues with

A form of multiple realizability must be true at some level. Like the Ship of Theseus, most of the individual atoms and many of the cells in any human body are replaced by equivalent copies each year. Not every one—the atoms in your tooth enamel are thought to be essentially permanent, for example. But who “you” are is defined by the pattern that your atoms form and the actions that they collectively take, not their specific identities as individual particles. It seems reasonable that consciousness would have the same property. (p. 237)

In my book 2008, I indicate exactly the same idea, but within the EDWs perspective!

In Chapter 40 (“The hard problem”), Carroll mentions Thomas Nagel’s “what is it like” writing that “On this view, we shouldn’t hope to explain conscious experience purely in terms of the physical behavior of the quantum fields in the Core Theory, since consciousness transcends the physical world.” (p. 240) Obviously, within the unicorn world, neither Nagel, nor Carroll can furnish the full answer to the problem of consciousness (and to many other problems). Neither “levels” can help them to explain these phenomena (if they believe that these phenomena that really (and both believe that these phenomena really exist, don’t they?), since within the unicorn world, we reach strong ontological contradictions! Carroll seems to be aware about these contradictions since he writes that:

It’s not hard to understand why someone might feel this way. Fine, the thinking goes, I can accept that the universe exists and obeys natural laws without appealing to anything outside. I have no trouble believing that life is a complex network of interlocking chemical reactions that began spontaneously and evolved through natural selection over billions of years. But surely *I* am more than just a bunch of atoms knocking into one another under the influence of gravity and electromagnetism. I *perceive*, I *feel*—there is something that it is like to be me, something uniquely personal and experiential, a rich inner life that can’t possibly be accounted for by unthinking matter in motion, no matter how many atoms you congregate together. The issue has been dubbed the *mind-body problem*: how can we hope to account for mental reality using only physical concepts?

As with the origin of life and the origin of the universe, we can’t claim to have a full understanding of the nature of consciousness. The study of how we think and feel, not to mention how to think about who we are, is in its relative infancy… But nothing we do know about consciousness should lead us to doubt the ordinary, naturalist conception of the world that has been so exceptionally successful in other contexts. As of right now, nothing about the mind-body problem should persuade us that the laws of physics need updating, amending, or augmenting. (p. 240)

Again, I dawn the attention that this paragraph is not from my main book published in 2008! It is from Carroll’s book (2016)! Take a look at my paragraphs (Vacariu 2008):

Within the non-reductive physicalist approach, philosophers such as Davidson, Fodor, Jackson, McGinn, Nagel, Putnam, Searle, Chalmers, and Van Gulick have argued in different ways for the epistemological irreducibility of mental qualitative phenomena or consciousness to physical states. In the context of non-reductive physicalism, one problematic notion is qualia or subjective phenomena. Even if the mind and consciousness are the result of a series of neural phenomena, an explanation of mental phenomena – or at least of some aspects of them like their *qualia* (qualitative content) or consciousness – cannot be given in neural terms. Describing the mental qualitative states in causal terms leaves out the special problem of *qualia* and in general consciousness. The core idea of irreducibility is that *qualia* and consciousness are subjective phenomena. Nagel insists that the methods of objective physical understanding “can be used on the body, including its central nervous system” but for the explanation of qualitative phenomena, a “different form of understanding” should be considered (Nagel 1993, p. 66). In Chalmers’ interpretation, the phenomenal properties (or qualia) grasp what it is like for a person or organism to be in a phenomenal state and these properties are properties of the individual and not simply of the mental states themselves. (Chalmers 2003, p.3)

For me, it is not clear at all what non-reductive physicalism means. We cannot explain qualia or consciousness in physical terms, but only from the first-person ontology. But does it mean that qualia and consciousness are still physical elements? Does it mean that they belong to another physical level? Is this nonreductive physicalism an epistemological position about a kind of ontological noumena? (We have to remember that Chalmers adopts a kind of Spinozist monism.) Then, if we use two epistemological notions to describe one ontological element, one notion is empty (in the Kantian sense). Two notions that describe the same entity do not have the same value. What does the value of such notions offer us? Non-reductive materialism differs essentially from the EDWs perspective. From its name, we can understand that non-reductive materialism refers only to an epistemological non-reduction. For me, there is a hyperontological non-reduction, i.e., the mental states exist as much as the physical states, but in EDWs. However, the main difference is that the mental states are the “I”, that is, from this viewpoint, an EW. But because of its unity, the “I” is, at the same time, an indivisible entity. (For discussion of qualia and the “I” from my perspective, see next section.) (Vacariu 2008, pp. 175-176)

Of course, we cannot explain the mind-brain problem or consciousness using the laws of physics since we talk about EDWs, not about “different levels”! Then Carroll writes about first-person and third-person views, “qualia”, Chalmers’s easy and hard problems, and “seeing red”:

The Hard Problem, by contrast, seems like an entirely different kettle of those fish. We can poke around in the brain all we like, but how in the world do we expect that to help us understand our inner, wholly subjective, experience? How can a collection of quantum fields evolving in accordance with the Core Theory be said to have “inner experience” at all? (p. 241)

Obviously, the same idea is in Chalmers’s article and book, but the answer to this problem cannot be furnished using “levels” within the unicorn world! Doing exactly this way, Carroll does not furnish any new idea regarding this and all the other problems investigated in his book. Carroll writes about Mary’s room and “knowledge argument” and he mentions that it “was introduced by Australian philosopher Frank Jackson in the 1980s” but surprisingly in an academic environment where it is compulsory to indicate any source of reading, he does not indicate exactly where he read about this topic (something very common in his book). And now let see Carroll’s answers to all these problems:

Let’s consider Mary’s predicament from a poetic-naturalism perspective. There is some fundamental description of our world, in terms of an evolving quantum wave function or perhaps something deeper. The other concepts we appeal to, such as “rooms” and “red,” are part of vocabularies that provide useful approximate models for certain aspects of that underlying reality in an appropriate domain of applicability. So we invent, for example, the concept of a “person,” which maps onto the underlying reality in a particular way—a way that might be difficult to precisely define in principle but is easy to recognize in practice.

These “people” have different attributes, such as “age” and “height.” One such attribute is “knowledge.” A person has knowledge of something if they can (more or less) answer questions about it correctly, or carry out the actions associated with it effectively. If a reliable person tells us, “Linda knows how to change the tires on a car,” we should have a high credence that the person labeled “Linda” is able to answer certain questions and perform certain actions, including helping us with our flat tire. The existence of knowledge in a person corresponds to the existence of certain networks of synaptic connections between the neurons in that person’s brain. (pp. 243-244)

“Different descriptions of the world”, this is Carroll’s answer! Exactly as it is Goodman’s answer, even if Carroll did not mention Goodman and not Carnap’s “linguistic frameworks”, all mentioned in my book 2008! And I mention again that, within the unicorn world, these answers produce strong ontological contradictions. However, these ideas are INCREDIBLE similar to my ideas (2002-2010, etc.) the difference being that Carroll “constructed” his idea within the unicorn world (the “world”) in 2016, I constructed my ideas in EDWs (2002-2010, etc.). Even the notion of “correspondence” in the last sentence has the same meaning, exactly the same meaning as in my works but, again working within the unicorn world (“world”) it produces strong ontological contradiction: how can something that really “exist” correspond to other thing that really exist in the same “person’s brain”? If we replace “underlying reality in a particular way” (first paragraph) with EDWs, we can find exactly the same answer I furnished for “Mary’s experiment” and “qualia” in my book published in 2008! It seems as if Carroll just replaced Goodman’s “different ways” or Carnap’s “conceptual frameworks” with EDWs. But this is just an appearance since Carroll works within the “universe”…[[29]](#footnote-28)

In Chapter 41, Carroll investigates the difference between “substance dualism” and “property dualism” (but as usually, he does not indicate exactly his lectures on these topics):

The idea is that you can have a collection of atoms, and tell me everything there is to say about the physical properties of those atoms, and yet you haven’t told me everything. The system has various possible mental states. If the atoms make up a rock, those states might be primitive and unobservable, essentially irrelevant. But if they make up a person, a rich variety of mental states come to life. To understand consciousness, on this view, we need to take those mental properties seriously.

If these mental properties affected the behavior of particles in the same way that physical properties like mass and electric charge do, then they would simply be another kind of physical property. You are free to postulate new properties that affect the behavior of electrons and photons, but you’re not simply adding new ideas to the Core Theory; you are saying that it is wrong. If mental properties affect the evolution of quantum fields, there will be ways to measure that effect experimentally, at least in principle—not to mention all of the theoretical difficulties with regard to conservation of energy and so on that such a modification would entail. It’s reasonable to assign very low credence to such a complete overhaul of the very successful structure of known physics.

Alternatively, we could imagine that mental properties just go along for the ride, as far as physical systems are concerned. The Core Theory can be a complete description of the physical behavior of the quantum fields of which we are made, but not a complete description of us. Such a description would need to specify our mental properties as well. (p. 245)

Again, all these ideas seem to be constructed within the EDWs perspective! In fact, Carroll could not construct these ideas within the unicorn world (the world)! It would be quite impossible a smart person as Sean Carroll is not to identify the strong contradictions such statements produce within the “universe”! Moreover, in one of my papers/books, I investigated exactly Bechtel’s notion of “go along for the ride”! Obviously, just another coincidence… Carroll writes that

The problem is that the notion of “inner mental states” isn’t one that merely goes along for the ride as we interact with the world. It has an important role to play in accounting for how people behave. In informal speech, we certainly imagine that our mental states influence our physical actions. I am happy, and therefore I am smiling. The idea that mental properties are both separate from physical properties, and yet have no influence on them whatsoever, is harder to consistently conceive of than it might first appear.

According to poetic naturalism, philosophical zombies are simply inconceivable, because “consciousness” is a particular way of talking about the behavior of certain physical systems. The phrase “experiencing the redness of red” is part of a higher-level vocabulary we use to talk about the emergent behavior of the underlying physical system, not something separate from the physical system. That doesn’t mean it’s not real; my experience of redness is perfectly real, as is yours. It’s real in exactly the same way as fluids and chairs and universities and legal codes are real—in the sense that they play an essential role in a successful description of a certain part of the natural world, within a certain domain of applicability. (p. 247)

So, “my experience of redness is perfectly red” or is it a word of “higher-level vocabulary we use to talk about the emergent behavior of the underlying physical system? Is it something not “separate from the physical system”, but it is in the same time something real!!! How can you write these sentences within the unicorn world (your “universe”) Mr. Carroll? These entities are real just in a pragmatic way, in the “essential role in a successful description of a certain part of the natural world, within a certain domain of applicability”! Of course, Carroll informs us that there are different descriptions that describe different parts of the same world, but these parts of the same world really exist, otherwise, these statements are just pragmatic sentences, and it seems that Carroll does not work exactly within the pragmatic framework. In reality, these paragraphs (like many other paragraphs) are very similar to many statements from my book 2008! Carroll uses different “vocabularies” for explaining the “emergent behavior of the underlying physical system, but he insists in informing us that “doesn’t mean it’s not real”, all being “successful description” of a certain part of the natural world (which has an ontology, doesn’t it?), within a certain “domain of applicability”. Or this framework is a contradiction in itself (not only an ontological contradiction)! Working within the unicorn world, but having very similar ideas to my ideas, it is quite impossible to avoid such ontological contradictions! Working within the unicorn world, Carroll is aware of some perils:

The idea that our mental experiences or qualia are not actually separate *things*, but instead are useful parts of certain *stories we tell* about ordinary physical things, is one that many people find hard to swallow. Even with the best of intentions on both sides, a dialogue between a property dualist who believes in the separate reality of mental properties (call him M) and a poetic naturalist who believes they are just ways of talking about physical states (call her P) can be frustrating. (p. 247)[[30]](#footnote-29)

And few lines later:

What do we mean when we say “I am experiencing the redness of red”? We mean something like this:

There is a part of the universe I choose to call “me,” a collection of atoms interacting and evolving in certain ways. I attribute to “myself” a number of properties, some straightforwardly physical, and others inward and mental. There are certain processes that can transpire within the neurons and synapses of my brain, such that when they occur I say, “I am experiencing redness.” This is a useful thing to say, since it correlates in predictable ways with other features of the universe. For example, a person who knows I am having that experience might reliably infer the existence of red-wavelength photons entering my eyes, and perhaps some object emitting or reflecting them. They could also ask me further questions such as “What shade of red are you seeing?” and expect a certain spectrum of sensible answers. There may also be correlations with other inner mental states, such as “seeing red always makes me feel melancholy.” Because of the coherence and reliability of these correlations, I judge the concept of “seeing red” to be one that plays a useful role in my way of talking about the universe as described on human scales. Therefore the “experience of redness” is a real thing. (p. 248)[[31]](#footnote-30)

Again, this paragraph is not from my book 2008! In my terms, the “useful think to say” (EW) is “correlated” (in my works, I indicated that “correspondence” is quite similar to “correlation”) with another EW. These correlations produce strong ontological contradictions within the unicorn world! How is it possible the “‘experience of redness’ is a real thing” within the world? It means that it is not about a “different description”. So, we have here (as in many parts of Carroll’s book) certain strong contradictions, not only ontological but logical contradictions written many times in his book! Maybe this book is a poem (and I do not understand it), since Carroll continues writing that “It’s a mouthful, and nobody would ever mistake it for a Shakespearean sonnet. But there’s a kind of poetry there, if you look closely enough.”! (p. 248)

Just in the next page, writing about reductionism (and Putnam’s view[[32]](#footnote-31)), Carroll insists in writing that “conscious experience” are “essential pieces of emergent effective theory”: “The best way we have of talking about people and their behaviors makes important reference to their inner mental states; therefore, by the standards of poetic naturalism, those states are real, existing things.” (p. 249) Again, and again, within the unicorn world, there are here strong logical contradictions! Are these forms, simple “different ways of thinking” or those states “really exist”? Carroll emphasizes that these states are “existing things”! What a wonderful construction! An incredible movement from Carnap’s “linguistic frameworks” or Goodman’s “ways of talking” to different “existing things” within the unicorn world! Carroll continues:

There is a relationship between the different ways we have of talking about the world, including the human-level vocabulary that includes our subjective experiences, and the cell-biological level that includes firing nerve fibers, and the particle-physics level that includes fermions and bosons. The relationship is that certain states in the more comprehensive theories (particles, cells) correspond to unique states in the coarse-grained theories (people, experiences). The reverse relationship is typically not unique; there may be a large number of arrangements of atoms that correspond to “me being in pain.”(p. 249)

Does the reader want me to explain also this paragraph? “Correspondence”, one of my main concepts, appears in Carroll’s paragraph exactly with the same meaning, but he insists his approach is placed within the framework of the “world”! Moreover, I have exactly the same idea in my book 2008 but in the EDWs! Exactly the same idea! Simple coincidence, again. However, Carroll assures us that his “poetic naturalism” “is ‘poetic’ because there are different stories we can tell about the world, many of them capturing some aspects of reality, and all useful in their appropriate context.” (p. 249) Again, within the same “word”, we have different stories” (vocabularies) that capture different “aspects of reality”!!! Do these “different aspects of reality” have real ontologies or are just “descriptions” of the noumena?

The reader has to move to the EDWs perspective to properly understand Carroll’s ideas written in his book. Amazing, the previous sentence continues with this one: “There’s no reason for us to pretend that subjective experiences don’t exist, or on the other hand that they ‘are’ something happening in the brain. They are essential concepts within a way of talking about things happening in our brains, and that makes all the difference.” Incredible contradiction expressed by Carroll in two statements of the same paragraph! Does the “subjective experience” “really exist” or is just an “essential concept within a way of talking about things happening in our brains”? INCREDIBLE: It is for the first time in my life I can read such an amazing way of writing an idea! Within the unicorn world, does the reader understand something in this statement? Can you explain to me? The next paragraph (a new chapter) is the following:

If consciousness were something over and above the physical properties of matter, there would be a puzzle: what was it doing for all those billions of years before life came along? Poetic naturalists have no problem with this question. The appearance of consciousness is a phase transition, like water boiling. The fact that sufficiently hot water is in the form of a gas doesn’t mean that there was always something gas-like about the water, even when it was in the form of liquid; the system simply acquired new properties as its situation changed. (p. 250)

Carroll tries to convince us that consciousness is not something “over and above”[[33]](#footnote-32) the “physical properties of matter” but I don’t understand what does this expression refer to? Moreover, “phase transition”? I remember that I introduced this notion when I investigated the dynamical system approach in my book from 2008. However, I emphasized that this “phase transition” may refer to the movement of our paradigmatic thinking in describing just entities and processes that belong to one EW to another EDW.

But if you believe that mental properties are an additional ingredient, over and above the underlying physical substrate, then the question of what they were doing for most of the history of the universe is a pointed one. The most straightforward answer is that those mental properties were always there, even before there were brains or even organisms. Even the individual atoms and particles that were bumping into one another in the early universe, or are currently doing so at the center of the sun or in the desolate cold of intergalactic space, are equipped with mental properties of their own. They would be, in this sense, a little bit conscious.

The suggestion that consciousness pervades the universe, and is a part of every piece of matter, goes by the name of *panpsychism*. It’s an old idea, going back arguably as far as Thales and Plato in ancient Greece, as well as in certain Buddhist traditions. In its modern guise it has been contemplated seriously by philosophers like David Chalmers and neuroscientists such as Giulio Tononi and Christof Koch. Here is Chalmers, admirably biting the bullet and accepting the consequences of what such a view would imply:

Even a photon has some degree of consciousness. The idea is not that photons are intelligent or thinking. It’s not that a photon is wracked with angst because it’s thinking, “Aww, I’m always buzzing around near the speed of light. I never get to slow down and smell the roses.” No, not like that. But the thought is maybe photons might have some element of raw, subjective feeling, some primitive precursor to consciousness. Consciousness, or at least protoconsciousness, could be analogous to “spin” or “electric charge”—one of the basic properties characterizing each bit of matter in the universe. (p. 250)

In my books, I wrote exactly the same ideas! In fact, it is about the fact that the microparticles (for instance) correspond to a mind-EW! “Consciousness, or at least protoconsciousness, could be analogous to ‘spin’ or ‘electric charge’—one of the basic properties characterizing each bit of matter in the universe.” (p. 250) Replace “analogue” with “correspondence” in this statement and you reach the exactly the EDWs perspective. “Consciousness seems to be an intrinsically collective phenomenon, a way of talking about the behavior of complex systems with the capacity for representing themselves and the world within their inner states.” (p. 251) Again does Carroll refer to “consciousness” as a different way of talking”? I don’t believe he refers only to this… In reality, it seems to be exactly my EDWs perspective placed within the unicorn world, the “universe”, no more or less… Incredible, the title of Chapter 43 is “What acts on what?”!

We live in a reality that can be fruitfully talked about in many different ways. We have an extravagant assortment of theories, models, vocabularies, stories, whatever you prefer to call them. When we speak about a human being, we can describe them as a person with desires and tendencies and inner mental states; or we can describe them as a collection of biological cells interacting via electrochemical signals; or we can describe them as an agglomeration of elementary particles following the rules of the Core Theory. The question is, how do we fit these different stories together? In particular, what acts on what? Does the existence of the particle-physics description, in which “causality” is nowhere to be found, imply that it is illegitimate to talk about scratching being caused by itching?

The poetic-naturalist answer is that any of the stories we have stands or falls on its own terms as a description of reality. To evaluate a model of the world, the questions we need to ask include “Is it internally consistent?,” “Is it well-defined?,” and “Does it fit the data?” When we have multiple distinct theories that overlap in some regime, they had better be compatible with one another; otherwise they couldn’t both fit the data at the same time. The theories may involve utterly different kinds of concepts; one may have particles and forces obeying differential equations, and another may have human agents making choices. That’s fine, as long as the predictions of the theories line up in their overlapping domains of applicability. The success of one theory doesn’t mean that another one is wrong; that only happens when a theory turns out to be internally incoherent, or when it does a bad job at describing the observed phenomena. (p. 255)

It is incredible, I have no words! Carroll writes here about “different vocabularies” that describe “inner mental states” or “a collection of biological cells interacting via electrochemical signals”! And his “poetic-naturalist” approach fits these descriptions of reality! Incredible: “MULTIPLE DISTINCT THEORIES THAT OVERLAP IN SOME REGIME” HAS TO BE “COMPATIBLE”, OTHERWISE, “THEY COULDN’T BOTH FIT THE DATA AT THE SAME TIME”! This words mirrors exactly my EDWs perspective placed within the unicorn world, closed to a “linguistic framework”.

It’s possible that what Fodor means by “literally true” is something like “an essential element of every possible description of nature,” or perhaps “of our best and most comprehensive description of nature.” In other words, there can’t exist any successful vocabulary that doesn’t include “wanting” and “believing” as fundamental concepts. (p. 255)

In my book from 2008, I investigated in details Fodor’s article (1974) exactly on this topic! Just another coincidence… “Believing” as a characteristic of a human being, really exists or it is just a concept in a “successful vocabulary”? And see the next INCREDIBLE paragraph(!!!):

Rather than acknowledging that there is one way of talking about the world in terms of the quantum fields and interactions of the Core Theory, and another way in terms of electrochemical signals traveling between cells, and yet another way in terms of human agents with desires and mental states, we fall into the trap of using multiple vocabularies at the same time. When told that every mental state corresponds to various physical states of one’s brain, one wants to complain, “Do you really think the reason why I’m scratching is only because of some synaptic signaling, and not because I feel an itch?”

The complaint is misplaced. You can describe what’s happening in terms of electrochemical signals in your central nervous system, *or* in terms of your mental states and the actions they cause you to perform; just don’t trip up by starting a sentence in one language and attempting to finish it in another one. One of the most common arguments against Cartesian dualism (or mental properties that influence physical ones) is *causal closure of the physical*. The laws of physics as we know them—the Core Theory, in the domain we’re interested in—are complete and self-consistent. You give me a quantum state of a system, and there are unambiguous equations that will tell me what it will do next. (We’ve written down one such equation in the Appendix.) There is no ambiguity, no secret fudge factors, no opportunity for differing interpretations of what is happening. If you give me the precise and complete quantum state corresponding to “a person feeling an itch,” and I have the calculational abilities of Laplace’s Demon, I could predict with extraordinary accuracy that the quantum state will evolve into a different state corresponding to “a person scratching themselves.” No further information is needed, or allowed. (p. 256)

As usually, Carroll does not indicate his source of “causal closure of the physical, but in my book 2008, I investigate in detail this notion (Kim’s works).[[34]](#footnote-33) Moreover, in the above paragraph we can see that Carroll seems to be writing these sentences under the EDWs perspective, since he uses “correspondence” and “or” italic again exactly with the same meaning as I introduced in my books 2008 and 2010. So again quoted:

When told that every mental state corresponds to various physical states of one’s brain, one wants to complain, “Do you really think the reason why I’m scratching is only because of some synaptic signaling, and not because I feel an itch?” The complaint is misplaced. You can describe what’s happening in terms of electrochemical signals in your central nervous system, *or* in terms of your mental states and the actions they cause you to perform; just don’t trip up by starting a sentence in one language and attempting to finish it in another one. (p. 256)

Unbelievable similar ideas to my ideas! Obviously, just another coincidence, no more or less. We have to pay attention that, in the second paragraph, the important notion “or” is written italic! It sends us directly to the Bohr’s complementarity that I applied to the mind-body problem within the EDWs perspective in my book 2008 and other works. Carroll is aware that “using multiple vocabularies at the same time” can be a “trap”! The answer (I write again):

When told that every mental state corresponds to various physical states of one’s brain, one wants to complain, “Do you really think the reason why I’m scratching is only because of some synaptic signaling, and not because I feel an itch?” The complaint is misplaced. You can describe what’s happening in terms of electrochemical signals in your central nervous system, *or* in terms of your mental states and the actions they cause you to perform; just don’t trip up by starting a sentence in one language and attempting to finish it in another one. (Carroll)

This paragraph, as many others of his book, seems to be written within the EDWs. I emphasize that this paragraph is written by Carroll in his book (2016)! He preserves the “vocabulary” for brain and the “vocabulary” for the mind in order to avoid any “complaint”! However, Carroll avoids the (un)famous “causal closure principle” talking not only about different vocabularies” but about different states that really exist! Working within the unicorn world, Carroll reaches again strong ontological contradictions! Immediately after this paragraph, he informs us about the “strong emergence” and “downward causation”. I introduce another long paragraph that the reader will have the feeling as being written under the EDWs perspective (!!!):

Poetic naturalists tend to view downward causation as a deeply misguided idea. Then again, they view upward causation as equally misguided. “Causation,” which after all is itself a derived notion rather than a fundamental one, is best thought of as acting within individual theories that rely on the concept. Thinking of behavior in one theory as *causing* behavior in a completely different theory is the first step toward a morass of confusion from which it is difficult to extract ourselves.

It’s certainly possible that behavior in coarse-grained macroscopic theories might be *entailed by* features of more comprehensive theories, and we certainly want them to be *consistent with* such theories when the descriptions overlap. We might even, as long as we’re careful, say that features of an underlying theory can help *explain* features of an emergent one. But we get in trouble if we try to say that phenomena in one theory are *caused by* phenomena in a different one. I know that I cannot use my mental powers to reach across space and bend spoons, since the fields and interactions of the Core Theory don’t accommodate that kind of capacity. But I can describe that feature purely in the macroscopic language: human beings don’t possess the power of telekinesis. The microscopic explanation might aid my understanding, but it’s not a necessary part of how I talk about human-scale behavior.

And the converse, downward causation of human-scale properties influencing the microscopic behavior of particles, is misguided. A standard example is the formation of snowflakes. Snowflakes are made of water molecules, interacting with other molecules to form a crystalline structure. There are many possible structures, determined by the initial configuration of the seed from which the snowflake grows. Therefore, it is claimed, the macroscopic shape of the snowflake is acting “downward” to determine the precise location of individual water molecules.

It’s bad form to mix vocabularies in such a vulgar way. Water molecules interact with other water molecules, and other molecules in the air, in precise ways that are specified by the rules of atomic physics. Those rules are unambiguous: you tell me what other molecules any individual water molecule is interacting with, and the rules will say precisely what will happen next. The relevant molecules may be part of a larger crystalline structure, but that knowledge is of zero import when studying the behavior of the water molecule under consideration. The environment in which the molecule is embedded is relevant, but there is no obstacle to describing that environment in terms of its own molecular structure. The individual molecule has no idea it’s part of a snowflake, and could not care less.

Something like downward causation is possible in principle, even if there’s no evidence for it in the real universe. We could imagine a possible world in which electrons and atoms obeyed the rules of the Core Theory in situations of very low numbers of particles, but started obeying different rules when the numbers became large (such as in a human being). Even then, the right way to think about the situation would not be “the larger structure is influencing the smaller particles”; it’s “the rules we thought were obeyed by particles were wrong.” In other words, we could discover that the domain of applicability of the Core Theory was smaller than we thought it was. There is no evidence that anything along those lines is true, and it would violate everything we know about effective quantum field theories—but many things are possible. (pp. 256-257)

I indicated in my book 2008 that the “downward causation” is a completely wrong notion. Again, I investigated Kim’s ideas about the “causal closure” and I furnished exactly the same idea. Carroll indicates exactly the same idea arguing exactly with the same argument! He talks about “causation”, but he uses “different vocabularies” within the “universe”! This is quite an absurd idea… However, Carroll also introduces the *difference* between “features of an underlying theory” and “emergent features”. Working within the unicorn world, we cannot accept this distinction without reaching strong ontological contradiction! However, in order to avoid a wrong explanation for different kinds of “causation” (real phenomena), Carroll emphasizes that we have different “causations” for these different kinds of “features” that really exist! This is, again, possible only within the EDWs perspective, but not possible within the unicorn world. It would be possible using only different vocabularies, but it is clear Carroll refers to “different phenomena/features” that really exist! In my book from 2008, I have exactly the same ideas! Does the reader want more details about the incredible similarities between my ideas and Carroll’s ideas? Again Carroll moves from “different vocabularies” to “different phenomena” within the unicorn world without any problem:

It’s bad form to mix vocabularies in such a vulgar way. Water molecules interact with other water molecules, and other molecules in the air, in precise ways that are specified by the rules of atomic physics. Those rules are unambiguous: you tell me what other molecules any individual water molecule is interacting with, and the rules will say precisely what will happen next. The relevant molecules may be part of a larger crystalline structure, but that knowledge is of zero import when studying the behavior of the water molecule under consideration. The environment in which the molecule is embedded is relevant, but there is no obstacle to describing that environment in terms of its own molecular structure. The individual molecule has no idea it’s part of a snowflake, and could not care less. (p. 257)

How is it possible to write about “mix vocabularies in such a vulgar way”, but, in the next sentence, to write about real phenomena like “water molecules that interact with other water molecules” and this interaction taking place in the “environment” described “in terms of its own molecular structure”! These ideas seem to be written under the EDWs framework not under the “universe” framework! Moreover, in the next sentence, Carroll emphasizes that the “individual molecule has no idea it’s part of a snowflake”!!! I emphasized exactly the same idea in my articles 2002, 2005, and my books 2008, 2010, etc.[[35]](#footnote-34) It is about EDWs and not about the “world”, the unicorn world…

In Chapter 44, Carroll focus on the notion of “freedom to choose”, that is on free will. At page 261, Carrol introduces Libet’s famous experiment in the 1980s. I investigated this experiment in my work 2010! Another coincidence, but the amazing thing is that Carroll investigates many topics (authors) that are investigated by myself in my two books from 2008 and 2010! *Just coincidences between my ideas and the ideas of this popular physicist in USA who have read just few works on philosophy of mind and cognitive neuroscience, but was able to find the correct answers for such old and difficult questions! This means to be “great physicist working on philosophy of mind and cognitive neuroscience and reading just few texts in a very short time”*. This state of affair clearly indicates the difference between Physics and philosophy of mind/cognitive neuroscience.

Carroll solution to Libet’s problem is exactly the same solution I furnished in my book from 2010 (p. 60 and next pages).

How can we interpret Libet’s experiment from an EDWs perspective? Firstly, it confirms the EDWs principle: the mind and the brain belong to EDWs. Moreover, the will of a human subject is a mental process that involves the entire subjectivity of the subject that is the “I”. So, we have to follow the principle of knowledge: the “I” is the knowledge. Even when we follow Libet’s indication (the subject has to tell Libet when she feels to move her finger), there are other brain areas that become more or less active. Probably, the subject needs large parts of the brain to feel the urge to lift her finger even if the activation of these areas can not be recorded by the actual devices. Obviously, using such

measuring instruments for the brain activity, we cannot detect all parts just because the entire “I” is involved. According to the principle of part-counterpart, the “I” corresponds to the brain and body, so we have to insert the whole brain and body into the equation. We believe that we should use the EDWs framework for a better interpretation of Libet’s experiment. (Vacariu and Vacariu 2010, p. 61)

Carroll continues:

A poetic naturalist says that we can have two very different-sounding ways of describing the world, a physics-level story and a human-level story, which invoke separate sets of concepts and yet end up being compatible in their predictions concerning what happens in the world. A libertarian thinks that the right way to talk about human beings ends up making predictions that are *incompatible* with the known laws of physics. We don’t need to do such dramatic violence to our understanding of reality just to make peace with the fact that we make choices as we go through the day. (p. 261)

We have again “two different-sounding ways of describing the world” with two different “levels”, the “physics-level story” and the “human-level story” which “invoke separate sets of concepts” but and “being compatible in their predictions concerning what happens in the world”. My question is “What really happens in the world, in your unique world, Mr. Carroll?” Of course, the free will is incompatible with the laws of physics but only within the EDWs perspective! I wrote exactly these ideas in my book from 2010! He continues this chapter with many other ideas that can be found in my book from 2010. Amazing, again, Carroll rejects the existence of “God” on ontological reason:

The source of these values isn’t the outside world; it’s inside us. We’re part of the world, but we’ve seen that the best way to talk about ourselves is as thinking, purposeful agents who can make choices. One of those choices, unavoidably, is what kind of life we want to live.

We’re not used to thinking that way. Our folk ontology treats meaning as something wholly different from the physical stuff of the world. It might be given by God, or inherent in life’s spiritual dimension, or part of a teleological inclination built into the universe itself, or part of an ineffable, transcendent aspect of reality. Poetic naturalism rejects all of those possibilities, and asks us to take the dramatic step of viewing meaning in the same way we view other concepts that human beings invent to talk about the universe. (p. 264)

In my paper (at my webpage, posted in 2014), I furnished exactly the same argument, but within the EDWs perspective! Amazing, isn’t it?[[36]](#footnote-35)

In this document, I indicated many UNBELIEVABLE similar ideas between Carroll’s ideas in his book 2016 and my books 2008, 2010. There are incredible many topics and authors in his book that can be found in my two books. On these topics, Carroll’s judgments are almost identical to my judgments, the difference being only the frameworks: the “universe" (however, he uses “different aspects of the world”) vs. the EDWs. Obviously, just coincidences… I emphasized that Carroll works in the framework of “universe”, while I worked in the framework of EDWs. Carroll reaches strong ontological and rational contradictions, even if in some paragraphs of his book, he supports “different aspects of reality” that sends directly to the EDWs. In order to avoid such contradictions Carroll uses “different vocabularies” (very similar to Carnaps’ linguistic frameworks or Goodman’s way of talking”). Preserving Kantian noumena, Carroll reaches strong ontological contradictions!

Sean Carroll continues publishing UNBELIEVABLE very similar ideas to my ideas: “The big bang is not the beginning of our universe — it’s actually the end of something else entirely” at [http://article4science.blogspot.ro/…/the-big-bang-is-not-be…](https://l.facebook.com/l.php?u=http%3A%2F%2Farticle4science.blogspot.ro%2F2017%2F07%2Fthe-big-bang-is-not-beginning-of-our_19.html&h=ATMYbvHAHQKEbPhvzn2AmTGWi14CTEum4Sh_rGfv8g1yXouAe9Hgi4i_sllzyyXBXAorUenF96QXdhWqyb_1jOKvFzTclfhljRn3dtTHFxuKS7xtQHjshtl5udWPy-jAr858W9F1xGFQMYRjEC8M&enc=AZMaJBCLpNLqNWK4fCJY5mRQ1IecNpAlHbfH9xx2loBAYBrbA77vR3xcqlHBLUhKn0ILI5-ZZWH0gsZKUmFWMTABsFjTylG4nFrxPPns5ts72GnDQl_dQG0ucw8bRpU9I0ya2DtjckHbUsysi7zjwhfLJs763DW-ykEQs00S3zGpYA6RUlD_C_xqMVhkbqX7dhc&s=1" \t "_blank)

I had this idea in an article from 2007, and I developed later in 2014 and 2016. The last footnote of my article 2007 below:

Footnote 10: I want to briefly analyse a Ptolemaic epicycle constructed among others within the unicornworld in contemporary physics. It is about dark matter and dark energy. Let us consider some EDWs: at least one micro-EW (with microparticals and their interactions), macro-EW (with microparticals like tables, stones, individual planets and their E interactions), galaxy-EW (with galaxies and their E interactions). From an EDWs perspective, the galaxies seem to be E entities that are different then the tables, stones and individual planets. In the same way as an electron does not exist in the macro-EW, a planet does not exist in the galaxy-EW. Between galaxies, probably there are certain E interactions (E laws) that are different then the E laws between individual planets, stones and tables. Within the unicorn-world, at ‘macro-level’, dominated by the macroscopic laws, for solving the anomaly that the “universe” expands faster and faster (i.e., the distances between the galaxies increase faster and faster) we invented such empty notions like dark matter and dark energy. Obviously, there are other EWs then those I mentioned above. The existence of EDWs does not depend on our conditions of observation but on the interactions between ED entities. With new tools of observation, we discover (we do not create) new EWs. To answer the question, “How many EDWs exist?”, we need heuristic and scientific methods. Therefore, this is a scientific and not philosophical problem. However, following Friedman (with his meta-paradigms) we can now return, with the EDWs perspective, to the long forgotten image of philosophy that was guiding the science. (Vacariu 2007, p. 175) [for more details books 2014, 2016]

**New York Times -review about “The Big Picture” of sean carroll by Anthony Gottlieb**

[many of these ideas underlined by Gottlieb fromm sean caroll’s book are UNBELIEVABLE similar to my ideas from my previous works…]

Let me indicate UNBELIEVABLE sean carroll’s similar ideas to my ideas from this review:

* In place of Eddington’s two tables, only one of which is real, Carroll sees a myriad of them, each legitimate in its own way. This is because phenomena may usefully be investigated at many levels. You can consider the individual atoms in a box of gas, for example, or you can instead treat the gas as a liquid and study its fluid properties. Similarly, the actions of a person may be described psychologically, in terms of his or her desires and beliefs, or in terms of physiology. Underlying all these scientific stories, there is, he insists, a rock-bottom level of description: “a quantum wave function, or a collection of particles and forces — whatever the fundamental stuff turns out to be.” But Carroll rejects the sort of reductionism that says all valid descriptions can be deduced from fundamental physics. That venerable idea seems to have been a mirage.
* Instead, Carroll defends what he calls “poetic naturalism.” “Naturalism,” because there is nothing above and beyond nature. In particular, there are no gods or spooks to transcend or interfere with natural laws. So Einstein’s dice are rolling themselves. “Poetic,” because “there is more than one way of talking about the world.” True enough, but “poetic” is a bit of a stretch. Carroll might just as well have called his position “romantic reductionism” or “fragrant physicalism,” since what he’s trying to convey is a stance that is hard-nosed yet soft to the touch — a kinder, gentler, more capacious science.
* Carroll’s gentler science includes a fair bit of philosophy. His knowledge of the subject not only deepens his book’s account of contemporary theories but is a boon to its historical parts. He knows better than to try to slice thinkers from the distant past into two neat piles labeled “scientist” and “philosopher.” For example, rather than making the downfall of Aristotelian physics all about Galileo as usual, Carroll is careful to give some credit to John Philoponus, a theologian and grammarian of sixth-century Alexandria, and to Jean Buridan, a 14th-century rector of the University of Paris. Another welcome walk-on part goes to Princess Elisabeth of Bohemia, a sometime abbess who corresponded with Descartes and gave him an impressively hard time over his ideas about the mind-body problem.
* The last quarter of “The Big Picture” deals mostly with questions about consciousness, free will and the nature of morality. If, as Carroll has explained in the rest of his book, “the vast majority of life is gravity and electromagnetism pushing around electrons and nuclei,” then how do minds fit into the picture? And what is one supposed to say about ethics?
* One famous thought experiment discussed by Carroll, which was invented by Frank Jackson, an Australian philosopher, concerns Mary, a scientist who studies color. Bizarrely, we are to imagine that Mary leads a wholly monochrome life, even though she is not colorblind. Her body is painted white, and she has never left her windowless house, the contents of which are all either black, white or gray. She has never directly experienced the colors of the rainbow, and yet she is an authority on optics and the physiology of color perception.
* Now suppose she goes outside and sees flowers for the first time. Does she thereby learn something about the world that science could never have taught her? In one sense, yes: She acquires new kinds of abilities and memories that you cannot get from books. But, Carroll argues, it does not follow that “there is more to the universe than its physical aspects.”
* In his closing chapters, Carroll ­tackles what he calls the hardest problem of all: how to find meaning in a cosmos that is “without transcendent purpose.” His answers come packaged in a format suitable for airport bookstalls: “Ten Considerations,” instead of Ten Commandments, to live by. They include “What matters is what matters to people,” “It takes all kinds” and “The universe is in our hands.”

**[here, one of my question: how somebody who has not had any article, chapter on cognitive neuroscience or philosophy of mind or philosophy, was able to write, so sundenly, several chapters on cognitive neuroscience and philosophy of mind????]**

* **(2016) The unbelievable similarities between Frank Wilczek’s ideas (2016) (Nobel Prize in Physics) and my ideas (2002-2008, etc.) (Philosophy of Mind and Quantum Mechanics)**

# In this chapter, I investigate the ideas that we can find in the very short videoclip of Frank Wilczek (<http://bigthink.com/videos/frank-wilczek-on-physics-and-understanding-the-mind> 4 min 50 sec) on “Big Think” site. Let me introduce the transcript of this clip:

Frank Wiczek in “Big Think” (Facebook, 98.10.2016)  
0:05 There’s every reason to think that physics provides the underlying fundamental laws that

0:14 describe how mind works. That’s the working hypothesis that Francis Crick calls the astonishing

0:23 hypothesis that I think basically every serious neurophysiologist assumes that by understanding

0:32 at a molecular level how nerve cells worked and understanding at an architectural level

0:37 how they’re wired together and understanding the logic of the processing as you might try

0:45 to understand how a computer works that that will give a rich and in a sense complete understanding

0:54 of how the brain works, that there’s nothing missing. That program is very, very far from

1:00 being accomplished and so it’s logically possible that something will go wrong. But

1:06 so far that seems to be on track and there don’t seem to be any show stoppers as far

1:13 as I can tell. The previous history is that at one time people thought that there would

1:20 be some kind of special animism or vital principle that was necessary to understand how metabolism

1:31 works or to understand how heredity works or to understand how other basic biological

1:38 processes work.

1:40 But in those cases I think it’s fair to say that we’ve actually achieved a molecular

1:44 understanding. It’s not absolutely complete but it’s – I think the conceptual outlines

1:49 are quite clear of how metabolism works and how heredity works and it is firmly based

1:55 on the principles of physics. Now that being said there’s a very important concept that

2:04 as I’ve – the deeper I’ve studied the more I’ve come to appreciate that Niels

2:09 Bohr introduced called complementarity. This in quantum mechanics is a theorem but I think

2:16 it has much more general applicability. It’s the concept that there can be an underlying

2:24 reality that you address questions to in different ways that are meaningful and give informative

2:31 answers but require processing the underlying reality in different ways. So that the ways

2:42 that you have to do the processing might be mutually incompatible. In quantum mechanics

2:48 that’s just something that’s a theorem, a mathematical theorem that if you want to

2:52 know where a particle is you have to process its most basic reality, it’s wave function

2:58 in one way. If you want to know how fast it’s moving, its velocity or momentum, you have

3:05 to process the wave function in a different way. And you can do either one of those and

3:09 get good answers for where it’s going to be or how it’s going to move.

3:15 But you can’t do both at once because the kind of processing that’s involved is incompatible.

3:22 I think that’s a much more general phenomenon that when you try to address the nature of

3:30 things you may find that asking different questions requires different ways of processing

3:35 the underlying information structures, the underlying reality so that, for instance,

3:42 in understanding the human mind which is what we were talking about, to understand it physically

3:47 requires one kind of processing and there’s every reason to think that we already have

3:53 the fundamental physical laws that are adequate to that kind of treatment. But to understand

4:02 how a person works, how thought processes, moods and so forth add up to a personality

4:10 in a human actor will require quite different ways of understanding and quite different

4:15 ways of processing the underlying information structure that are probably incompatible.

4:22 So the age old conflict between determinism and free will, for instance, I think is superficial.

4:31 They’re different ways of processing that could easily be and apparently are incompatible.

4:38 If we’re dealing with our own experience or if we’re dealing with issues of law we

4:44 really need the concept of free will. But if we’re dealing with the brain as a physical

4:50 object I think we can rely on the physical laws.

I mention that I read and wrote about Wilzek’s book (2012) and he did not mention anything about the mind-brain problem or about Bohr’s principle applied to the mind-brain problem! In reality, Wilczek has nothing to do with the mind-brain problem or cognitive neuroscience in that book! However, it seems that he discovers this application just this year in 2016!

I applied Bohr’s complementarity in my articles 2002, 2003, 2005, and all my books 2008-2016!

In my article Synthese 2005:

In my attempt to reject the unicorn-world framework, I start by introducing some related elements from Descartes, Spinoza, Kant and Bohr’s perspectives. I continue by introducing a new dimension given by the role of the observer and the conditions of the observation and I will look at the role of the observational conditions in grasping mental

states or neural patterns of activation. (p. 517)

It is generally accepted that the conditions of observation play a major role in explaining external phenomena. One of the best ways to make this idea more explicit is to look at Kant’s philosophy and Bohr’s physics. Both of them consider that through the conditions of observation (pure intuition of space and time for Kant and measurement apparatus for Bohr) we have access only to phenomena and not to noumena (or ‘closed systems of objects’ for Bohr). Kaiser analyses the strong influence of Kant’s approach on Bohr’s way of thinking (Kaiser 1992).7 He emphasizes how the Kantian notion of *‘conceptual containment’* can be identified in Bohr’s theory.8 (pp.522-523)

Bohr applies the same distinction between noumena and phenomena to the quantum level. He introduces the idea of complementarity for quantum phenomena: because of the conditions of the measurement apparatus, the position and the momentum of a particle cannot be observed simultaneously; or the properties of light (wave and corpuscular) cannot be grasped simultaneously. “The wave-particle duality of light *. . .* invokes mutually exclusive concepts relating to either wave behaviour or particle behavior.” (Kaiser 1992, pp. 220–221) Conceptual containment is for Bohr a requirement which says that we have to include the conditions of the observation (i.e. the measurement apparatus) in the definitions of quantum phenomena. Without such a rule, our judgments relate uncontained concepts and thus these judgments have no objective reality. (pp. 523-524)

Let us now apply the notion of ‘conceptual containment’ to the perspective of the observer. It follows that a specific set of observational conditions offers us a particular epistemological world. Specific judgments describe the phenomena of each epistemological world. These judgments must follow the rule of conceptual containment. As we saw above, for Kant conceptual containment means the inclusion of the conditions and limitations within the concept of the judgments. These conditions and limitations are given by the empirical intuitions. In part 2.1, I introduced the internal and external tools of observation (observational conditions) that offer us EDWs. (p. 524)

In my view, the process of ‘perceiving an object’ means to perceive internal or external objects. Internal and external tools of observation play the same role for perceiving internal or external phenomenal objects. Thus, the judgments of internal knowledge must follow the conceptual containment rule given by the properties of internal tools of observation that involve mental states (representations). For empirical (external) knowledge the conceptual

containment is given by empirical intuitions; for internal knowledge this rule is governed by the properties of mechanisms that observe internal mental states. In both cases, we deal with a process of observation of internal or external objects. Using different conditions of the observations we can observe either mental states or neural patterns of activation.

Up to this point, the aim of this entire argument has been to allow us to introduce the principle of conceptual containment specific for our analysis:

(P3) The set of judgments that describe the phenomena of each epistemological world must follow the rule of conceptual containment that is given by the conditions and limitations within the concepts of the judgments. These conditions and limitations are governed by the properties of (internal or external) tools of observation.

Different properties of the tools of observation lead us to different epistemological worlds. Not only do internal and external tools of observation offer us EDWs but also different external tools of observation can grasp EDWs. The external tools of observation are different because they have different properties; in consequence, they present us with EDWs. For instance, as presented in 2.1, fMRI and PET grasp different neural patterns of activation. We can say that explaining psychological terms through neuronal terms (or vice versa) is a mistake because it does not follow the conceptual containment rule as it is presented by (P3). Such judgements do not have objective reality. What we can do instead to avoid these errors is to try to see only the *correspondences* between the concepts that describe different phenomena belonging to EDWs. A particular concept describes a specific object/phenomenon that belongs to one epistemological world. A different concept describes an object/phenomenon that belongs to a different epistemological world. These two concepts under discussion do not refer to the same object/phenomenon

because each object/phenomenon described by them belongs to epistemologically different world. Therefore, in the best case, we can try to find a correspondence between objects/phenomena described by those different concepts that belong to EDWs. At this point, it is useful to clarify the notion of correspondence between objects/phenomena described by mind and by brain (body) terms within different EDWs. (pp. 524-525)

From this perspective, a particular understanding on human subjectivity or human experience is given by the part-counterpart principle:

(P4) In physical terms, the part-counterpart relation corresponds to human subjectivity or human experience.

We can explain in physical terms human subjectivity/experience only through the part-counterpart relation. Using external tools it is practically impossible to grasp human subjectivity as a whole. Human subjectivity is a universal property of the human species, that is, every human has the feeling of her self, as an individual, due to the internal tools. (p. 530)

Any alternative to the mind–body problem would necessitate one metaphysical framework. Therefore, there are some questions that still need to be addressed. What is the ontological status of each epistemological world? Which entities or primitives from which epistemological world really exist? In order to answer these questions we have to explain what we mean by ‘existence’. Following Kant and Bohr, I consider that the notion of existence can be defined from an epistemological perspective. Due to the conditions of observation, each epistemological world has its own entities, structures, processes, laws, etc. According to (P2), one person cannot observe simultaneously two EDWs. The entities and laws from two epistemological worlds are different; we can establish only correspondences between entities and laws of two epistemological worlds.14 For epistemological and pragmatic reasons, we can assume that entities from each epistemological world exist. We can ask about objective reality from this point of view, i.e., objective reality is given by the principle of conceptual containment that entails the observational conditions.

15 It would be completely wrong to understand EDWs as either ontological levels of existence or levels of analysis. It is not about levels but about epistemologically different worlds!16 (pp. 531-532)

The EDWs perspective (or the perspective of the observer) is fundamentally an anti-metaphysical view. My approach can be regarded as an extrapolated transcendental idealism: not only human beings but also each entity observes/interacts only with entities from the same EW. Moreover, I transcend ‘multiple worlds’ in an ontological sense, even if I extend the perspective of the observer to all entities (from an extended transcendentalist view). However, I go beyond Kant’s approach, as I reject the noumena-phenomena distinction (to talk of noumena assumes the unicorn-world). The trio of entity-conditions of the observation-epistemological world is crucial and all the components have to be taken into consideration together.19 I emphasize that the extended perspective of the observer to all the entities (that exist in EDWs) goes beyond transcendental idealism or different philosophical approaches such as relativism, or materialism vs. idealism. 20 The meaning of ‘epistemologically different worlds’ is crucial for the entire approach. As I adopted the specified anti-metaphysical point of view, I have somehow to bring together both epistemology and ontology in the same expression, or even to transcend them by proposing the concept of hyperworld or hyperverse… We can now introduce the last principle, the principle of objective reality:

(P5) Each epistemologically different world has the same objective reality. (p. 533)

All epistemological worlds have the same epistemological status. Regarding objective reality, there are no differences between internal and external conditions of observation. Each condition of observation offers us one EDW; all EDWs have the same objective reality. Each particular EW has its own entities, laws, processes and properties and they depend directly on the relation between the observer and what she observers using the conditions of observation. (p. 533)

I mention here another reason for the unicorn-world domination: in the history of human thinking, the overwhelming distinction between epistemology and ontology has misleaded us to the wrong framework of unicorn-world. In order to avoid this mistake and to discard the dualism (and all the other approaches for the mind-body problem), we have to reject the confident distinction between ontology and epistemology. We have to unify them in something like ‘epistemological ontology’ and this is the reason for the expression “epistemologically different worlds.”22 Exactly because of our limits, we have to admit the existence of EDWs. Thus terms like “appearance”, “phenomena”, “noumena”, “reality”, “real world”, etc., are improper.23 Some philosophers and scientists claim that macro-objects are “appearances”. Human beings are macro-objects. Thus not only are tables, chairs, and planets (and gravities caused by them) appearances but human beings are appareances, too!24 The Cartesian “I”, that is, the part–couterpart relationship, exists for us in one epistemological world; in the micro-epistemological world, the “I” corresponds to a network of micro-particles, their functions, and the relationships among them. Because of our limits of observation and of existence, the “I” as an entity has no identity in such an EW.25 *The existence of “I”, with its limits and with the possibility of changing the observational conditions, implies the existence of EDWs. (p. 534)*

While the forest and its trees belong to the same EW, the table and its corresponding microparticles from the quantum-world do not exist in the same EW just because a person needs to pass a threshold (and thus to change the observational conditions) in order to move from one EW to the other. As Bohr mentioned, we have to use macro-object tools for the observation of the quantum-world. With our eyes, we observe the table as a whole. Using a standard microscope we magnify, within a limit, a part of the table. We are still in the same EW. Using an electron microscope, we pass the threshold and we observe another EW, the quantum-world. We need to recognise that this process of magnification is not a continuous one. Thus, it is essential to note that our observation passes a threshold

and jumps from one EW to another! So we can see that it is a mistake to think that either micro-particles are in the same world as our tools of observation and us, or that the network of microparticles is identical with that macro-object because they form that object. (p. 535)

My book 2008: about Bohr’s complementarity applied to the mind-brain problem from my book 2008 (posted on Internet immediately after being published):

Following Bohr, and considering that a subject cannot use two or more tools of observation at the same time, we can postulate the next principle – the principle of complementarity: As human attention is a serial process, the human subject cannot simultaneously observe EDWs. Moreover, an observer cannot pay attention simultaneously to an entity and its organizationally different parts. Avoiding the unicorn-world, a researcher, as an observer, can try to see only the correspondences between the entities that belong to EDWs described by different concepts.11 For instance, we can find only the rough correspondences between mental states/processes and neural patterns of activation that belong to EDWs. In the next section, from an epistemological viewpoint, we have to emphasize the role of the conditions of observation in defining all epistemologically different entities (pp. 112-113)

Kaiser analyzes the strong influence of Kant’s approach on Bohr’s way of thinking. (Kaiser, 1992)12 He emphasizes how the Kantian notion of *“conceptual containment”*13 can be identified in Kant’s theory14. (p. 114)

Bohr applies the same distinction between noumena and phenomena to the quantum level. He introduces the idea of

complementarity for quantum phenomena: because of the conditions of the measurement apparatus the position and the momentum of a particle cannot be observed simultaneously; or the properties of light (wave and corpuscular) cannot be grasped simultaneously. (p. 115)

Let us now apply the notion of “conceptual containment” to the perspective of the observer. It follows that a specific set of observational conditions offers us a particular epistemological world. Specific judgments describe the phenomena of each epistemological world. These judgments must follow the rule of conceptual containment. As we saw above, for Kant conceptual containment means the inclusion of the conditions and limitations within the concept of the judgments. These conditions and limitations are given by the empirical intuitions. I introduced the internal and external tools of observation (observational conditions) that offer us EDWs. The conditions of observation represent, in a Kantian sense, the conditions of possible experience. Due to the evolution of species, and the development and experience of each individual in a “standard” or normal environment, human beings have certain empirical intuitions that correspond to external tools of observation, but also certain mechanisms of internal observation. Thus, we can also extend the rule of conceptual containment to the internal tools of observation.

In my view, the process of “perceiving an object/entity” means to perceive internal or external objects. Internal and external tools of observation play the same role for perceiving internal or external phenomenal objects. Thus, the judgments of internal knowledge must follow the conceptual containment rule given by the properties of internal tools of observation that involve mental states (representations). For empirical (external) knowledge the conceptual containment is given by empirical intuitions; for internal knowledge this rule is governed by the properties of mechanisms that observe internal mental states. In both cases, we deal with a process of observation of internal or external objects. Using different conditions of the observations we can observe either mental states or neural patterns of activation. Up to this point, the aim of this entire argument has been to allow us to introduce the principle of conceptual containment specific for our analysis:

**The set of judgments that describe the phenomena of each epistemological world must follow the rule of conceptual containment that is given by the conditions and limitations within the concepts of the judgments. These conditions and limitations are governed by the properties of (internal or external) tools of observation.**

Different properties of the tools of observation lead us to different epistemological worlds. Not only do internal and

external tools of observation offer us EDWs but also different external tools of observation can grasp EDWs. The external tools of observation are different because they have different properties; in consequence, they present us with EDWs. For instance, fMRI and PET grasp certain neural patterns of activation. Epistemologically, in Kantian terms, the conditions of observation are the “transcendental conditions” or “conditions of possible experience” that reflect, at the same time, the possibility of mental states and possibility of experience of external entities (pp. 116-117)

Bohr applies the same distinction between noumena and phenomena to the quantum level. He introduces the idea of complementarity for quantum phenomena: because of the conditions of the measurement apparatus the position and the momentum of a particle cannot be observed simultaneously; or the properties of light (wave and corpuscular) cannot be grasped simultaneously. “The wave-particle duality of light... invokes mutually exclusive concepts relating to either wave behavior or particle behavior.” (Kaiser 1992, pp. 220–221) Conceptual containment is for Bohr a requirement which says that we have to include the conditions of the observation (i.e. the measurement apparatus) in the definitions of quantum phenomena. Without such a rule, our judgments relate uncontained concepts and thus these judgments have no objective reality. (p. 118)

From an EDWs, epistemologically, according to the extended version of Bohr’s principle of correspondence, we can say that the EDWs are the “I” as “immanent thinking”. Ontologically, (in fact, hyperontologically – see 3.4) the epistemologically different interactions are constitutive for their corresponding entities. (p. 146)   
  
We have to apply here a revision of Bohr’s correspondence principle: the mind-EW (that is the “I”) corresponds to all EDWs. In other words, all the external EDWs – including the macro-EW – are represented by representations and processes within the mind-EW. (p. 146)

to explain the neural or the brain-body-EW through the mind-EW we can try to make an analogy with Bohr’s idea. Because we have to use classical instruments of measurement, phenomena from the quantum level have to be expressed in classical terms. In the same way, brain functions that correspond to cognitive functions are expressed by our mind. (p. 269)

Each theory has different constitutive principles that “secure its empirical content” (Friedman). (Or Bohr’s principle of complementarity secures the empirical content of two EDWs.) In this case, the  
constitutive principles of each theory (or Bohr’s principle of complementarity) individuate epistemologically different entities (waves, micro- and macro-objects) that belong to EDWs. Each planet constitutively interacts with other planets; in the other EW, each electron constitutively interacts with other micro-particles. Trying to relate general theory of relativity and quantum mechanics (that means to put planets and electrons in the same EW) is impossible because the constitutive principles corresponding to each theory are totally different and each theory explains its own EW.19 It is also true that, because of Bohr’s principle of complementarity, we cannot consider that  
the microparticles and the waves belong to the same EW. (pp. 318-319)

# (For more examples, see my articles and books.)

# Wilczek talks about “multiple realities” without explaining what he understands through this notion. However, as Sean Carroll (Chapter 1 of this book), working within the “world”, “universe”, Wilczeck has unavoidable great ontological problems! He cannot talk about “multiple realities” avoiding these ontological problems! Anyway, Wiclzeck’s “multiple realities” are incredible similar to my EDWs!

# Reading the above paragraphs from my article Synthese 2005 or my book 2008, every reader will notice the UNBELIEVABLE similarities between the ideas of these two physicists (Sean Carroll and Frank Wilzeck) and my ideas from 2005 and 2008, etc.

* **(2015 and 2018) Strong similarity between Carlo Rovelli’s ideas in three books (2015, 2017, 2019) to my ideas (2002-2008) + commentary February 2018**

**I strongly emphasize that carlo rovelli had been working within the unicorn world (world, Universe), until 2015! Then, he suddenly has changed his wrong framework of the unicorn world with a framework very similar to my EDWs!!!**

***(1) Seven Brief Lessons on Physics Hardcover* (September 2015)**

Somebody indicated me that Rovelli’s book has very similar idea to my ideas of entities and their “interactions”. I took a look at his book and, indeed, I saw some quite similar ideas in Rovelli’s book. For me, it seems as if Rovelli had read my works before writing his book. Moreveor, if you take a look at his articles before 2015, (including those form 1995.. about ‘relationism’[[37]](#footnote-36)) you will see that he has been working within the unicorn world until 2015!! And suddenly he discovered America (i.e., the EDWs!)…

In this book, there are many ideas are quite similar to my ideas and mainly the “framework of working” (“reality is interactions”) is very similar! My question is what does it mean “reality”? Does not “reality” presupposes some entities? Than we get: reality is entities that interact”. But what exactly is “reality” in this case? If we replace “reality” with EDWs, we reach exactly my framework of thinking!

The ‘quantum leaps’ from one orbit to another are the only means they have of being ‘real’: an electron is a set of jumps from one interaction to another. When nothing disturbs it, it is not in any precise place. It is not in a ‘place’ at all. (Rovelli 2015, p. 14)[[38]](#footnote-37)

The idea of the electron does not exist until we measure is an old one. However, here we have the “interaction” of an electron with another. This is exactly one of my main essential idea: “interacting” is a kind of “observing”. Nobody thought to this idea until my paper 2005, my PhD thesis 2007 and my first book 2008!

The nature of these particles, and the way they move, is described by quantum mechanics. These particles do not have a pebble-like reality but are rather the ‘quanta’ of corresponding fields, just as photons are the ‘quanta’ of the electromagnetic field. (p. 25)

The “corresponding” is similar to the “association”, and “association” an old concept used for describing the relationship between the wave and the particles (for some physicists). However, the “corresponding” is my main concept and the only one that I used for describing this relationship! I have never seen somebody using this notion before me; maybe there were other persons, I didn’t know.

Where are these quanta of space? Nowhere. They are not in a space because they are themselves the space. Space is created by the linking of these individual quanta of gravity. Once again the world seems to be less about objects than about interactive relationships. (p. 30)[[39]](#footnote-38)

In my EDWs approach, the interactions constitute the entities! So the “interactive relationship” is, indeed very important! Other notions, almost the same idea. Nevertheless, the framework seems to be very similar. My framework is the EDWs; Rovelli’s framework is the “universe”, which he uses quite often in his book.

What role do we have as human beings who perceive, make decisions, laugh and cry, in this great fresco of the world as depicted by contemporary physics? If the world is a swarm of ephemeral quanta of space and matter, a great jigsaw puzzle of space and elementary particles, then what are we? Do we also consist only of quanta and particles? If so, then from where do we get that sense of individual existence and unique selfhood to which we can all testify? And what then are our values, our dreams, our emotions, our individual knowledge? What are we, in this boundless and glowing world? (p. 41)

We can answer to these questions only replacing the “world”, the unicorn-world with the EDWs. At page 44, Rovelli mentions Spinoza’s idea about two aspects:

Our free decisions are freely determined by the results of the rich and fleeting interactions between the billion neurons in our brain: they are free to the extent that the interaction of these neurons allows and determines. Does this mean that when I make a decision it’s ‘I’ who decides? Yes, of course, because it would be absurd to ask whether ‘I’ can do something different from what the whole complex of my neurons has decided: the two things, as the Dutch philosopher Baruch Spinoza understood with marvellous lucidity in the seventeenth century, are the same. There is not an ‘I’ and ‘the neurons in my brain’. They are the same thing. An individual is a process: complex, tightly integrated. (p. 44)

It is amazing that until now, I don’t think Rovelli mentioned Spinoza (or other philosopher) in his works! It seems that something happened in his readings: maybe he read something that pushed him to read Spinoza. Or maybe he had a dream about Spinoza! Why about Spinoza and not Descartes? Ask Rovelli…

Rovelli indicates that the “I” and the neurons in my brain” are the same thing. So, he accepts the identity theory. Spinoza’s dual aspects approach is quite close to my EDWs. I emphasize that Spinoza’s framework is epistemological (dual aspects of the same thing-in-itself constructed within the unicorn world); my framework is ontological: all EDWs have ontological substrate and the thing-in-itself and the unicorn are completely rejected!

The ‘I’ who decides is that same ‘I’ which is formed (in a way that is still certainly not completely clear, but which we have begun to glimpse) from reflections upon itself; through self-representations in the world; from understanding itself as a variable point of view placed in the context of the world; from that impressive structure that processes information and constructs representations which is our brain. When we have the feeling that ‘it is I’ who decides we couldn’t be more correct. Who else? I am, as Spinoza maintained, my body and what happens in my brain and heart, with their immense and, for me, inextricable complexity. (p. 44)

Yes, it is Spinoza here but constructed within the unicorn world! The main difference between me and Spinoza is the unicorn world vs. EDWs! Also, I recall that my EDWs perspective is closed to Kant than Spinoza.

At the same page, for emphasizing the identity theory position, Rovelli writes: “I am, as Spinoza maintained, my body and what happens in my brain and heart, with their immense and, for me, inextricable complexity.” (p. 44) But just few lines later:

Our moral values, our emotions, our loves are no less real for being part of nature, for being shared with the animal world, or for being determined by the evolution which our species has undergone over millions of years. Rather, they are more valuable as a result of this: they are real. They are the complex reality of which we are made. Our reality is tears and laughter, gratitude and altruism, loyalty and betrayal, the past which haunts us and serenity. Our reality is made up of our societies, of the emotion inspired by music, of the rich intertwined networks of the common knowledge which we have constructed together. All of this is part of the self-same ‘nature’ which we are describing. (p. 44)

Emotions are real? In what sense? In dual aspects of Spinoza? Then (1) either there has to be a contradiction (since those dual aspects cannot both have ontology because there would be a strong ontological contradiction, and exactly this is in Rovelli’s statement! Or (2) Rovelli is quite close to my EDWs.

I rejected the ontological part of “society”, I have not been interested on “morals” and “emotions” (all being the “I”). However, “complex reality” is quite wrong notion.

Wrong is also this idea: “Nature is our home, and in nature we are *at* home.” (p. 46) “Nature” does not exist, but only the EDWs are. “Nature is our home, and in nature we are *at* home.” (p. 46) No, “nature” does not exist, “we” do not exist in nature since each self is an EW.

In conclusion: I cannot claim that Rovelli plagiarized my ideas. However, emphasizing that the reality is “interactions”, Rovelli is quite closed to my EDWs! Moreover, a similar framework to my EDWs seems to underlie several important ideas in Rovelli’s book!

(2) **Carlo Rovelli “Reality is not what it seems - *The Journey to Quantum Gravity”* (2015)**

At the beginning, Rovelli insists in informing us that his framework is the “world” having space and time. The main notion is here “quantum gravity”. However, in the last chapter, I would like the reader to read these paragraphs:

There are more than just atoms in this idea: what counts is the *way* in which they are combined, one in relation to another. But what relevance can the way in which they are combined have, in a world in which there is nothing but other atoms? If the atoms are also an alphabet, who is able to read the phrases written with this alphabet?

The answer is subtle: the way in which the atoms arrange themselves is correlated with the way *other* atoms arrange themselves. Therefore, a set of atoms can have *information*, in the technical, precise sense described above, about another set of atoms.

This, in the physical world, happens continuously and throughout, in every moment and in every place: the light which arrives at our eyes carries information about the objects which it has played across; the colour of the sea has information on the colour of the sky above it; a cell has information about the virus that is attacking it; a new living being has plenty of information because it is correlated with its parents, and with its species; and you, dear reader, when reading these lines, receive information about what I am thinking while writing them, that is to say, about what is happening in my mind at the moment in which I write this text. What occurs in the atoms of your brain is not any more independent from what is happening in the atoms of mine: we communicate. The world isn’t, then, just a network of colliding atoms: it is also a network of correlations between sets of atoms, a network of real reciprocal information between physical systems. In all of this, there is nothing idealistic or spiritual; it’s nothing but an application of Shannon’s idea that alternatives can be counted. All this is as much a part of the world as the stones of the Dolomites, the buzzing of bees and the waves of the sea. (p. 130)

Careful: when I say that we ‘have information’ about the temperature of cup of tea, or we ‘don’t have information’ about the velocity of every single molecule, I am not saying something about mental states, or abstract ideas. I am only saying that the laws of physics determine a correlation between ourselves and the temperature (for instance, I’ve looked at a thermometer), but not between ourselves and the velocity of the individual molecules. It is the same notion of information as the one I started from in this chapter: the white ball in your hand ‘has information’ about the fact that the ball in my hand is black. We’re dealing with physical facts, not mental notions. A ball has information, in this sense, even if the ball does not have mental states, just as a USB storage device contains information (the number of gigabytes printed on the device tells us how much information it can contain), even if a

USB storage device does not think. Information in this sense – correlation between states of systems – is ubiquitous

I believe that in order to understand reality we have to keep in mind that reality is this network of relations, of reciprocal information, which weaves the world. We slice up the reality surrounding us into objects. But reality is not made up of discrete objects. It is a variable flux. Think of an ocean wave. Where does a wave finish? Where does it begin? Think of mountains. Where does a mountain start? Where does it end? How far does it continue beneath the Earth’s surface? These are questions without much sense, because a wave and a mountain are not objects in themselves; they are ways which *we* have of slicing up the world to apprehend it, to speak about it more easily. These limits are arbitrary, conventional, comfortable: they depend on us (as physical systems) more than on the waves or the mountains. They are ways of organizing the information which we have or, better, forms of information which we have.

It’s the same for every object, properly considered, including living organisms. This is why it makes little sense to ask whether a half-cut fingernail is still ‘me’ or has become ‘not-me’; or if the hairs left on my sofa by the cat are still part of the cat, or not; or precisely when a child’s life begins. A child begins to live on the day when a person dreams of her for the first time, long before her conception, or when she forms her first self-image, or when she breathes for the first time, or when she recognizes her name, or when we apply any number of other conventions: they are all useful, but arbitrary. They are ways to think, and to orientate ourselves within the complexity of reality. (135)

Do you have the feeling of reading some paragraphs from my books? I had this feeling, but there are paragraphs from Carlo Rovelli’s book (2015).

Carlo Rovelli (2017): “Space is blue and birds fly through it"

Abstract: Quantum mechanics is not about `quantum states': it is about values of physical variables. I give a short fresh presentation and update on the relational perspective on the theory, and a comment on

its philosophical implications. [Paper presented to meeting on \Foundations of quantum mechanics

and their impact on contemporary society", held at The Royal Society in London on 11{12 December

2017; submitted to Philosophical Transactions A.]

Rovelli’s relational alternative to QM is very close to my EDWs. Main main notion (interactions) is used by Rovelli with exactly the same meaning! Other paragraphs with EXACTLY my ideas:

There is fundamental discreteness in nature, because of which many physical variables can take only certain speci\_c values and not others. (p. 1)

The values that a variables of a physical system takes are such only relative to another physical system. (p. 2)

The answer is: when S interacts with another physical system S0. Value actualisation happens at interactions since variables represent the ways systems a\_ect one another. Any interaction counts, irrespectively of size, number of degrees of freedom, presence of records, consciousness, degree of classicality of S0, decoherence, or else. In the course of the interaction, the system S a\_ects

the system S0. (p. 3)

The textbook answer is \when we measure it". This obviously makes no sense, because the grammar of Nature certainly does not care whether you or I are \measuring" anything. Measurement is an interaction like any other. Variables take value at any interaction. (p. 4)

The answer of relational QM is that the variable a of the system S actualized in the interaction with S0 takes value with respect to S0, but not with respect to S00. This is the core idea underlying the \relational" interpretation of quantum mechanics. (4)

The proper ontology for quantum mechanics is a sparse ontology of (relational) quantum events happening at interactions between physical systems. (5)

Relational QM is anti-realist about the wave function, but is realist about quantum events, systems,

interactions... It maintains that \space is blue and birds y through it" and space and birds can be constituted by molecules, particles, \_elds, or whatever. What it denies is the utility {even the coherence{ of thinking that all this is made up by some underlying entity. But there is a stronger meaning of `realism': to assume that it is in principle possible to list all the features of the world, all the values of all variables describing it, at each moment of continuous time, as is the case in classical mechanics. This is not possible in relational QM. (6)

Ronde\_ and R. Fernandez Moujan (2017)[[40]](#footnote-39) reject Rovelli’s ideas (1996):

“Rovelli’s interpretation takes distance from Bohr’s distinction between macroscopic and microscopic systems.

“The disturbing aspect of Bohr’s view is the inapplicability of quantum theory to macrophysics. This

disturbing aspect vanishes, I believe, at the light of the discussion in this paper.” Instead of the privileging

certain observers (classical systems) Rovelli centers his interpretation in the concept of information.

“Information indicates the usual ascription of values to quantities that founds physics, but emphasizes their

relational aspect. This ascription can be described within the theory itself, as information theoretical

information, namely correlation. But such a description, in turn, is quantum mechanics and observer

dependent, because a universal observer-independent description of the states of affairs of the world does

not exist.” [Op. cit.]

Rovelli recognizes the impossibility of presenting an objective description in terms of systems and replaces

this notion by “net of relations”. According to him: “[...] at the present level of experimental knowledge

(hypothesis 2), we are forced to accept the result that there is no objective, or more precisely observerindependent

meaning to the ascription of a property to a system. Thus, the properties of the systems are to

be described by an interrelated net of observations and information collected from observations.” [Op. cit.]

The question becomes then: what can we say about this net of relations. Rovelli, talks about the notion of

information: “The notion of observer independent state of a system is replaced by the notion of information

about a system that a physical system may possess.” Still, as in the case of Bohr, Kochen, Bene and Dieks,

the ontological question that any realist would want to answer is still present even though in a different form:

information about what? Although it is possible to maintain a relational view of quantum states in terms of

information, the ontological status of such information seems to remain a problematic issue —at least, from

a realist perspective.” (p. 18)

We can see that Rovelli’s ideas in 1996 were very different than much later: 2017 (about Rovelli’s UNBELIEVABLE similar ideas to my ideas[[41]](#footnote-40), see this manuscript!). He was working on “information” under Bohr’s framework.

A commentary introduced by me in February 2018

A commentary introduced by me in February 2018

In some videoclips (2013, but mainly 2016, 2017, 2018), (some of them below)

# Carlo Rovelli: "Why Physics needs Philosophy" <https://www.youtube.com/watch?v=IJ0uPkG-pr4>

<https://www.youtube.com/watch?v=YlRT8Z2cXlY>

# On Being with Krista Tippett: Carlo Rovelli — All Reality Is Interaction <https://www.youtube.com/watch?v=jXFbtDR7IF4>

<https://www.youtube.com/watch?v=1nwB6yXIz90>

# Conclusione Carlo Rovelli - “Osservatore - Osservato” - Conferenza - Associazione NEL <https://www.youtube.com/watch?v=xNWJY34ew4A>

<https://www.youtube.com/watch?v=E0hvh4NqgpE>

carlo rovelli introduces many of my ideas: ‘interactions’ is my main notion of articles and books published in 2002. 2004. 2005, 2008 etc. carlo rovelli claims that space and time do not exist! My brother and I wrote a book about exactly this idea in 2016! He also indicates the role of philosophy in science. Amazing, a scientist who has never written something about philosophy in the past, have started to strongly emphasize the role of philosophy just in the last one year or so! I indicated the same idea in my books 2008, 2010, etc.! It seems carlo rovelli moves very fast, publishing many of my ideas (not those about quantum mechanics, but also other ideas) after I published them and posted on various sites on Internet!

The main questions are: Why carlo rovelli did not published ANY of ‘his’ ideas about quantum mechanics, space and time, the relationship between philosophy-science in the past (before me, for instance)? How did carlo rovelli SUDDENLY changed his ‘framework of thinking’? In the past, he has written none of these ideas in his works in quite a long period (many years), but SUDDENLY, in one year or two, he has changed completely his framework of thinking! How was it possible? Did a *miracle* happen in the mind of carlo rovelli? I don’t think so… (In 2015, in a paper posted at my webpage, I showed that God cannot even exist!)

In my 10 books, I have changed EVERYTHING in Philosophy, Physics and Cognitive (Neuro)science… Everything: I have changed the framework of human thinking completely and I have solved the GREAT (i.e. philosophical) problems of each “special science”. Only two theories remains untouched (Darwin’s evolution and Boltzmann’s entropy), but my EDWs perspective have furnished their ontologies (for Darwin book 2016, for Boltzman book 2017)! All other theories have been either rejected (quantum mechanics, all approaches in cognitive neuroscience, which is a pseudo-science, etc., books 2008-2016) or majors changed (in book 2010, we furnished the definition of ‘life’, in book 2017, we re-wrote Einstein’s both relativities – since in book 2016, we showed that space and time cannot even exist). This is the main reason so many people have PLAGIARIZED my ideas! Obviously, history does not forgive plagiarism. They have already lost. “I don’t care that they stole my ideas. I care that they don’t have any of their own… The present is their; the future, for which I have really worked, is mine.” (Nikola Tesla)

**(3) Rovelli: “Thre is no time.” In is new book: “The order of time” (2019)**

<https://www.theguardian.com/books/2018/apr/14/carlo-rovelli-exploding-commonsense-notions-order-of-time-interview>

from his interview, very similar ideas to my ideas:

* “And I thought: ‘Well, it’s a chemical that is changing things in my brain. But how do I know that the usual perception is right, and this is wrong? If these two ways of perceiving are so different, what does it mean that one is the correct one?’”
* Rovelli’s words, “quantum mechanics cannot deal with the curvature of spacetime, and general relativity cannot account for quanta”. Both theories are successful; but their apparent incompatibility is an open problem…
* For Rovelli, there is more: according to his theorising, time itself disappears at the most fundamental level.
* He tells us, for example, when explaining that the smooth “flow” of time is an illusion, that “The events of the world do not form an orderly queue like the English, they crowd around chaotically like the Italians.” The concept of time, he says, “has lost layers one after another, piece by piece”. We are left with “an empty windswept landscape almost devoid of all trace of temporality … a world stripped to its essence, glittering with an arid and troubling beauty”.

<https://physicsworld.com/a/carlo-rovelli-the-author-of-the-order-of-time-discusses-perhaps-the-greatest-mystery/>:

### You write in your book that “the nature of time is perhaps the greatest mystery”. What attracts you to this subject?

I got interested in the nature of time because of quantum gravity. It is well known that the basic equations of quantum gravity can be written without a time variable, and I wanted to fully understand what this means. Getting to understand the various sides of this question has been a long  journey.

### In a nutshell, how do you understand time?

I think that the key to understand time is to realize that our common concept of “time” is multi-layered. Most mistakes about the nature of time, and much of the confusion, come from taking the full package of properties we attribute to time as forming a unique bundle that either is there or not. Now we understand that many properties we attribute to time come from approximations and simplifications.

Many properties we attribute to time come from approximations and simplifications.

Carlo Rovelli

### Can you give an example?

For instance, our common idea that time is one and the same for everybody comes from the fact that we usually move at speeds much smaller than the speed of light with respect to one another. As we drop approximations, time loses properties that we instinctively attribute to it. So we can use the word “time” to mean various things, depending on the generality of the context.

### Do you think physicists will ever solve the mystery of time?

Yes, I am optimistic. Why not? Physics has solved so many puzzles that appeared mysterious in the past. But I think that a full understanding of why time looks to us the way it does will not be a result that physicists will reach alone. Neuroscientists have to play their part. There are aspects of our intuitive sense of time that, I believe, it is a mistake to search for in physics alone. They depend on the specific structure of our brain.

### The Order of Time touches a lot on the philosophy of science; how much philosophy have you studied?

I am not a philosopher, but I have studied philosophy, read philosophy and go to philosophy conferences. The best physicists of the past read a lot of philosophy. Einstein, Heisenberg, Schrödinger, Bohr, Newton – they were all nourished with philosophy. There is a current anti-philosophical fashion in physics, which I think is detrimental for the advancement of science.

<https://www.nature.com/articles/d41586-018-04558-7>:

According to theoretical physicist Carlo Rovelli, time is an illusion: our naive perception of its flow doesn’t correspond to physical reality. Indeed, as Rovelli argues in *The Order of Time*, much more is illusory, including Isaac Newton’s picture of a universally ticking clock. Even Albert Einstein’s relativistic space-time — an elastic manifold that contorts so that local times differ depending on one’s relative speed or proximity to a mass — is just an effective simplification.

As Rovelli explains, the apparent existence of time — in our perceptions and in physical descriptions, written in the mathematical languages of Newton, Einstein and Erwin Schrödinger — comes not from knowledge, but from ignorance. ‘Forward in time’ is the direction in which entropy increases, and in which we gain information.

n part two, “The World without Time”, Rovelli puts forward the idea that events (just a word for a given time and location at which something might happen), rather than particles or fields, are the basic constituents of the world. The task of physics is to describe the relationships between those events: as Rovelli notes, “A storm is not a thing, it’s a collection of occurrences.” At our level, each of those events looks like the interaction of particles at a particular position and time; but time and space themselves really only manifest out of their interactions and the web of causality between them.

In the final section, “The Sources of Time”, Rovelli reconstructs how our illusions have arisen, from aspects of thermodynamics and quantum mechanics. He argues that our perception of time’s flow depends entirely on our inability to see the world in all its detail. Quantum uncertainty means we cannot know the positions and speeds of all the particles in the Universe.

He is the quintessence of common sense. He quotes Bertrand Russell’s famously witty comment on the fact that in modern physics one does not speak of “causes” – “The law of causality . . . is a relic of a past age that survives, like the monarchy, only because it is assumed, wrongly, that it does no harm” – but acknowledges the exaggeration. “At an elementary level there are no cats either,” he writes, “but we do not for this reason cease to bother with cats”.

* Etc. etc. etc.

**[carlo rovelli’s ideas (about “relations”, “no space, no time”) published until 2015 are exactly Leibniz’s ideas (who fought against Newton’s ideas of absolute space and absolute time)!!! No more or less! Until 2015, with his “relationism” (in fact nothing else than Bohr’s “complementarity” and Broglie’s “dualism” in Leibniz’s framework within the unicorn world (the Universe), carlo rovelli had worked within the unicorn world!!! carlo rovelli had no idea about the “EDWs” or “different realities” (as they call now my EDWs). I repeat again that, until 2015, carlo rovelli had been working within the wrong framework of “Universe/world” emphasizing Bohr’s complementarity and Leibniz’s relationism but both withing the unicorn world!**

**Until 2015, carlo rovelli introduce nothing new with his “relationism” In fact, he had never rejected the notion of the “world”/ “Universe”!!!**

**Then a sudden change happened in his framework, a sudden change that coincide with the publication of my Springer’s book!!!**

**On the contrary, my EDWs perspective is a COMPLETELY new FRAMEWORK OF THINKING!!! I recall that in 2016, together with my brother Mihai, I wrote a book: “Dark matter and dark energy, space and time, and other pseudo-notions in Cosmology” in which we indicate that space and time (spacetime) cannot have any ontological status. Of course, we are not the first who claim space and time do not exist, but we proved that spacetime cannot exist within the EDWs!**

**carlo rovelli wrote a paper on rejecting spacetime in 2006 but he works within the framework of “world”/Universe; he even mentions this word in his paper without denying its meaning, on the contrary he accepted the existence of the Universe until 2015! However, in that paper, all his ideas are within the unicorn world!!! he rejected spacetime exactly as Leibniz rejected Newton’s absolute space/time!**

In his article, The Disappearance of Space and Time (in eds. Dieks and Redei 2006), on the first page carlo rovelli writes the first paragraph:

Our understanding of the natural world evolves. We have developed a conceptual

structure that allows us to apprehend and frame the world that we perceive

and think; but this conceptual structure evolves, driven by experience and rational

investigation. Science is a continuous exploration of novel and more

effective ways for thinking the world. (p. 25, 2006)

Is it not clear that carlo rovelli is still working within the “world”/Universe even if he is denying the existence of space and time??? He introduces, then, the notion of “relativistic” (from Leibniz and Einstein, of course – therefore rovelli came with nothing NEW since he was still working within the unicorn world!)!

The clean way of expressing Einstein’s discovery is to say that there are no

space and time: there are only dynamical objects. The world is made by dynamical

fields. These do not live in, or on, spacetime: they form and exhaust

reality. (p. 27)

**Of course, Einstein relativies the “reality” but he was still working within the unicorn world!!!**

Or course relationalism, i.e., the idea that motion can be defined only in relation to other objects,

should not be confused with Galilean relativity. Galilean relativity is the statement that ‘‘rectilinear

uniform motion’’ is a priori indistinguishable from stasis. This is equivalent to saying that velocity

(just velocity!), is only relative to other bodies. Relationalism, on the other hand, holds that any

motion (however zigzagging) is a priori indistinguishable from stasis. The very formulation of Galilean

relativity assumes a nonrelational definition of motion: ‘‘rectilinear and uniform’’ with respect to

what?When Newton claimed that motion with respect to absolute space is real and physical, he, in a

sense, overdid it, by insisting that even rectilinear uniform motion is absolute. This caused a painful

debate, because there are no physical effects of inertial motion (therefore the bucket argument fails

for this particular class of motions). Newton is well aware of this point, which is clearly stated in the

Corollary V5 of the Principia, but he chooses to ignore it in the introduction of the Principia. I think

he did this just to simplify his argument, which was already hard enough for his contemporaries. (p. 30)

This paragraph has nothing to do with EDWs!!! Carlo rovelli was thinking within the unicorn world!!! IS IT NOT CLEAR????

Conceptually, what disappears with GR is the idea of space as the ‘‘container’’

of the physical world. As mentioned, this disappearance is not so revolutionary

after all: to some extent it amounts to return to the pre-Newtonian

view of space as a relation between equal-status physical entities…. In the 20th and 21st centuries and with GR

we have been learning that we do not need this frame to keep reality in place.

Reality keeps itself in place. Objects interact with other objects, and this is

reality. Reality is the net of these interactions. We do not need an external entity

to hold this net. We do not need Space, to hold the universe. Maybe the Copernican

revolution is finally being completed. (p. 32)

Again, we clearly see here that carlo rovelli was working within the “Universe”, i.e., the unicorn world!!! His “objects interact withi toher objects” is nothing more than Leibniz’s relationism (against newton’s absolute space and time!!)

To illustrate this point, consider a standard expanding cosmological model.

Its space like surfaces of homogeneity are formed by the events at equal proper

time after the big bang, or equal Friedmann time tFr; these are the surfaces

naturally considered ‘‘simultaneous’’ in cosmology. These surfaces are not equal

time surfaces according to Einstein’s simultaneity definition5. Therefore, in a

cosmological context we have the alternative to call either ‘‘simultaneous’’

events at the same Friedmann time, or events that satisfy Einstein’s definition of

simultaneity. Both definitions are useful. The choice between them is a matter of

taste or computational convenience, not a matter of ontology. (p. 33)

There are many distinct notions of time employed in GR: coordinate time t,

proper time S, clock times T, cosmological time tFr, asymptotic Poincare´

timey. The last two refer to the description of special solutions of the Einstein

field equations only. They are irrelevant in a discussion of the ontology of time,

because a different ontology for different solutions of the same theory is certainly

unsatisfactory. Clock times are simply the readings of certain physical variables,

which can be locally employed as the independent variable for convenience.

Once again, they have nothing to tell us about the ontology of time. (p. 34)

**This paragraph indicates us that carlo rovelli has no idea about EDWs. Moreover, in my book 2014, I applied my EDWs to Einstein’s special and general relativity getting the ONTOLOGY of both theories!!! Of course, carlo rovelli had no idea about this ontology in the period he wrote this period! He just rejected the exitence of space and time, exactly as Liebniz did against Newton’s absolute space and absolute time!**

Instead, we must describe reality in terms of correlations between observables.

We can measure physical quantities around us. The physical theory restricts the

combinations of quantities that we can measure. It predicts relations between

these quantities. (p. 34)

**“correlations” is an old concept from QM, but it was created within the unicorn world. IN fact, the above sentences are created within the unicorn world, exacly as Bohr created his idea of “complementarity” within the unicorn world (i.e., the thing-in-itself, borrowed from Kant, even if he used other notion…)**

So, where does temporality, with all its peculiar features (‘‘flow’’ of time,

whatever this means, irreversibility, memory, awarenessy) come from? I think

that all this has nothing to do with mechanics. It has to do with statistical

mechanics, thermodynamics, perhaps psychology or biology. In Rovelli (1993) I

have developed, in collaboration with Alain Connes, the idea that it may be

possible to recover temporality from statistical mechanics, within an atemporal

mechanical universe (statistical time hypothesis). If this point of view is correct,

temporality is an artifact of our largely incomplete knowledge of the state of the world, not an ultimate property of reality. (p. 35)

This paragraph is on the last page of carlo roveli’s article. Can the reader deduce that carlo rovelli was working within the EDWs perspective and rejecting the notion of “world/Universe”??? No. otherwise, these paragraphs would contradict the first paragraphs of his article!!

Conclusion of this article: carolo rovelli had no idea about EDWs; he was still working within the unicorn world, i.e., the world/Universe!!!!!!!!!!!

After 2015, carlo rovelli continues to publish more and more UNBELIEVABLE similar ideas to my ideas!!! His arguments are UNBELIEVABLE similar to my arguments… Until 2015, carlo rovelli had been working within the unicorn world; then he realized a sudden change! I let the reader to understand carlo rovelli’s step after 2015 since I mentioned that my book at Springer has been published in November 2015!!

Anyway, I have published FIVE books (2008-2014) with my EDWs, and in 2007, my entire PhD thesis (my first book 2008) was posted at UNSW (Australia) on their site!!! Moreover, in 2005, in Synthese article, in a footnote, I mentioned that the EDWs would be available for all quantum mechanics problems; in 2006 I published and posted on Internet (FREE) an article about my EDWs applied to quantum mechancis!

I emaphasize again that I believe that it would be impossible for carlo rovelli to discover the EDWs working within the quatum mechanics. Why? Because I discovered the existence of EDWs working on the mind-body problem, that would involve to special particular entities: the self and the body, that is, the mind-EW and the macro-EW. Quantum mechanics problems refer to ED entities that all external to our mind (and body). Therefore, it would be IMPOSSIBLE for someone working only on particular “external” entities to discover the the existence of EDWs!!!!

Only working for solving the mind-brain problem, that is, the “internal” and the “external” (wrong distinction, anyway) entities, I could discover the existence of the mind-EW and the macro-EW (where the body is placed).

Later, I applied this approach to the wave-particle duality, and after this, I applied my EDWs to the macro-micro duality.

After solving all these problems, I could apply my EDWs perspective to Einstein’s special relativity (the person on the train that has constant speed and the person on the pavement are in EDWs) and general relativity (acceleration presupposes the movement from one particular EW to an EDW in each fraction of second!

The conclusion is the following: it appear that it was impossible for carlo rovelli to discover the existence of EDWs working ONLY on the problems of Quantum Mechanics. His approach is nothing new, being just a combination of Bohr’s complementarity (Copenhagen interpretation), de Broglie’s dualism in the framework of Leibniz’s “relationism” but within the unicorn world (i..e, the Universe/world)! No more or less.

It has to be clear that I am the first human being who discovered the existence of EDWs in the entire history of human thinking (Philosophy, Physics, Cognitive Science, Biology, etc.)!

The reader cannot believe that my EDWs is a continuation of carolo rovelli’s approach. In fact, carlo rovelli’s is just a combination of Bohr’s complementarity with Leibniz’s relationism within the unicorn world (world/Universe). carlo rovelli’s approach (until 2015) has nothing to do with my EDWs since he still had worked within the framework of the unicorn world, accepting (officially) the existence of Universe/world!!

I recall that in 2014, I have sent emails to thousands of people (philosophers, cognitive neuroscientists, and physicists) in the entire world regarding the UNBELIEVABLE similarities between my ideas (2002-2008) and markus gabriel’s ideas (2013). Therefore, it is not accidentally that so many people have started to published UNBELIEVABLE similar ideas to my ideas since 2015!

After 2015, carolo rovolli have started to publish UNBELIEVABLE similar ideas to my ideas (2002-2008) until today! If someone compare carlo rovelli’s “relationism” with my EDWs perspective means that that person does not understand my EDWs and he is still working within the unicorn world! More exactly, even carolo rovelli’s relationsionism is quite wrong (being constructed within the unicorn word)!

It has to be clear that with the discovery of EDWs (my first publication was in 2002, in English, at Romanian journal of philosophy and posted immediately on Internet, then 2003, and 2005 at Synthese (USA, among the best international journals of philosophy of science, epistemology in the entire “world”)), I HAVE CHANGED EVERYTHING in philosophy, physics, cognitive neuroscience, EVERYTHING in human knowledge!

The EDWs perspective is the GREATEST challenge in the history of human thinking! Therefore nobody can dare to compare my EDWs with carlo rovelli’s relationism (Bohr’s complementarity and Leibniz’s relations)…

I emphasize, again and again, that de Broglie’s constructed his “duality” within the unicorn world, exactly as Everett thought his “many-worlds” within the same wrong framework, the “world”/“Universe”, or the “unicorn world”, as we called. Also, Bohr’s complementarity was constructed within the unicorn world. Such “duality”, as any kind of “duality” (so many during the history of human thinking), are incredible similar to Descartes’s mind-body “duality” or to Leibniz’s “parallelism” also constructed within the unicorn world. Such dualities have produced strong ontological contradictions impossible to be solved within the unicorn world!) In fact, working within the unicorn world, everybody thought that the double-slit experiment indicated a kind of the duality between the wave and the particle. rovelli’s “relationism” is mstly a kind of de Broglie’s dualism within the unicorn world, no more or less.

**Constructed within the unicorn world, carlo rovelli’s “relationism” is nothing more than de Broglie’s duality or Bohr’s complementarity within Leibniz’s relationism framework, but in the unicorn world; therefore his approach is totally wrong (it is an empty approach without any kind of ontology, exactly as Bohr’s complementariy and de Brogle’s “dualism wavea-particle”! What does carlo rovelli’s relationism brings new in quantum mechanics in comparation with Bohr’s and de Broglie’s approaches? (I mention here that Everett’s “many worlds” approach is still constructed within the unicorn world and has nothing to do with my EDWs)!**

Until 2002 and 2005 (when my articles – in English - have been published in journals), all other physicists, cognitive neuroscientists and philosophers had been working within the unicorn world. Suddenly, after my article at *Synthese* (USA) in 2005 and my first book 2008 (in English posted FREE on various sites), some people had published UNBELIEVABLE similar ideas to our ideas. Later, in 2014, I sent email to thousands of people (philosophers, cognitive neuroscientists, and physicists) in the entire world underlying the UNBELIEVABLE similarities between Markus Gabriel’s ideas of his book 2013 and his ideas (2002-2008). Also, I posted a clip on YouTube referring to these unbelievable similarities. After 2015 (when my *Springer* book has been published), more and more people (from many countries, many domains, on many topics) have started to published UNBELIEVABLE similar ideas to my ideas.

The reader has to notice that carlo rovelli has changed his framework after 2015: he has moved from the unicorn world to the UNBELIEVABLE similar framework to EDWs!!! Even in such conditions, carlo rovelli’s framework is not identical to the EDWs… it seems as if he could not understand completely all rules of EDWs…

* **(2016) Unbelievable similarities between Kastner’s ideas (2016) (Univ. of Maryland, USA) + (2017) R. E. Kastner, Stuart Kauffman, Michael Epperson and my ideas (2002-2008)[[42]](#footnote-41)**

1. **(2016) Kastner’s article: “Beyond Complementarity” (R. E. Kastner 6 March 2016 Foundations of Physics Group, University of Maryland, College Park, USA)**

In this paper, there are quite many ideas similar to my ideas. The main ideas are the following:

* Bohr’s complementarity does not work: “’Complementarity’ cannot consistently account for the emergence of classicality from the quantum level (p. 1)
* It is argued that ultimately this problem arises from Bohr’s implicit assumption that all quantum evolution is unitary; i.e., that there is no real, physical non-unitary collapse. (p. 1)

In my works 2002-2008 and later (2010-2106), I argued exactly the same ideas. The non-unitary phenomena in quantum and in the relationship between quantum and classical phenomena means exactly the EDWs!

Our world of experience is clearly classical in that we can legitimately consider our lab and macroscopic measuring instruments as inhabiting a well-defined inertial frame. *But these are the very phenomena that cry out for explanation in view of that fact that the microscopic quantum objects upon which we experiment, according to the theory describing them, do not inhabit well-defined reference frames. (pp. 3-4)*

“Our world of experience” means exactly the macro-EW vs. the micro-EW. However, we have to pay attention that “quantum world” means the micro-EW (for particles) and the wave-EW.

In section 4, Kastner investigates the “unnecessary” Bohr’s “epistemological and methodological assumptions”. If the reader will read the entire section will have the sensation of reading one of my works! In 2007, and 2008, I analyzed exactly the same notions with almost the same verdict!

Firstly, while Bohr’s insistence on the “necessity... of taking the whole experimental arrangement into consideration” is well known, and is often taken as a benign statement of ‘quantum wholeness,’ it is actually a very

strong (and, I will argue, unnecessary) prohibition on taking any degree of freedom as physically specifiable independently of macroscopic phenomena. (p. 7)

This paragraph, which is against the “quantum wholeness”, indicates exactly the EDWs!

Overall, Bohr’s quoted statement assumes that unambiguous physics only obtains in the context of a ‘measurement,’ where that term is considered to be definable only in terms of a macroscopic experimental arrangement leading to an ‘observation’ or ‘phenomenon’. This use of the term ‘measurement’ is a conflation, ongoing in much of the literature, of two distinct ideas: (i) the intervention of an observer whose intent is to gain determinate knowledge about something under study; and (ii) the existence of a fact of the matter – or determinate a value of some property – whether or not anyone has intent to discover it (or whether or not it results from a macroscopic ‘phenomenon’). The preceding two different notions of the determinacy obtaining in measurement (but not necessarily confined to a knowledge-gathering measuring operation) can be labeled as (i) epistemic and (ii) ontological, respectively. Bohr’s pronouncement of course denies (ii) by asserting that it is only through an in-principle macroscopic ‘phenomenon’ that any physical quantity is well-defined, and that the quantum formalism is not even interpretable outside that condition. But this denial can and will be questioned. (pp. 7-8)

Again, it seems as if this paragraph was written under the EDWs perspective! Few words later:

Yet clearly Bohr needs D’s uncertainty to be epistemic rather than ontic in nature to avoid a Schrodinger’s Cat situation; while on the other hand, since he views any attributes of a quantum system such as S in need of (at least) irreversible amplification [10] in order to be considered determinate, the uncertainty pertaining to S cannot be considered epistemic. However, the theoretical description provides no justification for attributing different sorts of uncertainties to S and D. (p. 8)

We are already within the EDWs perspective! (The reader has to remember that, in my previous works, I denied the distinction between ontology and epistemology…) Next Kastner’ sentence:

Ultimately, Bohr’s response to this conundrum is to deny reality to quantum objects, and to assert by fiat that at some point in the (assumed as linear) evolution, a determinate world of experience occurs and classical ‘reality’ begins – since we routinely see objects like D with determinate position and momentum. This is not an explanation of classical emergence, but rather an equivocation concerning the application of quantum theory. A crude analogy is that the unitary quantum evolution is like a car engine engaged via the clutch with the gear shaft (which carries the entanglement of the relevant degrees of freedom); but at the point in which we find ourselves empirically describing objects that are classically determinate (or, in which the dimensions of the experiment are much larger than Planck’s constant), we disengage the clutch. This is an *ad hoc* move; there is no consistent theoretical account for suspension of the unitary evolution. (p. 8)

From a long time, the reader has been already within a paradigm very similar to my EDWs paradigm! Do you want more details that are UNBELIEVABLE similar to my ideas? Exactly next sentence, Kastner rejects the pragmatism![[43]](#footnote-42) At page 10, Kastner quotes Stachel’s work who claims that “Bohr’s later approach places primary emphasis on four-dimensional processes; from this point of view, a ‘state’ is just a particular spatial cross-section of a process, of secondary importance: all such cross-sections are equally valid, and any such sequence of states merely represents a different ‘perspective’ on the same process.” ([12], p. 1, preprint version.)” (Kastner 2016, p. 10) I have not read Stachel’s article but it seems that he has very similar ideas to my ideas! Next sentence:

It should however be noted that such an approach – dissolving the measurement problem by noting that some outcome always in fact obtains at the phenomenal, classical, spacetime level – amounts to an epistemic interpretation of the quantum state. That is, the quantum state and its unitary evolution are taken as describing only our limited perspective on a process that is assumed to be complete as an element of a classically determinate block world. In this approach, the classical world of phenomenal experience does not emerge from the quantum level. It is taken as ontologically given and primary, with quantum theory relegated to a partial and perspectival description of that classical reality.4 (Kastner 2016, p. 10)

Again, it is very clear that we are in a paradigm very closed to the EDWs perspective! Later, Kastner investigates the problematic Bohr’s relationship between a microparticle and a wave.

In an epistemic approach to the quantum state, Bohr could finesse the inconsistencies described above by saying that we can suspend unitary evolution when it is no longer useful because we now have access to information that we lacked previously. Thus, neither the quantum state nor its unitary evolution ever directly described objects that physically existed. All that exists is the phenomenal, classical level of experience. But again, this leads Bohr to his ultimately antirealist view of quantum entities; i.e., to his utterance that “There is no quantum world. There is only an abstract quantum mechanical description.” If there is no quantum world, then we need not give any account of classical emergence from such a world, since all that exists is the classical world of experience. (p. 13)

Again, this investigation seems to be realized within the EDWs perspective!!! I drew exactly the same conclusion within my EDWs in 2006, 2007, 2008 and later!

In section 4, the first paragraph:

The above-discussed apparent discrepancy between theory and observation, to which Bohr’s Complementarity and its attendant antirealism about quantum objects is sometimes taken as a perplexing but inescapable response, is not a necessary one. The problem arises from demanding that all interactions between physical degrees of freedom are unitary ones. This is the key assumption that leads to the measurement problem and the “shifty split” between the quantum and classical realms, expressed in the *ad hoc* suspension of the unitary evolution and quantum-entangled state when it obviously no longer correctly describes the situation at hand. If nature in fact involves real non-unitary processes of a well-defined sort – including the circumstances that give rise to them – then the chain of unitary correlations is broken, and real physical collapse occurs, resulting in determinacy. Thus, the present author suggests that what Bohr needs to avoid the dilemma of theoretical inconsistency on the one hand, and antirealism about quanta on the other, is genuine, non-unitary physical collapse. (p. 14)

I am sure the reader who had written some of my works will had the feeling that this paragraph was from one of my works!!! “If nature in fact involves real non-unitary processes of a well-defined sort – including the circumstances that give rise to them – then the chain of unitary correlations is broken, and real physical collapse occurs, resulting in determinacy.” “Nature”? that is the EDWs, of course…

Other paragraphs that seems to be written under the EDWs perspective:

However, despite this apparent initial openness to allowing physical existence to non-classical, unobservable entities, Bohr steadily evolved toward a form of antirealism that denied reality to objects not in-principle capable of a classical description, i.e. “which cannot be visualized in the ordinary sense”, as his above-quoted assertions clearly demonstrate. (p. 15)

Thus, there is a real physical, nonunitary collapse in this model. There is also a clear physical referent for the “photon” concept independently of whether any macroscopic, observable “phenomenon” (involving an observer) results from it. (p. 16)

It is the fact that the coherent state is an eigenstate of the field destruction operator that allows it to function in this way; the repeated absorption of photon(s) from the field does not change the field state, which is what allows a detectable classical field to be sustained. So the photon as a physical entity remains quite meaningful – even crucial – in the quantum coherent state. (pp. 16-17)

Since a macroscopic object is a nexus of frequent and persistent transactions giving rise to well-defined spacetime intervals, macroscopic objects can be described by simultaneous spacetime (x, t) and dynamical (E, P) descriptions,

and as such are clearly distinguished from quantum systems described by quantum states, which are elements of an underlying substratum. Thus we have classical phenomena in PTI as well; they are simply a naturally emergent result rather than a necessary starting point in interpreting the theory. (p. 17)

Concerning the matter of contextuality: Bohr was of course correct that one cannot simultaneously define incompatible quantities when dealing with quantum systems. In terms of PTI, that is because determinate physical quantities only obtain as a result of actualized transactions. The latter occur by way of specific interactions between an OW and its responding CW. Confirmations define the basis for the measurement, by setting up the applicable mixed state (for example, two weighted projectors corresponding to each of two detectors in an interferometer experiment). Only the projectors in that mixed state are eligible for spacetime existence (i.e. as transfers of detectable energy, momentum, etc.); so quantities corresponding to noncommuting observables are simply not in play at that point. The CW thus constitute the physically well-defined “contextuality” that Bohr felt forced to define only with appeal to final, external observations – “phenomena”.

To emphasize the fact that such contextuality has nothing to do with macroscopic “phenomena,” an example of a well-defined physical quantity under PTI is the energy/momentum of a photon emitted from an excited

state atom and absorbed by a ground state atom, regardless of whether that single photon is ever amplified to the level at which it could in principle be perceived by a scientist in a laboratory. All the objects involved are quantum

systems, all described by quantum mechanics, and Planck’s constant plays a crucial role in the interaction. Yet there is an unambiguous interpretation of the quantum formalism, applying to the degrees of freedom described by the formalism. No appeal to “the entire experimental arrangement” or necessarily observable “phenomenon” is required for this interpretation. The context consists of any forces acting on the photon offer wave (i.e., the applicable Hamiltonian) and the set of advanced absorber responses to the photon offer (the latter being described by the usual forward-propagating quantum state). The context is entirely physical. The transactional process, which heralds the advent of classicality (because it confers determinate properties on the degrees of freedom involved) occurs at a microscopic level, independently of whether any particular scientist is able to identify any macroscopic phenomenon arising from it. (p. 18)

In conclusion Kastner writes:

Complementary cannot help us to explain measurement or the nature of physical reality in a consistent fashion unless we can explain why the quantum formalism applies correctly to quantum degrees of freedom (such as the “quantum particle” S in Bohr’s thought experiments with S and D) but not to macroscopic objects; that is, why the ontic uncertainty of quantum objects does not “infect” macroscopic objects such as Bohr’s diaphragm D, and why we can view the latter’s uncertainty as being epistemic. If we include absorber response, we have a way forward to make this distinction in physical terms. Bohr was unable to do this through Complementarity alone, and he lapsed into instrumentalist and anti-realist utterances as a result. (pp. 18-19)

Similarly, it is reasonable to take the success of quantum theory as evidence for the existence of additional structure in nature that gives rise to the kinds of phenomena predicted by the theory, even if it is difficult (or even impossible) to visualize this structure “in the ordinary (classical) way ” (p. 19)

Finally, the proposed PTI picture of an intrinsically unobservable, prespacetime quantum substratum giving rise to an empirical, classically determinate realm of experience may seem startling, even farfetched. But it does provide a clear physical referent for the quantum formalism (at least in a structural sense, [33, 34]), and a well-defined basis for the emergence of classical determinacy – describable by classical physics – from that formalism. In that regard, I have noted elsewhere ( [21], Chapter 7) that the PTI ontology provides a natural correspondence for Kantian “noumenon” as describing the quantum level and “phenomenon” as describing the classical level. (p. 20)

Is it VERY, very clear the UNBELIEVABLE similarities between Kastner’s ideas (2016) and my ideas (2002, 2003, 2005, 2006, 2007, 2008, until 2016)?[[44]](#footnote-43)

1. **R. E. Kastner[[45]](#footnote-44), Stuart Kauffman[[46]](#footnote-45), Michael Epperson[[47]](#footnote-46) (2017) “Taking Heisenberg’s Potentia Seriously”: Quite similar ideas to my ideas (2008)**

Let me introduce the abstract of this article:

It is argued that quantum theory is best understood as requiring an ontological duality of *res extensa* and *res potentia*, where the latter is understood per Heisenberg’s original proposal, and the former is roughly equivalent to Descartes’ ‘extended substance.’ However, this is not a dualism of mutually exclusive substances in the classical Cartesian sense, and therefore does not inherit the infamous ‘mind-body’ problem. Rather, res potentia and res extensa are proposed as mutually implicative ontological extants that serve to explain the key conceptual challenges of quantum theory; in particular, nonlocality, entanglement, null measurements, and wave function collapse. It is shown that a natural account of these quantum perplexities emerges, along with a need to reassess our usual ontological commitments involving the nature of space and time.

Already as usually, the reader will have the feeling of reading a paragraph from my books/papers! Who wrote this paper? Three persons: one from Physics, one from Biology and one from Philosophy/Mathematics. There was necessary the unification of three persons from different fields to write exactly my ideas! They write about one of the main problems of quantum mechanics (Heisenberg’s principle) but also about the mind-brain problem. In my book 2008, etc. I wrote exactly the same ideas!

Let me emphasize the ideas of this article that are very similar to my ideas. The authors emphasize that they got the idea of “res potensia” from Heisenberg:

For Heisenberg, potentiae are not merely epistemic, statistical approximations of an underlying veiled reality of predetermined facts; rather, potentiae are ontologically fundamental constituents of nature. They are things “standing in the middle between the idea of an event and the actual event, a strange kind of physical reality just in the middle between possibility and reality” (Heisenberg 1958, 41). (Hastner 2017, p. 2)

My EDWs have nothing to do with Heisenberg’s potentia. However, reading the next paragraph, the reader will see that these ideas are very close to my ideas:

We thus propose a new kind of ontological duality as an alternative to the dualism of Descartes: in addition to *res extensa*, we suggest, with Heisenberg, what may be called *res potentia*. We will argue that admitting the concept of potentia into our ontology is fruitful, in that it can provide an account of the otherwise mysterious nonlocal phenomena of quantum physics and at least three other related mysteries (‘wave function collapse’; loss of interference on which-way information; ‘null measurement’), without requiring any change to the theory itself. This new duality omits Descartes’ *res cogitans*. In addition, it should be noted that with respect to quantum mechanics, *res potentia* is not itself a separate or separable substance that can be ontologically abstracted from *res extensa* (i.e., neither can be coherently defined without reference to the other, in contrast to *res extensa* and *res cogitans* in the Cartesian scheme). Thus, in the framework proposed herein, actuality and potentiality will not be related as a *dualism of mutually exclusive concepts*, but rather a *duality of mutually implicative concepts. (p. 3)*

Few lines later:

Thus, in the framework proposed herein, *res extensa* and *res potentia* are the two fundamental, mutually implicative ontological constituents of nature at the quantum mechanical level. More specifically, they are mutually 4 implicative constituents of every quantum measurement event.3 Therefore, our thesis does not inherit the mind-body problem of Cartesian dualism, in which two fundamentally different, *mutually exclusive*, substances have no way of interacting. Two of us, Kauffman and Epperson, have addressed the relevance for the mind-body problem elsewhere (Kauffman 2016, Chapter 8; Epperson 2009, 344-353). (p. 3)

With this idea, we are already within the EDWs perspective and not Heisenberg’s potensia! (I have no time to go and read Kauffman 2016 or Epperson 2009, but I am guest that in those works there are UNBELIEVABLE similar ideas to my ideas.)

Thus, the new metaphysical picture, which we will argue is supported by quantum theory and its empirical success, consists of an ontological duality: *res potentia* and *res extensa*. (p. 4)

An idea very similar to my idea! However, it seems that this is not a “NEW metaphysical picture” since I wrote almost exactly this idea in 2005 in a footnote of my articles published in Synthese (one of the best journal of USA)!

In what follows, we elaborate this basic metaphysical picture and discuss how it can help to make sense of quantum nonlocality, entanglement, and other related non-classical concepts that appear to be forced on us by quantum theory. It should be noted, however, that the authors have varied approaches to fleshing out the metaphysics in specific terms. Thus, the proposed metaphysical framework can be exemplified via alternative, but fundamentally compatible, formulations. (p. 4)

In my works (2002, 2003, 2005, 2008, 2010, etc.) I explained exactly the same notions with an UNBELIEVABLE similar “metaphysical picture”, my EDWs perspective!

We are primarily concerned with proposing that quantum entities and processes are a particularly robust subset of these, which we will call *quantum potentiae* (QP); and that these are strong candidates for realism. However, before focusing specifically on QP, let us first take note of an apparently mundane but ontologically significant aspect of the interplay between actualities and possibilities: namely, the way in which actual events can instantaneously and ‘acausally’ (in the sense of classical, efficient causality) alter what is next possible globally. (pp. 4-5)

We have already here another idea very similar to my EDWs perspective! It seems as if the authors are talking about the EDWs!

One might object that in the above example of ordinary macroscopic processes, the nonlocality seems confined to the influence of actuality on what is next possible, since in the apparently deterministic, classically conceived macroscopic world, actuals lead deterministically to new actuals (and ‘what is possible’ plays no real dynamical role). However, at the quantum level, this does not hold, so that the acausal gap really does exist in both directions (from actuals to possibles, and vice versa). (p. 5)

In this paragraph, we have already the “macroscopic world” having the same meaning as my macro-EW!

Thus, we propose that quantum mechanics evinces a reality that entails both actualities (*res extensa*) and potentia (*res potentia*), wherein the latter are as ontologically significant as the former, and not merely an epistemic abstraction as in classical mechanics. On this proposal, quantum mechanics IS about what exists in the world; but what exists comprises both possibles and actuals. (p. 8)

This paragraph is very similar to one of my main ideas from EDWs perspective! (see my work 2008, for instance)

Then the authors write about the “two-slit experiment” but their conclusion is very similar to my conclusion! The same about one of their main ideas:

Since the bringing about of the new QP in this manner is not a causal process (it is indeterministic), *actuals (arising via measurement) acausally dictate what is next possible*. (p. 10)

The same verdict about the ideas from these paragraphs:

We thus propose that allowing for the dualism of res potentia/res extensa can serve to explain non-local phenomena. It can do so by observing that the phenomena are indeed correlated (through their supporting potentiae), but not causally connected in the usual way. That is, there is no efficient causal interaction between actuals; so we need not be concerned with the limitation of the speed of light on ‘signals’ between the two wings of the EPR pair (of which there are none), nor do we need to invent hidden variables that are not in the theory itself, or invoke neverobserved exotic particles such as tachyons (Maudlin 2011. p. 71). (p. 11)

Thus, we propose that an ontological dualism of res potentia/res extensa affords an account of quantum non-locality, instantaneous and global wave function changes for N entangled spins when one is measured, “which-way information” corresponding to loss of interference, and the phenomena associated with null measurements. These are all key puzzling aspects of standard quantum theory that are not readily explained otherwise. Admittedly, this requires expanding our ontology beyond the merely ‘actual’; but we believe that it is time to do so, given that many researchers are tacitly, or even explicitly, making use of Heisenberg’s idea that quantum systems are forms of potentiae, and/or that what goes on in spacetime may not be the entire ontological story. (p. 12)

Again, exactly these ideas can be found in my works! Moreover, the next section “IV. Potentiae Beyond Quantum Mechanics?” indicate an extension of their “new metaphysical picture” to other things! The next section “**V. Are Potentiae Outside Spacetime?”**, the authors introduce doubts about “spacetime”.

In this perspective, nonlocal correlations such as those of the EPR experiment can be understood as a natural, mutually constrained relationship between the kinds of spacetime actualities that can result from a given possibility—which itself is not a spacetime entity…. This new ontological picture requires that we expand our concept of ‘what is real’ to include an extraspatiotemporal domain of quantum possibility. Thus, we need to ‘think outside the spacetime box.’. (p. 13)

This new ontological picture requires that we expand our concept of ‘what is real’ to include an extraspatiotemporal domain of quantum possibility. Thus, we need to ‘think outside the spacetime box.’. (p. 14)

My brother and me wrote a book in 2016 having exactly the same idea about space and time! In their conclusion we can find this:

We have argued that an appropriate realist understanding of quantum mechanics calls for the metaphysical category of *res potentia*, just as Heisenberg suggested long ago. In particular, we suggest a non-substance dualism of res potential and res extensa as mutually implicative modes of existence, where quantum states instantiate a particular, quantifiable form of res potentia, ‘Quantum Potentiae’ (QP). As non-actuals, QP are not spacetime objects, and they do not obey the Law of the Excluded Middle (LEM) or the Principle of Non-Contradiction (PNC). On the other hand, *res extensa* is exemplified by the outcomes of measurements, which constitute structured elements of spacetime; the latter, as actuals, obey LEM and PNC. We argue that measurement is a real physical process that transforms quantum potentiae into elements of res extensa, in a non-unitary and classically acausal process, and we offer specific models of such a measurement process. In this ontology, spacetime (the structured set of actuals) emerges from a quantum substratum, as actuals ‘crystallizing’ out of a more fluid domain of possibles;15 thus, spacetime is not all that exists. (p. 15)

We draw the attention that this paragraph is not from my works! The authors talk clearly about the “mutually implicative modes of existence” which means exactly my EDWs perspective! They extended a weak notion from Heisenberg to such “mutually implicative modes of existence”. Why they did not this movement before 2008?

* **(2017) Lee Smolin’s trick: UNBELIEVABLE similarities between lee smolin’s ideas (2017) and my ideas (2002-2008) (another ‘reborned dinosaur’![[48]](#footnote-47))**

Something amazing happened to me: in my book 2010, I have written about smolin’s book 2002 ‘Three roads to Quantum Gravity’. In 2017, smolin wrote the third edition of this book with revision and adding’ some material. Apparently nothing surprisingly… However, when I saw a commentary on his book 2017, I realized that these ‘revision and adding’ material introduces UNBELIEVABLE similarities between smolin’s new ideas (2017) and my ideas (2002-2008…including 2016a)! The problem is that these new ideas a completely NEW comparing with all his ideas from the previous editions.

The question arises immediately: ‘Why smolin introduced these ESSENTIAL ideas (which represent a NEW FRAMEWORK OF THINKING very similar to my EDWs perspective) 15 years later than the first edition?’ He named this new framework ‘relationalism’ (apparently the same name used by carlo rovelli in the past 1995) but who also came with a new relationalism very closed to my EDWs perspective in the same YEAR 2017! What is the probability lee smolin to introduce so many similar ideas to my ideas in 2017?[[49]](#footnote-48) The probability is ZERO!

Also sean carroll came with the same ideas (and many others very similar to my ideas) one year earlier: 2016! What is the probability sean carroll, caro rovelli and lee smolin (and many other physicsts) to come with a new PERSPECTIVE which explains quantum mechanics UNBELIEVABLE similar to my EDWs perspective? ZERO ‘cut in four’.

Then again ‘who was it possible these ‘reborn dinosaurs’ of physics to come with the same RADICAL ideas in the same two years? I add more: there are many other physicists who published the same ideas within the 2015-2018! How what it possible? The answer is ‘a coincidence’: I published my Springer’s book in November 2015! The content of this book is a summary of FIVE previous books (all English) published at my university publishing company in 2008-2014! In this book , there is the EDWs perspective applied to quantum mechanics (and other theories and sciences) UNBELIEVABLE similar to these ‘reborn dinosaurs’ approaches.

What then is the probability as four reborn dinosaurs (and many others) to publish the same perspective in the same two years 2016-2017? ZERO!

I add that there are other physicists (and scientists from other particular sciences and philosophers) who published the very UNELIEVABLE similar ideas to my ideas? What then is the probability such things (a new paradigm of thinking to appear) to happen in the same 5-7 years? ZERO cut in many parts (there are more than 40 people that published books or articles having ideas very similar to my ideas!)

Let me start investigating lee smolin 2017 edition (based on a paper written by Paul Austin Murphy about smolin’s book, the paper written in 12 April 2018: ‘Lee Smolin’s Relationist (Meta)Physics’. Amazing, for the first time in his career, exactly as sean carroll and carlo rovelli, lee smolin introduces a new ‘(Meta)Physics’! I recall again that in his previsou edition 2002, I did not discover any similar idea to my idea! There are UNBELIEVABLE similar ideas to my ideas which I introduce below:

In a picture of this article, with lee smolin’s photo it is written:

What’s wonderful about the loop picture is that it’s entirely a picture in terms of relations.

There is no meaning of space that is independent of the relationships among real things of the world. Space is nothing apart from the things that exist.

Lee Smolin seems to go one step beyond what’s called ‘relationism’ to delve into domain of ‘relation[al]ism’. Relationalism simply emphasises the relations between things: it doesn’t deny that things exist. With relatinalism, ‘things exist and function only as relational entities.’ That is if there are no relations, then there would be no things…

Reading these paragraphs, I had the feeling of reading my ideas from 2008 to 2016!

The author of this article emphasize lee smolin’s contribution to QM: the loop quantum gravity. This theory has nothing to do with my EDWs perspective. The problem is that lee smolin introduces (in this 2017 edition) new ideas UNBELIEVABLE similar to my ideas 2002-2008 and later.

The author of this paper indicates that lee smolin denies the existence of absolute (Newton) space and time, lee smolin embracing Leibniz’s relationalism on space and time. ‘Nothing new under the sky’, isn’t it? However, the question is why lee smolin’s previous editions and other works had not denied the existence of space and time exactly as he is doing in 2017 edition?? Another paragraph from paper:

Smolin is what philosophers would call an *anti-essentialist*. That is, Smolin doesn't believe that there are “intrinsic properties”. Instead, as he puts it, “all properties are about relations between things”.

This idea is UNBELIEVABLE similar to my ideas from books 2008, 2010, etc.! it is very very similar to my definition of a physical thing! lee smolin also denies the existence of ‘absolute entities’ exactly as I denied it! The next paragraphs are form that paper:

It's not immediately clear why Newton's position on space would automatically exclude a “relationist” take on *things*/atoms. After all, “atoms with fixed properties” may still partake in relations even if space is*fixed*and also if the atoms within space have *absolute properties*. Why can't we have absolute properties *and* things which partake in relations?

Smolin's alternative picture to this is a “relational” or “dynamical”. It's a case of spacetime itself - and all properties/things/atoms within it - being relational or dynamical. In other words, in Smolin's universe, literally nothing is *absolute* or *intrinsic*.

Amazing, exactly the same ideas are in my works 2002-2008 and later!!! lee smolin made an UNBELIEVABLE similar movement to my framework: the moved from rejecting the absolut space and time to rejecting the absolute things! This movement pushes his approach to an UNBELIEVABLE similar perspective to my EDWs approach. On this line, a new paragraph from this paper:

On my own reading, Lee Smolin seems to go one step beyond what's called “relationism” and delves into the domain of “relation[al]ism”. What I mean by that it can be said that *relationism* simply emphasises the relations between things: it doesn't deny that things exist. With relationalism (with an added “al”), on the other hand, “things exist and function only as relational entities”. That is, if there were no relations, then there would be no things. Relationism, on the other hand, simply notes the importance of relations between things; it doesn't claim that things - in and of themselves – don't exist.

……..

Thus relationalism is like ontic structural realism (which will be discussed later) in that the latter eliminates *things* from its metaphysical picture ([“every thing](http://emilkirkegaard.dk/en/wp-content/uploads/every-thing-must-go.pdf)[must go”](http://emilkirkegaard.dk/en/wp-content/uploads/every-thing-must-go.pdf)). Relationism, on the other hand, simply places relations in an important position in the metaphysics of*things*.

…..

Nonetheless, relation[al]ism can also be read as not actually being eliminativist at all. After all, this metaphysical position may simply have it that things (or entities) aren't what's called “self-standing”. To put that another way: what makes things *the things that they are* may be their relations to other...*things*. Or we can even say that particulars (things) are *essentially*relational. Alternatively, we can say that all a thing's properties are relational. That is, it has no “intrinsic properties”.

Thus, in a weak (or even strong) sense, if all things only have relational properties (and such properties literally make all these things *the things that they are*), then there is a sense in which *things* are indeed eliminated from the metaphysical picture. To put that simply: if a thing's relations (or relational properties) were eliminated, then it would no longer be that thing. Indeed it would no longer exist.

Again, I had the feeling of reading new paragraphs from my previous works!!! Another paragraph with an idea very similar to my ideas:

So, again, how can the world be “made out of relations” alone? The same goes for Smolin's other claim that “all properties are about relations between things”.

And what does Smolin mean by the words “all about”? We can easily accept that relations between things are important. But so too are things and their properties. So how is it that properties “are [only] about” the relations between things? In other words, is this part of an identity statement? Namely:

“properties” =*relations between things*

UNBELIEVABLE similar ideas to my ideas published in 2002-2010!!![[50]](#footnote-49)

Then the author of the paper introduces some words about lee smolin’s ‘loop quantum gravity’. As I mentioned above, this approach has nothing similar to my EDWs perspective!!! On the contrary, we see here some paragraphs (probable from the same edition but written in previous editions) which claim the existence of space and time!!!: ‘[t]he geometry of space and time changes and evolves, as does everything else in nature”. However, lee smolin has this idea:

“[n]either space nor time has any existence outside the system of evolving relationships that comprises the universe”.

Indeed this soup of interrelating fields not only creates spacetime, it also creates the particles and all the other entities/conditions which exist at a specific point in time and place in space.

It seems that this paragraph contradicts the idea form the above paragraph regarding space and time: do space and time exist or don’t exist? The last paragraph indicates the same problem:

Smolin isn't only talking about things and their relations: he also sees the geometry of space and time as being relational. Indeed one can says that the geometry of spacetime is relational/dynamical precisely because things and their relations are also relational/dynamical.

Without having access to his 2017 edition of his previous book, I stop indicating UNBELIEVABLE similarities here. I am sure the reader will find many similar ideas to my ideas…

* **(2013) Did Markus Gabriel (Bonn University) plagiarize my ideas?[[51]](#footnote-50)**

“The hell is empty and all the devils are here.”

Shakespeare, *The tempest*

**Abstract**

In this appendix, I analyze the unbelievable similarities between my ideas from my works (2005, 2008, 2010, 2011, 2012) and Markus Gabriel’s ideas (Bonn University) from his book published in 2013 and his TED clip (also 2013).

1. **The “epistemologically different worlds” perspective**

I have been employed at the Department of Philosophy, Bucharest University (Romania) since 1998. I have studied at various universities around the world (I received scholarships from University of Oxford, New York University, University of New South Wales Australia), I have published four books at the Bucharest University Press (all in English), many articles in Romania (almost all in English) and in foreign journals (two papers at *Synthese* journal, I edited one special issue at *Synthese*, one issue at *Philosophia Scientiae* both issues having articles written by researchers that are among the best in (philosophy of) cognitive (neuro)science, in 2000 I started a CEEPUS project on cognitive science for Eastern European countries etc. My full CV can be found at this address: <http://filosofie.unibuc.ro/cv_gabriel_vacariu>. My books and articles are available in an electronic format on my university webpage. I have also presented my general framework in the prestigious philosophical journal *Synthese* in the paper (“Mind, brain and epistemologically different worlds”) published in December 2005 (special issue on “philosophy of neuroscience” edited by John Bickle) and I further developed this framework in my later books and papers, (books which are published in 2008, 2010, 2011, 2012 by the University of Bucharest Press).

In Vacariu (2005) and my book from (2008), I showed that the mind-brain problem is a pseudo-problem constructed within a wrong framework, the “world” or as I called, the “unicorn world”. In the introduction, I indicate:

Within this framework, there is one key element that represents the major error: the postulation of ‘*one world*’, one single ontological world in which everything has been placed (all the entities like Gods, angels, minds, bodies, planets, tables and micro-particles). Paradoxically, everyone before Descartes and after him, including his critics, has embraced the same framework. And here is, I think, where the mistake resides: assuming the existence of one world, the universe. Metaphorically, I will call this unique world or “uni-verse” the *“unicorn-world”*, to emphasize its mythological-religious roots. (p. 516)

And one page later:

The main aim of this paper is to show that the famous mind–body problem is a false problem or a pseudo-problem; the notion of the unicorn-world is the origin of major pseudo-problems (like the mind–body problem) in philosophy and science. Only by abandoning this concept – the unicorn-world – can we avoid all these pseudo-problems. (p. 517)

In my paper from 2005, I elaborated 5 principles that constitute my approach, the epistemologically different worlds (EDWs) perspective. These principles show that the “world” does not exist (I argue that the thing-in-itself does not exist: “Thing-in-itself’ would mean an entity that has no limits of interaction and this is not possible.”, p. 532), but only the EDWs exist. Here, I offer the analogy between table-microparticles and mind-brain: the table and “its” microparticles, the mind and the brain exist but in the EDWs not in the same “world” (the unicorn world).

In my next books and articles, I continued developing my perspective and I increased the principles from 5 to 13. Let me introduce again these principles (see 2008, 2010, 2011, 2012):

“(1) Epistemologically different interactions constitute epistemologically different its, and epistemologically different its determine epistemologically different interactions.

(2) Any it exists only at "the surface" because of the interactions that constitute it.

(3) Any it exists in a single EW and interacts only with the its from the same EW.

(4) Any EW (a set of its – and eventually Its – and their interactions) appears from and disappears in the hyper-nothing.

(5) Any EW is, therefore all EDWs have the same objective reality.

(6) Being corresponds to an It.

(7) Being is an EW. Therefore being is.

(8) Having certain determinations, from our viewpoint an It is composed of an amalgam of Its/its and their relationships.

(9) Certain states and processes form knowledge that is being.

(10) As an entity, being has unity as indeterminate individuality.

(11) Being is, therefore EDWs are.

(12) The set of judgments that describe the phenomena of each epistemological world must observe the rule of conceptual containment that is given by the conditions and limitations within the concepts of the judgments. These conditions and limitations are governed by the properties of external tools of observation or some abilities (introspection, consciousness) that the “I” has. (13) Since human attention is a serial process, the human being cannot simultaneously observe EDWs.” (Vacariu 2011, 2012, 2013)

In my books/articles, with the EDWs perspective, I showed that the main four problems (and many other related problems) from science and philosophy are pseudo-problems. The main four problems are: the old mind-body problem (and all its related problems), the relationship between an organism and live, the great mysteries of quantum mechanics and the relationship between Einstein’s theory and quantum mechanics are all pseudo-problems. Moreover, I showed that cognitive neuroscience is a pseudo-science and the search for the unified theory in physics is meaningless (in both cases there is a mixture of information referring to EDWs). Without offering any more details about my perspective (see mainly my books at my webpage), in the next sections, I will analyze TED clip with Markus Gabriel and his book published in 2013.

1. **The unbelievable coincidence: two individuals elaborated the same completely new framework of thinking in the same decade!**

Recently, one of my colleagues informed me about a clip posted on TED.com[[52]](#footnote-51) (September 2013, 18 minutes) of Prof. Dr. Markus Gabriel (Philosophy, University of Bonn, and Director of the *International Centre for Philosophy*, Germany) with the title “Why the world does not exist” on YouTube at this address:

[https://www.youtube.com/watch?v=hzvesGB\_TI0&feature=youtube\_gdata\_player](https://www.youtube.com/watch?v=hzvesGB_TI0&feature=youtube_gdata_player" \t "_blank)

In 2013, Markus Gabriel has also published a book (in German) with the same title *Warum es die Welt nicht gibt*, Ullstein: Berlin 2013. Watching the clip on TED (in English), I realized to my big surprise, Markus Gabriel’s ideas are incredible similarly with my ideas (I published in my papers and books in the last seven years) that reflect my general framework, the EDWs perspective, within which I proved the same idea, namely, the “world” does not exist. The similarities between my ideas and Markus Gabriel’s ideas from TED clip are so striking and I want to mention few of them in the next sections. The main 5 notions/ideas (from which results the same framework of thinking the world does not exist) are “unbelievable similarity”:

1. Vacariu: The *“***world does not exist***”* but “epistemologically different worlds” (*EDWs*) exist. (in my 2005 + book).[[53]](#footnote-52)

Markus Gabriel: “*Why the world does not exist*”. (title for TED clips and book)

1. Vacariu: All objects/entities exist but in **EDWs**.

Markus Gabriel: All objects are in different “*lists*”.

1. Vacariu: The objects/entities from one EW **interact**.

Markus Gabriel: The objects from a list *intersect*.

1. Vacariu: Only the objects that belong to a particular EW interact. The objects from one **EW do not interact** with objects from the other EDWs.

Markus Gabriel: All objects exist but *not* any object is “*connected with*” all other objects.

1. Vacariu: We need to change the definition of “existence”: For instance, in Vacariu (2008): “As I mentioned above, we have again to **change the notion of existence**…” (p. 141) (in many places)

Markus Gabriel: we have to *reconsider the definition of the “existence”*…

Having in mind the unbelievable similarity of these ideas that represent a new framework of thinking, let me introduces some particular ideas from TED clip (with Markus Gabriel) and his book (published in 2013) that are unbelievable similar to my ideas from EDWs perspective (elaborated during the last 7-8 years).

**3. Markus Gabriel’s TED clip**

* Markus Gabriel starts his presentation posted on TED site talking about the “*unicorn*”, even if the term it is regarded from a slightly different perspective. He considers that the unicorn exists in a particular context, which points to the same idea that the “world” does not exist.

My comment: In my paper from 2005 and in all of my books, I use the concept “unicorn-world”, a concept invented practically by me to express the uni-dimensionality of the world postulated by scientists. (See above Vacariu 2005, also Vacariu 2008 p. 15; Chapter 1 from Vacariu and Vacariu (2010): “1. The hyperverse versus the “unicorn-world”, and section1.1 “The oldest paradigm of human thinking: the unicorn-world”; part 1 from Vacariu 2011 (“The „Unicorn-World”, the House of Knowledge – the Human Greatest Illusion), etc. In Vacariu (2008): “After Copernicus, Darwin and Freud’s revolutions against myths in human thinking, we have to reject yet another myth: the “world” does not exist and we are not the only observers.” (p. 363) I start my article from 2005 and all my books with the idea of the “unicorn”. It is amazing that Markus Gabriel starts his TED clip with the idea of the unicorn considering we can believe the “unicorn” exist in a certain context. However, he does not really believe the unicorn really exists.[[54]](#footnote-53)

* In my theory I claim that an object exists because of the “interactions” with other objects from the same EW. For instance in Vacariu (2008), one of my principles is this one: “The determining epistemologically different entities and their corresponding constitutive epistemologically different interactions represent the epistemologically different worlds.” (p. 108); or Vacariu (2011), principle nr. 1.)

Markus Gabriel: He replaced EDWs with “list” and “interactions” with “intersections”.

* Let us see some paragraphs from my works and some affirmations made by Markus Gabriel (I bolded some words in all paragraphs):
* There is a fundamental issue here which needs to be noticed: Descartes’ approach is grounded in a **pre-existing framework (paradigm) which has dominated human thinking since the Ancient Greeks.** Within **this framework, there is one key element that represents the major error: the postulation of ‘*one world*’, one single ontological world in which everything has been placed (all the entities like Gods, angels, minds, bodies, planets, tables and micro-particles).** Paradoxically, everyone before Descartes and after him, including his critics, has embraced the same framework. And here is, I think, where the mistake resides: assuming the existence of one world, the universe. Metaphorically, I will call this unique world or “uni-verse” the “**unicorn-world**”, to emphasize its **mythological-religious roots**. We can identify this key element, the unicorn-world, within the majority of myths, theological doctrines, philosophical approaches, scientific theories, frameworks, etc., which explain both the “universe” and human beings. (Vacariu 2005, p. 516)
* This framework does not involve only the relationship between mind and brain (body), but also all the problems that flow from the singular conception of **the world, the universe, or reality**.” (Vacariu 2008, p. 101)
* In this work, I will try to show that the greatest **illusion** of human knowledge that has been surviving from the oldest times is the notion of “world”, of “uni-verse” or as I called it the “unicorn world”. (Vacariu 2011, p. 13)
* The main mistake that led to the creation of the unicorn world is that we, the human beings, believed (consciously or not) that we are the only observers of the “world. As a result, Gods, all beings (**humans** with their mind, brains and bodies, and **plants**, cells, microbes, animals) and **all objects** (tables, stones and **planets**, electrons, waves and fields) have been placed within the same world, the unique world, the uni-verse. The world is all the entities and their relationships inevitably placed within the **same spatio-temporal framework**. (Vacariu 2011, p. 14)
* The **world** is **all the entities** and their relationships inevitably placed **within the same spatio-temporal framework**. (Vacariu 2012, p. 15)
* Situating all entities within the same spatio-temporal framework, the creation of the unicorn world was inevitable; and vice-versa. (Vacariu 2011, pp. 48-9)
* For more than two millennia the human being has been thinking within the unicorn world. (Vacariu 2011, p. 173)

Markus Gabriel: He uses many of my expressions (but not EDWs, of course). For instance, he tells us that the “*nature, reality, the universe*… *the world*” does not exist. “I think that this really thing is an *illusion*…” “What is the *world*? Philosophers have tried to clarify this *for pretty much 2500 years*”, “*the world is the totality of things, the totality of**spatio-temporal things”, the world is planets and trees, and stars and people and friends and etc*.” He speaks about a *myth…*

* “In order to show that the **‘world’ does not exist**, I will investigate the eternal philosophical topic (a topic that science has undertaken in the last century): **‘What exists?’** and ‘What are the relationships between entities that exist?’. (Vacariu 2011, p. 17)

Markus Gabriel has almost the same expressions in TED clip.

* For me something to exist means to belong to a particular EW:

“An **entity exists** only if it has certain limits of **interaction with other entities**;” (Vacariu 2008, p. 151) “To exist means to have certain limits. The conditions of interactions have certain parameters that reflect the limits of that entity… Explicitly, any nonliving entities (for instance, a **table or a planet) exist only as a result of its external constitutive interactions**.” (Vacariu 2008, p. 152) Or: “These two notions, ‘**existence’ and ‘interaction’, are strongly interrelated**. Proposition (1) can be re-written in the following way: ‘To exist means to interact’.” (Vacariu 2011, p. 34)

Markus Gabriel: “*Existence is something that appears in context. To exist is to be in context.”* “*Any object intersects with other objects from the same list.”* These words are perfectly synonyms with my words! Is it not clear yet?

* “The philosophy of the hyperverse is **a step forward** to pass beyond the eternal and scorching pseudo-disputes of the last century. In order to avoid wasting time working on such pseudo-problems through creating marvelous Ptolemaic epicycles, people now have the opportunity to **replace the unicorn world** **with the EDWs**.” (Vacariu 2011, p. 175)

Markus Gabriel: “… an *important step for humanity*, we really have to give up to the idea that all things are connected. Something is connected and something is not. We have to *give up the idea of over structure that settles things*.”

* I graduated four years Computer Science and then philosophy, I read many books and papers on (philosophy of) physics and this is the reason I dedicated a chapter for the problems in physics (the theory of unification included) in my first two books and some papers. In my book from (2010), I have a section dedicated to the theory of unification. (Vacariu and Vacariu 2010, "7.4 The hyperspace versus the hyperverse") in which I showed that the “**theory of unification**” created by string theory is the greatest Ptolemaic epicycle in the history of human thinking.

Markus Gabriel: Without having any background or study in physics, he sustains that the idea of “*unified physics”* is wrong! (Even this expression is wrong!)

* Vacariu (2008, p. 5): “… the major **error**: the postulation of “one world”, one single ontological **world** in which **everything has been placed** (all the entities like Gods, angels, and mind and body, planets, tables and micro-particles).”

Markus Gabriel: He claims that it is *wrong* to consider “*the world is as being the sum of all things/objects*”.

* At the end of his presentation, Gabriel considers that we are “free” because “*human beings avoid the determinism, not because of God or univers*e”, but because we have “infinite possibilities”.

My comment: My idea is that the “I” is an EW, so there is nothing “determinate” in our mind, since one EW does not exist for any other EW. We can talk about determinism in the macro-EW where the brain/body is placed, but not in the self, that is an EW.

1. **Markus Gabriel’s book: “*Why the world does not exist”* (2013)**

In this section, let me analyze six paragraphs from only two pages (pp. 11-12) of his book *Why the world does not exist* (2013) (in Germany). Using Google translation program from Germany to English and correcting some words, my colleague (Gheorghe Stefanov) helped me translating these paragraphs:

* "Mir ist jedenfalls nicht bekannt, dass die Physik oder die Biologie inzwischen auch die Soziologie, die Rechtswissenschaft oder die Germanistik integriert hätten. Auch habe ich noch nie davon gehört, dass die Mona Lisa in einem Chemielabor auseinandergenommen wurde."

English[[55]](#footnote-54): “I certainly do not know that physics or biology have also *integrated* sociology, law or German. Also, I've never heard that the Mona Lisa was taken apart in a chemistry lab.”

My comment: I dedicated chapters of my books and articles to show that the knowledge from certain **particular sciences** (physics, biology, cognitive science) cannot be **integrated** in a scientific or philosophic theory or approach. However, in this paragraph, Markus Gabriel brings into discussion something new: “Mona Lisa”!

* “Doch genau dieses Allumfassende, die Welt, gibt es nicht und kann es auch nicht geben. Mit dieser Hauptthese soll nicht nur die Illusion zerstört werden, es gebe die Welt, an der die Menschheit ziemlich hartnäckig festhält, sondern gleichzeitig möchte ich sie auch nutzen, um daraus positive Erkenntnisse zu gewinnen. Denn ich behaupte nicht nur, dass es die Welt nicht gibt, sondern auch, dass es außer der Welt alles gibt.”

English: “But it is precisely this all-embracing, *the world, that neither exists, nor can it be given.* With this main thesis, that the world does not exist, not only the illusion that there is a world will be destroyed, an illusion in which *humanity believes quite stubbornly,* but at the same time I also want to use it in order to extract positive findings. Because I argue not only that there is no world, but also that *everything is apart from the world*.”

My comment: Here we can find exactly my main idea: the **world does not exist, but EDWs exist**. Instead of EDWs, Markus Gabriel uses “everything is apart from the world”. He mention, as I did many times, the illusion of humanity of believing, “quite stubbornly”, of the “world”. Moreover, he claims that he shows us not only that the world does not exist, but also that everything - except this world - exists! Such affirmations are exactly like many of my sentences from my books/papers: it is about the EDWs, no more or less. Moreover, in my paper from 2005 (and my books) I strongly emphasized all these ideas (see above the quoted paragraphs from my works). Using synonyms, Markus Gabriel writes the same thing here in the above paragraph.

* “Das klingt vielleicht merkwürdig, kann aber überraschend leicht anhand unserer  
  alltäglichen Erfahrungen illustriert werden. Stellen wir uns vor, wir treffen uns mit  
  Freunden zu einem Abendessen im Restaurant. Gibt es hier nun einen Bereich, der alle anderen Bereiche umfasst? Können wir sozusagen einen Kreis um alles ziehen, was zu unserem Restaurantbesuch gehört? Nun, mal sehen: Wir sind vermutlich nicht die Einzigen im Restaurant. Es gibt also mehrere Restaurantbesucher an Tischen mit unterschiedlichen Gruppendynamiken, Präferenzen und so weiter. Außerdem gibt es die Welt des Servicepersonals, der Restaurantbesitzerin, der Köche, aber auch der Insektenund Spinnen und der für uns unsichtbaren Bakterien, die sich im Restaurant aufhalten. Darüber hinaus gibt es Ereignisse auf subatomarer Ebene sowie Zellteilungen, Verdauungsstörungen und Hormonschwankungen. Einige dieser Ereignisse und Gegenstände hängen zusammen, andere überhaupt nicht. Was weiß die von allen unbemerkte Spinne im Deckengebälk schon von meiner guten Laune oder von meinen Speisepräferenzen? Und dennoch gehört die Spinne zum Restaurantbesuch hinzu, wenn auch meist unerkannt. Dasselbe gilt für Verdauungsstörungen, die man auch nicht ins  
  Zentrum der Aufmerksamkeit rückt.”

English: “This may sound strange, but can be surprisingly easy using our everyday experiences to illustrate it. Let us imagine that we meet with our friends for a dinner in the restaurant. Is there now an area that includes all other areas? Can we speak or draw a circle around everything that belongs to our restaurant visit? Well, let's see: We're probably not the only ones in the restaurant. So there are several diners at tables with different group dynamics, preferences and so on. In addition, there is the *world of the service staff,* the restaurant owner, the cooks, but also the insects and spiders and bacteria are invisible to us, who are in the restaurant. In addition, there are events at the *subatomic level*, and cell division, digestive disorders and hormonal imbalances. Some of these events, and objects are related, others not at all. What do the unnoticed at all spiders in the ceiling joists of my already good mood or my food preferences? And yet, the spider is added to the restaurant visit, though mostly unrecognized. The same goes for indigestion, which is also not the center of attention engaged.”

My comment: This paragraph is one of the most important because Markus Gabriel considers that there are “many worlds” (see below). One of such “world” is composed of dinners at table, service staff, restaurant owner, cooks, insects, spiders and bacteria “who are in restaurant”. There is another “world” of “subatomic level” and another world of “cell division” or digestive disorders. Essentially, “some of these events, and objects are related, others not at all”. This is exactly my idea **of EDWs** but Markus Gabriel did not fully understand it!

* “Es gibt beim Restaurantbesuch also viele Gegenstandsbereiche, gleichsam kleine isolierte Welten, die nebeneinander existieren, ohne dass sie wirklich zueinanderfinden. Es gibt also viele kleine Welten, aber nicht die eine Welt, zu der sie alle gehören. Dies bedeutet gerade nicht, dass die vielen kleinen Welten nur Perspektiven auf die eine Welt sind, sondern dass es eben nur die vielen kleinen Welten gibt. Es gibt sie wirklich, nicht nur in meiner Einbildung.”

English: “There is within the restaurant visit so many subject areas, as it were *small isolated worlds that exist side by side without really meeting each other*. There are so many little worlds, but *not a world to which they all belong*. This means *not* just that the many small worlds are *only perspectives on the one world*, but that there are only many small worlds. They not only exist in my imagination, but *their existence is real.*”

My comment: The last two paragraphs are strongly related: there are “small isolated worlds that exist side by side without really meeting each other”! What does it mean this sentence for Markus Gabriel? The next sentences in this paragraph indicate me that Markus Gabriel “borrowed” my ideas without fully understanding them! He didn’t understand my main idea that unifies epistemology with ontology and thus creating the EDWs. Markus Gabriel writes that these “small worlds” are “side by side without really meeting each other”. **These words reflect almost entirely my EDWs.** Moreover, this paragraph – as other paragraphs - indicates that in Markus Gabriel’s view it is not about Carnap’s “linguistic frameworks” (I don’t know how much Markus Gabriel has worked on Carnap’s philosophy), since he considers that these “worlds” really exist! Moreover, Markus Gabriel indicates that these “small worlds” are not “just perspectives of the world” but “small worlds”. As I did in my books (2008, 2010), with EDWs perspective, I avoided Spinoza’s dual property approach. Markus Gabriel insists in writing that these “small worlds” really exist. In reality, exactly as I have done in my works, Markus Gabriel rejects “world-in-itself” but, probably without understanding completely my ideas, he wrongly replaced EDWs with “small worlds”. In this frame, Markus Gabriel did not notice there are some ontological contradictions. Given his academic background, it is easy for everybody to remark that Markus Gabriel would not be able to understand completely EDWs perspective.

* “Genau in diesem Sinne kann man meine Behauptung verstehen, dass es die Welt nicht gibt. Es ist einfach falsch, dass alles mit allem zusammenhängt. Die populäre Behauptung, der Flügelschlag eines Schmetterlings in Brasilien löse möglicherweise einen Tornado in Texas aus, ist schlicht falsch. Vieles hängt mit vielem zusammen, aber es ist falsch (genau genommen sogar unmöglich!), dass alles mit allem zusammenhängt. Natürlich stiftet jeder Einzelne von uns andauernd Zusammenhänge.”

English: “It is in this precise sense that one can understand my contention that there is not the world. It is simply *false that everything is interconnected*. The popular assertion that the flap of a *butterfly's wings* in Brazil might produce a tornado in Texas is simply wrong. Much has to do with many things, but it is wrong (actually impossible!), that everything is interconnected. Of course every one of us creates lasting relationships.”

My comment: Obviously, in my EDWs perspective, many times I indicate that **not all entities (objects) intersect**, or, in Markus Gabriel’s words, “interconnected”. In his TED clip, he indicates that there are “lists” of objects, and these lists are such “small worlds”. The example with the butterfly is taken from the theory of complexity, and I doubt Markus Gabriel has any idea about this theory. A subchapter (6.2) in one of my books (2010) is dedicated to Kauffman’s **theory of complexity** applied to biology, another one is dedicated to the string theory. My opinion is that Markus Gabriel would not be able to understand the applications of my perspective to “special sciences”.

* “Analog verhält es sich mit der Welt im Ganzen. Diese gibt es ebenso wenig wie einen Zusammenhang, der alle Zusammenhänge umfasst. Es gibt einfach keine Regel oder Weltformel, die alles beschreibt. Dies liegt nicht daran, dass wir sie bisher noch nicht gefunden haben, sondern daran, dass sie gar nicht existieren kann.”

English: “The situation is similar with the world-as-itself. This is just as rare as a context that includes all contexts. There is simply no rule or universal formula that describes everything. This is not because we have not found it yet, but because of the fact that the *world in itself cannot exist*.”

My comment: Again, in all my books **I reject Kantian idea of thing-in-itself,** while Markus Gabriel uses this expression: “the world-in-itself cannot exist”. For me, only the entities that belong to EDWs exist. As I indicate in section 1, in my article from 2005, for instance at p. 532, I write: “thing-in-itself’ would mean an entity that has no limits of interaction and this is not possible.” My perspective is an extension of Kant’s theory, but, in many places, I strongly emphasize that, within my EDWs perspective, the Kantian distinction between noumenon and phenomenon is wrong.

1. **Remarks about the unbelievable similarities between EDWS perspective and Markus Gabriel’s ideas**

There are many other incredible similarities between my ideas and Markus Gabriel’s ideas (from the TED clip and from his book). This title of his book, “Why the world does not exist” (in German language) is identical with my main idea. My colleague told me that he did not offer arguments for this idea in his entire book. Just taking a look at his book, my colleague - who knows German - told me that, at pp. 11-12, we can find a very similar idea with my main idea of EDWs. Markus Gabriel introduces the idea of “restaurants”: it is not only one restaurant, it is a restaurant of humans, a restaurant of bacteria, a restaurant of subatomic particles. There is no one restaurant but more, that is there are more isolated worlds that “exist near the other, without really finding them”. He also wrote that these worlds are not parts of a unique big world. Later, he wrote that it would be false to affirm that the movement of butterfly’s wings in Brazil does not produce a tornado in Texas, the things are not all “connected” – here “connections” means “interactions”. These ideas are almost identical with my main ideas from my books/papers: if we replace EDWs with “restaurants” and “interactions with “intersections” we re-create exactly the main ideas from my perspective. Even if later, Markus Gabriel defines the existence as “*appearance in a conceptual field*”[[56]](#footnote-55) (Sinnfeld) (probably, this is “context”, in English), anyway, in his TED clip, he claims that all objects exist on different “lists”.[[57]](#footnote-56) Very probable, not to be accused of plagiarism, Markus Gabriel moves his main idea toward **Carnap’s “linguistic frameworks**”. Reading his CV, I believe Markus Gabriel he does not know too much about Carnap’s philosophy. However, in my book from 2008, I dedicated a section to Carnap’s linguistic frameworks showing that my EDWs means a movement from such linguistic frameworks to EDWs, that is a movement from the linguistic entities to the epistemological-ontological entities. The problem is that he could not write the title of his book and TED movie, “Why the world does not exist”, if he were working within Carnap’s “linguistic frameworks”! He could not claim that all objects exist, but on separate “lists” and an object is not “connected” with all other objects but any object exists in a “conceptual field”! Only working in a completely new framework of ontology-epistemology, could Markus Gabriel write the title of his book and the above sentences.

According to my colleague, “in his book, Markus Gabriel writes many names: Rilke, Adorno, Scheller, Heisenberg, Derrida, Putnam, Quine, Heidegger, Gadamer, Marx, Weber etc. etc., some ideas about art, religious, about everything and nothing. For many things, I don’t see the links with the thesis that the world does not exist, even if this should be the main idea of the book”. It seems that, Markus Gabriel needed two things: (1) to choose the title of the book and TED clip as being very similar with the most important consequence of my perspective (2) to fill his small book with something that has nothing to do with the framework and the main consequence (that the world does not exist)! Surprisingly, I have noted that Prof. Markus Gabriel has written in the past mainly on different topics (Ancient philosophy, German philosophy, etc.) completely different from what we can see in TED clips and those several pages in his last book, completely different from the title of his book and TED clip. (He got his PhD on Schelling’s philosophy.) We can clearly understand that with his unscientific background and the topics of his published papers and books, Markus Gabriel could and did not offer any strong (analytical philosophical or scientific) argument for supporting the main ideas/notions (TED clip and his book in the same year 2013!) that are *very similar* with my ideas: the title of TED clip and his book (“Why the world does not exist”), “lists”, and “intersections”. Working on completely different topics, Markus Gabriel suddenly publishes a book and has a TED presentation with the title “Why the world does not exist” in the same year, 2013! It is quite surprisingly for everybody to publish suddenly a book and have a TED presentation on topic that has nothing to do with your previous works but both with such a dramatic title and so drastic consequences in philosophy and science! Moreover, anybody working in academic field has to ask, if there are just “coincidences”, *how Markus Gabriel constructed “his” ideas/notions without offering us any arguments of supporting them?*

On the contrary, I have a background of studies in science (four years computer science) and then philosophy, I have been working in philosophy of science (mainly philosophy of cognitive (neuro)science and philosophy of physics) all my carrier. Reading enormous amount of books and papers from philosophy, cognitive science, physics, and biology published in the last 10 years, I developed my EDWs perspective step by step, from one published paper or book to another during many years. I believe that the relationship between my ideas and Markus Gabriel’s “ideas” **cannot be considered just a coincidence**! My ideas are not just simple ideas because the EDWs perspective is a **completely new framework** and this is the main reason nobody could elaborate an approach (“the world does not exist”) until me. Therefore, I am convinced that it is impossible for two persons to elaborate the same ideas in the same decade of time, i.e., it is impossible that Markus Gabriel elaborate few ideas that “coincides” with the main ideas from my EDWs perspective. There can be a coincidence regarding some simple ideas, *but it is impossible to be a coincidence regarding a totally new framework of thinking for scientists and philosophers. If it were possible such coincidence, then this framework would appear long time ago*, maybe even 200 years ago as a reply to Descartes’ mind-body problem or immediately after the elaboration of Einstein’s theory of relativity and quantum mechanics![[58]](#footnote-57) Again, if we consider that Markus Gabriel did not plagiarize my main ideas, then how was possible a person working on Ancient and classical philosophy to come with a **new** **framework of thinking** for scientists and philosophers in our days? Statistically, such process of thinking (changing the “paradigm” of thinking) happens one per century realized by one person! Therefore, I repeat that it is quite impossible such of complex approach, the EDWs approach to be elaborated by two different persons in the same decade. Again, Markus Gabriel did not offer any argument for supporting the main ideas from his TED clip and those main ideas (related to the title) from his book. It would be quite impossible for someone working on German idealism or Ancient philosophy to come with the ideas that are so “similarly” to my ideas. If this possibility were real, someone would produce it long time ago! For instance, I really do not understand the meaning of “lists”, “intersections” and “why the world does not exist”: these notions are not clear and there is no argument to supports them at all. From these notion, Markus Gabriel concludes that the “world does not exist”!

I succeeded in creating this general framework and its applications to particular sciences due to my extensive work on philosophy of cognitive science (cognitive neuroscience and philosophy of mind, mainly on the mind-brain problem), philosophy of physics (the problems of quantum mechanics, the relationship between this theory and Einstein’s theory of relativity, string theory, etc.), philosophy of biology, philosophy of science, theory of complexity, on Descartes, Kant, Carnap, Vienna circle, Putnam, and many other philosophers’ approaches. Having worked for many years on the mind-brain problem (an unsolved philosophical problem in the last 350 years) and other related problems, I discovered the existence of EDWs. Then, I applied this theory in quantum mechanics (and other problems from physics) and biology. Only working on all these problems, I was able to elaborate a completely new paradigm, different from any other philosophical approach of all times. On the contrary, someone getting the PhD on Schelling and working on Ancient Philosophy, Hegel, and such old philosophy, without having a background in science would be impossible to discover that the “world does not exist”, could not indicate the existence of EDWs and could not think of applying this perspective to many problems from particular sciences.

1. **Conclusion**

Did Markus Gabriel plagiarize my ideas?[[59]](#footnote-58) Reading his CV (he knows many foreign languages, including Ancient Greek and Latin), I believe Markus Gabriel has had great ambitions in the last years. He was not content only with his previous works of just “commenting” Ancient and German idealistic philosophy. He wanted to “change the world” but he could not do this working only in these areas. Nevertheless, without having background in any particular science, Markus Gabriel he needed some “revelations” from Internet. Markus Gabriel is from Germany (the core of the history of philosophy and the economical core of UE), I am from Romania (“*No man’s land*”, probably Markus Gabriel believed I had no access to the Internet) so can we speak he plagiarized my ideas?[[60]](#footnote-59) After reading this appendix and noticing so many “coincidences”, I leave the reader to answer this question.

“Have no fear of perfection, you will never reach it.” (Salvador Dali) In rejecting those prizes, probably Perelman’s thought was: “When you reach perfection, you do not need any million of dollars!” Obviously, perfection is reached when a professor of philosophy from a German university plagiarizes your philosophical work.

The cover of Vacariu's book 2010 and the cover Markus Gabriel's book 2015/2013!!



**Markus Gabriel (2017) *I am not a brain.* *Philosophy of Mind for the Twenty-First Century,* Polity Press**

I draw the attention that markus gabriel has never written an article on the Philosophy of Mind! However, we see now even in the title of his book that he talks about the Philosophy of mind for 21th Century!

As previously mentioned, I adopt the stance of **antinaturalis**, according to which not everything which exists can be investigated by the natural sciences. I thus contend that there are immaterial realities which I consider essential for any accessible insight of sound human understanding. When I consider someone a friend, and consequently have corresponding feelings for him and adjust my behavior accordingly, I do not suppose that the friendship between him and me is a material thing. (17)

In this paragraph, mg (markus gabriel) indicates that he “adopt” “antinaturalism”, i.e., the “immaterial realities”. (Even if mg explains nothing about these “immaterial realities”!) Obviously, remembering his previous UNBELIVABLE similar ideas form his book 2013 to my ideas, we can understand that these “immaterial realities” are quite similar to my EDWs referring to “minds”. Moreover, “corresponding”, (in this case for “feeling”) is exactly my expression for the same meaning!

Mainstream philosophy of mind for quite a while has sought to provide a theoretical basis for neurocentrism. This seemed necessary given that neurocentrism cannot yet claim to be based on empirical results, as neuroscience is infinitely far away from having solved even “minor” problems, such as finding a physical/neural correlate for consciousness, not to mention finding a location in the brain which correlates with insight into some complicated quantum-mechanical truth or the concept of justice. It has participated, sometimes even enthusiastically, in the decade of the brain. Yet, in the course of the

unfolding of mainstream philosophy of mind it has become apparent to many that it is anything but obvious that the self is a brain. (21)

Obviously, the ideas of this paragraph can be found in many of my works (2002, 2005, 2008, etc.) Since 2002, I have underlined many times that the self/mind cannot be explained by the neuroscience. Amazing, mg introduce even “complicated quantum mechanical truth”, so it means next year he will publish a short book about quantum mechanics problems!

Let us call the idea that we are our brains the **crude identity thesis**. A major weakness of the crude identity thesis is that it immediately threatens to encapsulate us within our skull as minded, thinking, perceiving creatures. It becomes all too tempting to associate the thesis with the view that our entire mental life could be or even is a kind of illusion or hallucination. I have already criticized this thesis in *Why the World Does Not Exist*, under the heading of **constructivis**. (21)

Again very similar ideas to my ideas.

My own view, **New Realism**, is a version of the idea that we can actually grasp reality as

it is in itself by way of our mental faculties. We are not stuck in our brains and affected by an external world only via our nerve endings such that our mental life is basically a useful illusion, an interface or computational platform with a basic evolutionary survival value. (22)

The same verdict: all these ideas can be found in my works. It is not amazing that these main ideas are surrounded by quotations/ideas from Shakespeare, Sartre, Luc Besson, etc. and other authors like these. Amazing is that an author like this mg (without any background in philosophy of mind and cognitive (neuro)science) can give advices for researchers working in these fields!

In particular, for its interpretation of neuroscientific knowledge, neurocentrism brings to bear *philosophical* concepts such as consciousness, cognition, representation, thinking, self, mind, free will, and so forth. (24)[[61]](#footnote-60)

Very important is that mg introduce, very shortly - of course, different concepts (like “theory reductionism”, behaviorism”, “the principle of the causal closure of nature”, “theory of everything”, eliminative materialism, for instance) without indicating the source of this notion![[62]](#footnote-61) Moreover, he introduces ideas of other authors (for instance Kim), without indicating the pages in of those authors’ works.[[63]](#footnote-62) It is not surprising if we know that mg has no background at all in philosophy of mind/cognitive science! Moreover, all these notions are investigated in my works…

Se for instance this paragraph:

Even if the physical discoveries concerning time – in particular, relativity theory – are indeed spectacular breakthroughs with major impact on our understanding of our awareness of time, they cannot replace that very awareness or fundamentally explain it. (107)

What does mg wanted to express using “our awareness of time”? Or see this paragraph:

**Neuromonism** claims that the consciousness-thing is identical either to the entire brain or to some areas of the brain and their activities. However, both positions presuppose that consciousness is a thing in the universe, which is the crucial mistake. (121)

“Neuromonim”? mg needs to invent something, at least to replace identity theory with “neuromonism”!

Later, mg investigated Descartes and others authors investigated by myself. Of course, everybody can investigate these authors, but the analyses are quite similar to my conclusions! Amazing is this statement:

To be sure, neuroscientists to this point have told us that this is not yet feasible, because the self has

yet to be found. It is unclear how multiple streams of information can be incorporated into a unity at all at the level of our perception, which is known as the **binding problem**.

Not to mention the question of how all the processes that are relevant for perception could be bound together in such a way that a self could be perceived in them. But let us assume for the time being that this will be solved in the future. Then I could see my self flickering in the fMRI. Yet, this self would still not be the self that we are looking for. The self perceived in the fMRI would be no more strictly identical to the perceiving self than in the case of my perception of the coffee mug. The very reason why I cannot be identical to a coffee mug I perceive counts against identifying myself with any object I can perceive by means of an fMRI! According to Meister Eckhart, then, we thinkers of thoughts are categorically distinct from any object we could ever perceive or think of. (156)

In our work 2012, my brother and I dedicated a chapter (no 7) to the binding problem! In the same work in a different chapter, we investigate fMRI. To save the situation, mg introduce Meister Eckhart’s and Fichte’s opinion about the self and later about Nagel and Searle. I haven’t investigated Eckhart and Fichte but a lot Nagel and Searle…

Knowledge that can be communicated and shared is universal. “The self” is Fichte’s name for the universal dimension of knowledge. It is the universal knowledge subject. “The divisible self,” in contrast, is Fichte’s name for the fact that many thinkers can know the same thing. (167)[[64]](#footnote-63)

Of course, the central statement (the self “is the universal knowledge subject”) is identical to my definition of self (2005, 2008, etc.)! In this context, I want to introduce a paragraph fro mg:

And yet Freud is on the right track. His reflections must be modernized, however, which in this case means above all freeing them from the erroneous assumption that the self or the ego is a biological entity that is formed by the interaction between organism and natural environment (external world), and that, moreover, a long cultural history has led to the emergence of a superego. (180)

It is, again, amazing that, working on Fichte, Freud, etc. markus Gabriel knows that today the self is a biological entity that is formed by the interaction between organism and natural environment (external world)”! Obviously, everybody knows about the dynamical system approach!

**Metaphysics**, in general, is concerned with absolutely everything, with absolute totality, the world, the universe, reality as a whole, the cosmos, or whatever else you want to call it. But, as I have argued at length in *Why the World Does Not Exist*, absolute totality does not exist anyway. Hence, there is no overall metaphysical reason to assume that there is a single enormous causal chain by which everything that ever happens is linked. For this reason, determinism should not offer itself as a metaphysical thesis and attempt to inflate itself into a world picture which weakens its case. Also, qua metaphysical world picture, determinism would be fundamentally unscientific, as one could neither prove nor falsify it by actually observing the universe – or, for that matter, the brain. It would have already been decided in advance that there is a single enormous causal chain, which is neither a presupposition of physics and neuroscience nor anything that follows from empirical, scientific discoveries that have been made up to this point. Causal determinism is simply a myth from the past. At best, it is a philosophical, metaphysical claim. 9 (207)

In my works I indicated exactly the same idea (but much more developed): there are no causalities between entities that belong to EDWs! At page 218, mg writes: “The laptop on which I am composing these lines, according to the advocates of the thesis of the “extended mind,” supposedly belongs to me just as much as my liver does.” (218) but he does not indicate at all the sources of this notion! (In my books I dealt a lot with the dynamical system approach and the extended mind!) Moreover, I introduce another notion discussed by mg but I want to mirror his investigation (very superficial) on many concepts and approaches (but surprisingly the majority of these notions are quite strong investigated in my books!!). mg’s notion is about “functionalism”

This dehumanization from above is also operative in **functionalism**, which claims that consciousness or mind is a formal functional structure that can be implemented or realized in various materials – in the age of Silicon Valley, silicon is repeatedly cited as an alternative to our brain tissue. One might think that functionalism is a new thesis that came into play with the arrival of computers. But here Benn is remarkably clear-sighted. In his “Speech to the Academy,” he describes the basic structure of neurocentrism, which has not changed to the present day, as follows:

A new stage of cerebration seems to be around the corner, a more frigid, colder one: to conceive our own existence, history, the universe in only two categories: the concept and the hallucination. From Goethe’s time, the *disintegration of reality* has transgressed every measure, so that even the wader, if he notices it, must plunge into the water: the earth is ruined by pure dynamics and by pure relation. *Functionalism*, you know, means the time of unbridled movement, inexistent being.33

Just like Goethe and Nietzsche before him, Benn recommends that we reflect on the historical background of modern intellectualization. In Goethe’s epic *Faust: The Second Part of the Tragedy*, a homunculus succeeds in escaping from the phial in which he had been living by smashing it on “the bright throne.”34 As the philosopher Thales – who appears on the scene in the “Classical Walpurgis Night” – remarks, the homunculus is “beguiled by Proteus”35 into giving himself over to “Eros … who gave all things beginning”36 and causes the glass in which he is trapped to shatter. (219)

mg continues mentioning Schelling, Goethe, and other such writers! Not amazing already, in the end of his book mg writes:

In this book, I have sketched the outlines of a philosophy of mind – or, rather, of *Geist* – for the twenty-first century. In so doing, my intention was to elaborate the concept of spiritual freedom and to advocate it against reductionist and eliminativist programs that would like to persuade us that we have neither minds in any demanding sense nor freedom. (224)

Obviously, being a “genius”, mg can indicate the future roads for the people who have been working within the philosophy of mind (cognitive neuroscience) even if his lectures on this area are very, very, weak!

Hence an important task for us in our century is to take a new look at our situation as minded animals. We must overcome materialism, which would have us believe that all that exists is what is found in the universe (in the sense of the reality of hard anonymous causes, of matter and energy), and which for that reason desperately seeks a conception of the mind that is able to reduce *Geist* to consciousness and then reduce consciousness to an electrical storming of neurons. We are citizens of many worlds, we move in the realm of ends. This provides us a series of conditions for freedom. (226)

In this paragraph, we understand why mg is against “materialism” (even if his lectures on materialism are so weak – but being a genius he can denies whatever he wants without many arguments): because he is working on the framework of “many worlds” – not explained by mg, but I supposed it is something quite similar to the framework of EDWs - or better expressed, what mg (his background being on *Phenomenology*) would understand reading my works (all my works being mainly on Physics, Cognitive Neuroscience, Philosophy of Mind, Kant, etc.).

Amazing is that the title of mg’s book is not CLEAR explained inside it! If the self/I is not the brain, what is then? What is then the relationship between the self and the brain, if not that of identity (but it is not dualism, which it seems to be rejected by mg)? There are many questions have no answers in this “phenomenological” book on the mind-brain identity!

1. In Romania, we call ‘dinosaurs’ those old famous (some of them having an important administrative function) professors (or people) who teach students the same old ideas in the last 20 years. I call this section ‘reborned dinosaurs’ since famous people come with ‘new’ ideas (very similar to my ideas 2002-2008). It is quite unusual somebody to come with a completey new framework of thinking being already a ‘dinosaur’!!! [↑](#footnote-ref-0)
2. This paper has been written in 2017. [↑](#footnote-ref-1)
3. Exactly similar movement we can find in Nortoff’s works (another person who published very similar ideas to my ideas; he also emphasizes that he works within the “world”!). [↑](#footnote-ref-2)
4. I mention that “poetic” in Greek means “constructive”! So, in this sense, “poetic naturalism” is very close to my EDWs! This notion sends directly to one of the most important notions of the EDWs perspective: the “interactions” which “determine” the “epistemologically different entities”! Carroll continues with this paragraph: “We find it natural to use a vocabulary of ‘causes’ and‚ reasons why’ things happen, but those ideas aren’t part of how nature works at its deepest levels. They are emergent phenomena, part of how we describe our everyday world. The difference between the everyday and deeper descriptions arises from the arrow of time, the distinction between past and future that can ultimately be traced to the special state in which our universe began near the Big Bang.” (Carroll 2016, p. 9) However, within the EDWs perspective, any kind of “emergence” is rejected! (See Vacariu 2008, etc.) Also, “levels” (either ontological, organizational or epistemological) is a wrong notion; “time” (and space) does not exist. (See Vacariu and Vacariu 2016b) “‘Complexity,’ we begin to see how those connections come about. The emergence of complex structures isn’t a strange phenomenon in tension with the general tendency of the universe toward greater disorder; it is a natural consequence of that tendency. In the right circumstances, matter self-organizes into intricate configurations, capable of capturing and using information from their environments. The culmination of this process is life itself.” (p. 9) Also, “complexity” is a wrong notion that fits perfectly the unicorn world. (Against Kauffman’s “complexity” in biology, see Vacariu and Vacariu 2010) [↑](#footnote-ref-3)
5. Amazing, even if the notion of “emergence” (strong or weak, it is not clear) it is a very important in Carroll’s book, he does not mention any serious reading on this notion! Probable, he learned this notion when he was at the high-school… The same verdict about many other notions in Carroll’s book. Anyway, reading Carroll’s book, I really had the impression of reading a novel! [↑](#footnote-ref-4)
6. “‘Complexity,’ we begin to see how those connections come about. The emergence of complex structures isn’t a strange phenomenon in tension with the general tendency of the universe toward greater disorder; it is a natural consequence of that tendency. In the right circumstances, matter self-organizes into intricate configurations, capable of capturing and using information from their environments. The culmination of this process is life itself. The more we learn about the basic workings of life, the more we appreciate how they are in harmony with the fundamental physical principles governing the universe as a whole. Life is a process, not a substance, and it is necessarily temporary. We are not the reason for the existence of the universe, but our ability for self-awareness and reflection makes us special within it.” (Carroll 2016, p. 10) Again, the “emergence of complex structures” within the “universe” is quite a wrong idea! [↑](#footnote-ref-5)
7. “Poetic naturalism suggests that we should think of ‘inner experiences’ as part of a way of talking about what is happening in our brains. But ways of talking can be very real, even when it comes to our ability to make free choices as rational beings.” (p. 10) Carroll specifies that David Hume is the “father of poetic naturalism” and Lucretius being the “grandfather”. (p. 34) [↑](#footnote-ref-6)
8. Also, the notion of “different kinds of stuff” or “different descriptions” appears Fodor (1974) which also reject “reductionism” (but working within the unicorn world) investigated in Vacariu 2008: “Evidently, connected to the mind-body problem is the relation between special sciences (psychology vs. neuroscience). In his article “Special sciences” (1974), Fodor explains the relationship between the mind and the brain by analyzing the relationship between *special* sciences (neuroscience, psychology, economics, etc.) and *basic* science, physics. The main idea is that the entities and processes from the special sciences cannot be defined/described using the entities and processes from basic science. In particular, he argues that psychology cannot be reduced to neuroscience, and any special science cannot be reduced to physical science. Each special science has a distinctive “taxonomy” or “distinctive ways of classifying and organizing descriptions and explanations of phenomena.” (Heil 2004, p. 116) One taxonomy, proper to one special science, cannot be reduced to another taxonomy.” (Vacariu 2008, pp. 269-270) However, Carroll’s main idea can be found in Fodor’s article: “The correspondences between the taxonomies of the special sciences and the taxonomy of physics require the correspondences between kinds of special sciences and physics. In this way we loose the generalizations of special sciences. (Fodor, p. 439) For Fodor neuroscience does not posit the kinds proper to psychology. Special sciences exist not because “of the nature of our relation to the world, but because of the way the world is put together: not all the kinds (not all the classes of things and events about which there are important, counterfactuals supporting generalizations to make) are, or correspond to, physical kinds.” (Fodor 1974, p. 439) He continues saying that if we want a general science of physics then all taxonomies must apply to the physical things. (p. 440) But the taxonomies of the special sciences cannot be reduced to physical science. According to this view, we have to reject the unification of science and to return to the “layered picture of reality” and a kind of supervenience in which each layer has specific entities and laws. Under this framework, the unity of science is meaningless.” (Vacariu 2008, pp. 271-272) So, Carroll’s framework is not my EDWs framework but Fodor’s framework of “taxonomies”! [↑](#footnote-ref-7)
9. “As knowledge generally, and science in particular, have progressed over the centuries, our corresponding ontologies have evolved from quite rich to relatively sparse. To the ancients, it was reasonable to believe that there were all kinds of fundamentally different things in the world; in modern thought, we try to do more with less.” (p. 18) I mention that “corresponding ontologies” is one of the most important notions of the EDWs perspective. However, these “corresponding ontologies” requires the EDWs perspective and not the “universe”/”Cosmos”. Within the unicorn world, these “corresponding ontologies” produce strong ontological contradictions! [↑](#footnote-ref-8)
10. I remind to the reader again that his expression remind us about Goodman’s article from 1978: “The Way the World Is” (Gabriel Vacariu wrote about Goodman in his book from 2008, section 6.6): “The main parts of the article are: The way the world is given; the way the world is to be seen; the way the world is to be described; and the way the world is. In the first part he rejects the notion of the ‘given’: ‘The question is not *what* is given but *how* it is given. Is it given as a single whole or is it given as many small particles?” (Goodman 1978, p. 25) and in the next two parts he relativises the ways in which we see and describe the world. And thus in the end his conclusion is ‘There are many different equally true descriptions of the world … None of them tell us *the* way the world is, but each of them tells us *a* way the world is.’ (Goodman 1978, p. 30) Following Kant and rejecting the physicalist doctrine, Goodman claims that we do not have absolute immediate sensory data free from categorization. But having different conceptual schemes or representational systems, we can construct many different worlds. Two different true descriptions that refer to the same thing are apparently contradictory; ‘apparently’ because they are not descriptions of the same thing. Each description is true not in the same world but in different worlds. (Goodman and Elgin, p. 51) The conceptual schemes dictate the identification of objects.” (Vacariu 2008, pp. 298-9) Carroll continues writing that “In a sparse ontology, there are a small number of fundamental categories (maybe only one) describing the world. But there will be very many ways of talking about the world. The notion of a ‘way of talking’ isn’t mere decoration—it’s an absolutely crucial part of how we apprehend reality.” (p. 18) However, the “way of talking” is just Goodman’s “way of telling” “a way the world is”! No more or less. In reality, we have to replace this “way of talking” with EDWs: the entities that exist in EDWs really have the ED ontologies! (In general, we write that “EDWs really exist” but “EDWs” is just a linguistic expression which refers to ED entities and their interactions that really exist, i.e., which really have ED ontologies.) [↑](#footnote-ref-9)
11. Carroll mentions that there are “several competing approaches as to how to best understand the measurement problem in quantum mechanics. Some involve true randomness, while others (such as my favorite, the Everett or Many-Worlds formulation) retain complete determinism.” (p. 31) Everett’s “many worlds” are totally different than EDWs! (For this comparison, see Vacariu 2008) [↑](#footnote-ref-10)
12. Regarding the dark energy, Caroll writes that “The observed acceleration must be due to something other than matter as we know it. There is a very obvious, robust candidate for what the culprit might be: *vacuum energy*, which Einstein invented and called the *cosmological constant*. Vacuum energy is a kind of energy that is inherent in space itself, remaining at a constant density (amount of energy per cubic centimeter) even as space expands. Due to the interplay of energy and spacetime in general relativity, vacuum energy never runs out or fades away; it can keep pushing forever.” (Carroll 2016, p. 41) Chapter 7 refers to “Time’s arrow” (Carroll mentions that for the understanding of “time”, we need to introduce “space”. However, about the dark matter/energy, space and time and other pseudo-notions in cosmology, see Vacariu and Vacariu 2016b) Carroll considers that even heat and entropy are “convenient *ways of talking* about atoms”! (p. 45) (About thermodynamics and the EDWs perspective, see our future work.) [↑](#footnote-ref-11)
13. “One master of modal reasoning was David Lewis, one of the most influential twentieth-century philosophers whom non-philosophers have never heard of. Lewis suggested that we could make sense of statements like “A causes B” by thinking of different possible worlds: in particular, worlds that were essentially the same except for whether the event A actually occurred. Then, if we see that B occurs in all the worlds where A occurred, and B does not occur when A does not occur, it’s safe to say “A causes B.” If the wineglass falls and breaks when Sally swings her elbow around, but stays on the table in a closely related world in which she does not, then Sally’s elbow swinging caused the glass to fall. (p. 50) [↑](#footnote-ref-12)
14. “Coarse-graining goes one way—from microscopic to macroscopic—but not the other way. You can’t discover the properties of the microscopic theory just from knowing the macroscopic theory. Indeed, emergent theories can be *multiply realizable*: there can, in principle, be many distinct microscopic theories that are incompatible with one another but compatible with the same emergent description. You can understand the air as a fluid without knowing anything about its molecular composition, or even if there is a description in terms of particles at all.” (p. 74) We have here EDWs, not “multiple realizable”! (About “multiple realizable”, see our previous works) Writing about “emergence”, Caroll introduces Philip Anderson’s main idea published in his article from 1972 “more is different”, article that Gabriel Vacariu investigated in his book 2008 (in which he investigates in details the notion of “emergence”). “Anderson’s comments were based on the fact that an emergent theory can be completely independent of more fine-grained comprehensive descriptions of the same system. The emergent theory is autonomous (it works by itself, without reference to other theories) and multiply realizable (many microscopic theories can lead to the same emergent behavior).” (p. 79) (Exactly the same idea I emphasized in my book (2008). Also, Caroll continues writing about weak and strong emergence, and later, about various forms of reductionisms, about eliminativism, etc. (In my book 2008, I wrote almost exactly the same idea about emergence and reductionism! Obviously, just coincidence…) However, both Anderson and Carroll work within the unicorn world. [↑](#footnote-ref-13)
15. In fact, in Vacariu 2008, I wrote about Fodor’s idea of autonomy (in his article from 1974!) of different “special sciences”. I emphasize again that this “taxonomy” sends directly to Carnap’s “linguistic frameworks” investigated by me in book 2008 (section 6.2)! [↑](#footnote-ref-14)
16. Another paragraph that seems, apparently, written exactly under the EDWs perspective: “Moreover, many different states in the molecular theory get mapped to the *same* state in the fluid one. When this is the case, we often call the first theory the ‘microscopic’ or ‘fine-grained’ or ‘fundamental’ one, and the second the ‘macroscopic’ or ‘coarse-grained’ or ‘emergent’ or ‘effective’ one. These labels aren’t absolute. To a biologist working with an emergent theory of cells and tissue, the theory of atoms and their interactions might be a microscopic description; to a string theorist working on the quantum theory of gravity, superstrings might be the microscopic entities, and atoms are emergent. One person’s microscopic is another person’s macroscopic.” (p. 73) My question: “During 2500 years, why nobody has ever written these similar ideas to those which represent the EDWs perspective I posted my published books on Internet?” However, working within the unicorn world, Carroll’s statement that “One person’s microscopic is another person’s macroscopic” is quite a strong ontological contradiction! [↑](#footnote-ref-15)
17. “Our best theory of the world—at least in the domain of applicability that includes our everyday experience—takes unification one step further, to say that both particles and forces arise out of *fields*. A field is kind of the opposite of a particle; while a particle has a specific location in space, a field is something that stretches all throughout space, taking on some particular value at every point. Modern physics says that the particles and the forces that make up atoms all arise out of fields. That viewpoint is called *quantum field theory*. It’s quantum field theory that gives us confidence that we can’t bend spoons with the power of our minds, and that we know all of the pieces of which you and I are made.” (p. 122) [↑](#footnote-ref-16)
18. I am sure Carroll introduces the notion of “universe” in the title of his book exactly to underlying that he works in the framework of the “world”, so he cannot be accused of plagiarizing my EDWs! Obviously, I do not accuse Carroll of plagiarizing my ideas! In this document, I illustrate many Carroll’s ideas (2016) that are unbelievable similar to my ideas (2002-2010), but Carroll’s framework is the “universe” (even if he emphasizes “different aspects of reality”), and my framework is the EDWs. In his frameworks, Carroll reaches many unbelievable ontological contradictions… [↑](#footnote-ref-17)
19. At one moment, Carroll switches the “vocabulary” from Physics to other vocabulary that includes “person” and “human beings”! [↑](#footnote-ref-18)
20. Another paragraph (not written by myself): “Likewise, even after another hundred or thousand years of scientific progress, we will still believe in the Core Theory, with its fields and their interactions. Hopefully by then we’ll be in possession of an even deeper level of understanding, but the Core Theory will never go away. That’s the power of effective theories.” (p. 138) Does the reader need more examples to see the UNBELIEVABLE similarities between my ideas (placed within the EDWs) and Carroll’s ideas (placed within the universe and preserving therefore the “underlying phenomena”, but simply emphasizing “different vocabularies” that explain the “emergent phenomena”? [↑](#footnote-ref-19)
21. In Chapter 41, Carroll investigates the difference between “substance dualism” and “property dualism”. [↑](#footnote-ref-20)
22. Interestingly, Carroll uses “soul” in the title of Chapter 26! Probably the meaning of this word is similar to that of “mind”. However, this notion “soul” was common for people working few centuries ago, but not for people working today on this topic. My question is why did Carroll use this old notion and not “mind”, for instance? Just because he stared this chapter with information about Descartes? Another coincidence: many times, I mentioned that in my works, “mind” has the same meaning with “soul” and other notions like this one. Also “mind” is similar to “life”! [↑](#footnote-ref-21)
23. “How an immaterial soul might interact with the physical body remains a challenging question for dualists even today, and indeed it has grown enormously more difficult to see how it might be addressed.” (p. 150) Later, Carroll mention “property dualism”, but he does not indicate in what articles/books he read about this notion! Many such situations are available in Carroll’s book! Anybody can find all these topics investigated in my books! Again, just coincidences… It is not forbidden for other persons to investigate the same topics, isn’t it? [↑](#footnote-ref-22)
24. “If we are collections of interacting quantum fields, the implications are enormous. It’s not just that we can’t bend spoons, and not even that our lives truly end when we die. The laws of physics governing those fields are resolutely impersonal and non-teleological. Our status as parts of the physical universe implies that there is no overarching purpose to human lives, at least not any inherent in the universe beyond ourselves. The very notion of a ‘person’ is ultimately a way of talking about certain aspects of the underlying reality. It’s a good way of talking, and we have good reason to take seriously all of the ramifications of that description, including the fact that human beings have individual purposes and can make decisions for themselves. It’s when we start imagining powers or behaviors that contradict the laws of physics that we go astray.” (p. 155) Again, the EDWs are transformed in “ways of talking”, a “person” is just a “way of talking”, so it as to be forbidden for a “person” to talk! Like in many other paragraphs of Carroll’s book, we have here a wonderful contradiction! [↑](#footnote-ref-23)
25. About “entropy” and EDWs, see my next book. [↑](#footnote-ref-24)
26. We investigated “complexity” in our book from 2010. [↑](#footnote-ref-25)
27. “Even if Kauffman recognizes himself that he has no definition of life (it would presupposes the laws of complexity that do no exist1), let us try to grasp, very shortly, his main idea about life. From a cell to an organism, life emerges2. In Kauffman’s framework, the most important notion in explaining (not defining) life is the “*collectively autocatalytic systems of molecules*”. (1995, 2000, 2008)” (Vacariu and Vacariu 2010, p. 245) [↑](#footnote-ref-26)
28. Carroll continues with this paragraph: “And if that’s true, then all kinds of things could be conscious. Imagine that we take one neuron in your brain, and study what it does until we have it absolutely figured out. We know precisely what signals it will send out in response to any conceivable signals that might be coming in. Then, without making any other changes to you, we remove that neuron and replace it with an artificial machine that behaves in precisely the same way, as far as inputs and outputs are concerned. A “neuristor,” as in Heinlein’s self-aware computer, Mike. But unlike Mike, you are almost entirely made of your ordinary biological cells, except for this one replacement neuristor. Are you still conscious?

    Most people would answer yes, a person with one neuron replaced by an equivalently behaving neuristor is still conscious. So what if we replace two neurons? Or a few hundred million? By hypothesis, all of your external actions will be unaltered—at least, if the world is wholly physical and your brain isn’t affected by interactions with any immaterial soul substance that communicates with organic neurons but not with neuristors. A person with every single one of their neurons replaced by artificial machines that interact in the same way would indisputably pass the Turing test. Would it qualify as being conscious?

    We can’t prove that such an automated thinking machine would be conscious. It’s logically possible that a phase transition occurs somewhere along the way as we gradually replace neurons one by one, even if we can’t predict exactly when it would happen. But we have neither evidence nor reason to believe that there is any such phase transition. Following Turing, if a cyborg hybrid of neurons and neuristors behaves in exactly the same way as an ordinary human brain would, we should attribute to it consciousness and all that goes along with it.” (p. 236) I furnished exactly the same example in my book 2008! Just another coincidence! [↑](#footnote-ref-27)
29. Carroll continues: “When she walks outside her room and those neurons do finally fire, does Mary “learn something new”? In one sense, surely yes—she now has memories that she hadn’t previously possessed. Knowledge is related to our capacity to answer questions and do things, and Mary can now do something she couldn’t before: recognize red things by sight.

    Is this an argument that there is more to the universe than its physical aspects? Surely not. We have merely introduced an artificial distinction between two kinds of collections of synaptic connections: “ones induced by reading literature and doing scientific experiments in black and white,” and “ones induced by stimulating the visual cortex by seeing red photons.” This is a possible way to carve up our knowledge of the universe, but not a necessary one. It’s a difference in the way the knowledge got to your brain, not in the kind of knowledge it is. This is not an argument that should induce us to start adding wholly new conceptual categories to our successful models of the natural world.” (p. 243) Again, it seems as if Carroll re-write my main idea of EDWs under the framework of the unicorn world (the world) using Goodman’s “different ways of thinking” (that can also be found in my book 2008) is nothing more than my EDWs! [↑](#footnote-ref-28)
30. At the same page, Carroll introduces even the notion of “functionalism” but, as usually, he did not indicate the source of this notion. [↑](#footnote-ref-29)
31. It is really amazing how such a famous physicist had time to read and write about qualia, consciousness, first-person and third person views, and many other philosophical problems! Really amazing! [↑](#footnote-ref-30)
32. Another coincidence: in my book from 2008, I dedicated a sub-chapter to Putnam’s view… [↑](#footnote-ref-31)
33. I did not notice Carroll quotes from where did he get this philosophical expression, indeed quite common but anyway, I believe it was necessary for him to indicate the source… I investigate, in detail, this notion in my book 2008! [↑](#footnote-ref-32)
34. For instance: “ From an EDWs perspective, we notice that the event of rain influences the eyes and the brain but not the mind! The clouds, the rain, the brain and the body are all within the same EW, the macro-EW. Evidently, the changes that take place in the brain *correspond* to some changes in the mind. But the notion of “correspondence” is totally different than “causal relationship”. The relationship between the mind-EW and the brain-EW is not a causal relation but a correspondence one. The EDWs perspective is not a rediscovery of parallelism. More than this, the EDWs are not parallel worlds from physics. (See Chapter 6) There are epistemologically different worlds, not ontologically different worlds or parallel universes. (Vacariu 2008, p. 195) And “Within the EDWs perspective, the exclusion principle is valid for each EW, i.e., each epistemological event and its cause belongs to the same EW. The exclusion principle is available not only for the physical micro- and macro-world but also for the mind-world. Each EW has its own entities, properties, processes, and laws (causalities). According to the principle of objective reality, all the EDWs have the same objective reality. Evidently, within the unicorn-world the exclusion principle leads to “causal powers draining away”. (Kim 1998; Block 2003)” (Vacariu 2008, p. 196) [↑](#footnote-ref-33)
35. For instance: “If, using an electronic microscope, the subject interacts with an electron then the subject, the tool of observation, and the electron are in the same world. From an EDW perspective, this is not a real objection. The electron does not interact with the subject but it interacts with an amalgam of microparticles that *corresponds* to the electronic microscope. The subject cannot observe at the same time the microscope (as macro-object) and the electron (as micro-object). According to the principle of conceptual containment, we have to include the microscope in the definition of the electron even if the electron really exists without our observation. Our essential mistake was that we consider ourselves to be the only “observers” (entities that interact with other elements) in the “world” and this was a reason for us to believe in the unicorn-word. We are not the only observers of our corresponding “world” and therefore there is not a unique world. Various macro particles and micro particles are epistemologically different entities with epistemologically different interactions that belong to EDWs. We can declare that the existences of epistemologically different entities *determine* epistemologically different interactions or epistemologically different interactions are *constitutive* (in Kantian sense) in creating epistemologically different entities.” (Vacariu 2008, p. 107) [↑](#footnote-ref-34)
36. Later chapter are about a philosophical topic, “morality”. It is for the first time when I see a physicist writing some chapters about “morality”! Did Carroll want to show us he is physicists but also a philosopher? Just a question… However, the main question is “Why Sean Carroll has never written anything on topics that belong to the philosophy of mind and cognitive neuroscience and pure philosophy (like morality)? Dealing with topics of “morality”, does Sean Carroll want to convince us that he has become a philosopher, so this is the reason he, a physicist, had been dealing with the mind-brain problem in this book? [↑](#footnote-ref-35)
37. I cheked on these articles after I discovered this book 2015. His relationism is constructed within the unicorn world world and it is nothing different than some ideas that appeared in 1920s and 1930s in quantum mechanics…However, in his book 2015, he introduced a framework very similar to my EDWs perspective! [↑](#footnote-ref-36)
38. “What does this mean? That the essential reality of a system is indescribable? Does it mean that we only lack a piece of the puzzle? Or does it mean, as it seems to me, that we must accept the idea that reality is only interaction?” (p. 15) Exactly my EDWs! [↑](#footnote-ref-37)
39. “The cold teaspoon heats up in hot tea because tea and spoon interact with us through a limited number of variables amongst the innumerable variables which characterize their microstate.” (p. 37) Instead of tea and spoon I used other notions, but the idea is exactly the same, only replacing “characterize” with the synonym “corresponding”! [↑](#footnote-ref-38)
40. About Ronde and Moujan UNBELIEVALBE similarities, see below. [↑](#footnote-ref-39)
41. I mention here that Rovelli’s ideas from 1996 are much different than his ideas from 2015!!! [↑](#footnote-ref-40)
42. I wrote this chapter in August 2017. [↑](#footnote-ref-41)
43. At page 10, Kastner quotes Stachel’s work who claims that “Bohr’s later approach places primary emphasis on four-dimensional processes; from this point of view, a ‘state’ is just a particular spatial cross-section of a process, of secondary importance: all such cross-sections are equally valid, and any such sequence of states merely represents a different ‘perspective’ on the same process.” ([12], p. 1, preprint version.)” (Kastner 2016, p. 10) I have not read Stachel’s article but it seems that he has very similar ideas to my ideas! [↑](#footnote-ref-42)
44. Reading this paper, I realized that there would be other authors who published, after 2014, very similar ideas to my idea! [↑](#footnote-ref-43)
45. Foundations of Physics Group, University of Maryland, College Park [↑](#footnote-ref-44)
46. Institute for Systems Biology, Seattle, and Professor Emeritus, Dept. of Biochemistry and Biophysics, University of Pennsylvania, Institute for Systems Biology, Seattle, and Professor Emeritus, Dept. of Biochemistry and Biophysics, University of Pennsylvania [↑](#footnote-ref-45)
47. Center for Philosophy and the Natural Sciences, College of Natural Sciences and Mathematics, California State University Sacramento [↑](#footnote-ref-46)
48. I mention other reborn dinosaurs that published UNBELIEVABLE similar ideas to my ideas: sean carroll, wilcezk, carlo rovelli… [↑](#footnote-ref-47)
49. Many scientists and philosophers come with a ‘new metaphysics’ (all almost the same metaphysics) that is UNBELIEVABLE similar to my ED ontologies. [↑](#footnote-ref-48)
50. ‘Here Smolin's position is fairly close to another structuralist position in the philosophy of science. Namely, the contemporary philosophical metaphysical position (as usually applied to physics) of *ontic structural realism*. In the ontic structural realism picture, “it doesn't make sense to talk about” things with their own determinate (or intrinsic) properties when these things “can only be distinguished” in terms of their structures and relations to other things (within spacetime). In simple terms, the “things” of ontic structural realism *can only be distinguished*in terms of their mathematical structures and relations. There literally isn't anything else.’ REALLY? This ‘ontic structural realism’ is UNBELIEVABLE similar to my EDWs perspective! It had not existed such ‘ontic structural realism’ until my first FIVE books had been published! [↑](#footnote-ref-49)
51. In this appendix, I introduced the paper after which I had the presentation at my Department of Philosophy (University of Bucharest) on 27th November 2013. I present the same ideas in a movie on YouTube. Also, I present the main ideas of my EDWs perspective in a movie (two parts) on YouTube. All my YouTube videos are at <http://www.youtube.com/channel/UC_3I96MSwXpUjm2x6f6SaUA>. [↑](#footnote-ref-50)
52. I would like to thank you very much to my colleague and friend Gheorghe Stefanov who informed me about this TED clip. [↑](#footnote-ref-51)
53. I indicate the reader to compare the **bolded** notions from my paragraphs with *italic* notions from Markus Gabriel’s paragraphs. [↑](#footnote-ref-52)
54. For many people, it have been quite surprisingly the similarities not only between many ideas from my EDWs perspective and Markus Gabriel’s ideas, but also another striking similarity, the notion of the “unicorn”: I used this notion in the introduction of my paper from 2005 and also in the introduction of each book, Markus Gabriel starts his TED clip with the “unicorn”! [↑](#footnote-ref-53)
55. I would like to thank you very much to Casia Zaharia and Paul Sandu for their translation from Germany to Romanian, respectively to English. Unfortunately, I cannot read in Germany, otherwise I believe I would find much many “similarities” between my works and Markus Gabriel’s book. I let specialists in philosophy and German speaking language to find them in detail. [↑](#footnote-ref-54)
56. In his TED clip, Markus Gabriel just mentions this expression without clearly explaining it. It is clear that he wants to refer to the real existence of objects and not to Carnap’s linguistic frameworks. [↑](#footnote-ref-55)
57. At “International Summer School in German Philosophy” organized by Markus Gabriel at his university (the announcement at http://selfandworld.blogspot.ro/2010/01/international-summer-school-in-german.htm), we can read this text: “One of the aims of the summer school is to argue that the thinkers of Post-Kantian Idealism defend a new ontology, one which lays out the conditions of possibility for transcendental, higher-order thought. Despite Kant’s negative verdict on ontology, these conditions appear precisely ontological as soon as the existence of the alleged transcendental subject is confirmed. Since the world cannot be reduced to a strictly ”external world” in the Cartesian sense, *the conditions of possibility for referring to determinate objects in the world* come to be conceived as *themselves determinate objects in the world. With this re-evaluation of the status of ontology* in mind, we will read key texts by Kant, Fichte, Schelling, and Hegel, with specific attention to the *relation between epistemology and ontology*.” (I added bold to these words.) The bold expressions of this text clearly reflect my EDWs perspective (that is, as I wrote everywhere an extension of Kant’s transcendentalism). The Kantian expression of “conditions of possibility” is extended from human being to the all objects. Amazing, Markus Gabriel did the same thing: he considers that these conditions of possibility “themselves determinate objects in the world” and focus on the relationship between ontology and epistemology. It is exactly what I have done in my works! [↑](#footnote-ref-56)
58. It is not the first time somebody plagiarizes my framework. One of my ex-student, Dinu Patarniche (actually a PhD student at one university in Munich) had a presentation at one of his seminars. One of my colleagues found his presentation on “Prezi”. Surprisingly, in his presentation, Patarniche used exactly my expressions (like “epistemologically different worlds”) and sentences from my books without quoting my name at all! When I asked him by email about this plagiarism, he wrote me that he orally pronounced my name during his presentation. A copy of this presentation is still on Prezi. I heard that some German politicians also plagiarized something. I hope it is not a common trend for German politicians and philosophers to plagiarize something in our days. On the contrary, I expect to see the correct attitude of German real philosophers against German plagiarism-philosophers who plagiarized my and other works. [↑](#footnote-ref-57)
59. I would like to recall the case of mathematician Grigori Perelman (Russia) whose ideas on Poincare conjecture were plagiarized by other two mathematicians. There was a huge scandal and people working in this field recognized that Perelman produced those ideas. For instance, I quote Hicks (2008): “After examining the evidence and analyzing multiple viewpoints related to the dispute over who solved the Poincare conjecture, Perelman should receive full credit. Perelman gains support for his argument on the basis that he did submit his paper before Yau and thus withstood the two years of bombardment that is required by the mathematical community. There is no way, correct or not, that Yau could receive credit for something that Perelman had solved almost four years previous. His thought that he had even done anything to contribute to the community is shameful because he just rewrote Perelman's proof. Second, Perelman should receive credit for the Poincare conjecture because he acted ethical in asking for permission to take someone's idea to make it his own. Yau does not set a good example of what a mathematician should resemble because he promised to mention the name of Givental in his ‘Mirror Principle I’ paper. He took some of his ideas, which was fine with the original author as long as credit was given, but he did not end of giving more credit than just mentioning the name. The third point that lends support to the side of Perelman is the immaturity of Yau in the mathematical community. He acts like a child and does not know the consequences of his actions. As far as the credit goes for Perelman, he should be recognized as the solver of the Poincare conjecture because it does rightfully belong to him. He may share it with whoever he sees deserves credit for inspiration or other ideas. He should be given the chance to accept the Fields Medal, although it is highly unlikely that he will go against his philosophy to take glory over the beauty of the problem. Yau should not be rewarded any credit at all as he did not contribute, only republish and undermine someone else's work.” (Hicks 2008) As a result, Perelman received two prizes of one million dollars each but he rejected both! In this footnote, I draw the attention to other potential plagiarism that, after seeing TED clip with Markus Gabriel and reading those two pages from his book, I sent emails with this paper “Did Markus Gabriel (Bonn University) plagiarize my ideas?” to many philosophers, philosophical journals and mass-media in Germany and in the world. Also you can find this paper on “Philpapers.org” or at my webpage. I emphasize that I also sent two different emails to Markus Gabriel but he did not reply to any of them. I hope the philosophers and people working in academic environment in the world will also condemn any kind of plagiarism realized by thieves (who believe they are philosophers, physicists or mathematicians). Anyway, the history does not forgive plagiarism! [↑](#footnote-ref-58)
60. Imagine one person from Europe (not from Germany), using other notions, publishing a theory very similar with the special theory of relativity several years later than Einstein (1905), for instance in 1910! Could any physicist from that period of time believe that both Einstein and that person produced, independently, the same theory? This comic-stupid scenery (I am not Einstein, I am just a Romanian) mirrors the “similarity” between my perspective and Markus Gabriel’s ideas. As I mentioned in this appendix, it is really IMPOSSIBLE two persons to elaborate the same very important FRAMEWORK OF THINKING (not just few ideas) in the same decade, a framework which changes so many things in philosophy and science! I repeat that, in our days, using Internet any person can have access to my books (all in English) very easy since I posted all my books on the Internet (I posted each book on Internet just two months after being published at Bucharest University Publishing Company). [↑](#footnote-ref-59)
61. Amazing, he mentions important authors without indicating the source: Incidentally, the fact that the Big Bang theory, as well as the theory of the expanding universe – aside from an anticipation in Immanuel Kant’s work on the universe (in his *Universal Natural History and Theory of Heaven* of 1755) – can be traced back to the Belgian priest and theologian Georges Lemaître (1894–1966), who had already formulated both theories some years before Hubble, is quite conveniently ignored by many popular physicalists. Remarkably, Einstein initially rejected Lemaître’s Big Bang theory because it struck him as too strongly influenced by the Christian doctrine of creation, while the Catholic Church accepted Lemaître into the Pontifical Academy of Sciences for his discoveries. In one word, the Catholic Church accepted the Big Bang theory before the scientific community did.” (mg 2017, 105) He did this way many times in his book. (Other example: he talked about “entropy” without indicating the source. Maybe he learned about entropy when he was in primary school….) [↑](#footnote-ref-60)
62. Essential: when mg mentions an author firs time, the name is followed by the year of born! (instead of the year of published work)! [↑](#footnote-ref-61)
63. Just an example: mg mentions Bernard Baars, Stanislas Dehaene and Jean-Pierre Changeux’ ideas about consciousness and neurons in firing (page 62), but he does not indicate the work and the year! In the same paragraph he moved to Plato and to Kant. This example: “In contemporary psychology and cognitive science this is called a “theory of mind”: the capacity to form assumptions about other minds and thus about the feelings, intentions, hopes and beliefs of others.” (79) [↑](#footnote-ref-62)
64. “We now know what the self is: it is the subject of universal knowledge. To be a self means to know something and to be able to communicate it. In no way does it mean to be alone with oneself or to dwell like a homunculus in the brain. That said, it is already clear: the self is not a brain.” (168) [↑](#footnote-ref-63)