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

Gabriel Vacariu

Philosophy, Bucharest University

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. Only working within this problem, 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 appears 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) with Leibniz’s relationism within the unicorn world (i..e, the Universe/world)! No more or less.

This document has been posted here

<https://unibuc.academia.edu/GabrielVacariu/Analytics/activity/documents>

<https://www.researchgate.net/profile/Gabriel_Vacariu/publications>

<https://philpeople.org/profiles/gabriel-vacariu/publications>

<https://sites.google.com/view/gabriel-vacariu-philosophy/home>

***(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 the 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. This would not mean he plagiarized my ideas. However, some 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)[[1]](#footnote-1)

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)[[2]](#footnote-2)

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…

Ravelli 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)[[3]](#footnote-3) 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[[4]](#footnote-4), see this manuscript!). He was working on “information” under Bohr’s framework.

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” 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 calro 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. Only working within this problem, 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) with Leibniz’s relationism within the unicorn world (i..e, the Universe/world)! No more or less.**

**It has to be clear that I am the first who discovered the existence of EDWs in the history of human thinking! 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 still he had worked within the framework of the unicorn world, accepting (officially) the existence of Universe/world!!**

**After this year, he started to publish UNBELIEVABLE similar ideas to my ideas (2002-2008)!!!**

**If someone compare carlo rovelli’s “relationism” with my EDWs perspective means that even that person is still working within the unicorn world and he understands nothing from my EDWs perspective!**

1. “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-1)
2. “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-2)
3. About Ronde and Moujan UNBELIEVALBE similarities, see below. [↑](#footnote-ref-3)
4. I mention here that Rovelli’s ideas from 1996 are much different than his ideas from 2015!!! [↑](#footnote-ref-4)