**Similarities between Adam Frank’s ideas (2016 or 2017?) (“Minding matter - The closer you look, the more the materialist position in physics appears to rest on shaky metaphysical ground”[[1]](#footnote-1)) and my ideas (2005, 2008)**

**Gabriel Vacariu (March 2017)**

(Frank paper at <https://aeon.co/essays/materialism-alone-cannot-explain-the-riddle-of-consciousness?utm_content=bufferd2006&utm_medium=social&utm_source=facebook.com&utm_campaign=buffer> I downloaded this paper on 15.03.2017)

ABSTRACT

A friend of my sent me the address where this paper has been posted by Adam Frank. Reading it, I realized that more than 90% of the main ideas of this paper (about the mind-brain problem, quantum mechanics (microparticles-wave relationship, Schrodinger equation, probabilities, “perceiving subject in physics”, the idea about consciousness and Nagel, etc. etc.) are UNBELIEVABLE similar to my ideas from my paper 2005 or my book 2008!!!

Let me investigate the main ideas of Frank’s paper (2017). In the first phrase, Frank proclaims that materialism has led the research in sciences, consciousness being reduced to “matter”: “Materialism holds the high ground these days in debates over that most ultimate of scientific questions: the nature of consciousness. When tackling the problem of mind and brain, many prominent researchers advocate for a universe fully reducible to matter. ‘Of course you are nothing but the activity of your neurons,’ they proclaim.”

I underlined exactly the same idea in many of my works. The first phrase in my paper 2005:

One of the most important problems in philosophy, the mind–body (or mind–brain) problem, is still up in the air. Paradoxically, since Descartes nobody has proposed a viable alternative to this problem. During this time technological developments have helped us to deal with complex problems regarding the external world and our own being. We have made great progress in trying to scientifically explain the origins of our universe, but we are not able to make progress regarding the mind–body problem. In the last decades philosophers have offered many approaches to the mind–body problem; yet none of these approaches has gained the assent of the majority of the thinkers. Even if the majority of philosophers consider that, ontologically, mind is a physical entity, many of them do not admit the epistemological reduction of the mind to the brain. The mind–body problem remains a mystery. From this paradoxical situation we can draw the conclusion that something is wrong with the problem itself. Therefore, we should look to the foundation of the problem, i.e., its conceptual framework. (p. 515)

Of course, nothing new in this phrase. Frank writes:

Like almost every student over the past 100 years, I was shocked by quantum mechanics, the physics of the micro-world. In place of a clear vision of little bits of matter that explain all the big things around us, quantum physics gives us a powerful yet seemly paradoxical calculus. With its emphasis on probability waves, essential uncertainties and experimenters disturbing the reality they seek to measure, quantum mechanics made imagining the stuff of the world as classical bits of matter (or miniature billiard balls) all but impossible.

Amazing! He already informs us about the micro-world! What is this micro-EW? What is the relationship between the micro-world and the macro-world? Where is the “universe, then? Let us see what I have written in my book (2008):

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 of

an 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. From an epistemological viewpoint, we can introduce the first principle, the principle of epistemologically different worlds (EDWs):

**Under different conditions of observation, the human subject observes epistemologically different worlds.**

If this principle is adopted, it can be assumed that mind and brain or micro- and macro-particles belong to epistemologically different worlds. (Vacariu 2008, pp. 104-5)

Next idea: “For physicists, the ambiguity over matter boils down to what we call the measurement problem, and its relationship to an entity known as the wave function.” (Frank 2017) I wrote a special sub-chapter about measurement problem. Or course, nothing new about this problem in Frank’s words, I raised exactly the same problems of “measurement” the wave in quantum mechanics. Frank introduces “probabilities” and Heisenberg’s main idea.[[2]](#footnote-2)

Next:

The earliest interpretation to gain force, the Copenhagen interpretation, is associated with Danish physicist Niels Bohr and other founders of quantum theory. In their view, it was meaningless to speak of the properties of atoms in-and-of-themselves. Quantum mechanics was a theory that spoke only to our knowledge of the world. The measurement problem associated with the Schrödinger equation highlighted this barrier between epistemology and ontology by making explicit the role of the observer (that is: us) in gaining knowledge.  (Frank 2017)

Again, amazing!!! An physicist (astronomy, not astrology!) speaks about the “barrier” between “epistemology” and “ontology” and the role of the observer in “gaining knowledge”! I wrote:

We can see that the mind–body problem is a pseudo-problem if we construct a new framework in which the direct relation between mind and body has no objective reality. This can be done by introducing into the equation the role of the observer and the conditions of observation. More precisely, there are things that must be taken into account for a proper framing of this relation: the subject, as an observer of both the external world and of his or her own world; the observed object itself (the phenomena); and the conditions of observation.

What are we to understand by the idea of the human subject as an observer of the external and internal world? If we generalize the notion of observation for external objects to include internal objects, we can say that each human action (perception, thinking, etc.) involves certain processes of observation. (Vacariu 2005, p. 520)

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. (Vacariu 2005, 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.” (Vacariu 2005, p. 534)

To get rid of reason the powerful distinction between epistemology and ontology which leads us to accept the unicorn-world framework (element (b) from the introduction), we need to

re-define the notion of ontology: it is about an epistemological ontology and this is the reason for the expression “epistemologically different worlds”. (Vacariu 2008, p. 154)

Even if from the perspective of the observer the Cartesian bidirectional relationship between epistemology and ontology is not wrong, this connection is not enough. However, we notice again that it is the powerful distinction between epistemology and ontology that misleads us into creating the unicorn-world! (Vacariu 2008, p. 156)

I ask the reader: do you have the feeling that Mr. Frank read my works before writing his ideas?

Next: Frank writes about Everett’s many-worlds.[[3]](#footnote-3) I have a section dedicated to Everett in my book 2008. Later Frank has a section: “Putting the perceiving subject back into physics seems to undermine the whole materialist perspective” I draw the attention to the reader that this title is not from any of my works! Frank writes: “Putting the perceiving subject back into physics would seem to undermine the whole materialist perspective. A theory of mind that depends on matter that depends on mind could not yield the solid ground so many materialists yearn for.” Also, I emphasize that this statement is not from my works! Then Frank wrote:

At a [2011](https://arxiv.org/abs/1301.1069) quantum theory meeting, three researchers conducted just such a poll, asking participants: ‘What is your favourite interpretation of quantum mechanics?’ (Six different models got votes, along with some preferences for ‘other’ and ‘no preference’.) As useful as this exercise might be for gauging researchers’ inclinations, holding a referendum for which interpretation should become ‘official’ at the next meeting of the American Physical Society (or the American Philosophical Society) won’t get us any closer to the answers we seek. Nor will stomping our feet, making loud proclamations, or name-dropping our favourite Nobel-prizewinning physicists. Rather than trying to sweep away the mystery of mind by attributing it to the mechanisms of matter, we must grapple with the intertwined nature of the two. ” (Frank 2017)

Regarding the last sentence, in my book 2008, I wrote:

At the end of their article (2001), Tegmark and Wheeler introduced the results of an informal pool at a conference on quantum computation at the Isaac Newton Institute (Cambridge, July 1999). Out of 90 physicists, 8 accepted wave-function collapse, 30 preferred “many-worlds or consistent histories (with no collapse)” and 50 accepted “none of the above or undecided”! “Rampant linguistic confusion may contribute to that large number. It is not uncommon for two physicists who say that they subscribe to the Copenhagen interpretation, for example, to find themselves disagreeing about what they mean.”(p. 75)40 Tegmark and Wheeler mention that quantum theory “is probably just a piece in a larger puzzle”. Theories from physics can be organized in a family tree. At the top of the tree, we can see general relativity and quantum field theory. However, “[p]hysicists know something is missing at the top of the tree, because we lack a consistent theory that includes both gravity and quantum mechanics, yet the universe contains both phenomena.” Therefore, the “ultimate goal of physics” is to find the “theory of everything” that “would have to contain no concepts at all”. (p. 75) As we saw above, the theory of everything has a “meaning” only within the unicorn-world. (Vacariu 2008, p. 341-2)

Next Frank’s idea:

It is in this sense that the unfinished business of quantum mechanics levels the playing field. The high ground of materialism deflates when followed to its quantum mechanical roots, because it then demands the acceptance of metaphysical possibilities that seem no more ‘reasonable’ than other alternatives. Some consciousness researchers might think that they are being hard-nosed and concrete when they appeal to the authority of physics. When pressed on this issue, though, we physicists are often left looking at our feet, smiling sheepishly and mumbling something about ‘it’s complicated’. We know that matter remains mysterious just as mind remains mysterious, and we don’t know what the connections between those mysteries should be. Classifying consciousness as a material problem is tantamount to saying that consciousness, too, remains fundamentally unexplained.

Amazing, again, he switched immediately from quantum mechanics to philosophy of mind (consciousness). This was my main route in all my works!

Then Frank mentions Chalmers and Nagel.

Following work by the American philosopher Thomas Nagel, Chalmers pointed to the vividness – the intrinsic presence – of the perceiving subject’s experience as a problem no explanatory account of consciousness seems capable of embracing. Chalmers’s position struck a nerve with many philosophers, articulating the sense that there was fundamentally something more occurring in consciousness than just computing with meat. But what is that ‘more’?

Some consciousness researchers see the hard problem as real but inherently unsolvable; others posit a range of options for its account. Those solutions include possibilities that overly project mind into matter. Consciousness might, for example, be an example of the emergence of a new entity in the Universe not contained in the laws of particles. There is also the more radical possibility that some rudimentary form of consciousness must be added to the list of things, such as mass or electric charge, that the world is built of. Regardless of the direction ‘more’ might take, the unresolved democracy of quantum interpretations means that our current understanding of matter alone is unlikely to explain the nature of mind. It seems just as likely that the opposite will be the case. (Frank 2017)

I wrote about Nagel and Chalmers in my book 2008. “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).” (Vacariu 2005, p. 519) Then, I wrote: “From my perspective, eliminative materialism seems to be partially an inaccurate alternative because it presupposes the elimination of one epistemological world, the psychological world, which has the same objective reality as the neuronal-world.” (Vacariu 2005, p. 540) I wrote about “emergence” and McGinn’s impossibility of solving the real mind-brain problem! In Vacariu (2008) I wrote:

McGinn mentions “the role of perception in shaping our understanding of the brain – the way that our perception of the brain constraints the concepts we can apply to it” and goes on to say that “The property of consciousness itself (or specific conscious states) is not an observable or perceptible property of the brain.” (McGinn 1989, p. 105) By way of comparison, we could equally say that “rain is, an object of perception, laid out in space,

containing spatially distributed processes; but consciousness defies explanation in such terms”. (p. 106) (Vacariu 2008, p. 121)

McGinn points out that Paul Churchland shows that his anti-reductionist opponents7 confuse ontological issues with epistemological ones. From an *ontological* point of view, mental states may be identical with brain states and their properties, while from an *epistemological* point of view, folk psychology and cognitive neuroscience are “two distinct forms of knowledge (knowledge-by-acquaintance vs. knowledge-by-description)” that use two distinct vocabularies (Paul Churchland 1998, p. 156). (Vacariu 2008, pp. 166-7)

Therefore, some of them consider human beings as limited entities that can only ever have limited knowledge (McGinn), some take refuge in the ontology-epistemology distinction (with levels of analysis and the corresponding epistemic emergence, weak and strong) and others introduce the notion of “organizational levels” that is related to a layered view of nature. (Vacariu 2008, p. 175)

I do not accuse Frank of plagiarizing my ideas. However, I have the feeling that Frank read my works before writing this paper. But just a feeling. The framework of his paper is, clearly, my EDWs perspective!

1. “Adam Frank is professor of astronomy at the University of Rochester in New York and the co-founder of NPR's blog 13.7: Cosmos & Culture where he is also a regular contributor. He is the author of several books, the latest being About Time: Cosmology and Culture at the Twilight of the Big Bang (2011).” (on the web indicate above.) [↑](#footnote-ref-1)
2. “The wave function treats all properties of the particle (electric charge, energy, spin, etc) the same way. They all become probabilities holding many possible values at the same time. Taken at face value, it’s as if the particle doesn’t have definite properties at all. This is what the German physicist Werner Heisenberg, one of the founders of quantum mechanics, meant when he advised people not to think of atoms as ‘things’. Even at this basic level, the quantum perspective adds a lot of blur to any materialist convictions of what the world is built from. Then things get weirder still. According to the standard way of treating the quantum calculus, the act of making a measurement on the particle kills off all pieces of the wave function, except the one your instruments register. The wave function is said to *collapse* as all the smeared-out, potential positions or velocities vanish in the act of measurement. It’s like the Schrödinger equation, which does such a great job of describing the smeared-out particle before the measurement is made, suddenly gets a pink slip. You can see how this throws a monkey wrench into a simple, physics-based view of an objective materialist world. How can there be one mathematical rule for the external objective world before a measurement is made, and another that jumps in after the measurement occurs? For a hundred years now, physicists and philosophers have been beating the crap out of each other (and themselves) trying to figure out how to interpret the wave function and its associated measurement problem. What exactly is quantum mechanics telling us about the world? What does the wave function describe? What really happens when a measurement occurs? Above all, *what is matter?*” (Frank 2017) I wrote a section about “*Heisenberg’s uncertainty principle”: “*This notion is constructed within the unicorn-world. It tells us that we cannot measure the position and the velocity of a particle at the same time. “Uncertainty is built into the wave structure of quantum mechanics and exists whether or not we carry out some clumsy measurement.”28 (Greene, p. 99) More exactly, I think that this principle is based on the relationship between a wave and a particle and therefore there is a mixture between two EDWs. Measuring the location of an electron depends on the magnitude of “its” wave function. For instance, if a wave has a uniform succession of peaks and troughs then the particle has a definite velocity. Nevertheless, its position is completely undetermined. The probability of a particle’s

   position is to be anywhere. From an EDWs perspective, there is a mixture between two EDWs. The particle and the wave are in EDWs and this is the reason we need to use probability calculus for relating the correspondence between the wave and the particle. From this viewpoint, the EDWs perspective is quite close to Bohm’s theory that follows the earlier “pilot wave” interpretation of De Broglie. Putnam mentions that this approach is the classical example of hidden variable theory. (Putnam 2005, p. 622)” (Vacariu 2008, p. 327) I just have the feeling, Frank wrote exactly the same ideas I wrote in my book… [↑](#footnote-ref-2)
3. “The many-worlds Interpretation is one that many materialists favor, but it comes with a steep price. Here is an even more important point: as yet there is no way to experimentally distinguish between these widely varying interpretations. Which one you choose is mainly a matter of philosophical temperament.” (Frank 2017) Indeed, it was necessary a philosopher (myself) to deal with quantum problems in order to solve them. One century, no physicist could have answered these problems just because they have been working within the wrong framework, the “universe/world” or as I called, the “unicorn world”. Frank writes something about Qbism, but I do not care too much. I believe he introduced this notion just to show that his paper is different than my ideas... [↑](#footnote-ref-3)