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Principles Concerning the Existence and the Interactions of Objects

In this chapter, I will present and analyze the principles referring to the existence of objects and their interactions, answering questions such as: who determines their existence, where they are, what traits they have and what the relationships between them are, which objects exist and which objects we believe exist, etc. These principles are valid for any set of non-living objects (natural and artificial, or man-made). As I have written in the preceding section, the physical (non-living) objects (processes) are not, as it has been assumed until now, in the same world, namely the unicorn world, but they are in EDWs (epistemologically different worlds).

Let us see how these sets of objects and therefore these EDWs appeared. According to the actual physical theories that explain the universe (the unicorn world), after the Big Bang there was the quantum plasma (made of quarks and gluons), which had an extremely high temperature. As the plasma became less and less hot, the first microparticles (photons) escaped from that plasma. Later, the planets appeared in the Universe and much later, life emerged¹ on the surface of at least one planet, the Earth.

This view is constructed within the paradigm of Universe; however, as we will see in the entire book, the notion of Universe/world is completely wrong. Let us see how these sets of objects and therefore these EDWs appeared.

I will introduce the five principles concerning physical objects² and their interactions.

- (1) Epistemologically different interactions constitute epistemologically different objects, and epistemologically different objects determine epistemologically different interactions.
- (2) Any object exists only at 'the surface', due to the interactions that constitute it.

1 We will discuss living organisms, life and cognition in Chapter 7.

2 These principles hold true for any type of object, process or even organism. As we will see in the next chapter, organisms are entities which exist in the macro-EW, where they are a set of physical macro-objects. But their minds or lives belong to different EDWs than this macro-EW where organisms reside. (See the next Chapter). That is why, in the last 3 books, instead of objects I used a more abstract notion, that of entity, which contains all the existent types of objects.

- (3) Any object exists in a single EW and interacts only with the objects from the same EW.
- (4) Any EW (a set of objects and their interactions) appears from and disappears into nothing.
- (5) Any EW is, therefore all EDWs share the same objective reality, even if one EW does not exist for any other EDW.

The existence of a (physical) object generally requires a spatio-temporal framework. Every object exists in one single epistemological world (EW), which means that the object exists and interacts only with objects from the same EW. These notions, existence and interaction/perception, are strongly interrelated. The great English philosopher Berkeley said that „to exist means to be perceived“. From my perspective, interaction is a sort of perception, so these two notions are equivalent. So, proposition (1) or Berkeley's slogan can be re-written in the following way: 'To exist means to interact'. Planets existed before man appeared on earth and they will exist even if human beings disappear entirely. Planets (like all macroscopic objects) exist for one another in the macro-EW. This statement is valid for microparticles existing in the micro-EW, as well.

Man is not the only entity who perceives, or who interacts with different objects. If an object is constituted by certain interactions with other objects, what does constitution mean? Interactions constitute the surface of an object. When man sees an object with the help of his eyes, he only actually sees the surface of the object. For example, a man looks at an apple on a table in front of him. He simply sees the apple peel (the apple as a whole), but he does not see anything inside the apple. In order to see what lies inside, the apple needs to be cut. If the man cuts the apple, that apple no longer exists as an object, only two parts of an apple exist.

Now I will make a very important observation: the apple is perceived not just by men, but also by other animals; also, the apple interacts with other objects. Let us suppose that the apple is on a plate placed on a table. As I have written above, we know that the man interacts with (perceives) the plate which, in its turn, interacts with the table. In the EDWs perspective, because the apple, the plate and the table interact (they perceive each other), these objects are in the same EW. Of course, an apple does not interact only with the plate and the table, but it can interact with other objects as well (e.g. with other apples in a fruit basket). The essential thing is that these actions are precisely the ones that constitute the apple, the plate and the table; in other words, these interactions offer objects an ontological status. Without them, the apple (like all objects) would simply not exist. Instead, what would exist would be the microparticles corresponding to the apple, which would interact with each other.

We can use the same reasoning in the case of planets. If there were a single planet in this universe, without anything existing outside of it, that planet would not

exist because it would not interact with anything. A planet exists only because it interacts with other planets, in other words, those interactions constitute that planet. It is absurd to claim that the planet would exist 'in itself' or that it would exist for God. Instead, what would exist would be the microparticles corresponding to the planet, since they would interact with each other.

Another question is: how did natural objects, such as planets, appear? According to current physical theories, after the Big Bang the first things that appeared in the universe were microparticles, and planets were formed when a huge amalgam of microparticles were unified. Therefore, can we say that microparticles form a planet? As we have shown until now, the planet does not exist for the microparticles and the microparticles do not exist for the planet, either. Moreover, one of the elementary rules says that two objects (or sets of objects) cannot exist in the same place at the same time. The apple exists only for other apples, for the plate or for the table. The microparticles in it exist, too, but only for other microparticles, not for planets or tables. So there is no point in claiming that microparticles form or compose a table or a planet. Composition, emergence, supervenience and identity are wrong notions that created many other pseudo-notions in various branches of science (for instance, cognitive (neuro)science, physics, biology) and philosophy. Such notions are simply the inventions of the human mind.

That is why we can say that a planet appeared spontaneously out of nothing. The planet's EW appeared out of nothing, but it corresponds to the EW of microparticles. Of course, without the existence of microparticles we would be unable to speak of the existence of planets, but that does not mean that microparticles exist for macroparticles. The macro-EW does not exist for the micro-EW and only man, changing his observation conditions, can observe (indirectly, through correspondence) an EW or another, but these EDWs do not exist for one another. On the contrary, for microparticles, planets don't exist, while for macroparticles it is microparticles which don't exist. Moreover, because of its interactions, only the surface of an object exists, therefore notions like 'internal existence', 'internal determinations', essence are meaningless when it comes to characterizing an object. An object exists only as a whole, i.e., the surface has no parts.

I will offer another example: we are faced with a table. The components of that table (for example, its legs) are not separate from its surface, so they do not exist independently of it. In other words, the legs of a table do not exist as objects. They exist only as parts of the table in the mind of the person who perceives the table at some point, but they do not have any ontological status different from that of the table. If we take the legs of a table away from the table top, the table would cease to exist, but the legs and the top would exist in the same EW as the table, namely the macroscopic EW. (Fig. 4) In other words, the whole does not exist for the parts, nor vice-versa.

Every object has certain traits, characteristics; some characteristics can be perceived by men, others cannot. Moreover, human eyesight assigns to objects certain characteristics which do not actually exist. As we well know, colors do not exist in the objects themselves; color is a perception of the light received by the human eye which is reflected with a certain frequency from the surface of the object. That is why man does not perceive the thing-in-itself (which does not even exist), but, in this case, he has a mental representation of the planets existing in the macro-EW. A planet can perceive/interact with another planet even though we cannot say that a planet observes the same characteristics that a man does. Still, some traits remain the same (what the English 17 c. philosopher Locke called ‘first-order’ traits), other traits are different (‘second-order’ traits).³ Moreover, a bat perceives objects from the macro-EW as having very different traits from those we perceive. For example, colors do not exist for bats. And yet the walls of the cave, for example, exist both for bats and for humans, even if the second-order traits differ greatly. Because EDWs exist or, more precisely, they are, the question ‘Which world truly exists?’ makes no sense, because all EDWs share the same objective reality.

As we saw in the introduction, one of the main problems in the history of human thought was the relationship between entities. Causality is one of these problematic relationships. Obviously, the notion of relationships is strongly related to the notion of levels. Used under an ontological framework, levels entail causalities which really exist. Used under an epistemological framework, the notion of levels becomes an empty notion, since such levels cannot exist in the same EW. For instance, during the last centuries, there have been strong debates regarding different pairs of levels: the mental level and the neuronal level, (i.e., the mind-brain problem), the micro-level (with microparticles like electrons and protons) or the macro-level (with macro-objects like planets or tables).

If we accept that in such cases both levels exist, we appear to be faced with an ontological contradiction: two objects can exist in the same place, at the same time. Therefore, it is not possible for a table and its microparticles to exist in the same place, at the same time. The acceptance of different types of levels when it comes to notions has created incredible Ptolemaic epicycles (wrong notions and wrong arguments) in the history of human thought. For instance, the notion of ‘levels of analysis’, used by many actual philosophers, was just a linguistic game which dominated analytical philosophy; the notion of ‘levels of organization’, used by some scientists and philosophers, led to contradictions regarding the identity of certain entities; and the notion of ‘ontological levels’, introduced by Descartes, but still used today, produces ontological contradictions within the unicorn world. Therefore, we

3 However, even the distinction between first-order and second-order characteristics is quite artificial.

have to replace levels with EDWs: both such levels exist, but one level does not exist where the other level is concerned, since each level is an EW.

I will draw your attention again to the fact that if we reject the EDWs perspective, contradictions and anomalies will continue to dominate philosophy and science. The scientific or philosophical explanations of some causalities seem to be correct. However, other causalities investigated by scientists and philosophers have produced strong anomalies that created Ptolemaic epicycles. Such Ptolemaic epicycles were formed over millenniums, when a scientist or philosopher thought (incorrectly) that there were certain causalities between objects placed (according to that man's ideas) in the same world. Human beings thought that certain objects were placed in the same spatio-temporal framework when, actually, some of them didn't even exist for others.⁴

Let me return to the quite problematic distinction between the parts and the whole by analyzing some examples. Surprisingly, perceiving for example two objects which appeared to be different, men think that those objects are placed in the same spatial-temporal framework (the unicorn world) and thus seek the relationship (causality) between them. However, those objects do not even exist for each other, so there cannot be any relationship between them, not even one of identity.⁵ Obviously, since the causalities are between entities belonging to EDWs, they cannot be explained through generally accepted scientific theories. Again, such anomalies were created because of the single-viewer perspective of human beings: one observer, one world. Within the EDWs perspective, when we try to grasp the relationship between entities belonging to EDWs, in some cases, we have to replace causality, identity and other linguistic notions with correspondences. Below, I will provide some examples.

(1) The example concerning the microparticles and a table (or a planet). As we know, the table (or the planet) and the microparticles exist in EDWs, but the table does not exist for the microparticles, nor the other way around. However, with the EDWs framework, we can say that the table corresponds to that set of microparticles. As we have seen above, we cannot claim that the microparticles form/

4 An extremely important case of this sort is the relationship between waves and microparticles (See Chapter 8 of this book, Vacariu 2008, Vacariu and Vacariu 2010)

5 In other words, it is incorrect to believe that the table is identical with the conglomerate of microparticles, since the table does not exist for the microparticles. Even the notion of identity produces huge problems, especially in cognitive science, when we believe that the mind is identical to the brain. If we accept the theory of identity (the mind is identical to the brain), then is a mental state identical to a certain neuron pattern activating at a certain point of time? This hypothesis is no longer accepted by many people who work in cognitive neuroscience. That is why even the theory of identity was challenged, despite being one of the most accepted theories at this time. Some philosophers (Searle 1992, for instance) proposed alternatives to the theory of identity. (See Chapter 4 of this book)

compose the table because the table does not exist for the microparticles, nor the other way around, so the notion of forming/composing makes no sense. I would like to emphasize that the identity of an object is given neither by its essence or by what it has inside (its composition or other metaphysical, empty notions), nor by the perceptual-constitutive mechanisms of human beings (as Kant and some people working in quantum mechanics believed).

Imagine that someone sends an electron towards a table. (Fig. 1) The question is: what does the electron perceive? A microparticle (the electron for instance) does not perceive, but to perceive is equivalent with to interact. I will ask the reader to imagine that she is the electron sent towards the table. So what does the electron interact with? Most people would answer that it interacts with the table. But this answer is completely wrong because it represents man's point of view. The correct answer relies on the point of view of the electron, not on that of any human observer: the electron interacts with/perceives a huge conglomerate of microparticles which to a human observer represent the table. (Fig. 2)

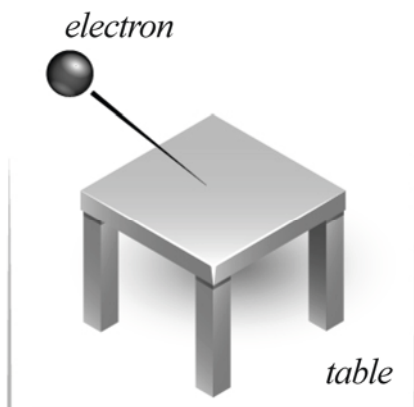


Fig. 1 The wrong image

We believe that a microparticle (an electron, for instance) moves toward the table. We can see the electron only by using an electronic microscope. With the electronic microscope, we do not see the table, but an amalgam of microparticles. For the electron, the table does not exist; only the amalgam of microparticles exists.

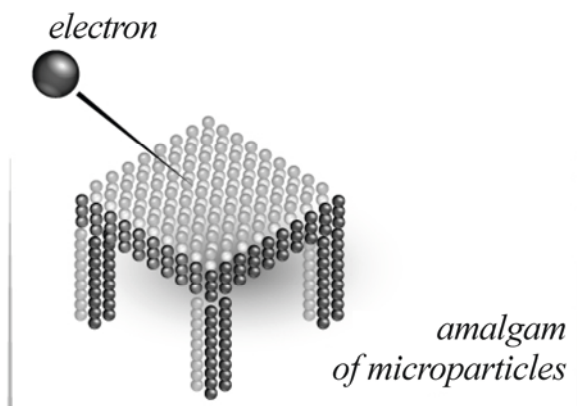


Fig. 2 The correct image

The microparticle moves towards (interacts with) an amalgam of microparticles. (The table does not exist for the electron, but only for our bodies, for other tables, for chairs, stones and other macro-entities)

If we replace the table with a planet we get the same question and the same answer: the planet, and therefore its gravity, does not exist for an electron (there is no quantum gravity because no graviton has been discovered and I believe gravitons do not exist); it perceives only a huge conglomerate of microparticles which, to humans, represents a planet. Moreover, I insist on emphasizing that a planet does not exist for an electron no matter how long the electron travels through the whole universe. In the entire universe, the electron (and any other microparticle) encounters only huge conglomerates of microparticles which men regard as planets. In fact, a planet exists for other planets from the same macro-EW. The microparticles and the macroparticles (among which planets) are objects/entities belonging to EDWs.

We do not have to break the Kant-Carnap rule using empty notions like gravitons. Those four physical forces (the gravitational force, the strong and weak forces and electromagnetism, which are, in my perspective, equivalent with interactions) belong to EDWs, and the trend to unify them is a huge error which has dominated physics for the past 6-7 decades. A planet simply corresponds to a huge amalgam of microparticles. The understanding of the correspondence between entities that belong to EDWs will lead us to reject the much-desired identity between the mind and the brain or between microentities and macroentities, and the very mysterious (unexplained) relationships between waves and particles in

quantum mechanics. Consequently, other essential notions from the various fields of human knowledge have to be rejected: emergence (of all kinds), non-locality and non-spatiality (from quantum mechanics), the relationship between Einstein's theory of relativity and quantum mechanics, etc. It seems that it was easier for philosophers and even for some scientists to play with certain concepts (let us consider merely the Ptolemaic epicycles, or linguistic games – which are often 'the only game in town') in an ideal (or better, ultimate) framework than to recognize the imperfection of a theory.⁶

The question is whether we can explain the gravity of a planet through the properties of certain microparticles (quantum gravity?). For Einstein, gravity is the deformation of space and time around macroscopic entities (planets). Nevertheless, almost all physicists extended gravity from the macroscopic level to the microscopic level and thus invented quantum gravity. No scientist has yet discovered gravitons, but the hope that they will never dies. From the point of view of EDWs, the notion of gravitons is meaningless. (For details, see Vacariu 2008, Vacariu and Vacariu 2010) Within the unicorn world, it seems normal to think that gravity exists at the microscopic level. Nonetheless, quantum gravity is just an illicit extension of macro-gravity and thus it is nothing more than a violation of the Kant-Carnap rule.

Maybe we can say that quantum gravity is a real phenomenon, but due to the (ontological and epistemological) limits of human beings, this notion is impossible to use. As we remember, within the EDWs perspective, epistemology is equivalent to ontology⁷, therefore the notion of 'impossible to use' becomes 'impossible to exist'. So, from the perspective of EDWs, we are obliged to extend an epistemological rule (the Kant-Carnap rule) into an ontological principle. To overcome linguistic limitations, we have to realize that quantum gravity really does not exist.⁸ Without this rule (proposition), certain amazing Ptolemaic epicycles would continue to dominate science and philosophy.⁹

6 We have to remember Newton, who recognized his inability to explain the strange rotations of the planet Mercury (its epicycles) (Mercury is the closest planet to the Sun). However, he was convinced that somebody, using his gravitational theory, would find such an explanation. In fact, Mercury's epicycle was strongly related to the nature of gravity (another notion which Newton realized he could not explain). More than 200 years later, Einstein demonstrated that the enormous mass of the Sun produces deformations in the spatio-temporal framework in which the planet moves. These strange movements of Mercury could not be explained by Newton's theory of gravity. (For more details, see Chapter 8 or Vacariu 2014)

7 We have to be aware that nature (i.e., the EDWs) has no idea about the distinction between epistemology and ontology made by the human mind. This distinction is the main error which led to the wrong paradigm, the unicorn-world.

8 This step from epistemology to ontology seems to be similar to the movement imposed by famous thinkers (Born, Heisenberg, Dirac, etc.) who created the erroneous bases of quantum mechanics through their explanations of entanglement, non-locality, the probability of reality, etc. The

(2) An automobile and its components (or a table and its components: the table top and the legs – Fig. 4). I have to specify that the wrong notion of composition refers not only to natural entities, but also to human artifacts, like cars. In general, when we speak of a car, we do not refer only to its surface, but also to its internal components. Nevertheless, the car and its components cannot exist in the same spatio-temporal framework, at the same time. Otherwise, we reach an ontological contradiction: two objects would ontologically both exist in the same place, at the same time. More precisely, a car does not exist for its components, nor do the components exist for the car. Still, we cannot claim that the car and its macroscopic components (the engine, doors, windows etc.) ontologically exist in the same EW at the same time. If we did, we would break what I call the ontological rule of parts vs. whole: ‘The parts do not exist for the whole, the whole does not exist for the parts’. The car as a whole does not exist for the parts, nor the other way around. When the table as a whole exists (in the macro-EW), its parts (the top, the legs) do not exist. When the table is taken apart, it does not exist at all, only the top and the legs exist in the same macro-EW. (Fig. 4) We will remember that this rule is constructed based on the principles above: the entities are constituted by the interactions that take place.

To us as observers, the car and its parts seem to be the same thing, but the car and its components cannot exist in an ontologically different way at the same time, in the same place. If we accept that both the car and its components exist simultaneously, then we simply reach an ontological contradiction: two objects cannot both exist in the same place at the same time. Therefore, ontologically speaking, in one EW at one moment in time you can either have the car, or its components, but not both. Essentially, we, human beings, have no right to decide what exists and what does not. Existence is constituted by the interaction each entity has with the other entities in the same EW, which is naturally true of the car and its components. Since both the car and the components belong to the same EW, they cannot exist at the same time.¹⁰

difference is that the last step within the unicorn world produces great anomalies (see the last chapter in Vacariu 2008, and Vacariu and Vacariu 2010).

9 „Imagination is more important than knowledge.“ (Einstein) Nevertheless, we really need to impose certain hyperontological constraints on the human imagination. Otherwise, we misplace the real knowledge we have about reality in a surrealist surrounding.

10 Some might consider that the car (or its components) exists only because of the functions it performs. This would reduce ontology to functionalism, which would be completely wrong. The EDWs perspective refers to that which exists without the presence of the knowing human subject, namely to the ontological status of entities (which exists in the absence of humans). Therefore, functionalism (an approach which requires the presence of the human subject) is completely averted, as are other theories related to this research area.

The same is true for the relationship between the car and the microparticles¹¹, which are also components, but microscopical ones: if we consider that both exist (in the same EW), we break the ontological rule of parts vs. whole. However, in this case, the whole (the car or the table) and the parts (the microparticles and their micro-forces) are in EDWs, not in the same EW as the car and its macroscopic components. For the relationships between a macroscopic object and a set of microparticles (and also for the parts-whole relationship), we have to replace the notion of composition with that of correspondence: an automobile is not composed of its parts because the automobile does not exist for its parts (and vice-versa). A table is not composed of microparticles because it only corresponds (ontologically) to a set of microparticles (and their micro-forces) since the table (and other macroobjects and their force, gravity) and the microparticles (and their micro-forces) belong to EDWs. EDWs in images:

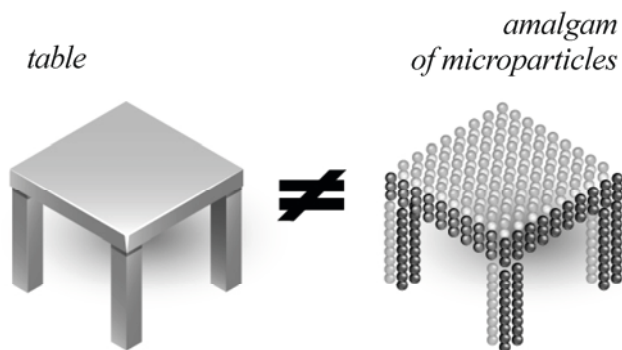


Fig. 3 The table is not identical to the amalgam of microparticles (and their micro-forces)

The table does not exist for the microparticles and vice-versa. The table is not identical to the amalgam of microparticles. For any electron, there is no table (planet) in the entire universe.

This distinction between the parts and the whole is a philosophical distinction which created many metaphysical (linguistic) games that have nothing in common with nature. What really exist in EDWs and what we believe that exist are very

¹¹ The same rule applies to any macroscopic object (such as the table) and to microparticles.

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