Relative Existence and Experience

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Özet: Fiziksel dünya şeylerden yapılmıştır. Bir kaya belirli bir ağırlığa, şekle ve boyuta sahiptir. Bir insanın (ya da hisseden başka herhangi bir hayvanın) dış dünyayı deneyimlemesi nasıl mümkün olmaktadır? Ben burada, fiziksel dünyayı göreli varoluşu açısından yeniden düşünmeyi öneriyorum. Dünya, her biri nedensel olarak etkili ve uzay-zamansal olarak saçılmış göreli ve gerçek nesnelerin bir derlemesi olarak yeniden tanımlanmaktadır. Fiziksel gerçeklik genellikle sanıldığından çok daha zengindir. Her nesne, göreli hız ve ağırlık gibi basit durumlardan iyi bilindiği üzere her biri diğer nesnelerle göreli olan birden fazla özelliği somutlaştırabilir. Bu makale, varoluşun göreliliğini, deneyimimizde bulduğumuz tüm özelliklere yaymayı önermektedir. Böyle yapmakla artık deneyimlerimizi dünyadan ayırmaya gerek kalmıyor. Fizikle tümüyle uyumlu böylesi bir değişikliğin temel bir avantajı vardır: zihin-nesne özdeşliği tezini destekler. Diğer bir deyişle, dünyaya ilişkin deneyimimiz artık dünyadan kopuk değildir.

Anahtar sözcükler: Bilinç, fizikalizm, zihin-nesne özdeşliği, fenomenal deneyim, nedensellik, uzay-zaman

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I. The biggest obstacle in matching experience and the physical world

Why is the physical world deemed unsuitable to host our experience of it? Indeed, why is experience (aka consciousness) of the world assumed to be distinct both numerically and ontologically from the physical world? The usual argument is that the physical world lacks phenomenal character. As of Galileo, the physical world is assumed to be devoid of the qualities we experience. Based on such an assumption, many neuroscientists maintain that the world is colorless, soundless, tasteless, and so forth (for instance, D.M. Eagleman, D.H. Ffytche & S. Zeki, A.K. Seth).[1] Yet, such a notion is troublesome for rather simple and unavoidable reasons — if the world were really devoid of qualities, how could we experience anything? Why would anyone need phenomenal qualities? The world would be causally closed, and the phenomenal character would be epiphenomenal and rather useless.

Classical thinkers –such as Galileo or Brentano– have endorsed the notion of a physical world devoid of phenomenal qualities because they were dualists. They believed that our experiences are located in a mental world distinct from the physical reality. They had the necessary ontological latitude to place our experiences in a separate domain than the physical reality. However, this move is no longer feasible. For a physicalist, such as myself, everything must fit in the physical world.[2] Hence, if our experience is real, our experience must be physical.

Does this lead to panpsychism? Or to emergentism? Not necessarily. In fact, I believe that both panpsychism and emergentism are mistaken moves. Or, at least, they are awfully expensive ontological options with very little, if any, explanatory power. Moreover, they both suggest that our experience is somewhat separate from the standard physical word. The physical world might

1 D.M. Eagleman, *The Brain. The Story of You*. New York: Pantheon Books, 2015; D.H. Ffytche & S. Zeki, "The primary visual cortex, and feedback to it, are not necessary for conscious vision", *Brain* 134, 2011, pp. 247-257; A.K. Seth, "The real problem", *Aeon* 11, 2016, pp. 1-11.

2 J. Kim, *Mind in a Physical World*, Cambridge (Mass): MIT Press, 1998.

be devoid of our phenomenal experience and still go on as usual. Epiphenomenalism is still lurking in the background.

I believe that the biggest problem in explaining our experience (aka consciousness) is the very assumption that our experience of the world and the world we experience are different. This assumption, as widespread as it might be, is a lot less obvious than it seems.

For a start, how do we know that the world is different from our experience of the world if we can access only the latter? Who has ever perceived the physical world devoid of its familiar properties to state that there is a true objective world opposed to everyone's subjective world? And why should we insist that the world we experience is not the world as it is? Let alone, that if we perceived a mental world, what would this internal world be made of? There is no need to insist any further. We are all familiar with the list of unsolvable problems about consciousness.

My initial point is that the alleged difference between the properties of the physical world, as such, and the properties of our experience is a byproduct of a more fundamental, and equally undemonstrated assumption, namely that our experience of the world and the world are numerically and physically separate.

So, I consider an apparently preposterous starting point. I reject the separation between our experience and the world, without falling in the trap of idealism (which presupposes a subject). My initial point is a much simpler view: experiencing the world is simply a matter of being one and the same as the world. Perceiving an object is just being made of that object. Or to put differently, the experience of x is nothing but x, where x is a physical object. This option has been called *mind-object identity* hypothesis.[3] What kind of

3 R. Manzotti, "Objectbound: A Mind-Object Identity Theory", *APA Newsletter on Philosophy and Computers* 16, 2016, pp. 24-31; *Consciousness and Object: A mind-object identity physicalist theory*, Amsterdam: John Benjamins Publishing, 2018; *The Spread Mind. Why Consciousness and the World Are One*, New York: OR Books, 2018; "Mind-object identity: A solution to the hard problem", *Frontiers in Psychology* 10, 2019, pp. 1-16; *Dialogues on Consciousness*, (with Tim Parks), New York: OR Books, 2020.

physical object is *x*? I will argue that is an actual and relative physical object and that, indeed, all physical objects are of the same kind.

A caveat. The mind-object hypothesis is not a form of panpsychism. It does not need to add any phenomenal character to the physical world as panpsychism does.[4] The hypothesis simply states that perceiving a physical object is a matter of being identical with the perceived object. It is, admittedly, a very radical hypothesis and it has both pros and cons. On the one hand, it offers an unprecedented simplification of the conceptual landscape necessary to explain the problem of the mind. There is no longer any need of any troublesome relation between the world and our experience. Both representationalism and relationalism are swept away. Having an experience of an object does no longer require some mysterious connection between us and such an object. Our experience is one with the object and that explains while all properties of the objects are available.

The mind-object identity puts forward a radical claim: our experience is one and the same with the world. As a consequence, the risk of epiphenomenalism and causal redundancy or overdetermination are solved too. Intentionality becomes superfluous. The advantages are indeed remarkable. Yet, there are also two formidable obstacles. I will call the first the problem of the *alleged autonomy* of experience and the latter the problem of the *alleged variability* of experience.

The first (the autonomy of experience) is usually addressed in all those cases in which it seems to be the case that experience of *x* occurs without *x*, as is the case with dreams and hallucinations. It is the well-known argument from hallucinations that has always been used by sensist and phenomenalist as a battering-ram to defend the separation between appearance and reality.

The latter (the variability of experience) is no less formidable. It is the fact that we all seem to have, to various extent, different experiences of the same

4 P. Goff, "Is the Universe a conscious mind?", *Aeon*, February, 2018; D. Skrbina, *Mind that abides. Panpsychism in the new millennium*, Amsterdam: John Benjamins Publishing, 2009.

world. Different subjects and, indeed, the same subjects in different circumstances experiences the same object in different ways. Since I spent weeks in the Covid19 lockdown my body lost fitness and the same kettlebell feels much heavier to my arm. The wine I bought looks sourer to me than to my partner. The room feels colder to me and warmer to my friend who has been walking all day outdoor in the chilly breeze.

Both cases seem like mortal blow for my optimistic hypothesis that our experience, after all, might be nothing but the world itself. But are they?

I believe that they are only apparently killer-bullets since they are both based on a simplistic model of the physical world that is much more naïve than the actual physical reality. To make the mind-object identity work, a revised notion of the physical object is needed. This is what this paper aims to do with the notion of the actual and relative object.

In this paper, I will revisit our notion of physical objects so to make them compatible both with the alleged autonomy and with the alleged variability of our experience. A quick wrap up of my strategy is this:

- The physical world is not made of absolute (naïve) objects.
- The physical world is made of relative and actual objects.
- A relative and actual object is a spatiotemporally spread cause that exists because there are the proper circumstances to let occurring an effect.
- Such an effect is their causal frame of reference, relative to which they exist.
- Existence is always relative (causally effective and spatiotemporally located).
- The world is made of relative and actual objects.

Eventually I will show that once physical objects are redefined in such a way, they are compatible with both the autonomy and the variability of experience and thus, whenever we experience x there is a relative and actual object x that is identical with our experience. *Existence and experience are thus reduced to rel-*

ative existence, being both partial ways to address actual objects. The goal of this paper is to outline the notion of relative existence.

II. The relative and actual object

The traditional picture of a physical world (which I will call *naïve realism*) suggests that the world is made of entities autonomous and aloof to each other. Of course, there is no scholar who corresponds perfectly with this view, but it is fair to maintain that something very close to it is endorsed by the majority of scholars and laymen who profess being physicalist.

This traditional view is not compatible with the simple fact that we have an experience of the external world. In fact, if the world were made of naïve objects, none of them might have the experience of anything else. The need for additional metaphysical contraption –such as intentionality, subjectivity, perspectivalness, qualia, and the like– stems from assuming such an oversimplistic ontology. The very notion of "having an experience of the physical world" is problematic insofar it is mysterious what is the part of reality which is have an experience of another part of reality and even more mysterious if we consider the relation between reality and experience. The situation is rather hopeless. Hence, as abovementioned, it is worthwhile to revisit our basic model of the physical world. The building blocks of reality ought to match both the causal/functional description of physics and the everyday experience of the world we live in.

According to naïve realism, traditional objects are 1. absolute 2. exhaustively describable in physics-alist terms 3. largely independent of time, and 4. causally impervious. By causally impervious I mean that causal relations are extrinsic to what an object is. This view does not work. It is thus necessary to consider an alternative building block.

Overall, the absolute object is a sort of transcendent object conceived from a God-like perspective. It contains an infinite list of physical properties, most of which no one has a clue about. Thus, it does not resemble the parochial notion of the object that one might have. It would be something completely

different from anything we have ever seen. In fact, the layman's idea of the object is irredeemably parochial insofar as it is made of only those features that are causally active thanks to human bodies. *The Galilean object is the horizon we never reach; the actual object is the ground where we stand. The Galilean object is not a real entity, but an abstraction.*

An alternative approach is that reality is made of relative and actual objects which are 1. relative 2. actual 3. spatiotemporally spread 4. causally constituted. While the traditional object is an abstraction that we have no reason to take seriously, the relative and actual object fits seamlessly both with our everyday experience and with physics.

The key hypothesis behind actual objects is that they are always a cause of some further (and distinct) occurrence — hence they have a causally relative existence. The actual object is a cause, contingent and actual. It is a causal token. Each actual object is a cause of something that has happened. It is a cause only if an effect has occurred. Thus, any object comes into existence because of the occurrence of its effect. It is enough to assume that each actual object is the cause of some further occurrence. *The essence of existence is causation*, so to speak. I will say a lot more about this connection between causation and existence.

Such a dependence on actual causation is consistent with our everyday experience. In fact, *everything we experience is something that has a causal effect either on our body* or, at least, *on something else that, in turn, has a causal effect on our body*. It is also consistent with the scientific worldview insofar as everything must be measurable and thus be the cause of some effect. Any measurement requires a causal process. If something had no effect whatsoever, we could not measure it. It would be causally extraneous to the physical world.

Are all objects we are aware of causally active? Yes, they are. Causation is intrinsic to what an object is. Whenever we refer to something –say, a red apple on the table– the thing we refer to is affecting our body. By means of light, chemicals diffused in the air, and pressure on our fingers, the apple affects our body. The apple is an actual object. There are occurrences inside our body

that are the effects of the apple. The apparently static object affects our body. The allegedly still apple is causally active! If such a causal presence were not obtained, the apple would be invisible, undetectable, evanescent, diaphanous, and immaterial… in the end, it would simply not exist.

The world is made of causally efficacious entities — i.e., objects are always contingent causes of further events. This should be rather uncontroversial, since everything that is part of our experience has a responsibility to produce some perturbation — otherwise we would be completely unaware of its existence.

Something exists insofar its effects take place. If entities were altogether incapable of producing any effect, such an entity would be completely inconsequential and, to all extents, immaterial (pun intended). Physics admits only entities that have an actual existence — i.e., that produce measurable effects. All experiments and measurements are based on the assumption that the target entity/property is producing a causal difference in the world.

Physics is committed to actual entities. In 1844, Urbain Le Verrier noticed perturbations in the orbit of Uranus and supposed, correctly, that the cause of these effects might be an unknown planet. At the Berlin Observatory in 1846, on the night of 23 September, the astronomer Johann Gottfried Galle found Neptune. Effects demand a cause.

Anything we perceive must be the cause of something. Our world is the world of actual objects. Here, we will skip the ontology of causally inert entities — say, transcendental platonic ideas or abstract entities. Whatever they are, they are not part of our existence. In fact, abstract objects are immaterial to us. Only actual objects have a role in our existence and in our experience.

We all know that traditional objects, as those endorsed by naïve realism, are not a good match for our experience of the world. Are actual objects any better? Before discussing their proposed identity, I need to spend some time to clarify the differences between naïve objects –also called *ideal* or *traditional Galilean* objects– and *actual* objects. While the naïve object is a tremendously useful abstraction, no one ever gets acquainted with it. Such an object is like

the notion of center of mass — useful but immaterial. It is an example of Whitehead's *misplaced concreteness.*[5] Conversely, actual objects are the objects that one grasps, sees, smells, and eats. They are something that is ontologically fixed thanks to an actual causal interaction.

The objects we perceive are made of those very properties that are causally coupled with our body. For instance, the apple on the table is undoubtedly emitting infrared. Yet, I am blissfully unaware of such additional radiations and –as regards the apple I see– infrareds are immaterial. The apple I perceive does not emit infrareds. In other words, the object my body brings into existence the object made only of those properties that affect my body. Other physical properties (infrareds, neutrinos, other hidden features) are not part of the (actual) object I experience.

An actual object is not the ideal object that science constructs, it is the object our bodies (or any other object) interacts with. However, since we are interested in the actual objects that might be identical with our experience of the world, I will focus mostly on the actual object relative to our body. The actual object is the cause that is singled out by the interaction between the world and our body.

Because of such intimate relationship with the body, the actual object exists only insofar as it is relative to one's body and hence it might be different for each different observer, without having to be mental or subjective. The traditional objection that the apple has at least some properties that the experience of an apple lacks –for instance, its mass– is not convincing. *The object we always perceive are actual objects, not naïve objects.*

The standard scientific object corresponds to an arbitrary and conventionally chosen list of physical properties as they usually take place in human environments. Such a list is never complete. In contrast, the actual object is, at any time, an actual cause. It is a physical object in its own right. It is neither a subset of the ideal object nor a temporal part.

5 A.N. Whitehead, *Science and the modern world*, New York: Macmillan Company, 1925.

The actual object exists because of the causal circumstances of contingent nature offered by our bodies. If our bodies were not in a certain place, the actual object would not occur. Other objects would occur, of course. Yet, those very objects that compose our world and our experience would not. The link between bodies and objects is paramount since, if our bodies did not exist, such objects would not exist either.

The actual object is whatever exists because of the causal circumstance offered by our body. *Whenever our body is in one location, the physical world takes place in a certain way, and certain actual objects are singled out.* The actual object, though, is neither a mental entity nor something inside our body. The actual object is a real, physical object, located in the external world, causing a causal process that ends in our brain and requires our body to reach completion. Likewise, when our body is in a certain place, a certain causal process flows, and its cause pops into existence as a distinguishable whole — the cause being the actual object. Effects single out their causes.

III. If a tree fell in the forest and...

One may rightly wonder whether the notion of the actual object leads to Berkeleian idealism. Is the actual object akin to a mental entity that exists only when we perceive it? If a tree fell in the forest and no one was there, would it still make a sound?

The answer requires to drop the notion of selves as the condition for the existence of their experiences. I believe everybody would agree that if a tree fell in a forest and there was no air, it would make no sound. Likewise, the air should be in the proper range of temperature and pression. Finally, would it make a noise if there were no other physical system around? Hardly. The noise is a physical cause determining some further effect that singles out a combination of frequencies in the air (which are the cause).

The crux of the matter is to reshape the previous sentence in this way: If a tree fell in the forest and *no other physical system* was there, would a sound still occur? The changes are key in order to avoid the traditional subject-ob-

ject duality. The first is that *the sound is not a mental effect, it is a physical cause that requires the proper circumstances.* Such circumstances include a body, not a subject. The body is just yet another physical object. No dualism or idealism is needed.

A useful analogy is offered by the fridge light. We never see the light off. In the case of the actual objects that compose our everyday world, the equivalent of the open door is our own body. The actual object is like the fridge light. Whenever we open the fridge door, the electricity flows and the light is switched on. As a result, whenever we check whether the light is on, the light is on. Of course, thanks to our understanding of the fridge's structure, we know the light is not always on. Whenever our body is at some place and sets a causal circumstance, the causal process occurs from a subset of the physical continuum to the body. As a result, whenever our body is present, the object occurs as well. When our body is not present, the physical world is different.

Our body is not special in this regard. It is just an object and because every object brings into existence additional properties in the surrounding other objects, so our body does. As velocity is always relative to a frame of reference, so any property is always relative to another object that has the role of *causal frame of reference.*

The causal nature of actual objects is manifest in all cases in which the existence of the actual objects depends on easily modifiable properties of the observer body — rainbows, short sight, reflections, and the like. For instance, consider Riccardo and Lucia looking at a rainy cloud while the sun shines behind them. They both see a rainbow, but each of them, will see a slightly different arch in the sky. The position of the rainbow is fixed by the position of the body of the observer. Since Lucia's and Riccardo's body are in two different locations, their rainbows will be two different portions of the cloud. They will be physically different. Each of them will exist because a body will provide the right causal circumstances. Potentially, the cloud is all multicolored. However, only God (so to speak), might see all the rainbows at once. A human body singles out only one arch at a time — the colored arch that is one

and the same with one's experience. Lucia's rainbow exists only relatively to the causal circumstances offered by Lucia's body. By the same token, Riccardo's rainbow exists only relatively to Riccardo's body. The colored arch on the cloud, like many other phenomena such as the path of the sun on the sea at sunset, is convincing because it depends on the observer's position which can be *easily* modified. One moves and the rainbow one sees changes. Yet, such phenomena are only the tip of the iceberg. If one might change as easily other properties of one's body –for instance, the structure of the retina– one would see a different world because the world one would select would be different. In other words, if one changes the body position, one will see a different object. The body is among the relevant causal circumstances. The body acts as a causal frame of reference and thus whenever it changes, the relative objects change too.

Actual objects endorse neither idealism nor panpsychism. Each actual object is relative to another object rather than to a subject. Everything is physical and everything that is physical is intrinsically causal. The proposed identity theory does not require any appeal to mentalistic notions. The apple, as every other object, comes into existence because there are the right causal circumstances for an apple to take place. As it happens, such causal circumstances are embedded by one's body. Thus, the actual object, which is both the external object and the thing usually called "experience", takes place whenever one's body is next to certain physical conditions. *The actual object is body-dependent; it is not mind-dependent.*

What is the role of the body? It is just another actual object, but it is the particular object relative to which our own world comes into existence. As every other object, the body allows other external objects to exist and to interact with other objects — as in the fridge light example. The body is a sort of causal enabler or, as we will see, our favorite causal frame of reference. It enables the world we experience to have the very causal properties we experience, and thus –according to the mind-object identity– to be the very object we perceive and are. The body brings into existence the objects our world is

made of — the objects our experience is made of. Francis Bacon wrote that "Opportunity makes a thief." Likewise, the body offers the opportunity to the world to take place as the object we experience: "Opportunity makes an object." The body is such an opportunity. The world we live in and our experience of the world are, in such a model, one and the same. The body is our favorite *causal reference frame.*

Consider a couple of cases: a constellation and a colored board. The constellation is a case so familiar that there is almost no need to repeat it. A group of stars in different places and times emits light rays in all directions. In another place, in a different time, a planet hurtles through the void and crosses the path of a light ray from each of the stars. At that very point, a human body with the right kind of causal structure allows those causal processes to reach a common end and produce a joint effect. At that very time, the ontology of the constellation is set *relative to* the effect and the constellation is brought into existence at the time and place where its parts were.

Consider now a composite color like magenta. Suppose you have a 1-foot-large red and blue 100 x 100 checkerboard — each cell is a hundredth of a foot. When you look at the red/blue board from 10 meters, the board looks magenta and no trace of the original red and blue cells is discernible. The board has a property, being magenta, which was not visible when you were at closer quarters. Yet, at 10 meters the property is unmistakable. What does this mean? Is it possible that the checkerboard is both magenta and red and blue? Yes. It is red and blue relative to your body structure at a distance less than, say, 8 meters. It is magenta relative to your body structure at a distance greater than 8 meters. Thus, by moving back and forth you change the property that that board instantiates relative to your body.

The nature of the board is not absolute. It depends on which physical system the board interacts with, and the distance of the physical system is surely a factor that influences the ensuing causal process. Thus, if there is no physical system, or there is no light, the board is neither magenta nor red and blue. If there is light (among other necessary conditions) but no other physical

system is around, no color obtains. If there is light and the physical system is like that of a standard human trichromat, it depends on the distance. If the human being is at a distance of, say, less than 8 meters, the red and blue grid takes place on the board. If the human being is farther away than 8 meters, the magenta color takes place on the board. For intermediate distances, finer considerations must apply.

If there are two standard trichromats, say, one at 7 meters and the other at 13 meters, the board will be both red and blue, relative to the closer observer, and magenta, relative to the farther one. Or suppose that Lucia is very short-sighted. With her glasses on, she sees the grid; without them on, she sees a magenta board. Does she see something that does not exist in the latter case? Not at all. The fact is that if the causal properties of her body change, a different external object will be brought into existence. What exists on the board is relative to the position of the observer and, by and large, to their physical features.

Any object is like the board, the constellation, and the rainbow. Each object, even the familiar objects, we deal with every day, are relative to our body. When our body changes (for instance, our retina adapts because of color fatigue), the external object, being relative, changes too.[6]

IV. Relative existence as causation

I am not the first to stress the deep connection between causation and existence, which can be traced back to Plato (in the *Sophist*). More recently a standard reference is an admittedly rather vague passage by Samuel Alexander that eventually became known as Alexander's dictum.[7] The passage reads:

6 R. Manzotti, "A perception-based model of complementary afterimages", *SAGE Open* 7, 2017, pp. 1-10; "Color Afterimages As Filtered Perception of External Physical Colors", *Reti, saperi, Linguaggi* 8 (15), 2019, pp. 55-78.

7 T. Cargile, "On 'Alexander's' Dictum", *Topoi* 22, 2003, pp. 143-149; C.L. Elder, "Alexander's Dictum and the Reality of Familiar Objects", *Topoi* 22, 2003, pp. 163-171; H. Hudson, "Alexander's Dicta and Merricks' Dictum", *Topoi* 22, 2003, pp. 173-182; J. Kim, "Mental Causation in a Physical World", *Philosophical Issues* 3, 1993, pp. 157-176; J. Kim, *Mind in a Physical World*; J. Kim, *Physicalism, or Something Near Enough*, Princeton: Princeton University Press, 2005.

> [Epiphenomenalism] supposes something to exist in nature which has nothing to do, no purpose to serve, a species of noblesse which depends on the work of its inferiors, but is kept for show and might as well, and undoubtedly would in time, be abolished.[8]

Hence, existence is intimately linked with causation. Jaegwon Kim restated the same notion by stating that "To be real is to have causal powers. [...] this principle [...] will be accepted by most non-reductive physicalists."[9] And "to deprive something of causal powers is to deprive something of its existence".[10] Likewise, Trenton Merricks' Eleatic Principle stated that "for macrophysical objects, to be is to have causal powers".[11] All these authors have stressed the same insight: existence requires causality.

The actual object address such intimate link between existence and causality in a straightforward way: If existence requires causation and causation is contingent, until an effect is consumed, *the existence of the cause is not set.* I don't need dispositions.

Consider this example: Is a scrap of metal a key? It is if I build a device, called a lock, that can be unlocked by that piece of metal. Is that scrap of metal a thermometer? Yes, it is, if someone can tell the temperature by looking at the size-changes in the metal's volume due to temperature variations. Is the same scrap of metal capable of exerting a pull of 10 tons? Yes, it is, as long as I place it nearby a giant planet with a mass hundreds of times that of the Earth. And so forth. The scrap of metal is nothing and everything as long as there are the right circumstances. The bottom line is that *effects bring their causes into existence.*

An example will help to clarify the matter. Suppose there is a group of seven suns scattered in space and time. They are the seven suns that, when

8 S. Alexander, *Space, Time and Deity*, Vol. 2, London: MacMillan, 1920, p. 8.

9 J. Kim, *Supervenience and Mind*, Cambridge: Cambridge University Press, 1993, p. 202.

10 J. Kim, *Physicalism, or Something Near Enough*, p. 159.

11 T. Merricks, *Objects and Persons*, Oxford: Oxford Clarendon Press, 2001, p. 81.

seen from the Earth, are named the Great Bear or Ursa Major. Such suns emit light in every direction. Do they produce an effect as a whole? So far, they do not. Their light rays proceed in every direction and travel through empty space. For the sake of the example, let's suppose that no other planets or stars are around. Then, after billions of miles, by contingent necessity, a planet is hurtling through the void and it happens to be in the exact right spot where seven light rays, each from one of the aforementioned stars, converge. In that very point in space, where such light rays cross paths, a human eye is placed in the right direction so that the seven rays enter its pupil and smash against its retina — a biological structure of a few square millimeters. The interaction with the retina triggers a cascade of further neural effects that culminate into a joint effect. For instance, the body of the eye owner –call her Lucia– utters "I really like Ursa Major". Thus, at that very moment, and not before, the existence of the cause –namely the constellation as a whole rather than the seven suns– is brought into existence. Lucia's body brings the constellation as a whole into existence. The occurrence of the effect is contingent and it might have been hampered by many events. For instance, Lucia might have been delayed by a plumbing problem in her apartment. Or, more apocalyptically, the Earth might have been shattered by an asteroid just a moment before. If that had been the case, the seven rays would have missed their only chance to produce an effect as a whole and the constellation would not have existed. If you think about it, the odds that the constellation would produce an effect as a whole after so many years were abysmally small!

The fact that Lucia's body brings into existence the constellation as a whole is not an admission of idealism. In fact, I have been careful not to write "Lucia" but Lucia's body which is just yet another body. The difference is paramount since my account does not allow anything but physical entities. Thus, the existence of the constellation is object-dependent and not mind-dependent. In this case, the object is Lucia's body, which does not pose any idealistic threat. Lucia's body, no matter how beautiful, is just an object with physical properties.

Lucia's case shows that the existence of an entity hangs in the balance, dependent on the occurrence of a corresponding effect. Effects carve out the ontology of the world by singling out the causes that produced them out of countless possibilities. Effects fix the actual ontology of the world against the potential ontology the world might have had.

The existence of an actual object is not absolute, instead, it is relative to the occurrence of a proper effect. Such a dependence is key to sidestepping the overdetermination argument that jeopardized the existence of macrophysical objects. The notion of relative existence applies not only to macrophysical objects, but to everything else as well (simples included). As previously mentioned, such a principle –a restatement of Alexander's dictum– should not cause worry. Both in science and in everyday life, everything we deal with is causally efficacious and thus relative to an effect.

In contrast, the traditional notion of the object (the Galilean object) is absolute. In this regard, the notion of the Galilean object is akin to the notion of absolute space — something that has no real currency both in our everyday life and in the scientific description of reality. In fact, the ideal object is something we never encounter, not only in our individual experience, but also during scientific practice. The ideal and absolute object is a useless hypothesis.

First, as mentioned before, whenever an object is part of our experience, such an object has had a causal role. The same fact holds for measured properties. It is impossible to interact with a causally inert object.

Second, the notion of an ideal object should encompass all possible physical features — an impossible feat. Many such features, in fact, are neither known nor accessible to us. For instance, take our familiar apple. What are its features? Shape, weight, texture, taste, smell. Are they enough to circumscribe the ideal object? Of course not. In fact, the ideal Galilean apple should also have properties that are not usually mentioned — electrical resistance, impedance, magnetic capacity, and level of radioactivity, but also neutrinos opacity, dark matter interactions, and more and more exotic properties. Yet,

these additional properties are usually neglected because they are not among those features that play a causal role relative to human bodies.

Yet, the existence of such an object has no role in our life. Every time an object partakes in our world, it does so because it is an actual object that is having causal intercourse with our body.

The proposed principle –a restatement of Alexander's dictum in contingent and causal terms– is that *everything exists relative to something else*. Such a principle does not require the introduction of relations as additional ontological characters. We do not need relations. There are just objects that take place relative to joint effects, which are nothing but other objects. We are fully inside physics.

A remarkable analogy is represented by germane notions such as relative vs absolute position, relative vs absolute orientation, relative vs absolute velocity, relative vs absolute time, and so forth. In antiquity, orientation, position, and velocity were taken to be absolute. The notion that at this very moment there might be people on the other side of a spherical Earth turned upside down with respect to us was a cause of endless wonder. Or, consider velocity — an object was either still or in motion, *tertium non datur*! It turned out that things were not that simple. Since Galilean relativity, every schoolboy knows that there is no such thing as absolute velocity. If one asks what the velocity of a body is, the correct reply is that the question is meaningless. Rather, one ought to ask what is the velocity of a body *relative* to a reference frame? Since there are infinite reference frames, every object, at any moment, has umpteen *relative* velocities, i.e., everything has umpteen velocities. It might sound strange to the layman, but the red apple that lies still on the table is, at the very same moment, moving in all possible directions at all possible speeds. Every object has umpteen relative velocities at any time. Every object has also umpteen relative properties. As there are no absolute velocities, so there are no absolute properties.

The notion of relative velocity, which has been around for four centuries, required a revision of the commonsensical notion of velocity. Yet, it did not

destroy physics, nor did it worry the layman. Likewise, the notion of the relative existence of objects should worry neither the layman nor the physicist. Every part of the physical continuum might give rise to umpteen different objects relative to a different object. Thus, the same part of nature might be a red apple to my body, a weight for the table on which it lies, an obstacle for Tell's arrow, or a comfortable home for a worm. There is no idealism in this model. I do not advocate any form of mind-dependence (or subject-dependence). The dependence is on other objects that offer the right causal circumstance for that object to take place, everything else being the same.

The kind of *relative existence* I defend here is of a contingent and causal nature. It is not an abstract relation. In other words, an object is what it is relative to an effect that occurs somewhere and at some ensuing time. Until the effect has not occurred, the object does not exist — nor would it make any difference if it did. This formulation is different from the traditional notion of relative velocity, which suggests a relation with an abstract reference frame: "velocity properties are relational [because] velocity properties are constituted in terms of relation to reference frames."[12] In the case of actual objects, an abstract reference frame would not suffice. A concrete physical system and the occurrence of effects are required. The additional physical system (yet another object) relative to which an actual and relative object exists is its *causal reference frame*.

In many relationalist accounts, the existence of something, say colors, is relative to something else.[13] Relationalism does not explain why a relation should constitute anything or what a relation should be in a physical world. As a matter of fact, relations are often abstract or logical, such as *being a sister*, or *being 50 meters to the left of a philosopher*. Most relationalists do not put forward an empirically falsifiable hypothesis but a conceptual schema, which is useful but empirically diaphanous, let alone appealing to subjects. For instance, Co-

12 J. Cohen, *The Red and the Real. An Essay on Color Ontology*, New York: Oxford University Press, 2009, p. 154.

13 For instance, ibid., p. 27.

hen maintains that "it is essential that we limit the scope of relationalism to those theories that construe colors in terms of relations to subjects".[14] In the scope of the present book, this is exactly what we should not limit ourselves to. In fact, being in relation to a subject does not help to flesh out a theory of experience. It is a recipe for circularity.

In contrast with traditional relationalism, the actual object is not constituted by a relation, let alone a relation with a subject. An actual object is neither subjective nor objective; it is both relative and actual.

The very notion of relation is no longer needed once identity can provide for everything we need. In fact, relations in general have been introduced to *relate* separate entities. Thus, once it was assumed that brain and world were separate, relations were called to the rescue. Or, once experience and world were assumed to be separate, relations had to be deployed. The problem is that, in the physical world, we never observe relations. We postulate relations or we use relations to speak of otherwise separate entities. I can speak of all kinds of relations and they are, from an epistemical perspective, extremely useful. We never experience them. We have seen particles, waves, and objects, or the footprints left by them on other objects. But have we ever taken a picture of a relation or its footprint? Nope. Only actual objects are needed.

V. Existence and experience

To a large extent, in the previous paragraphs I have already addressed to what extent the actual object matches the properties of our experience and endorses the mind-object identity hypothesis. What about the issue of the variability of experience? I believe the solution is effective.

Each causal process singles out a different actual object. A visual apple is, of course, an object different from a tactile apple or a gustatory apple. They are all different actual objects. Such objects, though, are not different subjective objects — they are different causal objects that single out different causes

14 ibid., p. 28.

from the physical continuum. Actual objects suggest that, at any time we perceive an object in a different way, we perceive a different actual object. If Tim and Tom perceive two slightly different version of the same object, Tim and Tom are perceiving two slightly different objects. The object we perceive is always a new actual object — a concrete, contingent causal entity. Are there more objects than it is usually assumed by naïve realism? Yes, definitely many more.

Yet, such a proliferation of objects should not worry. Consider again what happened with velocity in physics. Accepting the existence of multiple (indeed of an unlimited number of) relative velocities did not lead to any real problem. Moreover, although actual objects are much more numerous than traditional Galilean objects, they are causally fixed and thus perfectly definite. Their number will surely be huge, but it will be a finite number.

In the mind-object identity account, there is no need to contrast objects and their subjective version (their appearance). Every time one experiences something different, something numerically different comes into existence. Reality is a series of tokens — each one is a new actual object, like a new frame. Each one is a new actual object and, because of altered causal circumstances, might be different. Thus, it should not come as a surprise that reality keeps changing. It is not experience or appearance that changes. It is the external object that change. Subjective experience is fleeting because the world is made of fleeing relative objects. They are fleeting both because the world changes but, crucially, also because our bodies change and thus bring into existence different relative objects.

Likewise, different sensor modalities pick up different actual objects from the same physical continuum. For instance, the visual apple and the tactile apple are two distinct objects. Sensor modalities are different causal circumstances that bring different objects into existence. Among such different objects (the tactile apple, the visual apple, the aromatic apple), various relations hold and, because of their practical importance, they endorse us into having a belief in the existence of an ideal apple.

To wrap up what I have described so far, the world is made of actual and relative objects who are causally defined and spatiotemporally spread. Their existence is relative to other objects that play the role of their causal frame of reference. In the case of human beings, the relevant causal frames of reference are played by those objects we call "our bodies". Everything is physical. Everything exists relative to something else which is physical too. Each actual object exists relative to another actual objects. This kind of relativity is object-to-object relativity and does not require to step out of the physical world.

The crux of the matter is that the actual object and the mind-object identity allow to reduce subjectivity (being relative to a subject) to relative existence (being relative to an object). The traditional objection, i.e., the variability of experience, can be explained by the multiplicity of relative objects. As there are umpteen relative velocities, so there are multiple relative and actual objects. As each relative velocity is singled out by a reference frame, so each actual object is singled out by a causal reference frame, which is nothing but another actual object. Existence is relative and actual. Experience is relative and actual. Experience is relative existence.

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