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An Ontological Solution to the Mind-Body Problem

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Abstract: I argue for an idealist ontology consistent with empirical observations, which seeks to explain the facts of nature more parsimoniously than physicalism and bottom-up panpsychism. This ontology also attempts to offer more explanatory power than both physicalism and bottom-up panpsychism, in that it does not fall prey to either the ‘hard problem of consciousness’ or the ‘subject combination problem’, respectively. It can be summarized as follows: spatially unbound consciousness is posited to be nature’s sole ontological primitive. We, as well as all other living organisms, are dissociated alters of this unbound consciousness. The universe we see around us is the extrinsic appearance of phenomenality surrounding—but dissociated from—our alter. The living organisms we share the world with are the extrinsic appearances of other dissociated alters. As such, the challenge to artificially create individualized consciousness becomes synonymous with the challenge to artificially induce abiogenesis.

Keywords: idealism; panpsychism; physicalism; mind-body problem; hard problem of consciousness; subject combination problem; artificial consciousness

1. Introduction

The mind-body problem—that is, the question of how conscious experience relates to arrangements of matter—is inextricably tied to ontology. The mainstream physicalist ontology, for instance, posits that reality is constituted by irreducible entities—which I shall call ‘ontological primitives’, or simply ‘primitives’—outside and independent of experience. According to physicalism, these primitives, in and of themselves, do not experience. In other words, there is nothing it is like to *be* a primitive, experience somehow emerging only at the level of complex arrangements of primitives. As such, under physicalism experience is not fundamental, but instead reducible to physical parameters of arrangements of primitives. What I shall call ‘microexperientialism’, in turn, posits that there is already something it is like to be at least some primitives [1] (pp. 24–29), combinations of these experiencing primitives somehow leading to *more complex* experiences. As such, under microexperientialism experience is seen as an irreducible aspect of at least some primitives. The ontology of panexperientialism [2] (pp. 77–116) [3] (pp. 91–103) [4] (pp. 21–22) is analogous to microexperientialism, except in that the former entails the stronger claim that all primitives experience. Finally, micropsychism [1] (pp. 24–29) and panpsychism [4] (pp. 15–22) are analogous—and, in fact, may be identical—to microexperientialism and panexperientialism, respectively, except perhaps in that some formulations of the former admit cognition—a more complex form of experience—already at the level of primitives, as an irreducible aspect of these primitives. For ease of reference, I shall henceforth group microexperientialism, panexperientialism, micropsychism and panpsychism, as defined above, under the label ‘bottom-up panpsychism’.

If we stipulate that an entity is *conscious* if, and only if, there is something—*anything*—it is like to *be* the entity, we can then summarize the discussion above as follows: (a) physicalism posits that all ontological primitives, in and of themselves, are *unconscious*, consciousness arising only at the level of complex arrangements of primitives; (b) bottom-up panpsychism posits that at least

some ontological primitives are *conscious* in and of themselves, their combinations leading to more complex consciousness.

Notice, however, that the question of what physical entities are or are not conscious is not the only angle through which to approach the mind-body problem. Indeed, according to the ontology of idealism, physical entities exist only insofar as they are *in consciousness*, irrespective of whether they are conscious or unconscious. In other words, whilst physicalism and bottom-up panpsychism entail that there are physical entities or arrangements thereof that *circumscribe* consciousness, idealism posits that all physical entities and arrangements thereof are *circumscribed by* consciousness. This is a significant distinction that alone sets idealism—whatever its particular formulation—apart from all other ontologies discussed.

The present paper seeks to derive the simplest and most explanatorily powerful ontology possible from the basic facts of reality, thereby attempting to solve the mind-body problem. It starts by stating these basic facts precisely, in a way that avoids any a priori metaphysical assumption or bias. A series of inferences are then made, based on empirical rigor, logical consistency and parsimony. These inferences ultimately lead to an idealist ontology that explains all the basic facts. Explicit comparisons are finally made between the ontology so derived and those of physicalism and bottom-up panpsychism, in terms of both parsimony and explanatory power.

Before we begin, however, notice that idealism has a long and rich history, which can be traced back to the Vedas in the East and Neoplatonism in the West. Many different schools of idealism are known today, such as ‘subjective idealism’, ‘absolute idealism’, ‘actual idealism’, etc. The criteria for classifying a new formulation under one or another school are often difficult to apply with precision, due to their often ambiguous definitions and inconsistent usage of words such as ‘mind’, ‘consciousness’, ‘experience’, ‘subject’, ‘object’, etc. For this reason, I have chosen to simply present my approach in and of itself. Others can worry later about classifying it, if they find it worthwhile.

2. The Basic Facts of Reality

Let us start by neutrally and precisely stating four basic facts of reality, verifiable through observation, and therefore known to be valid irrespective of theory or metaphysics:

Fact 1: There are tight correlations between a person’s reported private experiences and the observed brain activity of the person.

We know this from the study of the neural correlates of consciousness (e.g., [5]).

Fact 2: We all seem to inhabit the same universe.

After all, what other people report about their perceptions of the universe is normally consistent with our own perceptions of it.

Fact 3: Reality normally unfolds according to patterns and regularities—that is, the laws of nature—independent of personal volition.

Fact 4: Macroscopic physical entities can be broken down into microscopic constituent parts, such as subatomic particles.

What makes these four particular facts significant is this: despite the formidable unresolved problems of both physicalism [6–10] and bottom-up panpsychism [11–13], these two ontologies are *prima facie* more easily reconcilable with the four facts than idealism.

On the physicalist side, the argument for this might go as follows: If the brain does not somehow constitute or generate conscious cognition through specific arrangements of its microscopic constituent parts (Fact 4), how can there be such tight correlations between observed brain activity and reported inner experiences (Fact 1)? If the world isn’t fundamentally independent of, and outside, phenomenality, it can only be analogous to a dream in consciousness. But in such a case, how can we

all be having the same ‘dream’ (Fact 2)? Finally, if the world is in consciousness, how can it unfold according to patterns and regularities independent of our volition (Fact 3)?

On the bottom-up panpsychist side, the following considerations might be added to the above: Since physicalism has hitherto failed to explain how the qualities of experience can be deduced from physical parameters, experience must be fundamental. The question then is: fundamental at what level? Well, since the macroscopic brain can be reduced to microscopic building blocks (Fact 4), experience must be a fundamental aspect of these microscopic building blocks.

3. Unpacking the Basic Facts

By carefully unpacking Fact 1, we can confidently state five other facts:

Fact 5: irrespective of the ontological status of what we call ‘a person’, there is *that* which experiences (TWE).

Properly understood, this is self-evident and, as colorfully put by Strawson [1] (p. 26), not even a sensible Buddhist rejects such a claim. For clarity, notice that I am not necessarily making an ontological distinction between experience and *experiencer* here; in fact, soon I will claim precisely that there isn’t such a distinction. I am simply recognizing that experience necessarily entails a subjective field of potential or actualized qualities. TWE *is* this field.

Notice also that I am not, at least for now, passing any judgment or making any assumption about the nature or boundaries of TWE. I am not saying, for instance, that it is or isn’t physical, or spiritual, or informational, etc. I am not saying that it is or isn’t circumscribed by the skin of a higher animal. I am simply asserting that it inevitably exists, whatever its nature may be and wherever its boundaries may lie.

Fact 6: A person has private experiences that can only be known by others if the person reports them, for other people do not have direct access to these private experiences.

Fact 7: The brain activity of a person is known only insofar as its observation is experienced in the form of perceptions.

For instance, if a neurologist performs a functional magnetic resonance imaging (fMRI) scan or an electroencephalogram (EEG) of a person’s brain activity, the measurements are only known insofar as the neurologist—or someone else—*sees* them consciously.

Fact 8: From Facts 1 and 7, there are tight correlations between two types of experience: (a) conscious perceptions of a person’s brain activity and (b) private experiences of the person.

Let us call these the *extrinsic appearance* and the *intrinsic view*, respectively. More generally, the intrinsic view is an entity’s conscious inner life, while the extrinsic appearance is how this conscious inner life is perceived by another entity e.g., through instrumentation. Both the intrinsic view and the extrinsic appearance are, of course, still *experiences* insofar as they can be known.

Fact 9: A brain has the same essential nature—that is, it belongs to the same ontological class—as the rest of the universe.

After all, brains are made of the same kind of ‘stuff’ that makes up the universe as a whole.

4. Deriving an Idealist Ontology from the Basic Facts

The question that presents itself now is this: What is the most parsimonious ontological explanation for these nine facts? Here I use the qualifier ‘parsimonious’ in the sense of Occam’s Razor: the most parsimonious ontology is that which requires the smallest number of postulates whilst maintaining sufficient explanatory power to account for all facts. In what follows, I offer six inferences that, together, aim to answer this question.

Inference 1: The most parsimonious and least problematic ontological underpinning for Fact 5 is that TWE and experience are of the same essential nature. More specifically, experience is a *pattern of excitation* of TWE.

This avoids the need to postulate two different ontological classes for TWE and experience, respectively. It also circumvents problems regarding the mechanisms of interaction between TWE and experience, which would arise if they were assumed to be of different essential natures. As an excitation of TWE, experience is not distinct from TWE as ripples are not distinct from water, or as a dance is not distinct from the dancer. There is nothing to ripples but water in motion. There is nothing to a dance but the dancer in motion. In an analogous way, there is nothing to experience but TWE ‘in motion’. Ripples, dances and experience are merely patterns of excitation of water, dancers and TWE, respectively.

Now, from Fact 8 we know that the activity of brains is accompanied by inner experience. In other words, there is something it is like to *be* a living brain. One possibility is that something about the particular structure or function of brains constitutes or generates experience. However, it is impossible to conceive—even *in principle*—of how or why any particular structural or functional arrangement of physical elements would constitute or generate experience ([1], pp. 2–30; [3], pp. 13–30). This is a well-known problem in neuroscience and philosophy of mind, often referred to as the ‘hard problem of consciousness’. The qualities of experience are irreducible to the observable parameters of physical arrangements—whatever the arrangement is—in the sense that it is impossible to deduce those qualities—even in principle—from these parameters [7]. It remains conceivable that physical arrangements could *modulate* experience, without constituting or generating it, if one postulates some form of dualism. But this still leaves ‘that which experiences’ entirely unexplained, since TWE is now that which is modulated (cf. Inference 1). From all this we can conclude that:

Inference 2: TWE is an ontological primitive, uncaused and irreducible.

Clearly, this step of my argument depends on the ‘hard problem’ being a fatal blow to the notion that physical stuff more fundamental than experience somehow constitutes or generates experience. There is now, of course, substantial literature supporting this view (e.g., [1], pp. 2–30; [3] pp. 13–30; [6,7]). Nonetheless, you may still disagree with Inference 2 for two reasons: (a) you may think that physicalism in fact does not entail a ‘hard problem’ (e.g., [14]); or (b) you may think that the ‘hard problem’ *can* be solved, even though today we do not know how. Position (a) implies that conscious experience essentially does not exist, which, as I have extensively argued elsewhere [10] (pp. 59–70), is absurd. After all, conscious experience—whatever its underlying nature—is the primary datum of existence. Position (b), on the other hand, cannot be refuted upfront because, outside closed formal systems such as mathematics or logic, one often cannot prove a negative. But if you sympathize with position (b), my invitation to you is this: continue nonetheless to entertain my argument to its conclusion; compare physicalism to the idealist ontology that will emerge from it at the end; and then ask yourself which alternative is more parsimonious.

Having briefly digressed, let us now proceed. Since ‘that which experiences’ cannot be caused by local physical arrangements (Inference 2), and since living brains—which *do* experience (Fact 8)—are of the same essential nature as the rest of the universe (Fact 9), we must face the possibility that the latter also experiences. Rejecting this conclusion entails accepting an arbitrary discontinuity in nature. As such, the entire physical universe may be akin to a ‘nervous system’ in the specific sense that all its activity may be accompanied by experience. Is there any circumstantial empirical evidence for this kinship? As it turns out, there is: a study has shown unexplained structural similarities—not necessarily *functional* ones, mind you—between the universe at its largest scales and biological brains [15]. We can thus cautiously attempt:

Inference 3: TWE is associated with the entire universe.

This does not imply that the activity of particular subsets of the universe is accompanied by *separate* conscious inner lives of their own. Asserting otherwise would require an extra inferential step. As such, it cannot be logically concluded from Inference 3 that there is something it is like to be, say, a home thermostat in and of itself. To gain intuition about this, consider e.g., an individual neuron in your brain: Is there anything it is like to be it, in and of itself? Insofar as you can directly experience, there isn't: there is only something it is like to be your brain *as a whole*—that is, you—not the individual neuron in and of itself. Nonetheless, this observation does not contradict Fact 8: the activity of the neuron is still accompanied by experience, *but experience at the level of your brain as a whole*. Analogously, Inference 3 must be interpreted parsimoniously as implying solely that all activity in the physical universe is accompanied by conscious inner life *at some level*, and not necessarily that particular subsystems of the universe—such as home thermostats—have separate conscious inner lives at their own level.

The best that can be concluded beyond this cautious interpretation of Inference 3 is that TWE is, in fact, *unitary* at a universal level: the validity of the laws of nature across time and space seem to indicate a holistic underlying reality, as opposed to a fundamentally fragmented one. Moreover, as argued by Schaffer, “there is good evidence that the cosmos forms an entangled system, and good reason to treat entangled systems as irreducible wholes” [16] (p. 32). Horgan and Potrč had already arrived at similar conclusions earlier [17]. So if the cosmos is an irreducible whole, then TWE—which is associated with the entire cosmos, as per Inference 3—must be unitary.

Yet, we know empirically that living people have separate, private experiences (Fact 6). Many of my personal experiences are surely not the same as yours. Moreover, I am not aware of what is going on in the universe as a whole and, presumably, neither are you. To reconcile these facts with the discussion above, I propose as a useful analogy a common mental condition called *dissociation*. Dissociative states are well recognized in psychiatry today, featuring prominently in the DSM-V [18]. Their hallmark is “a disruption of and/or discontinuity in the normal integration of consciousness, memory, identity, emotion, perception” [19] (p. 191). In other words, dissociation entails that some mental contents cannot evoke other mental contents, leading to *apparent* fragmentation. A person suffering from a particularly severe form of dissociation called Dissociative Identity Disorder exhibits multiple, “discrete centers of self-awareness” [20] (p. 67) called *alters*.

Dissociation allows us to (a) grant that TWE is fundamentally unitary at a universal level and then still (b) coherently explain the private character of our personal experiences (Fact 6):

Inference 4: there is a sense in which living organisms are alters of unitary TWE.

It is important to notice that the formation of alters does not entail or imply fragmentation of TWE itself, but only the dissolution of cognitive bridges between some of TWE's mental contents. Even when these mental contents are dissociated from each other—in the sense of not being able to directly evoke each other—TWE remains unitary. Let us unpack this.

As mentioned above, dissociation entails “a disruption of and/or discontinuity in the normal integration” of mental contents. This normal integration takes place through chains of cognitive associations: a perception may evoke an abstract idea, which may trigger a memory, which may inspire a thought, etc. These associations are *logical*, in the sense that e.g., the memory inspires the thought because of a certain *implicit logic* linking the two. Integrated mentation can thus be modeled, for ease of visualization, as a connected, directed graph. See Figure 1a. Each vertex in the graph represents a particular mental content and each edge a cognitive association logically linking mental contents together. Every mental content in the graph of Figure 1a can be reached from any other mental content through a chain of cognitive associations. Dissociation, in turn, can be visualized as what happens when the graph becomes disconnected, such as shown in Figure 1b. Some mental contents can then no longer be reached from others. The inner subgraph is thus a representation of an alter.

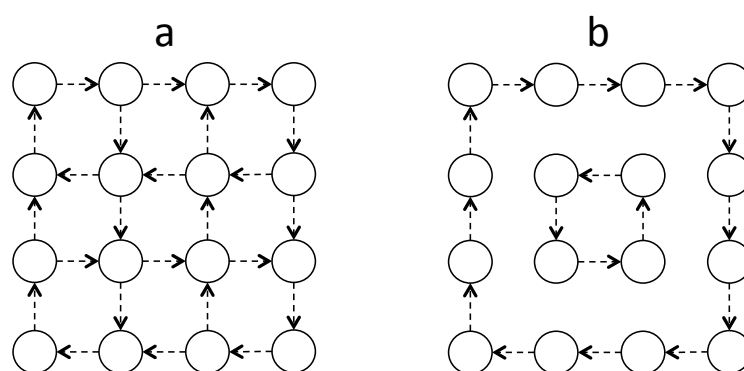


Figure 1. A connected graph (a) illustrating normal integration of mental contents, and a disconnected graph (b) illustrating dissociation and the corresponding formation of an alter (inner subgraph).

An alter loses access to—that is, the power to directly evoke—mental contents surrounding it, *but remains integral to TWE*. The disconnection between an alter and the surrounding mental contents is logical, not ontic. As an analogy, a database may contain entries that are not indexed and, therefore, cannot be reached, but this does not physically separate those entries from the rest of the database. Similarly, dissociation allows us to explain the existence of separate, private conscious inner lives, whilst preserving the notion that TWE is, and always remains, fundamentally unitary.

As discussed above, the empirical motivation for positing dissociation as the explanation for Fact 6 is the clinical condition called Dissociative Identity Disorder (DID). There has been debate about the authenticity of DID. After all, it is conceivable that patients could fake it. Research, however, has confirmed DID’s legitimacy (for an overview, see [21] (pp. 167–174)). Two very recent studies are particularly interesting to highlight. In 2015, doctors reported on the case of a German woman who exhibited a variety of alters [22]. Peculiarly, some of her alters claimed to be blind while others could see normally. Through EEGs, the doctors were able to ascertain that the brain activity normally associated with sight wasn’t present while a blind alter was in control of the woman’s body, even though her eyes were open. When a sighted alter assumed control, the usual brain activity returned. This is a sobering result that shows the literally *blinding* power of dissociation.

In another study [23], doctors performed fMRI brain scans on both DID patients and actors simulating DID. The scans of the actual patients displayed clear and significant differences when compared to those of the actors. This study is interesting not only for confirming the authenticity of DID, but also for showing that *dissociation has an extrinsic appearance*. In other words, there is something dissociative processes *look like* when observed from the outside, through a brain scanner. The significance of this fact will become clear shortly.

Finally, there is also compelling evidence that alters can remain conscious and self-aware even when not in control of the body. In Morton Prince’s well-known study of the ‘Miss Beauchamp’ case of DID, one of the alters “was a co-conscious personality in a deeper sense. When she was not interacting with the world, she did not become dormant, but persisted and was active” [21] (p. 318). Braude’s more recent work corroborates the view that alters can be co-conscious. He points to the struggle of different alters for executive control of the body and the fact that alters “might intervene in the lives of others (i.e., other alters), intentionally interfering with their interests and activities, or at least playing mischief on them” [20] (p. 68). It thus appears that alters can not only be concurrently conscious, but that they can also vie for dominance with each other.

As seen above, dissociation is an empirically established phenomenon known to occur in experiential space, which can lead to the formation of co-conscious alters. And since TWE is universal experiential space (Inference 3), it is empirically coherent to posit—as Inference 4 does—that top-down dissociation leads to the formation of discrete but concurrently conscious centers of experience within the otherwise unitary TWE.

The challenge we must now tackle is the so-called “boundary problem for experiencing subjects” [3] (pp. 77–90): What structures in nature correspond to alters of TWE? We know that we humans do. Do animals too? What about plants? Rocks? Atoms? Subatomic particles?

As Gregg Rosenberg put it [3] (p. 80), “we must find something in nature to ground (the boundaries of) an experiencing subject”—that is, the outline of the extrinsic appearance of an alter of TWE on the screen of perception. This “something in nature” must have structural and functional characteristics that allow us to differentiate it from everything else. After all, only on the basis of this differentiation can we delineate the dissociated alters from an extrinsic perspective. But just what is the structure Rosenberg was looking for? Departing here from Rosenberg’s own conclusions, I posit that a natural and empirically plausible candidate is metabolizing life:

Inference 5: Metabolizing organisms are the extrinsic appearance of alters of TWE.

The reasoning here is simple: since we only have intrinsic access to ourselves, we are the only structures *known* to have dissociated streams of inner experiences. We also have good empirical reasons to conclude that normal metabolism is essential for the maintenance of this dissociation, for when it slows down or stops the dissociation seems to reduce or end [24]. These observations alone suggest strongly that metabolizing life is the structure corresponding to alters of TWE.

But there is more: insofar as it resembles our own, the extrinsic behavior of all metabolizing organisms is also suggestive of their having dissociated streams of inner experiences analogous to ours in some sense. This is obvious enough for cats and dogs, but—you might ask—what about plants and single-celled organisms such as amoebae? Well, consider this: “many types of amoeba construct glassy shells by picking up sand grains from the mud in which they live. The typical *Diffflugia* shell, for example, is shaped like a vase, and has a remarkable symmetry” [25] (p. 26). As for plants, many recent studies have reported their surprisingly sophisticated behavior, leading even to a proposal for a new field of scientific inquiry boldly called “plant neurobiology” [26]. Clearly, thus, even plants and single-celled organisms exhibit extrinsic behavior somewhat analogous to our own, further suggesting that they, too, may have dissociated streams of inner experiences. Of course, the same cannot be said of any inanimate object or phenomenon (those that have been engineered by humans to merely simulate the behavior of living beings, such as robots, natural language interfaces, etc., naturally don’t count).

Finally, there is no doubt that metabolism is a highly differentiated process. Consider DNA, morphogenesis, transcription, protein folding, mitosis, etc.: nothing else in nature exhibits structural and functional characteristics such as these. And it is these characteristics that unify all metabolizing life into a unique, clearly distinct natural category, despite the widely different forms that organisms can take. This category may provide the unambiguously demarcated “something in nature” that Rosenberg was looking for.

The essence of Inference 5 is that there is something an alter of TWE looks like from outside; namely, a metabolizing body. By now this shouldn’t come as a surprise: recall that, in Inference 3, I’ve posited that the physical universe is, in a specific sense, akin to a ‘nervous system’. Recall also that a study has shown that dissociative processes in the nervous systems of DID patients have a distinct extrinsic appearance, detectable by brain scans [23]. Therefore, it is plausible that dissociation in the universal ‘nervous system’ should also have a distinct extrinsic appearance. The hypothesis here is that metabolizing organisms *are* this extrinsic appearance. As such, living bodies are to universal-level dissociation in TWE as certain patterns of brain activity are to DID patients. In the case of the universal ‘nervous system’, however, we don’t need brain scanners, for we are already *inside* the ‘nervous system’. To see the extrinsic appearance of dissociated mental processes within it we just need to look around: the people, cats, dogs, insects, plants, amoebae and all other life forms we see around are the diagnostic images of universal ‘DID’. Each corresponds to at least one alter.

For clarity and emphasis, notice that I have been elaborating on two levels: TWE as a whole and its dissociated alters, which are themselves nothing but local differentiations of TWE. Moreover, there are two ways in which an alter of TWE can be experienced: (a) its *extrinsic appearance*—that is,

the metabolizing organisms we can perceive around us, and (b) its *intrinsic view*, an example of which is your own stream of inner experiences as an alter yourself. Moreover, unless we are prepared to accept an arbitrary discontinuity in nature, the same must apply to the rest of the universe: its extrinsic appearance is the cosmos we perceive around us, while its intrinsic view is the hypothetical stream of inner experiences of TWE as a whole.

One may feel tempted to conclude that this implies some form of dual-aspect monism, a la Spinoza [4] (p. 88), whereby intrinsic views and extrinsic appearances are irreducible to one another. What I shall attempt to show next is that this is not so: extrinsic appearances can in fact be reduced to intrinsic views.

Before I continue however, notice that it is *perceptions* that carry extrinsic appearances, not thoughts (for simplicity, I shall henceforth use the word ‘thought’ to mean any experience distinct from perception). If all you experienced were thoughts, you would have no extrinsic point of view at all, only an intrinsic one. Therefore, if I can coherently reduce perceptions at the level of alters to thoughts at the level of TWE as a whole, I will have shown that nature, at its most fundamental level, consists purely of intrinsic views.

With this in mind, I submit that, before its first alter ever formed, TWE experienced *only thoughts*. There were no perceptions. The formation of the first alter then demarcated a boundary separating the experiences *within* the alter from those *outside* the alter (all of which were, of course, still within TWE). This newly formed boundary is what enabled perceptions to arise: the thoughts surrounding the alter *stimulated* its boundary from the outside, which in turn impinged on the alter’s internal dynamics. What we call perception is the experience of this impingement (see Figure 2). Naturally, the thoughts of the alter can also stimulate its dissociative boundary from the inside and thereby impinge on the external dynamics of TWE (not shown in Figure 2). This corresponds to the effects on the world of the presence and actions of a living organism within it, which cause something akin to perception in the external mental environment surrounding the alter. For the sake of simplicity, however, I shall henceforth talk of perception only as it applies to alters.

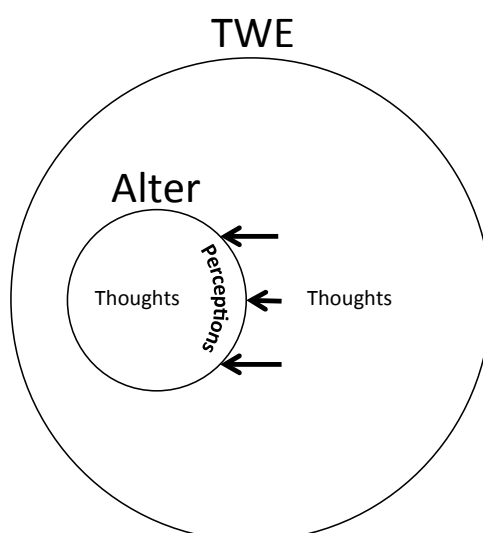


Figure 2. Thoughts in TWE cause perceptions in a dissociated alter.

Restating the key point more generally:

Inference 6: the perceptions of an alter are reducible to the experiences of TWE that impinge on the alter from the outside.

The extrinsic appearance of an alter’s boundary is, of course, an organism’s sense organs. In our case, these are our skin, eyes, ears, nose and tongue. Therefore, even if the outside stimulation

is very faint and subtle, evolution has had billions of years to optimize the sensitivity of our sense organs—our alters' boundaries—to pick up on these hypothetically faint signals.

Two questions can be raised at this point: First, how can a mere dissociative boundary give rise to a *qualitatively different* type of experience? After all, perceptions *feel* very distinct from thoughts. Second, how can outside experiences, which are by definition dissociated from the alter, cause experiences inside the alter? This seems contradictory at first.

Let us start from the second question. Contrary to the question's premise, we are all, in fact, personally familiar with dissociated experiences that causally affect each other while remaining dissociated from each other. Imagine, for instance, that you are having relationship problems at home. When you go to work, you successfully 'park' your problems—that is, repress your emotional life—in order to perform your tasks. Your emotions then become temporarily dissociated from your ego, in the sense that they are no longer evoked in your awareness while you work. *But they do still impinge on it*: they may, for instance, cause your imagination to flow in a somber direction, lead you to misunderstand comments received from colleagues, lock your intellect into repetitive patterns of reasoning, etc. All the while, your ego doesn't directly experience the emotions themselves; they remain dissociated from it. But from across the dissociative boundary they still causally influence what arises in your egoic awareness. Indeed, the plausibility of this kind of phenomenal impingement from across a dissociative boundary is well established in the literature: Lynch and Kilmartin [27] (p. 100), for instance, report that dissociated feelings can dramatically affect our thoughts and behaviors, while Eagleman [28] (pp. 20–54) shows that dissociated expectations routinely mold our perceptions. My claim is that something analogous to this happens across the boundary of dissociated alters of TWE, causing perceptions.

Let us now tackle the first question. Still with reference to the example described above, notice that your dissociated emotions at work have an impact on *qualitatively different* types of experience: they interfere with your imagination, understanding and reasoning, none of which *feels* like emotions. This shows empirically that, not only can there be a causal link across a dissociative boundary, this causal link can also connect qualitatively dissimilar experiences. A dissociated emotion can cause a thought; a dissociated belief can distort a perception or even generate one through hallucinatory mechanisms; etc. Therefore, it is empirically coherent to infer that experiences outside an alter can cause qualitatively dissimilar experiences in the alter. It is reasonable to postulate even that evolution would have *emphasized* this kind of qualitative transition, if it helped enhance the sensitivity of the alter to external stimuli.

As a matter of fact, these empirically-motivated speculations can be couched in recent theoretical results. Donald Hoffman's interface theory of perception [29,30], for instance, shows that evolution emphasizes perceptual qualities conducive to fitness, not to truth. In other words, we have evolved to perceive not the qualities that are really 'out there'—that is, outside our alter—but just a *representation* thereof that helps us to survive and reproduce. Hoffman uses the analogy of a computer desktop: although a computer file is represented in it as e.g., a blue rectangle, that does not mean that the file itself has the qualities of being blue and rectangular. As a matter of fact, the actual file does not have those qualities at all: it is a pattern of open and closed microscopic switches in a silicon chip. In an analogous way, my hypothesis is that the qualities of our perceptions—colors, shapes, sounds, flavors, textures, etc.—are *not* the qualities of the experiences of TWE that surround our alter, but their 'desktop representation' instead. Our perceptions do not feel like the thoughts of TWE (see Figure 2 again) because a *qualitative transition* between these two experiential categories has helped our ancestors survive and reproduce.

The work of Friston, Sengupta and Auletta [31] has similar implications but, significantly, is derived from an entirely different line of reasoning. Their results are based on abstract mathematical considerations and, therefore, can in principle be leveraged under any ontology. They show that whenever a boundary—a "Markov blanket" in their mathematical model—defines the outline of an individual organism, internal states of the organism will evolve to optimize for two conflicting goals:

(a) to reflect external states of the world beyond the Markov blanket; and (b) to minimize their own entropy or dispersion. Goal (a) is about allowing the organism to know what is going on in the world outside, so it can take suitable actions to survive in that world. Goal (b) is about preventing the organism from losing its internal structural and dynamical integrity because of the second law of thermodynamics. Naturally, in our case the Markov blanket is the dissociative boundary of an alter, whose extrinsic appearance is our skin and other sense organs. Dissociation thus creates a Markov blanket within TWE.

The key insight of Friston, Sengupta and Auletta can be paraphrased as follows: a hypothetical organism with perfect perception—that is, able to perfectly *mirror* the qualities of the surrounding external world in its internal states—would not have an upper bound on its own internal entropy, which would then increase indefinitely. Such an organism would dissolve into an entropic soup. To survive, organisms must, instead, use their internal states to actively *represent* relevant states of the outside world in a *compressed, coded form*, so to know as much as possible about their environment while remaining within entropic constraints compatible with maintaining their structural and dynamical integrity. This way, my hypothesis is that the qualities of perception experienced by an alter are just compressed, coded representations of how surrounding thoughts of TWE actually feel. As such, while there must be a *correspondence* between perception and surrounding thoughts, the respective experiential qualities don't need to be the same. In fact, they will likely be very different if it helps organisms resist entropy. Our perceptions don't feel like thoughts because they are coded representations thereof.

These six inferences complete the proposed idealist ontology. We must now check how well this ontology explains the four basic facts of reality that we started with in Section 2.

5. Explaining the Basic Facts of Reality

I showed in Section 2 how Facts 1 to 4 can be construed *prima facie* to favor physicalism and bottom-up panpsychism over idealism, despite the formidable unresolved problems of the former. What I hope to show next is that, in fact, the idealist ontology articulated in Inferences 1 to 6 can explain those four facts at least as elegantly. Moreover, as I shall discuss later, the proposed ontology does not suffer from the problems that physicalism and bottom-up panpsychism fall prey to.

In what follows, each explanation is numbered according to the fact it explains. For instance, Explanation 1 explains Fact 1.

Explanation 1: Let us start by noticing that, from an empirical perspective, there is nothing to Fact 1 that is not captured in Fact 8. Therefore, by explaining Fact 8 we also explain Fact 1. From Inference 6, for any given alter *A1* of TWE, it is the experiences surrounding *A1* that cause its perceptions of the world around it. Naturally, dissociated experiences corresponding to another alter *A2* can be part of the experiential environment surrounding *A1*. As such, the inner experiences of *A2* can also indirectly stimulate *A1*'s boundary—by impinging on their shared experiential environment—and thereby cause *A1*'s perceptions of *A2*. This is what gives *A1* an *extrinsic* view of the inner experiences of *A2* in the form of *A2*'s metabolizing body (Inference 5) (see Figure 3). And since *A2*'s brain is an integral part of its body, it follows that *A2*'s inner experiences *cause* the perception by *A1* of the activity in *A2*'s brain. This causal link explains Fact 8 and, therefore, Fact 1.

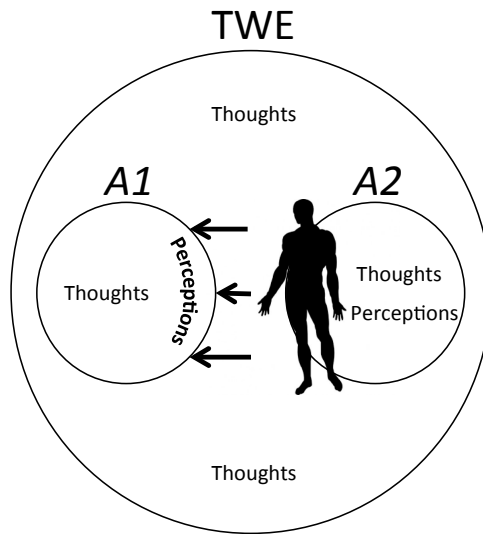


Figure 3. The dissociated experiential activity of an alter A2 can also stimulate the boundary of another alter A1 by impinging on their shared experiential milieu.

Putting it more generally, the extrinsic appearance and intrinsic view of an organism correlate tightly with one another because the intrinsic view causes the extrinsic appearance, not the other way around. Contrary to physicalism, thus, it is the inner experiences of an organism—including non-self-reflective and internally dissociated types unreachable through introspection, which I shall elaborate upon in Section 6—that cause its body (see also [10] (pp. 17–18, 189–190)), insofar as the body is no more than a set of perceptions. (Notice that A1 and A2 can also be the *same* alter, since an organism can perceive its own body.)

Explanation 2: Since TWE is universal (Inferences 3 and 4), it follows that all alters of TWE—that is, metabolizing organisms such as ourselves (Inferences 4 and 5)—are immersed, like islands of a single ocean, in the thoughts that constitute the intrinsic view of the non-metabolizing part of the universe. These universal thoughts surround all alters and cause their perceptions by stimulating their respective dissociative boundaries (Inference 6). See Figure 4.

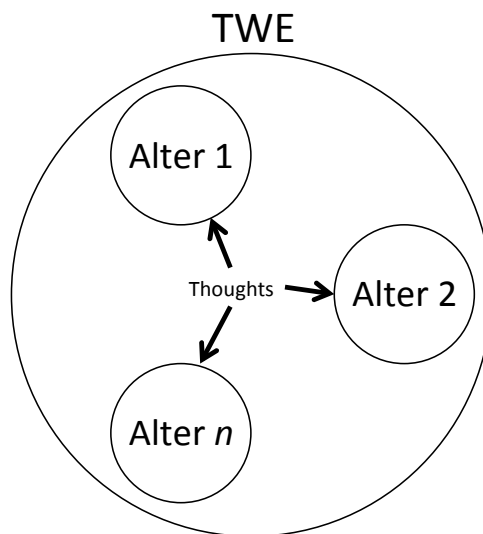


Figure 4. Our shared universe arises from the thoughts of TWE in which all alters are immersed.

Moreover, since the thoughts of TWE are excitations of TWE itself (Inference 1), it follows trivially that we can explain our shared universe based on excitations of TWE alone.

Explanation 2 may raise a plausibility objection, since it entails that thoughts in TWE as a whole need to be significantly more orderly than those in our personal psyches. I deal with this objection in the next section. For now, let us continue.

Explanation 3: Since volition is innately experiential, the volition of each and every alter of TWE is also dissociated from the rest of TWE (Inference 4). This explains rather simply why we do not have personal volitional control over the laws of nature: the unfolding of the universe around ourselves consists of excitations of TWE from which we are dissociated.

Explanation 4: The perceptions of an alter are coded representations of experiences in TWE that surround the alter (Inference 6). Those experiences in TWE are excitations or ‘movements’ of TWE itself (Inference 1). Therefore, subatomic particles, as the smallest discernible elements or ‘pixels’ of the perceived world, are coded representations of the smallest discernible ‘movements’ of TWE.

Facts 1 to 4—and, in fact, Facts 5 to 9 as well—are now explained in terms of TWE. Naturally, from Inference 2 we know that we don’t need to explain TWE itself: it is an ontological primitive. Indeed, every theory of nature needs to identify at least one ontological primitive, since we cannot keep on explaining one thing in terms of another forever. At some point we have to stop and say: at this level, nature simply is. So TWE *simply is*. The fact that I do not reduce it to something else is in no way a shortcoming. Physicalism and bottom-up panpsychism themselves, depending on their specific formulation, postulate a slew of abstract subatomic particles, the quantum field, ‘superstrings’, ‘branes’, etc. as primitives, all of which are also fundamentally unexplainable. If anything, my formulation has the advantages of both parsimony—for making do with a single primitive—and empirical rigor—for choosing an indisputable empirical fact as primitive, as opposed to abstractions of thought.

The proposed ontology thus reduces everything to TWE, its sole ontological primitive. And as attentive readers have probably already noticed, ‘consciousness’ is the ordinary English word that best fits what is meant by TWE:

TWE = universal consciousness

6. Criticisms of the Proposed Ontology

In another work [32], I have rebutted several objections to idealism. It is not in the scope of this essay to repeat all those rebuttals, but three particularly relevant objections must be anticipated and addressed here.

The first objection relates to Libet’s experiments [33], wherein neuroscientists were able to record, a fraction of a second *before* subjects reported making a decision to act, mounting brain activity associated with the initiation of a simple voluntary action. At first sight, this would seem to indicate that decisions are made in a neural substrate outside consciousness, thereby contradicting the proposed ontology.

The fallacy behind this objection is a conflation of consciousness itself with a particular *configuration of* consciousness. But before I get to it, notice that the proposed ontology entails that dissociation can happen in nested levels: TWE can dissociate into multiple people, and then a person suffering from DID can, in turn, dissociate into multiple personal alters. Dissociation within a person does not even require pathology, for there is significant evidence that we all have a second center of cognition—an ‘other’—dissociated from our ego [21] (pp. 301–365). Indeed, this is the very foundation of depth psychology and relatively recent results in neuroscience corroborate it [34–36]. Therefore, that a part of us has experiences that another part of us has no introspective access to, and therefore cannot report, can be elegantly explained by nested dissociation without any need to postulate anything outside consciousness itself.

Yet, Libet's observations suggest *quick* and *consistent* transitions into awareness of cognition that was initially apparently unconscious. Today we know of a vast variety of analogous cases, such as moving one's foot halfway to the brake pedal before one becomes aware of danger ahead [28] (p. 5). The presence of a dissociated 'other' within us all does not seem to explain these cases, for quick and consistent transitions into awareness are not typical of communication between strongly dissociated parts of the psyche. Does this mean that there must exist a neural substrate outside consciousness? No.

Notice that, in order to report an experience—such as making a decision or seeing danger ahead—to another or to oneself, one has to *both* (a) have the experience *and* (b) know *that* one has the experience, which Schooler [37] called a "re-representation". In other words, one can only report an experience that one is self-reflectively aware of at a metacognitive level. But self-reflection is just a particular, rather complex configuration of consciousness, whereby consciousness turns in upon itself so to experience knowledge of its own experiences [9] (pp. 104–110). Nothing precludes the possibility that an experience takes place outside the field of self-reflection without ceasing to be experienced. The latter is still in consciousness, but we cannot report it—not even to ourselves—because we don't know *that* we experience it. Nixon [38] (p. 216) calls it "unconscious experience", which in my view is an oxymoron, but illustrates the subtlety of the point. And indeed, the existence of experiences that escape metacognitive re-representation is well established in neuroscience today [39,40].

So the hypothesis here is that *all* mentation is actually conscious, even though we cannot report on much of it—not even to ourselves [41]. I thus posit that Libet's subjects made their decisions *in consciousness*, but outside the field of self-reflection. Their decisions were 'experiences that weren't aware of themselves' until entering the field of self-reflection after a small delay. Only then could they be reported by the subjects.

In conclusion, the first objection is based on a misunderstanding of terminology. While I use the word 'consciousness' in its broadest sense—that which experiences—the objection assumes it to mean only self-reflective awareness, a particular configuration of consciousness. So it is true that there are phenomena that unfold outside self-reflective awareness, but this does not imply that there is anything outside consciousness itself.

The second objection relates to Explanation 1: I have stated that an organism's inner experiences—including the internally dissociated and non-self-reflective types discussed above—cause its body, not the other way around (see also [10] (pp. 17–18, 189–190)). However, it is a well-established fact that physical interference with the brain—through psychoactive drugs, trauma to the head, exposure to electromagnetic fields, etc.—affects inner experience. So the arrow of causation must point the other way: from the body to inner experience—or so the objection goes.

Although this may sound persuasive at first, it's based on an unexamined assumption: that the physical is in some sense distinct from, yet causally effective upon, the experiential. This is precisely what I am denying. The proposed ontology asserts that, in essence, there is *only* the experiential, since there is only TWE. The physical is simply the verifiable contents of perception, a particular category of experience. As such, what we call 'physical interference with the brain' is simply the extrinsic appearance of experiential activity external to an alter that, in turn, disrupts the inner experiences of the alter from across its dissociative boundary. The disruption 'pierces through the boundary', so to speak. The resulting effects are then simultaneously detectable in the extrinsic appearance of the alter—that is, its body—just as the proposed ontology explains. That certain types of experiential activity disrupt other types of experiential activity is not only entailed by the proposed ontology, but is also empirically trivial. After all, our thoughts disrupt our emotions—and vice-versa—every day. For the same reason that thoughts disrupt emotions, 'physical interference with the brain' disrupts an organism's inner experiences.

The third and final objection relates to Explanation 2: if the world we perceive around ourselves is a coded representation of thoughts in universal consciousness, how can the laws of nature be so stable, self-consistent and predictable? The fallacy here, of course, is that of anthropomorphization: to attribute to universal consciousness as a whole cognitive characteristics known only in infinitesimally

small dissociated aspects of it, such as human beings. Nothing in the proposed ontology precludes the possibility that thoughts in universal consciousness unfold according to very stable, self-consistent and predictable patterns and regularities, whose extrinsic appearance corresponds to the laws of nature. That our human thoughts seem rather reactive and unstable should be considered a product of the evolution of biology, under the pressures of natural selection, within a particular planetary ecosystem. At a universal level, ‘that which experiences’ has not undergone such evolutionary pressures or processes.

The stability of the laws of nature under the proposed ontology can perhaps be better understood with a simple shift in terminology. Certain schools of psychology speak of “psychological archetypes”: innate, built-in templates according to which the dizzying variety of human mentation unfolds [42]. We can then say that, under the proposed ontology, the laws of nature are akin to the archetypes of universal consciousness. They are built-in templates according to which the dizzying variety of the ‘vibrations’ of universal consciousness—that is, experiences—develops. As such, the archetypes are analogous to the physical constraints of a vibrating surface, which determine the surface’s natural modes of excitation. Although the vibrations themselves can be highly complex and sometimes apparently disorderly, the underlying patterns and regularities remain stable and orderly.

7. Comparison to Physicalism

How does the proposed idealist ontology measure up to physicalism in terms of parsimony and explanatory power? To begin with, notice that our only access to a world allegedly independent of experience takes the form of perceptions, which are themselves experiences. Therefore, physicalism is an abstract explanatory model produced by thought, not an observable empirical fact. Its motivation is to provide a tentative explanation for Facts 1 to 4.

Physicalism is inflationary: In addition to experience itself—the one undeniable ontological class—it postulates the existence of stuff outside and independent of experience. This step would only be justifiable if we could not make sense of Facts 1 to 4 without it. However, in Section 5 we have done just that. Therefore, physicalism can be rejected on grounds of parsimony.

Moreover, physicalism is limited in its explanatory power. *In addition to its own ontological primitives*, it fails to explain experience itself (recall the ‘hard problem of consciousness’), which ultimately is all we have. The idealist ontology proposed here, on the other hand, circumvents the ‘hard problem’ altogether: since consciousness itself is taken to be the sole ontological primitive, it does not need to be explained in terms of anything else. Indeed, from the perspective of the proposed ontology, the ‘hard problem’ exists only in the logico-conceptual structure of physicalism, with no grounding in empirical reality. By conceptualizing abstractions of consciousness as ontological primitives, physicalists conjure up the impossible challenge of having to reduce consciousness to consciousness’s own abstractions.

Since the proposed ontology circumvents the ‘hard problem of consciousness’ in the process of explaining Facts 1 to 4, physicalism can be further rejected on grounds of explanatory power.

8. Comparison to Bottom-up Panpsychism

By taking complete living beings to be unitary—instead of composite—experiencing subjects (Inference 5), the idealist ontology proposed here avoids the so-called ‘subject combination problem’ that plagues bottom-up panpsychism [11]. As we’ve seen, bottom-up panpsychists posit that entities as small as subatomic particles are experiencing subjects in their own merit. They imagine that the unitary subjectivity of more complex experiencing subjects, such as human beings, arises from *bottom-up combination* of countless simpler subjects. The problem is that the bottom-up combination of subjects is an unexplainable process, perhaps incoherent [13]. It is just as hard as the ‘hard problem of consciousness’ [12]. Inference 5 circumvents this altogether by positing that *top-down dissociation*—instead of bottom-up combination—happens exactly at the level of individual living creatures with unitary subjectivity, such as ourselves. And unlike bottom-up combination, we actually

understand and have plenty of empirical evidence for top-down dissociation, as discussed in the context of Inference 4.

The motivation for bottom-up panpsychism is that, undeniably, subatomic particles are the discernible ‘pixels’ of the world we perceive around ourselves (Explanation 4). But to imagine, for this reason, that the unitary subjectivity of living beings is composed of myriad subatomic-level subjects entails a flawed logical bridge: it attributes to *that which experiences* a structure discernible only in *the experience itself*; that is, in our perceptions of the world. In the framework of the proposed ontology, the error is that of attributing to TWE a structure discernible only in *the excitations of TWE* (Inference 1). This is analogous to saying, for instance, that water is made of ripples simply because one can discern individual ripples in water. Clearly, individual ripples make up the structure of the *movements of water*, not of water itself. Analogously, subatomic particles are the ‘pixels’ of the observable ‘movements’ of TWE, not the building blocks of TWE itself. Our unitary subjectivity is not necessarily composed of myriad subatomic-level subjects for the same reason that water is not made of ripples.

Because experiences are excitations of TWE, the latter—by definition—cannot be experienced in its *unexcited* state. In the absence of excitations, TWE consists purely of the *potential* for experiences. This is analogous to the ‘vacuum state’ in Quantum Field Theory, or to unexcited ‘branes’ and ‘superstrings’ in M-Theory and Superstring Theory, respectively. So an argument could be made here that, while water without ripples can be empirically observed to exist, unexcited TWE cannot and, thus, may not exist. Nonetheless, even if TWE exists only in excited states, it remains a conceptual error to conflate patterns of excitation with that which is excited.

9. Volition and Natural Law

The ontology articulated in this paper entails that all reality unfolds in a form of transpersonal consciousness. This tempts some to conclude that, as an implication of the proposed ontology, natural phenomena must be triggered by rationalized volitional choices analogous to our own. One may ask, for instance, *why* universal consciousness has *chosen* to dissociate itself into alters so prone to suffering.

The thinking underlying this question unnecessarily attributes to the whole of universal consciousness particular configurations—such as self-reflection—that it may not have outside its alters. Indeed, I have posited that self-reflection is tied to alter formation [9] (pp. 110–116). As such, the dynamics of universal consciousness outside its alters may unfold, at least partly, along lines that we may describe as instinctual or naturalistic. Moreover, insofar as the question presupposes a form of free will distinct from both randomness and determinism, it may be a red herring [10] (pp. 171–180). The idea that reality unfolds within universal consciousness is not at all incompatible with causes and constraints given by the laws of nature.

10. Implications for Artificial Consciousness

According to the proposed ontology, consciousness is an ontological primitive. As such, it cannot—and does not need to—be created, for it already underlies all nature. Creating something means inducing a certain pattern of excitation of and in TWE. Universal consciousness is thus that within which all creation happens and out of which all creation is made.

Yet, what is ordinarily meant by ‘artificial consciousness’ in the field of Strong Artificial Intelligence entails more than just the creation of consciousness proper: it entails the engineering of an entity with *separate, private* conscious inner life, akin to yours and mine. In the context of the proposed ontology, this amounts to *artificially inducing dissociation* in universal consciousness, thereby creating an artificial alter of TWE.

Most attempts to realize ‘artificial consciousness’ center on mimicking the patterns of information flow discernible in biological nervous systems (e.g., [43,44]). This, however, only captures the *formal*—not the essential—aspects of alters of TWE. In this specific sense, the attempts are akin to what Feynman called “cargo cult science” [45] (pp. 242–243). Indeed, according to the proposed ontology, a functioning biological nervous system is merely the *extrinsic appearance* of an intrinsic

view. It does not logically follow that, by mimicking this appearance, the intrinsic view will also be reproduced. Engineering work in this direction may even succeed in creating philosophical zombies whose behavior is indistinguishable from that of living organisms, but there will be nothing it is like to be these zombies *in and of themselves*, for the same reason that—at least as far as you can tell—there is nothing it is like to be an individual neuron in your brain. There is only something it is like to be your brain *as a whole*—that is, you. Analogously, there is only something it is like to be the non-metabolizing universe *as a whole*, zombies being integral parts of its extrinsic appearance just as the individual neuron is an integral part of your brain.

If biology is the extrinsic appearance of alters of TWE, then the quest for artificial consciousness boils down to abiogenesis: the artificial creation of biology from inanimate matter. If this quest succeeds, the result will again be *biology*, not computer simulations thereof. The differences between flipping microelectronic switches and actual metabolism are hard to overemphasize. Therefore, there is no empirical reason to believe that a collection of flipping switches could ever be what individualized, private conscious inner life looks like from the outside, even if these flipping switches perfectly mimic the patterns of information flow discernible in metabolism.

11. Conclusions

I have argued for a coherent idealist ontology that explains reality in a more parsimonious and empirically rigorous manner than mainstream physicalism and bottom-up panpsychism. This idealist ontology also offers more explanatory power than both physicalism and bottom-up panpsychism, in that it does not fall prey to either the ‘hard problem of consciousness’ or the ‘subject combination problem’, respectively. It can be summarized as follows: there is only universal consciousness. We, as well as all other living organisms, are but dissociated alters of universal consciousness, surrounded like islands by the ocean of its thoughts. The inanimate universe we see around us is the extrinsic appearance of these thoughts. The living organisms that we share the world with are the extrinsic appearances of other dissociated alters of universal consciousness. As such, the quest for artificial consciousness boils down to the quest for abiogenesis. The currently prevailing concept of a physical world independent of consciousness is an unnecessary and problematic intellectual abstraction.

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