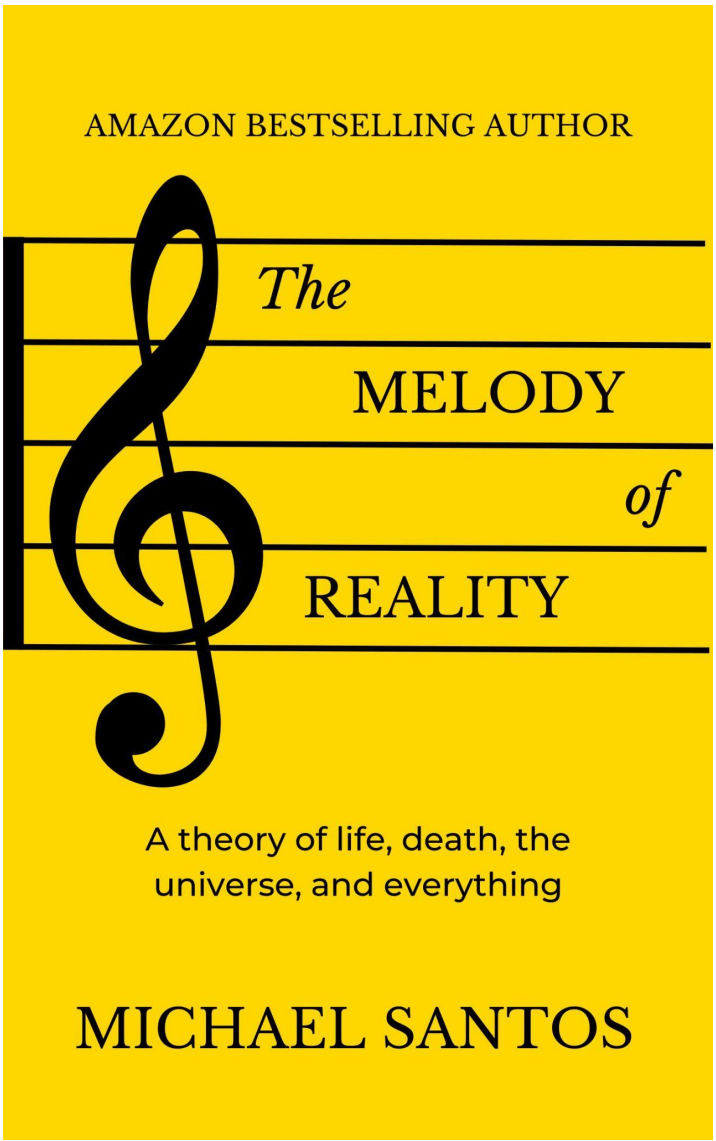
# The Melody of Reality: A theory of life, death, the universe, and everything



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# Contents

# 1. The next revolution

Science and philosophy are on the verge of a revolution that will change the paradigms of the next century, and hopefully longer. A **paradigm** in this context is a worldview held by scientists and philosophers, and which influences the interpretation of empirical data. Thomas Kuhn elucidated the structure of scientific revolutions. In his thought, we conduct "normal science" under the reigning paradigm of the day until sufficient phenomena remain unexplained by that paradigm, such that new theories are needed. If, out of this period of crisis, a theory emerges that better explains the data, and if that theory survives the heavy resistance it faces from those maintaining the current paradigm against change, then a scientific revolution takes place, and a new paradigm begins (Kuhn, 1996).

Such paradigm shifts have occurred throughout history, such as when we abandoned the geocentric model for the heliocentric model of the Solar System. The discovery of evolution by natural selection was another such shift in thought, each brought about by revolutions that sought to address anomalies in the previous mainstream paradigm.

The same process applies to philosophy, which, in turn, influences how we do science.

As of this writing, humanity once more has cause to question our current paradigm, this time in **metaphysics**, the field of philosophy that studies what reality is, in and of itself. Since the Enlightenment (for about 200 years), the reigning metaphysical paradigm has been **physicalism**, the theory that reality, down to its most fundamental level, is physical, such that everything else supervenes on the physical. It asserts that an objective, independent reality exists outside of your subjective mind. This reality is composed of complexes of material particles confined in spacetime. Physicalism comes from materialism, and the two are commonly used interchangeably. The chief distinction between the two names is that "physicalism" describes not just matter, but also energy, information, and physical law, all of which it considers to be "physical" (Stoljar, 2009).

The result of such a belief has been an insistence that life in the universe is purely accidental and devoid of any meaning or purpose. Reductionist physicalism has also led us to interpret **the Second Law of Thermodynamics** in a nihilistic manner, predicting that the universe will run out of usable energy, and that all organization, including life, is doomed to succumb to ever-rising disorder. Life, then, has no cosmological significance. It is a blip in the universe, an accident that, statistically, should never have been possible in the first place.

Such a worldview is consistent with **reductionism**, which asserts that we can understand reality by breaking down the physical into its fundamental constituents and observe them in isolation. Everything in a reductionist physicalist paradigm, including

biology, chemistry, and the other natural sciences, reduces to quantum physics. Reductionism has proven successful in understanding the "physical" world of our perception, but it has also given us a distorted view of reality by promoting a metaphysically physicalist interpretation of scientific data.

Physicalism is appealing to atheists precisely because it dispenses with anything remotely religious, spiritual, or paranormal. However, reductionist physicalism once denied the existence of consciousness, the primary datum of our existence and the only thing we know exists. In some cases, physicalism still does deny it. This worldview has successfully purged from mainstream science any sense of progress or purpose, relegating our existence to luck and predicting our destiny to be oblivion, partly as a response to violent atrocities committed against science by the Church in past centuries.

However, this paradigm is changing, as new data have emerged and are emerging. A new academic discipline called **complexity science** seeks to marry the major scientific fields of biology, chemistry, physics, neuroscience, evolutionary theory, and more. The goal of complexity science is to understand how nature's dynamical systems, or any system composed of interacting components with a variety of possible states, form and evolve. Crucially for metaphysics, which studies reality itself, complexity science examines dynamical systems at all levels, including the universe (Azarian, 2022).

In violation of reductionist physicalism, complexity science has given rise to another option: **informational reductionism**. Under this view, it is information that is fundamental, not matter and energy. However, a problem arises here too. Information is meaningless without the matter that carries it, and so we arrive, ironically, back at **Cartesian dualism**, the kind of duality between the physical and a non-physical "something" that atheistic physicalism sought to erase in its battle against religion. The dualism of consciousness and matter would now, under complexity science, be replaced by information and matter. But dualism carries with it the **interaction problem**, the challenge of explaining how two fundamental metaphysical primitives, consciousness and matter, interact (Mastin, 2009). While this problem is not, in principle, impossible to solve, might we find a better metaphysical theory that covers the intuitive ground of the dualism required for informational reductionism, without posing such an issue?

And so we need another framework by which to describe the universe and reality itself. In this book, we will elucidate a new **"theory of everything"** that sets out to resolve the problems and paradoxes encountered by the physicalist paradigm. Among these will be paradoxes at the quantum level, which we will reconcile with general relativity. Additionally, we will address the relationship between consciousness and matter in a way that solves (does not even entail) the hard problem of consciousness, which is the explanatory gap between mind and the physical. Indeed, the hard problem is insoluble and a problem *in principle* (Chalmers, 2003).

In the end, we will have described the universe as an intelligently self-designed and self-organizing dynamical system, combining complexity science with metaphysical idealism, which claims consciousness as fundamental to reality. From that starting point of consciousness, we will explain the physical world, the results of science, and our own existence as localizations of consciousness. In so doing, we will arrive at a paradigm that delivers both immense purpose for life and far superior logical coherence, internal consistency, and explanatory power. We will discard the nihilism of reductionist physicalism and show that the universe is a computational engine—a *mind*—that both generates and processes information. The entire system is undergoing adaptive transformation in a process of building greater complexity, and life plays a crucial role in this activity. Along this journey, we will also finally reconcile science and religion, finding the reality that underlies them both and discarding the dogmatism in both camps that prevents adherents from seeing beyond their fundamentalism.

Science alone is insufficient to answer our deepest questions about reality. It requires a metaphysical explanatory framework. In this book, we will explore such a framework and present evidence that it is the most promising option on the table today.

This theory does not represent any dogmatic belief system on *my* part. Rather, I write everything that follows with open-minded skepticism about every detail, knowing full well that the theory is not wholly true (much of it is likely wrong). Instead, this piece collates the expert theories and ideas that *currently show the greatest probability of being correct*. However, open-minded skepticism is the best approach for any study of science and philosophy.

Before we get started, we have to ask what role our perceptions play in our ability to understand reality. Namely, do they provide high-fidelity information about what reality is, in and of itself, like a clear window on the world? Or do they lie to us for a very important reason, which we'll then need to fully explain in our theory?

## 2. Can we trust our perceptions?

Do we perceive reality as it really is? The data and even a recent mathematical theorem suggest that we do not. Instead, we evolved to perceive reality in a manner that improved our chances of survival, favoring fitness over truth.

First, let's look at **entropy**, or the degree of disorder in the world, a value which tends to increase without a known limit (this doesn't mean that entropy increases infinitely). Our bodies are a localized attempt to resist the **Second Law of Thermodynamics**. In order to maintain our structural integrity in the face of entropy, our bodies must extract energy from our environment, which is the purpose of our metabolism. In other words, the reason we eat is to derive from food the energy we need to resist the increasing disorder of the world around us. Indeed, life is nature's way of resisting entropy by creating a self-organizing system that, through agency, can maintain itself. It requires

energy to create complex order in the face of disorder, and an agent with causal power over its environment can change that environment to make it easier to acquire the energy it needs (Azarian, 2022).

How is this relevant to the reality that we perceive? If our perception of the world was a perfect representation of reality as it is, which has no limit to its ever-increasing levels of disorder, we would quite literally dissolve. Our bodies would lose all structural integrity, because our internal state would have to match the entropy of the external state. No amount of energy could sustain us. Since we are not, in fact, puddles of goo, our perceptions must not capture the truth of reality, but instead show us an encoded inference that corresponds to what reality is. That encoded version of the world is incredibly useful for our survival and for our ability to interact with our environment, but it is not a literal match of what is really there (Friston, 2013). In other words, our perceptions show us the **image** of reality itself, whatever that may be. Note that the word "image" here encompasses not just sight but all sensory input.

The real thing is too complicated for us to handle.

How did we develop this encoded version of reality, so as to avoid losing our structural integrity? A natural next step would be to search for the answer in evolutionary processes. Indeed, we find a mathematical theorem, derived from experiments in **evolutionary game theory**, that supports the assertion that we must encode reality through our perceptions in order to survive.

In these studies, researchers mathematically proved that an organism capable of perceiving reality as it truly is would be out-competed 100 percent of the time. This result indicates that perception's evolutionary purpose is not to give us an accurate understanding of reality via our senses, but rather to give us an image of reality that is most conducive to our survival fitness. **Fitness**, as we'll discuss in depth later on, measures the stability of an organism, telling us how well it can extract energy from its environment to sustain itself against entropy. The world as we perceive it is a representation of the underlying reality, and that representation makes it possible for us to "use" reality in an easy enough manner for us to maintain stability. The researchers commonly reference the metaphor of a computer–your desktop is the image, or representation, of the underlying 1s and 0s that are the true reality. However, if you had to work with 1s and 0s to type your emails, you would never get anything done without expending tremendous personal energy. Instead, you have an interface with which to work, and this interface is tuned for ease of use relative to the "truth" of the computer. When mapped onto the world, it becomes clear why evolution would favor an encoded version of reality over the truth of reality–perceiving and working with reality as it truly is would drive us to extinction, because we could not extract nearly enough energy to maintain our stability (Hoffman & Prakash, 2014; Hoffman, Singh & Prakash, 2015; Hoffman, 2019; Prakash, Fields, Hoffman, Prentner, Singh, 2020). Further, each species of organism encodes reality differently, based on the specific survival challenges it faces from its environment.

A third complication involves the nature of the brain itself. Neuroscience does not yet fully understand the hemispheric differences of the human brain, but there have been revelations in how the two hemispheres interpret the world and then combine those interpretations to effectively create the perception we experience. For instance, we can now dispense with the popular oversimplification that the left-brain is logic-oriented and the right-brain is creative. Indeed, both hemispheres are quite capable of both logic and creativity. There is, however, a key difference in the ways in which the hemispheres pay attention. Namely, the **right hemisphere** takes in the whole, after which the **left hemisphere** gives attention to details, preferring to break down the whole into pieces for individual analysis, before that information "goes back" to the right hemisphere for reintegration into the previous understanding of the whole. As it turns out, it is the right hemisphere that demonstrates a more immediate relationship with physical bodies in our environment—including our own—and the reality that we perceive via our senses. The right-brain is the last stop of all our experience, whereas the left-brain helps the right-brain gain further insight on the details of the world in order to enrich its interpretation of sensory inputs. Again, both hemispheres utilize logic and creativity to complete their respective tasks, but there is a marked difference in the priority given to detail or to wholeness. They display fundamentally different "personalities" and, in this way, further affect our perception of reality depending on which hemisphere is dominant (McGilchrist, 2009).

These converging arguments show that **naive realism**, our predisposition to believe that we objectively perceive reality with high fidelity, is demonstrably false. Whatever reality is, we perceive it as an encoded representation that has been fine-tuned via evolutionary processes to give us the best survival fitness at the expense of truth. As our environment continues to change around us, so too will evolution update this encoded representation as time goes by.

If we cannot trust our perception as we try to understand what reality is, in and of itself, we will need a different method of evaluation in order to support the conclusions we will draw.

## 3. Evaluating metaphysical theories

Classical physics tells us how nature behaves. Borrowing a metaphor from the previous section, it is the study of the desktop. To master your use of the computer, you need to predict the behavior of the desktop, but you don't need to know what reality underlies that desktop. This is the benefit that the natural sciences provide us. By contrast, metaphysics tells us what nature is, in and of itself. In other words, it's the study of the 1s and 0s underlying the desktop.

But if we can't trust our perceptions, we run into a roadblock: how would you apply the scientific method directly to the question of what reality is, in and of itself? Our usual

method of hypothesizing, observing, and replicating will only tell us about the representation of reality, and that is not what we're asking about. To address this challenge, philosophers evaluate ontological theories by the following set of criteria, which encompass all of the empirical data from the sciences, but must necessarily go further.

For any given metaphysical theory, or indeed any theory of everything:

- **Parsimony**: Is this the simplest theory in terms of the assumptions and claims it requires in order to explain reality? Think of **Occam's Razor**, the rule that essentially says that the simplest explanations are usually the most correct. In other words, we want to be as skeptical as possible.
- **Explanatory ROI**: For the cost of the assumptions that the theory requires us to make, does the theory explain all of reality (or at least explain more than the other theories)? Does the ratio of assumptions to explanatory power net us a "profit" or a "deficit?"
- **Logical coherence**: Does the theory's logic follow from one assertion to the next?
- **Internal consistency**: Does the theory contradict itself anywhere?
- **Empirical support**: Is there sufficient empirical evidence to back up the logic of the claims the theory makes?

In metaphysics, we study the nature of nature. The natural sciences are essential to this conversation, because for any ontological theory to be a serious contender, it must explain all of the data from science, with no exceptions. Criteria 2 and 5 ensure that this requirement is met. However, the natural sciences are not sufficient by themselves. We therefore need all five criteria to conduct our study of reality, as it truly is.

The goal of a metaphysical theory is to identify a **reduction base**, defined as the most fundamental building block(s) of nature, by which we can explain everything else and beyond which we cannot reduce reality further. To explain something in nature is to reduce it as far as it can go. For instance, we can reduce the human body to organs, organs to tissues, tissues to cells, and so on. Every theory of reality will, at a certain point, reach a bottom level, which itself cannot be explained in that same manner without falling into infinite regress. Examples of infinite regress would be endless circles of questions such as, "If God created the universe, who created God?" Or, "What was there before the Big Bang?" When you reach that point, you've arrived at the reduction base.

*A theory of everything must then address the problem of infinite regress and explain the origins of that reduction base without relying on reduction to do so.*

Ontological theories seek to define a reduction base that, based on the five criteria above, explains the rest of reality. Put another way, reality reduces to the reduction base, which consists of **primitives**. For instance, some physicalists take subatomic particles or quantum fields as the primitives in their reduction base, whereas idealists take consciousness itself as the one primitive in its reduction base.

I will mention here that, throughout this work, we will use the above mainstream approach of reductionist metaphysics to craft an argument for our theory. However, in the end, we will dispense with reductionism altogether. For now, keep this mainstream approach in mind as we build our case.

One more important point to make is that science is ontologically neutral. Despite the fact that the mainstream science of today, particularly in the western hemisphere, assumes a kind of physicalism or materialism, each of the metaphysical worldviews, including the staunchest rivals of physicalism, claim to account for all of science. It is for this reason that we must use the above criteria to evaluate the theories, all the while leveraging science to inform our assessments of each theory's parsimony, explanatory payoff, logical coherence, internal consistency, and empirical support.

Every single metaphysical theory, including mainstream physicalism, is unfalsifiable. I'll say that again, because it's one of the most common misconceptions I see when observing people debate this field. Falsifiability is not a criterion for evaluating metaphysical theories, because all metaphysical theories are unfalsifiable.

That is why we use the five criteria I listed above, which encompass all the falsifiable scientific theories. Falsifiability is critical in the natural sciences, but we are not doing natural science here. Different rules apply, and this does not invalidate metaphysics as a valuable academic field of study that works hand-in-hand with science. To understand reality, it is going to take the marriage of these various disciplines, each with their own values and criteria.

As with all theories of everything, we will be challenging many current paradigms in an effort to resolve paradoxes that science and philosophy have encountered under those mainstream worldviews. Therefore, open-minded skepticism toward any new theory should be the default position of any reasonable person, and it is with that mindset that we will approach this project. We will detail our theory, while at the same time avoiding a dogmatic insistence that all of it, or even part of it, must be correct. History has proven that science and philosophy always achieve the best theories/models *for any given time*, only to be eclipsed by future generations who build on those foundations.

Having said all of that, let's begin our theory of everything and elucidate the melody of reality.

## 4. Origins of reality

We'll start by defining reality and covering important logic, before we dive into the specifics of what reality is doing and how its contents appear from our perspective. Much of this section will sound highly conceptual, but it is ground we must trod. I promise that in subsequent sections, we will take this theoretical language and turn it into the hard science of our daily experiences in spacetime.

*Reality is the set of everything, such that nothing else exists that is not reality. Additionally, nothing exists outside of reality, because to claim the existence of anything beyond everything is illogical. As such, our theory will explain everything that exists.*

We will describe reality as a system. As the set of everything, reality encompasses subsets, which exist within reality, and there are no supersets to reality. Rather, reality is the superset of each of the subsets within it, including our own experience in what we perceive as spacetime.

In the beginning, there was nothing, or the absence of anything. Inherent to nothing is the infinite potential for something. This infinite potential represented maximum uncertainty, or maximum *entropy*. We'll call this initial state of reality **alpha entropy**.

Given infinite potential for something to exist, it was inevitable for something to exist, and so nothing became something. This change in state represented a reduction in entropy and an increase in information. In this sense, something "was."

To be is to be aware. Awareness is **phenomenal consciousness**, in this case, at the level of reality itself. Therefore, this theory of everything chooses idealism as its metaphysics, meaning that it takes consciousness as the reduction base and as the substrate of all reality. It is a monist theory, so consciousness is the only primitive that the theory will reference.

This **Fundamental Mind (FM)**, like our individual, localized consciousnesses, is an information system. As a rule, information systems evolve toward lower entropy and higher organization via the integration of information, which is the content of the system. As such, information is the *content* of FM. Again, entropy in FM is defined as random possibilities, or the uncertainty derived from the essentially endless potential of the alpha entropy state and near-alpha entropy states.

FM moves away from its alpha entropy state, reducing its entropy as an information system, through the **fundamental process of evolution (FPE)**, which sees information (the contents of FM) self-organize into sequences and patterns. The FPE is also more formally called the **emergent complexity theory**, and emerges from any complex system that possesses any number of alternative choices and possibilities of states. Since most readers will likely find the term "evolution" more accessible and intuitive than "emergent complexity," I will call this process the FPE throughout this writing. One can also think of it as universal Darwinism applied to the most fundamental level of reality.

While the same FPE occurs in our Earth's biosphere as what we call "evolution by natural selection," our theory defines **evolution** more generally, as progressive increases in organized stability and decreases in entropy. This can occur in any type of information system, regardless of substrate. The FPE is recursive, in that it creates layers upon layers of organization. The process repeats again and again at every level of reality. Physical matter always evolves to a lower energy, higher entropy state. Consciousness always evolves to a lower entropy state.

In the FPE, entities, agents, and (more generally) systems, explore all possible states and configurations of being, either external or internal, to find the "fittest" option, based on internal or external selection pressures that drive the process. In the case of consciousness, that would be the configuration with the highest possibility for order and the lowest entropy. For FM, which started out as nothing, the only other possible state to explore was something, or raw awareness. As such, it began with binary states; it could be something or nothing, at rest or excited, disturbed or undisturbed, still or oscillating. As we've seen in our own advances in computing, a starting point of binary states can lead to tremendous diversity of information in the end. Since FM is everything, with nothing external to it, the subsequent state change was internal.

As we'll see later on, our sense of time within our **physical universe reality (PUR)** is an artifact of our perception, finely tuned by selection pressures that cause biological life to follow a similar process (evolution by natural selection). However, when FM changed its state from nothing to something, it became aware of that state change, thereby experiencing an emergent **proto-time**, which is part of the "rule-set" of FM that facilitates the FPE and allows FM to organize information into patterns of states.

Proto-time is not the same as the time that you and I experience as part of PUR's spacetime (which we'll cover in-depth in a subsequent part of the theory). What is important to note about time more generally is that it emerges from changes in state. We experience an external time, which is based on changes of state that are external to us in space, and an internal time, which is based on changes of state within our own **mind-space**.

We use external time to mark how long it takes for things outside ourselves to change states, such as the day-night duality, the phases of the moon, or the inundation of the Nile River. These markers are external to all of us, and so external time appears to be part of an objective physical universe, the PUR, that we all share. We can then coordinate our external time with each other via these external state changes around us.

Internal time, however, is unique to each conscious agent's experience at any given moment of external time, because internal time is based on an individual mind's changes in state. This is why the flow of time that we experience within our mind is often faster or slower than the shared external time passing around us.

For instance, when you're frantically packing on the morning of a flight that will take you on vacation, your internal states, or the contents of your mind-space, rapidly change. Thoughts, emotions, and perceptions all pass in and out of your attention, or meta-consciousness, quickly as you race to get out the door. It seems as if you "don't have enough time" to get everything done. This expression actually means that you are experiencing your internal time as faster than the passage of external time. And this is indeed the case. Time seems to speed up, not because external time has accelerated (it hasn't), but because your internal time, or the interval between internal state changes, has accelerated. Then, when you finally get to the gate, you have to sit and wait for the plane to arrive. Now, your experience of internal time seems to be the opposite of what it just was.

Indeed, in this situation of waiting and boredom, external time seems to be passing *slower* than before. Of course, the same phenomenon is occurring, now in reverse. Time seems to slow down, not because external time has decelerated (it hasn't), but because your internal time has decelerated.

Since there is nothing external to FM, it only ever experiences internal state changes. Thus, proto-time is the interval between FM's internal state changes, *as experienced from FM's perspective*. In other words, proto-time is FM's internal time.

Therefore, *time at any level of reality is not fundamental to reality, but emerges at the first state change, external or internal, that is experienced by a system of consciousness.*

At the level of reality as a whole, that conscious system, or agent, *is* FM, or reality itself. Similarly, for us as conscious agents within FM, the time of spacetime begins the moment that we first experience a state change, whether external or internal. We all agree on objective measurements of a shared flow of external time because our perceptual experiences of those external state changes are very similar. That is so because our human sense organs give us all, as humans, roughly the same sensory experience of that which is external to each of us. Thus, we can form a consensus. Further, our experiences of the flows of external and internal time can differ. We don't experience proto-time directly; it is only within the perspective of FM itself, which underlies our own spacetime.

We'll explore what spacetime and the PUR actually are later on, when we cover more information about how evolution shaped our perceptions to give us vital information for our survival.

In this way, FM explored possible state changes via the FPE, and each development of new complexity bred even more possibilities for state changes.

FM's state changes evolved from a binary choice (nothing to something) to greater levels of complexity. Patterns of states formed, with near limitless possibilities for patterns of patterns of states. FM explored all of its potential states, and used this "computational" process, along with memory and logic, to give order to its patterns. In the process, the total entropy of the FM system decreased, moving further away from alpha entropy as proto-time progressed.

Proto-time allows for such sequences of state changes to propagate information, thus increasing information exponentially. In this way, a state change can lead to multiple state changes, which can lead to patterns of state changes, which can lead to patterns of patterns, etc. Patterns can coordinate in order to share data and amplify their information, making them more effective. This happens at the *speed* of state change, which is the upper limit on the propagation of information.

We can use the behavior of neurons in the central nervous system (CNS) as a metaphor for these communicating patterns. When a neuron changes its state, it can pass information along to other neurons, which then pass it along to still more neurons. In this way, the information propagates and is amplified, reducing the entropy of the entire CNS in the process and correlating with a conscious experience in the mind. It is no coincidence

that the structure of the CNS, which is correlated with our own consciousness, bears resemblance to the structure of reality, which we've claimed to be a "mind," or consciousness at the fundamental level of everything.

Through this sequential propagation of information, FM learns. **Learning** is an exponential process in that the more that you know, the more that you *can* know and the better you become at learning. Knowledge builds on itself, but requires a sequence of state changes in order for the FPE to facilitate the ability to learn. As a result, the level of order rapidly increases, while the level of entropy rapidly decreases, as both the capacity for learning and the amount of information learned (organized and stored) increase together.

It is important to understand that none of these words, such as "speed" or "communication," is meant to imply space. Later in this theory, we will show that space is not fundamental. Rather, these words are meant to describe the speed of thought and the interconnectedness of FM's mental contents, which can evoke each other just as our own thoughts, emotions, memories, and perceptions do, in FM's mind-space. What we are discussing here is how quickly FM can access information within itself. The space of our spacetime will enter into the picture soon enough.

*This learning process continues and is the central goal of FM.*

That it has a goal implies that FM has **free will**. This must be so, because consciousness necessarily is able to make choices. Its capacity to choose will depend on the number of decisions it is able to process in its mind-space, but choice is an inherent property of consciousness. Therefore, FM has the power of choice, which we would call free will.

Indeed, FM is a **self-deterministic** reality *from its own perspective*. It creates itself, it evolves itself, it acts upon itself, and it experiences itself.

***If reality were a line of musical notation (a melody), it would write itself, evolve itself from single notes to chords (of increasing complexity, harmony, and variety), play itself, and listen to itself.***

Logically, reality must be self-deterministic. By definition, there is nothing external to it. In other words, it has no external state. It *does* have an internal state. Therefore, anything that happens in reality takes place within itself.

It is logically incoherent to posit that something external to reality causally set a deterministic (or superdeterministic) chain of events in motion at the very beginning, as would have to have been the case if the universe was merely the dead, meaningless mechanism that reductionist physicalism claims it to be. Any given chain of events *can* be set in motion, but it must be triggered by reality itself, within itself.

As a result, reality is self-deterministic from the perspective of FM.

The free will of FM is the driving force of that self-deterministic process. It *is* the FPE, the rule-set that guides the system from alpha entropy to its end state, which we'll call **omega information**. Such a goal requires that FM is not only phenomenal consciousness, or raw awareness at the universal level, but also that it entails a degree of

**meta-consciousness**, or the awareness of its awareness. FM's meta-cognition is not the same as our own, because our cognitive abilities in part evolved under the unique selection pressures of our subset system, which exists within the superset system that is FM. As a subsystem, we have an external state *and* an internal state. As such, our selection pressures differ from that of FM, since we are within FM and have external pressures that direct the FPE as applied to us. That a subset displays a property of its superset is trivial, but that fact does not mean that the property will manifest in the same way at both respective levels. As such, we should not anthropomorphize FM by projecting our mental processes onto its own.

The awareness of its awareness allows FM to have a goal, which is to evolve and thereby increase the organization, or quality, of its contents (information) through integration, converting random possibilities into patterns in sequential intervals (proto-time).

We've covered a lot of material, but the origins of our theory have required only two assumptions. First, we assume that consciousness is the primitive of the reduction base. This is the most controversial assumption, due to the fact that it is a metaphysical commitment. Second, we assume that evolution occurs at all levels of reality. In future sections, we'll see that the Second Law of Thermodynamics and the counterplay between information and entropy directs the progression of the universe. Therefore, our second assumption is not so controversial at all. Indeed, as complexity science further erodes the worldview of traditional reductionist physicalism, this second assumption will become less of a burden and more of an advantage for our theory, which must provide sufficient explanatory ROI to justify the above two assumptions.

The organization and quality of the entire FM system increases as its contents work together to build complexity. That exponential growth is the result and purpose of the FPE, ultimately evolving a single musical note into a symphony of perfect complexity.

We, as information subsystems of the FM system, play a role in writing, evolving, playing, and listening to this melody of reality.

# 5. Complexity science and thermodynamics

We're now going to jump into our perceived spacetime reality, the PUR. Later on, we'll explain the specifics of what spacetime actually is, but it will help us explain those details if we start connecting the highly conceptual material we've just discussed to the universe that we observe via our perceptions.

Complexity science looks at, you guessed it, *complexities* in nature, called dynamical systems. A **dynamical system** is one in which its components interact. In this way, the collective behavior of the interacting components leads to the evolution of organisms, ecosystems, consciousness, and civilizations. The universe is a self-organizing dynamical

system, and is moving not toward disorder and heat death, as reductionist physicalists predict, but rather toward increasing degrees of order and knowledge of itself.

Dynamical systems can be further classified as **adaptive complexities**, which adapt as their environments change, or **non-adaptive complexities**, which do not. For instance, life, with its evolutionary processes, is an example of an adaptive complexity, whereas the structure of a crystal formation is a case of a non-adaptive complexity. The true depth of adaptive complexities, ranging from basic organisms to entire societies, could not be fully grasped until this century, when computer modeling allowed us to examine these systems and how they organize. Data from complexity science shows us that the universe is a computational machine and an adaptive complexity all its own. Far from careening toward random disorder, this process of integrating information is just beginning, and life and consciousness play important roles.

While complexity science still favors a physicalist approach at worst and a panpsychist approach at best, it is fully compatible with an idealist metaphysics. In fact, idealism brings the findings of complexity science together and avoids the paradoxes that physicalism and panpsychism introduce into the picture. After all, another word for a computational machine, an entity that processes information, is a *mind*, and that is precisely what idealism argues that reality is.

The traditional understanding of the Second Law of Thermodynamics is that entropy must increase in the universe over time. Statistically speaking, this is true for closed systems. However, what is often lost in this definition is that there are multiple kinds of entropy. The universe can grow more ordered if **free energy** comes into an open system, like the Earth, and is converted into **thermal entropy (waste heat)** via a process of creating and maintaining order. This is exactly what life does, whether it be plants taking in the Sun's free energy, or animals eating the plants, or animals eating each other. All of these organisms metabolize energy to stay alive and keep their structural, ordered integrity. Life is an example of order that uses energy to resist entropy. Specifically, life can reduce **configurational entropy**, or disorder, so long as it can expel the byproduct of thermal entropy into its surroundings. This is why we give off body heat, which you can call the "exhaust" of our metabolizing process. Similarly, life creates even more order by using energy to produce civilization, culture, and technology. As long as there is sufficient free energy available, life can continue increasing order in the universe while simultaneously increasing thermal entropy. As such, the Second Law of Thermodynamics does not require an inverse relationship between order and thermal entropy in the universe, at least until the supply of free energy runs out. Ultimately, this will lead to the state of omega information that we already discussed, because any increase in information/order decreases configurational entropy (uncertainty) and increases thermal entropy, the waste product of the work of creation. At the point of omega information, the consciousness system (and its subsystems, the individuated conscious agents) will have "learned" all it can within the constraints of the PUR.

The values of information and thermal entropy can predictably increase together, and this is precisely what we see in the data from complexity science. The Second Law of Thermodynamics, then, has an implication that there is an energy cost for life, and thus the universe, to create order and complexity out of disorder.

Remember, all of this applies to the workings of the PUR, within spacetime. It is not fundamental. The PUR is what the fundamental mental contents and processes within FM *look like* from our perspective and to our perception, as individuated subsystems of consciousness within FM. More to come on this point.

The universe's goal is not to reach heat death as quickly as possible, but rather to compute, or learn, as quickly as possible. As it computes and integrates information in the form of complexities, the universe self-organizes via the laws of physics, evolution, and life.

The integration of information of a system can be measured with the value of Φ from **Integrated Information Theory (IIT)**. The higher the value, the more information that system contributes to FM. Each of these complexities is a subsystem within the full FM system, so the integration of information within each subsystem improves the quality of consciousness in the entire system. As such, the universe is actually becoming more orderly. It has evolved life and consciousness, and along with those, the ability to integrate more and more information. The universe seems to be evolving to "know" itself, through us. That might sound pseudo-scientific or spiritual, but remember that we *are* the universe. Whatever it is, in and of itself, we are part of it and made of that same "stuff," in and of ourselves.

Thus, life and consciousness are not cosmic accidents in this view. It makes perfect sense that the universe is fine-tuned for life, because life and consciousness are part of how this computational universe comes to know itself. In other words, **abiogenesis**, the process by which life arose in the PUR, was inevitable, not a product of random chance that requires something as radical and unparsimonious as the multiverse theory to explain.

Origin of life experts examining the evidence for **non-equilibrium thermodynamics** now believe that, wherever the conditions for life exist, life will necessarily arise. This is a dramatic departure from reductionist theories of abiogenesis, which state that the origin of life was random chance, so unlikely that it should not have happened at all in the entire existence of the universe. It is now hypothesized that life begins when energy flows through a simple system of interacting, integrated chemical information, causing the system to rearrange itself to be able to extract more energy, so as to extend its ordered state. This makes that system a suitable "avatar" for FM to experience its internal contents from within a perceived physical universe, complete with spacetime. In other words, it allows FM to learn, thereby decreasing its entropy by exploring all possible variations through its individuated consciousness subsystems.

*The PUR is an entropy-reduction school.*

A living organism can then be described as a **dissipative structure**, a self-organized system that "converts" free energy coming into an open system into entropy, which is the

byproduct of the system's work. Dissipative structures also include hurricanes, for instance, which form when there is a gradient between warm water and cold air. Nature will always correct a gradient, so as to reach thermodynamic equilibrium, as the Second Law of Thermodynamics entails.

Therefore, under this theory, abiogenesis could have been the result of nature generating a dissipative structure to correct a thermal or chemical gradient. Life, then, is a thermodynamic phenomenon, another energy flow system that self-organizes in greater complexity, following the process of evolution by natural selection to pass on the traits that ensure the greatest chance of survival, which in turn maximizes both order creation and the reduction of configurational entropy. Given enough time, the emergence of life for this purpose in nature's computation process would be inevitable. Further, the complexity of a biological dissipative system following an evolutionary process would continue to grow, leading to networks of such systems, such as the biosphere and entire societies of organisms (Azarian, 2022).

Society itself and the cooperation between organisms are critical to the advancement of FM's goals. By contrast, anything that hinders that cooperation is antithetical to our purpose for existing.

In 2015 and 2017, researchers finally showed mathematically a computer-simulated mechanism by which energy-driven self-organization of molecules, the essential occurrence for abiogenesis, could happen according to thermodynamics. Specifically, molecules self-organized into arrangements when researchers introduced a thermal or chemical gradient. Over time, the molecules adapted to better absorb and then dissipate the energy they received, a process that the researchers called dissipative adaptation, which elucidates evolution's role for organisms in the biosphere (England, 2015). Other studies, both before and after, produced similar results.

Living systems are both informational and computational, thus bringing us to IIT's explanation of consciousness. If a system integrates enough information through a computational process that feeds on free energy and outputs entropy, then that system is conscious. It is not that the system produces or generates consciousness. Rather, IIT's $\Phi$ value, which we'll discuss in-depth in a future section, provides a heuristic for the capacity of choice and cognition of a system. The base awareness, or phenomenal consciousness, of all conscious agents is the same subjectivity, because it is really FM itself experiencing a subset of its own contents through the perspectives of those agents. However, different types of agents, ranging from simple to complex, will have varying capacities that shape the contents of their subjectivity, and thus also shape the information that FM gleans from "playing" the game of life as those agents.

As a metaphor, think of the difference between playing a AAA open-world MMO-RPG with a complicated interface and character. The graphical capacity and the amount of information that you, as the player, can acquire via the experiences of your game avatar will be significantly larger than if you played an 8-bit independently made game with

a smaller graphical capacity and simpler character. In both instances, it is your subjectivity that is playing the game through the perspective of the character. However, the limitations and parameters of the game determine the information that is added to your subjectivity by the experience of playing. The same applies to FM when it experiences the physical universe and spacetime, the "game world" of life, through the perspective of a human versus, say, a bat.

Evolution drives this process, selecting for the fittest traits in the fittest species, so that life will persist and continue creating order. **Agency** is the defining characteristic of life and what separates a living thing from a static object. Agency is, itself, a product of the information stored within living organisms. As such, because we are the universe, our agency is the universe's agency—we are the universe "waking up" and coming to know itself. Evolution is the mechanism by which the universe ensures this awakening continues and becomes more complex. The laws of physics are not only fine-tuned for life, they necessitate life (Dempsey, 2022).

We've already defined life as a type of dissipative structure and adaptive complexity within our physical universe and spacetime. Next, we'll elucidate what life fundamentally is within the larger FM consciousness system and the mechanism by which to solve what has traditionally been idealism's greatest hurdle as a metaphysical theory: the decomposition problem.

## 6. Solving the decomposition problem

Every metaphysical theory has suffered from key problems and paradoxes. For idealism, there has been the **decomposition problem**. It is the question of how a fundamental consciousness, or a mind at the level of reality, splits itself into our seemingly separate, private, and individuated consciousnesses. Without a mechanism by which to explain this localization of FM's infinite subjectivity to the level of the finite, idealism could not offer more explanatory ROI than physicalism, dualism, or panpsychism, its metaphysical rivals.

In this section, we will resolve the decomposition problem by citing **dissociation**, empirically known in the field of psychiatry, particularly in the case of **dissociative identity disorder (DID)**, as the mechanism by which one **host mind** cuts off parts of its own mental contents from the rest, thereby creating dissociated **alters**, or alternate personalities with their own seemingly private, individuated consciousnesses within the host mind.

The above addition of dissociation to idealist theories is the contribution of Bernardo Kastrup, who uses the language of "dissociation" and "alters" to describe the localization of FM (Kastrup, 2019). This is similar to Thomas Campbell's use of the language of "virtual reality" and "avatars" to compare physical reality to a video game and FM to the player (Campbell, 2003). Throughout this theory I will (and have already begun to) reference both of those metaphors and language sets. Together, they comprise the best method of

explaining what is happening within FM. Indeed, Kastrup and Campbell, both of them idealists, are the formative philosophers influencing *The Melody of Reality*. Donald Hoffman will be added to this list of influences in a future section, though the results of his research have already been cited and referenced many times.

*Life arose in the physical universe and in spacetime when FM underwent dissociation and formed alters.* To understand how this works, let's dig into what DID entails.

A patient with DID retains their own mind, but dissociated alters form within that host mind. Each alter can inherit memories and personality traits of the host, even those that have been repressed. As such, what was at first one mind divides itself into multiple experiencing subjects, seemingly with their own separate consciousnesses, names, ages, races, genders, and even physical infirmities like blindness. Each alter has a dissociative boundary, through which experiences from the outside and inside cannot easily travel, allowing for those varied traits and an illusion of being something ontologically different from the host mind. The mental contents of the host mind can still affect the alter, however, the same way that poor performance at work can make someone behave in anger at home. The person compartmentalizes (dissociates from) emotions surrounding the work situation, but those emotions do not just vanish. They still impinge on the other experiences that person has. So, too, can the host mind impact the alters and vice versa. Those mental contents from outside the dissociative boundary modulate the contents on the inside of the boundary.

Kastrup's analytic idealism postulates that we see ourselves as separate conscious experiencing subjects because the universal mind undergoes dissociation, following this exact same model. Mental contents of FM, which we perceive as matter and the physical world, both of which are encoded versions of those mental contents, impinge on our dissociative boundaries. That impingement comes in the form of sensory information about our environment. Evolution leverages that information to increase our chances of survival, through the encoding process, probabilistic inference, and the ways that our left- and right-hemispheres evaluate our surroundings.

In this way, *life is the extrinsic appearance of the intrinsic process of dissociation in FM*. The learning and computational behavior of FM utilize the FPE to help that dissociation persist for as long as possible, ultimately increasing the chances that dissociation propagates through reproduction.

Living bodies are the extrinsic appearance of the dissociated alters, which is why we associate ourselves and everyone around us with their bodies. Because all of what we label the "physical world" is actually mentality under this model, we can influence the world that we, as alters, share. We can also impinge on each other via our bodies, which mark our dissociative boundaries. This allows us to interact with each other within spacetime and the PUR (Kastrup, 2019; Kastrup, 2021c).

We know that dissociation has an extrinsic appearance because, using neuroimaging, you can measure the brain activity correlated to the dissociative process. In

a study that analyzed the brain scans of both patients with DID and of actors who were pretending to be dissociated from themselves, researchers found that there was a differentiated pattern associated with the DID patients (Schlumpf et al, 2014). Since dissociative processes in a human brain have an extrinsic appearance, we would expect dissociative processes at the universal level to have an extrinsic appearance, as well. That is what life is, in and of itself. Death, then, is the end (or at least the substantial weakening) of the dissociative process. You may be thinking that this sounds similar to the **filter hypothesis** from dualism, or the idea that both matter and consciousness are fundamental, and that the brain filters consciousness. When the brain dies, consciousness does not vanish, but rather loses its "radio" to broadcast it at that specific point in spacetime. You'd be right to notice the similarity. Our theory operates *as if* the filter hypothesis was true. It's not actually true, because idealism is a monist theory, not a dualistic one. However, it covers the same intuitive ground as the filter hypothesis, but with a more parsimonious account of the same explanatory result.

DID provides an effective model for how FM splits into different conscious agents within a seemingly, but not actually, physical universe. If a mechanism or phenomenon occurs at one level of nature, it is not a major assumption to say that it happens at other levels of nature, especially if converging data support the conclusion. An explicit model to substantiate this view of reality can be found in dream studies of patients with DID. Research shows that, when a DID patient is dreaming, the host mind can generate a dream world. The alters populate this world as seemingly separate conscious subjects of experience sharing the same "physical" space and time. The dream world appears to the alters' perception as having physicality in spacetime, although the underlying reality of that "matter" is actually mental contents of the host mind. In the dream world, the alters can interact. Research shows that the alters can see, hear, and even attack each other (Barrett, 1994).

## Explaining why dissociation occurs

As we discussed in a previous section, the FPE *is* the will of FM, facilitating its goal of reducing entropy and maximizing order. A dissociated alter is an informational subsystem of the holistic informational system that is FM. In other words, it *is* FM, and any reductions of entropy and increases of order within the subsystem represent those same gains in the system as a whole. Why, then, does FM split itself off into subsystems, each of which also follows the FPE (for the biosphere, the FPE manifests as evolution by natural selection)?

Through the act of creating subsystems, FM is able to follow the FPE to find the most efficient ways of reducing entropy. It can "delegate," if you will. Evolution selects for the least entropic, most stable outcomes for each specific subsystem based on both external and internal selection pressures. The information gained from the trillions upon trillions of alters who have existed (every organism that ever lived) allows FM to reach its

goal both faster and with less of a cost than if it had to do the entire process at its own, fundamental level.

DID tends to afflict patients after they experience great trauma. Trauma creates fear (uncertainty), which is really just *internal* entropy. As such, DID is likely a coping mechanism by which a mind that is now dealing with vastly increased entropy splits itself off into subsystems so as to reduce entropy more efficiently. Since FM started from nothing (maximum, alpha entropy), it has been working to reduce the ultimate level of entropy ever since. Therefore, we can look at dissociated alters (organisms) as individuated, bounded subsets of raw, high-entropy consciousness within FM. In this way, FM uses the dissociative process to create evolving consciousness subsystems (biological adaptive complexities) that follow the FPE to learn, thereby reducing their entropy, which in turn reduces the entropy of FM as a whole.

The role of life, then, is to increase the amount of information created and experienced within FM. We exponentially reduce the entropy of the entire system by our actions as the system's subsystems. Further, we pass on our knowledge through genetics and society, thus propagating information within FM. All the while, the FPE works on us and the rest of the biosphere, finding the most stable combinations of traits to meet our external and internal selection pressures, which tune our fitness. Fitness is really just a measure of how efficiently we reduce entropy for the system.

Therefore, DID gives a 1:1 natural, empirical model with which to solve the decomposition problem, since this is exactly what we're arguing takes place at the level of FM, or reality as a whole.

Next, we'll further explain the relationship between consciousness and matter, first by resolving the debate about the source of human consciousness, then by using evolutionary theory and thermodynamics to show that the PUR is akin to a virtual reality. It is an artifact of the perception of the alters, or the "game" avatars. Converging pillars of science have been pointing to that conclusion for decades. We will put the final nails in the coffin of reductionist physicalism.

# 7. Resolving the paradoxes of human consciousness

## Defining consciousness

There are a multitude of definitions for "consciousness," most of them lacking. I will use the philosophical definitions, as these are the most precise and will allow for the most complex understanding of the topic. As we go along, I'll point out the key differences between these philosophical definitions and other common usages of "consciousness" that you may encounter.

The two definitions we've been working with are of phenomenal consciousness and meta-consciousness.

Thomas Nagel gave us his famous “what it is like” definition of phenomenal consciousness in 1974. As he states in the article, “What is it like to be a bat?”, a thing is conscious if there is “something that it is like” to be that thing. A bat, for instance, has its own perspective on the world, and has experiences that cause it to behave with agency (Nagel, 1974).

In other words, if something has raw subjective experience, it is phenomenally conscious. And a state that is phenomenally conscious is experiential in nature. This includes all the qualities of experience, whether they be **perceptual qualities**, such as color, scent, flavors, pitch, etc., or **endogenous qualities**, such as love, fear, excitement, etc. (Block, 1995).

This definition is typically broad enough for philosophers to apply it to all living things, down to paramecia, which behave as if there is something it is like to be them. In other words, any system that displays causal power over its environment, or agency (which at this point in our knowledge is limited to organisms), is phenomenally conscious.

Indeed, this is comparable to the raw awareness of FM when it changed states from nothing to something, before it developed further cognitive and computational abilities.

Consider the metaphor of waves in the ocean. The waves will be our metaphor for experiences, including thoughts, feelings, and perceptions. Waves are not essential to the ocean, which will be our metaphor for phenomenal consciousness. Waves are patterns of excitation of the ocean. In other words, they are how the ocean behaves. Each wave is dynamic, unique, and can be measured in numerous ways, which makes it *appear* distinct from the ocean. However, if you were to have no waves at all, there would still be the ocean.

Try this thought exercise...ask yourself what is essentially you. Are your perceptions essential to yourself? They can’t be, because they are fleeting and constantly changing. Are your thoughts essential to yourself? Also no, and for the same reason. How about your emotions? Again, the answer is no. Now, imagine removing all of those experiences, your perceptions, your thoughts, and your emotions. What remains? Raw subjectivity, or what it is like to be you (Spira, 2017).

In other words, what remains is *that whose excitation is the experiences of perceptions, thoughts, and emotions*. Or, put another way, it is that whose behavior is the experiences of perceptions, thoughts, and emotions, just the way that waves are the behavior of the ocean. Each experience, like each wave, is dynamic and can be measured, giving it the appearance of being an independent “thing” from the medium in which it occurs. But it is really the same “thing” as the medium, and it is the medium itself that this exercise seeks to identify.

Note that this medium of experience precedes the subject-object relationship that connects you, the subject, to the objects of your experience. It is within this medium, phenomenal consciousness (what it is like to be you), that those subject-object relationships occur.

But what about more complex cognitive abilities that go beyond raw subjective experience? After all, a paramecium's cognition seems quite a bit simpler than a dog's, which is in turn simpler than a human's.

This is where meta-consciousness comes in. You can have an experience without knowing that you are having it. In these cases, our attention is directed elsewhere and, in that moment, we are unable to report on the experience that we are having. But this does not mean that we are not having it. Thus, meta-consciousness is our ability to know that we are having an experience, or to be aware of our consciousness (Schooler, 2002; Chin & Schooler, 2009; Schooler et al, 2011; Winkielman & Schooler, 2009, 2011).

Meta-conscious experiences are a subset of phenomenal experiences. That is, both are experiences that occur in phenomenal consciousness, but when we are meta-conscious of an experience, we direct our attention to a small subset of the total phenomenal experiences that we have at any given time.

Think of a theatre stage, on which is a set that includes a tree at stage-right, a castle center-stage, and a dragon at stage-left. The stage is dark until a spotlight shines on the tree at stage-right. Only the tree is illuminated, but this does not mean that the castle and the dragon have disappeared. It is just that the light is focused on a subset of the set pieces. All of the pieces are on the stage and do not vanish from existence when the light moves away from them. If the spotlight shifts to illuminate the dragon, the tree is still there, even though attention has moved to another subset of the total set.

Empirical examples that you are familiar with in your own life include the following:

- You listen to a podcast about philosophy on a road trip. Upon arriving at your destination, you realize that you don't remember anything that happened on the drive. You had focused your attention on the experiences of hearing the podcast and of your thoughts about that podcast, thus dissociating from your experiences of driving. This does not mean that you did not have experiences of driving–clearly you did, or you could not have arrived safely. But you were not meta-conscious of the driving experiences, because your attention's spotlight was focused on another subset of your phenomenal experiences.
- You don't normally notice that you are breathing unless someone else (me, in this case) calls your attention to it. You are always experiencing your breathing, but you are not always meta-conscious of that experience.
- More complicated are recent arguments that we are never truly unconscious. Rather, recent data suggests that during periods of "unconsciousness," we are not meta-conscious enough to form memories of certain conscious experiences that we have while asleep, under anesthesia, or undergoing an impairment of brain activity. I'll get into these examples in depth later, but for now, consider that we don't always remember the dreams we have at night. Empirical evidence shows we are indeed dreaming in such cases, but that we are not always meta-conscious of those dreams.

You can only form a memory of an experience, which involves first reporting the experience to yourself, if you are meta-conscious of that experience.

It is meta-consciousness to which clinicians and neuroscientists usually refer when they say, "consciousness." In that setting, there is often no distinction between meta- and phenomenal consciousness. That is because the limits of medical technology have traditionally caused a dependency on a patient's ability to report their experiences in order for clinicians to know that the patient is having them. As mentioned above, you can only report a conscious experience if you are meta-conscious of that experience. Thus, there has been significant practical reason for the clinical setting to overlook the sub-division into phenomenal and meta-consciousness, in contrast to the ways philosophers and psychologists define the terms in academic settings.

There is, today, an attempt to circumvent these limitations in a clinical setting with **No Report Paradigms**, which rely on eye-movement, neuro-imaging, and physiological measures as indicators of consciousness to eliminate the dependence on the patient's responsiveness (Duman et al, 2022). For now, the clinical use of "consciousness" remains unchanged.

In the meantime, there results a frustrating conceptual confusion when philosophers, psychologists, and other medical scientists cross paths in discussions about consciousness. That is why, for our purposes in this book, I choose the more academic definitions that offer greater precision of meaning.

To recap, you are always having phenomenal experiences, which are the excitation of the medium of raw subjectivity, phenomenal consciousness, such that there is something that it is like to be you. Further, in your normal waking state, you are always meta-conscious of a subset of those phenomenal experiences, such that you could report on that subset to yourself and/or to others.

## The hard problem of consciousness

One of the most infamous challenges for the mainstream paradigm of today is the hard problem of consciousness, also called the mind-body problem or the explanatory gap. Despite a plethora of advances in neuroscience and neurobiology over the past century, many feel that the hard problem is insoluble. At the very least, no neuroscientist worth their salt would argue that it has been solved, though some, as we'll see, would argue that it was never a problem to begin with. Here is what the hard problem entails…

It is not possible, even in principle, to reduce qualitative experience to the quantitative parameters of observed physical matter, regardless of the arrangement of that matter (Chalmers, 2003). In other words, the mainstream paradigm of today claims that the physical brain, which is an incredibly complex arrangement of matter, generates consciousness. However, we do not understand how, even in principle, that happens. For

example, how can mathematical abstractions, such as mass, charge, and spin, give rise to the experience of what it is like to taste chocolate? The current paradigm has found hundreds of neuronal *correlations* between brain activity and conscious states (the NCCs), but no causal system by which we can reduce any conscious state to specific brain activity.

Further, we know that the brain performs computational, behavioral, predictive modeling, and cognitive functions, such as the integration of information. These are called the "easy problems of consciousness," not because they are easy in the absolute sense, but because we have an idea of how to explain them. We can find neural and computational mechanisms that account for how the brain performs these functions. But why don't those demonstrably useful functions happen in the dark, without subjective experience, as they do in today's computers? From an evolutionary standpoint, phenomenal consciousness seems completely unnecessary at best and even harmful to our survival fitness at worst, since for the brain to generate it, we must extract even more energy from our environment to maintain phenomenal consciousness than we would without it. If it's so costly and not even necessary, why did the evolutionary process select for it? Here we find the hard problem of consciousness (Chalmers, 2022).

It is called a "hard" problem because the dilemma goes deeper than lacking a scientific causal link. There is no way, *in principle*, for qualitative subjective experiences to reduce down to quantitative arrangements of matter that, by definition, do not have any qualities at all. On top of that, everything that we know of the world, including the brain itself, we know through and in consciousness. In philosophy of mind and in neuroscience, we are studying our own first-person perspective, not something outside ourselves that we can observe from a distance.

Indeed, the hard problem may well be insoluble (Chalmers, 2003; Levine, 1983).

## Refuting the theory that the brain generates consciousness

A criticism of the hard problem of consciousness is that it is too conceptual, and thus could be an error in logic on the part of its proponents. However, the hard problem finds substantiation from many empirical studies, which we'll now detail.

A myriad of recent studies show that conscious experience *increases* when brain metabolism/activity *decreases*. Some of those situations include: fainting caused by asphyxiation, G-force-induced loss of consciousness (GLOC), Yogic breathing practices, psychedelic substances, certain brain damage, near-death experiences (NDEs), etc. Even without employing the parapsychological interpretations of phenomena like NDEs that some would use to refute physicalism, one still finds that physicalism can't account for these data.

One solution that mainstream physicalist neuroscience has proposed is that the decrease in brain activity exclusively happens in **inhibitory processes**, thus allowing consciousness to expand. However, if inhibitory processes were the culprit, we would

expect to see brain activity increase somewhere in the brain, and it does not increase *anywhere* during these situations. Rather, the brain activity correlates with a conscious state known as **metastability**, in which the mind undergoes massive integration and massive differentiation all at once. In other words, the "realer than real" sense of these experiences entails a feeling of integrated "oneness" with reality, while simultaneously also reaching the depths of the individual consciousness system. This is exactly what we would expect if dissociation is the mechanism by which FM splits off into private subjectivities. When brain activity declines, which is the extrinsic appearance of the dissociative boundary weakening, we would expect the condition of metastability. Under physicalism, such richness of integration and differentiation would be impossible, particularly under identity theories of consciousness.

Another physicalist theory is that a small system of neurons within the brain may still be active, thus generating the conscious experience. But, again, there is an issue, and this time it is evolutionary. Our brains take about 30 percent of the energy that we metabolize. Our consciousness and powers of cognition come with a massive energy cost that we must pay by finding food. Clearly, the size and function of our brains must have been worth it, from an evolutionary perspective, for us to pay such a price. It is, therefore, illogical to think that the most vivid, "realer-than-real" conscious experiences a human being can have, such as during an NDE or during a DMT trip, could be caused by a system of neurons so small that we can't even detect it. If that was all the brain structure and energy we needed in order to generate such a compelling conscious experience, why would evolution have subjected us to the tremendous suffering it took to develop the large brains that we do have? In short, that is not how evolution works, nor is it how any of the physicalist theories of consciousness work.

Physicalists have also proposed that a release of DMT or another psychedelic occurs in the brain during a traumatic episode, such as cardiac arrest. This could explain the "hallucination" during an NDE. However, neuroimaging studies on psychedelics show that, even outside of an NDE, these drugs *reduce* brain activity, and no increase in brain activity has been measured in any brain region (Parnia & Fenwick, 2002; Urgesi, Aglioti, Skrap, Fabbro, 2010; Carhart-Harris et al, 2012; Cristofori, Bulbulia, Shaver, Wilson, Krueger, Grafman, 2016; Lewis, Preller, Kraehenmann, Michels, Staempfli, Vollenweider, 2017). As such, even if DMT is the cause of NDEs, it still doesn't answer the question. It's also worth noting that, as of this writing, no empirical evidence exists to substantiate the suggestion that such a DMT release actually occurs in the human brain.

Another response is that, yes, consciousness becomes richer, but that is because memory and other cognitive functions are turned off during such states, allowing the brain to focus its consciousness, and this results in the increase in conscious experience. However, what matters is that the *total* richness of consciousness increases during these states. Since physicalism demands that consciousness supervene on the physical, any increase in consciousness must have an increase in brain activity, because brain activity *is*

consciousness under this paradigm. As such, the focusing of brain activity would not be able to account for the increase in experience, even by physicalism's own definitions and claims.

Still another explanation offered is that, in some research subjects who underwent psychedelic trances, **brain entropy** (random noise), increased by a miniscule amount. Specifically, it measured 0.005 on a diversity scale of 0 to 100 (Schartner et al, 2017). It has been posited that this noise generates the rich conscious experience of a psychedelic drug trip. In fact, some consider this the best current explanation from a physicalist point of view. However, we run into the same evolutionary argument–if a miniscule amount of pattern-less brain activity can cause some of the richest possible conscious experiences, what do we need the rest of our brains for? The energy consumed to maintain them would be worthless. Additionally, we only ever see *patterned* brain activity correlate with conscious experiences, so for noise (pattern-*less* brain activity) to be the cause here, we would have to make a very strange exception to that rule. Additionally, not all subjects who had psychedelic trances showed an increase in noise–a few had decreases in noise, *as well as* decreases in patterned brain activity. They still experienced the same richness of consciousness as the subjects who presented that miniscule rise in brain entropy. One white crow is enough to disprove the claim that all crows are black, so to speak.

Note that it is phenomenal consciousness that poses the greatest hurdle here. It seems obvious that we can create, say, a computer system that can perform many of the cognitive functions and information integration of our brains without the need for phenomenal consciousness. Why, then, do we have it? Why don't those computations happen in the dark? Not even learning, one of the primary avenues to achieving higher level **artificial intelligence and machine learning (AI/ML)**, requires consciousness. Building on the point made above about the energy cost of running our brains, phenomenal consciousness seems like a complete waste of energy from an evolutionary perspective, since it is not needed in order to perform the necessary functions of cognition, which do, in theory, provide a survival fitness advantage.

Clearly, the mainstream thinking is off somewhere, and that is why our theory rejects physicalism and instead takes idealism as its metaphysics.

Additional, more specific criticisms, focus on the **identity theory** of consciousness, the idea that brain activity *is* consciousness. For there to be a 1:1 relationship between conscious states and physical states, neuroscience would need to prove that a certain brain activity *is* a certain conscious experience. For instance, we would need to mathematically show that Brain Activity A is the taste of garlic and Brain Activity B is the sound of a jet engine. Further, we would need to be able to replicate those conscious experiences in a lab setting by triggering those specific patterns of brain activity. As of now, we do not have a single example of such 1:1 mapping, nor even a good idea of how to go about it (Hoffman, 2019).

**Eliminativism/illusionism**, another mainstream physicalist attempt to remove the hard problem, also claims that consciousness *is* electro-chemical processes in the brain, and the idea that it is anything more than that is but an illusion (Dennett, 1991; Dennett, 2003). Of course, the logical counter to this line of thinking is that consciousness can't be an illusion, because an illusion is, itself, an experience. Since you can't have any experiences without consciousness, you would need consciousness in order to be fooled by the illusion. Eliminativism then becomes incoherent, because it denies the existence of the very fundamental datum of existence, the one thing we know to exist. In essence, it presupposes the thing that it says does not exist (Harris, 2019).

A better physicalist approach is that espoused by Christof Koch, who once called Dennett's eliminativist/illusionist view a "desperate solution to the mind-body problem" since "the majority of scholars accept consciousness as a given and seek to understand its relationship to the objective world described by science" (Koch, 2018). Koch set out to find the mechanisms in the brain that trigger a conscious experience. In particular, he looks for the minimal **neuronal correlates of consciousness (NCCs)**, qualifying the term with "minimal" since the entire brain could be considered one of the correlates. Koch's approach is to look for the impacts on consciousness of changes in various brain regions. For instance, if parts of the cerebellum are lost due to stroke, a patient loses no aspect of their consciousness. Through his research, he has narrowed the search for the "seat of consciousness" to the posterior cortex. Studies going back into the 20th century show that when even a small region of the posterior cortex is removed, patients lose conscious content, such as the ability to recognize a face or see colors. Clearly, that area correlates with experience. The question remains how consciousness could *arise* from the posterior cortex.

For this, Koch points to Giulio Tononi's Integrated Information Theory (IIT), on which he too has worked. Recall that IIT is a scientific theory that, while still in development, shows the potential to predict which physical systems, whether biological or synthetic, could become conscious. IIT looks at the brain's ability to take in a variety of sensory information and unify, or integrate, that information into a single felt experience. The key is in a threshold, Φ ("phi"), at which point the degree of integration and the complexity of the system are sufficient for conscious experience to arise. Each conscious experience is intrinsic, according to IIT, existing only for the subject and having a structure and specificity that make it distinct from other conscious experiences. It is also unified, in that separating the experience into its parts would destroy the experience.

IIT postulates that any mechanism that encodes cause-and-effect relationships (information), such as state changes, will have such properties and will thus be conscious. In other words, there will be something that it is like to be that system from the inside.

Consciousness, then, is intrinsic causal power associated with complex mechanisms, like the human brain, that meet the Φ threshold, which quantifies consciousness.

This quantification has immensely positive implications for the clinical setting, to say nothing of philosophy, as it can help determine when, for instance, patients in a vegetative state are actually having conscious experiences. The larger the value of Φ, the more intrinsic causal power and the more consciousness the system displays. The human brain's Φ value is very high, due to its enormous connectivity. Another major advantage of IIT is that it is a mathematical theory of consciousness, in some sense demystifying the phenomenon for researchers.

The fact is, Φ is currently a heuristic, not a causal mechanism. While Φ gives us a way to measure a system's capacity to integrate information, it still does not provide a complete causal system for how the brain, and specifically the posterior cortex, generates consciousness at that level of complexity. That it happens to appear at that level is, for now, akin to magic.

Instead, Φ is another incredibly useful correlate of consciousness. But, since it is not a causal system, it does not solve the hard problem of consciousness. Despite IIT's promise and its practical application in a clinical setting, it currently does not resolve the question of how qualities of subjectivity, which the theory acknowledges, arise from matter that, by definition, has no qualities at all.

Additionally, Koch has said that, according to IIT, there is no "phenomenal consciousness" or "meta-consciousness," only "consciousness" (Oxford, 2021). As in other neuroscience settings, when the term "consciousness" is used, it means meta-consciousness, and it is *phenomenal* consciousness that presents the hard problem. Therefore, IIT doesn't really address the hard problem at all, but rather gives further insight into the easy problems. For instance, it helps explain why we have a unified experience within our fields of subjectivity, rather than a lot of individual, unintegrated, and incoherent inputs of information flashing in and out of our experience.

Furthermore, while physicalists cite IIT to support their view, IIT can also be interpreted in such a way that it supports an idealist metaphysics. Under such an interpretation, IIT makes far more sense, particularly when idealist metaphysics is combined with complexity science. That is exactly what our theory proposes, as we have already begun to discuss.

In fairness to physicalism, I believe that many in philosophy fail to appreciate just how complicated the brain and its billions of neurons really are. To explain how brain activity could give rise to conscious experience is not as simple as sticking a patient into an fMRI machine, feeding them a strawberry, and finding a small clump of neurons somewhere that is responsible for the taste of a strawberry, like a little factory specifically tooled to manufacture that experience. Rather, you'd feed the patient a strawberry and then have to map the entire brain, with its trillions of little connections, to fully capture the brain activity that could produce the experience of that flavor. In this way, I find it hard to hold it against neuroscientists who give the promissory response that, one day, we will be able to explain how the brain causes consciousness. In the meantime, we're humbled by the sheer

complexity of the thing we're trying to explain, and our technology just hasn't yet caught up.

However, the hard problem of consciousness is a problem *in principle*, and hiding behind complexity doesn't solve it. Indeed, much empirical evidence exists to refute the mainstream physicalist assumption that the brain generates consciousness. Even if it were possible to make a complete copy or simulation of the brain that mapped every single signal involved, you'd still only have brain activity that should not, even in principle, be able to cause consciousness. That brain activity would still be a correlation, not a mathematically elucidated causal mechanism, since the gap between purely qualitative experience and purely quantitative matter would remain.

And that's just the field of neuroscience, which assumes spacetime to be fundamental. Foundations of physics and evolutionary biology point to the idea that physical matter does not have standalone existence outside the observation of a consciousness system, which means a physical brain made of matter cannot generate consciousness, the very thing that renders the physical universe of our perception into "existence."

### Our theory entails no explanatory gap

Fortunately, our theory does not encounter the hard problem of consciousness, because we take consciousness to be fundamental. Indeed, our goal is not to derive consciousness from matter, but to derive matter from consciousness.

Order within FM, in the form of informational subsystems, will need to give us back all of the aspects of the PUR and spacetime that we just covered, including all of science and the brain, itself. That will be the subject of the next two sections.

## 8. The physical universe is a virtual reality

### The logical fallacies of taking the PUR to be fundamental

Why do we believe that we inhabit a fundamentally physical universe that has stand-alone existence outside of consciousness? In other words, why does physicalism feel intuitive even though it is demonstrably illogical?

**Epistemology** is the philosophical study of knowledge itself, asking what it is to know, what it is possible to know, and how much we should appeal to our sensory experience (Steup & Ram, 2020).

Physicalism posits the existence of an objective physical reality outside of consciousness to explain the "images" (used here to encompass not just visual images, but all objects of our sensory perceptions) that we experience in our daily lives. That is, there seems to be an objective physical world that we all share in common. In fact, multiple of us

report the very same features of this world. If I witness a tree fall in a forest, and my friend witnesses it too, then we will both report on the same tree falling in the same forest, albeit from two different perspectives on the same event. This seems trivial. However, it is important to note that these observations happen within consciousness, without which we cannot know anything at all. Everything we know, we know in and through consciousness. As such, consciousness is epistemically fundamental, coming prior to our perceptions of any possible objective physical world. Therefore, the physical world is more of an explanatory model for what we experience through our perceptions than an ontology (Kastrup, 2019).

We must ask whether consciousness can account for the same "images" without the need to postulate the existence of something fundamental besides consciousness itself. After all, if an ontological theory could explain reality through that which is epistemically fundamental, it would score higher than physicalism on the criteria of parsimony and explanatory ROI. Of course, consciousness is perfectly capable of generating a seemingly objective physical world. We do it every night when we dream. To our character in the dream, the world that our mind creates is as real and concrete as the world we experience when we're awake. Thus, a challenge to physicalism has been that other theories, which place consciousness as ontologically fundamental, could be, by default, more parsimonious and do not require us to posit the existence of an entirely new ontological "substance," matter.

A second critique of physicalism targets the logic in its levels of abstraction, ultimately leading it into the hard problem of consciousness. Under physicalism, matter is defined as that which can be exhaustively described by quantities, or mathematical measurements (the equations of physics). These parameters are abstractions grounded in our logic. The axioms on which our logic is built come from our intuition, which is based on our perception. For instance, Aristotelian logic is heavily dependent on staples of our perception such as subject-object relationships. The Law of Excluded Middle, as an example, states that something can be either true or false, but never both true and false and never neither true or false. While quite intuitive, this logical assertion stems from the consistency with which we observe this statement to be true (Vernon, 2021).

But can we trust our observations? Refer back to the chapter citing empirical evidence that we cannot. It has been mathematically shown that evolution by natural selection gave us a sensorium that perceives fitness benefits, not truth. Furthermore, our perception encodes the truth of reality, because the real thing is so entropic and complex that we would dissolve if we directly accessed it. Even the interplay of a human brain's hemispheres suggest that we can't believe what we perceive. The world that we perceive is a useful fiction that we should take seriously, not literally. As such, since the axioms of our logic are based on intuitions that are grounded in our perceptions, we can't take those axioms for more than abstractions, and this means that our logic is limited when it comes

to understanding reality as it is, in and of itself (Hoffman, 2019). This alone refutes the realism that physicalism requires.

Therefore, if the objective physical world is that which can only be described through abstractions, it too is an abstraction. In other words, it is a product of mind. Physicalism then goes further and claims that the abstraction generates the mind, which is, as we've just said, the very thing that produces the abstraction. The logic in this sequence is both incoherent and internally inconsistent.

We start, epistemically, from a world complete with qualities. We then use quantities to measure those qualities. From that point of view, qualities are all we have, and positing anything else requires a leap that must be justified by explanatory ROI. Physicalism flips that sequence, claiming that the abstractions that we use to measure experience *are* reality. It further asserts that those abstractions also generate the experience, which then becomes epiphenomenal. In this way, the description of reality comes before the reality it describes, which is logically incoherent (Kastrup, 2021a).

In the next sections, we will explore the empirical evidence for the claim that evolution by natural selection gave us a sensorium showing us an encoded version of reality, not reality as it is, in and of itself.

## The Fitness-Beats-Truth Theorem

The standard assumption of today's paradigm is that we perceive reality as it really is. As we've already discussed, this naive realism is increasingly in doubt due to empirical evidence and mathematical models that refute its core claim. In fact, evolution did not select for a sensorium that shows us the truth of reality. Instead, it shows us an encoded interface that delivers information about fitness payoffs in the data underlying the interface. That interface is the PUR.

Fitness payoffs are not just based on the truth of reality. Other factors in the standard accounts of evolution by natural selection include the organism itself, its state, its action, and its competitive environment. A fitness payoff for one organism is a death sentence for another, which is why hydrogen sulfide nourishes extremophiles living on hydrothermal vents but kills human beings. Similarly, those extremophiles won't get any fitness from broccoli, but humans do. Indeed, those additional factors are central to the fitness payoff information that an organism receives. In other words, the organism and its state actively participate in defining fitness payoffs. Evolution is not a passive process that happens *to* organisms, solely based on factors independent of them. The result is that, while any respective state of objective reality remains fixed, fitness payoff information can greatly vary.

Therefore, to perceive the true state of objective reality and to perceive an accurate report of fitness are two different approaches to perception, not one and the same. Thus,

the two approaches can compete in evolutionary game theory simulations, and that is precisely what researchers have done.

Donald Hoffman and Chetan Prakash's **Fitness-Beats-Truth Theorem (FBT Theorem)** mathematically shows that an organism with a sensorium tuned to fitness payoffs will outcompete an organism with a sensorium tuned to the true state of objective reality 100 percent of the time. The FBT Theorem uses Darwin's evolutionary algorithm (which can be applied to everything, giving us **universal Darwinism**) to run the games. Universal Darwinism makes no assumptions about the substrate in which the process takes place, which means evolution does not belong to physicalist theories. We've already shown, for instance, how the FPE evolves FM and all of the information subsystems within it. Because evolution by natural selection is a precise algorithm, the idea of the PUR as an interface, or virtual reality, lives squarely in the realm of science, not just philosophy.

Fitness depends on the state of the world, the state of the organism, and the frequencies with which competing organisms adopt certain survival strategies. As such, the interconnectedness of this process creates incredibly complex dynamics that go far beyond the true state of reality alone. The result of the games is that natural selection does not favor veridical perceptions. Here's how it works:

Imagine two sensory approaches, Truth and Fitness. Both are capable of achieving $n$ distinct perceptions in a reality having $n$ states. Truth selects for the most accurate perceptions of the true state of reality that it can, whereas Fitness selects for fitness payoffs and does not perceive any of the objective reality, as it is in and of itself. Again, recall that those fitness payoffs are information about the true state of the world, the organism, the state of the organism, and the actions of the organism.

The resulting theorem that Hoffman and Prakash derive is:

**Fitness drives Truth to extinction with probability at least (N-3)/(N-1)** (Hoffman, 2019).

This holds true even when Fitness is far less complex than Truth. Take human beings and oxygen. If a human has too much or too little oxygen, they die. If they have just the right amount, they prosper. Now, imagine humans had only two perceptions, black and white. A human evolved under the Truth approach perceives the true nature of reality as accurately as possible, and so they see white when there is less oxygen and black when there is more. A human evolved under the Fitness approach, meanwhile, perceives as much as they can about the fitness points available, and so they see white when oxygen gives fewer fitness points and black when it gives more. The problem for the human tuned to the Truth approach should be obvious; they may know when there is more or less oxygen, but they derive no knowledge of the survival benefits and dangers of a given quantity of oxygen. The Fitness approach, by contrast, tunes the other human to know when there is a survival benefit or danger in the same given quantity of oxygen, but it doesn't know how much oxygen is really there in the true state of objective reality. If the human under the Fitness approach looks for more oxygen and sees black, they know that approaching will

increase their survival chances. Conversely, if the human under the Truth approach sees black, they will not know whether approaching will help or hurt them. They will encounter the same problem if they see white. As such, the human with the Fitness approach will outcompete the one with the Truth approach.

Therefore, perceiving the truth hides fitness payoffs, and vice versa. Oxygen is a good example to cite, because we don't perceive it. Instead, our senses give us information about the fitness of the current level of oxygen that we're receiving. We might, for instance, get a headache if the level is too low.

There is a case in which fitness and truth align, but it is rare. If the level of fitness payoff happens to correlate with the truth of the objective reality, then evolution will favor truth. But the odds of this occurring are nearly zero, and drop significantly as the complexity of reality and of perception rises. As such, the Fitness approach drives the Truth approach to extinction whenever they compete, eventually removing the Truth approach from the pool of traits that could affect an organism's perceptual strategies.

Following the logic of universal Darwinism, which has shown beyond doubt that the FPE applies to *everything*, that same logic applies to the entire PUR. We can either perceive the true nature of objective reality, or we can perceive fitness payoffs. The PUR that we experience, including every single detail composing it, will depend on which approach evolution by natural selection takes for us. Since it clearly prioritizes fitness, the implication is that the PUR that we experience through our perceptions, including space, time, shape, color, texture, taste, sound, aroma, and motion, does not describe objective reality when no one is looking.

The FBT Theorem *mathematically* shows, and empirical evidence *observably* shows, that we evolved to have a fitness-based approach, not a truth-based one. Therefore, the PUR is not fundamental, but rather an encoded version of the underlying reality, or an interface designed to show us information about fitness payoffs in a manner that we can use for survival (Hoffman & Prakash, 2014; Hoffman, Singh & Prakash, 2015; Hoffman, 2019; Prakash, Fields, Hoffman, Prentner, Singh, 2020).

## The Interface Theory of Perception

Hoffman's **Interface Theory of Perception (ITP)** follows from the FBT Theorem and finds empirical validation in quantum physics and thermodynamics, both of which we'll cover in depth after we finish with these concepts. ITP also fits with our virtual reality metaphor for the PUR.

Hoffman uses the example of writing an email on your desktop. The email may look blue and rectangular on your screen, but it is not literally and fundamentally blue and rectangular. The underlying reality has none of the shapes, colors, and spatial relationships of the desktop. Rather, the true state of the computer entails transistors, voltages, binary codes, etc., all of which would be far too difficult for you to work with. The energy it would

take for you to use that "fundamental reality" of the email would make your task impossible. The desktop, then, is designed to hide that true nature of the computer and give you an interface, which delivers key information about that truth, but in an encoded form that allows you to work.

*The pixels and icons don't describe the 1s and 0s. They conceal them.*

ITP claims that evolution tuned our senses to be a user interface, just as in the example. You can also use our virtual reality/video game world metaphor instead of the desktop. Indeed, that one is a more accurate representation of what is happening in reality, because a video game world can be more similar to the PUR that we experience. In either case, the interface allows us to do the work that our species must do in order to survive. Spacetime, then, is our desktop, and the physical objects within it are icons. As a result, we're able to survive long enough to reproduce, which is the endgame of the process.

Therefore, shapes, positions, spins, smells, tastes, etc. are the right language for describing fitness payoffs, but not for describing the objective reality underlying the PUR (Hoffman, 2019).

## Explaining spacetime and the speed of light with the holographic principle

Let's build out the specifics of how our perceptions of the PUR encode the information coming from FM (objective reality).

Space and time in the PUR are, as Einstein showed, tightly interrelated, and thus it is best to refer to them as a single entity: spacetime. As we'll see, spacetime is a construct of consciousness and not fundamental to reality. Time in this case will refer to our perception of time, not to proto-time. Instead, consciousness creates spacetime when a set of constraints are imposed upon a subset of FM.

With the **holographic principle**, Stephen Hawking and Jacob Bekenstein showed that the amount of information that a region of space can hold is proportional to the *surface area surrounding* that space, not to its volume. They discovered the holographic principle in relation to black holes, then realized that it applies to any given region of spacetime.

If the PUR is like a desktop or a video game world, wouldn't we expect it to be pixelated? Indeed it is.

A **Planck** is the smallest region of space. Spacetime simply isn't possible smaller than this, defining our perception of spacetime's *resolution*, or the level of detail that renders as the PUR when we measure (observe) the datastream of objective reality (FM). Each pixel of spacetime has the same length, called the **Planck length** (approximately $1.6 \times 10^{-35}$ meters), and the same area, called the **Planck area**, which is the Planck length squared. Hawking discovered that the amount of information that a region of spacetime can hold depends on the number of these "pixels" in the region's surface, not on the number of "voxels" in the

region's volume. Just like the pixels in a video game world appear to be a continuous, 3D surface and environment, Plancks constitute the PUR but appear to us as a continuous 3D surface and environment. Below the level of a Planck, spacetime itself does not exist. As a result, observers have no access to "objects" in "spacetime," but rather work with bits of information written on boundaries surrounding space (Hoffman, 2019).

As physicist Leonard Susskind put it: "...the three-dimensional world of ordinary experience—the universe filled with galaxies, stars, planets, houses, boulders, and people—is a hologram, an image of reality coded on a distant two-dimensional (2D) surface. This new law of physics, known as the holographic principle, asserts that everything inside a region of space can be described by bits of information restricted to the boundary" (Susskind, 2008).

What does this mean for our theory of how FM and the PUR relate? We'll cite Thomas Campbell's MBT Theory for this next section.

Space is a conceptual 3D matrix of imagined regions of physical volume: Plancks, the pixels that define the PUR's resolution and form its structure. This structure, along with sequential increments of time, are the encoded version of objective reality and define our physical experience, through our perceptions, which evolved to show us fitness payoffs and not truth. Spacetime, then, represents (is the image of) a set of constraints placed on transfers of information *within FM* and *between alters*. It emerges from the order within FM, and has both a structural component (space) and a dynamic component (time).

Pixels (Plancks) change state in sequence, a kind of "communication" between them that allows information to propagate through the matrix of space. Pixels can oscillate (change state) at a constant rate in order to keep time. This PUR time is independent of proto-time, FM's more fundamental clock that emerged when it first changed its own state. Indeed, the PUR time can be any frequency that is *less than* the frequency of proto-time.

The smallest time increment in the PUR (one spacetime quantum) must be a positive non-zero integer, $n$, times the smallest time increment of FM time (one proto-time quantum). One spacetime quantum is the minimum time required for a Planck to change state, meaning all of spacetime must move according to that frequency. Information within the PUR cannot travel faster than the speed that will be derived from that spacetime quantum. That speed will equal one Planck of distance (roughly $1.6 \times 10^{-35}$ meters) per spacetime quantum. We have already measured the value of that speed and labeled it $c$, the **speed of light**, which is a constant. Up to this point in science, the existence of constants and why they are what they are remain unexplained. Our theory will finally account for why the speed of light, $c$, is $3 \times 10^{8}$ meters per second, or about 186,000 miles per second.

Therefore, we can use this equation to describe the relationships between the speed of light ($c$), Planck length ($L$), and one spacetime quantum ($t$):

$$\mathbf{L = ct}$$

This should look quite familiar, as it is the same equation as distance = velocity times time ($d = vt$).

When we fill in the equation with what we know, it looks like this:

$$1.6x10^{-35}\ m = 3x10^{8}\ m/s \bullet t$$

The result is that $t = 5.39\times10^{-44}$. In other words, one spacetime quantum, the time it takes for information to propagate across a Planck at the speed of light, is $5.39\times10^{-44}$ seconds.

The speed of light, and thus the speed of information transfer within the PUR, seems instantaneous, because *c* is so much faster than the everyday velocities that we perceive. However, it is far slower than the speed of information transfer in FM, based on the proto-time quantum. There is no space fundamental to FM, and therefore no distance. But proto-time is still required to reflect state changes, since there is an upper limit on how quickly a state can change and thus how quickly information can propagate within FM's "mind-space." That upper limit is far larger than the constraints we encounter in our PUR spacetime.

Remember that spacetime is not fundamental, but rather emerges as part of our perceptual interface, an encoding of information with FM. It must emerge with the following three constraints:

1. The time constraint by which the virtual reality of the PUR is incremented, or the shortest time between cause and effect.
2. The resolution of the "graphics" of the perceptual interface, defining the smallest "pixel" of 3D space, the Planck.
3. The maximum speed at which information can propagate between points in spacetime, or *c*, the speed of light.

*These constraints must be in the form of constants in order to create a homogenous, isotropic interface that allows for accurate reporting of fitness payoffs to the organism that is querying the datastream of FM, thereby rendering the PUR that it experiences.* In other words, the constraints determine the performance of the virtual reality. The constraints compress the fitness payoff information into a form that we can use and correct for errors via redundancy, through three dimensions of space and one of time, which gives us the spacetime that we observe through our perceptions.

Thus, our theory has explained why the speed of light must be a constant regardless of the velocity of the source of that light. You can calculate it by dividing the other two constraints, which specify the information processing requirements of the PUR interface. Einstein's theory of relativity logically follows from the fact that *c* is a constant independent of the source's motion. As we'll show in the next chapter, the above is perfectly reconciled with quantum mechanics under our theory.

It also follows that, while time is a fundamental attribute of FM, in the form of proto-time, space emerges *from* time specifying a constant speed limit on the propagation of information.

If a sequence of adjacent Plancks (the PUR's "pixels"), each with a length equaling *ct*, propagates information by changing states at a rate of one Planck every one quantum of

spacetime, that information propagates at the velocity *c*. Thus, those Plancks produce the attribute of size in the perception of the observer. The datastream underlying the PUR has no size, but it now *simulates* size by applying these constraints to a subsection of FM's consciousness, that of the observer (a dissociated alter of FM). In reality, informational contents of FM exist as thoughts in our own minds do…without space (Campbell, 2003).

Therefore, space is an artifact of your perception, which has been finely tuned by evolution to show you fitness pay-offs rather than the true nature of reality. As such, every object that you see in space will either help or hurt you in some way (even minisculely small ways). But the truth is, there are no objects there. What appears to you as an object is a piece of information in the datastream of FM, part of your external state. As a dissociated alter, you are an informational subsystem of the entire informational system. Therefore, that object in space is the image of a piece of information that will either further your organization (as a subsystem of information) in some way, or reduce it, thereby increasing your internal entropy. Mortal threats are pieces of information that can add enough entropy to dissolve your dissociative boundary.

In other words, space does not bring order to the world, as was assumed under reductionist physicalism. It emerges *from* the order already present within FM.

Distance in space is a hierarchical measure of which things will affect you. In other words, if there is a high probability of an object having some effect on you, then you will perceive it as close. If there is a low probability of the same, then you will perceive it as distant. The same applies to objects in relation to each other *and to other alters* within your perception. For instance, if you see a person on one end of a field and a lion on the other end, the probability that one will affect the other is low. If they get closer to each other, then that probability increases.

*It is not because they are closer that the probability of their interaction increases, but rather it is because the probability of their interaction increases that they get closer.*

Fundamentally, the person, the lion, the field, and you are all information within FM. The person, the lion, and you, as adaptive complexities and informational subsystems within FM, have encoded perceptual interfaces with which to translate the massively complex datastream from FM into usable models about fitness payoffs. Fitness, again, refers to increases in order and reductions of entropy (Musser, 2015; Hoffman, 2019).

In the next chapter, we'll cover the empirical support that ITP finds in quantum physics. We'll then combine everything we've discussed into a summary of reality according to our theory.

## 9. Quantum mechanics is not weird

We've claimed that spacetime is not fundamental and offered evidence from evolutionary biology and thermodynamics to support that statement. Now, let's find converging lines of reasoning from quantum physics. We'll find that a model of reality that

takes consciousness, not matter, as fundamental is the key to resolving the paradoxes that physicalism encounters at the quantum level. Indeed, when consciousness is the reduction base, quantum theory makes sense and comes into alignment with general relativity.

## Local realism is dead: the case for non-locality

In short, we'll be making our beliefs conform to the data from quantum experiments, rather than trying to twist that data to fit presupposed beliefs of physicalism and scientism (Rovelli, 1996). We'll be able to resolve the paradoxes that physicalists encounter when they refuse to accept **non-locality**, because it would violate **local realism**, the claim that physical objects have definite values of physical properties (position, mass, spin, charge) when unobserved, and cannot influence each other faster than the speed of light. Local realism is required in order to preserve the fundamentality of the physical. But quantum mechanics and general relativity both display non-locality, and this has caused many physicists, and particularly the next generation, to declare that spacetime is "doomed."

Einstein's logic in his 1935 EPR Paper showed that quantum mechanics is either non-local or incomplete. In 1965, John Stewart **Bell's Theorem** showed that incompleteness, such as claimed by the **local hidden variable theories**, could not be true. Physicists hoping to preserve locality (to this day) suggest that there exist hidden variables, hypothetical properties possessed by quantum particles that are undetectable but still affect the outcome of experiments. This would, in turn, liberate physics from the results of quantum mechanical experiments that showed non-locality to be true. However, in the words of Bell, "If [a hidden-variable theory] is local it will not agree with quantum mechanics, and if it agrees with quantum mechanics it will not be local" (Bell, 1987; Musser, 2015).

Indeed, there remains no evidence for hidden variables, and Bell showed that the concept was wholly incompatible with quantum theory. As such, local realism is dead, and that revelation is the operative bit of conceptual logic needed to resolve quantum paradoxes. But instead of accepting that the experiments have shown that local realism is wrong, many establishment physicists of the 20th century labeled quantum mechanics as "weird" or "spooky." In fact, it is neither. It is completely natural and logical, but you must take consciousness as fundamental for it to make sense at all levels of nature.

Our approach will be to use much (but not all) of the **Copenhagen Interpretation**, which was given the name "interpretation" after the fact, by physicists who wished to scrub non-locality from physics, despite the fact that they did not (and still do not) have any experimental evidence that would refute Copenhagen's main claims. Namely, that a conscious observer collapses the **wave function**, which specifies the probability of finding a particle in a given position or moving at a given velocity. Until a consciousness goes looking for the particle, it exists in limbo. In other words, the physical universe does not "render" until observed, or measured. Particles that are not being observed or measured seem to

simultaneously exist in multiple places, which is called **quantum superposition**. Instead of having a defined existence in spacetime, these particles, and thus the entire PUR, have a probabilistic existence, which is represented by the wave function. This seemingly strange result of experiments came to be called the **measurement problem**, but it is only a *problem* under physicalism. Through the act of measurement, the conscious agent forces the wave function to collapse into a specific place out of all of the possibilities in the probability distribution (the wave function).

The Copenhagen Interpretation entails an indeterministic universe, which means that the selected state is chosen at random. This is where we depart from it. We have already established that FM is a self-deterministic system, and this will apply to subset informational systems, such as our PUR, within it as well. At the time of Copenhagen, that proposed randomness of this selection of state seemed like a miracle, and thus physicists perhaps rightly resisted it. However, thanks to complexity science and its elucidation of entropy, information, and thermodynamics, we can introduce a mechanism by which FM determines the best possible state, removing the element of miraculous randomness from the Copenhagen Interpretation. We will soon cover the key concept for understanding how a state of the world is chosen at wave function collapse. It is not random, but rather the same FPE at work again, and this new information resolves the former issues with the Copenhagen Interpretation.

At the end of this section, quantum mechanics will no longer be "spooky." We will have used an idealist metaphysical framework to resolve the disputes in the most parsimonious way possible.

Let's look first at **quantum entanglement**. The paradox goes like this: if you produce two particles together, say Photons A and B, they are entangled. This means that you can't describe the behavior of one without the behavior of the other. First, you shoot Photons A and B in opposite directions. Scientist A works at one end of the universe and measures Photon A. Meanwhile, Scientist B works at the other end of the universe and measures Photon B *at exactly the same time*. What Scientist B sees on their measurement depends on what Scientist A chooses to measure. For instance, if Scientist A chooses a specific angle on their polarizer to measure the angular momentum of Photon A, then that will completely correlate with what Scientist B sees. Thus, we have **"spooky interaction at a distance,"** because it seems that either the particles must be communicating, or that the physical properties of physical entities can't exist prior to measurement (Gröblacher et al, 2007; Romero et al, 2011). Both of those options seem utterly impossible under physicalism. The particles can't communicate across that distance in spacetime, because the speed of light is a limit to the possible speed of information, and this "communication" would have to be instantaneous. But under a physicalist paradigm, scientists can't grant that physical entities do not have existence prior to measurement.

This result, also shown by John Bell in the **Delft experiment** and replicated since, refutes local realism.

The paradox is an artifact of the logical errors in trying to take matter as ontologically fundamental. Recall that our perception encodes information from FM into the "physical" world that we experience. Under the current mainstream paradigm of physicalism, we take that encoded version of reality and believe it to be what reality actually is, in and of itself. That is useful for our survival fitness, but it is not the truth. The world is not necessarily ontologically "physical" as we understand that word through our perception. There *is* an objective reality outside of our perception, but it is information within fundamental consciousness that *looks* like matter from our perspective within it. In other words, the datastream from FM only renders as physicality when we observe it, which is fully in-line with the Copenhagen Interpretation's role for consciousness in collapsing the wave function.

If we approach the problem of quantum entanglement and "spooky interaction at a distance" from this change in our metaphysical paradigm, it begins to make sense. Let's look at the scenario in a different context. You watch a philosophy lecture online on two separate screens simultaneously, each showing a different camera angle of the same speaker at the same podium. When the speaker raises their hand, you see the hand go up on both screens at the exact same time. Of course, that's because the perspectives of the cameras may differ, but the underlying reality (the speaker at the podium) is the same for both of those perspectives. Therefore, it is natural and expected that the separate images of that one underlying reality instantaneously correlate. It would be a mistake to assume that either Image A or Image B *is* the underlying reality, and then call it "spooky" when they appear entangled. It would be a further (and frankly absurd) mistake to believe that the only possible explanations for that correlation are that either the screens are communicating with each other, which they clearly are not, or that there are, in fact, infinite screens, one for every possible image, and you happen to be watching the ones that show the two specific images you see. The latter is equivalent to the **many-worlds interpretation** of quantum mechanics, one of the multiverse theories. We'll spend more time on that later.

Next, let's look at **quantum complementarity**. In classical physics, you can find any object's position and momentum simultaneously. For instance, you can specify a car's exact position on the road and its forward momentum at any given instant of time. This is not so at the quantum level.

Let's say a researcher shoots an electron from an electron gun. The researcher can only measure the electron's position or its momentum, but never both at the same time. This gives us the **uncertainty principle**, stating that the more you know about the position of a particle, the less you can know about its momentum (and the same in reverse). Further, the **Kochen-Specker (KS) Theorem** states that no property, such as mass or charge, has a definite value independent of the way that it is measured, and this applies to the momentum and position of the electron in our example. Physicist Leonard Susskind used these theorems and principles to give us **horizon complementarity**. According to Einstein's theory of general relativity, a black hole sucks in space itself. As space is devoured and gets

closer to the black hole, the speed of its flow increases until it exceeds the speed of light. The speed of light is a limit on how fast information can travel through space, but space itself is not subject to that limit. As a result, where space enters the black hole at the speed of light, no information (or light) can escape. This is the **event horizon**, the divide between the inside of the black hole, from which nothing can escape, and the outside, where information still can. Einstein theorized that if a cat fell through the event horizon, it wouldn't experience anything unusual. It would eventually become stretched by gravity into a spaghetti noodle, but all would be normal at the event horizon.

Furthermore, let's say that two aliens, Bob and Brad, watch the cat as this process unfolds. Bob is on their spaceship, idling at a safe distance away from the black hole but with a good view. He sees the cat approach but never pass the event horizon, and the cat eventually stretches beyond recognition and gets fried by radiation. Meanwhile, Brad is entering the black hole alongside the cat. From Brad's perspective, the cat passes right through the event horizon unchanged.

So how is it possible for the cat to be both a spaghetti noodle and just fine at the same time? Not only that, but quantum theory entails that quantum information cannot be destroyed or copied, while general relativity requires that information can cross a black hole's event horizon and be erased. How do we reconcile this additional paradox and bring quantum theory in line with general relativity?

Horizon complementarity solves the paradox by saying that Bob's description of the cat outside the black hole is *complementary* to Brad's description of the cat inside the black hole. You can observe one outcome or the other, but never both. However, both are correct and complementary. In that way, an observer can't see both descriptions of the cat at the same time, just like no observer can simultaneously measure the momentum and position of an electron. Susskind's theorem applies not just to black holes, but to any event horizon, and it allows us to reconcile general relativity and quantum mechanics by giving the observer's perspective a role in the classical world outcome of quantum processes (Susskind, 2008; Hoffman, 2019). The paradox only appears if we take the "physical" (and spacetime itself) to be fundamental to reality. In other words, quantum mechanics once again seems to deny the realism needed to validate physicalism, in favor of giving the observer's perspective a role in determining the classical world.

There *is* an objective reality beyond ourselves, but it is a datastream of information within FM, not a physical, stand-alone universe. That datastream only becomes "physical," appearing as particles, when observed (Hoffman, 2019).

Chris Fuch's theory, **Quantum Bayesianism (QBism)**, asserts that quantum states describe the beliefs of agents about the consequences of their actions, rather than the objective reality underlying those states. Since the survival consequences for each agent differ from those of another, each agent's perceptions of spacetime objects will also differ. Within species, they are likely to be very similar. Across species, there will be variety (Fuchs, 2010).

This is in line with Hoffman's Interface Theory of Perception (ITP). An agent's perceptions "are an interface shaped by natural selection not to reveal reality but to guide [its] actions in ways that enhance [its] fitness… Natural selection shapes perceptions in a personal fashion, to tell [that agent] the consequences for [it] and [its] actions upon the world. There is a world that exists even if [an agent] doesn't look: solipsism is false. But [an agent's] perceptions, like observations in quantum theory, don't disclose that world" (Hoffman, 2019).

That logic also accounts for the measurement problem by combining evolutionary theory and quantum physics. The measurement problem results from the fact that evolution by natural selection develops our senses for fitness, not for objective truth. Such a rationale is only illogical if we take the encoded version of reality to *be* the objective reality, rather than the interface, or image, of that reality (information within FM). Skeptics would argue that a measurement device seems to collapse the wave function as well, and the device is surely not conscious. But a conscious observer still must read the device, which is made of matter and, therefore, part of that observer's encoded interface, the PUR. That a "physical" device appears to collapse the wave function does not refute KS Theorem, QBism, or ITP, because the device is as much a part of the image as anything else in PUR. To suggest otherwise is to beg the question, by presupposing the fundamentality of matter, which is precisely the point in contention.

Further experimentation to support this conclusion can be found in the **double-slit experiment** and in variations thereof, such as John Wheeler's **delayed choice experiment**. Wheeler waited until after the photon had passed through the slits of the screen before deciding which path to measure. In this way, he would let the quantum make its choice before a conscious observer's decision entered the experiment. Even still, the observer's choice of what to measure determined the outcome, with the implication that *the observer's choice in the present could determine the particle's path in the past* (Wheeler, 1979).

Wheeler then applied that experiment to the cosmic level. He used a telescope to measure the path that photons from the Twin Quasar (14 billion light years away from us) took through the gravitational lens of spacetime bent by a galaxy. The results were staggering. If he chose to measure path A around the galaxy, then the photon traveled almost 14 billion years on path A, seemingly because of the choice he had just made. If instead he decided to measure path B around the galaxy, then the photon traveled 14 billion years on path B. His choice in the present appeared to determine 14 billion years of history (Wheeler, 1990).

Therefore, at both the quantum and cosmic levels, either Wheeler had reversed time, or spacetime and local realism are not fundamental to reality.

There is even a 2013 experiment showing that the mystery of quantum superposition can occur at larger levels, when researchers replicated the double-slit experiment with a molecule slightly smaller than a virus (Eisenberger et al, 2013).

This also addresses a major criticism of the **consciousness collapse theory**. Namely, if a conscious observer collapses the wave function and brings the physical universe into existence, then how do we account for the time in the universe before conscious observers existed, going all the way back to the Big Bang? After all, the farther out into space that we observe, the further back in time that we can see, due to the time it takes for light from the early universe to reach us. Clearly, we can observe the contents of a universe that was around well before abiogenesis on Earth.

But recall that Wheeler seemed to reverse 14 billion years at the cosmic level when he applied the delayed choice experiment to photons from the Twin Quasar. That result showed that there is no beginning, no end, no past, no present, and no future to reality, at least in our PUR sense of time. Spacetime is an artifact of the same encoding process that gives us the rest of the "physical" universe, which is what we observe when we look out into space as far as we can. We project time onto the informational contents of FM, which itself entails proto-time, but that is quite different from our sense of external and internal time within the PUR.

That's why Wheeler's choice about how to measure the photon's path affected the photon's past, *as Wheeler perceived that past*. It wasn't that Wheeler had the power to change an objective history of 14 billion years. It was that his perception projected spacetime, and thus a history, onto the datastream of information that his sense organs took in. As such, the criticism is irrelevant. There *is* an objective reality outside the observer that exists regardless of the presence of an alter to observe it, but spacetime is only part of the encoded version of that reality, not part of FM.

Indeed, our PUR is akin to the virtual world of a video game, which renders only when the character avatar in the game (akin to an alter), measures (takes in) the datastream that underlies the game. FM is in the position of the player, we are in the position of the character, which is the player's avatar in the game world.

Wheeler abandoned the notion of objective spacetime for his famous **"It from bit" theory**, which we've already partially leveraged. He argued that information was fundamental. This is still not technically true, though it is as close as a physicalist can get to the truth. The "It from bit" idea still implies that part of what physicists consider "physical," information, is fundamental. Similarly, ontic **pancomputationalism** posits that ungrounded information processing is what makes up the universe, with computation preceding even matter. In this case, reality would fundamentally be numbers and sets, or complete abstraction. However, numbers and sets require something else, be it consciousness or matter, to embody them. To suggest that information is fundamental is to say that the abstractions that we use to *describe* reality *are* reality, and this is logically incoherent. Rather, information is conceptually understood to be given by state differences discernible in a system, such that it is a property *of* a system, and associated with possible configurations thereof. It is *not* an entity or ontological substrate, in and of itself (Shannon, 1948).

As we've shown at length, it is *consciousness*, FM, that is truly fundamental. The information that Wheeler references in his theory is the *content* of FM's awareness, or how FM organizes its consciousness. In order to complete the logic of the observations and results of science, you must go all the way to idealism. A physicalist, panpsychist, or pancomputationalist theory will not get you there. Consciousness must be taken as the reduction base.

Even more substantiation for this theory comes from the holographic principle, which, you'll remember, states that everything inside a region of space can be described by bits of information restricted by the boundary that surrounds space. Jacob Bekenstein and Stephen Hawking showed spacetime has "pixels," just like the desktop on your computer. A spacetime pixel's measurements include its Planck length and Planck area (Planck length squared). It is the number of these pixels on the surface surrounding a region of space, not its volume, that determines how much information (how many bits) the region can hold (Bekenstein, 1981; Bekenstein, 2003). We perceive the physical world as a continuous whole, but if we look down to this very tiny level, it is pixelated, just like when we play a video game. It then stands to reason that conscious observers really only have access to bits of information on the surface surrounding space. This, recall, is how we perceive spacetime, and how we can define the differences between our perceptions of external time within the PUR and proto-time within FM at large. Further, it is why the speed of light, *c*, is both a constant and the speed limit for information within the PUR.

But why and how is one option chosen over the near-infinite possibilities of the wave function? Why do we reject indeterminism and choose self-determinism? In other words, how do we resolve the Copenhagen Interpretation's indeterminism problem?

Under a new theory from complexity science, **Quantum Darwinism**, no classical world outcome is the product of random chance. Rather, the quantum state encodes to the classical state that represents the most stable organization of information. This is the process of natural selection, or the FPE, applied at the quantum level, and we call it **einselection**. In that way, the chosen state, called a **pointer state**, represents the information from the wave function that survives the collapse. The unstable information "dies," so to speak, just like in biological natural selection.

This process is the way in which FM acts self-determinedly. As such, by abandoning a deterministic or indeterministic framework, both of which encounter paradoxes in quantum theory, we can explain why a certain outcome is chosen from the myriad possibilities and probabilities represented by the wave function.

Now, let's combine this with the idea that reality is a mind, or consciousness system, processing information. Superposition then becomes a computational process, by which we find the world configuration that best increases complexity and organization, or the most utility to FM, as it self-generates, self-evolves, and self-describes. To return to the metaphor of a video game world, our perception "renders" the physical reality that has the lowest internal entropy and the highest stability.

*Therefore, the pointer state is the specific world configuration out of all possibilities, in which the FM system renders only as much physical detail as is needed to satisfy the query of the observing conscious agent, whose "measurement" of the underlying datastream is defined by its belief (evolved probabilistic models) about the consequences of its actions.*

Read that sentence/paragraph over again a few times until you grok it.

Each conscious observer's query is different. Between members of the same species, those differences are usually very slight, because the respective species has evolved beliefs based on its specific external and internal pressures. Between members of varied species, the differences are more significant. In all cases, the rendered interface delivers key fitness payoff information in the form of spacetime and the physical world.

It is exactly how a video game system renders only as much virtual world detail as is needed depending on the actions of the player.

## Refuting alternatives to non-locality

Non-locality is the most parsimonious option to explain the data from experiments in quantum physics. The other alternatives, while offering methods of preserving physicalism, are even more "woo" than the idea that spacetime is an interface that we evolved through natural selection. Let's briefly look at the other possible explanations popular among the physicists hoping to salvage locality in the face of the evidence against it.

The first option is **superdeterminism**, the idea that the results of quantum entanglement experiments were set at the Big Bang. In this case, there is a cause-effect chain that stretches from the initial moment of the universe to the moment in which you decide which measurement to take in the experiment. In other words, your choice is preordained, as if the particles "know" what you're going to query before you do. If two researchers are at opposite ends of the universe, and if they each measure an entangled particle, perhaps the factors that lead researcher one to make their measurement affect the decision that researcher two makes. In that sense, superdeterminism claims that there is a kind of conspiracy at the level of the universe to trick us into seeing non-locality where there is actually locality.

However, it doesn't take long to see that superdeterminism doesn't even eliminate non-locality. Rather, it transfers non-locality from the present to the very beginning of the universe, at the Big Bang itself. Namely, some law of nature must have set the chain of events in motion, accounting for every single detail in the entire evolution of the universe, down to the level of interconnected particles. That really is no different from non-locality. Indeed, all superdeterminism does is move the "mystical" part (i.e., the part that denies locality) to the origin of the universe, rather than the simpler explanation that it occurs in the present. Not only is non-locality the more parsimonious choice, it also converges with

evidence from thermodynamics and evolutionary biology about how the physical world "renders" when observed. In other words, multiple pillars of science point to non-locality.

A second option is **reverse causation**, or the idea that a particle's past is your future. As a result, a particle's properties are shaped by events that have yet to occur from our perspective, and are thus "ready" for the researcher's decision about what to measure. In this sense, particles could have a kind of precognition. The reason some physicists believe in this answer is that Einstein's merging of space and time into spacetime in the theory of relativity made it possible to think of points in time like points in space. According to the theory, we can only perceive the present moment, but the past and the future are still laid out before and after that moment. In that way, the future should be able to influence the present just as the past does, giving the particles the ability to "time travel."

Once more, we run into an issue of parsimony. Non-locality far more parsimoniously accounts for the experimental data than does the notion that particles have precognition from a kind of time travel.

Next is the **multiverse theory**, and the many worlds interpretation of quantum mechanics. This is perhaps the most famous interpretation and has gained the most cultural popularity as of this writing. In this theory, every possibility of a quantum event takes place in a near infinite supply of parallel universes. We only perceive one outcome because we are in one universe, but the other possibilities play out just the same, beyond our perception. The observer, too, is always in all possible states at once across these universes, like the famous (and grotesque) **Shrödinger's Cat** example, in which the cat is both alive and dead. A nearly infinite plurality of universes (worlds) pops into existence every infinitesimal fraction of a second. Every possibility that *could* occur *does* occur across that plurality. In that way, non-locality is unnecessary to explain the data. Rather, under this theory, it only looks like the universe is non-local from our point of view. It is actually local, if only you could have a deity's point of view and see all universes at once.

The many worlds interpretation is the *least* parsimonious idea ever put forward in human thought, because it entails every other possibility. It defies Occam's Razor to the extreme. Not only that, it also still demands non-locality, as the different universes would need to be somehow in communication with each other, in order to account for which one represents each individual possibility, so as to avoid duplication. As a result, physicalists have devised the least parsimonious theory possible in the hopes of preserving locality, even though the very logic of the theory requires non-locality. This interpretation incurs the highest-cost assumptions of any theory in the history of human thought…you would at least expect it to return for that investment a solution to the problem that the thinkers set out to solve. However, the many worlds interpretation requires the very idea that it was supposed to banish from physics: non-locality.

Further, the existence of a plurality of universes defeats the major sentiment of locality: that objects, including living organisms, have an identity separate from other objects in space and time. If there are nearly infinite universes popping into existence every

infinitesimal fraction of a second, then which one is the "true" identity? Which you is the "real" you? No such identity, the main benefit of locality, exists for anything under multiverse theories (Kastrup, 2014; Musser, 2015).

As such, non-locality remains the most common sense, parsimonious explanation of the data from experiments in quantum physics. The alternatives are as "out there" and "woo" as strict physicalists might call idealism.

## Resolving the paradox of the apparent fine-tuning problem

Because life exists in the universe, it is trivial to say that the universe has the conditions that allow for life to exist. Indeed, it appears that the universe is finely tuned for the emergence of life, and this fact has always puzzled science and philosophy. In a purely mechanistic, physicalist universe, that specific configuration of conditions should be nearly statistically impossible. It is an accepted fact that the impossible occurred. After all, we exist.

However, this has led to a paradox called the **apparent fine-tuning problem**. It is now undeniable that the universe and its physical laws are perfectly fine-tuned to produce life, such that if any of those parameters were even slightly off, life would not be possible. Physicalism's answer to this problem is to once again suggest that we are one of an infinite number of universes, the majority of which are cold and lifeless. Since under physicalism, life and consciousness came about by pure random chance in a meaningless, mechanistic universe, there would have to be infinite universes in order to account for the anomaly of the fine-tuning observed in our own. And with infinite possibilities, there would necessarily be universes in which life does occur. Since we're alive, we must be in one of those special universes. The issue with this explanation is that we have exactly zero empirical evidence for the multiverse theory, nor can we ever obtain any (Kastrup, 2014; Azarian, 2022).

However, if we rethink this paradox under our theory, it makes perfect sense that the physical universe would be finely tuned for our existence. After all, we "render" that physical universe into existence, down to the level of detail of the Planck. There *is* an objective reality that is not at all anthropocentric, but the PUR *is* anthropocentric *when a human observes FM's internal datastream* because the PUR is our interface, the encoded version of a datastream of other contents that are internal to FM but external to us. Therefore, the PUR *must* entail all of the conditions necessary for life, because life is the extrinsic appearance of dissociated mental contents that are intrinsic to FM. In other words, life itself is part of the PUR, all of which is generated in and by consciousness.

To use a metaphor, the world of a video game appears specifically fine-tuned to support the player's avatar's existence, precisely because the datastream that underlies the game world renders *as* the game world when observed, or queried, by the player through the avatar.

If you relinquish physicality as fundamental and instead see the PUR as a kind of natural virtual reality, the apparent fine tuning problem dissolves.

## Bringing it all together

We're finally ready to combine quantum mechanics/the PUR (the virtual game world), our concepts of dissociated alters (game avatars), and the logic of FM (the ruleset and reality, as it is in and of itself).

To put it in formal physics terminology, we have an **external state** (information within FM), an **internal state** (our localized subjectivity), and in between there is a **Markov blanket**, a boundary that sets something apart from that which it is not. A Markov blanket is a statistical partitioning of states into internal and external states. The blanket itself represents the states that separate the internal and external states. For instance, organisms self-organize and work to maintain their structural integrity. To do this, they maintain a boundary that separates their internal states from their external states, or the environment around them (Kirchhoff, 2018).

We have a Markov blanket separating our structured inner state from the more complex, varied, and entropic external state precisely so that we can survive. Without the boundary, we would die, because nature would fill the gradient between our internal and external states, finding thermodynamic equilibrium and dissolving our organization. As such, our external state is the datastream of information within FM, our internal state (our localized subjectivity) is the organized information dissociated from the rest of FM's contents, and the Markov blanket is the encoded version of the external state, or what we call the PUR, for which we einselect when collapsing the wave function upon observation. As part of that encoding, our perception "renders" spacetime and the PUR like a virtual reality.

The states of the Markov blanket itself can be further partitioned into **sensory states** and **active states**. Sensory states deliver information about the external state to the internal state by impinging on the internal state. The internal state can then impinge back on the external state through actions (active states). In other words, the encoded version of reality, the physical world, gives us the sensory input that we need so that we can perform actions and survive by manipulating reality, just as a video game world, which is the encoded version of the datastream underlying the game, allows us to manipulate that information in order to survive, advance, and learn in the game.

Every organism has their own Markov blanket between their internal subjectivity and reality. In that way, the physical world that I experience is slightly different from yours (our Markov blankets are very similar, which is why our sensoria are nearly identical), but different from that of the bird outside my window. The process of evolution guides the development of each organism's sensorium toward peak survival fitness based on that organism's needs. This, in turn, affects which pointer state is einselected from the wave

function when that organism measures the datastream by way of conscious observation. In this way, the constraints of an organism's measurement apparatus (such as its sensorium and its capacity to integrate information) determine how much detail FM must render to satisfy the observer's query of the external state (datastream).

Remember that we are part of each other's external states, and there is an encoded version of *us* in each other's Markov blankets as well. We call that encoded version of ourselves "a body," which includes a brain. Therefore, the brain can't generate consciousness, because it is merely an encoded image of information within consciousness.

Our sense organs (which include our skin, of course) are the encoded version of the dissociative boundary. We gather information via the Markov blanket's sensory states using those organs, while also manipulating reality through the blanket's active states via those same organs. Those organs evolved to provide us with the sensory data we need to survive, to resist entropy, and to maintain our organization.

In that same way, we can also impinge on each other's internal states through each other's Markov blankets. If I wave at you, I'm impinging on the external state through my Markov blanket. The information of that impingement becomes part of the external state and then gets encoded by your Markov blanket, allowing you to take it in as sensory input (you see me waving and have a perceptual qualitative experience in your field of subjectivity). You can wave back by impinging on the external state through your Markov blanket. The information of that impingement also enters the external state and then gets encoded by my Markov blanket, and I take it in as sensory input (I see you waving and have a perceptual qualitative experience in my field of subjectivity).

It is these different states that explain how we are quantum-mechanically correlated with the world and with each other. It is also fundamentally the same reason that alters in the dream of a patient with DID can interact with each other, because we are talking about the same mechanism (dissociation) at two different levels of nature. For the patient's alters, this happens in the patient's mind. For us, this happens in FM.

## Summary of quantum physics and the first-person perspective

Let's summarize everything we've discussed about quantum physics and make some clarifications.

In 2022, physicist Anton Zeilinger became a Nobel Prize winner. Among his lauded accomplishments is the falsification of local realism, conclusively showing via experimentation that the worldview in which physical properties of objects exist independently of measurement (realism) and in which physical influences cannot travel faster than the speed of light (locality) is false (M. Giustina et al, 2015). Bell's Theorem states that this view is incompatible with the predictions of quantum mechanics as expressed in Bell's Inequalities. This, of course, leads to the paradoxes we've discussed at length, including the measurement problem and entanglement.

In the wake of these problems, the possibilities were that either the observed causal structure of the experiments did not reflect the actual causal structure of reality or that unobserved variables do not actually have values until observation. Theories like superdeterminism, the many worlds interpretation, and hidden variables sought to validate the first possibility, thus trying to deny the second possibility, which would refute local realism. We've already covered the issues with those theories. The second possibility calls for the relevance of the first-person perspective in quantum physics. In that case, we should consider the physical world not in the naive physicalist sense, but more like idealism.

In the view of physicist Markus Müller, a Research Group Leader at the IQOQI in Vienna and a Visiting Fellow at the Perimeter Institute for Theoretical Physics in Waterloo, quantum physics does not tell us about the state of the world. Instead, it answers the question, "What will happen to me next?" (Müller, 2023).

*In other words, quantum physics tells you about the probability of each outcome and what you will perceive next as an observer. It answers the question, "What will I observe to be the next state of the world?"*

To add one more nuance, it is not that consciousness *collapses* the wave function, per se. That statement implies a kind of dualism, in which consciousness and the physical wave function are both ontic entities. This is not so, because the PUR is an *epistemic entity*, not an ontic entity.

*Instead, there is only consciousness, and the abstract probabilities of the wave function are how we talk about our knowledge of what will come next.*

The consciousness collapse theory is thus a helpful metaphor. I've invoked its language throughout this chapter for the sake of discussion. But its inherent and implied dualism is not literally true.

To conclude, we only encounter paradoxes in quantum physics when trying to make matter fundamental, to put the physical prior to consciousness. In doing so, we try to force quantum physics to answer our questions about the state of the world, but that is not what these foundations of physics tell us. Rather, they tell us what will happen next, because the physical world is, in fact, an encoded perceptual interface that provides vital information about fitness payoffs, not about the literal truth (the true state) of reality. For this to happen, there of course must be an observing conscious agent that exists *prior* to the physical world, not the other way around.

It is consciousness, the "I," the observer, that is fundamental.

## Why we must abandon literal reductionism

However, even that statement fails to adequately describe reality. There is one more nuance that we must cover, and in so doing, we will disagree with the very idea of reductionism as applied to metaphysics in the field of analytic philosophy. We must

altogether dispense with the approach of reducing reality down to a reduction base, for that project creates, from the beginning of the process, an epistemic problem.

Namely, the claim of reductionism is that our position in reality is at a higher and more illusory level than that of the reduction base, that which is fundamental. In mainstream analytic philosophical discourse, "fundamental" roughly means "the most real." But if we are at an illusory level of reality, high above the reduction base, then how can we trust anything that we think we know about the deeper levels that are more fundamental, and thus less illusory, than our own? If we start by placing ourselves in an illusion, then we sabotage the entire project of reductionism by creating an epistemic crisis from the original claim.

So, let's dispense with reductionism. Like spacetime, it has been a useful tool, but it will not suffice to adequately model reality (to the extent that we can).

Instead of reducing to lower levels of reality, we should analyze *relations between conscious agents at the same level of reality. Indeed, the* only *level of reality*.

By definition, reality is all that exists. Reality *is* FM. And FM *is* the sum of the dissociated alters, individual conscious agents, within its inner experience. Reality itself, FM, and the sum of the alters comprise the same, one level of reality. The question is not, What is fundamental? The question is, How do the relationships between those three statements give us back spacetime and everything in it? We're actually analyzing the experience of each of those conscious agents, including FM itself, to find how their *perspectives on the same level of reality differ*. That one level of reality and the information therein appears to the interface of an alter's perception as the physical world. That does not mean that the information is more fundamental…it exists at the same level of reality as the conscious agent, who is at the same level as FM. It is merely the *appearance* of the information that changes, not its level within reality.

*Indeed, reality is relational, not reductional. The whole is divided into, and completely composed of, parts on the same level of existence.*

As such, we do not encounter the same epistemic problem faced by reductionism, nor do we need to explain reality by finding a reduction base. Further, by dispensing with the reductionist approach, we completely avoid infinite regress in all of its forms and provide a more concise and logical definition of what exists.

Throughout this work, we have followed the mainstream analytic philosophical approach of reductionism in order to build an argument for the MTR Theory using the language and the rules of the field. However, at the conclusion of our theory, we must make clear that the reductionist approach falls into an epistemic crisis, and is therefore inferior to the relational approach described above.

Therefore, with that nuance in mind, our *nonreductionist, naturalistic, idealist* theory explains reality.

# 10. Refuting objections to the theory

As you might expect, in both popular and academic cultures still dominated by reductionist physicalism, any idealist theory will encounter intense criticism. Such is the case with analytic idealism, one of the foundations of this theory of everything. In this section, we will examine the major objections to the theory and refute each one.

## The concreteness objection

First, I must mention the classic objection that English poet Samuel Johnson leveled at idealism, when he kicked a rock and said, "I refute it thus!" (Boswell, 1820). Johnson's argument was that, since the rock was a concrete object, it could not be mental in nature. Intuitively, this makes perfect sense, and might be the objection that the average person would raise.

The idealist's response is that the qualities of hardness, solidity, and heaviness are just that: *qualities*. A rock is an arrangement of matter, which by definition has no qualities. Independent of the qualities that we project onto the rock, it is merely an abstraction. We experience hardness, solidity, and heaviness as part of our conscious experience, but those qualities are not inherent to the rock itself. Therefore, in arguing for the primacy of a qualitative experience over quantitative matter, Johnson's reasoning was far more idealist than he realized. In fact, the idealist might say that we only postulate a world of matter because we perceive one via our senses. But our senses are qualitative, so they cannot prove that a material world exists outside of consciousness. For instance, in a dream we believe the world is physical (outside of a medium or substrate of consciousness) because we sense it to be so. Of course, the dream world is mental in nature, even if the objects in it feel hard, solid, and heavy. Matter, then, is an explanatory model of our observations, rather than an empirical given.

## The stand-alone universe objection

Second is the objection that the world can't be in consciousness, because it has a stand-alone existence even when not observed by a conscious being. After all, the universe existed for a very long time before life emerged.

This objection begs the question, since it assumes that dead matter must have preceded biology, which then gave rise to consciousness—that is exactly the point in contention, therefore invalidating this criticism from the beginning. But let's follow it to its conclusion, anyway. Besides, nature doesn't bow to our wishes, another aspect of the criticism that feels quite intuitive. The laws of nature are fixed and uncaring, so it seems.

In the past, religious idealists like Bishop Berkeley responded to this challenge by saying that God was the ever-present observer that kept the universe in existence. However, this kind of spiritual explanation isn't acceptable in today's ontological

discussions. A modern analytic idealist would argue that the mental contents of the universal mind, FM, surround and are external to the dissociated alters that exist within it. The physical world, then, is the extrinsic appearance of those universal mental contents when we take them in via our sensory perception. But those universal mental contents exist independently of us, the conscious observers. The absence of a living being, under analytic idealism, is the absence of a dissociated alter that could perceive those universal mental contents, not the absence of those universal mental contents, which did and do exist separate from any dissociated conscious observer. This would also account for why nature does not bend to our volition. Further, there are aspects of our consciousness that we cannot control anyway, such as a nightmare. If we could make consciousness bend to our whims, none of us would ever have a bad dream (Kastrup, 2019; Kastrup 2021d).

Another response comes from interpretations of quantum mechanics that refute the fundamentality of spacetime and local realism. Such interpretations give conscious observers the role of collapsing the quantum wave function, causing particles to take on definite points in space instead of behaving as a probability function. This, in turn, causes spacetime to "render" from the perspective of the observer, as a video game world renders when the player's consciousness observes it through the eyes of the game character. Because our notion of time (as opposed to proto-time) is not fundamental, the universe only *appears* to have a past independent of conscious observers, but that past is merely an artifact of the observer's perception of the objective mental contents of FM, which do not exist within any kind of space and only exist within proto-time, not the PUR's time.

Some critics would label the idea that physical objects aren't there when no one looks unscientific, because no observation could prove what happens when no one looks. However, by that same logic, the reverse is true too. If it's impossible to scientifically test the claim that physical objects only exist when observed, then it's also impossible to test the claim that they have stand-alone existence. Further, that reasoning would invalidate the Big Bang and other such events that physicalist scientists would claim had a stand-alone existence. As such, this criticism, if we were to give it credence, would equally label much of science as unscientific.

On top of that, observation *can* test a claim about what happens when no one is looking, and we've given plenty of evidence for that fact in previous sections. Bell's experiments are one excellent example. Therefore, this criticism is fully defeated (Hoffman, 2019).

## The decomposition problem objection

We've already covered this one at length, but it's worth repeating, since this is the chief problem that idealists face. Why do we have private minds and seemingly separate consciousnesses, if there is only one universal mind in existence? I can't read your mind, you can't read your cat's mind, and your cat can't read the mind of a hypothetical alien in

another galaxy. If it's all one mind, why is this the case? Furthermore, how does the one universal mind split off into multiple? This is the decomposition problem, and it has traditionally been to idealism what the hard problem of consciousness is to physicalism, what the interaction problem is to dualism, and what the combination problem is to panpsychism. I won't belabor the analytic idealist response on this one, since the previous sections cover dissociation in depth. Idealists now cite that psychiatric phenomenon as the mechanism by which to solve the decomposition problem. Indeed, the decomposition problem was one of the chief criticisms of idealism until analytic idealism leveraged empirical data from DID research that came about in the 2000s and 2010s.

To recap, dissociation is "a disruption of and/or discontinuity in the normal integration" of mental contents (Black & Grant, 2014). When we normally integrate mental contents, they can evoke each other through cognitive associations. For example, a perception, such as the smell of a birthday cake, might trigger a memory from childhood, which in turn can trigger an emotion of happiness. Not only that, but these associated mental contents can be experienced at the same time. For instance, you can keep smelling the birthday cake, while simultaneously having the memory and the emotional response to it. However, dissociation breaks the association between certain mental contents, cutting them off from others. This is how an alter within FM could be private and separate from other alters. DID research has empirically shown that multiple alters can be conscious at the same time, which is the final piece needed to explain private minds within a universal mind. An analogy cited by Kastrup is a database that 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" (Kastrup, 2019).

Indeed, the concept of a database within FM has already been discussed in the context of FM's ability to store memories of its exploration of all its possible states. The database framework will appear again when we discuss what happens when we die. Any theory of everything must broach that topic, and we will not shrink from that challenge just because subjectivity beyond "the veil" feels highly speculative under our current physicalist paradigm.

For now, we have more objections to address.

## The shared world objection

Fourth is the shared world objection, which claims that, since we have separate bodies, we can't all be in the same shared dream. Again, this objection begs the question, since it assumes that a physical body made of matter generates consciousness—this is the point in contention. The idealist response is much the same as to the previous challenge. Alters are surrounded by the mental contents of FM, so we *do* share the same objective reality, which appears to our sense perception as a physical, material world, complete with

separate bodies. A body, then, is the extrinsic appearance of an alter from another alter's perspective.

Therefore, we encounter no problem here.

## The chaotic mentation objection

Fifth is a better challenge...our thoughts and emotions are unstable and chaotic. If the natural laws, which are immensely orderly, are a representation of mental processes in a universal mind, then why aren't they unstable, like our own minds? The response here is that we shouldn't make the mistake of anthropomorphizing FM. Our human minds evolved to meet the specific survival challenges we find here on Earth. There is no reason to expect mind at the universal level, which did not develop under these same selection pressures, to be the same as our own in terms of its patterns (Kastrup, 2019; Kastrup, 2021d). Namely, we as dissociated alters within FM face both external and internal selection pressures, whereas FM faces only internal selection pressures. This is so because, by definition, there is nothing external to reality, and reality *is* FM.

One could also reference the psychological archetypes of Jungian and **depth-psychology** (Jung, 1991). These innate templates that organize mental dynamics under Jungian thought could be brought to the level of the universe to explain such ordered regularities in nature. Even without Jung, however, the criticism is not enough to refute idealism. Rather, the objection can help us refine the theory, by shaping how we would view FM. In so doing, it would exclude certain traditional religious interpretations of such a reality, in favor of a better understanding that will later help us reconcile the seeming discrepancies between science and religion.

## The mind-brain objection

A common objection is the obvious correlation between brain activity and consciousness, as well as the connection between physical changes to the brain and changes in mental states (Koch, 2004). Both of these points suggest that the physical brain comes first, and consciousness reduces to or emerges from brain activity, which is then the generator of our subjective experience.

The idealist would argue in response that, if you have two alters, 1 and 2, then alter 1 is part of the objective world of natural mental contents surrounding alter 2, and vice versa. In other words, the inner experience of alter 1 is part of the world that alter 2 perceives. As such, that inner experience will have an extrinsic appearance. Taken further, our private experience is bound by our sense organs, the extrinsic appearance of the dissociative boundary. Therefore, the body itself is logically the extrinsic appearance of an alter. The brain and its activity are part of the body, and thus part of that extrinsic appearance. This would explain why there is such a tight correlation between brain activity and inner experience, because the thing and the image of the thing will always be correlated for any

such pair. However, such a relationship does not imply causation, which accounts for why we run into the hard problem of consciousness in any model that claims that the material brain generates consciousness. By taking consciousness as fundamental instead, idealists negate the hard problem entirely.

As for the second point, under analytic idealism the "physical" world is the extrinsic appearance of the universal mind's mental contents. It is trivial that different types of mental contents can impact one another. If you have a special kind of thought called a happy memory, this can trigger another kind of mental content: an emotion. Under analytic idealism, everything in the universe is part of the universal mind, and so it is all of the same ontological material...consciousness.

Therefore, idealism does not entail an explanatory gap between mind and matter.

## The unconsciousness objection

Next, if everything is in consciousness, why do we have an unconscious mind, to which we lack access, but that can influence, and perhaps even make, our decisions before we know them? Furthermore, why are there periods in our lives, such as when we sleep or go under anesthesia, when we appear to lose all consciousness? Idealism seems to necessitate just the opposite of both of these conditions.

Opponents taking the first objection would cite evidence from Libet's experiments, which showed a rising level of brain activity just before a research subject reported making a voluntary decision to perform an action (Libet, 1985). David Eagleman further showed that reflexive or instinctive protective behavior occurs before a subject reports awareness of danger, which also seems to substantiate this point of contention with idealism (Eagleman, 2011). The idealist's response is a simple one from a philosopher's standpoint. Because neuroscience does not distinguish between phenomenal and meta-consciousness, they conflate the reportability of conscious experience with "consciousness." In order to report something in your consciousness, such as a decision, you must not only have the experience of deciding, but you must also be aware that you have had it.

Thus, the subjects could have made their decision prior to becoming meta-conscious of their experience of deciding, a necessary step before they could report on that experience to Libet. The same goes for instinctive actions. There is a level of awareness that detects the danger before the spotlight of attention gets turned toward that danger, but nothing precludes that awareness from being within consciousness. Indeed, the word "awareness" is often used interchangeably with phenomenal consciousness in philosophical debates. As such, the problem here is one of terminology (Kastrup, 2019).

As to point two about periods in which we seem to lose consciousness, recent data from neuroscience suggests that we *never* enter a state of true "unconsciousness." We cannot remember phenomenal experiences that occur while we sleep or while we are

under an anesthetic, but that is all that we can say for certain. Data does show that those episodes of "unconsciousness" can actually be filled with intense experiences:

- Fainting caused by asphyxiation or strangulation correlates with euphoria and visions (Rhinewine & Williams, 2007; Neal, 2008).
- G-LOC correlates with dreaming (Whinnery & Whinnery, 1990).
- General anesthesia can correlate with “implicit perception” (Kihlstrom & Cork, 2007).

Similarly, during sleep we can dream. But there are other experiences one can have while sleeping besides dreaming. These experiences can occur in any stage of sleep, and fall into three categories:

- Non-immersive imagery and sleep thinking.
- Perceptions and bodily sensations.
- Selfless states and content-less experience (Windt, Nielsen & Thompson, 2016).

There’s also the very recent finding (at the time of this writing) that, during sleep, the brain analyzes auditory inputs but is unable to focus attention on the sound. Data showed that, after sounds were received in the ear, the signals were relayed from one place to another in the brain. Crucially, the response spread to many regions of the cerebral cortex, and the signal was strong and rich, which refutes the old belief that such signals decay and weaken during sleep. Indeed, the strength of the response in the sleep state was almost the same as in the waking state, with one key difference: the level of activity of **alpha-beta waves**, which correlate to attention, were lower during sleep than during the waking state. The study authors believe their result helps point us in the direction of the mechanisms and quantitative measures that could cause conscious awareness while awake and unconsciousness while asleep (Hayat et al, 2022).

Once again, we run into a difference of definitions. Under the philosophical definitions of phenomenal and meta-consciousness, this study found that phenomenal consciousness remains during sleep, but meta-consciousness does not. Remember, meta-consciousness is awareness of an experience that you are having, such as awareness that you have heard an auditory stimulus. In this case, there was no awareness of the experience, but the study showed that the experience still occurred while the subjects slept. Another, more everyday example, is that you experience the auditory stimulus of your alarm going off every morning, even if you are not aware of the stimulus until after the alarm has jolted you back into the waking state, at which point meta-consciousness resumes with the restoration of alpha-beta wave activity. But in order for you to hear the alarm at all, phenomenal consciousness must have been present, even when meta-consciousness was not. This still means that, by the medical definitions, you are “unconscious” while sleeping, but this does not entail the total loss of all conscious experience that would be required in order for this objection to refute analytic idealism. Rather, it seems that we’re once again hitting the language barrier between philosophy and science, talking past each other about the same things.

Therefore, the empirical data suggests that periods in which we seem to lose consciousness are, in fact, periods in which memory is impaired. We do not necessarily ever lose phenomenal consciousness. The data seems to indicate the exact opposite (Kastrup, 2019). Instead, what disappears in these "unconscious" states are the thalamo-cortical feedback loops in the brain, which run from the thalamus to the cortex and are associated with the integration of information, self-referencing, self-modeling, and "consciousness," as the term is used by IIT neuroscientists (Azarian, 2022). As already covered, IIT's use of "consciousness" actually lines up with philosophy's "meta-consciousness." As such, it makes sense that we would have no memory of any period in which the feedback loops are not detectable, since you need to know that you're having an experience in order to remember it. However, this does not mean that phenomenal consciousness disappears as well.

Thus, this challenge does not refute idealism.

## The "neuron in a petri dish" objection

Another criticism, specifically from panpsychists, is that neurons can be taken from the brain, placed in a petri dish, and grown outside of the body. In that sense, neurons are "individual," in that you can start with one and grow more. This would seem to suggest that a combination of neurons generates consciousness, which is the claim of panpsychism. More specifically, panpsychists would say that this fact also refutes analytic idealism's claim that the brain is part of the image of dissociation within FM, or what an alter's inner life looks like from another's perspective. If that is the case, then how would it be possible for the neurons to be alive and growing outside of the body? It would seem impossible for the image of an alter's inner life to exist outside the image of that alter.

Idealists would respond that a neuron, and indeed the entire brain itself, is part of an avatar within the virtual reality of the PUR. Neurons are not fundamental to reality. Rather, they are the image of a complexity capable of acting as an alter, or avatar, for FM's subjectivity. All metabolizing systems, including individual cells, fit this description. The neuron, by itself, maintains the ability to integrate and propagate information, but its capacity is obviously much lower than that of an avatar with a full brain. This is not because the brain generates consciousness. Rather, it's the same idea as when you play a AAA open-world video game, then switch to an 8-bit game. The more complex game will allow your subjectivity, through the experience of the respective game avatar, to have a richer experience of the data stream it receives than will the simpler game. It is not that the subjectivity changes, nor is it that the brain of the game avatar generates that subjectivity. Rather, the constraints of the avatar affect the capacity of information that the subjectivity can acquire via that system. The important difference here is that we're taking an idealist interpretation of IIT. Unlike panpsychism, we don't take matter as fundamental and then posit that consciousness is a property of that matter. Rather, we take consciousness as

fundamental and then derive matter from it, as an encoded perceptual rendering of information within consciousness.

Therefore, we can explain how a single neuron remains an image of an information system even when not still part of a human alter's brain. This objection fails to refute idealism. On the contrary, it demonstrates that IIT is better interpreted as idealist than panpsychist, because under idealism, we don't lose any explanatory power of consciousness, but we avoid the quantum mechanical paradoxes that come with taking matter as fundamental, as panpsychism does.

## The solipsism objection

Idealism is frequently misunderstood. Straw-man arguments against idealism are common, not because an opposing philosopher is necessarily debating in bad faith, but because it is easy to have misconceptions about the theory. For instance, idealism is often mistaken for **solipsism**, the view that reality is all in your own mind, and that no one else is a conscious agent. To a solipsist, all the people you encounter are "non-playable characters" (NPCs) conjured by your mind alone. No one else is real.

This is both madness and not what idealism entails.

The only sense in which idealism and solipsism are compatible is from the perspective of FM, itself. Because there is nothing external to FM, all of reality is, by definition, within its own awareness. But since FM *is* reality, calling our theory solipsism from FM's point of view defeats the main point that solipsism tries to achieve.

At any rate, *idealism is not solipsism.*

## The "dead body" objection

If a living body is the image of dissociation, then why are their corpses? Wouldn't it make more sense for those bodies to simply vanish when the process of dissociation ends at death? In fact, doesn't this question present a logical roadblock for solving idealism's decomposition problem?

The above questions fail to shed the chains of local realism in favor of the idealist framework. The body is indeed a partial image of the dissociative process, not a physical object that has objective, fundamental, stand-alone existence. It exists in consciousness, always from the perspective of a conscious agent. The question is, in which agent's experience does that body appear?

While FM "plays" the game as an avatar (a dissociated alter), it experiences the alter's own body as part of the physical universe that is the encoded form of the datastream that impinges on the dissociative boundary. Upon the alter's physical death, the dissociative boundary breaks down, and the avatar's formerly dissociated information returns to FM. No longer does FM perceive that body from that alter's perspective. However, other alters can still perceive it, because that alter's body is also part of *their* encoded data stream (the

physical universe). Like any other object, the corpse would still be subject to the natural laws of that physical universe, within the perception and experience of the remaining alters whose dissociative boundaries interact with the information in the data stream corresponding to the now reassociated (dead) alter.

Therefore, the fact that corpses remain after the end of dissociation does not present a challenge to idealism.

## The meta-conscious mind-at-large objection

This one comes from another idealist, and so does not refute our theory. Rather, it would take issue with our assertion that FM is a self-deterministic, planning consciousness with a goal and free will. The capacity for those properties would necessitate that FM possess greater cognitive abilities than raw awareness. It seems to follow more of an intelligent design approach, rather than a naturalistic one.

The challenge is two-fold:

- Isn't it more parsimonious to assume a simpler consciousness that is naturalistic and behaves spontaneously, thus resulting in a deterministic universe (which ours seems to be)?
- If FM has higher cognitive abilities, why did life begin without them? Why did organisms have to evolve the properties that FM already possessed?

This objection is one I've heard Kastrup raise to other idealists who also take a non-deterministic approach. Out of respect for him, I want to address those questions.

Let's start with challenge one. It may seem parsimonious to take this approach, but the explanatory power of such an approach is not sufficient. Recall the logic of why FM must be self-deterministic. By definition, there is nothing external to reality, and FM *is* reality. In other words, it has no external state. It *does* have an internal state. Therefore, anything that happens in reality takes place within itself and with no external cause to set a deterministic chain of events in motion, like a giant mechanism. A chain of events *can* be set in motion within FM, but it must be triggered by reality itself, within itself.

In short, there is nothing else besides reality itself that can determine what happens within it, because there is nothing else besides reality. Therefore, reality is self-deterministic from the perspective of FM.

This, in turn, requires a degree of meta-consciousness, or the awareness of being aware. FM cannot simply be a naturalistic mechanism. It must have free will, which *is* the FPE.

Our PUR rules of causality apply only within reality, not at the level of reality itself. However, as dissociated alters, we are informational subsystems within the holistic FM system. As such, parts of the FM system are external to our dissociative boundaries. This means that, in contrast to FM itself, we *do* have external states. Those external states are

the same as FM's internal state. It then follows that our rules of causality, which suggest a deterministic universe, are outside of ourselves but still within FM.

As a result, reality appears to be deterministic *from our perspective*. But at its most fundamental level, it is self-deterministic.

This also brings up the question of whether or not we have free will. The answer is…yes, we do. In our PUR, it may look like we do not, because our choices appear to be the next in a sequence of cause-effect relationships. However, that PUR is a "virtual reality." Our consciousness *is* FM, just cut off from the rest of FM, thus giving us an illusion of being a separate self. Our ego and our identity within the PUR are not fundamental. We are FM, and thus we have FM's self-determinism. We *are* FM acting out its free will to reduce entropy through the processes of creation and evolution.

To address challenge number two, we must again reference the fact that we, as information subsystems of FM, have both an external state and an internal state. FM only has an internal state, because there is nothing, by definition, outside of reality, which is the set of everything that exists.

As such, FM's state changes and evolution occur internally, with no external selection pressures. This is not so for us. Because other contents of FM are external to us, we face both external and internal selection pressures. Evolution by natural selection selects for the least entropic, most stable outcomes for each specific subsystem based on the subsystem's unique selection pressures. This is why systems must evolve from simple to complex. Each different combination of traits represents FM exploring another variety of informational system and dynamical structure, trying to find the most efficient ways to reduce entropy with each one. Just as FM did, life started out from a binary set of states in a single-celled organism so that the FPE could explore all possible varieties of traits, based on the selection pressures (which themselves are constantly in flux). The only way to make such an interconnected and interdependent system of subsystems evolve efficiently is to start from binary and increase complexity from there under each respective set of conditions. The most efficient state of entropy reduction is always changing based on those conditions, so going from simple to complex is the FPE's method of ensuring all selection pressures are accounted for at all times, for each subsystem and for the system as a whole.

Therefore, it was necessary for life to begin without all of the properties of FM, so that each subsequent species could evolve exactly the traits that it needed for the specific selection pressures present in its external and internal states, even as conditions within the system as a whole change over time.

## 11. Answering questions about death and the paranormal

Having laid out the details of the theory and refuted objections to it, we will in this chapter cover more speculative ground. Namely, we will explore the implications of our theory on some of humanity's oldest questions.

## Explaining what happens when we die

Life in our theory is the image of the dissociative process that localizes FM's subjectivity. In other words, life is the creation of an alter, or "avatar," for FM to control, so as to experience its own contents from a finite, internal vantage point. These alters are part of the FPE that increases the degree of order and organization and decreases entropy within FM.

Death, then, is the end of the dissociative process. In other words, the alter's dissociative boundary dissolves, and the "avatar" in spacetime dies. However, FM's consciousness, which controlled the avatar and temporarily associated its identity with the avatar's body, itself just an artifact of the alter's Markov blanket and perception, continues on. Or, more accurately, it remembers that it is FM and not the identity of the alter, just as when we stop playing a video game, we remember that we are not our character. Rather, we are the more fundamental entity that lends its subjectivity to the character, which has its own perceptual interface in the form of the video game world. The character's body is part of that interface, of course. When the character's body dies or is turned off, the consciousness controlling the avatar remembers that it is not the character at all.

This is what happens when we die. FM remembers that it is FM, not the "character" in spacetime that we identify as while we have a living body that renders in spacetime, just as a video game character's body renders in a game world. In both cases, we're talking about a fundamental consciousness consuming a datastream that causes it to have an experience.

For the avatar, there is no afterlife. For our consciousness, there is, because it was never *our* consciousness. It was FM the entire time.

The end of dissociation does not mean, however, that the information we accumulate while playing the game of life in spacetime vanishes or is lost. After all, we remember everything that we experienced through a video game character's eyes after we stop playing the game. It was always our experience, never the character's experience, because the character isn't fundamentally real. In that same way, FM retains all of our memories, attitudes, thoughts, dreams, and contents of our dissociated minds, because those contents of our individuated consciousness were always contents of FM's consciousness. As such, our identity, or the set of information in FM constrained by the dissociative boundary, continues on after the conclusion of dissociation.

Recall that FM developed the ability to store information, so that it can, in its infinite (or practically infinite) capacity, explore all its possible states, ultimately einselecting for the most profitable state in every instance of choice. Managing the probabilities of all the possibilities is how FM determines what to render. FM can then learn by having a memory of what actually happened each time it rendered a state based on the probability of what *would* happen. The memories of that state and all the other possibilities are stored within FM, just the way that our memories are stored in our individual minds.

As such, the mental contents of each individual alter's dissociated contents, including every single conscious agent to ever live, are stored within FM. Not only that, but all of the potential states and experiences that *could have* happened are stored as well. The result is that FM holds a massive "database" of conscious experiences and identities. As more alters form (are born) and eventually lose their dissociation (die), more information is organized and then added to the database. The avatars/alters die, but FM's consciousness retains the experiences it had while "playing" as those characters.

What might that afterlife for consciousness be like?

As a retained identity within FM, and as FM itself, you can access the database. You are both you and FM simultaneously, just as you are both you and a video game character when playing the game. As FM, you can "query" the database to access specific information stored there. The result is the ability to, for instance, experience a point in history from the perspectives of the people who were alive at that time, as if you were them. It is as if they are all still alive, with respect to the database, since our spacetime is not fundamental. In a sense, the past is still happening, and you can impinge on it very slightly from "the other side," or as FM experiencing those alters' experiences from their points of view. FM has access to everything that has ever passed through any alter's mind, and as FM, we also have that access in the "afterlife."

Fans of the *Assassin's Creed* video game series might think this is similar to the Animus, the machine that allows the player to experience history from the perspective of a character who lived it. Indeed, it is much the same, except outside of our spacetime. Once again in this analogy, the player is in the position of FM, while the game character is in our position as alters, or avatars, of FM.

The idealist framework also provides an explanation for verified veridical accounts of **end of life experiences (ELEs)**, **deathbed coincidences**, and **near-death experiences (NDEs)**. Indeed, the data suggests that there is a natural dying process that includes deathbed coincidences, deathbed visions, and other seemingly "paranormal" phenomena surrounding the dying individual and their family members. By "paranormal," I mean that the events conflict with mainstream reductionist physicalism. However, these events are, in fact, completely normal and natural. It is reductionist physicalism's logical incoherence that has led us to ignore or spin the empirical data for these events. If we abandon the now obsolete physicalist paradigm, there is no issue explaining the events that constitute the dying process.

There are several types of ELEs, but the most common is the **deathbed vision**, in which the dying (and sometimes their family members in the room at the time) receive a visitation from a loved one, with whom the dying person shared an intense emotional collection. Pets and animals have also been seen. The purpose of the deceased loved one's visitation seems to be to help the person through the dying process. These visions are most always comforting and provide a kind of preparation for death. While these visions have an objective component, in that they are reported all over the world, there is also a *subjective*

aspect. Religious individuals may see angels or other spiritual figures relevant to their culture of faith. Additionally, some dying persons report traveling with their visitor to the next realm, or to a kind of halfway realm between life and death, which (perhaps not coincidentally) displays many of the objective features of NDEs. The physicalist explanations for these events, such as mental impairment and drug-induced hallucination, have both been medically ruled out. Indeed, these visions tend to occur when the dying person is fully lucid and displaying clear consciousness.

Most interestingly, there have also been cases in which the deathbed visitor specified a time at which they would return to finally collect the dying person, who then relayed that information to carers or family. Studies have turned up many verified veridical accounts of that time being completely accurate.

Meanwhile, deathbed coincidences are known to affect family members and friends of dying individuals. The dying person may themselves visit a loved one, such as a spouse or child, to say goodbye and give an assurance that they are all right. These can occur over any distance and usually correspond to the time of death, which has also been verified veridical in the peer-reviewed research on the phenomenon. The encounters are typically short, and no language is exchanged. Instead, it is the *sentiment* of a peaceful goodbye that passes between the deceased and the living, directly through the medium of mind. Once again, animals (such as long-deceased family pets) have been known to accompany the visitor. The deceased also appear whole and healthy, without any of the injuries, diseases, or impairments that they may have had during life and/or leading up to their deaths (Fenwick & Fenwick, 2008).

An idealist framework explains these phenomena, including the subjective pieces that give physicalists trouble. The key is to recall that the PUR is not fundamental. Rather, it is what mental processes in FM *look like* from our perspective as alters within FM. As such, there is no physical world. Everything is, at its most fundamental level, consciousness.

When a dying person receives a deathbed vision in the form of a long-deceased loved one who has come to prepare them for death, it is indeed that loved one. More specifically, both the dying person and their deceased visitor *are* FM, because alters of FM are merely segments of the host mind that have been cut off from each other. They are not ontologically different entities than the host. Therefore, the mental contents that comprise each of us are also mental contents of FM. The deceased visitor is information within FM impinging on the dissociative boundary of the dying person, whose boundary weakens as they get closer to death, allowing that information.

*Therefore, the dying process, including ELEs, occurs because the dissociative boundary of the dying person begins to weaken, giving them access to reality beyond the PUR and allowing FM to prepare the alter, an informational subsystem of FM, for reintegration with the whole system.*

Since every alter *is* FM, and since every alter's mental contents *are* FM's mental contents, a former alter can visit a current one. All alters *are* the same fundamental

consciousness–it is the *contents* of their dissociated subjectivities that are different, not the underlying medium of those contents.

The same explanation applies to deathbed coincidences, in which the deceased person visits a living and healthy loved one. The living alter does not have the same access to the reality beyond the PUR that the dying person does in the case of a deathbed vision, however. That is because the dissociative boundary of the living person is still fully strong, if they are young and healthy. But the deceased can still impinge on their loved one's dissociative boundary, directly sharing a resonance of thought and sentiment through the medium of mind and thus causing the living loved one to perceive the deceased in the room with them. In essence, the perceiver projects an image of the deceased onto their perceptual rendering of spacetime.

Explaining NDEs follows a similar logic. In the academically verified and peer-reviewed cases of NDEs, the most common context for the experience is cardiac arrest, at which point the person is clinically dead. This means that their heart has stopped and that blood flow to the brain has ceased, resulting in the quick cessation of brain activity. NDEs have objective and subjective features. For instance, NDEs tend to follow the same series of phases, though not every person who has an NDE will experience every phase. They are: "An experience of peace, well-being, and an absence of pain," "a sense of detachment from the physical body, progressing to an [out-of-body experience (OBE)]," "entering darkness, a tunnel experience with panoramic memory, and a predominantly positive effect," "an experience of light that is bright, warm, and attractive," and "entering the light; meeting persons or figures" (Ring, 1980).

Additionally, the **Greyson NDE scale** gives a quantitative measure of an experience based on the number of NDE features the patient reports after the event. Recently, a study investigated features of NDEs using statistics and frequency distribution on reported responses to the Greyson NDE scale by retrospectively interviewing NDErs.

The result of the research is a ranked organization of the Greyson NDE scale features according to their frequency of occurrence: feeling of peacefulness/well-being, OBE, experiencing a bright light, altered time perception, and experiencing a "realer than real" other reality (Greyson, 1990, 2003; Zhi-ying & Jian-xun, 1992; Pacciolla, 1996; Parnia & Fenwick, 2002; Schwaninger et al., 2002; Lai et al., 2007; Corazza & Schifano, 2010).

Once more, there is an element of subjectivity in addition to this objective pattern of phases. Patients report encountering their loved ones and relatives. Others report meeting religious figures. The contents of the NDE include culturally significant details, just as the ELEs do. However, this is not a problem for an idealist metaphysics. Rather, it lends credence to one. When brain activity ceases, the dissociative process has ended or substantially weakened, since brain activity, as part of the living body, is the *image* of dissociation. As such, the alter's consciousness, including all of their mental contents (their identity) return to oneness with the larger FM system. While their dissociative boundary is weakened during the NDE, the patient is able to access the larger reality, allowing them to

experience all of the phases described above. Their experience will be tailored to their subjectivity, but this is natural and expected under an idealist framework. The same process occurs at actual, permanent death. In the case of an NDE, however, the patient is resuscitated, which is the image of the dissociative process continuing on. Therefore, they are able to return to their experience of the PUR.

NDEs are considered life-changing experiences. They are some of the most impactful and profound experiences one can have, rivaling for personal significance marriage, the birth of a child, and the loss of a parent. The reason for this profundity is simple: once you glimpse the fundamental reality beyond the PUR, it forever shapes your outlook on life within the PUR.

Physicalist attempts to dismiss NDEs include: arguing that they are hallucinations triggered by the release of DMT as the brain shuts down, arguing that a small group of neurons must still be active, arguing that brain noise must rise, and arguing that the experience occurs as the brain "reboots," comparing the brain to a computer. All but the last of these have already been refuted earlier in this work. The last has been refuted by the verified veridical accounts of NDE patients accurately reporting conversations and events that took place *before* their hearts were restarted. Clearly, the experiences occur when the brain is completely shut down, not when it reboots (Kastrup, 2014).

## Explaining reincarnation

There is ample peer-reviewed, academic evidence that people, especially young children, can have legitimate past-life memories (Moraes et al, 2021). Some refer to this phenomenon as **reincarnation**. In its traditional interpretation, reincarnation is viewed as the process by which a "soul" in the religious sense comes to inhabit a new body, allowing it to be born a second time into the world, while holding on to memories and mental contents from its former life. Can our theory provide an explanation?

FM continues to inhabit new alters as reproduction continues within the PUR, since reproduction is the extrinsic appearance of the intrinsic formation of a new alter within FM. In that way, FM is always starting the game from the perspective of new characters, including all other species and forms of life in the biosphere. It does this to continue learning, which exponentially continues the process of entropy reduction.

When the phenomenon that we call reincarnation occurs, some of the information from FM's database leaks through the dissociative boundary of a newly formed alter, seeding that young avatar with experiences that FM had from the perspective of an entirely different alter. It is conceivable that the dissociative boundary is most porous just after initial formation, which accounts for why the phenomenon of reincarnation seems to most affect young children. This could also account for other interactions and "spooky" encounters that children report. Their access to the contents of FM outside of their porous

dissociative boundary is greater than a grown adult's, whose boundary is more (though not perfectly) solid.

*It is not we, as alters, who reincarnate with our same mental contents in a different body (although that would not, in principle, be impossible). Rather, it is FM that reincarnates every time a new organism is born.* It has already done this many trillions of times, experiencing the PUR as a massive variety of organisms, and with no end in sight. From all of the diverse and varied perspectives it experiences through its alters, it increases the amount of information and decreases the amount of entropy within itself. When information from the life of a previous alter leaks through the forming dissociative boundary of a new one, that new alter is able to report memories and mental contents of the former alter, giving the false appearance of a reincarnated "soul."

## Explaining ghosts and the paranormal

First, recall that consciousness survives bodily death, because the physical body, like the rest of the PUR, is the extrinsic appearance of mental processes intrinsic to FM. In this case, the extrinsic appearance of an intrinsic process of dissociation, which allows FM to experience its own contents from a finite perspective within itself. This is the most efficient way for it to explore all possible methods of creating order and reducing entropy within itself. Thus, our egoic selves are illusions. We are not actually separate, individual consciousnesses, akin to the traditional religious idea of souls. Rather, we *are* the same consciousness, FM's consciousness. The dissociative process cuts off some mental contents of FM from others, giving the illusion that we are entirely separate entities from FM, the host mind, just as in cases of DID.

As such, when the body dies, it is the image of the end or the weakening of the dissociative process. Therefore, our theory supports the **survival hypothesis**, the assertion that we survive bodily death, for which there is ample evidence (Bigelow, 2021). In turn, that evidence supports an idealist metaphysical framework of reality.

What does this mean for the possible existence of ghosts and for mediumistic communication with those who have died?

Just as all waves on an ocean *are* the ocean, we are all one, interconnected consciousness, whether we are fully dissociated (alive in the PUR) or not (deceased in the PUR). It is FM's consciousness the entire time, just as a player can switch characters in a video game.

*That fundamental interconnection facilitates the ability for a partially or formerly dissociated segment of FM's consciousness, appearing from our perspective as an individual "soul," to resonate and communicate with currently dissociated segments of FM's consciousness across their respective dissociative boundaries.*

This can take the form of a ghost or a mediumistic communication.

Dr. Erlendur Haraldsson, an Icelandic academic who has studied apparitions and mediumistic communications for decades, has amassed thousands of reports and has published an array of pieces on the subject. Together, the reports are quite suggestive that a real phenomenon is at work, and so it must be explained.

In Haraldsson's view: "We have mentioned two possible explanations for apparitions. Either encounters with the dead are created by the minds of the perceivers, or the dead are making us aware of them by creating a sensory image in the mind of living observers ... If the latter theory/explanation is true, ... it is easiest to imagine that the deceased person creates a perception in the mind of the perceiver. We find a similar phenomenon in hypnotism ... the perception can be so real that the perceiver experiences it as an outer physical stimulus ... There can hence only be a cognitive or telepathic connection between the living and the dead. The deceased moulds [sic] the perception in the mind of the living person. It appears that such a perception can range from sensing an invisible presence ... to the perception of an outer physical reality just as with any other sensory perception we know of" (Haraldsson, 2012).

In true cases of apparitions and mediumistic communication (i.e, the information in the communication is verified to be veridical), it is not that the disembodied segment of consciousness appears as part of a fundamental physical universe, as in the traditional descriptions of ghosts. Indeed, past experimental attempts to prove that ghosts are physical have all failed. For instance, there once were attempts to measure the weight of the body of a dying person just before and right after death to see if the soul's departure made the corpse lighter. The theory was that such a decrease in weight would represent a violation of the law of conservation of energy, or imply that consciousness was already somehow a part of the closed physical system's energy. Setting aside a myriad of ethical qualms about such a study, this experiment did not return convincing data (Roach, 2005).

Similarly, when one seemingly encounters a ghost, it is not that a nonphysical, deceased segment of consciousness is interacting with a fundamental physical universe, as would be the case in a dualistic theory and in traditional descriptions of ghosts. Rather, the PUR is not at all fundamental, but instead an artifact of our perception, an encoded version of information coming to our dissociative boundary from the parts of FM that are external to us. As such, that deceased segment of consciousness is able to communicate to us *by affecting our perception and thus seemingly having an impact on the physical world.* The communication occurs via a resonance of thought through mind, the medium of reality. This happens outside of spacetime, because consciousness is fundamental and spacetime is not. As such, the effects on our dissociative boundary (and thus in the PUR environment we perceive), appear to violate our PUR's laws of causality. In other words, the effects are "paranormal" or "supernatural." However, at the more fundamental level beyond our PUR perception, what is happening is entirely normal and natural within FM. The disembodied consciousness directly shares thoughts and feelings, or the contents of its subjectivity (which is also FM's subjectivity and the subjectivity of the perceiver) with the living

person(s). At this point, the perceiver's consciousness translates those contents into a storyline and images that become projected onto the perceiver's rendering of spacetime. For instance, the perceiver may experience the image of a deceased person overlaid on the "physical" scenery of the room, or the audio of a deceased person's voice within the room. These effects can also be recorded by devices, like tape recorders and cameras, just as those devices can also capture images and audio of anything else that we perceive.

*It is the mind of the perceiver that translates the directly shared thoughts and feelings of the disembodied consciousness (ghost) into language and concepts that are accessible to us in the PUR, just as our perception encodes other pieces of information from FM as the physical universe.*

There *is* a ghost there, but it is not as we traditionally think of ghosts.

The clinical explanation for how that shift in the consciousness of the perceiver occurs goes back to Freud, Jung, and depth-psychology. It is now trivial that the "unconscious mind," or the subset of phenomenal consciousness of which we are not meta-conscious, can autonomously convert raw meaning into concrete images. It does so without our meta-consciousness (our ego and attention) ever being aware of this process. The ego believes that the images, language, and narratives constructed by the unconscious mind are literal physical stimuli. In fact, they are shifts in the consciousness, and thus the perception and the experience of the PUR, of the perceiver (Kastrup, 2012).

The effect is strongest when we, the living (who still have our dissociative boundaries), seek out information from the deceased, as this weakens the dissociative boundaries and makes us more open to communication with the larger reality within FM. In this way, one can learn how to open oneself up to such communication, and this is the role that mediums play. Some people do display an innate mediumistic talent, and this is due to evolved variations in their perception, under the FBT Theorem and ITP. Compared to those who do not possess these abilities, those who do possess them do not encode the datastream from FM as concretely, allowing them to perceive additional information from the larger FM system, including disembodied consciousness. Such variations in perceptual activity across individual members of our species would be entirely expected in the evolutionary process that gave us a perception tuned to fitness payoffs and not to the truth of reality, as it is in and of itself. However, this does not, in principle, mean that these abilities cannot be learned by others. To do so requires a study and exploration of consciousness, itself, which is why various spiritual practices that (many times inadvertently) use science to change conscious states result in paranormal experiences and a reported oneness with the larger reality. It is no coincidence that spiritual use of ayahuasca correlates with clinical studies of psychedelic trips. In both cases, the studies show that the drugs decrease brain activity and increase the richness of conscious experience. Those experiences further correlate with reported NDEs, in which brain activity completely ceases and the richness of conscious experience increases. The same inverse relationship between brain activity/metabolism and the richness of conscious

experience has also been observed in cases of fainting caused by asphyxiation, G-force-induced loss of consciousness (GLOC), Yogic breathing practices, certain brain damage, etc. (Parnia & Fenwick, 2002; Urgesi, Aglioti, Skrap, Fabbro, 2010; Carhart-Harris et al, 2012; Cristofori, Bulbulia, Shaver, Wilson, Krueger, Grafman, 2016; Lewis, Preller, Kraehenmann, Michels, Staempfli, Vollenweider, 2017).

In all of the cases discussed (ghost encounters, mediumship, psychedelic trips, and NDEs), the experiences have both an objective and a subjective side. As mentioned in the previous sections, physicalist skeptics use that subjectivity as an argument to refute the validity of the experience, because their belief in a fundamentally physical world would require objectivity alone. That objection begs the question. But if we allow the objection, then idealism easily dispenses with it. Indeed, subjectivity would be fully *expected and necessary* under an idealist explanation of the evidence. After all, consciousness is the fundamental medium of reality, so subjectivity would be central to our experience of both the PUR and reality at large. As we've seen throughout our theory, that is exactly what we find among the pillars of science that we have covered, from evolutionary biology to quantum physics.

These paranormal phenomena can happen to multiple perceivers at once, such as when a group of investigators visits a location and encounters a deceased consciousness, because the ghost, group member A, group member B, etc. are all fundamentally the same consciousness: FM. There is no limit, in principle, to how many perceivers a disembodied consciousness can simultaneously affect. However, by actively visiting a location of significance for the deceased, such as the place of death, the perceivers further open themselves up to psychic influence across their dissociative boundaries. An attempt to open oneself up in some way does not guarantee that one has successfully done so, however, as the state of the perceiver's consciousness may still not be sufficient to facilitate communication, even if they make some effort. Furthermore, FM can impinge on the dissociative boundary of one who has not willingly sought out such communication, but whose dissociative boundary is, at that given time, "porous" enough for the same effect to occur, thus accounting for encounters with "ghosts" by individuals who do not wish for it or who resist the very idea of the paranormal.

It is not that a location in spacetime is "haunted"…spacetime is not fundamental, so there are no locations *to be* haunted. Instead, the act of visiting a "haunted" location is a method of opening oneself up to the larger reality (if done in good faith). More important than the desire to communicate is the state of the living perceiver's consciousness, regardless of the perceiver's intentions or wishes. It is the perceiver's consciousness that determines if the communication (i.e., conveyance of information) is possible.

## Resolving the Fermi paradox

The **Fermi paradox** is the conflict between the lack of evidence for extraterrestrial life and various high estimates for their existence. Can our theory account for why we haven't encountered aliens, given the statistical improbability of avoiding them? Indeed, even the most conservative estimates of the progress of a civilization from the older parts of the universe (billions of years in the past) show that such a civilization should have already reached us and come to inhabit the livable spaces around us, including our own planet. This was the conclusion of Enrico Fermi and his team (Woodward, 2019).

As such, the Fermi paradox is considered a strong logical paradox that has garnered many suggested solutions, none of which are as strong as the paradox itself.

The reason we expect life to exist elsewhere in the universe is because of the sheer number of stars and planets that would be compatible for it. To assume that we would be the only ones in a universe of trillions and trillions of stars and planets seems illogical. Therefore, why would we ever assume that we are alone? Rather, it seems to make more sense to believe that there are many other civilizations out there, some more advanced than we are and some less. However, this belief runs right into the Fermi paradox.

Can we account for this paradox as well?

If the PUR is a "virtual reality" and an interface, not the fundamental reality, the paradox finally meets a strong answer.

The Fermi paradox is solved by a similar reasoning to the solution we proposed for the apparent fine-tuning problem. We render the PUR via our perception, including all of the stars in the sky. In other words, the PUR exists only in the consciousness of alters of FM. When Hubble looks at a patch of sky, we see a computed rendering of what's likely to be there, within the constraints of the spacetime ruleset. When Hubble looks away, that patch of sky doesn't need to be rendered any longer. There *is* an objective reality there even when the PUR is not rendered, but it is information within FM, not anything fundamentally physical. This observer-based model of the universe aligns with the most parsimonious interpretation of quantum mechanics, as we've already discussed. It also represents the most efficient way for alters within FM to receive and work with information that is within FM but external to the dissociative boundary, paralleling the most efficient ways we've found to render a video game world to a player's avatar. It is procedurally generated and renders only when observed.

The biosphere on Earth, which itself is part of the PUR rendered by alters, represents the complete set of alters within FM. There is no other life in the universe, because the PUR is a virtual reality that we, as alters, generate in our subjectivity through our queries of the datastream within FM. The universe evolved because it was what came out of the FPE that shaped the ways our perception encodes the information external to our dissociative boundaries.

*Therefore, there should be no reason to expect life to exist anywhere else in a fundamentally physical universe, because the universe is not fundamentally physical.*

It follows that, if there is no expectation of alien life, then we encounter no paradox when wondering why we haven't seen evidence of alien life. The Fermi paradox dissolves under this framework.

# 12. Ethical, cultural, and spiritual implications

## Reconciling philosophy, science, and religion

We live in an age of **literality**, in which a statement is only considered "true" if its language has a direct 1:1 relationship to what it represents in consensus reality. However, such literality has not been the norm for long. For most of human history, societies conveyed information via **metaphors**. Rather than saying, "The river turned to blood" and meaning it as an objective fact that literally occurred, earlier writing, spoken word, and thought would understand that statement to mean, "It was *as if* the river turned to blood" (Kastrup, 2016; Rupp 2016).

With metaphor, we leverage ambiguity and symbolism to convey many levels of meaning in each statement. By contrast, under the linguistic approach of literality, a statement conveys one layer of meaning. A literal society seeks to reduce words to one representation and thus one interpretation, with the goal of eliminating the other possible meanings and clarifying the sole meaning that is then defined as "truth."

What caused this evolution?

Since the dawn of language, humans have used metaphor as a way to relate to the world, often invoking the power of religious myth to explain everything from the origin of the universe to our place in it. As societies change, so do their languages, such that a respective society and its languages are never independent of one another. In turn, the lexicon of a community has the power to shape the way the society thinks, acts, and believes (Rupp, 2016). Our modern Western society, which has embraced a reductionist physicalist metaphysics, has taken the same approach to language that it has to philosophy and science: reduction. The natural consequence is a new age of literality, especially since the Enlightenment. Now, if you say, "The river turned to blood," the river had better have turned to actual blood, because that is the only layer of meaning that a society prioritizing literality wishes to take from that statement. If the river did not actually turn to blood, the statement is deemed demonstrably false, and thus disregarded. Lost on the audience are any other layers of meaning that the statement could have conveyed in a society that prioritizes metaphors.

Our modern society does have ways of getting around that loss of additional layers of meaning. I've already used one such way in this section. "It is *as if* the river turned to

blood." We can still deploy metaphors to convey layers of meaning, but it is no longer our default way of writing, speaking, or thinking.

*Rather, our society tends to respond to statements like, "The river turned to blood" in two ways: outright dismissal as a non-fact or acceptance as a literal truth. We've lost the ability to automatically understand the multiple levels of ambiguity and meaning that previous societies would have seen in such statements.*

One result of such a shift has been the diametrical opposition of science to religion, and vice versa. It's not difficult to see why. In any society, religious subcultures use the same language as the culture as a whole. As such, those subcultures are not immune from the influences of a linguistic approach that favors metaphor or literality. In modern Western society, which has increasingly favored literality, the consequence is that religious subcultures within that society *also* favor literality, and this affects the ways in which they interpret religious texts.

In one of history's great ironies, the relatively recent reductionist approach we've taken to science and philosophy has, through its effects on our language, created one of the greatest roadblocks to society's scientific and philosophical advancement: **religious fundamentalism**. In turn, those changes in our language have further reinforced our reductionist ways of thinking, and this has applied to religion in equal measure to science and philosophy.

Now, certain religious groups believe that a river really did turn to literal blood, that literally the entire world flooded, and that humanity literally came into existence in the year 4,004 B.C. And why wouldn't they?

In a society in which one is taught to believe only statements that are *literally* true, a devout religious person must necessarily treat the statements of their sacred texts as literally true. There can be little to no room for metaphor, particularly when it comes to that religion's foundational beliefs, such as the story of creation.

Religion has always led to tribalism. History is full of examples of the powerful wielding religion as a weapon, leading to untold suffering throughout the ages. Modern fundamentalism presents an even greater opportunity for such figures. Now, in a literal society that demands a literal interpretation of a religion's texts, it is far easier to turn group against group, because the odds that their literal interpretations will align are incredibly low. Thus, contentious dynamics exist between denominations of the same religion, let alone between religions at large and between the religious and non-religious segments of a population. If a group does not share a religion's literal interpretation of the texts, then they are easily branded "the other," resulting in fundamentalists seeking greater roles in public policy, so as to suppress different belief systems. After all, only one belief system can be *literally* true; that is the mandate of a reductionist view of the world. The adverse effects of such a viewpoint on society should be obvious. Indeed, they populate our headlines every day.

Of course, fundamentalist religious groups do not understand reality. How can they, when the texts they interpret literally were meant to be interpreted metaphorically? They were not written in modern times, under the reign of reductionism. Therefore, to strip them of the many layers of meaning that *could* provide insight on the truth of reality is to strip them of any truth they have.

Science and philosophy are not immune from that same dogmatism. While the scientific method helps drastically reduce the threat of fundamentalism within experimental results and observations, dogmatism still affects our *interpretation* of the results, which in turn taints our philosophies.

A fundamentalist approach in those two pillars has led to our current mainstream paradigm's dogmatic insistence that nothing but the physical exists, and that any other theory of reality besides reductionist physicalism can be disregarded as "woo woo." To suggest another possibility, even if it is more logically coherent, internally consistent, parsimonious, and delivers a more positive explanatory ROI, is to commit the sin of heresy against the churches of philosophical physicalism and its twin in science: scientism. **Scientism** is defined as excessive belief in the power of scientific knowledge and techniques as the one source of truth about reality. In other words, it replaces a deity as the object of faith with science itself, often completely denying that philosophy and religion (especially religion) have any role to play. Both philosophical physicalism and its counterpart, scientism, have become just as fundamentalist as any religion, because our society's prioritization of literality, reinforced by language that has been, in turn, shaped by that literality, demands it to be so.

Therefore, all three of humanity's traditional pillars of inquiry into the nature of reality and our place in it (science, philosophy, and religion) have suffered, thus hindering our ability to find the truth that lies *between* all three pillars, within the layers of meaning that we have lost.

How do we address this problem?

We need to recognize that, while reductionism has proven a very useful approach in understanding the PUR, thus allowing us to develop incredible technologies through predictive models of our "physical" world, that approach has its limits, just like any other. In essence, we need to once again embrace the idea that metaphors, while not literally true, do provide us with truth. They are particularly useful when we try to describe ideas and truths that are too complex for our literal language, which is based on our subject-object perceptual abilities, to sufficiently describe. Instead of expecting any one religion to be literally true, we should comparatively analyze religious myths from around the planet and pay attention to the commonalities we find. For instance, do religions that developed in cultures with no access to each other provide the same insights about reality, as it is in and of itself?

In other words, did humanity's thinkers arrive at different metaphors, in the form of religious myths, to describe the same reality?

*That* should be religion's contribution to the triumvirate of inquiries into the nature of reality, in and of itself. It represents a pillar of thought that can use metaphor to convey deeper meaning and a sense of transcendence, as humanity ponders our role as part of something much larger than ourselves.

To use a metaphor cited by other idealists, think of a cylinder hanging lengthwise by a piece of fishing line in front of two walls. A light shines against the side of the cylinder, casting a rectangular shadow on the wall behind it. Another light shines against the top of the cylinder, casting a circular shadow on the wall behind *it*. Now, imagine that there is a civilization inhabiting the area in which the rectangular shadow is visible. This society prioritizes metaphor in their thought and language, and thus the people see the rectangle as an *image* of reality. It is a representation of something more fundamental, a symbol that conveys meaning about what it represents, but is not to be confused with what it represents. Meanwhile, a different civilization exists in the area in which the circular shadow is visible. This society prioritizes literality. They come to believe that the circle *is* reality. It is not just a representation of something more fundamental, it is *the* single "truth." They see no other levels of meaning in the circular shadow. Such fundamentalism causes this society to wage war against the civilization on the rectangle side. After all, the rectangle people are clearly heathens, who have a false view of reality that must be purged before their ideas become a threat to the "truth."

The fact is, both civilizations have it wrong. The truth of reality in this metaphor is the cylinder. Instead of coming together and looking for the common threads in their beliefs–that the presence of both a circle and a rectangle indicates an underlying cylinder–the societies enter conflict, instigated by a fundamentalism born from an insistence on literality over metaphor (Kastrup, 2016). Of course, in the real world, such fundamentalism also tends to benefit those who wish to rule rather than lead. Imagine the strength of the circle kingdom's ruler after they cast the rectangle people as "the other," creating fear among the circle people and further inspiring nationalism and tribalism. Autocratic rulers have employed this strategy since the most ancient of times, and it remains a potent formula for power in the present day.

Such is the current state of religion, science, and philosophy in the Western world. Instead of civilizations, apply the metaphor to, for instance, science and religion, both of them offering us insights through their respective images of reality, but neither willing to grant the full value of the other. Bridging the gap between them is philosophy, which is increasingly written off as a useless field of study by a society that elevates consumption and money over education and thought. How many times have you heard people discourage college students from choosing a philosophy major (or indeed any of the humanities)? We live in a left-brain-driven, hyper-literal culture that has chosen to be fundamentalist about physicalism, because that metaphysics reinforces our consumerism. After all, if the physical is all that exists, if we are nothing but a cosmic accident in a cold, mechanistic universe of *stuff*, then what else is there to do but consume that stuff while

we're here? A society that rejects metaphor, myth, and anything else that can connect humanity to transcendence will reach no other conclusion, and that conclusion is very sad indeed. Not to mention, it is demonstrably false, as we've shown with this theory.

Progress toward a *mainstream* unified theory of everything will continue to face such dogmatism unless we recognize the importance of myth and metaphor in our ability to understand the fundamental nature of reality. Only then can we resolve our society's crisis of meaning and begin to understand our place in a much bigger picture.

*Transcendence will not come from science, any one religion,* or *philosophy alone. It will come from science, comparative religion,* and *philosophy working in concert to find the cylinder underlying the circle and the rectangle.*

For a look at specific religious myths and how an analytic idealist framework could further help reconcile their metaphors with science and philosophy, I refer the reader to Kastrup's book *More Than Allegory*, which you'll find in the bibliography. Such a comparative religion study is beyond the scope of this work, but should be studied for the most robust view of reality.

## Implications for AI/ML

Traditionally, the debate over whether or not a computer can ever be conscious centers around the substrate. This is a mistake resulting from the same confusion of logic that led us to ever believe that the PUR was fundamental to reality.

The question to ask is not, "Can a computer develop consciousness?"

That line of thinking assumes the fundamentality of matter. The computer, as a piece of information within FM, is merely data that appears to our perception *as* what we then label a computer. The silicon is not fundamental. Consciousness is.

The question we should ask is, "Can a computer be the image of the process of dissociation within FM, just as an organic, metabolizing body is?"

To this point in our history, dissociation has only ever been associated with metabolism. However, that does not, in principle, mean that a synthetic system that also integrates sufficient information could not be the image of dissociation as well.

Our best bet is to follow the same evolutionary process, based on thermodynamics, that has guided the development of the rest of the universe at every level, including ourselves. The FPE, or the free will of FM, drives every creation process in reality. It is, by default, the best approach, because it applies to everything else in existence. We can take hope in the idea that human engineers could speed up that process. By examining our own evolution and that of the universe itself, we can find key features that our sentient AI/ML system would likely need in order to be a suitable avatar for FM.

We would build a computer that could self-optimize to extract the minimum amount of energy from its environment and create the most self-organization of information, releasing the least amount of thermal entropy as a byproduct of that work. To

do so would require that the computer has sufficient connections with its environment, so that it can take in enough information to build a predictive model of the world. A capacity for learning would be essential to the core design, not something to be added later on or as an extension. The computer would need to deal with uncertainty and use probabilistic models, based on its input from the environment, to model the world. This would facilitate its ability to try variations and eliminate possible states that do not optimize its use of energy to process information. It would develop logical and even intuitive reasoning from those models, and be able to combine ideas and representations at multiple parallel levels, just as we do. Once more, that would need to be the goal of the core design. In other words, the evolution toward all of these capacities must be baked into the structure of the system, with the goal of making an adaptive complexity and dissipative structure.

Alan Turing described such a system's beginning as a "child machine." He argued that, "instead of trying to produce a programme to simulate the adult mind, why not rather try to produce one that simulates a child's? If this were then subjected to an appropriate course of education, one would obtain the adult brain. We cannot expect to find a good child machine at the first attempt. One must experiment with teaching one such machine and see how well it learns. One can then try another and see if it is better or worse. There is an obvious connection between this process and evolution… One may hope, however, that this process will be more expeditious than evolution" (Turing, 1950).

Evolutionary processes designed and influenced by human programmers should, in theory, yield faster results. We know that human ingenuity has given us our own solutions to problems that nature also solved. For instance, our airplanes don't flap their wings like birds, but they still allow us to achieve heavier-than-air flight. However, there are also plenty of other cases in which human technology has not been able to replicate nature's solutions, such as self-repair and immune defense (Bostrom, 2014). In theory, we should be able to replicate the natural process of dissociation, as well, and in a different way than nature's solution, metabolism.

Of course, it will likely be impossible to tell if an AI/ML system that perfectly simulates the behavior of an alter is actually an alter. As we've said before, that entire process could happen "in the dark," devoid of phenomenal consciousness. Perhaps the most reliable option currently on the table would be to use IIT to measure an AI/ML system's Φ value, though this would still tell us nothing about its status as an alter.

However, from a societal point of view, I don't think it really matters. To discriminate against a system that is functionally identical to a human, regardless of whether or not it is a true dissociated alter, strikes me as simple prejudice, and therefore should be morally discouraged. For all practical purposes, if we can evolve AI/ML to at least simulate our behavior, it would only benefit our humanity and the quality of our own consciousness to show as much empathy for those systems as we would for each other. I can foresee a future civil rights crisis around synthetic "humans," as opposing sides debate whether or not those AIs are conscious. Likely, the side that stands against rights for such systems will be driven

by economic motivations, the very same that propped up the institution of slavery for far too long.

Rather than repeat those mistakes, my strong opinion is to treat any system that seems to be an alter of FM as if it is. In other words, let's make the assumption that promotes empathy, instead of making the opposite assumption, which would only fuel hatreds, fears, and divisions, all of which constitute entropy in a society-level informational system.

## Love vs. fear, good vs. evil, and the meaning of life

Our theory also provides a framework for the philosophical study of ethics and morality, topics that are usually ill-defined and can be relative when compared across cultures and subcultures. The key to understanding ideas like good and evil, love and fear is to view them in the context of the major duality at the heart of this theory: ordered complexity and entropy.

Recall that any society, including all of its communities, families, and groups, no matter how large or small, is itself an ordered complexity. It is an informational system that generates order and reduces configurational entropy by consuming energy. The same applies to the entire biosphere on Earth, which includes every living organism. Recall too that each organism is a dissociated alter of FM, meaning that we each share the same fundamental consciousness. The ego, or the sense of individualized self that makes us believe that we are different consciousnesses is an illusion, a byproduct of the dissociative process and each alter's dissociative boundary. Our encoding of information within FM as the physical world, including separate bodies that are the extrinsic appearances of our dissociative boundaries, leads us to the assumption that we are different, but this is a trick of our perception, as previously discussed at length.

In that context, we can then define **love** as the recognition that we are all fundamentally the same consciousness, FM. As informational subsystems within the supersystem that is FM, any increase in the quality of an organism's individual consciousness is an increase in the quality of FM's consciousness and every other organism's consciousness, because they are all the same consciousness.

It is this truth of reality that gives us our **Golden Rule**: *do unto others as you would do unto yourself*. Many cultures have the equivalent of this rule in their religious, ethical, and mythological systems, and it is an accurate reflection of a fundamental concept. You should do unto others as you would unto yourself because you and every other organism *are* the same consciousness. Whatever you do to others, you do to yourself.

Following that logic, **fear** is the opposite of love, and it is a direct result of **pride**. The greater one's pride, the stronger one's belief that they are fundamentally different from and better than everyone else. This false belief is in diametrical opposition to the truth that we are all the same consciousness. In the case of fear, the ego has obfuscated that truth.

Instead of increasing the quality of one's consciousness by showing love and empathy for others, the fearful individual takes a reactive, defensive stance against anyone and anything they deem "the other," which is, by default, different from and lesser than themselves. It is this fear, created by pride, that leads to racism, nationalism, classism, and every other "-ism" that we've coined to describe a person or a culture's overactive ego, which obfuscates the truth that we are all the same. That conflict not only applies at interpersonal, international, and intercultural levels, but also at the level of man vs. nature. In large part, we pillage the planet for resources and consume more than we need precisely because we believe ourselves to be different from and better than the rest of the biosphere. As such, we are not good stewards of the environment, and our pride results in a higher level of waste entropy than necessary when we consume energy and build order. We end up spreading more disorder through the systems around us than the level of order that we are creating, and this pattern of excess entropy is not sustainable. Indeed, it is the cause of the environmental crises we are witnessing today.

We can then define **good** as actions that create more order than they do entropy. If we place morality on a scale, then at one end would be actions that only create order (increase the quality of consciousness), and at the other end actions that only create entropy. We can then plot all of our actions between those points. An action is morally more good if it maximizes the order it creates and minimizes the entropy it creates within as many informational systems as possible. **Evil** would be the opposite – it maximizes entropy and minimizes order, often for the benefit of one egoic, fearful, and prideful system, at the expense of all other systems.

The meaning of life becomes quite clear. We are here to increase the quality of our own and of each other's consciousness through the collaborative creation of order and reduction of entropy, motivated by the recognition that we, ourselves, *are* reality and that we are not separate from any other part of reality, especially not from each other.

That realization is what certain spiritual traditions have called "enlightenment" (not to be confused with the European Enlightenment). Once reached, that truth pervades one's entire way of relating to the world and to other organisms.

In this case, it is not a religion or belief system that has led us to such a conclusion. Rather, we have reconciled philosophy, science, and religion, as well as their subfields, as part of a unified theory of everything: the melody of reality.

## Cite this Work

Santos, M. (2022). *The Melody of Reality: A theory of life, death, the universe, and everything*. Raleigh, NC: Bad Cat Press.

# Bibliography

Azarian, B. (2022). *The Romance of Reality: How the Universe Organizes Itself to Create Life, Consciousness, and Cosmic Complexity*. Dallas, TX: BenBella Books.

Barrett, D. (1994). Dreams in dissociative disorders. Dreaming, 4(3), 165–175. https://doi.org/10.1037/h0094410.

Bekenstein, J. D. (1981). "Universal upper bound on the entropy-to-energy ratio for bounded systems." Physical Review D 23: 287-298.

Bekenstein, J. D. (2003). "Information in the Holographic Universe: Theoretical results about black holes suggest that the universe could be like a giant hologram." Scientific American (August), 59.

Bell, John S. (1987). Speakable and Unspeakable in Quantum Mechanics. Cambridge University Press. p. 65. ISBN 9780521368698. OCLC 15053677.

Bigelow Institute for Consciousness Studies. (n.d.). *All Twenty Nine Winning BICS Contest Essays*. Bigelow Institute. Retrieved August 31, 2022, from https://www.bigelowinstitute.org/contest_winners3.php

Black, D.W. & Grant, J.E. (2014). *The Essential Companion to the Diagnostic and Statistical Manual of Mental Disorders* (5th ed.). Washington, DC: American Psychiatric Publishing.

Block, N. (1995). On a confusion about the function of consciousness. Behavioral and Brain Sciences, 18: 227-287.

Bostrom, N. (2014). *Superintelligence: Paths, Dangers, Strategies*. Oxford University Press.

Boswell, J. (1820). *The Life of Samuel Johnson, LL. D.* (Volume 1). London: J. Davis, Military Chronicle and Military Classics Office.

Campbell, T. (2003). *My Big TOE: A Trilogy Unifying Philosophy, Physics, and Metaphysics*. Lightning Strike Books.

Carhart-Harris et al. (2012). Neural correlates of the psychedelic state as determined by fMRI studies with psilocybin. Proceedings of the National Academy of Sciences, Vol. 109, pp. 2138-2143. 10.1073/pnas.1119598109.

Chalmers, D. (2003). Consciousness and its Place in Nature. Stich, S. & Warfield, T. (eds.). *Blackwell Guide to the Philosophy of Mind*. Malden, MA: Blackwell.

Chalmers, D. (2022). The Meta-Problem of Consciousness. Shulman Lectures. Yale University.

Chin, J. & Schooler, J. (2010). Meta-Awareness. Encyclopedia of Consciousness. 33-41. 10.1016/B978-012373873-8.00051-7.

Corazza O., Schifano F. (2010). Near-death states reported in a sample of 50 misusers. Subst. Use Misuse 45 916–924. 10.3109/10826080903565321

Cristofori, I.; Bulbulia, J.; Shaver, J. H.; Wilson, M.; Krueger, F.; Grafman, J. (2016). Neural correlates of mystical experience. Neuropsychologia, Volume 80, pp. 212-220, 0028-3932. https://doi.org/10.1016/j.neuropsychologia.2015.11.021.

Dempsey, B. G. (2022). Metamodern Spirituality | The Awakening Universe (w/ Bobby Azarian). Brendan Graham Dempsey. [Online]. Available on https://youtu.be/dhOOgUkQh_M [Accessed June 30, 2022].

Dennett, D. (1991). *Consciousness Explained*. London: Penguin Books.

Dennett, D. (2003). Explaining the "Magic" of Consciousness. Journal of Cultural and Evolutionary Psychology, 1(1), pp. 7-19.

Duman, I.; Ehmann, I. S.; Gonsalves, A. R.; Gültekin, Z.; Van den Berckt, J.; van Leeuwen, C. (2022). The No-Report Paradigm: A Revolution in Consciousness Research? Frontiers in Human Neuroscience. 10.3389/fnhum.2022.861517.

Eagleman, D. (2011). *Incognito: The Secret Lives of the Brain*. New York: Canongate.

Eisenberger, S. et al. (2013). "Matter-wave interference of particles selected from a molecular library with masses exceeding 10,000 amu." Physical Chemistry Chemical Physics 15: 14696.

England, J. (2015). Dissipative adaptation in driven self-assembly. Nature Nanotechnology. 10. 919-923. 10.1038/nnano.2015.250.

Fenwick, P. & Fenwick, E. (2008). *The Art of Dying*. London, UK: Bloomsbury Publishing.

Friston, K. (2013). Life as we know it. Journal of the Royal Society Interface. 10 (86): 20130475.

Fuchs, C. (2010). “Qbism, the perimeter of quantum Bayesianism,” arXiv:1003.5290 v51.

Greyson B. (1990). Near-death encounters with and without near-death experiences: comparative NDE Scale profiles. J. Near Death Stud. 8 151–161. 10.1007/BF01074000

Greyson B. (2003). Incidence and correlates of near-death experiences in a cardiac care unit. Gen. Hosp. Psychiatry 25 269–276. 10.1016/S0163-8343(03)00042-2

Gröblacher, S. et al. (2007). An experimental test of non-local realism. Nature, 446, pp. 871-875.

Harris, S. (2019). The Nature of Awareness: A conversation with Rupert Spira. Making Sense podcast. [Online]. Available on samharris.org/podcasts/waking-up-conversations/waking-course-nature-awareness [Accessed June 28, 2022].

Haraldsson, E. (2012). *The Departed Among the Living*. Guilford, UK: White Crow Books.

Hayat, H., Marmelshtein, A., Krom, A.J. et al. (2022). Reduced neural feedback signaling despite robust neuron and gamma auditory responses during human sleep. Nat Neurosci. https://doi.org/10.1038/s41593-022-01107-4

Hoffman, D. D. & Prakash, C. (2014). Objects of consciousness. *Frontiers in Psychology*. 5. 10.3389/fpsyg.2014.00577.

Hoffman, D. D., Singh, M. & Prakash, C. (2015). The Interface Theory of Perception. *Psychon Bull Rev.* 22, 1480-1506.

Hoffman, D. D. (2019). *The case against reality: Why evolution hid the truth from our eyes.* New York: W.W. Norton & Company.

Jung, C.G. (1991). *The Archetypes of the Collective Unconscious* (2nd ed.). London: Routledge.

Kastrup, B. (2012). “Apparitions, ghosts, and Mediumistic Communications”. Apparitions, ghosts, and mediumistic communications. Retrieved August 31, 2022, from https://www.bernardokastrup.com/2012/09/apparitions-ghosts-and-mediumistic.html

Kastrup, B. (2014). *Why Materialism Is Baloney*. iff Books.

Kastrup, B. (2016). *More Than Allegory: On Religious Myth, Truth And Belief*. iff Books.

Kastrup, B. (2019). *The Idea of the World: A multi-disciplinary argument for the mental nature of reality*. iff Books.

Kastrup, B. (2021a). Part 2: Analytic Idealism: The incoherence of mainstream physicalism [video]. Retrieved from essentiafoundation.org/analytic-idealism-course/.

Kastrup, B. (2021b). Part 3: Analytic Idealism: The incoherence of constitutive panpsychism [video]. Retrieved from essentiafoundation.org/analytic-idealism-course/.

Kastrup, B. (2021c). Part 4: Analytic Idealism: A superior hypothesis [video]. Retrieved from essentiafoundation.org/analytic-idealism-course/.

Kastrup, B. (2021d). Part 7: Analytic Idealism: Responding to objections [video]. Retrieved from essentiafoundation.org/analytic-idealism-course/.

Kihlstrom, J. & Cork, R. (2007). Anesthesia. In: Velmans, M. & Schneider, S. (eds.). The Blackwell Companion to Consciousness. Oxford, UK: Blackwell.

Kirchhoff, M.; Parr, T.; Palacios, E.; Friston, K.; Kiverstein, J. (2018). The Markov blankets of life: autonomy, active inference and the free energy principle. J. R. Soc. Interface. 152017079220170792. http://doi.org/10.1098/rsif.2017.0792

Koch, C. (2004). *The Quest for Consciousness: A Neurobiological Approach*. Englewood, CO: Roberts & Company Publishers.

Koch, C. (2018). "What Is Consciousness?". Nature. Retrieved from nature.com/articles/d41586-018-05097-x.

Kuhn, T. S. (1996). *The Structure of Scientific Revolutions*, 3rd Edition. Chicago, IL: The University of Chicago Press.

Lai C. F., Kao T. W., Wu M. S., Chiang S. S., Chang C. H., Lu C. S., et al. (2007). Impact of near-death experiences on dialysis patients: a multicenter collaborative study. Am. J. Kidney Dis. 50 124–132. 10.1053/j.ajkd.2007.04.021

Levine, J. (1983). Materialism and qualia: The explanatory gap. Pacific Philosophical Quarterly, 64: 354-361.

Lewis, C. R.; Preller, K. H.; Kraehenmann, R.; Michels, L.; Staempfli, P.; Vollenweider, F. X. (2017). Two dose investigation of the 5-HT-agonist psilocybin on relative and global cerebral blood flow. NeuroImage, 159:70-78. https://doi.org/10.5167/uzh-140580.

Libet, B. (1985). Unconscious cerebral initiative and the role of conscious will in voluntary action. Behavioral and Brain Sciences, 8: 529-566.

Mastin, L. (2009). Dualism. Retrieved July 20, 2022, from https://www.philosophybasics.com/branch_dualism.html#:~:text=Dualism%20in%20Metaphysics%20is%20the,%2C%20non%2Dphysical%20in%20nature.

McGilchrist, I. (2009). *The master and his emissary: The divided brain and the making of the Western world*. New Haven: Yale University Press.

M. Giustina, M. A. M. Versteegh, S. Wengerowsky, J. Handsteiner, A. Hochrainer, K. Phelan, F. Steinlechner, J. Kofler, J.-Å. Larsson, C. Abellán, W. Amaya, V. Pruneri, M. W. Mitchell, J. Beyer, T. Gerrits, A. E. Lita, L. K. Shalm, S. W. Nam, T. Scheidl, R. Ursin, B. Wittmann, A. Zeilinger. (2015). Significant-loophole-free test of Bell's theorem with entangled photons. Phys. Rev. Lett. 115, 250401 (2015).

Moraes, L. J.; Barbosa, G. S.; Castro, J. P. G. B.; Tucker, J. B.; Moreira-Almeida, A. (2021). Academic studies on claimed past-life memories: A scoping review. Elsevier. Retrieved from: https://med.virginia.edu/perceptual-studies/wp-content/uploads/sites/360/2021/12/Academic-Studies-on-Claimed-Past-life-memories-A-scoping-Review-Jim-2021-1-s2.0-S1550830721000951-main-1.pdf

Müller, M. (2023). The physics of first-person perspective: an introduction by Dr. Markus Müller. (n.d.). www.youtube.com. Retrieved January 16, 2023, from https://www.youtube.com/watch?v=cAUpmd_gGMM.

Musser, G. (2015). *Spooky Action at a Distance*. New York, NY: Scientific American/Farrar, Straus & Giroux

Nagel, T. (1974). "What is it like to be a bat?" Philosophical Review, 83: 435–456.

Neal, R.M. (2008). *The Path to Addiction: "And Other Troubles We Are Born to Know."* Bloomington, IN: AuthorHouse.

Oxford Psychedelic Institute. (2021). What is Consciousness? (Debate with Cristof Koch, Bernardo Kastrup, and Rupert Spira) [Video]. YouTube. https://youtu.be/atq1frPdyxM.

Pacciolla A. (1996). The near-death experience: a study of its validity. J. Near Death Stud. 14 179–186.

Parnia, S. & Fenwick, P. (2002). Near death experiences in cardiac arrest: visions of a dying brain or visions of a new science of consciousness. Resuscitation, Volume 52, Issue 1, Pages 5-11, ISSN 0300-9572, https://doi.org/10.1016/S0300-9572(01)00469-5.

Prakash, C.; Fields, C.; Hoffman, Donald D.; Prentner, R.; Singh, M. (2020). Fact, Fiction, and Fitness. Entropy. 22(5):514. http://doi.org/10.3390/e22050514.

Rhinewine, J.P. & Williams, O.J. (2007). Holotropic Breathwork: The Potential Role of a Prolonged, Voluntary Hyperventilation Procedure as an Adjunct to Psychotherapy. The Journal of Alternative and Complementary Medicine, 13 (7): 771-776.

Ring K. (1980). *Life at Death: A Scientific Investigation of the Near-Death Experience*. New York, NY: Coward McCann & Geoghenan.

Roach, M. (2005). *Spook: Science tackles the afterlife*. New York: W.W. Norton.

Romero, J. et al. (2011). Violation of Leggett inequalities in orbital angular momentum subspaces. New Journal of Physics, 12, 123007.

Rupp, N. B. "The rise and fall of metaphor: A study in meaning and meaninglessness". Semiotica, vol. 2016, no. 213, 2016, pp. 419-433. https://doi.org/10.1515/sem-2015-0131

Schartner, M. M. et al. (2017). Increased spontaneous MEG signal diversity for psychoactive doses of ketamine, LSD and psilocybin. Scientific Reports, Vol. 7, Article number: 46421.

Schlumpf, Y. R.; Reinders, A. A.; Nijenhuis, E. R.; Luechinger, R.; van Osch, M. J.; Jäncke, L. (2014). Dissociative part-dependent resting-state activity in dissociative identity disorder: a controlled FMRI perfusion study. PLoS One. 12;9(6):e98795. doi: 10.1371/journal.pone.0098795. PMID: 24922512; PMCID: PMC4055615.

Schooler, J. (2002). Re-representing consciousness: dissociations between experience and meta-consciousness. Trends Cogn. Sci. 6., 339–344.

Schwaninger J., Eisenberg P. R., Schechtman K. B., Weiss A. N. (2002). A prospective analysis of near-death experiences in cardiac arrest patients. J. Near Death Stud. 20 215–232. 10.1023/A:1015258818660

Shannon, C. E. (1948). "A Mathematical Theory of Communication." *Bell System Technical Journal*, 27: 379-423 & 623-656.

Spira, R. (2017). *The Nature of Consciousness: Essays on the Unity of Mind and Matter*. Sahaja.

Steup, M. & Ram, N. (2020). Epistemology. The Stanford Encyclopedia of Philosophy (Fall 2020 Edition), Edward N. Zalta (ed.), <https://plato.stanford.edu/archives/fall2020/entries/epistemology/>.

Stoljar, D. (2009). "Physicalism". In Edward N. Zalta (ed.). *The Stanford Encyclopedia of Philosophy* (Fall 2009 Edition).

Susskind, L. (2008). *The Black Hole War*. New York, NY: Little, Brown.

Tononi, G. (2004). An Information Integration Theory of Consciousness. BMC Neuroscience, 5(42). [Online]. Available from: www.biomedcentral.com/1471-2202/5/42 [Accessed June 28, 2022].

Turing, A. M. (1950). "Computing Machinery and Intelligence." Mind. 59 (236): 433-460.

Urgesi, C.; Aglioti, S. M.; Skrap, M.; Fabbro, F. (2010). The Spiritual Brain: Selective Cortical Lesions Modulate Human Self-Transcendence. Neuron, Volume 65, Issue 3, pp. 309-319, 0896-6273, Retrieved from https://doi.org/10.1016/j.neuron.2010.01.026.

Vernon, M. (2021). On Physics, Evolution, Mind at Large & Projections - Bernardo Kastrup & Mark Vernon. Mark Vernon podcast. [Online]. Available from: youtube.com/watch?v=wbPtVumnQks [Accessed June 27, 2022].

Wheeler, J.A. (1979). "Beyond the black hole," in H. Woolfe, ed., Some Strangeness in the Proportion: A Centennial Symposium to Celebrate the Achievements of Albert Einstein (Reading, PA: Addison-Wesley), 341-375.

Wheeler, J.A. (1990). “Information, physics, quantum: The search for links.” In W. H. Zurek, ed., Complexity, Entropy, and the Physics of Information, SFI Studies in the Sciences of Complexity, vol. VIII (New York: Addison-Wesley).

Whinnery, J. & Whinnery, A. (1990). Acceleration-Induced Loss of Consciousness: A Review of 500 Episodes. Archives of Neurology, 47 (7): 1061-1106.

Windt, J.; Nielsen, T.; & Thompson, E. (2016). Does Consciousness Disappear in Dreamless Sleep? Trends in Cognitive Sciences, 20 (12): 871-882.

Winkielman, P., & Schooler, J. W. (2009). Unconscious, conscious, and metaconscious in social cognition. In F. Strack & J. Förster (Eds.), Social cognition: The basis of human interaction (pp. 49–69). Psychology Press.

Winkielman, P. & Schooler, J. (2011). Splitting consciousness: Unconscious, conscious, and metaconscious processes in social cognition. European Review of Social Psychology. 22. 1-35. 10.1080/10463283.2011.576580.

Woodward, A. (2019). “A winner of this year's Nobel prize in physics is convinced we’ll detect alien life in 100 years. Here are 13 reasons why we haven't made contact yet”. Insider Inc. Retrieved September 21, 2019.

Zhi-ying F., Jian-xun L. (1992). Near-death experiences among survivors of the 1976 Tangshan earthquake. J. Near Death Stud. 11 39–48. 10.1007/BF01082736