

Dear Robert Lawrence Kuhn:

I have listened to many of your interviews with leading thinkers, and what makes them so illuminating are the questions you pose. You enable them to answer central issues in science, philosophy and religion so directly in a language that everyone can understand that even those who are specialists in their fields learn something from what they say. The more interviews I hear, the more I admire the clarity of your understanding of basic issues. I think I know where you are coming from and where you want to go. And please excuse my boldness in claiming to provide what you are looking for.

You want to get closer to truth. But truth is correspondence to reality, and you already know enough about reality to know which direction to go in searching for it.

1. Reality lies in the direction taken by physics as the basic branch of science. But it can't be just the laws of physics (or just mathematics) because they don't explain the existence of the world they describe.

2. Reality must explain the meaning of life, and Western religion assumes that it depends on something that transcends the world described by science. But if life has such a meaning, it must depend on something in in space and time.

3. Reality includes the brain studied by neuroscience. But to be complete, a scientific explanation of how the brain works must explain consciousness.

4. Reality includes everything that exists, and we can ask why there is something rather than nothing. But reality must explain how that makes sense.

If I am right about the kind of reality that you believe is “closer to truth,” it can be explained as a world constituted by substances, where substances are self-subsistent entities that exist in definite ways as they endure through time. The pre-Socratic philosophers called them the first cause because they expected substances to explain everything in the world, with change being constituted by their interactions. Since substances explain what is found in the world by constituting it, they are causes of existence, or ontological causes, since ontology is the study of existence. The pre-Socratics were ontological naturalists, and after generations of arguing about it, they still couldn’t agree about the kinds of substances that constitute the world. But contemporary ontological naturalists can discover the first cause because what they find in the world includes the laws of physics. They can infer the kinds of substances that constitute the natural world as the best explanation of those laws, and by discovering that they include space as well as matter, science will be able to explain all the regularities that hold necessarily in the natural world.

This is not a materialist ontology, since space is a substance that helps constitute the natural world. The possibility that space is a substance has been defended by so-called substantivalists ever since Newton. But to my knowledge, no one has defended what I call spatio-materialism because it assumes that space is not just a container of matter but also a substance that inter-acts with matter. Space acts on bits of matter by giving them spatial relations, but bits of matter can also act on space in ways that affects other ways that space can act on matter. Such inter-actions of space and matter are ontological mechanisms, and there are powers of space and matter by which their interactions can generate the regularities described by laws of physics—and much more.

You should be happy with this scientific revolution because it will show that your beliefs about the nature of reality will solve these basic problems:

1. Though reality will be discovered by the most basic branch of science, it will not be just laws of physics because they will be reduced to ontological mechanisms. I predict that physicists will soon infer spatio-materialism as the best explanation of what Eugene Wigner called the “unreasonable effectiveness” of mathematics in discovering laws of physics. Interactions of space and matter can generate only quantitatively precise regularities, and when physicists discover the powers that enable them to generate the regularities described by laws of physics, the problems of modern physics will be solved. And since space and matter are ontological causes, they explain the existence of the world where physical laws hold.

2. Western religions see the meaning of life as the struggle to choose good over evil, and the spiritual nature on which it depends is explained by our relation to the creator of the natural world. Life does have such a meaning in the spatio-material world, so it does not depend on anything that transcends the natural world. But it does depend on something that transcends the world described by science in two ways. First, it is something that transcends a science based on physics, and second, as explained later, it seems to depend on something that transcends space and time.

I predict that the reduction of physics to ontology will reveal a kind of efficient cause, not recognized by physics, called geometrical causes, which works by constraining what happens by physical causes. This discovery will lead to an ontological explanation of the origin of life that shows how goodness is part of the essential nature of life. It will reveal

that distinct forms of life evolve at a series of four levels of geometrical organization, and since this includes a series of inevitable evolutionary stages that brings beings like us into existence, it reveals that we are parts of the form of life that evolves on the level of geometrical organization higher than multicellular animals. Such spiritual organisms are groups of mammals that use language to coordinate their behavior in pursuit of goals on both the individual and group levels, and when their language enables them to reflect on their psychological states and see into one another's minds, they are reflective subjects who recognize their equality. Their culture evolves moral rules governing how they treat one another that promote conditions under which they can cooperate in pursuit of shared goals. They have a spiritual nature in virtue of sharing in the life of a spiritual organism, so it is good for them to follow moral rules because that is what they must choose to lead lives as parts of spiritual organisms. And even though they are constituted by ontological mechanism that are completely deterministic, they could always have done otherwise because choosing what to do is the function of the geometrical cause that guides their behavior, so they are justly held responsible for what they choose. That is the meaning of life in the spatio-material world, and it depends on something that transcends science based on physics (i. e., physicalism).

3. When science is based on ontology, neuroscience will have an explanation of the mammalian brain that includes consciousness. Spatio-materialism will make it possible to explain how consciousness is part of the natural world because all matter can have a primitive phenomenal way of existing in itself, which means that the existence of even the simplest bit of matter entails the existence of something like a sensory quale. The ontological explanation of the stages of evolution that lead to reflective subjects includes an explanation of the basic structure of the mammalian

forebrain as a faculty of naturalistic imagination, and since bits of matter have definite kinds of spatiotemporal structures when they coincide and interact with parts of space, it is possible for a bit of matter to have a spatiotemporal structure that is complex enough to explain the configurations of qualia in phenomenal space that are immediately present when a mammal perceives the natural world. There is such a bit of field matter helping constitute the mammalian brain, called the electromagnetic field in physics, so since being a mammal entails being the bit of field matter with that spatiotemporal structure, consciousness will be explained as what it is like to be a mammal.

Notice that this way of explaining how consciousness is part of the natural world confirms all three approaches that you say are worth thinking about in your recent episode, "Does Consciousness Require a Radical Explanation?" But it avoids the problems posed by all the theories that you use to illustrate them. Consciousness is a fundamental part of reality because it depends on a phenomenal intrinsic property of matter. But there is no need to agree with Paul Davies about the whole being more than the sum of its parts, no need to agree with David Chalmers about consciousness collapsing the Schrödinger wavefunction, and no need to agree with Max Tegmark about the existence of something non-physical accompanying information processing. Second, consciousness has the complex structure described by Giulio Tonini in defending his integrated information theory. But instead of being a mysterious entity called information that is generated by a part of the brain, it is the complex spatiotemporal structure of a particular bit of matter helping constitute the mammalian brain. Third, consciousness transcends the physical world because matter can have this complex spatiotemporal structure only when it coincides and interacts with space. But there is no need to agree with

Bernard Carr about the incompleteness of the efficient causes identified by the basic branch of science because the immediate presence of phenomenal properties has no effect on what happens in the natural world except helping constitute what happens.

The epiphenomenalism of this panpsychist explanation of consciousness does pose a problem about knowledge of consciousness, and its solution is relevant here because it shows how the meaning of life depends on something that seems to transcend the natural world.

Though the immediate presence of phenomenal properties is not an efficient cause, there is an illusion inherent in consciousness that helps constitute a mistaken belief about the nature of knowledge. Since mammals are “inside consciousness,” it naturally seems to them that they know about their phenomenal properties because they are immediately present. I call this false belief intuitionism. But it makes a difference in what happens only in spiritual organisms where intuitionists exchange metaphysical arguments. They are attempts to show that Reason knows Reality behind Appearance, where both Appearance and Reason are ways of describing parts of consciousness as objects of intuition, and they lead to the discovery that beings like us are conscious in the problematic form of Cartesian mind-body dualism. That is, Descartes discovered that he was conscious when he recognized that the world outside mind, being divisible into parts, must be constituted by substances that are radically different from the substance constituting mind, since it has the unity of consciousness. Ontological scientists will solve the problem of mind when they use their explanation of consciousness to explain how the exchange of metaphysical arguments causes a stage of human evolution that follows that of other civilizations on Earth. They will explain mind as a phantom Reality conjured

up by intuitionistic metaphysics. But since this explanation requires them to discount the illusion of intuitionism in themselves, they will find themselves knowing Reality behind Appearance, and since they are naturalists who use the empirical method to know the first cause, they will insist that their cognitive power be called naturalistic Reason.

The explanation of Western civilization as the metaphysical stage of evolution will reveal why the meaning of life seems to depend on something that transcends the natural world. Naturalistic reason will enable scientists to explain the belief in a God that exists outside space and time as a phantom Reality conjured up in the ancient era of Western philosophy, and since the Judeo-Christian religion explains our spiritual nature as a relation to God, they will explain it saw meaning of life as depending on something that transcends the natural world.

4. Naturalistic Reason explains why it seems to make sense to ask why there is something rather than nothing. The existence of nothing is logically possible because we can construct sentences that deny that anything exists. But it is not ontologically possible in a world with a first cause because everything is explained by how substances constitute it, and nothing is the one thing that substances cannot constitute. And it does not make sense to ask why a world where everything is constituted by substances is constituted by substances. To ask for an explanation of why there is something rather than nothing is to presuppose the existence of something. And it can make sense for Rational beings to ask why a world with a first cause is what exists because they may be asking why the first cause has a way of asking about its own existence. That is certainly a unique way of making the most out of a world constituted by substances, and it is a mystery why the natural world is perfect in this way.

Since the solutions to these basic puzzles all depend on a single discovery by physicists, there is a unity and completeness of its explanation of the nature of Reality that makes it stand out among explanations being defended these days, and it should appeal to you because it solves those puzzles in the way that you believe is closer to truth. It shows how Reality explains the existence of the world described by laws of physics, how it explains the meaning of life as due to an aspect of what exists in space and time that transcends physical science (and seems to transcend the natural world), how the brain can be explained in a way that includes consciousness, and how it can make sense in a world with a first cause to ask why something exists, albeit by pointing to a profound mystery.

I apologize for the length of this message, but it is actually a very brief description of a long argument presented in a trilogy, called *Naturalistic Reason*, that I am self-publishing as I send you this message. The first volume, *Unification of Physics*, defends the prediction that physicists are on the verge of a discovery about space that will solve the problems of modern physics and discover an efficient cause not recognized by physics. The second volume, *the Unification of Science*, defends the prediction that the recognition of geometrical causes will enable specialized sciences to show how interactions of space and matter generate all the regularities that they study. The third volume, *the Unification of Science and Philosophy*, shows how the spatio-material explanation of how consciousness is part of the natural world will enable ontological scientists to explain Western civilization as a stage of evolution that follows the stage represented by other civilizations on Earth. All these predictions are defended in enough detail that, if this ontology is on the right track, they will cause the scientific revolution that they predict.

You will be skeptical of this prediction because it sounds too good to be true, and since you will wonder about anyone who asks you to consider such an unlikely argument, let me say something about myself and its origin. I have been working on this argument, pretty much on my own, for over 45 years, while teaching philosophy at American University for 30 years and since retiring from teaching over 20 years ago. As a philosopher, I have written this argument with a care that justifies expecting it to stand up under such scrutiny. There may be incomplete or mistaken arguments in it. But I am confident that the discovery that space is a substance that interacts with matter will eventually cause the scientific revolution I predict, and I am prepared to defend it on all fronts. My reason for writing you and a few others is to make what I have discovered public. I am about to turn 83, and I believe that it is my duty to tell others about my discoveries because my society has given me the leisure and privilege to enjoy a life spent in such an exceedingly meaningful way.

Even those who believe in the rational pursuit of truth will find the prospect of reading a detailed all-inclusive explanation of the natural world in three volumes daunting, so I am offering an easier way of learning more about it. An executive summary of the argument is presented in a short (150 page) book titled *Sapere Aude* that I am also self-publishing now. I am including a free Amazon link to an eBook version of it. (See below.) And there is more information about this argument at natReason.com, including an introduction to the trilogy, a Table of Contents for it, a bookstore, and more information about me. I would be happy to answer any questions you may have and very grateful to learn about any problems that you think may cast doubt on it. You can reach me personally at philliphscribner@yahoo.com.

R.L. Kuhn

Dear Philip:

I appreciate your thoughtful, erudite and original ideas: giving priority to ontology, searching for efficient cause, stressing nationalistic reason, and introducing spatio-materialism. I have gone through your email and downloaded and skimmed *Sapere Aude* - I need to think more about it all.

I like setting physics on the foundation of ontology, not the other way around, as is conventional wisdom. See my essay on Nothing.

I also like how you deal with some of CTT's prime contributors on consciousness.

I am less convinced that "When science is based on ontology, neuroscience will have an explanation of the mammalian brain that includes consciousness" - unless you are assuming panpsychism, which 3 seems to suggest. (I'm not saying I agree with panpsychism, only that it makes your account more internally consistent, which is a good thing, of course.)

See my essay on Consciousness (in the guise of Virtual Immortality).

I appreciate your background story and passion.

Thank you for your gracious words about Closer To Truth. This means a good deal to me personally. Much thought and work go into each episode - sometimes for a year or more - and it is gratifying to know that it is well received.

Best regards,

Robert

Phillip Scribner

Dear Robert:

Thank you for your reply to my email and the two papers you sent. They confirm that the Reality that naturalistic Reason discovers is what you are looking for.

Your paper on "Virtual Immortality" poses the problem that physicalists confront explaining how consciousness is part of the natural world. Neither consciousness nor functionalism can be explained by the laws of physics, and since there are two intractable problems, physicalism suggests that the postulation of a single non-physical entity is the simplest way to solve both: digitally based intelligence might be conscious. But if the natural world is constituted by space and matter, that is clearly impossible. Confusion about the nature of consciousness is caused by conflating consciousness with reflection. It would all be cleared up if people recognized the basic difference between consciousness, as the phenomenal character of experience, and reflection, as the capacity of a language-using mammalian brain to represent the psychological states causing its behavior (beliefs and desires) as causes of behavior (called reasons) in the very process of causing its behavior. But showing how consciousness and reflection are different depends on two basically different implications of spatio-materialism. One solves the physicalist problem about functionalism (by showing how information can play a causal role), while the other solves the problem about consciousness by showing how it is part of the natural world).

One implication of showing that laws of physics describe regularities generated by interactions of space and matter is that there is a kind of efficient cause not recognized by physics, called geometrical efficient causes. Space gives the

matter helping space constitute atoms and bodies composed of atoms unchanging structures that constrain what happens by physical causes, that is, by physical forces that mediate interactions of particles/bodies moving independently of one another. That will enable biologists to explain evolution on Earth in a way that reveals a series of inevitable stages, caused by a series of levels of geometrical organization, that lead inevitably to beings like us. That reduces functions to the powers of geometrical causes on which their evolution depends, most of which are ontologically necessary. Since we are language-using mammals, it explains what is meant by information as the representational role that enables linguistic representations (and their parts) to serve their function of coordinating behavior in groups of such animals. That is, information is an effect of geometrical causes by which they help determine what happens.

One consequence of this explanation of evolution is especially relevant. The function that explains the why mammals evolved is that their forebrain can serve as a faculty of naturalistic imagination, that is, for thinking about the relations of objects in space, including their bodies, and how motion changes them. (The faculty of imagination is explained in detail in Chapter 7 of Volume II of *Naturalistic Reason*. The forebrain circuits can all be identified by tracing their homologies with the three anatomically distinct parts of the non-mammalian brain: the hindbrain, midbrain, and forebrain.) Language also has an ontologically necessary function on a higher level of geometrical organization. Its function of coordinating behavior of members of groups leads to the existence of reflective subjects, and the reason it is so hard for computers to guide behavior in a world of objects in space is that they are linguistic robots trying to simulate intelligence based on animals with a faculty of naturalistic imagination. (Penrose is right about reflection depending on

“non-computational” information-processing in the brain but mistaken about its cause. He doesn’t recognize that it depends on geometrical causes.)

You are right about my ontological explanation of consciousness being a form of panpsychism. It assumes that matter has a phenomenal way of existing in itself, and it is empirically verifiable because it defines species of matter by the spatiotemporal geometrical structures of their ways of coinciding and interacting with parts of space. (Like other monistic ontological explanations of the natural world, physicalism is a form of atomism, and thus, even if physical particles had phenomenal intrinsic properties, they would be too simple to explain the vast configurations of sensory qualia that are immediately present to mammals when they perceive the natural world. The best that physicists can do is postulate complex phenomenal properties as effects of brain states that cannot affect what happens in the brain, so the only way for physicalists to explain how they know that others are not zombies is to insist dogmatically that the psychophysical law that they postulate holds necessarily.) Though the simplest bits of matter in the spatio-material world presumably have rather simple proto-phenomenal intrinsic properties, bits of matter can have complex spatiotemporal structures, and there is one—and only one—particular bit of matter helping constitute the mammalian brain whose spatiotemporal structure can explain the configurations of sensory qualia in phenomenal space when mammals perceive the natural world. That is the bit of magnetic field matter that mediates all the interactions of ions in the synchronized firing of neurons throughout the mammalian faculty of naturalistic imagination. The relevant neurons include all those connecting the thalamus with the neocortex in its three circuits. [But it seems to me that the configurations of qualia depend mainly on the projection

from the neocortex (especially the parietal lobe) to the caudate nucleus for guiding bodily behavior relative to objects in space). Thus, mammalian consciousness is what it is like to be that particular bit of matter helping constitute its brain. (The Volume I explanation of how magnetic field matter depends on interactions of space and matter provides a foundation for discovering how combinations of waves in magnetic field matter account various aspects of complex perceptual phenomena appearances, or qualia space, if you will.)

If mammalian consciousness is what it is like to be this particular bit of matter, it is not possible for digitally based intelligence to be conscious. The bit of magnetic field matter generated by the interactions of electrons and nuclei in silicon chips (or other digital mechanisms) does not have a kind of spatiotemporal structure that could possibly constitute the configurations of sensory qualia in phenomenal space that mammals have when they perceive the natural world.

There is more to be said about consciousness because spatiomaterialist panpsychism is a form of epiphenomenalism and that poses a puzzle about how we know that we are conscious. It is solved in Volume III, albeit in a way that depends on solving the Cartesian mind-body problem and cutting the Gordian Knot of philosophy.) But putting that aside, I believe that you are right to refuse the offer of virtual immortality. In the far future when linguistic robots are intelligent enough to talk coherently about their consciousness, they may claim to be conscious, but we will know that they are mistaken. Or if they are as intelligent as we are and can explain what is found in the world ontologically, any such claim will come with an admission that what they mean by consciousness is different from us.

Regarding "Levels of Nothing," I agree with you about the fascinating puzzling nature of the question about why there is something, rather than nothing. I address this issue in the conclusion of the final volume of the trilogy, *Naturalistic Reason*, after I have shown how a world constituted by interactions of space and matter as they endure through time explains everything found in the world, including not only consciousness and everything we can perceive but also everything we can conceive or worship. That makes this question easier to answer, but exposes a bigger mystery.

Spatio-materialism is what the pre-Socratics called the first cause, and I accept their conclusion about the nature of substance in the end. Substances are self-subsistent entities, so they explain the existence of what they constitute, and they exist in certain ways in themselves, so they can explain the kinds of things they constitute. Since they are the causes of the existence and nature of everything, I call them ontological causes (ontology being the study of existence or what exists most basically).

In asking why there is something rather than nothing, therefore, the relevant sense of Nothing is your 9th level, that is, the kind of "Real Nothing" where abstract objects and even possibilities do not exist. Everything you mention in your process of elimination has an ontological cause in the spatio-material world, though some are just entities that language-using mammalian brains mistakenly believe exist.

Since every question about what exists or what happens in the world is ultimately a question about how substances constitute it, it does not make sense to ask why there is something rather than nothing. To ask why anything at all exists is to ask about the cause of the cause of the

existence of everything, and there can be no explanation of it because ontological causes are the first cause, the cause of everything found in the world. In effect, explanation itself is "inside" existence. Real Nothing does not exist because it is what substances do not constitute. In short, Real Nothing is ontologically impossible. (But it is logically possible because the denial that anything exists is grammatically correct.)

This is one of the two answers that you accept at the end of your paper: "that existence is a brute fact without explanation." But since all explanations come down to substances that never come into existence and never go out of existence, it is also the other answer that you accept in the end: "non-existence to it [the first cause] would be as inherently impossible as physical immortality to us is factually impossible." What natReason adds is an explanation of how you are correct.

But a world in which spatio-materialism is the first cause poses another puzzle that cannot be answered so easily. Since the first cause entails the existence of beings like us who know the first cause, it seems to us that the world makes the most out of all possible worlds constituted by substances. Indeed, this product of evolution seems to be so unique that we cannot help wondering why the substances constituting our world are the kinds of substances they are. It cannot be the purpose of existence that beings like us exist because purposes are just one of the kinds of causes that the first cause entails. So our first conclusion about "existence [being] a brute fact without explanation" seems mysterious.

I agree with you that regardless how intelligent digitally based robots may be, they would not be our equals because when we understand what a robot says we will know that we are not seeing into the *mind* of another reflective subject.

But I don't believe that conscious reflective subjects who know that spatio-materialism is the first cause will see much point in sending anything out into the far reaches of the universe because they will know that there are beings like them on suitable planets throughout the universe, wondering at and feeling grateful for having the kind of existence that they all have. That is what it is like for the first cause to have self-knowledge.

Thank you for the opportunity to discuss these issues with you.

Best regards,

Phillip

R. L. Kuhn

Dear Philip:

I very much appreciate, and enjoyed, your exposition – it is a fresh, integrative approach to the fundamental questions. Much depends on precise definitions, such that we may be closer than first perceived.

Again, I have saved.

All best,

Robert