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Editorial

The Big Questions: Thinking across Science, Religion, and Philosophy

Jon Paul Sydnor, Professor, Theology and Religious Studies, Emmanuel College, Boston, MA, USA, sydnorjo@emmanuel.edu

This Editorial essay explores the big questions resident within human experience, arguing that science, philosophy, and religion must cooperate to address them adequately. The essay begins by emphasizing the inevitability of existential questioning and the importance of reflective, epistemologically aware living. The discussion then examines key questions: Why is there something rather than nothing? Who am I? Do persons have rights? Does God exist? How should we live our lives? Is there an afterlife? And is life understandable? Across these domains, the essay argues that scientific methods, while powerful, are limited to testable claims and cannot resolve ultimate questions of meaning, value, or origin. Such questions often lead to "mystery," areas of human inquiry that are immune to resolution. The essay concludes that responsible thinking requires epistemological humility, openness to multiple ways of knowing, and a commitment to ongoing dialogue in the face of ambiguity.

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> *Even if there is only one possible unified theory, it is just a set of rules and equations. What is it that breathes fire into the equations and makes a universe for them to describe? The usual approach of science of constructing a mathematical model cannot answer the questions of why there should be a universe for the model to describe. Why does the universe go to all the bother of existing?*
>
> — Stephen Hawking, *A Brief History of Time*

The big questions are unavoidable. Life poses certain questions to us: Will you live your life selfishly or generously? Will you prioritize interesting experiences, personal relationships, or professional achievement? Will you be a pragmatist or dreamer?

We inevitably answer these questions by the living of our lives. Even if we never think about them, we still answer them by what we do. Some people dedicate themselves to advancing themselves; others dedicate themselves to improving the world. Yet many, perhaps most, make these choices without consciously asking: Should I prioritize myself over my community, or my community over myself? Many of us act subconsciously (Plato *Gorgias*, 500c–d).

Because the quality of our answers influences the quality of our lives (how our lives feel), philosophers have insisted that reflection is an essential component of a good life. To live skillfully, we must think deeply. Only then will we pursue the goals that grant fulfillment (Plato *Apology*, 38a).

But what is fulfillment? What should we pursue? The answers to these questions vary. Over the millennia, thinkers have identified our highest good as the accumulation of money, experience of beauty, acquisition of power, service of God, loyalty to tribe, physical pleasure, satisfying relationships, professional achievement, political struggle, etc. Some advocate lives of safety, others advocate lives of danger. Some advocate conformity, others nonconformity. To choose the life we live, we must select from an array of possibilities.

Which life is best? And how can we know? Questions of knowledge are questions of epistemology, the philosophical discipline that discusses or analyzes (Greek: *logos*) knowledge (Greek: *episteme*). It addresses fundamentally important concepts such as truth and how it is discovered, as well as opinion and how it is justified. Regarding the beliefs we hold, epistemology considers to what degree we should be certain or skeptical of them, if our convictions should be relatively stable or constantly changing (Plato *Meno*, 87c–89a).

Epistemology may sound like an abstract, even irrelevant, discipline, but it has important consequences for how we live our lives. Some people confuse their opinion with fact and propound it with absolute certainty. Others hold their opinions lightly and change them frequently. Which practice is healthier for the individual? Which is better for society?

Our personal epistemology influences the quality of our relationships because it influences how we agree and disagree with others. And the epistemology of

any society, that is, how that society interprets its own beliefs and values, affects the quality of relationships within that society because it affects how that society treats dissenters, iconoclasts, and rebels—those whose novel ideas may propel their society into a better future. Frequently, in the evolution of thought, today's heresy becomes tomorrow's dogma (Gregg and Mahadevan 2014, 13–14).

Epistemology calls into question what we think, but it also calls into question how we think. This subdiscipline is called methodology. Methodology considers, analyzes, and attempts to improve the methods by which we arrive at truth, or some approximation thereof. Methodology considers how we think so that we don't just think but are aware of how we are thinking.

For example, one powerful way of gaining knowledge is via the scientific method, which, in its idealized form, gathers data, proposes a hypothesis to explain the data, then tests that hypothesis by gathering more data. Some scientists, such as chemists and biologists, use the experimental method, in which carefully controlled experiments produce focused results that apply to a specific hypothesis. Then, based on the results of the experiment, these scientists can reject, revise, or further refine their hypothesis.

Over the past few centuries, the scientific method has proven so powerful that some thinkers have advocated for its exclusive application to all areas of human inquiry. In other words, they propose that people should only think scientifically, applying the scientific method to every aspect of human existence and every claim someone makes. Even political, moral, and aesthetic claims should be produced by science and science alone.

According to these advocates of imperial science (science that takes over other, formerly nonscientific realms of thought), for the scientific method to apply to a claim, that claim must be testable. That is, it must be verifiable (provable as true) or falsifiable (provable as false). If a claim is not testable, that is, capable of being proven or disproven, then it isn't even worth discussing. It is meaningless (Ayer 1952, 31–36).

In philosophy, this belief is called logical positivism. In popular culture, it is called (somewhat controversially) scientism. To the advocates of scientism, such a rigorous mode of thinking would produce a new age of international peace, consumer abundance, and informed rationality. To the opponents of scientism, its triumph would neglect much of what makes us human, such as art, literature, and even religion. The claims of these three areas of human exploration are important but untestable, consequential but unverifiable.

The discussion of epistemological questions raises into consciousness how we come to our beliefs. Through this process, we can consider the reliability or unreliability of our ways of knowing. More importantly, we may come to suspect our ways of knowing, suggesting the need to revamp both how and what we believe. Some people will experience this process as frightening, others as liberating (Tracy 1994, 135–36).

Now, having laid the groundwork for our epistemological investigations, let us consider some of the big questions and the way those questions themselves inform the discipline of epistemology.

Big Question One: Why Is There Something Instead of Nothing?

On the one hand, this question can come across as purely scientific—a challenge to astronomers, physicists, and cosmologists (those who investigate our most fundamental questions about the cosmos). The prevailing explanation for the origins of our universe is the Big Bang, a theory that our universe began about 13.8 billion years ago when a tiny point of immensely dense energy suddenly expanded, then slowly cooled, producing the universe of space, time, matter, and energy that we know today.

But we can ask: What produced the Big Bang? If the Big Bang is a stand-alone event, and this universe is the only universe there is, then we can find no testable explanation for why time (the particular arrow of time within which we exist) started, nor can we explain the source of that dense point of energy. We can speculate about these questions using mathematical physics, and some speculation will account for the data and be more mathematically rigorous (and hence plausible) than other speculation, but we will not be able to test those speculations.

Today, some cosmologists propose a multiverse, a sprawling foam of universes that spontaneously generate new universes, including our own. But we can ask: What produced the multiverse? If it had a beginning, then we have no access to that beginning, as it happened in a different universe. If it has always existed, and there is no beginning, then we have no explanation for why the multiverse is existing rather than nonexisting. Even more perplexingly, we cannot account for the source of the physical laws that make the multiverse so prolific. What causes causality? Once again, we cannot know why there is something rather than nothing.

In other words, when asking ultimate questions about the origin of our universe, we end up with an infinite regression—the questions just keep coming, implying that the question is unanswerable, and our quest offers no resolution.

While the history of our universe is an excellent candidate for scientific investigation, we may never know scientifically why there is something rather than nothing. The question might be transscientific or metascientific—beyond the competency of science alone to answer (Hawking 1989, 174). In other words, the question "Why is there something rather than nothing?" may push us beyond science into the realms of philosophy and theology.

Big Question Two: Who Am I?

The question "Who am I?" is closely related to the question "What is a person?" Our answer will have important implications for how we live our

lives. Historically, some traditions have asserted that we are souls trapped in bodies and that salvation is the release of the soul from the body. In this view, material existence is dangerous and painful, but purely spiritual existence offers rescue. Through the techniques of religion and/or philosophy, we can rise from the material to the spiritual, from suffering to bliss, thereby realizing our true nature.

Other traditions have argued that only matter (or the natural universe) exists and that such concepts as soul and spirit are mere illusions. Worse, these illusions distract us from the vividness of physical reality, trading metaphysical abstraction for concrete stimulation. Such philosophers call their orientation materialism, naturalism, and/or physicalism. Materialism asserts that only matter matters, naturalism rejects all reference to the supernatural, and physicalism prioritizes the physical universe over against any spiritual reality.

For adherents to these schools, religious referents like "soul" and "spirit" only confuse thought, muddying analysis and hindering our understanding of life.

Concepts such as matter/spirit, body/soul, and brain/mind draw attention to two aspects of human existence, the exterior and interior. That is, human beings participate in an external realm of matter (the physical universe) and an internal realm of thought, feelings, and emotions (the private self). Generally, these two realms are considered objective and subjective, respectively. One consists of objects, or things. The other consists of subjects, or persons (Barbour 2002, 80–82).

These two realms—the objective and subjective, the exterior and interior—are quite different. The exterior, objective world lends itself to quantification and measurement. For example, we can very precisely measure the height and width of a painting and state that measurement in units of our choice, such as square centimeters. But it is impossible to measure the beauty of the painting or quantify beauty with units. Our measurement of the painting is quantitative, but our experience of beauty is qualitative. Because our experience of beauty is internal and subjective, it resists quantification (Trifonas 1995, 82–83).

Moreover, the objective world is public, while the subjective world is private. We can know material facts about a person by measuring them, such as their height and weight. But we can't know for sure what a person is thinking or feeling in that moment. This inability may disappear over time through advances in brain scanning, but for now, most of our thoughts remain private unless we choose to reveal them (Ward 2008, 169–71).

To a certain extent, we reveal our internal experience through our behavior and facial expressions. Evolutionary theorists speculate that we have sclera, or the whites of our eyes, so that we can more easily determine where others are looking and better understand their interests and intentions. This increased knowledge of one another allows better social functioning. Still, a deceptive

person can fake an inner life, pretending to weep when they are not grieved or laugh when they are not amused. An expressive person may reveal their emotions, while a repressed person may hide them. Public facts are obvious, but sharing our interiority with one another is a murky endeavor.

Any discussion of the question "Who am I?" will have to address these various aspects of existence: interior and exterior, private and public, qualitative and quantitative. Our final answer may prefer one aspect to the other. For example, we may prefer soul to body or body to soul. Or, to use a more modern example, we may prefer mind to brain or brain to mind. Our final answer may even embrace one aspect to the exclusion of the other: we may affirm the material universe but deny the spiritual universe, or vice versa.

To really complicate things, our final answer may fully embrace every dimension of human experience, believing that we are embodied souls in a divinely created universe. Or, to use less religious language, we could affirm that we are both bodies and minds in a universe of both matter and feelings. Since this choice unites interiority and exteriority into one person, it demands nuanced thought. To think across this fullness of personhood, we would have to think quantitively about the material world and qualitatively about our inner lives, then unite this quantitative and qualitative reasoning into one perspective. The resulting worldview would be quite subtle. If formulated skillfully, it will be plausible, but no excellence in formulation will make it compelling. Within our epistemological situation, important decisions are unavoidably ambiguous and hence always open to challenge. If we want to think well, which is to think together, then the debate will never end (Gadamer 2000, 221–24).

How we answer the question "Who am I?" will influence how we live our lives—what goals we prioritize, what values we cherish, and what friends we seek. Life offers us no predetermined answer, so we must provide our own. Even within such ambiguity, whatever answer we provide will be consequential, both for ourselves and those around us.

Big Question Three: Do Human Beings Have Rights?

Just as an individual must answer the question "Who am I?" to organize their lives, societies must answer the question "What is a person?" to organize their body politic. For example, in any society, you either can or cannot freely criticize the ruler. During World War II, Americans could scoff at FDR, but Germans couldn't scoff at Hitler. America ascribed to her citizens the right to free speech, but Nazi Germany did not. America had decided that dissent was a boon to the nation, sparking intensified discourse and better decisions. Nazi Germany had decided that dissent posed a threat by creating division. These decisions produced very different ways of thinking and acting in the two countries. Americans had to work together while acknowledging their disagreements; Germans had to operate under coerced uniformity.

Should citizens be able to criticize their leaders or not? Do people have the right to freedom of speech? Science alone does not seem able to answer this question. Certainly, we can reason about human freedom, as America's founders did when they wrote the Constitution and Bill of Rights. And we can gather facts about human freedoms, comparing societies that grant rights to societies that don't.

As we do so, we may try to determine which societies produce the most human flourishing, or the most powerful military, or the most equality, or the most cultural creativity, or the greatest wealth, or the lowest crime. But which of these social goods is most important? Freedom or equality? Strength or creativity? Now, we have raised the question of values. This question demands rational analysis but seems to elude scientific analysis. Philosophers call the contemplation of values axiology.

Science investigates matter, but neither rights nor values can be found in the material universe. Rights and values are immaterial. They're not made of matter, so they cannot be located, measured, or experimented on. For example, contrast human rights with the element iron. Iron is a given; it existed before us to investigate. But human rights are attributed; we posit them (or not) to create the society we want to live in. Science discovers; political philosophy chooses (Smith 2010, 436–38).

Thus, political philosophy is analogous to scientific investigation, because both disciplines gather facts and then reason about those facts. But in the end, political philosophy differs from scientific investigation because its answers aren't objectively testable. We can assert that people have rights and provide an argument for our assertion. Then, we can compare the outcomes of our different polities by comparing different societies and debating which results are preferable, which society we would most want to live in. But we can't prove that persons have rights, as astronomers have proved (provisionally) that the universe is expanding. Axiology and cosmology are distinct intellectual arenas that demand distinct intellectual methods (van Huyssteen 1999, 141–43).

Big Question Four: Does God Exist?

The concept "God" may have as many different interpretations as there are people. To some, God is a strict enforcer of moral standards, to others a nurturing presence. To some, God is all-powerful, to others God is all-loving. God plays the part of warrior or peacemaker, strict father or pure intelligence, Supreme Being or being itself.

So, when discussing God, we must follow Aristotle's advice and first define our terms. If someone says that they're an atheist, they are disbelieving in a certain concept of God (Schleiermacher 1996, 18–25). Many LGBTQ+ persons, for example, were raised in churches that preached a wrathful God intolerant of gender and sexual difference. To fully accept themselves, these

persons must either change their concept of God or abandon the concept altogether. On the other hand, if someone says that they're a theist, they may believe in an inclusive, all-loving God who would never reject a person based on their gender or sexual difference. In other words, one person's atheism may be another person's theism, and vice versa. The term "God" has an extremely large range of meanings.

Nevertheless, despite the elasticity of the word "God," we can debate whether there is any transcendent presence beyond the universe, or immanent presence within the universe, or both. We can contrast theism (belief in God) with naturalism (belief exclusively in the natural universe). A naturalist denies the existence of anything supernatural, such as spirit, souls, or God. A theist affirms that supernatural entities exist and must be considered when determining the meaning of human life.

These contrasting worldviews will produce different interpretations of life. For believers in a Creator God who summons the universe into being, life comes with a preexisting meaning provided by an all-knowing deity. Humankind flourishes when they live in accord with this meaning, variously interpreted as obedience to God, service of God, love of God, love of neighbor, etc. For nonbelievers, the universe does not come with a preexisting meaning. They must either reject the possibility of any meaning, which is called nihilism (belief in nothingness), or create their own meaning, which is called humanism (belief in humankind as the measure of all things). Thus, disbelief in a Creator God poses a creative challenge to disbelievers (Blessing 2013, 113–16).

Theism and atheism also produce different interpretations of the universe itself. For the theist, the universe is creation—the gift of a Creator. For atheists, the universe is a glorious accident—mathematically improbable, startling in its intricacy, yet open only to naturalistic investigations that presume no supernatural influences. Both the atheist and theist may experience awe at the cosmos, but they will differ over whether the cosmos itself is a divine gift or improbable event (Flanagan 2006, 444–49).

Of course, there remains the option of agnosticism. Agnosticism derives from the Greek root *a* (not)-*gnosis* (knowing). Agnostics believe that we cannot know whether God exists or not. Since the existence of God cannot be proved or disproved beyond a reasonable doubt, agnostics refuse to take a stance on the issue. Some agnostics believe that this epistemological situation is permanent and we can never know if God exists; others are open to future evidence that might change their mind.

Although agnosticism differs from atheism philosophically, they resemble each other in practice. Theists tend to have a set of practices that express their theism, such as prayer, rituals, reading scripture, participation in a religious congregation, etc. Atheists and agnostics, however, tend to avoid such practices.

What is the best way to go through life—as a theist, as an atheist, or as an agnostic? Well, that is a controversial question over which thinkers have spilled infinite barrels of ink. There are a vast number of ways someone can be a theist: fundamentalist, progressive, Muslim, Jew, Christian, militant, pacifist, etc. So, there is no single experience of theism. Likewise, there are a vast number of ways someone can be an atheist: conservative, liberal, capitalist, communist, environmentalist, etc. So, there is no single experience of atheism. (The same goes for agnosticism, of course). Any analysis of a person's worldview and its influence on that person's quality of life would necessitate a tremendous amount of detail about that person's way of being in the world. Any judgment without such detailed analysis would be presumptuous. Unfortunately, those who read extensively in these fields encounter much presumption.

Big Question Five: What Should I Do While I'm Here?

"How should I live?" Everyone asks themselves this question at some point in life (Plato *Republic*, 352d). We human beings not only live, we also know that we live. We don't just act, we are aware that we are acting. This awareness gives us a freedom that amoebas and bacteria lack: the freedom to respond to our environment rather than react to it. That is, given a certain situation, we can survey a range of options, deliberate regarding the various courses of action available, and choose the one that conforms to our principles and/or promotes the best outcome. We can shift our decision-making process from instinct to intellect, from reflex to analysis.

This freedom comes with a cost, or a benefit, depending on your perspective. When we shift from instinctive activity to deliberative activity, we also shift from certainty to ambiguity. Ambiguity is a state in which no obvious decision presents itself, so that multiple decisions are possible (Tracy 1989, 550). A foodie in a fancy restaurant with a long menu faces an ambiguous choice. A guest being served dinner at a friend's house faces no ambiguous choice.

Given the ambiguity of so many of our decisions, whenever we decide, we become aware that we could have decided otherwise and might have decided better. We can regret our decision or celebrate it. We can doubt our ability to make good decisions or overestimate that ability. We can fear making a mistake and hand over our decision-making responsibility to an external authority. Or, an external authority might make decisions for us that we should make ourselves, causing us to resent that authority. With awareness comes freedom, and with freedom comes ambiguity, and with ambiguity comes an entirely new set of possible emotions. Consciousness comes with tremendous potential, heightened intensity, and inevitable difficulty—as well as reward.

What are some of the choices we must make as we decide how to live? Let us consider a few, presented as polarities, or binary choices. But as we do

so, let us recognize that all choices lie on a spectrum and polarities are always simplifications. Life is complicated, as are the choices that we make as we negotiate life.

How selfless or selfish should we be? Should we dedicate our life to the service of others (altruism) or primarily advance our own interests (egoism)? Cold calculation suggests that accumulating money and power for oneself is the obvious choice. Many historical figures pursued precisely this path, which society tends to celebrate. Yet religious teachers and philosophers through the ages have frequently advised otherwise, and contemporary psychologists are finding evidence that the more generous a person is, the more life satisfaction they report (Collett and Morrissey 2007, 8–10). Therefore, the decision to be an altruist or an egoist is an ambiguous one.

Somewhat related is the question of practicality and passion. One social group facing this decision is college students choosing their majors. For example, a first-year student might take a course in philosophy and fall in love with the subject. Should they then go ahead and major in business as they had planned? On the one hand, by studying philosophy, they might feel academically inspired throughout their college career, which tends to produce a higher GPA. On the other hand, business majors tend to have higher incomes upon graduation, which might help to pay down any student debt.

This choice between practicality and passion extends into choice of career. A college student might love math and want to share that love with others. They are considering becoming a high school math teacher but know that accountants make more money. They love teaching but want to have their own kids and worry about how to put them through college. Which path should they choose? Meaning is a wonderful gift in life, and if you do what you love, then work doesn't feel like work. But money is powerful. It allows us to shelter our family, educate our children, and provide them with quality medical care. Once again, the choice is not obvious, which is why people make different decisions on these issues (Hagmaier et al 2018, 151–54).

People also make different choices regarding ease and challenge. No one's life is easy, and every human life is effortful. Nevertheless, some people are more attracted to challenge and adventure than others. Mountain climbers scale Everest; hikers take a walk through the woods. One soldier enlists to serve thirty years and retire; another is determined to become a Green Beret. Two nurses graduate: one wants to go home to where they grew up and work in a medical practice; the other wants to serve as a medical officer in refugee camps. One child wants to take over the family farm; the other wants to captain ships for the merchant marine. None of these choices is better than any other, and each person must make the best choice for themselves. Still, some existential philosophers argue that we are the sum of our decisions, so we should make all choices with care (Sartre 1948, 34–37).

The question "How should we live?" has a unique property: it is unavoidable. We must answer the question, because how we live our life is our answer. The next question then becomes: Should we answer the question consciously, after deliberation, with heightened awareness? Or should we just live our lives unconsciously, acting instinctively on the values that we inherit from our family and culture? The Greek philosopher Socrates famously asserts that the unexamined life is not worth living, implying that answering these questions explicitly offers significant benefits (Plato *Apology*, 38a). But historically, many governments (totalitarian, authoritarian, etc.) have deliberately suppressed discussion of different life options, preferring a unified populace that acts on national instinct. Such governments always generate an underground resistance of those who value the free exchange of ideas. Such resistance generally fears governmental brainwashing as harmful to the national intellect, damaging to its collective character, and dangerous to its future wellbeing.

Big Question Six: What Happens After We Die?

To the best of our knowledge, all biological organisms eventually die. Amoebas are relatively unbothered by this fact; humans more so. While we are alive, we can contemplate a time when we will be dead, when the world will be without us. Stated philosophically: We *are*, but every moment that we *are* is permeated by the realization that we will *not be*, at least with regard to this life as we know it, our current situation and relationships.

This realization has varying effects on people. Paradoxically, some find an awareness of their own eventual demise to be lifegiving. Realizing that life doesn't last forever, they resolve to celebrate every moment as precious. Others find the idea of death terrifying. Life for most is enjoyable overall, and we are programmed with an instinct to survive, so the thought of our own demise can be quite disturbing. To avoid this disturbance, some avoid the consideration of death, turning their attention (sometimes addictively) to this-worldly things, pursuing the fame, glory, or money they hope will propagate their name beyond their own lifespan. Those who practice death denial may dismiss their death-accepting peers as morbid, while the death-accepting may dismiss the death-avoidant as shallow (Becker 1973, 65–67).

Whatever approach to death we choose, avoidance or acceptance, we will all end up at the funeral of a loved one, asking the question "Where are they now?" Historically, different cultures have given a vast range of answers to this question. Some have proposed that death leads to personal extinction, while others have allowed for a dim, shadow existence. Some propose that at death the soul is freed from the body, while others insist that the soul will be reincarnated into a new body. Some believe in an embodied afterlife not unlike our current life, perhaps with our ancestors. Many cultures have asserted that people are judged for their good and bad deeds and rewarded or punished accordingly. This punishment

and reward can take place through the person's next incarnation (pleasant or unpleasant), in heaven or hell, or in some kind of ghostlike existence.

The range of possibilities matches the range of imagination. Some materialists (those who believe only in matter) point to religious disagreement about the nature of the afterlife and insist that personal extinction is the only plausible viewpoint. All other scenarios are just avoidant fantasies, ways to deflect the terror caused by our mortality. In a sense, recent developments in neuroscience have buttressed their position. Changes in our consciousness seem to be inextricably linked to changes in our brain. If the brain produces the mind and its consciousness, then it makes sense that the death of a particular brain would result in the death of that particular consciousness. Thus, that particular person and their particular personality would be extinguished (Atkins 2006, 128–29).

But materialism faces its own philosophical challenges. How do we know that matter exists? On the one hand, its existence seems obvious: we would all step out of the way of an oncoming train because we trust that the material train would do great damage to our material body. On the other hand, we have no direct experience of matter. We can have the sensation of matter; we can feel the ball of wax in our hand, for example. But we experience that sensation in our mind. The mind can only access sensations of things, not things in themselves, from which we are epistemologically cut off (Descartes 1985, §7:32–33).

Consider the brain and the mind. The brain is material: we can measure its weight, volume, and density, and we can state those measurements in units. We can locate it in space-time; it is somewhere specific. But the mind is immaterial: it has no weight, volume, or density, and it can be anywhere, fantasizing about a beach when it should be at work, worrying about work when it should be enjoying its children. The mind has qualities: it may be conscious while working, semi-conscious while daydreaming, and unconscious while sleeping, but we cannot measure these qualities precisely, so we cannot express them in units.

Problematically for the materialists, all our measurements of the brain occur in our mind. Since all our experience and knowledge of matter occur only in our mind, some philosophers insist that we can only know that the mind exists, not matter. This perspective is called mentalism (Berkeley 2003, §1.3).

But then, if the brain dies, could the mind survive? Is there an afterlife? Many thinkers entertain the possibility. At the same time, they sometimes assert that the question itself, as well as the realm of thought into which it casts us, is a mystery. A mystery is a question of great importance that forever disallows any indisputable answer. A mystery, by its epistemological nature, resists conclusive investigation and consigns all answers to the realm of opinion. Mysteries reveal the limits of our understanding, since they deny us certainty about our answers. Some sects may claim certainty for their answers, such as the belief that there is a heaven and a hell, that we are rewarded or punished for our this-worldly actions in an afterlife. But that certainty is not based on facts and reason alone.

It may arise from our community, or strict indoctrination, or a lack of awareness of other possibilities, but it does not arise from a disinterested analysis of the situation, and no argument for the position can logically compel someone to adopt it. The big questions that we have been discussing in this essay are, in the opinion of many, mysteries. The existence of mystery implies that existential reality is inescapably ambiguous and all certainty is manufactured. Mysteries allow investigation but disallow resolution. They are realms of honest disagreement, if not always civil disagreement.

Big Question Seven: Is Life Understandable? Is Reality Intelligible?

Alas, the concept of mystery can be abused. That is, some people can advance an extreme skepticism, declare reality fundamentally unintelligible, and then make claims that contradict facts and reason. A humble epistemology will admit that we can't know very much for certain. Extreme skepticism takes this admission and asserts that we can't know anything at all—so we can think whatever we want to think and, by way of consequence, do whatever we want to do. We can't know with absolute certainty that human beings are causing climate change, so why do anything about it? Why not just consume as we have always consumed?

An honest appraisal will concede that almost nothing can be proven beyond a shadow of a doubt. But this admission does not mean that all claims are equally true. Even without certainty, some claims are more reasonable than others, some are more factual than others, some are more practical than others, some are more humane than others. These qualities make them probably true. But extreme skeptics deny that there is any spectrum of probability. In rejecting certainty, they reject probability, and in rejecting probability, they reject the usefulness of dialogue (James 1992, §2–3).

One example is Young Earth Creationists, who assert that the biblical story of Genesis is literally true as both a historical and scientific text. They also assert that the Bible, as the Word of God, is infallible—without mistakes, utterly trustworthy and correct in all matters, including science and history. They then use data from the Bible, such as various genealogies found there, to count the generations between Adam and Jesus. Using a few anchor dates, some very specific birth narratives, and assigning about twenty-five years to each generation, they estimate that the Earth is 6,000-10,000 years old.

Their method presents its own ambiguities: both the gospel of Matthew and gospel of Luke list the generations from David to Joseph, the father of Jesus. But Matthew has twenty-seven whereas Luke has forty-two, with almost no overlap between them. More importantly, Young Earth Creationism involves a wholesale rejection of most science. Its claims do not cohere with those of astronomers, biologists, chemists, geologists, physicists, et al. Some Young Earth Creationists justify this contradiction through extreme skepticism: we cannot even determine with certainty if the external, material world exists, so

how can our studies of it produce reliable knowledge? We would be better off trusting the Bible instead, since its provenance is God's mind, not the human intellect (Martinez 2005, 2008–10). (While Young Earth Creationists express a profound distrust of science when discussing the origins of the universe, they express a profound trust of science when flying in jets.)

Problematically, the concept of mystery can be used by extreme skeptics to deny the value of all investigation—scientific, philosophical, theological, etc. Such extreme skepticism can be dangerous since some other authority will inevitably step in to replace rational investigation and informed debate. Authoritarian rulers, infallible scriptures, or rigid tradition always seek to fill epistemological vacuums.

Critics of extreme skepticism, fearful of a decline into irrationalism, sometimes denounce any reference to mystery as mystification—the assertion that certain beliefs lie beyond the reach of critical analysis and thus are immune to all scrutiny. And they have a point: mystification rejects rigorous, disciplined investigation as useless. In contemporary language, an appeal to mystery may very well be an act of gaslighting, of discouraging people to examine a claim. Gaslighting occurs when a claimant knows full well that their claim cannot withstand scrutiny. Gaslighting is a tool of authorities who demand that we believe not what facts or reason warrant but what they deem to be true, because the designated authority is more trustworthy than any individual conscience, especially your own.

In nuanced thought, not all reference to mystery endorses mystification. Cosmologists can study the age of the universe (science), but they can't determine why there is something instead of nothing (mystery). Neuroscientists can study near death experiences (science), but they can't determine if there is an afterlife (mystery). Physiologists can study the human body (science), but they can't determine if it hosts a soul (mystery). Thus, science and mystery can coexist without any resort to mystification. Scientists can forever plumb nature, while philosophers and theologians can forever plumb mystery (Turner 2019, 133–46).

Some advocates of scientism have asserted that science is omnicompetent—completely able to answer all the meaningful questions of human existence (Atkins 1995, 132). But mystery may be an indelible characteristic of the cosmos, even to science. Physicists, for example, have long sought to discover and describe why things do what they do. With varying degrees of success, they have theorized why objects fall to Earth, why lightning flashes, and why radium glows in the dark. In their quest, scientists have discovered that elements are made of atoms; atoms are made of electrons, protons, and neutrons; protons and neutrons are made of quarks; and quark behavior is governed by quantum chromodynamics (QCD), a well-established theory of physics.

But why does quantum chromodynamics have the laws it does? How does it produce the behaviors it produces? QCD does an excellent job describing the behavior of the quantum universe, but it has a hard time explaining why the

quantum universe behaves as it does. So beguiling is the question of why, and so imponderable, that some physicists have simply retreated from the question with the pragmatic motto "shut up and calculate" (Mermin 1989, 9–11). For physicists, who practice a natural science that attempts to understand the cosmos, this may very well be good advice.

Nevertheless, some physicists find the question of why the universe behaves as it does to be irresistibly attractive. We have discovered many laws of nature. But what is the source of the laws of nature? Where do they come from? We observe that if we drop an object it falls to the ground. We observe this behavior repeatedly. In fact, we observe it every time. Therefore, we infer that there is a law enforcing this observed behavior. But we can't observe the law; we only observe the behavior. We assume that there is a necessary connection between the cause and effect when, in truth, we only see one event repeatedly follow another (Hume 2004, §1.3.14). To use language borrowed from the philosophy of science: behavior is an observable; law is an unobservable.

Let us hypothesize that there are in fact physical laws that govern the behavior of matter in our universe. This view is called realism. If physical laws govern the behavior of matter in our universe, then where exactly are they? Utilizing the methods of physical science, it would be difficult to determine if they are within matter, beneath matter, or beyond matter. What is the nature of their existence? Since they govern matter, they would seem to be immaterial, but the material sciences aren't well-equipped to study immaterial forces.

Relentless questioning, even the most rigorous questioning by the natural sciences, seems to reach a limit. At this limit we reach a brute fact, beyond which questioning is at best speculative, at worst fruitless. For example, the strong force in physics binds quarks into neutrons and protons, then holds those together in the nucleus of an atom (as the strong nuclear force). If the strong force coupling constant (its measured strength) were slightly weaker, atomic nuclei would fall apart (or simply never form), and there would be no chemistry. If it were slightly stronger, the universe would have produced helium or heavier elements right after the Big Bang instead of hydrogen. In this scenario, hydrogen-based stars would never have formed, and the stellar lifetimes needed for life to evolve would never have been reached. In other words, if the strong force coupling constant were slightly weaker or slightly stronger, you would not be reading this essay right now (Barnes 1994, 64).

Why is the strong force precisely as strong as it is? That question, although scientific, may be scientifically unanswerable. That is, the strength of the strong force may be a brute fact of physics, the cause of which we cannot fathom. Quantum chromodynamics describes how the universe works but cannot explain why it works that way. Scientifically, we may have advanced to the edge of mystery. If so, then the nature of mystery itself becomes a big question, and one worthy of pursuit, even if such pursuit may never achieve resolution.

Competing Interests

The author declares that they have no competing interests.

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