



DO YOU BELIEVE?  
A BOOK SERIES FROM RATIO CHRISTI

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# SCIENTISM

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RATIO  
CHRISTI

**FAITH & REASON** are at odds in our culture. For many, faith has come to mean little more than wishful thinking and blind belief. Such a concept is completely foreign to the pages of Scripture and historical Christianity. As Edward Feser notes, “In short, reason tells us that there is a God and that he has revealed such-and-such a truth; faith is then a matter of believing what reason has shown God to have revealed. In that sense faith is not only not at odds with reason but is grounded in reason.”

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## CHAPTER 1

# WHY SHOULD I SPEND TIME LEARNING ABOUT SCIENTISM?

Since my childhood I have loved the sciences. In college, I majored in physical chemistry. When done correctly, science produces spectacular and beneficial insights into the physical world. However, one set of ideas about science is foolish, mediocre, and insignificant. The name given to this cluster of ideas is “scientism,” a viewpoint which promotes science as the only reliable path to knowledge about reality. If scientism is so abundantly silly, however, then why would I write a booklet about it? That’s a good question, and the purpose of this chapter is to answer it. I will alert you to how widespread these ideas are and how many well-educated people espouse them. Further, I want to inform you of how hazardous these ideas are to your life.

### **Scientism is in our Drinking Water**

As stated above, scientism is the philosophical doctrine that the only way—or, at least, the vastly superior way—of knowing truths about reality is through the accepted methods and theories of the hard, empirical sciences. All other fields of study—e.g., philosophy, ethics, theology, history, and literature fail to give us knowledge of reality and truth. According to philosopher of science, Tom Sorrell, “Scientism is the belief that, especially natural science, is [by far] the most valuable part of human learning—much the most valuable part because it is [by far] the most authoritative, or serious, or beneficial. Other beliefs related to this one may also be regarded as scientific, e.g., the belief that science is the only valuable part of human learning...”<sup>1</sup>

Since the 1920s in North America, scientism has grown slowly, steadily, and imperceptibly. For some time now, scientism has been so pervasive and widely adopted, that it is now the subconscious assumption of most Americans even if they aren’t consciously aware of embracing it. For example, science is given vastly more intellectual respect and

authority than the humanities, the arts, ethics, and theology. To see how subtly entrenched scientism is, consider the following examples:

**EXAMPLE 1: TIME MAGAZINE:** On June 25, 2001, *Time* magazine featured an article by Michael Kinsley defending stem-cell research on human embryos. He wrote: “These [embryos] are microscopic groupings of a few differentiated cells. There is nothing human about them, except potential—and, if you choose to believe it, a soul.”<sup>2</sup> Note first that his conclusion is bad science; the claim that there is nothing really “human” about human embryos a scientifically absurd statement contradicted by all the standard textbooks of embryology!

More importantly, I want to draw your attention to a part of Kinsley’s sentence that you may not have noticed. Reread it carefully and observe what he presupposes: we *know* scientific facts about human embryos, but we only *believe* or *blindly* accept the existence human souls. For Kinsley, belief in a soul is not an item of knowledge. In his view, there is no evidence for it. He would probably put it in the category of a unicorn. You can believe it if you want, perhaps because someone told you that it exists or because you wish that such a creature is out there, but you’ve never seen or heard or touched a unicorn, so your belief does not count as knowledge. Kinsley undoubtedly thinks this kind of belief belongs in the pages of fantasy literature, not in the items of what we can truly know and be justified in believing. Michael Kinsley is not merely advocating science here; he’s expressing scientism.

**EXAMPLE 2: MARILYN VOS SAVANT:** For a long time, Marilyn vos Savant (listed in the Guinness Book of World Records as the human with the highest recorded IQ) has written a column in *Parade Magazine* entitled “Ask Marilyn,” where people submit questions and Savant provides answers. In one post, a man explains that his parents raised him in a certain religion. Now an adult, he still likes the religion, but his friends are trying to get him to rationally consider others. He wonders if Savant thinks he should consider his friends’ arguments or just go on accepting his parents’ religion.

Here is Savant’s response: “You’re smarter than those friends. Religions cannot be proved true intellectually. They come from the heart—and your parents—not the mind. In my opinion, you have behaved wisely [by not listening to your friends’ “arguments”].”<sup>3</sup>

Marilyn vos Savant has no problem with this man holding to his parents’ religious beliefs; “no harm, no foul” she might say. But she’s critical of his friends for trying to reason with him or to persuade him that other religious beliefs are more compelling or truthful or accordant with the evidence.

From reading her columns over the years, I assure you Marilyn would not say that science comes from the heart and not the mind or that it comes from what your parents told you. Scientific claims can be known; religious claims cannot. Once again, this attitude is not one of science but scientism.

**EXAMPLE 3: SCIENTISM IN SCHOOL:** Scientism is not just found among those writing columns in popular magazines. It is also the required dogma in our schools, where it directly challenges Christianity’s claim to be a knowledge tradition. For example, consider the Science Framework issued by the state of California in 1989, designed to guide its public school’s science curricula. The document offered teachers advice about how to address students who expressed reservations about the theory of biological macroevolution:

*At times some students may insist that certain conclusions of science cannot be true because of certain religious or philosophical beliefs they hold. . . . It is appropriate for the teacher to express in this regard, “I understand that you may have personal reservations about accepting this scientific evidence, but it is scientific knowledge about which there is no reasonable doubt among scientists in their field, and it is my responsibility to teach it because it is part of our common intellectual heritage.”<sup>4</sup>*

This statement’s significance comes not so much from its promoting evolution over creation. The problem is the picture of knowledge it presupposes, that knowledge about reality comes solely from science. Only empirical knowledge claims derived from the hard sciences deserve the backing of public institutions.

Such reasoning implies that religious and philosophical claims are merely matters of private feeling, which, by extension, downplays the significance of ethics, political theory, and religion. Science, then, becomes associated with words such as “conclusions,” “evidence,” and “knowledge,” while words like “beliefs” and “personal reservations” are associated with non-empirical claims. This phrasing gives science the “right” to define reality, while denigrating religious beliefs as mere ungrounded opinions. Put simply, the state of California is requiring that all students must abide by the dictates, not merely of science, but of scientism.

I could multiply examples *ad nauseum*, but the point has been made. Scientism has so pervaded our institutions that scientists have become the priests of a secularized culture.

## **Scientism: A Silent Killer**

At this point, you may be wondering what all of this has to do with you. *Plenty*. Ideas matter. Indeed, we are largely at the mercy of our ideas. More importantly, having true ideas and knowing they are true is necessary for living a flourishing life and sustaining a healthy society. As scientism has become more pervasive in our culture, the Western world has turned increasingly secular, and the power centers of culture (the universities, the media and entertainment industry, the Supreme Court) regard religion as a private superstition. And when our children go to college, unsurprisingly, many of them are giving

up on Christianity for no good reason. Culturally, we are all socialized to accept scientism. As a result, we lose our ability to achieve knowledge and wisdom about things that matter most in life—knowable answers to whether God exists and, if so, what is God like? Is there any meaning/purpose to life and how do I know? Is there objective right and wrong? What is a good person and how does one become a wise, good, and flourishing individual filled with peace, joy, and a heart that loves and serves others? Is there life after death and, if so, what is it like? None of these questions (and many more like them) can be answered by the hard sciences, yet knowing the truth about them is essential to a robust and thriving life, marriage, and culture.

Additionally, scientism has created at least five cultural shifts that prevent all of us from being the kind of people we know deep down that we should be. See if you can pinpoint the role scientism has played in facilitating each of these shifts:

- Morality and Christian theology, once understood as fields of knowledge, have become items of blind faith and emotion
- The pursuit of wisdom, character, and objective knowledge has been traded for instant gratification and satisfaction of desire
- Knowledge of objective moral truths, duties and virtues has succumbed to moral relativism and constructivism
- Freedom, once defined as the ability to do what one ought, has been redefined as the right to do what one wants
- Tolerance, once defined as treating respectfully people who disagree, is now thought to entail never judging that another's beliefs or behaviors are wrong in the first place.

In these and other ways, scientism has done tremendous damage to us all. But that does not tell us whether scientism is true or rational. To this topic we now turn.

## CHAPTER 2

# WHY IS SCIENTISM AN IRRATIONAL VIEWPOINT?

Years ago, I was invited to speak at an evangelistic event at a home in Baltimore. I was warned by a Christian friend that he was bringing his boss, a man who had been a chief engineer for decades and was finishing a belated Ph.D. in physics from Johns Hopkins University. He apparently went out of his way to ridicule Christians for their intellectual ignorance.

Upon being introduced to me at the dessert table, the gentleman wasted no time in making his views known and his condescension clear: “I understand you are a philosopher and theologian,” he said with a patronizing tone. Before I could respond, he proclaimed, “I used to be interested in those things when I was a teenager. But I have outgrown those interests. I know now that the only sort of knowledge of reality is that which can and has been quantified and tested in the laboratory. If you can measure it and test it scientifically, you can know it. If not, the topic is nothing but private opinion and idle speculation!” He certainly was not lacking in confidence, but his claims were not so plausible as he assumed.

### **Strong Scientism is Self-Refuting**

There are two forms of scientism: *strong* and *weak*. This gentleman was expressing *strong scientism*, the viewpoint that the *only* knowledge or rationally justified belief we can have about reality are those that have been certified by (especially) the hard sciences. Unfortunately, strong scientism is not only false, it could not possibly be true, any more than  $2+2$  could equal  $17!$  And no amount of future scientific discoveries will change this fact. Here’s why: strong scientism is self-refuting, meaning that it refutes or undermines itself. Strong scientism asserts that science is the only path to knowledge, but it cannot itself be certified by the hard sciences; it is self-refuting. Thus, even God could not create a word in which strong scientism is true.

Let's go back to my encounter with the physicist in Baltimore. After allowing the gentleman speak for two to three minutes, and I interrupted him with an expression of puzzlement: "Sir, you have made thirty to forty assertions in the last few minutes, and as far as I can tell, not one of them can be quantified, measured, and scientifically tested in the laboratory. But this places me in an awkward position. By your own standards, all you have been doing in our conversation is spouting your private opinions and idle speculation. Given this, I am wondering why I or anyone else ought to give you the time of day or think a single thing you said is knowably true."

The gentleman's face turned red—obviously, no one had ever pointed this out to him—and he quickly changed the subject! It is an uncomfortable thing to realize that one's beliefs are so absurd that they disprove themselves. But that is precisely the predicament for anyone who knowingly affirms strong scientism.

## **Scientism Undercuts Core Scientific Assumptions**

In addition to strong scientism there is a weaker form. Weak scientism acknowledges the existence of truths apart from the hard sciences, granting them some minimal rational status even if they don't have scientific support. Nevertheless, weak scientism still implies that science is by far the most authoritative sector of human knowing. If a conflict arises between an accepted view in a hard science and a view in, say, philosophy, the scientific claim always wins. If neuroscientists claim there is no soul, but a group of highly respected philosophers argue that there is, the former must win because their assertion is scientific.

Like strong scientism, weak scientism is utterly irrational and false. To show this, I will present two kinds of arguments against it. In my view, they are equally affective against strong scientism, but here I limit my focus to the weak version. In 1980, philosopher John Kekes made a crucial point about science and philosophy as competing paradigms for rationality. The following numbered points will help us track his argument.

1. A successful argument for the claim that science is the paradigm of rationality must be based on the demonstration that the presuppositions of science are preferable to other presuppositions.
2. That demonstration requires showing that science, relying on these presuppositions, is better at solving some problems and achieving some ideals than its competitors.
3. But showing the superiority of scientific presuppositions cannot be the task of science.
4. It is, in fact, one task of philosophy.



5. Thus the enterprise of justifying the presuppositions of science by showing that with their help science is the best way of solving certain problems and achieving some ideals is a necessary precondition of the justification of science.
6. Hence philosophy, and not science, is a stronger candidate for being the paradigm of rationality.<sup>5</sup>

Shortly, I will list some of these presuppositions. The issues before us are these: (1) The *nature* and *content* of the presuppositions are not scientific; they are philosophical. So, the task of stating and clarifying each assumption is a philosophical and not a scientific one. (2) The job of *defending*, *criticizing*, and *offering alternatives* to each presupposition is a philosophical one and not within the competence of science. With this in mind, here is a list of some crucial philosophical presuppositions of science:

1. A world exists “out there,” independent of mind, language, or theory.
2. The nature of the world is orderly, especially its “deep structure” that lies under and beyond the manifest world of ordinary perception.
3. Objective truth exists and truth is a correspondence between a proposition or assertion and reality.
4. Our sensory and cognitive faculties are reliable for gaining truth and knowledge of the world, including the world’s deep structure that lies beyond the sense perceptible world.
5. Various types of intrinsic values and objective “oughts” exist (e.g., one ought to report one’s data honestly; one ought to prefer the simpler to the more complex theory, all things being equal).
6. The laws of logic and mathematics exist, are presupposed by science, and are known in non-scientific, non-empirical ways.

## **Some Non-Scientific Facts are More Certain Than Any Scientific Facts**

I was in the middle of a nine-day stay in the hospital following the removal of a cancerous tumor in my colon on April 27, 2016. During that time, several different shifts of nurses had come and gone. On this particular day, a new nurse came to care for me, and take my vital readings.

As we chatted, she asked me what I did for a living. I told her I was a philosophy professor. “Where did you go to school?” she asked. Working backwards, I explained that my Ph.D. in philosophy is from the University of Southern California, my M.A. in philosophy

is from the University of California at Riverside, my Th.M. in theology is from Dallas Seminary, and my B.S. in physical chemistry is from the University of Missouri.

A puzzled look came on her face. She mused out loud that I had taken two very unrelated, divergent paths. Before she could explain, I asked if this was what she meant: I started off in science, which deals with reality—hard facts—and conclusions that could be proved to be true. But theology and philosophy were, well, fields in which there were only private opinions or personal feelings, where no one was right or wrong, or if they were, no one could know who was right. Science was cognitive, and theology and philosophy were personal and emotional. Looking surprised, as though I had read her mind, she acknowledged that my understanding was exactly what she had in mind.

My nurse had absorbed weak scientism without knowing it, so I told her that we have more certainty for many non-scientific facts than for many scientific facts. For example, we have more evidence that objective moral truths exist than that electrons exist. As an illustration, consider the following item of moral knowledge: “It is wrong to torture babies for the fun of it.” Now it is not hard to imagine some possible scenario by which, in fifty years, most people in our culture could be deluded into rejecting this moral truth. But it is very hard to imagine what we could learn in fifty years that would make this truth irrational to believe, or what evidence we might gain that would overturn it. It is self-evidently and intuitively obvious. In fact, one can know it is true without knowing *how* one knows it is true. We just do. If someone claims he doesn’t know that it is wrong to torture babies for fun, that person needs therapy, not an argument!

Now, is the same thing true of electrons? Not at all—as the history of the electron demonstrates.<sup>6</sup> Consider the different views of an electron held by J. J. Thomson (1856–1940), Niels Bohr (1885–1962), and contemporary quantum physicists. Thomson, an English physicist who won the Nobel Prize in Physics, is credited with discovering and identifying the electron. He held that electrons were non-orbiting, negatively charged particles embedded in an atom much like raisins are embedded in plum pudding. He favored the view that the force an electron exerted on another object was like fluid in the ether (a view that presupposed absolute space and time). According to Thomson, the entire mass of an atom was due to electrons (e.g., he thought an atom of hydrogen had 1836 electrons).

Bohr, a Danish physicist who also won the Nobel Prize in Physics and made important observations about quantum theory and atomic structure, disagreed with Thomson. Rather than viewing electrons as non-orbiting, he argued that they orbit but only in discrete, specific circular orbitals at specific energy levels. Electrons, according to Bohr, can jump from one energy level to another, but they have no location (or at least no definable location) in the space between orbitals involved in such a jump.

The current model of the electron is part of modern quantum theory and is distinct from both Bohr’s and Thomson’s models. One interesting question of current quantum theory is whether the constituents of the universe, including electrons, should be taken as physical or non-physical according to some form of metaphysical idealism. Another

feature is that electrons are considered to be probability clouds around an atom's nucleus.

Now, when I asked the nurse if she believed in electrons, my question was intentionally ambiguous. I should have specified which electron I was asking about. We no longer believe that "Thomsonian electrons" exist. While features of "Bohr's electrons" have been retained in current theory, it is a legitimate question as to whether there ever were any such things as Bohr electrons, given what we now take electrons to actually be. Does current theory refine or replace Bohr's? At the present time, it is difficult to say.

But why take you through this mini crash-course on the history of the electron? To illustrate the key point that as the science of a particular area moves forward, older views of some entities are often abandoned, such that scientists no longer believe there ever were such entities.

The history and theory of the electron is hardly an isolated example. Wikipedia has an entire page devoted to "Superseded Scientific Theories," ranging across the disciplines of biology, chemistry, physics, astronomy and cosmology, geography and climate, geology, psychology, etc. But, then, is it hard to imagine that in fifty years, no one will think it rational to believe in electrons as they are currently depicted? Given the history of science's track record for abandoning old theories and the alleged entities that populated them, it is not at all hard to imagine such a situation. Thus, the strength of one's belief in the quantum electron should be appropriately curtailed. Consequently, it seems clear that our knowledge of the moral truth listed above (the wrongness of torturing babies) is known with greater rational strength than our knowledge that electrons (i.e., our current understanding of electrons) exist. Weak scientism does not allow for this case and, thus, weak scientism is false.

In fact, there are many non-scientific truths that we can know with more certainty than many scientific truths. For example, the laws of logic and math are items of philosophical knowledge – not scientific knowledge. And yet, our knowledge that  $2+2=4$  is more certain than most scientific knowledge. Similarly, when we experience a conscious state like a thought or a pain, we are far more certain of the content of such conscious states than we are of the scientific data on our brain states. In fact, in order to correlate any brain state with particular thoughts or experiences, scientists have to ask the subject what is going on in their consciousness while they measure the brain state. The scientific knowledge of the brain is almost entirely dependent on the private experience of the knower himself.

I conclude that strong and weak scientism are false and irrational, no matter who affirms them. In exploring these issues, I have frequently used philosophy in my arguments, so now is a good time to raise a related question: What is the relationship between philosophy and the hard sciences?

## CHAPTER 3

# HOW DO PHILOSOPHY AND SCIENCE RELATE TO EACH OTHER?

To put the matter simply, *philosophy operates outside, underneath, and inside of science*. I know that statement isn't very helpful, so I'll unpack and illustrate each mode of philosophical involvement with science.

### **Outside and Underneath: First-philosophy and the Autonomy and Authority Theses.**

What, exactly, is first philosophy? Roughly, first philosophy is the notion that there is a realm of rational investigation that is the proper domain of philosophy. Within this realm, philosophical inquiry is independent of and more basic than science, and it gives us knowledge of the topics within its domain, including knowledge of reality. Hence, science is built upon the foundational results of first philosophy.

Philosopher George Bealer unpacked first philosophy into the following two theses:

*The Autonomy of Philosophy: . . . Most [of the central questions in philosophy] can in principle be answered by philosophical investigation and argument without relying substantively on the sciences.*

Examples of this thesis are numerous. The development and interpretation of various systems of logic, for example, depend upon no scientific investigation. Similarly, meta-ethics and normative ethics are largely independent of science. Other foundational philosophical questions are similar, such as the metaphysical study of whether properties are universals, particulars, or mere words. The development of different theories of free will is another such example. In these areas and many others, philosophy generally progresses without requiring input from the sciences.

*The Authority of Philosophy: [When] science and philosophy . . . answer the same central philosophical questions . . . the authority of philosophy in most cases can be greater in principle.*<sup>7</sup>

First philosophy has been central to philosophical thought since Plato. Since the advent of scientism in the mid-twentieth century, however, the public has had little exposure to philosophy in our educational system. As a result, the idea of first philosophy has fallen into disfavor. The autonomy and authority theses are frequently violated by those who have little understanding of first philosophy and its significance.

One illustration of this comes from *The Grand Design*, by Stephen Hawking and Leonard Mlodinow. In this book, Hawking and Mlodinow claim that quantum physics has made the need for a creator and designer superfluous.<sup>8</sup> How? The universe can “create itself.” It came into existence out of nothing; no creation necessary! Now this claim upset the faith of many believers because it was the considered judgment of a scientist, indeed, one of the top living scientists. Unfortunately, Hawking and Mlodinow may well be great scientists, but they are very poor philosophers. They failed to grasp that their concept of “nothing” is not the same as the philosophical one, and it is the philosophical notion which is relevant one to deciding on the “need” for a Creator. For Hawking and Mlodinow, “nothing” means a quantum vacuum, which contains energy and is itself located in space. The universe comes into being spontaneously as a fluctuation of the energy in the vacuum.

But this is hardly a case of the universe coming into being from nothing! The philosophical notion of nothing is the complete and total lack of any being whatsoever, including the absence of particles, causal powers, fields, properties, and so on. Given this notion of nothing, it is self-evident that, necessarily, something cannot come *from* nothing without a cause, because there is nothing to come from! Here, philosophical considerations carry more weight than do the scientific claims about the “same” topic.

## **Inside: Philosophy operates within Science**

Finally, philosophy operates within science in at least three ways. First, philosophy analyzes and clarifies concepts used in scientific investigation. Second, philosophy specifies and defends key features of reality appropriated by science. And finally, philosophy confronts science with external conceptual problems. We will look at each of these tasks in turn.

(1) Conceptual analysis and clarity: Scientific theories often have fuzzy, seemingly contradictory or circular concepts that philosophical analysis can clarify. Here’s one example. Some critics claim that the evolutionary notion of survival of the fittest is circular. It is sometimes defined as a process which selects for those traits that contribute to

survival. And which traits contribute to survival? They are the ones that evolutionary processes select. Different philosophers have responded in different ways to this conceptual confusion, and in doing so, they resolve this difficulty.

(2) Scientific theories use various philosophical concepts, such as Leibniz's Law of the Indiscernibility of Identicals, the distinction between essential and accidental properties, and so on. These ideas and others have been rigorously analyzed by philosophers and they can make a scientific theory that employs such concepts more precise.

(3) An External Conceptual Problem (ECP) is a rationally justified belief that is part of a non-scientific discipline, but enters into scientific evaluation when that belief challenges or contradicts some aspect of scientific investigation. Scientific theories need to solve empirical problems, and ECPs are relevant to those theories because they may not square with scientific observations. For example, there are rigorous philosophical arguments that provide significant justification for the claim that the universe must have had a beginning. Now, if a scientific theory is developed that entails an eternal universe, that scientific theory must be evaluated in light of the philosophical reasons to think otherwise.

## CHAPTER 4

# WHAT ARE SOME WAYS THAT WE EXPLAIN THINGS?

Explaining things is the heart of an intellectually virtuous life. However, there are different types of explanations for various phenomena.<sup>9</sup> As the philosopher of religion Richard Swinburne observes, there is a great difference between a physical, *scientific explanation* for some event and a *personal explanation*.<sup>10</sup> In this chapter I will illustrate how each type of explanation helps us accounting for different kinds of events. This will provide a foundation for the next chapter, where I will mention various things that science cannot, even in *principle*, explain.

### Standard Scientific Explanations

Standard scientific explanations seek to explain states or changes in states.. For example, we may try to explain why a gas enters into a certain state under certain pressures. In such cases, one event causes another event in accordance with some law of nature, and so the standard scientific explanation employs *event-event causation* (event A causes event B).

Associated with event causation is a “*covering law*” model of explanation according to which some event is explained—or covered—by giving a valid deductive or inductive argument for that event. Such an argument utilizes two features: (1) a universal or statistical law of nature and (2) some initial conditions. For example, consider the ideal gas law:  $PV=nRT$  ( $P$ ,  $V$ ,  $T$  are pressure, volume, temperature;  $n$  is the number of moles of the gas;  $R$  is a constant (.0821...)). Accordingly, a covering law model of explanation for the temperature of the gas would look like this:

1.  $PV=nRT$
2. The gas in our container has  $P_1$ ,  $V_1$  and  $n_1$ .
3. Therefore, the gas in our container has  $T_1$ .

In this case, we want to explain why our gas has temperature  $T_1$ . And we explain this by citing the law of nature (the equation in premise 1), plug in our initial conditions (premise 2), and we explain the fact (stated in the conclusion, 3).

While covering law of explanations may be a *necessary* condition of explanation, it is not *sufficient* by itself. It needs to be supplemented by some model that tells us *why* the universal law is true in the first place. Let's look again at our attempt to explain the temperature of the gas in our container. Yes,  $PV=nRT$  is the relevant law of nature of ideal gases. However, one can still ask *why* this equation succeeds in describing the behavior of gases. And to answer that, scientists have developed a model that includes a mechanism which *undergirds* and further *explains* the ideal gas law.

That model is the ideal gas model. *Gases* are taken to be collections of tiny point particles (atoms or molecules) that engage in completely efficient elastic collisions (no loss of momentum). Moreover, *temperature* is reduced to atomic/molecular motion, and *pressure* is reduced to the rate at which the atoms/molecules of the gas collide with a certain area of the container wall. Thus, if we keep the volume constant (as in a pressure cooker) and increase the temperature, the atoms/molecules will be agitated and will move around much faster (this process is what temperature is in the ideal gas theory), and this will, in turn, cause more of them to hit the container wall per second (pressure). The ideal gas model provides an *explanatory model* of what is going on, including a *mechanism* (agitating the gas's atoms/molecules) that explains the ideal gas law.

## Personal Explanations

Standard scientific explanations are crucial, but they are not the only way to explain why things happen; there are also *personal explanations*. A *personal explanation* involves some event which is purposefully brought about by a person, whether divine, human, or otherwise. Personal explanations will employ notions such as the *intention* of the agent and the relevant *power* of the agent to cause the event.

Let's say that Rae sets the dinner table in a certain way, intending to provide a relaxing dinner for her neighbors. A personal explanation of her actions would utilize a *Result* (the dinner table is set a certain way) brought about by a *Person* (Rae) by citing her *Intention* (to provide a relaxing meal for her neighbor) and the exercise of her *basic power* (to set the dinner table). This power, by the way, is not just a theoretical capacity but an actual ability—so Rae has the basic power of setting the table but not of lifting a piano by herself. Furthermore, not everyone has this power (e.g., her two-year-old son Alex). To summarize, a personal explanation involves an *agent* bringing about a *result* by exercising a *power* in order to realize an *intention* as an irreducibly teleological (i.e., purposeful) goal.

These kinds of explanation are used all the time, especially in court. In a murder trial, for example, the jury seeks *personal explanations*: Who committed the murder? What



power did he use to do this? Did the alleged killer actually possess that power and could he exercise it at the right place at the right time? What was his intention?

## A Criterion for Things that Are Scientifically Unexplainable

In the next chapter, we will observe five things that science cannot explain, even in principle. But first we need to have criteria in place for knowing why this would be the case. Several have been adopted, but here is a crucial one: *When phenomena are too odd to fit into a pattern of scientific explanation, those phenomena cannot in principle be explained by science.* Philosopher Richard Swinburne has clarified what “too odd” means and thereby identified two sorts of phenomena that satisfy these conditions.<sup>11</sup>

First, a phenomenon is too odd to fit a scientific explanation when you must suggest new laws solely to make sense of the phenomenon. Indeed, if there is good scientific evidence for a theory covering a range of phenomena, and if certain phenomena occur within this range that are *not* a consequence of the theory, then any attempt to *revise* the theory so that it now has laws that predict such phenomena would make it complex and *ad hoc*.

For example, consider a scientific system of medical laws that cover various phenomena regarding the body (how it breaks down, what disease does and does not do to it, etc.). Then imagine we then encounter various strange phenomena that fit within the purview of the medical theory’s range of application, such as

- deformed limbs returning to normal when prayed for,<sup>12</sup>
- people who have been dead for two to three days come back to life due to prayer,<sup>13</sup>
- people going through significant periods of time when they are dead and have no brain activity at all returning to life and reporting having been conscious during the entire time and provide evidence of things they saw in the emergency room and elsewhere that they could not have known if they were not conscious and out of their body.<sup>14</sup>

Swinburne’s point is that any attempt to revise the medical theory so that its laws can now predict apparent miracles would make the theory hopelessly complex and arbitrary. Think of all the laws that would have to be revised to take the form “when missionary doctors pray for deformed limbs they will straighten out.” And the only reason these bizarre new formulations would have to be incorporated into the medical theory would be to avoid a miraculous, theistic explanation. Here’s the bottom line: Changing the laws of nature to incorporate what are obviously miracles is an example of incorporating the odd (a miracle) into a law that just doesn’t fit the medical theory.

Second, a phenomena is too odd for a scientific theory when it is new and utterly unique from anything in the old theory and cannot, in principle, be predicted from that old theory. If the new phenomenon incorporated into the old theory is so utterly unique and different from every other entity in the theory such that the new phenomenon's appearance cannot, in principle, have been predicted by the old theory, then the expanded version falsifies the old theory.

The example of consciousness provides a case of oddness. According to scientism, the entire history of the universe was a history of strictly physical entities until the very first sentient beings evolved. Prior to the appearance of these beings, there were no sensations, thoughts, desires, and so forth. And the appearance of consciousness was utterly unpredictable from even exhaustive God-like knowledge of brute matter.

Thus, the nature of consciousness is *odd*—it does not fit comfortably in a naturalistic physical worldview. As naturalist philosopher Colin McGinn admits, consciousness is one of the most mystifying features of the cosmos. He claims that its arrival borders on sheer magic because there seems to be no naturalistic explanation for it:

*How can mere matter originate consciousness? How did evolution convert the water of biological tissue into the wine of consciousness? Consciousness seems like a radical novelty in the universe, not prefigured by the after-effects of the Big Bang; so how did it contrive to spring into being from what preceded it?*<sup>15</sup>

Purely physicalist scientific theories of consciousness fail to meet the criterion of oddness. And labeling the properties of consciousness “emergent properties” is just a name for the problem, not a solution. Indeed, it is tantamount to admitting defeat for purely physicalist theories of consciousness.

In sum, according to Swinburne, a phenomenon is scientifically inexplicable if it is odd in the relevant ways. I have spelled out two kinds of oddness:

1. When the previous physical theory must take on new laws that leave the adjusted theory overly complex and *ad hoc* in its formulation.
2. When the new phenomenon is so utterly unique compared to anything else in the old theory and cannot properly be explained by an expanded new theory. In the next chapter, we will look at specific items that science cannot explain.

## CHAPTER 5

# WHAT ARE FIVE THINGS SCIENCE CANNOT EXPLAIN BUT THEISM CAN?

The heart of scientism is the notion that science can explain virtually everything. According to scientism, if there is not a valid scientific explanation for an event, then we cannot know that the event took place. In reality, however, there are many things that science cannot explain. And the problem is not merely that we lack sufficient data, but that science cannot explain such things, even in principle. Even more significantly, theism *can* explain them. Let's look at five things that theism can explain but science cannot.

### 1. Science Cannot Explain the Origin of the Universe

It is now beyond reasonable doubt that the universe—the system of time, space, and matter/non-personal energy—began to exist at some finite time ago (e.g., 13.8 billion years). The *kalam cosmological argument*—a powerful argument for God's existence from this fact—was formulated many centuries ago, but it has received renewed interest in the last few decades.<sup>16</sup> I cannot investigate the argument here, but for those who do, they will find a powerful argument for the claim that God's existence and initial creative activity is the best explanation for the universe's origin. Important for present purposes is the fact that science cannot—even *in principle*—explain the origin of the universe, for at least three reasons.

First, science can only explain one aspect of the universe by appealing to another aspect of the universe, often subsuming them both under a law of nature. For example, we explain the formation of water by appealing to the chemical properties of hydrogen and oxygen, along with some energy-releasing event that caused the two to come together according to these chemical properties. In all cases of scientific explanation, one must already have a universe in existence before scientific explanations such as initial conditions, laws of nature, and so forth have something to which they can apply. Scientific

explanations presuppose the universe in order for them to be employed in the first place. Thus, *a scientific explanation cannot be used to explain the very thing (the universe) that must exist before scientific explanation can get off the ground.*

Second, scientific explanations apply to ongoing temporal states or changes of states (both are events) of various things according to relevant laws. The moving of the continents, the formation of the solar system, and so on are all events that are explained by other events and laws that connect the events. Accordingly, scientific explanation presupposes the reality of both events and time, since events are temporal episodes and no sense can be given to the idea of a timeless event. Two things follow from this. For one thing, science will never be able to explain the first event (the beginning of the universe) because to do so, it would have to appeal to a prior event and a law connecting them. But in this case, the origin of the universe would no longer be the first event; the prior explanatory event would be. But then, to explain this first event, one would need to postulate another prior event, and a vicious regress ensues.

Furthermore, since scientific explanations tie one event to another via a law, such explanations presuppose time for them to be applicable. Thus, again, science cannot explain the origin of the very thing (time) that must exist before scientific explanations can be proffered in the first place.

Third, coming-into-existence is not a process but an instantaneous occurrence. Consider the process of walking into a room. One starts completely outside the room, then one is 20% into the room, then 30%, and so on, as one passes through the entrance. Finally, one is 100% in the room. But coming into existence from nothing is not a process. It is not as though the entity in question starts off being 100% non-existent, then is 90% non-existent and so on until it is 100% existent. Remember, by “90% non-existent” I don’t mean that 10% of the entity fully exists and 90% is completely non-existent. Rather, I mean that the entire entity is 10% *real*. It’s hard to avoid the conclusion that notions like 90% non-existent are incoherent.

Something either does or does not exist. Period. It follows that, apart from the creative activity of God, there can be in principle no reason, no explanation for why one thing—say, the universe—popped into existence as opposed to another thing—a Honda Civic, a bass’s backbone, one half of Mt. Everest, or a pair of chicken wings. Science can only be applied to transitions of one thing into another, but coming into existence is not a transition; it is, as it were, a point action or instantaneous event. So, science cannot in principle explain the coming-into-existence of the universe from nothing.

## **2. Science Cannot Explain the Origin of the Fundamental Laws of Nature**

Not all laws of nature are equally fundamental. Some can be derived from others.

For example, Newton's first law of motion (an object at rest stays at rest, and an object in motion stays in motion with the same speed and in the same direction unless acted upon by an unbalanced force) builds on Galileo's concept of inertia (the tendency of matter to resist change in velocity; objects do not spontaneously change their velocities, which will remain constant unless acted upon by a force). However, such derivations cannot continue indefinitely. There must be fundamental laws of nature. But *the existence and precise nature of these laws cannot be explained by science*. All scientific explanation presupposes them. As far as scientific explanation is concerned, they are simply brute givens to be used to explain scientifically other things but which themselves cannot be explained scientifically.

So, how do we explain the existence and nature of these laws? Where did they come from? There are two major options here: (1) take them as unexplainable brute entities, or (2) provide a theistic explanation. For many thinkers, myself included, the "unexplainable-brute-entity" option is not a good one. Since the actual brute entity (e.g., natural laws) might not have existed, we naturally seek an explanation as to *why* the contingent entity exists instead of not existing. Option (2) is the best alternative.

### 3. Science Cannot Explain the Fine-Tuning of the Universe

What do we mean by fine-tuning?<sup>17</sup> At minimum, it refers to the fact that there are certain features of our world which, if they were altered even slightly, would make life of any sort impossible. These features make our universe look "fine-tuned" to allow for life. For example, our universe contains various *constants* (like the gravitational constant  $G$  in Newton's law of gravity:  $(F=Gm_1m_2/d^2)$ ) and *certain arbitrary physical quantities* (such as the specific low entropy  $R^2$  Level in the universe—the amount of disorder or useful energy to do work in the universe) that are not determined by the laws of nature but, as far as science is concerned, are brute facts that are just there.<sup>18</sup> And as philosopher William Lane Craig points out, even "small deviations from the actual values of the constants and quantities in question render the universe life-prohibiting . . . the range of life-permitting values is extremely narrow."<sup>19</sup> These factors are in principle incapable of being explained by science because they are ultimates—brute givens plugged into scientific laws. However, they can be explained quite persuasively by theism. To put it simply, rigged dice are best explained by a dice rigger.

The main naturalistic attempt to avoid this argument is called the *Many Worlds Hypothesis*, according to which there are a near-infinite number of actual, concrete universes parallel to our own and with which we are incapable of interacting in any way, including scientific means of interaction. Given that each world in this so-called "World Ensemble" would have its own combination of values for its constants and arbitrary physical magnitudes, it is probable that there will be many universes that contain beings capable of observing their own universe. And, thus, it is necessary that our observed universe be one

that contains the right combination of constants and magnitudes because if it did not, we would not be here to debate the question!

In my view, the Many Worlds Hypothesis fails to be plausible. But that is not the point here. The central point, rather, is that the idea of a World Ensemble is a *philosophical* assertion which is not scientifically testable. *Science* cannot explain fine tuning.

#### **4. Science Cannot Explain the Origin of Consciousness**

Various features of human persons, consciousness being among them, have provided very serious problems for scientific naturalism. But given Theism, consciousness is easily explained.<sup>20</sup> Consider the following quote from one of the world's leading scientism and naturalism advocates, Crispin Wright:

*A central dilemma in contemporary metaphysics is to find a place for . . . semantic, moral, and psychological [subject matters] . . . in a world as conceived by modern naturalism: a stance which inflates the concepts and categories deployed by (finished) physical science into a metaphysics of the kind of thing the real world essentially and exhaustively is.*

*On one horn, if we embrace this naturalism, it seems we are committed either to reductionism . . . or to disputing that the discourses in question involve reference to what is real at all.*

*On the other horn, if we reject this naturalism, then we accept that there is more to the world than can be embraced within a physicalist ontology—and so take on a commitment, it can seem, to a kind of eerie supernaturalism.<sup>21</sup>*

If one's view of reality begins with a Mind, there is no difficulty in embracing subsequent, finite conscious beings. But if one begins with brute matter, and the history of the universe is the rearrangement of brute matter into larger and more complexes of material entities, you will end up with larger and more complex material entities. For consciousness to appear would seem to get something from nothing. It would be magic without a magician.

#### **5. Science Cannot Explain the Existence of Objective Moral, Rational and Aesthetic Laws and Values**

Most people acknowledge the existence of objectively true normative “oughts/ought nots” in morality (one ought to be honest), rationality (one ought to believe the best hypothesis, given the evidence), and aesthetics (one ought not mix certain colors in a painting).

The problem for scientism is that science is descriptive, not prescriptive; science attempts to describe what *is* the case, but it cannot prescribe what *ought* to be the case. Thus, science must remain silent when it comes to normative laws and principles. This is why evolutionary ethics is a failure. It can only describe what is the case, e.g., the given the behavior of a group of chipmunks; it cannot prescribe what ought to be the case. As one of the leading philosophers of evolutionary biology, atheist Michael Ruse puts it:

*Morality is a biological adaptation no less than are hands and feet and teeth. Considered as a rationally justifiable set of claims about an objective something, ethics is illusory. I appreciate that when somebody says "Love thy neighbor as thyself," they think they are referring above and beyond themselves. Nevertheless, such reference is truly without foundation. Morality is just an aid to survival and reproduction . . . and any deeper meaning is illusory.*<sup>22</sup>

Ruse's point applies with equal force to rationality and aesthetics. However, if there is a virtuous, good God, then the moral, rational, and aesthetic duties he imposes on us will be objectively true (that is, true independent of what humans think or believe), conducive to prescriptively good human flourishing, and real whether one believes in them or not.

In this booklet, I have tried to present an honest and unfavorable evaluation of scientism, but not of science itself. Science is indeed a powerful path to knowledge, but there are many ways of knowing things. A "One size fits all" approach should not be taken to the pursuit of truth, because how one knows a thing depends on the nature of the item known. More significantly, restricting knowledge to only that which is scientifically verifiable will undercut one's confidence in some of the most meaningful areas of life, from faith to ethics to art. Your future will be deeply affected by where you come down on this topic, so think very carefully before you drink the scientific cool-aid.

## ENDNOTES

- 1 Tom Sorell, *Scientism: Philosophy and the Infatuation with Science* (London: Routledge, 1991), p. 1.
- 2 Michael Kinsley, “If You Believe Embryos Are Humans . . .,” *Time* (June 25, 2001), 80.
- 3 Marilyn vos Savant, “Ask Marilyn,” *Parade Magazine* (October 7, 2001), 25.
- 4 Cited in Mark Hartwig and P. A. Nelson. *Invitation to Conflict* (Colorado Springs, Colorado: Access Research Network, 1992), p. 20.
- 5 John Kekes, *The Nature of Philosophy* (Totowa, N. J.: Rowman and Littlefield, 1980), p. 158.
- 6 For a brief treatment of this history, along with other resources, see J. P. Moreland, *Christianity and the Nature of Science* (Grand Rapids, Michigan: Baker, 1989), pp. 162-65.
- 7 George Bealer, “On the Possibility of Philosophical Knowledge,” in *Philosophical Perspectives 10: Metaphysics*, 1996, ed. James E. Tomberlin (Cambridge, MA: Blackwell, 1996), 1.
- 8 Stephen Hawking and Leonard Mlodinow, *The Grand Design* (New York: Bantam Books, 2010.)
- 9 Phenomena is a general term for any type of thing, event, situation, or experience which is known to exist or to be experienced.
- 10 Richard Swinburne, *The Existence of God* (Oxford: Clarendon Press, 2d. ed. 2004), pp. 26-45. I am not claiming that personal explanation cannot be scientific. Later, we will see that personal explanation is central to the Intelligent Design science. I am simply pointing out that there is a standard type of physical explanation used in science and it differs from personal explanation.
- 11 Swinburne, p. 74.
- 12 See cardiologist Chauncey Crandall’s *Touching Heaven* (New York, New York: FaithWords, 2015), p. 37.
- 13 See Reinhardt Bonnke, *Raised from the Dead* (New Kensington, PA: 2014); also, consult the accounts in Crandall. It would be foolish to make judgments about the credibility of these accounts without having the integrity to first read them with an open mind. For a scholarly treatment and documentation of the numerous miraculous acts of God happening all over the world today, see Craig Keener’s two-volume set *Miracles: The Credibility of the New Testament Accounts* (Grand Rapids, Michigan: Baker, 2011). Furthermore, no discussion of people being raised from the dead would be complete without mentioning the evidence for the bodily resurrection of Jesus of Nazareth from the dead. See N.T. Wright, *The Resurrection of the Son of God* (Philadelphia, PA: Fortress Press, 2003); Gary Habermas and Mike Licona, *The Case for the Resurrection of Jesus* (Grand Rapids, Michigan: Kregel, 2004); Mike Licona, *The Resurrection of Jesus: A New Historical-Graphical Approach* (Downers Grove, Illinois: InterVarsity Press, 2010); William Lane Craig, *The Son Rises* (Eugene, Oregon: Wipf & Stock, 2000).
- 14 See Eben Alexander, *Proof of Heaven* (N.Y.: Simon and Schuster Paperbacks, 2012). In my view,



it is beyond reasonable doubt that Alexander had left his body, was conscious when his brain was completely unable to sustain consciousness, and went to another realm. However, I think that the interpretation he gives to some of his experiences is erroneous. For more on the stunning evidence for the reality of Near-Death Experiences (which should be called “After Death Experiences”), see the sources cited in chapter 3, note 11.

**15** Colin McGinn, *The Mysterious Flame* (N.Y.: Basic Books, 1999), pp. 13-14.

**16** For fuller developments of this argument, see J. P. Moreland, *Scaling the Secular City* (Grand Rapids, Michigan: Baker, 1986), chapter one; Douglas Groothuis, *Christian Apologetics* (Downers Grove, Illinois: InterVarsity Press, 2011), pp. 214-234; and William Lane Craig, *Reasonable Faith* (Wheaton, Illinois: Crossway, 2009), pp. 111-56.

**17** I am indebted to William Lane Craig’s excellent discussion of this topic in *Reasonable Faith* (Wheaton, Illinois: Crossway, 3d. ed., 2008), pp. 158-59.

**18** For a list and nice explanation of these constants and physical quantities, see Hugh Ross, *The Creator and the Cosmos* (Colorado Springs, Colorado: NavPress, 3d. revised and expanded ed., 2001), pp. 145-167.

**19** Craig, *Reasonable Faith*, p. 158.

**20** See J. P. Moreland, *The Recalcitrant Imago Dei* (London: SCM Press, 2009).

**21** Crispin Wright, “The Conceivability of Naturalism,” in *Conceivability and Possibility*, ed. Tamar Szabo Gendler and John Hawthorne (Oxford: Clarendon, 2002), p. 401. The paragraph breaks are mine.

**22** Michael Ruse, “Evolutionary Theory and Christian Ethics,” in *The Darwinian Paradigm* (London: Routledge, 1989), pp. 262-269.

## FURTHER READING

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