

Lutheran Mission Matters



Volume XXIV, No. 3 (Issue 49) November 2016

Articles

God, the Gospel, and Modern Science: Reflections on the Church's Witness and Message in a Scientific Age

Joel P. Okamoto

Abstract: Science is certainly important to the contemporary world, not least because it is indispensable to economics, health care, transportation, and communications. But it matters also for Christians because it is often taken as a natural philosophy with a definite ontology (account of what there is) and epistemology (account of knowing and knowledge). This natural philosophy is not only highly successful and influential, but also challenging to Christian faith and life. This article traces out the basic features of science as a type of natural philosophy, and suggests how it matters for faithful Christian witness.

Introduction

Science is a very important feature of life in many nations. The United States offers a good example. Children are taught about science in their schools, and many learn to be scientific in the university. Science is essential to modern technology, and in this way science is essential to industry, health care, communications, and travel. For this reason, science also is essential to economics and politics; and nearly everyone, whether he knows it or not, counts upon science to make lives longer, more productive, and more comfortable.¹ Moreover, in societies where science and technology are economically and politically vital, science does much to shape the way people think about themselves and the universe.



Joel Okamoto is the Waldemar and Mary Griesbach Professor of Systematic Theology and Chair of the Department of Systematic Theology at Concordia Seminary, St. Louis, where he has taught since 1998. He also is project director for Concordia Seminary in the “Science for Seminaries” program, sponsored by the American Association for the Advancement of Science, which has explored ways of integrating science into pastoral education and also of equipping seminary students and church workers for engaging topics, questions, and challenges that science may raise along faithful and constructive lines of conversation. okamotoj@csl.edu

Copyright 2016 Lutheran Society for Missiology. Used by permission.

View Lutheran Mission Matters 24, no. 3 (2016) at <http://lsfm.global/>.

Membership in LSFM is available at <http://lsfm.global/joinlsfm.htm>.

E-mail lsfmissiology@gmail.com to purchase a print copy of a single issue.

For this reason alone, science also should be a very important factor for contemporary Christian life, witness, and theology. But science is also often regarded as a competitor to the Christian faith. So-called “new atheists” like Richard Dawkins, Daniel Dennett, and Sam Harris set modern science against all religious beliefs and values, including Christian ones.² But they stand out only for the virulence of their polemic against religion. What they share with many more moderate people is the view that science tells us how the world really is. For them, the word “science” stands for a reliable way to learn the truth about the world. Consequently, religious claims that contradict these facts are, as far as we know, false. And so a sense of competition and conflict between science and most religions, and definitely the Christian religion, cannot be avoided.

Christians sense this as much as anyone. Tim Keller, pastor of widely-known Redeemer Presbyterian Church in New York, talks about the supposed competition in his book, *The Reason for God*.

Over the years at Redeemer I’ve talked to many people trained in science and biology who were very wary of orthodox Christian belief. One young medical student said to me, “The Bible denies evolution, which most educated people accept. It bothers me terribly that so many Christians, because of their belief in the Bible, can take such an unscientific mind-set.” His concern is quite understandable.³

Keller’s findings are consistent with those that David Kinnaman reported in his book, *You Lost Me*. “Millions of young Christians perceive Christianity to be in opposition to modern science.”⁴ In other words, they find the Christian faith to be “antiscience,” and it forces even them into an all-important dilemma. Kinnaman quotes a scientist who put it clearly:

Every week, I am contacted by young Christians who tell me their faith cannot survive their interest in science. They feel the church has forced them into an either-or decision—either they can stay true to the Christian faith or become an intellectually honest scientist.⁵

This kind of situation adds urgency for Christians to deal with science and its implications for life, witness, and theology today.

Science as Natural Philosophy

To pursue this undertaking, the first task is to be clear about the meaning of the word “science,” because it has several common uses, including these:

- *Science as a set of topics and findings*, such as “physics,” “chemistry,” and “astronomy.” This is how science is commonly taught in school. Science in this sense conjures up equations like “ $F=ma$,” the periodic table,

microscopes and slides, and experiments like Galileo is supposed to have performed at the Leaning Tower of Pisa.⁶

- *Science as a particular systematic method for understanding and getting around in the world.* According to a local St. Louis television program on the Anheuser-Busch Research Pilot Brewery, “Beer can be many things. It can simply be a beverage, a hobby, a social icebreaker, or all the above. But first and foremost, the art of brewing beer is a science.”⁷ Science as this method assumes that everything is made of more fundamental stuff—ingredients—and that everything works according to some definite rules. Science proceeds by a method of trial and error, trying to ascertain not only what does work, but also what does not. It could be difficult to figure out the basic ingredients or the underlying rules or the appropriate experimental tests, for example, if you were trying to figure out the recipe for a certain brand of cola or of fried chicken. A process of “reverse engineering” would have to go into it. But these are practical difficulties, not fundamental problems or questions. Newton and Einstein arrived at their theories of gravitation through much more involved efforts, but their approach to understanding the world was no different than what diligent brewers, bakers, and cooks do in their search to develop a new beverage or dish.
- *Science as the definitive systematic method for understanding and getting around in the world.* This is science as “natural philosophy,” which is what modern science was often called before the nineteenth century. The assumptions and procedures of the method are the same as outlined in the second use above, but “science” in this view specifically seeks a comprehensive account of the world—the entire universe—and not just of a beverage or dish.

It is this third type, namely, science as natural philosophy, that I am highlighting.⁸ It certainly includes findings and theories, but it is far more. Science as natural philosophy is what Tim Keller and David Kinnaman were concerned about and, as I contend, what Christian missiology (among other aspects of theological reflection) should be concerned about too.

Why? Because science as natural philosophy challenges Christianity fundamentally. The Christian faith, life, and witness presuppose a particular story of everything: a story of the one true God and

Science as natural philosophy is . . . what Christian missiology (among other aspects of theological reflection) should be concerned about. . . . Why? Because science as natural philosophy challenges Christianity fundamentally.

Father of Jesus Christ and His creation. Science as natural philosophy offers a different story of everything. Therefore, it is fundamentally incompatible with the Christian faith; and if Christians can see their way forward about their message and mission when science as natural philosophy is an important factor, then they will be in an excellent position also to deal fairly with science in other senses.

This natural philosophy aspect can be traced all the way back to the Presocratic philosophers.⁹ For example, in her book, *Plato at the Googleplex*, Rebecca Newberger Goldstein explained how the first Ionian philosophers—men like Thales and Anaximander—“would themselves have made excellent scientists.”¹⁰ This is because of their assumptions and their views about what we really know.

First, they made two assumptions about the universe: (1) that everything is made of more fundamental stuff—ingredients; and (2) that everything works according to some definite rules. Goldstein called the first assumption “materialism.” This is the conviction “that there is some fundamental kind of stuff that’s uniform throughout all the myriad phantasmagoria that we perceive.”¹¹ Thales, for example, thought water was the fundamental stuff. Today, by contrast, it is essential to believe that everything consists of fundamental particles: atoms and their constituents. “Essential,” moreover, is not a rhetorical flourish. Physicist Richard Feynman made this point at the outset of his lectures on physics, the most well-known of the twentieth century:

If, in some cataclysm, all of scientific knowledge were to be destroyed, and only one sentence passed on to the next generation of creatures, what statement would contain the most information in the fewest words? I believe it is the *atomic hypothesis* (or the *atomic fact*, or whatever you wish to call it) that *all things are made of atoms—little particles that move around in perpetual motion, attracting each other when they are a little distance apart, but repelling upon being squeezed into one another*. In that one sentence, you will see, there is an enormous amount of information about the world, if just a little imagination and thinking are applied.¹²

Feynman went on for several pages applying “just a little imagination and thinking” to convey some of the information in this one sentence, and then he concluded:

Everything is made of atoms. That is the key hypothesis. The most important thing in all of biology, for example, is that *everything that animals do, atoms do*. In other words, *there is nothing that living things do that cannot be understood from the point of view that they are made of atoms acting according to the laws of physics*. This was not known from the beginning: it took some experimenting and theorizing to suggest this hypothesis, but now it is accepted, and it is the most useful theory for producing new ideas in the field of biology.¹³

Feynman's mention of "the laws of physics" takes us to the second assumption: *that everything works according to some definite rules*. According to Feynman, understanding the rules that govern the world constitutes understanding the world:

We can imagine that this complicated array of moving things which constitutes "the world" is something like a great chess game being played by the gods, and we are observers of the game. We do not know what the rules of the game are; all we are allowed to do is *watch* the playing. Of course, if we watch long enough, we may eventually catch on to a few rules. *The rules of the game* are what we mean by *fundamental physics*. Even if we knew every rule, however, we might not be able to understand why a particular move is made in the game, merely because it is too complicated and our minds are limited. If you play chess you must know that it is easy to learn all the rules, and yet it is often very hard to select the best move or to understand why a player moves as he does. So it is in nature, only much more so; but we may be able at least to find all the rules. Actually, we do not have all the rules now. (Every once in a while something like castling [a chess move] is going on that we still do not understand.) Aside from not knowing all of the rules, what we really can explain in terms of those rules is very limited, because almost all situations are so enormously complicated that we cannot follow the plays of the game using the rules, much less tell what is going to happen next. We must, therefore, limit ourselves to the more basic question of the rules of the game. If we know the rules, we consider that we "understand" the world.¹⁴

Goldstein called this belief "naturalism," the belief "that a small number of fundamental laws underlie all the ceaseless changes."¹⁵ This insight may be the most important contribution ever to modern science. As Goldstein explains,

Of all the conceptions that made science possible, none is more essential than what the physicist and historian of science Gerald Holton called "the Ionian Enchantment": the intuition that nature is governed by a small number of laws which account for all the vast complexity that we observe in the physical universe. This enchantment, if enchantment it be, ensorcelles all of science. . . .

Science simply cannot subject the Ionian nomological intuition to doubt and still remain science. Should an observation clash with what scientists have heretofore believed was a law of nature, the scientific response is never to consider the possibility that we'd gotten the Ionian intuition wrong; rather, the scientific response is that we got that particular natural law, or cluster of laws, wrong. . . . It is a fundamental condition of doing science that nothing that we could possibly observe would count as a violation of the Ionian Enchantment, at least that part of the Ionian Enchantment that posits the nomological character of physical reality. Nothing would count as evidence

that our physical reality is ungoverned by physical laws. Rather the scientific response would be that we hadn't formulated the laws correctly.¹⁶

Before we turn to the other features of modern science, it is worth noting the precise form that materialism and naturalism have taken, because it has had such a profound influence. It is a *mathematical* form. This is unsurprising, given that the first major exponents of modern science—Copernicus, Kepler, and Galileo—were firmly convinced that nature itself was mathematical, and that Newton's remarkable breakthrough spelled out the "mathematical principles of natural philosophy."¹⁷

To see its effect, consider children learning mathematics, starting with "1+1=2." They learn to see the world as consisting of simple, inert objects. They learn this by learning that adding and subtracting and multiplying and dividing work as well for counting pennies and dollars as for counting sheep and pieces of pizza. It does not matter what one is trying to count; it's all the same for mathematics. Everything is reduced to simple, inert objects for the sake of counting. It's the same with geometry, and once you have mastered these skills, a great deal of practical mathematics simply consists of shortcuts and approximations. (What, after all, is algebra but generalized elementary arithmetic?)

The materialism and the naturalism of modern science are both mathematical. The fundamental stuff consists of simple, inert objects in fields of force; and the fundamental rules locate everything in mathematical form either with equations or by numerical approximations and probabilities. This is what Copernicus and Kepler did in their astronomy, and what Galileo and Descartes extended with their mechanics and mathematics, and to which Newton advanced to unparalleled heights by formulating a theory of motion that gave exact definitions to and equations for mass, space, and time. (And to accomplish this, he also invented calculus.)

Later work, including the theory of relativity and quantum mechanics, along with contemporary biological sciences, represent incredible advances, but they all hold to the same assumptions. They all view the world in just this materialist and naturalist way.

Moreover, because of the successes of science, it has fundamentally affected economics, not only in mechanization and computational controls, but also in finance, management, and planning, as well as in health care, agriculture, communications, and travel. And because science matters fundamentally to all these things, we teach our children to see the world as consisting of simple, inert objects, starting with "1+1=2."

What this view of the world implies is that matters of value and quality are subjective. "Color" does not exist in nature, but rather reflects how each being responds to certain wavelengths of light. "Heat" and "sound" do not exist in nature but rather reflect how each being responds to faster and slower vibrations. "Beauty"

and “goodness” do not exist in nature but rather reflect how each person responds to his surroundings and reflects on his prospects. And so on and so forth.

To be sure, this view of the world emerged for other significant reasons. It arose at the same time as the civil and ecclesial authorities in the West schemed and fought their way into obsolescence. Today it sounds premodern to believe something simply because the Church said that it is to be believed, or to believe that rulers reign by divine right. That is because those beliefs *are* premodern. Their abandonment in the seventeenth century marked a massive shift in Western civilization. Among other things, it prompted remarkable efforts in metaphysical and political philosophy. But the most successful philosophical movement has been the universal acceptance of scientific natural philosophy. Metaphysical movements have come and gone, while modern politics are ever-shifting and mutating, but the key features of modern science have stayed the same.

Metaphysical movements
have come and gone,
while modern politics
are ever-shifting
and mutating,
but the key features
of modern science have
stayed the same.

From the standpoint of Christian missiology, the most important result of these developments has been a pronounced dualism. On one side, there is the physical, tangible world, composed of particles in fields of force that act according to invariant laws, a world without values and qualities. It is the world of objective facts.

On the other side, there is world of mind and soul, in which are found feeling and value and qualities. It is the world of subjective experience. In philosophy, dualism is evident in the mind-body distinction and in the fact-value distinction. In politics, dualism is demonstrated in a separation of church and state. In society, dualism is exhibited in the distinction between a managerial sphere of competition and a contrasting therapeutic sphere in which one finds affirmation and care.

This dualism marginalizes religion as a matter of course, without any substantive argument, reducing it to the private, inner, and spiritual. So science as natural philosophy, taken consistently, is directly at odds with the Christian message about God, His creation, and His coming kingdom.

Two other basic features of modern science also bear importantly on missiology. One is the approach to learning about the world, which also can be traced back to the Presocratics.¹⁸ It has been common to say that science proceeds from observation to hypothesis to experimental testing. While this progression is sometimes the case, it is not always the case, as can be seen as far back as the Ionians. In an anticipation of modern geology’s theory of plate tectonics, Thales hypothesized that the earth was

supported by water, while Anaximander, against all experience, suggested that the earth was freely suspended in space.

More significantly, all such theories were subject to critical discussion. This process was completely at odds to most schools of thought, where the function of a school is to uphold the community's teachings and protect them from criticism, not expose them to questions and counterexamples. But it was precisely this feature—what philosopher Karl Popper calls its “secret”—that allowed science's method to develop: the method of conjectures and refutations. This approach serves well any *search* for truth.

The Presocratics' assumptions about the universe and their attitude toward truth claims are certainly essential to contemporary “natural philosophy,” that is, modern science. But there is more to modern science. As Feynman put it, “The principle of science, the definition, almost, is the following: *The test of all knowledge is experiment.* Experiment is the *sole judge* of scientific ‘truth.’”¹⁹ What the Presocratics lacked but the modern tradition provided was a well-developed experimental method in which all proposals would have a form that would allow them to be openly criticized and assessed. Galileo did not merely assert that bodies fall at a rate independent of their weight; his proposal could be and was tested (a test that most of us associate with the leaning Tower of Pisa). Einstein's general theory of relativity was not widely accepted (nor Einstein widely known) until it could be tested, and that was five years after it was published.

The experimental method allows science to be “self-correcting.” As Goldstein explains:

Possessing the self-correcting means to test and dispose, they prod the physical world so that the physical world gets a chance to answer back for itself in the form of experimental evidence. If science oftentimes has charged off in some altogether wrong direction, believing, say that first is to be explained by the existence of fire-stuff, phlogiston, or that life is to be explained by the existence of a life-stuff, the *élan vital* [life-force], then empirical testing will, sooner or later, disabuse science of such fictions.²⁰

This critical and self-correcting approach to truth claims not only serves scientific ventures well, but it also implies a criticism of those who will not allow critical arguments and empirical testing to question and falsify their beliefs and message. Of course, “those” include Christians, for whom the “sole judge” of truth is Jesus Christ, as known by the testimony of the Church.

The Witness and Message of the Church in a Scientific Age

Perhaps the number who have adopted the understanding of science as natural philosophy [which for convenience I will refer simply to as “Science” from this

point] is fairly small; the influence of this view is certainly large. Moreover, the view itself is quite challenging to Christians, and we, like Tim Keller and David Kinnaman, should expect that our disposition toward it will matter to many. So Science raises several different questions for missiology.

One question concerns Christian identity: What should it mean to be a Christian? This question matters a lot in places like the United States, where, for example, politics are more determinative than beliefs or message. Christians tend to be identified with political positions on issues like abortion and homosexuality. Science also tends to be identified with specific contrary positions, leading many to think that the differences between Science and the Christian faith are decisive and to identify Christians themselves as “anti-science.” Someone might object that much of this conflict is supposed rather than real. But the perception is the point.

The question of identity also matters because Science, along with modern civil politics, has tended to make religion a private and spiritual matter. In this climate, the Christian message is assumed to be a matter of personal preference and value. To a considerable extent, Christians have conformed to these expectations, stressing individual morality, personal affirmation, and an afterlife for the soul in heaven, and playing down the return of Christ, the resurrection of the dead, and the new creation.

And so, what should it mean to be a Christian? The situation calls for a “back to the basics, no messing around” answer: Christians are followers of Jesus Christ, the Son of God and Lord of all. Science poses cosmic questions to Christians, not more specialized ones about salvation or authority in the Church or even morality. These questions are important, but they are secondary.

Science poses questions about the nature of the universe and the proper means to ascertain the truth about it. For those convinced about Science’s mathematical account of the universe, salvation is something dreamed up by those who are not able to handle the truth. The Church consists of believers in falsehoods, and morality is entirely a matter of negotiation. Christians risk irrelevance by stressing Jesus as Savior, the Bible as the inerrant Word of God, and moral absolutes, because they are not paying attention to the larger more significant issue.

Today’s situation is similar that of the early Church, where there were many gods and cults and various philosophies and sages. The Christians were definitely in

Science poses questions about the nature of the universe and the proper means to ascertain the truth about it. For those convinced about Science’s mathematical account of the universe, salvation is something dreamed up by those who are not able to handle the truth.

the minority. They had a message that was at odds with both the Jews and Gentiles. What was it? That Jesus of Nazareth was the Son of the Creator of the universe, sent to bring about a cosmic revolution and establish the reign of this God over all things. What gave them confidence to believe this, even to the point of death? The fact that Jesus was willing to die for what He believed, and, even more, that He rose from the dead.

Their confident belief meant that the truth about all things and all people, and their disposition—their justification—are ultimately found in and through Jesus Christ, not by the Torah or other gods in the days of the first Christians, and not by Science in our day.

A second question follows immediately, and it concerns the Christian message. What should it be? The answer also follows immediately. It is not a message primarily about the right way to attain salvation, or about the Bible being the Word of God, or about the existence and importance of moral absolutes.

Neither is it a message calibrated to maintain Christian influence in society or to keep church attendance up and new members coming in. It is as Jesus Himself proclaimed: “The time has come. The reign of God is at hand. Repent and believe the good news” (Mk 1:15). The apostles took up exactly this message, whether to the Jews, as Peter did on Pentecost (Acts 2), or to the Gentiles, as Paul did on Mars Hill (Acts 17).

Paul assumed almost complete ignorance among his hearers. He began by explaining the Christian *concept* of God (not His identity). God for Christians is not another object in the universe, who might live in a temple or be identified with a figure. He is the Creator of the universe and the director of all that dwells in it. This means that all human beings are His creatures and therefore subject to His judgment, which, Paul says, is soon to be visited upon them. The proof of this is the resurrection of the one appointed to judge. At this point, the conversation breaks down, but it is clear that Paul is announcing, “The time has come. The reign of God is at hand.” And it is also clear that his next move would have been: “Repent and believe the good news.”

Now, these answers about what a Christian is and what message Christians should stand by do not mean that they are the only things to say about Christian identity and the Christian message. One can and should say many things. These answers are not meant to exclude them. Rather, they are intended to point out the fundamental positions on these vital topics, which means that, however we portray ourselves and whatever we say, they ought to be consistent with these views, not confusing, irrelevant, or contrary to them.

Doing this is straightforward, but it may also be difficult. It is straightforward because it is not hard to see what is consistent and what is inconsistent. It may be difficult because it may show many Christians that what they are doing now is

confusing, irrelevant, or just plain wrong, and because bringing ourselves into proper alignment is a task of *formation*, not simply *information*.

After all, we want to *do* something, not just *know* many things. For example, the mission of the Church in a scientific age—one in which the idea of God is up for grabs—requires us to identify not only ourselves but also our God. Doing this is straightforward, because it goes with confessing Jesus as the Son of God and as Lord: our God is the God and Father of our Lord Jesus Christ. But despite the Scriptures and the worship of the Church, not many Christians possess this *information*, and still fewer operate with it. The same holds for sin, justification, sanctification, grace, forgiveness, and the Word of God. So there is a lot of work to be done both in preparing for evangelism and in mission thinking.

The mission of the Church in a scientific age—one in which the idea of God is up for grabs—requires us to identify not only ourselves but also our God.

A third question is: How should Christians view the relationship between Science and the Christian faith? One option is *total repudiation of Science*: have nothing to do with Science, and denounce it entirely as false, misleading, and harmful. This approach is not just wrong but impractical. Science has too much to do with everyday life to easily disown it.

Another option is *total capitulation to Science*: assume the place that Science allows to religion as a private, personal, subjective affair. This is practical—and practiced—but it is just wrong, because the Christian message and faith are not merely private, personal, and subjective.

A third option sees *Science and the Christian faith as complementary*. This approach follows the example of the first modern scientists: Copernicus, Kepler, Boyle, Newton, and others who firmly believed that the new science was consistent with the Christian faith (as they understood it).²¹ This approach, moreover, mirrors the example of the early and medieval Church's use of Greek philosophy. This option regards Science as useful in its sphere, dealing with "all things visible," as the Nicene Creed puts it, and believes that the Christian faith, including its biblical interpretation, can include it in some way.

The caveat "in some way" is both important and tricky. It is important because Science should fit the Christian faith, not vice versa. The proper direction of fit must be maintained. But it is also important because Science itself should not escape critical examination.

A good example of such examination comes from philosopher Thomas Nagel in his book *Mind and Cosmos*. The subtitle tells you what it is about: "Why the Materialist Neo-Darwinian Conception of Nature Is Almost Certainly False."²²

Nagel takes issue with the assumption of modern science that mind and consciousness are very late and wholly accidental features of the universe. He contends, “Mind is not just an afterthought or an accident or an add-on, but a basic aspect of nature.”²³ He argues, from the naturalism of science, the assumption that the world is itself rational and that we are capable of knowing this. These facts mean that “mind” ought to belong to the basic convictions of science.

The intelligibility of the world is no accident. Mind, in this view, is doubly related to the natural order. Nature is such as to give rise to conscious beings with minds; and it is such as to be comprehensible to such beings. Ultimately, therefore, such beings should be comprehensible to themselves. And these are fundamental features of the universe, not byproducts of contingent developments whose true explanation is given in terms that do not make reference to mind.²⁴

Now, as Nagel himself is quick to point out, this does not lend itself necessarily to any theistic conception of the universe. But he is using the assumption of naturalism—with the unquestioned fact that all of us know ourselves to be conscious and rational—to call into question the mathematical conception of the universe: that everything is composed of simple, inert stuff, as Science today assumes.

The other side of the “in some way” is that there are several challenging topics for Christians and Science: the age of the universe; the origins of life; common ancestry of species; human uniqueness; consciousness; free will; rationality; and the nature of the soul. Current Science proposes something like this: that the universe as we know it is over thirteen billion years old, originating from a single point; that life developed out of the material of the universe in an unguided way; that human beings and their mental lives are products of this development. Human beings share a common ancestry with other life, and they are unique only in the way that every other form of life is unique. The mind and the soul are all explained as biological phenomena, like digestion. Consciousness, free will, and rationality are illusory.

At some point, nearly all Christians are troubled with this account. The trouble, however, starts at different points in the story and for different reasons for different people. For example, some, like so-called “young earth creationists,” are troubled over the age of the universe, but others accept “theistic evolution.”

This much is clear: most Christians view the complementarity between Science and their beliefs and story as *critical*. And it should be. But important challenges and work remain.

I will mention only one point related to the usual challenges that Christians find. They should not be surprised or concerned that the universe does not give clear testimony to their God. Because of original sin, they may be troubled by the ambiguity, but sin is no excuse. The biblical witness of Genesis, the Psalms, and Job show that the universe was created by the Word of the Lord, even though Science

may find something very different. But there is no necessary conflict between the belief that God created *ex nihilo*—out of nothing—and finding by observations and theorizing something very different. The operative word here is “different.” The Scriptures and science do different things and therefore, of course, may well give different answers. There is a good theological reason that Christians should not be troubled by this, that they should assume immediately neither that science is wrong nor that Genesis should be interpreted figuratively. Creation ultimately answers to God the Creator, not to us.

Science, as we have noted, makes certain assumptions and sees what it finds. It tries to do the best it can with the world, and that is why it has been so successful and useful. But the world is one thing; God is quite another. To say God created out of nothing includes confessing His utter freedom. “Whatever pleases the Lord he does, in heaven and on earth, in the seas and all deeps,” says the Psalm (135:6 ESV). Christians should acknowledge this by recognizing that the universe looks as it satisfies *Him*, not as it might satisfy us and our scientific ventures and theological puzzles. Unlike human creators, God can make a 12-year-old whiskey, a 12-year-old tiger, and a 13.77 billion-year-old universe, whenever it pleases Him, including 15 minutes ago. And if He does so, it will be a 12-year-old whiskey, a 12-year-old tiger, a 13.77 billion-year-old universe, even if He did do it 15 minutes ago. The important issue for Christians is not the age or the how, but the fact God did it to give it all meaning and purpose (Heb 11:1–2). Only the eyes of faith can see that.

A fourth question is about our disposition: How should we engage others in a scientific age? The answer is easy and sufficient: We should be honest, open, inviting, fair, confident. This, however, turns out to be more easily said than done, which is why the question is important.

Like everyone else, Christians often find it difficult to accept that there are others who see and understand the world differently, much less deal with them fairly. As a result, Christians, like everyone else, tend to treat others as if they were stupid or bad. This attitude explains why many shy away from discussing religion, politics, money, sex, race, and their favorite books, music, and TV shows.

But Christian mission requires us to do better. Doing better means recognizing that others will see and understand the world differently, or they will be impressed by other ways of seeing and understanding the world. Whether those “other ways” be Science or Buddhism or paganism, we should “always being prepared to make a defense to anyone who asks you for a reason for the hope that is in you; yet do it with gentleness and respect” (1 Pt 3:15 ESV).

As for concrete advice in doing this, psychologist Jonathan Haidt points us in a useful direction in his book *The Righteous Mind*.²⁵ According to Haidt, for each of us “Appearance is usually far more important than reality.” When asked “for a reason,” we automatically justify ourselves; “we lie, cheat, and justify so well that we

honestly believe we are honest”; and “we can believe almost anything that supports our team.”²⁶ He lines up a persuasive array of examples and studies to make his point.

But Haidt also calls attention to the work of psychologists Jennifer Lerner and Philip Tetlock on decision-making and accountability.²⁷ As generally believed, people think more carefully when they know they will have to justify themselves. But *how* do they think more carefully? It depends. Lerner and Tetlock identified two kinds of careful reasoning.

On the one hand, there is “confirmatory thought,” which “involves a one-sided attempt to rationalize a particular point of view.” It “takes place in the service of self-justification.” In other words, we do it to make ourselves look good.

On the other hand, there is “exploratory thought,” which “involves even-handed consideration of alternative points of view.” It “takes place in the service of optimizing a judgment/decision.”²⁸ In other words, we engage in exploratory thought to seek out and make clear the truth. These two modes of reasoning are easy to understand and recognize. The key question for our purpose (and many others!) is this: When are we disposed to engage in exploratory thought? It turns out that it depends on how you view your audience. As Haidt summarizes it,

Accountability increases exploratory thought only when three conditions apply: (1) decision makers learn before forming any opinion that they will be accountable to an audience; (2) the audience’s views are unknown, and (3) they believe the audience is well informed and interested in accuracy.²⁹

The lesson for Christian witness is straightforward, and not only for a scientific age. We should always understand ourselves ahead of time to be accountable to others when dealing with them. We should assume that we really don’t know how they view and understand things. We should expect them to be well informed and interested in the truth.

Endnotes

¹ Of course, the best that a significant proportion of the world’s population can do is hope to be able to count on science and technology in this way.

² See especially Richard Dawkins, *The God Delusion* (New York: Houghton Mifflin, 2006); Daniel Dennett, *Darwin’s Dangerous Idea: Evolution and the Meanings of Life* (New York: Simon and Schuster, 1995), and *Breaking the Spell: Religion as a Natural Phenomenon* (New York: Viking Press, 2006); and Sam Harris, *The End of Faith: Religion, Terror, and the Future of Religion* (New York: W. W. Norton and Company, Inc., 2004).

³ Timothy Keller, *The Reason for God: Belief in an Age of Skepticism* (New York: Dutton, 2008), 87.

⁴ David Kinnaman with Aly Hawkins, *You Lost Me: Why Young Christians Are Leaving Church . . . and Rethinking Faith* (Grand Rapids: Baker Books, 2011), 131.

⁵ Ibid., 132.

⁶ There is no clear evidence that Galileo actually performed this particular experiment, but as a thought experiment it is important for what it can show.

⁷ *SciTech Now*, July 13, 2016. The Nine Network of Public Media, St. Louis, MO, <http://www.ninenet.org/blogs/scitech-now/scitech-now-july-13-2016/>.

⁸ These types are just that: types. They have been imagined for the sake of making a messy and fluid situation more orderly. No one type should be expected actually to consistently fit any one profile.

⁹ See John Burnet, Karl Popper.

¹⁰ Rebecca Newberger Goldstein, *Plato at the Googleplex: Why Philosophy Won't Go Away* (New York: Pantheon Books, 2014), 29.

¹¹ Ibid.

¹² Richard P. Feynman, Robert B. Leighton, and Matthew Sands, *The Feynman Lectures on Physics: Mainly Mechanics, Radiation, and Heat* (Reading, MA: Addison-Wesley Publishing Company, 1963) 1–2.

¹³ Ibid., 1–8, 9.

¹⁴ Ibid., 2–1.

¹⁵ Goldstein, *Plato at the Googleplex*, 29.

¹⁶ Ibid., 30–1.

¹⁷ An excellent account is given by E. A. Burtt in his book *The Metaphysical Foundations of Modern Science*, 2nd rev. ed. (New York: Doubleday, 1954).

¹⁸ See especially Karl Popper's essays "Back to the Presocratics" and "Conjectures and Refutations" in *Conjectures and Refutations: The Growth of Scientific Knowledge*, Routledge Classics edition (London and New York: Routledge: 2002).

¹⁹ Feynman, *The Feynman Lectures*, 1–1.

²⁰ Goldstein, *Plato at the Googleplex*, 25.

²¹ The orthodoxy of Newton, for example, is widely questioned, while Kepler was excommunicated by the Lutheran Church for his rejection of the doctrine of the Sacrament of the Altar. But for this point, heterodoxy may be ignored.

²² Thomas Nagel, *Mind and Cosmos: Why the Materialist Neo-Darwinian Conception of Nature Is Almost Certainly False* (Oxford and New York: Oxford University Press, 2012).

²³ Ibid., 16.

²⁴ Ibid., 17.

²⁵ Jonathan Haidt, *The Righteous Mind: Why Good People Are Divided by Politics and Religion* (New York: Pantheon Books, 2012).

²⁶ Ibid., 75, 82, 85.

²⁷ Haidt relies especially on Philip E. Tetlock, "Social-functional frameworks for judgment and choice: The intuitive politician, theologian, and prosecutor," *Psychological Review* 109 (2002): 451–472, from which he takes the term "intuitive politician"; and Jennifer S. Lerner and Philip E. Tetlock, "Bridging Individual, Interpersonal, and Institutional Approaches to Judgment and Choice: The Impact of Accountability on Cognitive Bias," in *Emerging Perspectives on Judgment and Decision Research*, ed. Sandra L. Schneider and James Shanteau, (New York: Cambridge University Press, 2003), 431–457.

²⁸ Lerner and Tetlock, "Bridging," 438.

²⁹ Haidt, *The Righteous Mind*, 76. See also Lerner and Tetlock, "Bridging," 440–449.