Science and the Knowledge of God: From Machine to Metaphor

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After a review of how the machine model of nature has been used to argue both for and against the existence of God, the author makes the case that metaphors borrowed from the sciences can suggest new information about God.

The idea that we can or should “learn more about God” from “sources of information beyond the Scriptures” may raise a red flag of caution for many evangelical Christians. Evangelicals and their predecessors have spent the last century or more urging people to seek learning and information about God from within the Scriptures, and discouraging them from looking elsewhere.

However, the idea that we can obtain meaningful information about God from extra-biblical sources is not without precedent in evangelical theology, and in Scripture itself. If we view God’s creation as a form of revelation from God, and we view nature as being God’s creation, and we view science as the study of nature, then we can even suggest that science may serve as one means of discerning God’s own self-revelation.

A number of terms have been applied to this way of gaining knowledge about God. “Natural theology,” “general revelation,” and “common grace” are all related concepts but can take on slightly different nuances, depending on the historical, ideological and theological commitments of the persons using the terms. “Natural theology” has been official dogma for the Roman Catholic Church since Vatican Council I. However, it is frequently criticized by Protestants, who accuse the “natural theologians” of underestimating the corruption of human reason caused by sin, and also accuse them (perhaps unfairly) of suggesting that God’s self-revelation in nature is sufficient for an observer to attain salvation, even apart from the “special revelation” through Christ and the Bible.

Protestants, therefore, have tended to prefer the term “general revelation” over “natural theology.” It carries with it the conviction that God has revealed the divine self in two principal ways—through creation (“general revelation”) and through Christ and the Scriptures (“special revelation”). And most Protestants would agree that the former provides insufficient information to attain salvation without the addition of the latter.

Protestants remain divided, however, on whether God’s “general revelation” in nature is even intelligible to human beings who lack a prior faith in Christ. Is it, in other words, part of God’s “common grace,” freely available to all? Or, is even the “general revelation” only comprehensible by virtue of God’s “special grace” through Jesus Christ? Karl Barth is among those who argued the latter (breaking sharply with Emil Brunner over the issue). Reformed theologian G. C. Berkouwer likewise argues that “no true knowledge of the revelation of God in the works of his hands is obtainable without faith in Christ.”

However, Scripture itself would seem to indicate that nature does indeed testify to God in a way that all can understand. Psalm 19:1-4, for instance, declares:
The heavens are telling the glory of God; and the firmament proclaims God’s handiwork. Day to day pours forth speech, and night to night declares knowledge. There is no speech, nor are there words; their voice is not heard; yet their voice goes out through all the earth, and their words to the end of the world.

The apostle Paul made a similar point in his letter to the Romans. In Romans 1:19-20, he is not speaking about believers, but warning of God’s wrath against the wicked:

For what can be known about God is plain to them, because God has shown it to them. Ever since the creation of the world God’s eternal power and divine nature, invisible though they are, have been understood and seen through the things God has made. So they are without excuse...

These passages seem to show plainly that God’s “general revelation” is indeed part of “common grace.” John Calvin said, “There are innumerable evidences both in heaven and on earth that declare his wonderful wisdom,” including those “for the general observation of which astronomy, medicine, and all natural science are intended.” It therefore seems reasonable to conclude that an evangelical can accept the findings of the natural sciences as one source of knowledge about God.

In examining the relationship between science and religious belief, it is intriguing how often one particular concept comes up. This is the concept of a “machine.” What makes it intriguing is that the image of a machine is employed by those at completely opposite ends of the spectrum—by both believers and unbelievers. Those who believe in science and are skeptical about God argue that both the universe and living things can be described as functioning as machines—and, therefore, there is no need, nor room, for the supernatural intervention or sustenance of God. Those, on the other hand, who believe in God (and may harbor some skepticism about science) argue that the machine-like precision that describes the functioning of both life and the cosmos is exactly the thing that proves the existence of God. These two views of the machine will be examined before a third approach to the relationship of science and religion is proposed.

Virginia Stem Owens writes that “ever since the age of Newton and the classical laws of physics, civilized folk have agreed that matter is essentially a manipulable machine.” The new view of the heavens promoted by Galileo and Copernicus should also be credited with helping to foster the view that knowable forces lead to predictable events in nature. And the notable successes experienced in applying machines to science (the telescope, the microscope) and in applying science to machines (the industrial revolution) also seemed to shrink the realms in which knowledge or achievement were dependent upon divine revelation, supernatural mystery, or miraculous intervention.

Nevertheless, as recently as 1851 an observer could write that “science...is in almost every great department thoroughly Christian in its radical principles, and in the sincerest and deepest convictions of those by whose labors it has been formed.” Yet only a half century later, an author would take two volumes to describe A History of the Warfare of Science with Theology in Christendom. And by the mid-twentieth century a theologian would declare that “in our modern universities...more than ninety percent of the faculty are either completely naturalistic or materialistic...or very nominally religious.” What could have so tipped the balance against the spirit and in favor of the machine?

The obvious answer is Darwin’s theory of evolution. If naturalistic, mechanical processes could explain not only the movement of falling bodies and heavenly ones, but the origins of different life-forms, then what place was there left for God? Critics of Christianity such as Bertrand Russell could take gleeful in declaring that “everything distinctive of living matter can be reduced to chemistry, and therefore ultimately to physics.” And books by contemporary Darwinist Richard Dawkins are sold with the assertion, “Man is a gene machine, blindly programmed to preserve its
Dawkins even bluntly credits Darwin with making it possible to be an “intellectually fulfilled atheist.”12

However, the picture of nature as a machine does not belong to atheists alone. It has been used for quite the opposite purpose. The classic example is nineteenth-century Christian apologist William Paley. In his book *Natural Theology*, he gives an oft-quoted illustration:

> In crossing a heath....suppose I had found a watch upon the ground, and it should be inquired how the watch happened to be in that place.... When we come to inspect the watch, we perceive...that its several parts are framed and put together for a purpose, e.g. that they are so formed and adjusted as to produce motion, and that motion so regulated as to point out the hour of the day; that if the different parts had been differently shaped..., of a different size or placed after any other manner, or in any other order either no motion at all would have been carried on in the machine, or none which would have answered the use that is now served by it.... The inference, we think, is inevitable; that the watch must have had a maker...who formed it for the purpose which we find it actually to answer.... Every manifestation of design, which existed in the watch, exists in the works of nature...[which] are not less evidently mechanical, not less evidently contrivances, not less evidently accommodated to their end, ...than are the most perfect productions of human ingenuity.13

Paley’s “argument from design” for the existence of God came under attack over time from philosophers and scientists alike. The theory of evolution seemed to provide a plausible explanation for the appearance of design based only on the blind forces of natural selection (hence, Dawkins’ book title, *The Blind Watchmaker*).

But a funny thing happened on the way to a completely naturalistic and mechanistic view of reality. The twentieth century, which was supposed to uncover the remaining pieces of the machine while closing the few remaining windows open to supernatual intervention, did just about the opposite. In realms of science from the very large (the origin of the universe) to the very small (molecular biology), the naturalistic answers are missing, while the evidence for what is now called “intelligent design” is growing.

Let us look first at that which is older and larger--the universe itself. Of all the findings of the cosmologists in this century, one of the most easily understood (and thus easily nicknamed) is the “Big Bang” theory. The discovery that nearly all observable galaxies in every direction of the sky are moving away from our own galaxy at considerable rates of speed led to the idea that the entire universe is expanding. Extrapolating this motion backwards in time led to the conclusion that the universe, instead of having existed in a “steady state” for all eternity, had in fact burst into existence in a huge explosion at a particular point in time and an unbelievably small point in space. This view of an instantaneous creation of all that is, at a moment before the physical laws of our universe even operated, sounds suspiciously like the description given in the first few verses of Genesis.

Another aspect of the new cosmology that suggests the existence of design is what has come to be known as the Anthropic Principle. This is the observation that many of the characteristics of the universe seem to be precisely calibrated so as to produce the only conceivable type of universe in which human life could exist. Of course, some would say this is a rather circular argument, because if the universe had been otherwise, no one would have been here to ponder its characteristics. And for all we know, there may be, or have been, billions of parallel universes without these characteristics.

However, the inference of intentional design remains an obvious and tempting one. Hugh Ross, an astrophysicist (and evangelical Christian), cites no less than 26 such precise characteristics, some of which “must be fine-tuned to better than one part in 10^17 for life of any kind to exist.” These range from the “strong nuclear force constant” to the “velocity of light” to the “decay rate of the proton” to the “polarity of the water molecule.” And just for good measure, Ross adds another 33 characteristics of our “Galaxy-Sun-Earth-Moon System” that are essential to the development of life.14
Even when we turn to Darwin’s own science of biology, we see that the evidence of intelligent design keeps popping up. The discovery of the double-helix design of the DNA molecule, for example, appeared to reveal that an incredibly intricate and purposeful design is at the foundation of life.

More recently, biochemist Michael Behe has challenged naturalistic views of evolution by carefully describing biological structures of “irreducible complexity.” To suggest that all life evolved from a single cell, for instance, has little utility in explaining how life began when we observe that even a single cell is incredibly complex. Behe returns to our central image, saying that “life is based on machines—machines made of molecules! …Highly sophisticated molecular machines control every cellular process. Thus the details of life are finely calibrated, and the machinery of life enormously complex.”

As an example, Behe provides an illustration of “the biochemical complexity of a bacterial flagellum,” which is complete with a drive shaft, rotor, bushing, universal joint, and propeller! Our knowledge of how such processes work has become quite comprehensive, but Behe notes that if you search the scientific literature for theories as to how such machines developed in the first place, “you find an eerie and complete silence.” In the end, he suggests, “we are left with no substantive defense against what feels to be a strange conclusion: that life was designed by an intelligent agent.”

Robert Jastrow has put the present state of science in perspective:

So in science, the machine that has no room for God has faltered, and the machine that makes God a necessity is now ascendant. The theologians have won. But what, exactly, have they won?

For the scientist who has lived by his faith in the power of reason, the story ends like a bad dream. He has scaled the mountains of ignorance; he is about to conquer the highest peak; as he pulls himself over the final rock, he is greeted by a band of theologians who have been sitting there for centuries.

So in science, the machine that has no room for God has faltered, and the machine that makes God a necessity is now ascendant. The theologians have won. But what, exactly, have they won? Have we really experienced “an increase in information about God, the Sacred, or the Spiritual?”

After all, theologians, particularly evangelical Christian ones, assert much more about God than merely the fact of existence. They also do not merely assert that God is intelligent, deliberate, and powerful. Does science have anything to say for or against such Christian doctrines as the trinity, the incarnation, or the atonement? What about prayer, predestination, and judgment? Can it solve the problem of evil, once and for all?

Hugh Ross, the prolific evangelical author and scientist-apologist, has ambitiously suggested that science can indeed answer such questions. In his recent book, Beyond the Cosmos, he draws on the concept of “extra-dimensionality” to suggest answers to a number of theological puzzles. We are accustomed to living in a four-dimensional universe (the three dimensions of space, plus time). We have also grown accustomed to thinking of the fundamental subatomic particles as points. However, recent research has shown that it may be more useful to conceive of them as vibrating “strings.” This “string theory” has brought us closer to the goal of a unifying the four fundamental forces of nature under a single theory. It also provides a plausible description of conditions much closer to the initial moment of the Big Bang. There is only one problem: It requires not three or four dimensions, but ten in which to operate.
As a result of this view of the first split-second of creation, Ross concludes that the Creator must actually operate in at least eleven dimensions. This “extra-dimensionality” may help to explain some doctrines that appear otherwise paradoxical to those of us limited to four dimensions. For example, how could Jesus be both God and a human being? After the crucifixion, how could he be both dead and alive?

An illustration of the answer may be drawn from the dimensions we do understand. For example, a circle, by definition, cannot at the same time be a triangle—that is, if we are dealing in only two dimensions. In three dimensions, however, it is possible to have the shape of a cone, which is both a triangle (when viewed from the side) and a circle (when viewed from the top) at the same time. In the same way, God’s existence in dimensions beyond our own constitutes a scientific explanation of the divine ability to do things and have qualities that are impossible for us.

But does this really “prove” anything about God? Does string theory demonstrate that Jesus was God incarnate? It would be a huge leap to make such a definitive claim. So what kind of contribution, if any, do such scientific findings make for our understanding of God?

The answer, I believe, requires us to move beyond the concept of machine to that of metaphor. Science cannot show us directly what God’s essence is, because God is beyond our capacity to understand. What it can do, however, is to provide us with new ways of thinking about what God might be like—in other words, with new metaphors for our theology.

My fellow evangelicals may bristle at the thought of reducing our conceptions of God to the level of “mere metaphor.” My argument, however, is that the concept of “metaphor” does not deserve the diminutive “mere.” As evidence, we need only return to the special revelation of Scripture itself. We have tended to forget that some of the most common terms for God in the Bible are in fact metaphors. Every time we call God “father,” for instance, we are using a metaphor, knowing full well that it was not God’s sperm that united with our mother’s egg to form us. The absence of wool on our bodies hardly causes us to question Jesus’ characterization of himself as our “shepherd.” And we do not need to have lived under slavery or feudalism to understand submission to our “Lord.”

There are dangers in resting theology upon science. One is finding God only in the gaps where science offers no explanations. The danger is that as the gaps grow smaller, our concept of God does, too.

Another is in tying our ideas about God too much to one scientific paradigm—be it that of Aristotle, Ptolemy, or Copernicus. Darwin, Einstein, or Hawking. When the paradigm shifts, there may be no platform for our God.

But there are two things that science can do, and recently has done, for our theology. It can, perhaps surprisingly, break down barriers to belief in God’s existence; and it can provide new metaphors to help us finite creatures conceptualize the infinite God. In doing the latter, in helping us to move beyond nature-as-machine to nature-as-metaphor, science has indeed helped us to learn more about God.

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Works cited:


Endnotes:

1See Van Engen.

2See Fraenkel.

3Berkouwer, p. 285.

4Ibid., p. 331.

5Calvin, I.v.2, p. 53.

6Owens, p. viii.

7Baird, p. 125.

8See White.

9Ramm, p. 17.

10Russell, as quoted in Ramm, p. 55.


13Paley, pp. 5-6, 13.

14Ross, pp. 118-21, 138-41 (review edn).

15Behe, pp. 4-5.

16Ibid., pp. ii, 5, 252.

17Jastrow, p. 116.

18Ross, pp. 55-56.

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