

The unexpected history of scientific naturalism

Science Without God? Rethinking the history of scientific naturalism

Peter Harrison and Jon H. Roberts
(Eds)

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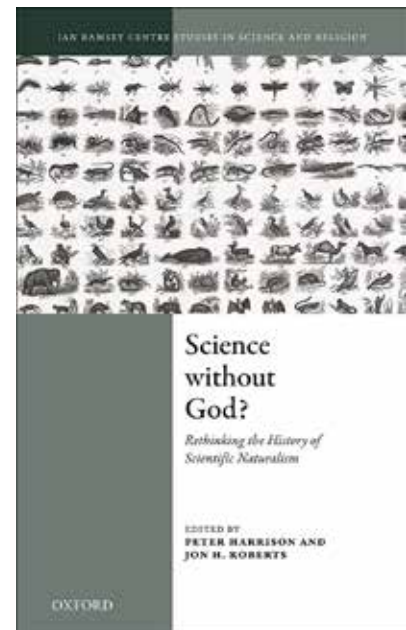
Daniel Davidson

In debates about science and religion, ‘naturalism’ is a recurring subject of discussion. As it’s usually explained, ‘scientific naturalism’ refers to a commitment on the part of scientists to look only to natural causes to explain phenomena under discussion. That is, one should employ only natural and *not* supernatural explanations. Secular scientists and historians alike have long assumed that modern science as such developed hand-in-hand with scientific naturalism. They believe, in other words, that science progressed as researchers learned to eschew the temptation of falling back on supernatural explanations: rather than attribute fossils to the caprices of the gods, study geology and learn how animals can naturally fossilize; rather than insist that the heavens are the realm of divine perfection, look through a telescope, see the craters on the moon, and study how they got there. And so on. Secular apologists take a lesson from this story about the advance of science: religion holds science back; science progressed as religious influence on science declined. On this account, the history of science is a secular morality tale about the importance of naturalism and the negative influence of religion.

But the best historians of science today know that this secular morality

tale is bad history. In *Science without God?*, 13 historians of science come together to consider the sometimes surprising relationship between naturalism and religion in the history of science. The book is edited by two eminent historians of science: Peter Harrison (now at University of Queensland after having previously held a professorship of science and religion at Oxford) and Jon Roberts (Boston University). The book’s contributions span a vast chronological scope and range of sciences, from the ancient Greek philosophers to Newton and the scientific revolution, to the origins of modern psychology in the early 20th century. It is a work of historical scholarship that captures a lively conversation among outstanding historians of science. Christian apologists will appreciate the fact that the contributors mostly agree on the basic point that the simple secular morality tale of history is wrong.

What goes in place of the now-debunked secular morality tale version of the history? What do the best historians have to say about the relationship between religion and naturalism? On that issue, there’s less agreement—that varies at different times and places. The closest thing to a consistent theme in the historical accounts presented in this book is a thematic interest in finding the unexpected twists and turns of the relationships between science, religion, and naturalism. Some of the chapters argue that periods in the history of science that are commonly thought of as highly secular and naturalistic are not. Other chapters argue that the turn to naturalism was itself (sometimes) motivated by religious reasons. Still others document the coexistence of religious commitment and naturalism.



Each contributor has a different perspective and narrates a different historical episode. Together, this book presents a set of historical episodes, and conversations about how to interpret the history, that rewards a thoughtful reading by any Christian interested in the relationship between science and biblical faith.

A word about terminology (and apologetics)

Before getting into the contents of this book, it’s worth clarifying the terminology and also the biblical creationist position on the theory of naturalism. A commitment to scientific naturalism can come in two varieties: “methodological naturalism” and “metaphysical naturalism”. “Methodological naturalism” means that naturalism is a commitment for scientific method. But it leaves open the possibility that non-naturalistic forces actually exist and that non-naturalistic explanations might be appropriate in other contexts (such as origins). Metaphysical naturalism, by contrast, is a commitment to the idea that nature is all that exists in all of reality—a

commitment incompatible with religious belief. (All metaphysical naturalists are also methodological naturalists, but not the other way around.) Even the most liberal theistic evolutionist ultimately has to reject metaphysical naturalism. In *Science without God?* the reference to naturalism is really to methodological naturalism throughout—but always alert to the possibility that increasing methodological naturalism might aid and abet the cause of metaphysical naturalism, even if the former doesn't necessarily entail the latter.

A casual observer might think that biblical creationists and Intelligent Design (ID) proponents would reject even the less-robust methodological naturalism. This is true but needs to be carefully qualified. Yes, creationists and ID proponents believe that it's appropriate to explain features of the natural world by reference to supernatural design. But the biblical creationist position is subtler than a simple assertion that God directly intervenes in creation. The biblical position does indeed reject a thoroughgoing methodological naturalism and instead affirms that divine design (and judgment) is responsible for important aspects of the natural world. But the biblical position also affirms that God generally works through regular processes of nature. Miracles are rare interventions and not the whims of a capricious God. The biblical creationist can thus insist that we don't—and shouldn't—invoke a 'God of the gaps' to explain every difficult question that we find in His created world.¹

With this in mind, we can turn to consider some of the thought-provoking history in *Science without God?*

Looking for naturalism in the wrong places

The book starts with the ancient classical philosophers whose work on the observation and interpretation of natural phenomena is often hailed as the earliest beginnings of natural

science. The standard story here has long been that the Greeks made the crucial move. For instance, it was in classical Greece that one can find a shift from weather being explained as the activity of the gods, to the assertion that lightning and thunder are caused by the natural force of "wind" (as Anaximander says). This is the much-hailed shift from superstition to naturalism.

In his chapter reconsidering classical science and naturalism, Daryn Lehoux (Queen's University, Ontario) documents that a great many of these supposedly naturalistic proto-scientists in fact remained committed to a deeply religious cosmology. The list includes Ptolemy, Aristotle, Pliny, Cicero, and many more. None of the major thinkers clearly demarcated the natural world from the influence of some sort of supernatural entity. Few indeed are the ancients who actually moved to full-blown metaphysical naturalism and denied the existence of gods *in toto*.

Lehoux helpfully notes that it hardly makes sense to ask what it would mean to the ancients to demarcate a domain

of 'scientific naturalism' as distinct from the domain of the 'supernatural':

"After all, if we define science as the domain of the natural and label one set of causal agents as by definition *beyond* that domain—*super* it, in the Latin—we are certainly setting up a clear demarcation, but at the non-trivial risk of begging the question. Or perhaps the gods are just part of the natural domain in the first place. If we try to refortify the natural-supernatural distinction by now arguing that the gods as causal agents do not, in point of fact, exist (or more cautiously, have never been proven to exist), we simultaneously close off a considerable portion of what we might otherwise want to accept as historical science, pre-modern as well as modern, since so very many historically posited causal entities turn out to be just as non-existent: N-rays, phlogiston, psychic pneuma—the list is endless" (p. 21).

The modern idea of scientific naturalism just didn't exist in any meaningful sense among the classical naturalists.

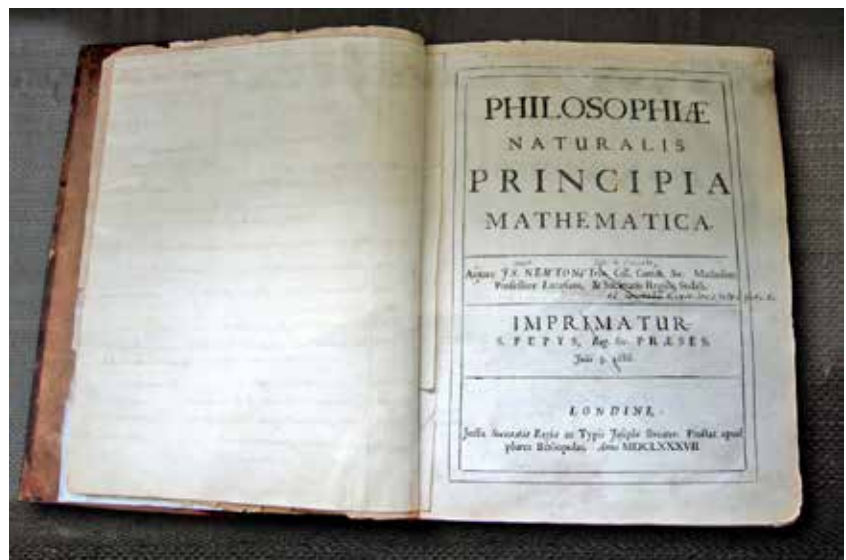


Figure 1. Isaac Newton's own copy of his *Principia*. Newton was not a modern philosophical naturalist but believed that science, natural law, and divine action were compatible, as contributors to *Science without God?* document. The longstanding association between 'Newtonianism' and naturalism was a product of later Enlightenment secularists who worked hard to reinterpret Newton in support of their position.

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Peter Harrison gets to a similar bottom line in his fascinating account of natural-law thinking among leaders of the scientific revolution. The laws of nature articulated most famously by Newton are often thought of as foundational for scientific naturalism. With natural laws recognized, there's less need for divine intervention and the whole machine of nature can go on its own. Or so goes the standard story. Harrison argues persuasively that this is quite wrong. Instead, Newton, Boyle, and Descartes all believed that the laws of nature were regular and reliable precisely because of God's direct engagement with the world.

Newton and Descartes reasoned about God's relationship to the laws of nature in quite different ways, to be sure. Descartes started with the regularity of God's actions as his premise and that allowed him to conclude that the natural laws established by God could be relied upon. Newton started with the observation of the laws of nature and concluded that, from this observation, we could (in Harrison's words) "arrive at conclusions about God" (p. 64). "Newton has accepted that there are laws of nature but proposes that these are freely chosen by God, and these choices attest to the wisdom of their divine source" (p. 64). Newton criticized Descartes for creating a system which could be understood as God setting up laws and letting nature go on its own. But Descartes just saw a different place for the operation of God's direct intervention to undergird laws of nature. In ancient classical ideas about the laws of nature, Harrison notes:

"... nature had usually been understood as governed by the internal properties or essences of natural things, even if these internal tendencies had been implanted in things by God. In Descartes's mechanical and atomistic world, however, natural things are essentially inert, and are moved according to external laws imposed directly by God" (p. 62).

Both of these approaches require a creator God. And not just a one-time deistic creator who then leaves his creation to run autonomously on natural laws, but an *active* Creator who is (in one way or another) involved in maintaining His creation on an ongoing basis. At least in this conclusion, Descartes and Newton, each in his own way, put forward ideas that fit well with biblical teaching. Jesus Christ "upholds the universe by the word of his power" (Hebrews 1:3); "in him [Christ] all things hold together" (Colossians 1:17).

Newton's rejection of naturalism doesn't stop there. Harrison argues that Newton went beyond this commitment to God-sustained natural law to a belief in an apparently non-law-based direct intervention of God in the solar system. In 1694, mathematician David Gregory reported that Newton said: "that a continual miracle is needed to prevent the sun and the fixed stars from rushing together through gravity" (p. 67). This particular point is controversial as an interpretation of Newton's thought.² But Harrison makes his case that this is indeed compatible with what we can learn from Newton's own writings. It is hard to imagine anything further from modern "scientific naturalism", with its sharp demarcation between science and religion.

A campaign for naturalism

Harrison's account doesn't absolve Newton and Descartes from a role in the development of modern scientific naturalism. It instead sets up the next step of the story: these heroes of the scientific revolution (Newton particularly) were important figures in the later development of naturalism, but thanks to a distortion of their views. The conclusion of Harrison's chapter and then a full subsequent chapter by J.B. Shank (University of Minnesota) both describe how individuals following Newton used and misused natural

law as an excuse for reducing the role of God in accounts of the natural world. While the "Newtonian scheme" had been intended to "assert the ubiquity of divine power and to 'super-naturalize' the whole cosmic order", Harrison notes that Newton's approach could be—and was—reframed in "a purely naturalistic reading". God was simply dropped from the account of natural law, laws were said to run on their own, and the scope for non-law-based "miracles" was contracted every time science made an advance in understanding. In a development that would doubtless have appalled Newton himself, Enlightenment natural philosophers appropriated Newton's enormous prestige to support a naturalism in which God appeared to be an unnecessary hypothesis.³ Shank charts the fight over Newton's legacy in a fascinating chapter that shows how history can become a battleground: over the course of the 18th century, Christian natural philosophers struggled with materialists over the meaning of Newton's legacy. "Newton's 'Newtonianism' and the one which came to be held by many across Europe by the end of the 18th century were two very different things," Shank explains (p. 96.) Contrary to long-accepted wisdom, "Newton's pioneering work was anything but a direct agent in the Enlightenment's isolation of cosmological science from God and religion" (*ibid.*); instead, his appropriation by the Enlightenment secularizers was the product of a self-conscious, intentional campaign to claim Newton for naturalism (figure 1).

Naturalism as a sharp delineation of divine activity from the realm of science became a larger issue from the Enlightenment on. But it wasn't one of natural association between science and naturalism. To the contrary, the lines between scientific research and belief in divine intervention in nature remained fluid and contested in a great many fields. John Hedley Brooke describes the history of chemistry as

one of ongoing fights over the theological implications of this scientific field. Nineteenth century Christians saw in chemistry a lesson about God's incredible design, proven by His ability to make living systems out of elements as unlikely as carbon, hydrogen, oxygen, and nitrogen (p. 120). Materialists and

positivists, on the other hand, would refer to the science to support reductionist accounts of the world, with matter and chemical reactions the building blocks that had no need of God.

Sometimes the turn to naturalism had even stranger and more surprising twists. In 17th and 18th century

England, for instance, a group of heterodox professing Christians argued for a materialist account of the soul. A fascinating chapter by Michelle Pfeffer (Queensland) describes this forgotten argument. Growing out of the ferment of radical religions in the 17th century, these materialists argued that the Hebrew Scripture supported their position and that the concept of an immaterial soul was a Greek corruption of the biblical idea. They were not particularly important figures in the history of science. But they were a reminder that nothing can be taken for granted in historical study, not even the idea that materialism is always associated with unbelief.

Naturalism by happenstance

Naturalism wasn't always intentional. A chapter on the medieval period by Michael H. Shank (University of Wisconsin) reveals a sharper demarcation between the study of science and the study of religion. This was not due to a lack of religious commitment by medieval scholars. Rather, Shank argues, this demarcation came about as a matter of university governance. Ecclesiastical authorities ran virtually all schools in Europe until the first universities were created in the late 12th century. Medieval universities were divided into semi-autonomous faculties. The faculty of arts was able to preserve its autonomy from ecclesiastical control by carefully self-policing the subject matter fit for scholarship and discussion. Avoiding theological disputes enabled the arts faculty to avoid oversight or interference by church authorities. So it became institutionally important to emphasize that the study of (say) Aristotelian physics or astronomy was not related to theological inquiry, that it was possible to proceed *de naturalibus naturaliter*, '[to treat] the natural naturalistically' (Albertus Magnus, quoted on p. 38). The medieval scholars emphasized the lawlike



Figure 2. Fourteenth-century scholars hard at work at the University of Paris. A chapter in *Science without God?* argues that one source of naturalism was a happenstance of institutional politics in medieval universities, rather than a deeper philosophical commitment to separating science and religion.

regularity of nature, which helped them to defend their position that they could work on ordinary occurrences in nature without trenching on the domain of theology. Sometimes this argument led the medieval scholars to minimize the truth claims of Scripture or theology about the natural world, as Shank documents. For instance, 12th century scholar William of Conches interpreted Genesis 1 as declaring (in Shank's words) "the existence of various beings (the facts) without explaining how they came into being (the causes). William therefore insisted that, by supplying the missing causal explanations, the natural philosopher ... could not possibly be doing anything contrary to Genesis" (p. 41). Shank's main point here is that the link between naturalism and scientific explanation wasn't a necessary condition for doing science. It was instead a highly contingent development in which institutional politics happened to promote a particular perspective on the science-religion relationship (figure 2).

Darwin and naturalism

The chapter on Darwin and naturalism is written by the prolific Michael Ruse, not a historian but a philosopher. More than other chapters, this one affirms a standard view about the history of naturalism: Darwin did take a significant step toward removing God from biology by enhancing the status of naturalism in the discipline. Ruse goes so far as to quote the atheist Richard Dawkins favourably (Ruse has often disagreed with Dawkins in print): "Until Darwin, it was impossible to be an 'intellectually fulfilled atheist'" (p. 134).

Yet in keeping with the revisionist spirit of the rest of the book, Ruse doesn't stop there—he wants to complicate the picture somehow. He notes that Darwin was a believer in 'God' at the time he wrote *Origin of Species*—a deistic god, but a god nonetheless.

Ruse also points out that Darwin's research agenda was one that grew from the Christian culture: Darwin searched for a final cause because that was what natural philosophers in the Christian tradition did. It just so happened that Darwin chalked up to nature many things that had previously been attributed to a designer. Ruse makes much of the structural similarities between Darwinian evolutionary thought and Christian thought about the origins and development of biology. (It's a theme he previously developed at length in a book.⁴) In the end, this is really just a way of noting that the Darwinian argument was quite forceful in replacing Christian concepts about biology with secular, naturalistic ones: divine creation and providence replaced with a story about naturalistic but progressive evolution. But is a belief that evolution is 'progressive' really justifiable based on the observation of nature? Ruse concludes that it isn't—it is instead an item of faith. Ruse is obviously drawn to an ideology of progress as a kind of faith commitment, but he recognizes that he can't really justify the move on the empirical evidence alone.

If Ruse's chapter on Darwin is relatively weaker than others on disrupting accepted narratives about naturalism, this is also notable in a different way. For the Christian apologist, it drives home the point: Darwin is especially problematic precisely because he played this important role in the cause of naturalism and the replacing of Christian belief in design and providence with a secularized faith in progressive evolution.

A resource for historians of science and Christian apologists

As the editors of this fine collection, Harrison and Roberts are to be commended. The contributions are on the whole successful in combining fine scholarship with an accessible

presentation and united around the coherent theme (scientific naturalism). Such coherence and unified presentation is not something to take for granted in an edited collection. Nor is the overall quality of the prose in an academic volume. One could quibble about points of emphasis. While most of the chapters are easy to see as participants in the same dialogue, a few chapters (on biblical criticism, anthropology, psychology, and the obscure quasi-Christian materialists) stretch the conversation in new directions. Depending on one's perspective, this might or might not be viewed as a valuable move. Historians might appreciate the broadening of the conversation while people reading for contemporary apologetic relevance will likely find these less immediately useful. In any case, this is a thought-provoking resource for both the historians of science and more generally for Christian apologists. For the apologists, this provides outstanding scholarly resources with which to answer the skeptics who believe that the history of science requires naturalism in order to succeed.

References

1. See Weinberger, L., Whose God? The theological response to the god-of-the-gaps, *J. Creation* 22(1):120–127, 2008, creation.com/gaps.
2. For more on Newton's treatment of "perturbations" in planetary courses, and whether the solution should be characterized as a miracle or as a (divinely-planned) extension of natural law, see Snobelen, S.D., The unknown Newton: Cosmos and apocalypse, *New Atlantis: A Journal of Technology & Society* 44:76–94, 2015.
3. According to a widely repeated but possibly apocryphal story, Napoleon asked natural philosopher Pierre-Simon Laplace (1749–1827) why he didn't invoke God in his cosmological system. Laplace said that he had no need for that hypothesis (p. 77).
4. Ruse, M., *The Evolution-Creation Struggle*, Harvard University Press, Cambridge, MA, 2005.