

Reading the Bible and understanding nature

A review of
*The Bible, protestantism,
and the rise of natural
science*
by Peter Harrison
Cambridge University Press,
New York, 1998

Lael Weinberger

In the nineteenth century secular activists made an effort to claim a position of dominance in the academy for the natural sciences, and sought to unseat the reigning “queen of the sciences” theology.¹ The partisans of secular science painted an image of warfare between science and religion. By their account, progressive, inquiring, empirical science was—and always had been—arrayed against old-fashioned, dogmatic religion.

The image of warfare has been highly influential, but more because it painted a vivid image than because it was true. Serious historians of science have come to view the warfare thesis as overly simplistic at the very least.²

Indeed, a number of historians and sociologists have come to view modern science itself as the historical product of Christianity.³ It’s hard to get much further from the warfare thesis than this. This is an important point for Christian apologetics. If it is true that Christ is the source of all wisdom and truth, then it is only to be expected that Scripture would have helped, not hindered, the pursuit of good science.

Peter Harrison’s *The Bible, Protestantism, and the Rise of Natural Science* is an important study of how Christianity helped birth modern science. At the time of publication, Harrison was a professor of history and philosophy at Bond University in Queensland, Australia (he now holds a professorship at Oxford University). In this book, Harrison does not attempt to present a comprehensive account of

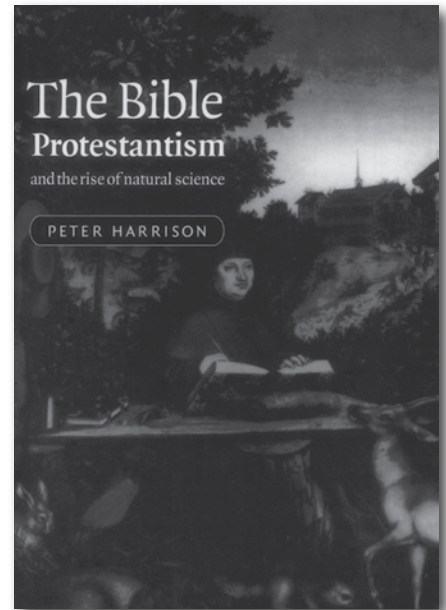
the birth of modern science. He presents instead a detailed examination of how biblical interpretation influenced the interpretation of nature. His conclusion is that a literal reading of the Bible led to a literal reading of nature and the birth of modern science. The story Harrison tells should be of interest to historians, scientists, and theologians alike.

Nature as symbol

Harrison begins with the early church fathers, the great majority of whom viewed Scripture as literally true. The Genesis creation account, for instance, was an actual historical description of a physical event. But a few in the patristic era believed that the literal meaning of the historical texts was subordinate in importance to deeper symbolic meanings. This tendency was seen in its most extreme form in Origen, the Alexandrian Platonist. Origen was the one important church father who really did doubt the literal veracity of some of Scripture’s historical narratives, suggesting that at least some of them were allegorical and symbolic stories alone.

When nature and the natural world were mentioned in Scripture, the reference was interpreted not primarily in terms of God interacting with the natural world. Rather, each natural object was viewed as a symbol of something else. Thus, as Harrison explains, there were multiple layers of meaning that the interpreter had to peel away to access the hidden spiritual meaning of a passage. The deepest level of meaning was spiritual rather than physical, a typical Platonic doctrine.

The symbolic view of nature from this era was most clearly presented in the *Physiologus*. The writers of the *Physiologus* provided an encyclopaedia of symbolism in the natural world, much of it based on anecdotes, hearsay, and legend. The goal was to understand symbols, not what actually occurred in nature.



Medieval period

The Platonic tendency to divorce the biblical narrative from the physical and the natural was mitigated somewhat in the middle ages. Theologians were willing to pay more attention to the physical. Human relations were now seen as a subject of symbolic communication, a move toward legitimizing “this-worldly” inquiry. The universities fostered philosophical discussions about nature, and helped produce natural theology that explored God’s communication to man through His creation.

In the medieval period and into the Renaissance, the rediscovery of Aristotle provided an important source of inspiration to look again at the natural world—or rather, what ancient authors had said about the natural world. Harrison explains that it was a common scholastic belief that the “human race had at one time been in possession of a complete knowledge of the natural world” (pp. 66–67). This knowledge was corrupted by the Fall, but ancient sources were still deemed superior as closer in proximity to this knowledge. Thus, the medieval classicists’ interests did not extend beyond what others had said about animals, plants, and natural phenomena. These scholars did help advance knowledge of nature, but there was still little motivation for scholars to actually study the natural world.

Reformation

The Reformation brought about a revolution in the way people looked at Scripture, and with it, nature as well. There was a return to a “literal” hermeneutic, properly called historical-grammatical.⁴ Under this hermeneutical principle, physical descriptions and historical accounts of Scripture were precisely what they appeared to be—physical descriptions and historical accounts. They may have some symbolic roles to play, Reformers acknowledged, but that was not their primary purpose. This was a major shift in the way Scripture

was read, and Harrison argues that this was of great consequence for the future of science. Nature *qua* nature was important enough to God that He devoted significant portions of His word to describing His creation of it, and instructing man to work with it.

Additionally, the Reformation also occasioned a discounting of the authority of the ancients. The Reformation proclaimed the supremacy and sufficiency of Scripture and rejected the authority of tradition. This same rejection of tradition caused a new scepticism of the ancient authorities on science, including Aristotle.

No change could be complete overnight, however. There were still plenty of interesting questions and pursuits in the sciences that followed directly from the Reformation.

How far should it go?

First of all, Harrison examines how the Reformers confronted the question, how far does the principle of literal interpretation go? Some parts of Scripture are clearly allegories; others are poetic in form. It all needs to be interpreted based on its natural literary sense. One consequence of this was the concept of “accommodation”. The basic idea was that the scientific accounts in Scripture were accurate but not comprehensive; the accounts were simplified to accommodate simple



Painting Courtesy of S.M. Davis

Historians have noted many connections between the Reformation and the rise of science. In his groundbreaking scholarly work, historian Peter Harrison explains one of the most interesting connections of all: the impact of the Reformers’ reading of Scripture itself on the rise of natural science.

readers. As an exegetical principle, there is danger here of taking a step back into allegorical readings by saying that God’s revelation used a simple story to represent something more complex.⁵ But there is also a place for the concept of accommodation. For a modern example, when Scripture says that the sun rose or set, it doesn’t necessarily mean that the sun moved instead of the earth, any more than a television weatherman does when he says the same. The expressions are accommodations for easy communication, written with the reader’s frame of reference in mind. (An emphasis on “frame of reference” is a better approach to the issue.⁶)

The companion issue was how far to take natural explanations. Since more and more people were beginning to recognize that the natural events recounted in the Bible were important as natural events and not solely as a vehicle for conveying some abstruse symbolism, efforts commenced to understand the natural history of Scripture as fully as possible. Theories of the Flood were offered, attempting to explain geological and meteorological phenomena. But how far should this theorizing be taken? Where was the line between natural phenomena that occurred by natural processes, and natural phenomena that occurred by

supernatural causality? How far back in the causal chain should the new students of nature hope to find natural forces at work?

Open for speculation in this category were not only such events as the Flood and the parting of the Red Sea, but also future eschatological events such as the resurrection of the dead and the final judgment. Chemistry (and alchemy) was consulted in an attempt to explain how bodies could be transformed “into a form fit for the next life” (p. 155). Astronomers speculated about the locations of heaven

and hell (one writer suggested that hell was on a comet). Scientists from various disciplines offered theories of the resurrection. While some of these theories seem more than a little odd when viewed in retrospect, they are an indication of how serious interest was in applying the insights of science to understand God’s workings.

Teleology

Post-Reformation students of nature wanted to retain a voice with which to speak to theology, which to some extent they had lost since the rejection of the symbolic reading of nature. God told us about science, but did anything remain for science to tell us about God? Many of the early naturalists answered in the affirmative, and Harrison calls them the “physico-theologians”.

The primary research emphasis was on discovering God’s purposes for His works in nature. Thus arose the teleological endeavour, the search for ends or goals in nature, which was to play a powerful role in the sciences until Darwin challenged it in the mid nineteenth century.⁷ Teleological research examined natural objects and organisms and asked why they were the way they were, and what purposes of God underlay them.

Teleology can certainly be a legitimate research program. The way

teleological studies were pursued, however, did not always do credit to the subject. Harrison's look at the origins of teleological studies of nature is informative on some of the weaknesses that made natural theology vulnerable to attack in the 19th century.

First of all, teleological studies were often pursued as an *a priori* project, and hence consisted more of armchair philosophising than serious science. This would, in later years, lend credence to the view that teleological pursuits were impractical and unscientific. Francis Bacon suggested that teleology was better classed as metaphysic than physic (that is, philosophy rather than science). This seems like a fair description of the way teleology was pursued at the time,⁸ although the prescriptive implication that science and theology should be kept apart has problems.⁹

Second, and even worse, the printed material on teleology was sometimes not very good even as armchair philosophising. Some of the more bizarre claims can be attributed to inattention to basic theological issues. For instance, one of the "physico-theologians" suggested that the woodworm, which eats the hulls of ships, was designed to promote "harmonious international relations" by providing opportunities for some countries to sell pitch (to protect the ships) to other countries (p. 175).

The explanations for fleas were even worse. English author John Hutchinson claimed that "Vermine prevent that hoarding which is prejudicial to society," and also encourage greater cleanliness (pp. 175–76). Another writer suggested that blood-sucking insects provided healthful bleedings at no charge, and the fact that fleas infested the poor to a greater degree than the rich was in fact a special provision for them, to save them the cost of hiring a physician (p. 176).

For those of us today interested in developing a normative biblical account of design, these prior attempts are instructive. The extreme suggestions are theologically problematic in that they assume (1) that "pests" were designed

in the beginning to do what they do now, and (2) that what they do now must somehow be beneficial to man. First, it is by no means clear that pestilential creatures are operating the way they were originally designed by God to operate; the physico-theologians failed to consider the possibility of degeneration and mutation since the Fall. Second, Scripture nowhere suggests that all of fallen nature is beneficial to man.

After the Fall, God cursed the ground and called forth thorns (Genesis 3). The physico-theologians failed to take into account the Fall, and as a result ended up making embarrassingly broad claims. The modern Intelligent Design movement is vulnerable to similar errors, as it likewise ignores biblical history.

The most extreme claims are not representative of the whole field of teleology. But they do expose the potential weaknesses of these pursuits, and help explain why natural theology was vulnerable to assault several centuries later.

The dominion mandate

The study of purpose in nature, while important, had less practical consequences for science than did another fruit of the Protestant Reformation—a literal reading of the creation and fall in Genesis. Harrison saves this topic for his final chapter, *Eden Restored*. A major motivation for scientific research, exploration, and discovery was the fulfilment of the dominion mandate that God gave to Adam, and an amelioration of the effects of the Fall. Literalism, Harrison writes,

"... thus contributes to the emergence of natural science



Sketch by Carl Johan Wahlboom <www.wikipedia.com>

Plato, depicted here teaching at his academy, had a significant impact on several early church fathers. The Platonists in the church tended to allegorize Scripture and under-valued the implications of the Bible for the physical realm of nature and science.

in two distinct ways: first, by evacuating nature of its symbolic significance; second by restricting the possible meanings of the biblical narratives of creation and Fall, in that they cannot be read other than as enjoining upon the human race the necessity of re-establishing its dominion over nature" (p. 208).

Seventeenth century writers spent enormous amounts of ink and paper in expounding the first few chapters of Genesis. These expositors faced some of the key issues that the teleologists missed. They examined the Fall and its effects; studied the effects of the Flood (and suggested that it created the fossil record (p. 224)), and speculated about the knowledge that was lost to mankind due to the confusion of tongues at Babel (p. 225).

What to do about all these effects of the Fall was the question. The most basic imperative for mankind was to take dominion over nature. This was understood as meaning, not plundering or abusing nature, but learning how to make the most of nature and working diligently to do so.

Harrison points to the popularity of gardens in the 16th century as a consequence of this renewed emphasis on the dominion mandate. A garden

was, after all, the original location of man's work before the fall. Seventeenth century writers pictured Eden as the ultimate formal botanical garden. As a result, the formal garden came into vogue and became a symbol of dominion. Scientific knowledge was demonstrated by arranging gardens in some sort of botanically meaningful order. Man the gardener demonstrated his learning and skill in ordering nature, and, in a symbolic sense, restoring Eden.

Knowledge in general, and science in particular, was an important tool of dominion. Scholars emphasized that Adam's original knowledge must have been extraordinary, freshly created by the hand of God with the ability to name all the animals.

From this, Adam's original language was itself presumed to be a key to great wisdom and scientific information. How a language could contain inherent information was a mystery never quite elucidated, but nonetheless, some brilliant minds expended much effort on fruitless searches for Adam's original language. Robert Boyle and Francis Bacon were among the many distinguished scientists who expressed serious interest in the prospect of recovering Adam's language. The Royal Society even commissioned Robert Hooke to prepare a special report on the subject (p. 259).

The larger and more important point is that the preservation and dissemination of information took on urgency precisely because it was viewed as a part of the dominion mandate. It was to this end that the Royal Society itself was founded, according to Thomas Sprat, the Society's first historian (p. 231). Even the inquiries into the original language were not entirely fruitless, for as Harrison points out, they pointed the way toward the future of taxonomy (p. 261). And as a whole,

"... The pursuit of scientific activities, it should be clear, was an integral part of the attempt to revisit Eden, for such endeavours resulted in the rediscovery of lost knowledge, which in turn, conferred dominion" (p. 249).

In a more practical sense, discovery and exploration were logical impulses that followed from the biblical command to "fill the earth, and subdue it."¹⁰ The dominion mandate was a strong motivation for the Puritan settlers of New England in the first half of the seventeenth century. Indeed, Harrison notes, the Puritans' understanding of the Fall set them apart from the Spanish and Portuguese explorers to the south, who had come to the new world in search of "a terrestrial paradise, an El Dorado." The Puritans, by contrast, "saw their mission not as the discovery of Eden, but as the transformation of the wilderness into a paradise" (p. 246, n. 208).

More effective and efficient means of agriculture were another dominion endeavour. The "literal reading of Genesis 2.15 ... meshed neatly with the Reformer's doctrine of the priesthood of all believers, according to which all human vocations were equally sacred," Harrison writes (p. 240).

In different ways, all of these diverse endeavours were spurred on by the Genesis account and, in turn, advanced the scientific enterprise. The predicate for this progress, Harrison explains, was that in "the seventeenth century, the story of the fall was literal and not allegorical. It was about the material world, not merely the spiritual" (p. 248).

Conclusion

Harrison's *The Bible, Protestantism, and the Rise of Natural Science* is an important book for everyone with a serious interest in the historical relationship between science and religion. Not only is it a fascinating story, told with great erudition, but it is one filled with historical lessons of interest to those interested in apologetics and theology. We see the ways in which Scripture inspired science. We see both the positive and negative influences of various theological and philosophical positions.

That Christianity would inspire and foster the development of science is a logical consequence of a religion that proclaims its adherence to the Redeemer who is the Truth and who

revealed truth to mankind. Yet if we are going to look to history with this theological thesis in mind, there is a risk of being simplistic with the historical record.¹¹ We shouldn't expect perfect coincidence between theory (or theology) and practice. History is complex and messy precisely because this is a fallen world. We only hurt ourselves if we employ history for apologetic purposes, and later find out that we messed up or oversimplified the record. Careful, sophisticated historical analysis is a must if we are to accurately understand the relationship between Scripture, Christianity and science. This is what Peter Harrison has provided in this valuable historical study.

References

1. See Garrouette, E.M., The positivist attack; in: Smith, C. (Ed.), *The Secular Revolution*, University of California Press, Berkeley, 2003; and see review by Weinberger, L., *Secularizing America*, *Journal of Creation* 20(3):43-45, 2006; <creation.com/secular>.
2. See e.g. John Hedley Brooke, *Science and Religion: Some Historical Perspectives*, Cambridge University Press, Cambridge, pp. 33-42, 1991.
3. Alfred North Whitehead, no Christian himself, advanced this thesis almost a century ago in *Science and the Modern World*, 1925; reprint, *Simon and Schuster*, New York, NJ, pp. 12-13, 1997. Sociologist Rodney Stark has been a notable recent proponent; see his *Victory of Reason*, Random House, New York, 2005, and *For the Glory of God*, Princeton University Press, Princeton, NJ, pp. 123-88, 2003 (reviews from J. Creation at <creation.com/stark> and <creation.com/stark2>). See Lennox, J.C., *God's Undertaker?*, Lion, Oxford, pp. 19-29, 46-51, 2007, for an excellent summary of the argument reviewed this issue, pp. 35-38.
4. The term "literal" is so often subject to abuse in the context of biblical interpretation that it is preferable to use the term "historical-grammatical."
5. Thus, the concept of accommodation is frequently abused today as an easy justification to not take Genesis as history. See Ruse, M., *Can a Darwinian be a Christian?*, Cambridge University Press, Cambridge, p. 53, 2001; and see review: Weinberger, L., *Preaching to his own choir*, *Journal of Creation* 19(2):42-45, 2005, <creation.com/ruse2>.
6. See, e.g., Sarfati, J., *Refuting Compromise*, Master Books, Green Forest, AR, p. 51-52, 2004.; Sarfati, J., *Refuting Evolution*, Master Books, Green Forest, AR, pp. 101-02, 1999.

7. After which teleology became controversial, though not unimportant, to science. See Bergman, J., Condemnation of terms such as “purpose” and “design,” *Creation Matters* 11(4):1–4, 2006; Williams, A., Explaining design away: A review of *Darwin and Design* by Michael Ruse, *Journal of Creation* 18(3):31–34, 2004, <creation.com/ruse3 >; Allen, C., Teleological Notions in Biology, *The Stanford Encyclopedia of Philosophy*, Spring 2009 Edition, Zalta, E.N. (Ed.), <http://plato.stanford.edu/archives/spr2009/entries/teleology-biology/>, 26 April 2009.
8. Cf. Williams, ref. 7.
9. In other words, the goal certainly should *not* be hermetically sealed disciplines (philosophy, theology, science) that never talk to each other. Bacon’s problem on this point was that he tended to absolutize the natural sciences and the empirical method. Within a few generations, this turned into a claim of epistemological priority for empirical science over all other disciplines (philosophy and theology included). Garroutte, E.M., The positivist attack; in: Smith, C. (Ed.), *The Secular Revolution*, University of California Press, Berkeley, CA, 2003; see also Dembski, W.A., *Intelligent Design*, Intervarsity Press, Downers Grove, IL, pp. 122–27, 1999. It is important to emphasize, though, that Bacon himself probably would have been unhappy with this radicalism. Bacon did not discard metaphysics or teleology: see his acknowledgment that teleology is a proper pursuit as long as kept separate from physical scientific inquiry, in *Advancement of Learning*, Wright, W.A. (Ed.), Clarendon Press, Oxford, 2.7.7, pp. 118–120, 1885.
- In its strong form, the epistemological exaltation of science became the (discredited) verification principle in philosophy: what cannot be “verified” empirically is meaningless. The basic (and embarrassing) problem with verificationism was that it could not be verified empirically itself. See Bahnsen, G.L., *Always Ready*, Covenant Media Foundation, Nacogdoches, TX, pp. 207–11, 1996.
- For more criticisms of Baconianism and its effects, see: Sarfati, J. and Wieland, C., Culture wars: Bacon vs Ham, Part 1, *Creation* 25(1):46–48, 2002; Weinberger, L., Whose god? The theological response to the god-of-the-gaps, *Journal of Creation* 22(1):120–127, 2008, <creation.com/gaps>; and Weinberger, L., The problem with naturalism, the problem with empiricism: A review of *Science’s Blind Spot: The Unseen Religion of Scientific Naturalism* by Cornelius Hunter, *Journal of Creation* 22(2):28–31, 2008, and references therein.
10. Genesis 1:28, *Geneva Bible* (1599).
11. Cf. Brooke, ref. 2, pp. 42–51.

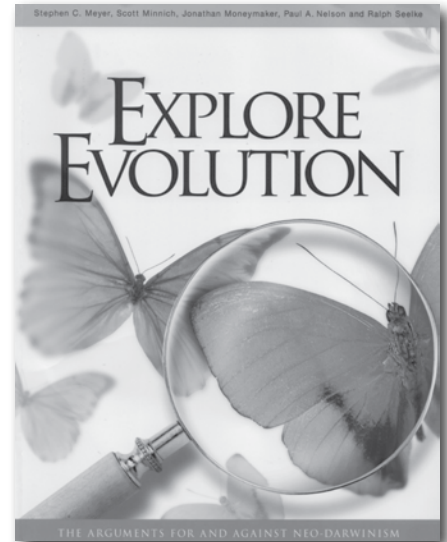
Darwin dissent book— ultimately disappointing

A review of
***Explore Evolution: The
Arguments for and Against
Neo-Darwinism***
by Stephen C. Meyer, Scott
Minnich, Jonathan Moneymaker,
Paul A. Nelson and Ralph Seelke
Hill House Publishers,
Melbourne, 2007

Carl Wieland

This recently released offering by various people affiliated with the ID movement certainly provides the exploration its title promises, and does so in a very professional manner. Well produced and presented, it clearly sets out and explains (at senior high or junior university level) pro-and-con arguments for the various categories of evidence relevant to the evolution question.

Forexample, homology (anatomical and molecular), fossil succession, embryology, biogeography, natural selection/mutation as a creative agency, etc. are well covered, with impressively up-to-date references. There is little doubt that students who work through this overview of evolution’s strengths and weaknesses will learn more about evolution than most. This can only be a good thing overall. Most people who believe in evolution do so not because they have a good understanding of the arguments, but quite the opposite. It is only when evolution’s strengths and weaknesses are deeply understood that they can be evaluated rationally; even most scientists believe in evolution not because they understand it well, but because most other scientists believe likewise. To ensure that more people learn about evolution “warts and all” is a major step towards overcoming such psychosocial objections to creation.



The authors are skilled communicators and teachers. They really bend over backwards to be fair to evolution, which might win them a few points with their intended audience. But if they think that this will gain them a seat at the table of mainstream discussion in educational circles, one strongly suspects this will be for naught. The philosophical stakes are far higher than some civil discussion about scientific issues. Their evolution-committed opponents, with their vast superiority in societal, academic and media “clout”, will see no reason to give an inch of ground. To them, evolution is fact, the key plank of sacred materialist dogma. The study of evolution-related issues is to such adherents not a question of “whether evolution”, but only “how did evolution...”. So anything which serves to highlight doubts about this belief system is to them at best an annoying distraction from the main game, at worst something which threatens to take science and society back into the “dark ages” when most westerners believed the Bible. Did I mention the “B-word”, so carefully avoided in ID circles? Well, yes. Ultimately, no matter how much