

Peter J. Bowler, *Reconciling Science and Religion: The Debate in Early-Twentieth-Century Britain* (Chicago: University of Chicago Press, 2001), vii + 479 pp., illus., \$40.00.

John Hedley Brooke, Margaret J. Osler, and Jitse van der Meer, eds., *Science in Theistic Contexts: Cognitive Dimensions*, Osiris, 2nd ser., no. 16 (Chicago: History of Science Society, 2001), xii + 376 pp., illus., \$39.00, \$25.00 paper.

The simplicity (and adversarial nature) of the phrase “science versus religion” belies the diversity of ways in which these two fields of knowledge can, and do, interact. Thanks to the work of Ian Barbour, four modes of interaction are now generally accepted (conflict, independence, dialogue, and integration). Scholars realize that in these post-1859 times religion has had to face the radical reconfiguration of the human experience that appears to be required by the acceptance of modern scientific theories such as evolution, quantum mechanics, and electromagnetism. However, within such an arrangement, one must ask how science is, if at all, modified by religious beliefs. As John Hedley Brooke notes in *Science in Theistic Contexts*, we must avoid essentializing “science” and “religion,” and imagining that our current boundaries would be acceptable to the scientists of times past. The two works under review offer potent illustrations of how scientific theory and religious belief have in the past influenced and affected each other, and we thus have no reason to imagine that this will not be the case in the future.

Science in Theistic Contexts stems from a 1998 conference at the Pascal Centre for Advanced Studies in Faith and Science which sought to examine whether personal convictions of a religious (or anti-religious) nature ever affected the construction and evaluation of scientific theories. Introductory essays by Brooke and Stephen Wykstra offer overviews of the problems facing research into possible extra-scientific factors, and these initial essays are nicely supplemented by the early part of Thomas Dixon’s paper, which discusses criteria for detecting the influence of “worldview” on scientific theory. Brooke highlights one of the problems with investigating these issues – how do we know that religion really played a part in the formation or assessment of a theory? For example, Robert Chambers’s *Vestiges of the Natural History of Creation* contains many references to a creator under a number of different appellations; it appears, however, that these may have been inserted in an unsuccessful attempt to pacify religious leaders and did not reflect the author’s own religious beliefs. On the other hand, St. George Jackson Mivart was accused by Thomas Henry Huxley of allowing his Catholicism to lead to his rejection of the ability of natural selection to accomplish everything claimed of it. Mivart himself strenuously rejected Huxley’s reading of his motives. Both of these incidents make it clear that much caution is required

in interpreting the public and private writings of scientists with regards to religion, particularly in the first 75 years of "Darwinism."

Following this introductory material is a series of case studies drawn from the history of both physics and biology. The latter include papers by Dixon, Phillip Sloan, Martin Fichman, Richard England, and Geoffrey Cantor. These uniformly excellent essays are cautious in their interpretation, and present much food for thought regarding Victorian biology. Three examples will suffice. Fichman discusses how the writings of the last three decades of Alfred Russel Wallace's life offer "compelling historical evidence for the constitutive role of theistic beliefs in biological sciences" (p. 228), thus highlighting the welcome current interest in Wallace as an individual in his own right. Sloan sketches the development of Darwin's views of "nature" between 1831 and 1859, while arguing against the prevalent view that Darwin's theories can be best understood within the context of British natural theology, political economy, and utilitarian ethics. Instead, he situates Darwin within a Romantic tradition deriving from Alexander von Humboldt and delineates a quasi-religious grounding to Darwin's theories. Lastly, England provides a wonderful discussion of the acceptance of "Darwinism" by Oxford intellectuals, such as Aubrey Moore, whose arguments allowed the establishment of the religious orthodoxy of natural selection and the heterodoxy of alternative theories. These three papers, along with the others in the volume, will repay close attention from students of science and religion.

Bowler's volume is destined to become the starting-point for any future investigation of science and religion within the early twentieth century. In previous works, Bowler has successfully debunked the myth of a rapid "Darwinian Revolution." In this work, he ably deconstructs another myth: that materialism was rampant in the late Victorian period. He demonstrates that in the early 1900s, the "widespread enthusiasm for reconciliation . . . led to a rewriting of history, sweeping away memories of those Victorian scientists who had retained some form of religious belief and creating the illusion of an era dominated by materialism and Darwinism" (p. 407). In this information-packed yet readable work, Bowler mixes the tales of scientists and theologians, physicists and biologists, Socialists and Marxists, Anglo-Catholics and modernists, evangelicals and Creationists, spiritualists and eugenicists, effectively demonstrating how it was (ironically) the neo-orthodoxy wing of the Anglican Church that eventually prevented any permanent reconciliation between science and religion. He ties in threads from his previous research, showing how Lamarckism, vitalism, and a belief in progress were all used in an attempt to heal the apparent wounds caused by evolutionary theory. As Wykstra notes, "[t]o take history of science seriously is to let the historical figures we study surprise us with their unexpected

connections” (p. 46). Bowler’s book is a treasure-trove of such surprises regarding individuals who have escaped the notice of previous research. I, for one, will be turning to it often, particularly as it provides a startling counterpoint to contemporary events in America.

Both of these volumes will prove highly useful to historians of science and religion. Yet they also have great relevance to the study of modern reactions to evolutionary thinking. An American neo-creationist movement called “Intelligent Design Creationism” (IDC) has, since the early 1990s, been seeking to re-inject theistic explanation into scientific discourse. Eschewing the methodological naturalism that has proven so successful in the past, proponents of this school of thought claim that if the design “hypothesis” is true, then there are major implications for theism. In so doing, they exhibit all the hallmarks of allowing their religious belief to drive their science. Brooke sees such conditional statements as being one of the best ways to detect extra-scientific influences especially “where (a) they feature as part of a clearly discernible polemical program, and (b) where the subject or their collaborators are actively engaged in substantiating the hypothesis” (p. 27) – two conditions which very much apply here. Likewise, Bowler’s work illustrates the sheer intellectual poverty of IDC supporters when compared with the theological and scientific debates in Britain during the early twentieth-century. While Frances Mason could claim in 1934 that “the greatest question in the world to-day [was] Is there a Living Intelligence behind nature, or does the great Cosmos somehow run itself, driven by blind force?” (Bowler, p. 45), any such statement today within biology is greatly diluted by the results of nearly seventy years of the “New Synthesis.”

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Leah Ceccarelli, *Shaping Science with Rhetoric: The Cases of Dobzhansky, Schrödinger, and Wilson* (Chicago: University of Chicago Press, 2001), xi + 204 pp., \$55.00, \$20.00 paper.

Shaping Science with Rhetoric uses three case studies from biology to show the fruitfulness of rhetorical study. The first two books that Ceccarelli examines provide examples of successful rhetoric: Theodosius Dobzhansky’s famous synthesis of Darwinian selection theory and genetics entitled *Genetics and the Origin of Species* (1937) and Erwin Schrödinger’s highly influential work that engaged the difficult conversation between physics and biology in *What is Life?* (1944). The last text, E.O. Wilson’s *Consilience: The Unity of Knowledge* (1998), which attempted to unify all knowledge, is chosen to demonstrate ineffective rhetoric. All three texts are treated as