

Book Review

Jerry A. Coyne, *Faith vs. Fact: Why Science and Religion Are Incompatible*, Viking, 2015, pp. 311, \$28.95, ISBN 978-0-670-02653-1

Reviewed by **Dr William Patterson, Independent Researcher, United States; Email: wpatterson002@gmail.com**

Jerry Coyne's first book meant for a popular audience, *Why Evolution is True*, was a masterful exposition of the evidence supporting evolutionary biology. It was rightly seen by many as one of the best books yet written on that subject for a general audience and deservedly spent time on the bestsellers list. In his second book, *Faith vs. Fact: Why Science and Religion are Incompatible*, Coyne does less well. His aim is to demonstrate that the contrasting mindsets underlying science (with its emphasis on rationality, evidence, experimentation, and observation) and religion (with its emphasis on faith) are intrinsically opposed and that all attempts to reconcile them must result in failure. Coyne has much of use to say on the topic and many of his points are powerfully made. His case is weakened, however, by his incoherent treatment of epistemology. This problem is serious in that it lies at the heart of the matter and serves to undermine, at least to some extent, parts of Coyne's main argument.

The book is divided into five chapters. In the first chapter, Coyne sets out why the relationship between science and religion is a problematic one. He argues that they "are competitors at discovering truths about nature" and that science has the greatest potential for disproving the claims of science and therefore eroding its credibility while religion is powerless in the face of demonstrated scientific fact (Coyne, p. 1). The chapter provides a useful background to the disputatious history between science and religion and lays the groundwork for the remainder of the book. He closes the chapter with what he sees as a key difference between the two domains: "*in science faith is a vice, while in religion it's a virtue*" (Coyne, p. 25).

In the second chapter Coyne delves into detail about what precisely is incompatible between science and religion, after first spending a good deal of space defining both. He points to three primary differences between them that assures their incompatibility. Those differences are: 1) the methodology of acquiring knowledge (rigorous examination on the part of science, and faith on the part of religion, most commonly in the form of adherence to scriptural authority and religious revelation); 2) the outcomes of those methods in terms of beliefs about the world (for example, scientists believe that the age of the earth is around 4.5 billion years while creationists peg it at between 4,000 and 6,000 years old); and 3) philosophy (with scientists provisionally rejecting supernatural hypotheses and religionists clinging to the supernatural). As he sums it up, "science and religion are incompatible because they have different methods for getting knowledge about reality, have different ways of assessing the reliability of that knowledge, and, in the end, arrive at conflicting conclusions about the universe" (Coyne, p. 64).

His arguments on these points are quite convincing in some regards. That religionists tend not to utilize the same rigorous methodologies as do scientists, for example, requires little argumentation to demonstrate. The doctrine of the Trinity was not arrived at through controlled experimentation. In so far as that doctrine is taken to reflect an empirical reality, Coyne is right, though not particularly groundbreaking, in rejecting scriptural authority as a valid methodology for establishing such a fact. Yet Coyne clearly oversteps some epistemological boundaries in his claim that scien-

tific methodologies are the *only* methodologies that can lead us to truths of any sort. The problem revolves around his definitions of truth and knowledge, which are contradictory.

Coyne starts off by defining truth as being, “simply what *is*. It is true that DNA is a double helix, that the continents move, and the Earth revolves around the Sun” (Coyne, p. 29). He then defines knowledge as “the apprehension of fact or truth with the mind; clear and certain perception of fact or truth; the state or condition of knowing fact or truth” (Coyne, p. 29). The problem for Coyne is that on the previous page he had already conceded that “scientific knowledge is often transitory: some (but not all) of what we find is eventually made obsolete, or even falsified, by new findings” (Coyne, p. 28). But if knowledge is the apprehension of truth, and truth is simply what *is*, how can scientific knowledge be transitory? Knowledge, on this definition, could only be transitory if the natural phenomena under investigation were themselves transitory (which is, of course, possible). But what Coyne seems to have in mind is the revision of scientific knowledge through the discovery of new facts. Facts which overturn previous scientific notions and replace them with a new understanding. If that’s the case, however, then the overturned beliefs can never have been knowledge, because, under Coyne’s definition, knowledge is the apprehension of the truth, and the truth is what is. If the previously accepted scientific notion did not accurately represent the truth, then it could not, by Coyne’s definition, have been knowledge.

Coyne worsens his situation by saying that “Scientific truth is never absolute, but provisional: there is no bell that rings when you’re doing science to let you know that you’ve finally reached the absolute and unchangeable truth and need go no further” (Coyne, p. 30). There is a sleight-of-hand going on when he defines truth as that which is and knowledge as the apprehension of that truth while still claiming that “scientific truth” is non-absolute but still produces knowledge. By denying that science can definitively establish truth, he has, by his own definition, denied science the ability to produce knowledge. Yet his entire project rests on demonstrating that science secures us in our knowledge while faith does not.

In Coyne’s attempt to discover the essence of truth and knowledge, he destroys the workability of both terms.

His definitions are so restrictive that they eliminate both mathematics and philosophy from the realms of knowledge. Those two disciplines “are a bit different,” he says in Chapter Four. “Although they’re useful *tools* for both science and rational thinking, they don’t by themselves yield knowledge about the universe” (Coyne, p. 188). Yet even he sees how ridiculous this claim is, immediately backtracking by admitting that “it would be churlish to argue that the Pythagorean theorem, the value of pi as the ratio of two measurements of a circle, or Fermat’s Last Theorem do not constitute ‘knowledge.’ They are indeed knowledge (or ‘truth’)—knowledge not about the universe, but about the logical consequences of a series of assumptions” (Coyne, p. 188). By this admission—that there is a diversity of types of knowledge and truth—he further undermines his earlier simplistic definition of those terms that his overall argument rests upon.

He has more loyalty to his claim that literature and the arts can produce no knowledge. They are useful in eliciting emotion and conveying beauty, and sometimes they can even serve to convey knowledge that has already been produced through the empirical methods of science broadly conceived, but they cannot, he says, create knowledge. This is likely true under Coyne’s narrow, but unworkable, conceptions of truth and knowledge. Neither art nor literature can tell us how neurons transmit information in the brain, for example; that is the proper domain of neuroscience. But can neuroscience ever reveal to us the human condition and the experiences of consciousness with the same depth and meaning as can literature and the arts? Coyne would likely call such insights mere emotion, but there seems to be no valid reason to expel the acquisition of a deeper understanding of the human condition from the realm of knowledge.

Coyne’s attempt to confine truth and knowledge to a Procrustean bed of his own making only serves to tie him into epistemological knots and leaves him in a position of incoherence. The words knowledge and truth have various meanings in our language. They are what the philosopher Ludwig Wittgenstein called “family resemblance” terms. These are terms that don’t, except under special circumstances and for special purposes, have exact definitions. Rather, they have similarities and resemblances, much as do members of the same family. Wittgenstein famously pointed to the example of games. He asked us to look at various types of games—“board games, card-games, ball-

games, Olympic games, and so on”—and then to look for a single commonality, one could say an essence, holding them all together. “For if you look at them you will not see something that is common to all, but similarities, relationships, and a whole series of them at that” (Wittgenstein, s. 66, p. 31).

Coyne’s failure to grasp that there are different types of truth and different forms of knowledge undermines at least one central claim of his book. That there is only one type of knowledge, and that it is solely derived through science. This is not to say, however, that the book isn’t worth reading. It’s important in that it serves to point to some serious pathologies in contemporary religion that continue to harm our society (in ways that Coyne does an excellent job of describing in the fifth and final chapter of the book). If there is one underlying theme of the book it’s that “The harm... comes not from the existence of religion itself, but from its reliance on and glorification of *faith*—belief, or, if you will, ‘trust’ or ‘confidence’—*without supporting evidence*” (p. 225). In arguing this point, especially as it applies to empirical realities, Coyne succeeds in his purpose. For even though Coyne’s conception of truth and knowledge are too narrow—excluding mathematics, logic, and the knowledge to be gained

about the human condition through the arts and literature (and quite possibly from religion, if looked at as literature)—he is right to exclude faith. He makes a sufficiently strong case to demonstrate that faith is in a different family from knowledge and truth, even as derived from the arts and literature, and bears little resemblance to either of them. Faith is indeed incompatible with fact.

In *Faith vs. Fact*, Jerry Coyne has written a flawed book that falls far short of his earlier work on evolution. The book’s overall message, however, that faith is often dangerous, harmful, and in conflict with scientifically-demonstrated fact, is well-presented and deserves our attention. Despite its deficiencies, this book serves as a useful addition to the discussion about the interaction between science and religion and deserves a close reading.

Bibliography

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