

and those with training in the history of biology may be dissatisfied with his quick treatment. Peirce apparently was well aware of the different evolutionary ideas, and comments on them, even developing his own. I suspect that to fully understand Peirce here, further work is needed. However, these minor gaps in no way detract from this book; it is ground-breaking in that it opens up points of contact between previously disparate fields, and places us on the path of finally understanding one of the founders of modern scientific philosophy.

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Bas C. van Fraassen, *The Empirical Stance*. New Haven: Yale University Press (2002), xix + 282 pp., \$30.00 (cloth).

Bas van Fraassen's (constructive) empiricism was initially conceived as a rival to realism. But, for him empiricism is not just another view in the realism-anti-realism debate in philosophy of science. In one of his articles, he advances empiricism as "an approach to life as well as science" (1994, 114). In this book, he argues for empiricism as a "stance", from where he addresses questions about science, metaphysics, and religion.

This book consists of five lectures: four of which were delivered in 1999 as Dwight Harrington Terry Lectures on Religion in the Light of Science and Philosophy, and three appendices. The first lays out what van Fraassen sees as the core of empiricism: rebellion against metaphysics. This is what unites empiricisms throughout the ages, despite the varied theories they held. Analytic metaphysics, as inaugurated by Quine, is the object of rebellion in van Fraassen's empiricism. It conceives metaphysics as "an extension of science, putatively pursued by the same means and realizing the same values" (11). It is obvious, then, that this metaphysics presupposes some conception of how science works. The problem, as van Fraassen sees it, is that the analytic conception has not kept up with more recent developments in the field.

Beyond rebellion against metaphysics, is there anything positive offered by empiricists? If that offer is conceived as a set of doctrines or beliefs held by an empiricist, his answer is 'no'. Van Fraassen's rebellion is not only against certain metaphysical beliefs, but the very way philosophy, understood as the producer of theories about the world, is practiced. "[A] philosophical position can consist in something other than a belief in what the world is like. . . [It] can consist in a stance (attitude, commitment, approach, a cluster of such—possibly including some propositional attitudes such as beliefs as well). Such a stance can of course be expressed, and may involve or presuppose some beliefs as well, but cannot be simply equated

with having beliefs or making assertions about what there is” (47–48). Thus, the second lecture identifies empiricism as a “stance”.

Characterization of the empiricist stance includes a range of attitudes and commitments, such as rejection of explanation demands, devaluing explanation by postulate, a call back to experience, rebellion against theory, ideals of epistemic rationality, and admiration for science—directed not to its content, but more to its forms and practices of inquiry (47). A central empiricist identification of science is that it is an objectifying inquiry, discussed in the fifth lecture. Science *is* an objectifying procedure: the scientist distances herself from her object; she takes herself out of the picture to gain more cognitive understanding; the natural world is neutralized of any non-observational values; and the domain is restricted in terms of parameters allowed. It is not surprising that van Fraassen’s attempt here is, like many past attempts to characterize or demarcate science, unsatisfactory. It is, however, sufficient to take him to a different footing—compared with the realists, for example—to deal with his next big issue: religion.

Throughout this work he liberally and illuminatingly touches on some issues related to religion and scripture mostly by way of analogy with issues in philosophy of science. However, it is probably this last lecture, entitled “What Is Science—and What Is It to Be Secular?”, which makes this work fit with the intention of the Terry Lectures. His main question here is: ‘Does the empirical stance allow for anything other than a secular orientation?’ (153)

His answer is not always clear-cut, but in short: yes, it does. Secularism is about an attitude, or a stance, towards science. The secular is content with the scientific as sufficient in itself; the religious displays discontent, though it does not preclude the possibility of peaceful coexistence with science (155).

Here, van Fraassen’s discussion of three existentialist thinkers is illuminating. Engaging Emil Fackenheim to answer the question, van Fraassen asserts that “[t]he satisfaction with science is not part of science as science.” The attitude that devalues the abiding wonder is not science, as well. “[I]t is the secular standpoint, which is merely one possible orientation for participants in science” (182). On the other hand, when discussing Martin Buber, van Fraassen asserts that “[i]t is a poor love, and a poor sense of the sacred, that cannot live in a world infused by science” (184). Taking science seriously, the third existentialist—Rudolf Bultmann, chooses to carry out a demythologizing project by reinterpreting the scriptural mythology in existentialist terms (188). An empiricist, therefore, is content with the form of science. Unlike a realist, he chooses not to obey his abiding wonder *in science*. Yet, he may acknowledge that *in life* it would make us too poor to deny other spheres of life. While this may seem

trivial, it is true that a realist's aspiration to get to things as they really are—and build a “scientific cosmology” or “analytic ontology”—could easily lead to a dominating scientism. It is not surprising that van Fraassen's view on science and religion would remind one of Pierre Duhem, as do some aspects of his philosophy of science.

For students of philosophy of science, this book is refreshing because it discusses issues familiar to the discipline, but brings it to broader realms. Quite a few of his points here have appeared in his earlier works, e.g., materialism as false consciousness, the analogy of *sola scriptura* and *sola experientia*, and science as representation and interpretation. But in this ambitious, yet relatively brief work, those ideas reappear well-connected with other parts of the book in a way that is accessible to non-philosophers. This work could thus also serve as a nice introduction to van Fraassen's big picture.

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#### REFERENCE

van Fraassen, Bas (1994), “The World of Empiricism”, in Jan Hilgevoord (ed.), *Physics and Our View of the World*. Cambridge: Cambridge University Press, 114–134.

Stathis Psillos, *Causation and Explanation*. Montreal: McGill-Queen's University Press (2002), xi + 324 pp., \$70.00 (cloth), \$22.95 (paper).

Even though Psillos's latest book is called *Causation and Explanation*, it is actually a unified discussion of causation, laws, and explanation. Despite the fact that these three topics are interconnected, it is rare to have detailed treatment of all of them. Psillos does not really aim at developing and defending his own detailed account of these issues. Instead, the book is best viewed as a textbook that gives a comprehensive overview of the literature on each of these topics and illuminates their interrelations. The discussion includes recent accounts such as Dowe's theory of physical causation and Lange's account of laws and their function in scientific reasoning.

After a discussion of Hume's account of causation, Psillos continues with a review of the current literature on causation. He compares and discusses the major regularity accounts, counterfactual (as well as agency and intervention) approaches, and physical theories of causation, including their motivations and problems. (A discussion of probabilistic causation is omitted because it is beyond the scope of a book of this length that also deals with laws and explanation.) So far the reader is left relatively unclear