

***Science, Technology, and Religious Ideas.* Edited by Mark H. Shale, George W. Shields. Pp. 254, Maryland USA, University Press of America, Inc., 1994.**

***Varieties of Scientific Experience.* By Lewis S. Feuer. Pp. xx, 445, New Jersey, USA, Transaction Publishers, 1995.**

Book review:

Are science and religion completely separate? If they are, can scientists work exclusively in the scientific domain without being influenced in any way by their religious or other commitments? These questions have been treated in a number of interesting ways in the course of intellectual history. But in the past few decades, the extraordinary developments in physics and biology have raised new possibilities for attempting to give answers to them, and thus for gaining a clearer picture of the right kind of interaction between science, religion, and moral values.

The collection of papers presented in *Science, Technology, and Religious Ideas* consists in the proceedings of three annual conferences organised by the Institute for Liberal Studies at Kentucky State University: those of 1990, 1991, 1992. There are eleven essays falling into the following three thematic categories: the Nature of Science, Religion, and Technology; Recent Physics and the Design Argument; Studies in the History of Science-Religion Interaction. These three categories constitute the first three parts of the book. The fourth and last part consists in a comprehensive catalogue of short descriptions of conference papers given over a period of three years.

Part I contains five essays. In the first one entitled 'Christendom goes to College', Frederick Ferré discusses the learning pains of Christendom. He challenges some presuppositions concerning the relation between science and religion mainly by uncovering the problems undermining the claim that science and religion should always be kept completely apart. For him, religion has the divine duty of criticizing science, and science is obliged to set limits for whatever religious thinkers are permitted to say. Interaction is inevitable. Ferré's final suggestion that science should be considered as more amenable to the qualitative domain of religion and of the humanities is echoed by the second essay, written by Thor Hall about Michael Polanyi. The main point here is that Polanyi's ideas on personal knowledge are very useful as a key to a healthy correlation of Science and the Humanities. Discussion should not of course be limited to the theoretical aspects of science. Technology itself is value-laden and resides within the continuum of human aesthetic expression which includes art and craft. This point is made by Jacquelyn Ann K. Kegley in the essay entitled 'Technology as Creativity and Embodiment: A New Critical View'. A contrasting view is expressed by the well-known author Stanley Jaki. In his essay, he draws the reader's attention to a series of problems that often arise when the distinctive identity of disciplines is neglected. He offers convincing historical arguments to show that we must accept that human cognition is limited to mutually irreducible conceptual domains. He offers these arguments as a diagnosis for what he calls the 'confusion which is all too evident in the manifold symptoms of the real and perceived identity crisis which for some time has been plaguing science as well as religion' (p. 39). This first part of the book is concluded by a precious paper on paraconsistent logic in Science and Religion, written by Ronald Mawby. According to standard logic, we should clear all our theories of inconsistency. Protagonists of paraconsistent strategies are less worried when contradiction threatens. One may divide theories into consistent sub-theories. But this way, no cross fertilization is allowed between

such sub-theories. A more fruitful strategy is that of containment. One bears with the inconsistency with the hope that it will bear fruit later.

The second part is the most valuable part of the book. It contains three essays which approach the Design Argument from different points of view. George W. Shields argues that the prospects for a theistic design model of the universe are stronger in the light of the new cosmological picture than some authors, like P.C.W. Davies, suggest. What seems to be the crucial issue in such discussions is the role of why-explanations. The essay by Dennis Temple called 'The New Design Argument: What Does it Prove?' is in fact a valuable philosophical analysis of the logic of why-questions in this context. Here the creator hypothesis is not taken as a theological kind of discourse but only as a metaphysical hypothesis. Because of its simplicity, it should be preferred to any theory proposing a multiplicity of universes. Another paper by Ernan McMullin contains historical arguments showing that the much-discussed anthropic principles should be better called anthropic explanations. He shows convincingly that there are indeed only two: one cosmological, the other theological. He suggests at the end that recent cosmology should be taken by theologians as a cue to enlarge our theological horizons and not to engage in a new kind of apologetics.

Part III deals with some historical topics. The first paper is about William McDougall and the reaction against Victorian scientific naturalism. Mark Shale here shows how, according to McDougall, if materialism is true, human life will not be worth living. This view made McDougall insist upon using an empirical method based on experimental observation in his search for the spiritual element of the universe, especially in his search for the proposed conscious field produced by the mind. The following paper, by Ron Levy is about Robert Boyle and the status of Reformation 'Theological Voluntarism' and is followed by the last paper by Edward Schoen entitled 'Galileo and the Church'. The most important contribution of Galileo is shown here to have been his rejection of the method of deduction from necessary first principles and his emphasis on analogical thinking.

As can be seen from this rapid survey, the book is a valuable collection of original views which will certainly be useful for anyone interested in the interaction between science, philosophy and theology. Not all the papers are of the same standard, but none is too technical for the reader who has no advanced background in any of the subjects treated. Any reader will certainly gain a number of useful insights concerning the question whether science and religion are indeed completely separate. As regards the second question mentioned in the introduction of this review, namely the one whether scientists can work exclusively in the scientific domain without being influenced in any way by their non-scientific commitments, useful insights are gained by going through *Varieties of Scientific Experience* by Lewis S. Feuer.

In general, one can say that Feuer presents a study dealing mainly with the sociological and psychological aspect of science. The subtitle of the book is more informative than the title: *Emotive Aims in Scientific Hypotheses*. His overall method is directed at illustrating how the gestation of various famous ideas and theories by well-known intellectuals is in large part a subconscious process. For him, intellectuals project onto the world ideas and theories that betray, or even sometimes express, their own deep emotional longings. Personal beliefs such as pacifism, socialism, and anti-Semitism influence in a substantial way the adoption of particular worldviews both in science and in philosophy.

The book is a collection of essays spanning about forty years of the author's efforts to deal with logical, metaphysical, sociological, and psychoanalytical aspects of the formation of scientific and philosophical theories. The table of contents shows an impressive range of intriguing terms and phrases, such as: Einstein's argument for the existence of God, teleology, guilt, the principle of simplicity, holocaust theology, psychoanalytical realism, Descartes' dreams, and so on.

Three exemplary discussions from Feuer's collection will be enough to give a fairly good idea of how he argues. The first concerns teleology. He starts by claiming that the Leibnizian principle of perfection: 'whatever is possible or compossible with the laws of nature, must exist' is to be considered a good example of a teleological principle. For him, a teleological principle is 'one which affirms that some ethical, extra-logical purpose is fulfilled in the structure of the laws of nature' (p. 42). From here he seems to deduce that teleology is at work when a particular world view is sought which will answer to the scientist's emotional longing. This move leads to the conclusion that the emotional longings, often expressed in teleological principles like the Leibnizian one, are not merely personal details extraneous to an understanding of science. Without a consideration of such longings, we would miss the interesting fact that 'the verified fact is congruent, or isomorphic with, the emotionally sought' (p. 67). Some readers will certainly have doubts here, doubts not so much about the role of the animating spirit behind scientific endeavour as about Feuer's twist on the meaning of teleology. Teleological explanation is normally considered to be the attempt to account for things by appeal to their contribution to optimal states, or normal functioning, or the attainment of goals. These factors appealed to are normally quite distinct from the feelings of the one who is doing the explaining. When I explain, say, why rabbits have white tails in terms of their need to signal imminent danger to each other, I am not explaining things in terms of *my own* purposes or goals. What Feuer is calling a teleological principle here seems to be tied exclusively, and therefore incorrectly, to the satisfaction of desires belonging to the one doing the explaining.

The second example concerns the Ontological Argument. Feuer makes the bold claim that this argument for the existence of God is convincing only for those who share a common concern with the experience of guilt. This guilt is a source or a mode of thinking which he calls 'logical masochism'. According to him, to assuage guilt, one bows one's logical powers submissively before an entity. This is certainly a bold suggestion. Faced with it, the reader legitimately expects some kind of robust evidence to justify it. Unfortunately, what one finds is only a few historical anecdotes picked purposely from some scientific biographies. This isn't enough. Feuer seems oblivious to the fact that, the bolder the claim, the more reasoned justification it needs to render it convincing. The bold claim mentioned here is just one of the many that he makes without enough evidential support. Such tentative suggestions tend to leave the serious reader unclear as to what extent they should be taken seriously.

A final example of his style concerns his treatment of cultural relativism. Consider the question: if Aristotle had been a Mexican, would his system of logic have assumed a wholly different form? Feuer answers in the negative. This may come as a surprise to those who imagine that his sociological and psychological analyses are meant to debunk objectivity. In fact, he holds that there is no causal link between society and philosophy. To justify this, he attempts to show that the same metaphysics has arisen among peoples with radically different languages, and, in the opposite sense, that the most diverse types of

philosophies have arisen among people of the same language. His project here is certainly interesting and worth pursuing, even though perhaps over-ambitious for one chapter in a book.

The general impression the reader is left with is that the author usually starts off each chapter with an intriguing question but, by the end of the chapter, leaves a lot to be desired as regards rigour of argumentation and evidential support for the broad claims entertained. Nevertheless, the book has the considerable merit of treating some philosophical issues in a highly original way, thus raising interesting questions for possible future analysis. To appreciate the value of this work, one should recall that the author's general point is not that philosophical worldviews and scientific theories are nothing more than expressions of deep, subconscious processes within those few who propose them. It is rather that, even though the theories held by scientists and philosophers fit, to a greater or lesser extent, the given physical, mental or social realities they deal with, the context of their discovery is by no means independent of the particular psychological dispositions of the discoverer. If approached from the right perspective, therefore, the book will certainly be useful for those engaged in sociology of science and in sociology of scientific knowledge and for those with a special interest in the psychology of creativity.

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