

Review Article

Science and Religion: The Continuing Debate

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Are science and religion opposed fields of man's commitment and endeavour to understand reality? If so, what theory or theories have been advanced to relate them in a harmonious synthesis of knowledge? *Science and Religion*,¹ a recent volume of 17 essays from the S.C.M. Press, edited by Professor Barbour, Chairman of the Department of Religion and also Professor of Physics at Carlton College, Minnesota, U.S.A., aims to put before an educated but general public 'new perspectives on the dialogue' between these critically important fields.

This volume has not attempted to offer even a typology of the various theories advanced by different people to harmonize science and religion. Much less has it advanced a single coherent system of harmonization. One can look back, with Francis Schaeffer in this volume, at various unsuccessful attempts to reach a theologico-philosophical synthesis of all areas of culture, most notably Leonardo da Vinci's effort which failed in Renaissance humanism, and at various attempts by purely mathematical methods. Since various fields of knowledge are so much greater today—the sum of total human knowledge is said to double every 10 years—the problem of finding a synthesis comprehending science and religion is exacerbated. The present volume, although it cannot fill this great lacuna, offers piecemeal reflections on many facets of the problems relating to the dialogue between science and religion. This makes for stimulating reading.

It is, of course, possible to structure monologies or anthologies on science and religion from several dimensions of theological understanding and scientific self-understanding. At one extreme could be the discussion of scientific dogmatists like Julian Huxley, C. H. Waddington, F. Hoyle and Bertrand Russell (as instanced in the rather dogmatic optimistic humanism of their more popular—not technical writings) versus religious fundamentalists like

¹ *Science and Religion*, edited by Ian G. Barbour. The S.C.M. Press, London, 1968. Pp. 323. Price 28s.

Cressey Morrisson (*Man Does Not Stand Alone*), Bernard Ramm and many others who are ever ready to invent a swift explanation to square the oddest Biblical passages with the changing winds of new and newer scientific explanations ! At the opposite end of the scale are those who would shed an extremely dogmatic mentality on the part of both scientists and religionists and work for an affable harmony of a generalized spirituality and the scientific spirit. The volume before us stands approximately midway between an extremely dogmatic plea for *rapprochement* of science with religion, and an extremely dedogmatized plea for a *rapprochement* of religion with science. The reason for this is that, as the preface indicates (p. xi), most, if not all, contributors are professing churchmen ; and the scientists who have contributed essays of the volume are regular church-goers. 'Four of the authors are Roman Catholics (McMullin, Schmitt, Teilhard, Clarke) and one is an Eastern Orthodox (Dobzhansky), while the Protestants range from neo-orthodox views (Berkhof, Gilkey, Easton) to liberal perspectives (Schilling, Birch) and more radical proposals (Ferré, Cox). In terms of occupation, the group is about equally divided between theologians, philosophers and scientists (Coulson, Schilling, Schmitt, Birch, Teilhard and Dobzhansky), though many of these men have had training and experience in more than one field. Of the selections included, five were written specially for this volume (Barbour, Evans, Ferré, Jones, Easton).' From the point of view of the present reviewer the essays by Prof. H. K. Schilling of the University of Pennsylvania, D. D. Evans ('Differences between Scientific and Religious Assertions', pp. 100-133) and Frederick Ferré ('Science and the Death of God', pp. 134-156)—though Ferré's conclusion is not logically inexorable—are particularly stimulating.

The structure of the book is fourfold: Part I (pp. 3-53) deals with introductory and historical matters ; Part II (pp. 55-156) deals with some questions relating to scientific method ; Part III (pp. 157-257) discusses evolution and creation ; and Part IV (pp. 258-317) considers matters pertaining to the impact of science on religious attitudes and human social ethics.

Part I attempts to interpret the significance of the rise of modern science in relation to the Biblical attitude to nature and in the bosom of Western culture. Eran McMullin's essay as an excursus into the history of science is lamentably sketchy. The volume would have done well to have included relevant material from Dr. Charles Raven's (the late Vice-Chancellor of Cambridge University, geneticist, theologian and eminent historian of science) Gifford Lectures. Incidentally, Dr. Raven's thesis was that the history of science when written with an eye mostly on astro-physical questions gives a one-sided picture of the warfare of science and religion ; but it gives nearly the opposite picture when the history of science takes in the general cultural sweep of the rise of biology, medicine, chemistry and indeed technology. Even data on the history of science interpreted by humanists like the

nuclear physicist Prof. Bronowski and historian Mazlish (cf. *Western Intellectual Tradition*) confirm the general thesis of Raven, John Dillinberger and others that science grew geographically anti-clockwise in the West as cultural freedom grew only as religious authoritarianism abated with the Reformation, so as to cease needlessly controlling all spheres of culture, including of course science. Surely some historical considerations such as these ought to have found place in such an anthology as the one before us.

Part II which deals with 'The Methods of Science and Religion' is undoubtedly the best section of the volume. Prof. C. A. Coulson, Rouse Ball Professor of Mathematics at the University of Oxford whose pro-religious writings are well known, briefly and eloquently repeats his favourite thesis that the *discovery process* epistemologically is akin to revelation. This is claiming too much. If we make a distinction between inspiration, illumination and revelation, then from the epistemological point of view science and religion share inspirational similarity (not identity). This from the theological point of view cannot take an apologist of revelation very far, as we can see so clearly from Dr. S. Radhakrishnan's Hibbert Lectures on *The Idealist View of Life*. But the 'Differences Between Scientific and Religion Assertions' (Donald Evans' essay) seems to be more important. Religious assertions are encounter depth experiences (pp. 102-104), suffused with *numinous* apprehension, surcharged (in Christianity at least) with moral responsibility (pp. 104-105) and compassion (pp. 106-107). On the other hand, scientific assertions are (p. 111) *logically neutral, comprehensible impersonally and testable by observations*.

None of these essays outlines the standard gist of the scientific method, viz. observation classification, hypothesization, experimentation, deductional verification, theoretical subsumption, etc. But as Ferré points out in his fresh and brilliant essay, the empirical footing of science need not restrict the philosophical implications of science to logical positivism's bogey of verificational analysis or the verification principle (i.e. the view that true assertions are empirically verifiable by sense data, and that assertions short of this are as false or as meaningless as the 'square circle'). No assertion in science is verifiable in isolation from the web of scientific assumptions, methodological presumptions and priorities. The relative *importance* of some rival (both valid) hypotheses is not determined by verifiability alone but by economy of rational coherence in explanation. But for all the similarities and differences of the methods of science and religion, both have a major parallel, according to Harold K. Schilling, in a threefold respect. Both science and religion commence with a basis which is 'empirically descriptive and experientially analytic', both develop an explanatory theoretical superstructure and both have transformative practical application, i.e. are intended to produce practical change or transformation. What Schilling says about

the empirically descriptive part of religions holds true of the importance given to the religious founders of Christianity, Islam and perhaps Theravāda (Southern) Hinayāna Buddhism. This statement about the importance of the empirically descriptive part of religion is very doubtful regarding Hinduism and Mahāyāna Buddhism. But all higher religions have theologies (their theoretical superstructure) and some degree of practical ethics.

Part III of the book takes us to the discussion of two doctrines of creation and evolution, omitting many others which cry out for attention such as determinism and indeterminism, psyche and cybernetics, mechanism and theology. Perhaps out of a motive of theological generosity to the *avant-garde* biological standpoint, the book discusses evolution without even the well-recognized basic distinction in mechanical and non-mechanical evolutionary theories. Any discussion of evolution without some mention of Morgan's 'emergent evolution', Smuts' 'Holism', Bergson's 'creative evolution' and Le Comte du Nouy's 'telefinalism', i.e. teleological evolution, is wholly inexcusable in an avowed 'new perspectives on the dialogue between science and religion'! However, the Jesuit contributor to the volume rehearses the history of spontaneous generation briefly and speculates as to its near future accomplishments in the biochemical laboratory. In this connection he reminds us that according to the Papal Encyclical *Humani Generis* 'The teaching of the (Roman) Church leaves the doctrine of evolution an open question . . . In the present state of scientific and theological opinion the question may be legitimately canvassed by research and by discussions between experts on both sides.' Noting matters of evolution, however, not from the biological but rather the cosmological evolutionary ('process' dimension—A. N. Whitehead) theories, the recent concession of astronomer Fred Hoyle of Cambridge University, that the expanding universe theory, rather than his own steady state theory better accounts for quasars and other astronomical phenomena, augurs well for a theistic orientation of the ultimate implications of the philosophy of science along the lines perhaps of Sir Arthur Eddington and Sir James Jeans. The volume before us nowhere hints at this situational arrival of science in respect of the contemporary astrophysical preference for the expanding universe theory and its possible philosophical implications.

Part IV of the volume discusses questions of the impact of science on attitudes and human social ethics. For some strange reason a discussion of science and axiology, or a discussion of psychology, especially psychiatry, from the religious angle has been bypassed in this book. Harvey Cox has written, however, of the religious man's growing involvement in technology. Prof. Dobzhansky in his essay on 'Genetics and the Future of Man' pleads in a balanced way for moderate use of eugenics—as genetic counselling rather than totalitarian forced application or total boycott. (Here is an area of knowledge and application, the ABCs of which we in India are tragically innocent!) The book

lifts our eyes from the collective egocentric predicament of the human situation on this planet to the question of the possibility of life on other planets, which is admitted.

The present book would not bring about a breakthrough in the dialogue of science and religion as conducted by religious conservatives or Marxist naturalists, as it appears to be directed implicitly at another discussion constituency (cf. para 3 of the present review). But this work affords a compendium of useful reflection, perhaps, for further developing our own dialogue in a spirit of open informed inquiry. The value of the book could have been enhanced by the inclusion of a systematic alphabetical bibliography of the many publications, scattered notices of which are given throughout the book. Also an index of subjects and authors mentioned in the volume would have added to this work to aid in quicker reference. It is a useful addition to the growing discussion.

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