TWO BOOKS FOR TEACHERS

On the Moral Nature of the Universe: Theology, Cosmology, and Ethics. By NANCEY MURPHY and GEORGE F. R. ELLIS. Minneapolis: Fortress Press, 1996. 268 pages. $20.00 (paper).

This is a daring book. Written by a prominent theologian and a prominent physicist, *On the Moral Nature of the Universe* not only relates theology to issues in physics and cosmology (which many works have already done); it also argues that a correct understanding of cosmology, theology, and the social sciences endorses an ethic of self-renunciation. Indeed, the ethical component is seen by the authors as the most significant contribution they are making to the science-and-religion discourse.

Such a work is bound to fail when such a wide scope of material is crammed into 251 pages of densely packed ideas, suppositions, and agendas for future research, even when composed by two well-respected authors, as is the case here. But there are boring failures and interesting failures. This work is certainly of the latter type. Although readers will frequently have to bite their tongues at the inadequate depth of the discussion, the sometimes lacking documentation, and the bypassing of obvious and important objections, enough truly original material and thought-provoking ideas are presented to make the book well worth the effort.

The first chapter presents Murphy's now-familiar thesis that theology can and should be a science. According to the philosopher Imre Lakatos, science is a collection of competing hypothesis-testing research programs, each composed of a hard core of unquestioned assumptions, a protective belt of auxiliary hypotheses, and an agenda for further research that should confirm and expand the claims contained in the hard core. Theology, Murphy and Ellis argue, can and should proceed in the same manner.

In chapters 2–5, Murphy and Ellis lay down their understanding of the place of the physical sciences and their relation to the social sciences, free will, and theology. Chapter 2 starts from Arthur Peacocke's positions regarding the hierarchy of the sciences, reductionism, and causation. In brief, Peacocke holds that reality (and therefore the sciences that describe it) is composed of different levels of organization, and each level can be described according to laws that are unique to that level. Murphy and Ellis use the analogy of computer software, which has multiple levels of implementation, from the binary machine language to the higher-level programming languages. Because of these different levels, one may speak of bottom-up and top-down (or whole-part) causation to explain how the different organizational levels impinge on

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one another. This type of explanation even applies to the human mind, although Murphy and Ellis make significant qualifications to acknowledge room for free will.

Chapter 3, in turn, presents Ellis's thesis regarding the argument from design. Murphy and Ellis briefly discuss the basic laws of the physical universe and then move on to consideration of the anthropic principle. Although they reject the strong anthropic principle ("Intelligent life must exist"), Murphy and Ellis do conclude that the apparent fine-tuning of the basic physical laws makes the design hypothesis one of the stronger, if not strongest, explanations for the final nature and structure of the universe. This fine-tuning, moreover, can provide confirmation of the Christian concept of God that Murphy and Ellis are presupposing as part of the hard core of a theological science.

It is with chapters 4 and 5, however, that the truly original contributions of this work begin. Murphy and Ellis argue that Peacocke's hierarchy of the sciences needs to be bifurcated toward the top, with one branch consisting of the broader-scope natural sciences (ecology, astrophysics, and cosmology) and the other consisting of the social and applied sciences. This second branch is distinctive, they argue, because these sciences function well only if they are recognized as being goal directed. But what goals are they directed toward? Ultimately, say Murphy and Ellis, these goals are ethical ones, and therefore the applied and social sciences are incomplete without a teleological ethic that is placed at the top of the hierarchy and that stipulates the good toward which all human beings aim.

Indeed, not only does ethics lie at the top of the hierarchy of the social sciences but ethics should be considered a science itself. Like theology, ethics can be construed in terms of a Lakatosian research program, and specific ethical programs can therefore be progressive or degenerative. Facts and values, rather than living in separate worlds, are inextricably linked.

The kind of ethical program that Murphy and Ellis support is laid out in chapters 6 and 7. The hard core of this program is self-renunciation, entailing the renunciation of one's own personal interests and a preference for the good of others and of God. This requires not only a commitment to humankind's highest good and a renunciation of material things and personal reward but a commitment to radical nonviolence as well. Murphy and Ellis then go on to sketch how such a program might play out in the realms of economics, law, and politics. Confirming instances of the efficacy of a nonviolent ethic are given as well as counterarguments to the claim that nonviolent resistance is still a form of coercion and, in a sense, still a form of violence.

For many, the chapters endorsing an ethic of self-renunciation will raise as many questions as they answer. As an example of a nonviolent legal system, for instance, Murphy and Ellis refer to the reinstituted Maori system of restitution for juvenile offenders, which entails dialogue with the victims, apologies, and recompense for damages. This replaced an apparently ineffective penal system where offenders were imprisoned. Statistics given for the Maori system indicate a much improved rate of success in combating juvenile crime, but what Murphy and Ellis fail to recognize is that such legal systems are still *enforced*. Maori criminals do not volunteer to do this of their own free will. A similar point may be

made regarding Murphy and Ellis's example of the South African peace process, which included both violent and nonviolent actions.

Throughout these chapters, Murphy and Ellis are aware that their ethical claims do not stand alone but must be backed up by theological claims as well. Thus, reconnecting the branching hierarchies of the natural and social sciences is theology at the very top. Recognizing this, in chapter 8 Murphy and Ellis elaborate a kenotic theology in consonance with an ethic of self-renunciation and nonviolence. Drawing upon the work of John Howard Yoder, this kenotic theology is outlined where God's renunciation of violent means, particularly as exemplified in the life of Jesus, is laid out. Because Christian ethics consists in the imitation of Christ, such a kenotic ethic is required of us as well. Moreover, Yoder's interpretation of Jesus' action and biblical texts indicates that this ethic is indeed a *political* one. A Christian can and should carry this valuation into all walks of life.

The consistency of this perspective is then rounded out in chapter 9, where the theme fully returns from ethics to theology proper. A kenotic theology (and therefore ethic), Murphy and Ellis argue, is consonant with what is currently known of the physical universe and is partially confirmed by it. It is for this reason that theology is able to reconnect the two branches of the sciences and provide, as the title indicates, the moral nature of the universe. The physical sciences portray a universe guided by inviolable laws, apparently at odds with an interventionist God. But, say Murphy and Ellis, this is precisely the kind of universe that a kenotic God would create. God does not violently or coercively intervene in creation or in the lives of humans. God's activity is rather in the form of nonviolent persuasion and guidance.

In the final chapter, Murphy and Ellis provide an analysis of their program and a comparison with other research programs. Again they put great emphasis on the Lakatosian framework and the way research programs should be compared one to another. Although they treat the viewpoints of such atheists as Carl Sagan and Richard Dawkins cursorily, they more fully examine the works of well-known science-and-religion writers such as Wolfhart Pannenberg and Philip Hefner.

In spite of the fact that this work exposes a number of new ideas and original analyses, a number of flaws permeate the work. One feature of the book that makes it unnecessarily difficult is simply the writing style of the authors. Both Murphy and Ellis tend individually to write quite tersely. There are times when one gets the feeling that one is reading lecture notes rather than a fully thought out book. Moreover, there are many areas that seem to be treated too briefly, where other authors' ideas are so briefly described as to be in danger of being misquoted (the work of Roger Penrose mentioned on page 35 or the references to Daniel Dennett and Richard Dawkins in the final chapter stand as examples), or where portions of chapters seem to demand a chapter of their own (as with the treatment of Jesus and nonviolence, for instance).

Not infrequently, important dissenting or divergent voices are not mentioned. Although much is made of Yoder's claim that Jesus endorsed nonviolent resistance, they give no attention to significantly different interpretations of Jesus by such prominent New Testament scholars as John Dominic Crossan and Richard Horsley. Likewise, they make no reference to significant critiques of self-renunciation and nonviolence made by feminists and liberation theologians.

Despite this, the connecting of ethical issues to the science-and-religion dialogue is an important move, and Murphy and Ellis's presentation is an innovative and possibly useful one. Likewise, their reinterpretation of the hierarchy of the sciences is also novel. Although I am not altogether convinced that it will prove successful, it certainly merits further study.

The same can be said of this work as a whole. In the preface, the authors themselves seem to recognize the inadequacy of the book they have produced; they acknowledge that they take a "necessarily schematic" approach (p. xv). This approach is ultimately both the major strength and the weakness of the book. On the one hand, it allows the authors to put forth a number of interesting and novel claims. On the other, it requires such brevity of treatment as often to leave the reader frustrated. One only hopes the authors will now take the time to more fully expand on the ideas they have put forth here.

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Science and Religion: From Conflict to Conversation. By JOHN F. HAUGHT. New York and Mahwah, N.J.: Paulist Press, 1995. iii + 225 pages. $14.95 (paper).

The last few years have seen a number of significant publications dealing with the question of the possible relation between the world of science and the world of religion. In 1990 the first volume of Ian Barbour's Gifford Lectures, entitled *Religion in an Age of Science*, was published. The same year saw the publication of Nancey Murphy's *Theology in the Age of Scientific Reasoning* and Willem Drees's *Beyond the Big Bang*. In 1993, Arthur Peacocke published *Theology for a Scientific Age*. John Polkinghorne's Gifford Lectures appeared in 1994 under the title *The Faith of a Physicist*. This is just a small sampling of the serious work being done on the problems raised for religion and theology by the world of contemporary science. After so many years of neglect and outright warfare between these two worlds, it is significant to see this profusion of excellent, serious discussions from the perspective of people deeply immersed in the sciences and others just as deeply involved in theological studies.

Whereas books such as those just mentioned are addressed to a readership that is already reasonably literate in the sciences, the present volume by John Haught of Georgetown University is a remarkable attempt to reach a wider public by a person who has been teaching courses on science and religion to undergraduates for more than twenty-five years. Haught offers a discussion of major questions that emerge for religion from the sciences in a way that is accessible not only to scientists but to theologians, students, and other interested persons who may not have a detailed knowledge of science, and perhaps not even of the-

ology. Haught's own modest hope is that the book may serve as "an introduction for non-experts" (p. 2).

In speaking of religion, Haught consciously limits his concerns to what he calls the "theistic traditions," namely, Judaism, Christianity, and Islam, and explicitly excludes the great religions of the East such as Taoism, Buddhism, and Hinduism. These, he suggests, might involve quite a distinct sort of study. And for his purpose here, he understands religion to include not only the foundational experiences of the theistic traditions but also the sort of reflection that has led to highly developed doctrinal systems over the ages.

Taking his orientation from recent studies such as those of Ian Barbour and Willem Drees on possible interfaces between the disciplines, Haught singles out four models for the relation between science and religion. These he calls conflict, contrast, contact, and confirmation.

The *conflict* model is probably the one that is most familiar because so many people have grown up in modern Western culture with the assumption that there is inevitably and necessarily a conflict between the claims of science and those of religion. This model may well have its historical roots as far back as the Galileo case, but it is far from a dead issue even today. It operates from the basic dualism that isolates the realm of religion from the work of the sciences.

The *contrast* model may be seen in relation to the theological style that can be described as *existential*. It operates on the assumption that science and religion are two fundamentally different and unrelated realms of discourse. Hence, there can really be no contradictions between them as long as one is clearly aware of the concerns and limits of each.

The *contact* model moves from the conviction that science and theology are in fact looking at the same world, but they look through different lenses. Hence, although they raise different kinds of questions, the questions are concerned with the same world. This means that the empirically based positions of science may raise some serious questions for theology. And scientific discoveries may at some point require a significant redefinition of some very basic theological concepts and principles. But it also means that science must recognize the limitations of its own methodology. This model, therefore, leads one in the direction of conversation between the disciplines even if it attempts to avoid any form of reductionism or conflation of the disciplines. Its primary concern is the search for consonance and coherence. Or how can one think theologically if, in fact, the scientific description of the cosmos is appropriate?

Finally, the *confirmation* model moves from the conviction that there are ways in which religion as understood in the theistic traditions, although not proving any specific scientific claims or theories, may in fact offer positive support for the scientific project as a whole. Religion, in the creative moments of its history, does not suppress the desire to know and understand but encourages it. And it is precisely the desire to know that is at work in the efforts of science. Hence, Haught concludes that there is something at least in theistic religion that encourages and supports the project of scientific investigation and research as such without confirming any specific result of such work.

Haught uses these models to represent four types or groups of people who engage in a conversation from these different, but sometimes overlapping,

perspectives. This is the context within which he presents the claims of science that bear on the following concerns: the existence of God, the growing agreement on Big Bang cosmology and theories of biological evolution in the cosmos described by such a cosmology, the chemical basis of life and the physiological aspects of intelligence, the creation of the cosmos, the intimate relation of humanity to the cosmos, chaos theory and complexity theory, the seemingly pointless character of the cosmos, and the relation of religion to the ecological crisis.

Each of these areas is analyzed from the perspective of the four models indicated above. A theistic position is described on each question in contrast with various forms of reductionist and materialistic positions. Overall, Haught discusses the possibility that religion need not be seen as hopelessly naive. It may, in fact, be seen as a responsible, mature decision about the nature of reality and of human life. One might argue that as understood in the terms laid out by Haught, theism is at least as responsible a position as that of scientific skepticism, scientific materialism, or other forms of scientific reductionism. This does not preclude the fact, however, that various extreme forms of religious dogmatism are an enduring factor in the major religious traditions. There is extreme dogmatism on both sides of the science/religion divide. A critical consciousness is the most effective tool for dealing with both forms of dogmatism.

Haught has produced a work that is preeminently readable and devoid of highly technical language and yet reflects an extensive knowledge of the major scientific theories as well as a deep awareness of the world of theology. He has done this in a style that is calculated to encourage thought about big issues and to shed light on matters about which there is much public confusion (p. 1). He has been exceptionally successful in carrying out his basic project.

This book can serve effectively at a number of levels. First, individual readers will find it of significant help in recognizing their own personal convictions and limitations and situating them in a larger framework. Second, the book is a remarkably skillful guide to the discussions going on today among theologians and scientists at various levels. Here the book is not only informative but thought-provoking as well. Third, the style of presentation makes the book an exceptional teaching tool for courses on science and religion as well as for courses on the theology of creation and theological anthropology. At this level, it will help to provide a realistic cosmic context for the responsible discussion of issues as widely diverse as medico-moral problems on the one hand and ecological issues on the other.

Haught has surely succeeded in providing what he hoped for—namely, a lucid and accessible basis from which a genuine conversation can begin to develop between interested parties of various backgrounds and convictions.

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