

Reviews

Economics, Ecology, Ethics: Essays Toward a Steady-State Economy. Edited by HERMAN E. DALY. San Francisco, Calif.: W. H. Freeman & Co., 1980. 372 pages. \$16.95, \$7.95 (paper).

Herman E. Daly's recently edited book comprises a group of readings that collectively represent a branch of political economy flowing out of mainstream economics, picking up some topsoil from the fields of ethics, physics, and ecology, and depositing its rich and murky waters on the alluvial plain of the steady state. For those who wind down this stream with Daly, the unfolding landscape may convince them to conclude, as does Daly, that an amoral and biophysically ignorant, modern political economics of growth must be replaced by an ethical and scientifically sound political economics of scarcity.

Daly's introduction asks two basic questions: (1) What are man's ultimate means, and are they absolutely limited from a biophysical perspective? (2) What is the nature of man's ultimate end, and is it poorly served by the further accumulation of material possessions and reproduction of human beings? While most conventional economists would be unwilling to address these wide-ranging questions in their professional roles, Daly obviously is quite willing and answers them both with a definite "yes." He sees the ultimate political economy, or stewardship, as dealing with the problem of how to use ultimate means to serve best the ultimate end. The refusal of conventional economics to deal with these critical questions allows a growth ethic to permeate economic policy prescriptions. Daly summarizes his position succinctly: "Growth chestnuts have to be placed on the unyielding anvil of biophysical realities and then crushed with the hammer of moral argument. The entropy law and ecology provide the biophysical anvil. Concern for future generations and subhuman life and inequities in current wealth distribution provide the moral hammer" (p. 11). The recommended alternative to a growth-oriented economy is the steady-state economy, the goal of which is to maximize the services from a constant stock of products and people that can be maintained by a fixed throughput (low entropy matter-energy) flow.

As in Daly's earlier work, *Toward a Steady-State Economy* (San Francisco, Calif.: W. H. Freeman & Co., 1973), this current book is organized into three parts. The readings have been selected to demonstrate some basic propositions: Part I ("Ecology: Ultimate Means and Biophysical Constraints")—that the possibility of material growth is limited by the absolute scarcity of ultimate means; Part II ("Ethics: The Ultimate End and Value Constraints")—that the desirability of material growth is limited by morally competing means to serve the ultimate end; and Part III ("Economics: Interaction of Ends and Means")—that biophysical principles and ethics interact to generate the governing economic limit to material growth. This book contains more readings than does Daly's earlier book, and many previously included readings have been revised or omitted. The selections consist of previously published arti-

[*Zygon*, vol. 18, no. 1 (March 1983).]

© 1983 by the Joint Publication Board of *Zygon*. 0014-5614/83/1801-0008\$00.75

cles, book chapters or parts thereof, and newly penned articles from seven-
 ten different authors, in addition to an introduction and postscript by Daly.
 However, Daly's views are evident throughout. In addition to the opening
 introduction, the author has provided a separate introduction to each of the
 three parts and has written two of the articles in Part III. The selections in all
 three parts are notable for their readability, and several of the articles, such as
 Garrett Hardin's "Tragedy of the Commons," and Kenneth Boulding's "The
 Economics of the Coming Spaceship Earth," are familiar to specialists from a
 variety of fields. However, the denouement of the steady state-vision occurs in
 Part III, and to fully assess the merits of some of the key methodological and
 theoretical points made about conventional economics in this section, a firm
 grasp of conventional economics would seem to be required.

The "Ecology" readings intend to provide the limiting scientific principles
 which underlie the steady-state belief that growth-oriented economic policies
 in industrialized countries should be eliminated. Specifically, the entropy law
 imposes an energetic limit, while ecosystem carrying capacity imposes an
 ecological limit, to the material desires and reproductive behavior of man. To
 ignore the increasing entropy engendered by continuing industrialization,
 unrestrained world population growth, and rapacious economic policies is to
 be ignorant of the most fundamental proposition in physics. To exceed the
 carrying capacity of the environment because of excessive resource use and
 accumulating waste is to destabilize ecosystems and to destroy a diversity of
 life forms. Because growth-oriented conventional economics is scientifically
 unsound and biologically destructive, its policy conclusions are suspect.

The "Ethics" readings intend to provide a moral basis for not "destroying
 the spaceship in an orgy of procreation and consumption" (p. 123) should the
 limiting scientific principles go unheeded. E. F. Schumacher offers the view
 that material means should be channeled toward spiritual pursuits ("The Age
 of Plenty: A Christian View") and believes that happiness should be max-
 imized by minimizing, rather than maximizing, consumption ("Buddhist
 Economics"). While such views may be commonplace among philosophers,
 the acceptance of explicit ethical propositions as part of conventional
 economic analysis would constitute a fundamental shift away from accepted
 positivistic methodology, since this would negate the traditionally maintained
 "is-ought" distinction. Robert L. Sinsheimer ("The Presumptions of Science")
 argues that intellectual inquiry is not an absolute value and should be re-
 strained because of the fragility of ecosystems and because of more important
 values imbued in man's social institutions, which could be destroyed by such
 inquiry. C. S. Lewis also emphasizes the same theme in his elliptical and
 prescient article ("The Abolition of Man") which asks that scientists gird their
 scientific searching with a humanistic natural philosophy that promotes a
 continual awareness that an abstract model is not the phenomenon being
 modeled. John Cobb ("Ecology, Ethics, and Theology") argues for a hierar-
 chical utilitarianism wherein animals are to be valued by their place in the
 biotic pyramid, the existence of which reveals the intrinsic hierarchy of values.

At least three interrelated themes emerge from the "Economics" selections.
 First, conventional economists have developed an extensive analytical appar-
 atus, the hedonistic utilitarian maximizing model, which fruitfully ex-
 plains the means of economic behavior while analytically neglecting the pur-
 poses to which that behavior is directed. As a result, conventional economics
 legitimizes the excessive materialism of modern man and forgoes interest in
 broader, more important questions such as "Is ever greater GNP good for

society?" or "Which human preferences are preferable?" The analytical tradition of a myopic economics has become the "ought" for a complex society. The result has been the spiritual deprivation of man and the destruction of the natural environment. Second, the market-oriented solutions to environmental problems of excessive pollution and resource use are inappropriate, since inordinate market-based behavior itself is part of the problem. Third, environmental problems can be solved only by more drastic policies than are presently being used. Policies such as severance taxes or depletion quotas on nonrenewable resources, transferable birth licenses, minimums and maximums on income, and maximums on wealth are suggested as those which can guide industrialized countries toward a steady-state society.

Daly's book does not successfully answer the two questions posed in the introduction, but these *are* big questions. One is neither convinced that man's ultimate end and ultimate means have been identified nor that ultimate means are absolutely limited after having read this book. The contingency of knowledge and the nature of reality (objective or subjective?) remain lively issues. One need be neither a cynic nor a falsely optimistic technologist to believe that man will outlive current scientific truths. Conventional economists seem reasonable in their unwillingness to sanction severe constraints on the market process on the basis of as yet amorphous ethical precepts and on the basis of the entropy law which portends an end to industrial man in the millenia to come. The market process generates new information and institutional diversity, and these are of biological as well as economic value. Could we not be delimiting the potential diversity of our ecological system (including man) if we were to introduce inappropriate constraints into the human subsystem?

In any case, the policy prescriptions offered in Daly's book may guide us to a steady-state, but they are not as radical as Daly implies. Welfare programs, progressive income taxes, and estate and inheritance taxes already provide approximations to minimum and maximum incomes and to other wealth constraints. Many conventional economists support these policies as citizens but do not believe in the steady-state vision. Even auctioned-off depletion quotas, severance taxes, or tradeable child rights are policies that a market-loving, neoclassically trained economist could support on efficiency grounds, given imperfectly functioning commodity futures markets, short-run planning horizons of market participants, and lags in information flows. Without accepting "ought" principles as part of economic science, conventional economists can, in principle, accept steady-state policy prescriptions, though not in the ideological package that Daly and others would prefer.

While Daly admits that the steady-state vision is not fully developed, key unresolved questions go undiscussed in his book. Should our concern horizons be narrower, limited to family, friends and neighbors, as Schumacher and Hardin have argued, or should they be broader, as the *Limits to Growth* authors have suggested? Is the biotic pyramid an obvious fact that provides a moral imperative or could it be a limited perspective that exaggerates man's and higher animals' importance in the scheme of things, a kind of Ptolemaic biology that will eventually be superseded by a less man-oriented model? At least one of the "Ethics" readings should have presented a deontological argument for the value of nonhuman (not subhuman) life. Furthermore, the increasing literature on ethical systems that relate their precepts to a diversity of scientific principles, a major theme in *Zygon*, is explored only lightly in this book of readings. In Daly's book ecological development alone provides the major foundation for the ethical principles that are espoused and the human

institutions that are thought to be desirable. As the leading animals in a maturing system, we are urged to emphasize maintenance, stability, and qualitative change rather than production, growth, and quantitative change, characteristics germane to immature ecosystems. Even if we accept the ethics implied by the image of ecological development, it may be that the human subsystem is as yet too immature in terms of accumulated knowledge to make the transition to a mature system.

While the steady-state vision remains necessarily underdeveloped, Daly and other writers in these readings are penetrating in their criticisms of standard hedonistic, utilitarian models which legitimize and even sanctify ever more growth in many policymakers' minds. Daly's postscript is especially interesting and curious in this respect because Daly ostensibly replies to critics of the steady-state scenario, none of whom mention his name or the steady-state. Is Daly merely trying to restoke the fires he and others have lit but, the fires having been seen by conventional economists, are dying unappreciated? Or are steady-state criticisms of conventional economics too trenchant and the steady-state vision too encompassing for orthodox economics to deal with? This is not clear, but what is clear is that conventional economics continues to ignore steady-state and other unorthodox approaches to economics, and the entire discipline is less interesting and weaker for that.

At the risk of exceeding the carrying capacity of a metaphor, I would think that many sojourners will find that Daly's stream of articles offers a worthwhile excursion. For those well read in the environmental literature, the journey will be familiar and unsurprising. But for conventional economists and others comfortable with the placid growthmanship of the mainstream, the readership to whom this book is addressed, these readings promise a wilder, more expansive trip. They present a view of reality that challenges deeply entrenched academic beliefs and values. The steady-state vision needs to be more widely understood, and Daly's book is an excellent place to begin.

KENNA TAYLOR
Assistant Professor of Economics
Rollins College

Anthropology and the Old Testament. By J. W. ROGERSON. Atlanta, Ga.: John Knox Press, 1979. 127 pages. \$10.00.

This short work by a theologian is an attempt to demonstrate critically the influence of anthropological ideas and assumptions over a whole array of Old Testament scholars and the field of Biblical scholarship since the middle of the eighteenth century. In the introductory chapter the author reviews the history of anthropology in respect to its involvement with the Old Testament, essentially following the outline of E. E. Evans-Pritchard's three periods (mid-eighteenth to mid-nineteenth, mid-nineteenth to early twentieth, early twentieth to the present). In the succeeding four main chapters he deals respectively with such concepts as "survivals, evolution, and diffusion" (chap. 2); theories of "primitive mentality" (chap. 3); motifs and functions of "folklore" (chap. 4); and a study of the meaning and nature of "tribes, clans, and groups" (chap. 5). The last two chapters, one specifically on "structural

[*Zygon*, vol. 18, no. 1 (March 1983).]

© 1983 by the Joint Publication Board of *Zygon*. 0044-5614/83/1801-0007\$00.75

anthropology" and the other entitled "postscript," give an overview of some recent interplay between anthropology and the Old Testament, concluding with a recapitulation of a pertinent theme of the book—Biblical scholarship should be concerned with the radical changes taking place within social anthropology. Throughout the work this theme of anthropological advances and the warning to Biblical scholars about the pitfalls of relying on obsolete or outdated ideas and cultural theories are interwoven with a call upon Old Testament scholars to recognize their long history of dependence on social anthropology.

In respect to the latter, Rogerson briefly examines the rise and growth of ideas like animism, magic, totemism, nomadism, patriarchal/patrilineal family systems, myth and mythopoeic thought, ancestor worship, sacrifice, folklore and oral tradition, and evolutionist and diffusionist models of culture which are of central concern to anthropological thought. He also decries the general neglect by Old Testament scholars (ardent students of many disciplines from Semitic and Classical languages to archaeology and philosophy) of the study of social anthropology to which he claims they are indebted for the interpretations of many of these ideas. For example, he analyzes, albeit schematically, how J. F. MacLennan's (McLennan's) theory of totemism, developed and popularized by W. Robertson Smith (1885, 1889), dominated Old Testament scholarly thought in respect to the concepts of kinship and marriage as well as the origin of sacrifice. Likewise, he shows how in the study of Hebrew ancestry the concepts of matriarchal and matrilineal family figure prominently in the works of such scholars as W. Nowack (1894), P. Volz (1914), and I. Benzinger (1927); how animism (surprisingly E. B. Tylor, the foremost English ethnologist/anthropologist who first propounded this theory formally, is conspicuously missing from Rogerson's book!) was attributed to primitive Semitic religion by S. I. Curtiss (1902), and to Hebrew religion in particular by W. O. E. Oesterley and T. H. Robinson (1930-37); how S. H. Hooke (1933-34) traced the influence of the Gilgamesh Epic to the Elijah stories on the one hand and to certain Melanesian ones on the other; and how the apotropaic rite of seminomadic stockbreeders as the origin of the Jewish Passover was adopted by such scholars as M. Noth (1962) and R. de Vaux (1961) without too much questioning.

In these and other similar cases the author raises some justifiable objections to the uncritical use of cultural theories by Biblical scholars; unfortunately he also leaves us with a certain degree of uncertainty as to what significant differences the latest anthropological theories would make overall to Old Testament scholarship. Moreover, the point Rogerson makes about the influence of anthropological ideas and views in Biblical scholarly thought is unnecessarily overstated, since early speculations and theories about the origin of religions, human society, and culture (including ideas about nomadism, diffusionism, survivals, and evolution) have been developing and undergoing radical changes for almost two centuries—not only within the discipline of anthropology but also independently within the field of Biblical scholarship itself. Therefore, it seems regrettable to this reader at least that the author did not choose to address the question of how the two areas of learning have been influencing each other historically, as well as how both should continually re-examine the accepted premises and conclusions of their respective inquiries. In this regard, Rogerson does indeed make one poignant point when he demonstrates (p. 26f.) how the outmoded theory of communion sacrifice figures in respectable Hebrew lexicons in which *zebah* is defined as a common

form of ancient sacrifice “whose essential rite was eating the flesh of the victim at a feast in which the god of the clan shared by receiving the blood and fat pieces” (Brown, Driver, and Briggs, 1907; see 1981 reprint), or an occasion of eating the flesh of a victim which “creates communion between the god in whose worship the sacrifice is slaughtered and the partners . . .” (Koehler-Baumgartner, 1958). It does indeed behoove Biblical scholars to re-examine the validity of such daring linguistic conclusions; and, if anthropology can furnish the insight into such matters, an understanding of the field can no doubt benefit all concerned scholars.

Another shortcoming of this book, not unrelated to the problem alluded to above, is the lack of distinction between what one might call a “broader” anthropology—the theoretical framework created by philosophers, historians, and other thinkers on the basis of their assumptions about human nature and society, so prevalent during the earlier two centuries—and the “academic” or formal anthropology of this century, for which the author in fact gives a careful definition at the beginning of the work. Thus, for example, among the early theoreticians about the (patriarchal/matriarchal) family, Sir Henry Maine (1861) was a jurist and Fustel de Coulanges (1864-66) a historian. Rogerson himself quotes Evans-Pritchard who had rightly said that the so-called “anthropologists” of the first period were “philosophers” or thinkers (like David Hume, Adam Smith, and others) who “for the most part . . . used facts [I prefer ‘information culled from missionary reports and traveller’s tales’] to illustrate or corroborate theories reached by speculation” (p. 11.) This assertion is in fact not altogether invalid for the “anthropologists” of the second period (from the mid-nineteenth to the beginning of the twentieth century) “probably the most important period for anthropological influence on the Old Testament” (p. 12); certainly “anthropologists” such as Sir J. G. Frazer and Robertson Smith were but a little different from the armchair philosophers of the earlier period, despite the fact that they had qualitatively better information available to them from colonial sources.

Even more significantly, Rogerson overlooks the fact that religious scholars, including those who study ancient Israel and Greco-Roman antiquities, have not only been influenced by but also have influenced the development of the “anthropology” of the first two periods ultimately contributing to the birth of the academic discipline now called anthropology. For instance, the term *tribe*, an important anthropological concept, “came into the English language as the result of Bible translation . . .” to use the author’s own words. A project that he himself describes as exemplary “anthropological” field work is also a case in point: the studies of Carsten Niebuhr (1772-8) are the result of the efforts of J. D. Michaelis of Göttingen (1762-3) who initiated the project (and received the support of King Fredrick V of Denmark) to send an expedition of experts of various fields to the Near East to study the flora and fauna of the areas considered relevant to Biblical studies, and to observe the Bedouin with a view to understanding Biblical customs.

In general, the idea that “all races had passed through identical stages of social, mental, and religious development, and that the forebears of civilized peoples had once lived, thought, and believed like contemporary primitives” (p. 13), adhered to by B. Stade (1881) or J. Wellhausen (1887), is part of the repository of the peculiar European intellectual history, rooted in the Enlightenment, concerning ancient and other non-Western peoples (compare also Adolf Bastian’s theory of the psychic unity of humankind) rather than any part of a systematic anthropological science. Likewise, the Pan-

Babylonians (pp. 29-33) were not strictly speaking anthropologists but thinkers of the general astral school of that period; the doctrine of cultural survivals is no more an anthropological idea than a historical one; J. G. Eichhorn's "demythologization" of the Bible was influenced by C. G. Heyne's idea of myth and fetishism—inaccurately attributed by Rogerson to the concept of primitive mentality—and ultimately originates from J. G. Herder's aesthetic theory. Moreover, following the author's own statement of purpose that "in the present book, the main preoccupation will be with social anthropology as undertaken in Britain" (p. 10), the two chapters on "Folklore" and "Primitive Mentality" fall largely outside the scope of the work; Ernst Cassirer whose ideas influenced W. F. Albright, H. Frankfort, and H. W. Robinson belongs to history and philosophy, and Lucien Levy-Bruhl to the French school of social science (admittedly closer to anthropology). Additionally, several works listed in the suggested reading list (such as R. M. Dorson, H. M. and N. K. Chadwick, W. D. Hand, and J. Piaget) belong to such varied areas as literature, folklore, and education, not to anthropology. In conclusion, ideas that come from speculations or studies in the diverse realms of science, philosophy, history, literature, and other disciplines and which were, are and can be used as the bases of certain Biblical scholarly assumptions should not be lumped together as "anthropology."

There is an equally important matter which Rogerson should have examined more fully. Contemporary anthropologists have not fared well or their analyses met with approbation when dealing with Biblical material. According to the author's own assessment, for instance, "Leach's statement that he hopes to have shown how, 'in the analysis of ethnography, attention to small details really matter' will, however, produce a smile among Old Testament scholars, in the light of J. A. Emerton's articles on Leach's handling of Genesis 38, where Emerton points out numerous small details which Leach appears to have overlooked" (p. 119). I also doubt whether D. F. Pococke's exegesis of a redemptive character in the south-to-north movements (so called "symbolic geography") in Genesis would draw any less of a polite smile among Biblical scholars. As for Mary Douglas's structuralist theory concerning clean and unclean animals (Lev. 11:1ff; Deut. 14:1ff.) and their classification in terms of the symbolic meaning of Genesis 1, I have my own doubts about its validity, but it remains to be seen whether other scholars would be as receptive to her interpretations as Rogerson.

In the study of Greco-Roman religions, many scholars have been critical about the use of anthropological interpretations, some claiming that no real progress in the knowledge of these religions has been made outside of classical studies (Otto Gruppe) or that Greek customs should best be explained in Greek terms (Otto Kern). Of course, the same can be said for Old Testament studies, but that would be shortsighted: the critical analysis of one's own field of learning in the light of every possible and relevant comparative knowledge is the duty of every serious scholar. Yet Biblical scholars do sometimes get drowned in a narrow Eurocentric *Weltanschauung* despite the clarion claim to look at the world of the Bible in its own *Sitz Im Leben*. Hence, Rogerson's overall thesis is a valid one, and Biblical scholars would indeed do well to heed his advice to seek the most up-to-date anthropological information which they may use in their analysis of the ancient Near Eastern Cultures. But if Old Testament scholars are to avoid the pitfalls of anthropology, they should not only be warned (as the author does) about outdated theories but also about any cultural data, including those coming from the present period, which

have been collected uncritically, especially by researchers without a first-rate knowledge of the languages of the peoples they study as often happens today. This is particularly important since the religious ideas and customs of any people are implicit in their way of thinking, molded like gold in lost wax, and their way of thinking is in turn molded in the language they speak. In other words, anthropologists, the "theologians" of culture, need to shed their own respective Eurocentric view and specialize in the languages of the peoples they study, before it can be said that their work is indispensable to Biblical scholars.

Evidently, it is not an easy thing to assess the relationship between an ancient discipline and a modern and young science. Rogerson deserves credit for daring to undertake such a venture. He is indeed widely read in both fields he discusses, and one should hope he will continue to generate similar provocative ideas as in this work. In this respect, the criticisms above are intended to encourage a continued critical examination of the subject at hand, not to reproach the objectives of the author.

EPHRAIM ISAAC
Visiting Professor in
Religion and History
Bard College

The Edge of Contingency: French Catholic Reactions to Scientific Change from Darwin to Duhem. By HARRY W. PAUL. Gainesville: University Presses of Florida, 1979. 213 pages. \$15.00.

This book is the first comprehensive study of the intellectual response of the French Catholic community to scientific developments in the late nineteenth century, especially in their implications for traditional religion. The scientific-religious problem faced by French Catholic intellectuals fits into the ancient pattern of accommodating religious thought to scientific developments, or interpreting the new science in accordance with the old religion. Harry W. Paul, a professor of history at the University of Florida, argues effectively that a paradigmatic shift occurred in late nineteenth-century French thought on the philosophy of science and on the philosophy of religion. It is Émile Boutroux's contingency thesis, expressed in the phrase "radical dualism," which best characterizes the relation established between science and religion in the generation before World War I. Paul reveals the sophistication and complexity of conflicting French Catholic positions on the significance or nonsignificance of scientific developments and new currents in the philosophy of science.

The first half of this masterful book is devoted to Catholic participation in the Darwinian revolution in the biological sciences and provides many useful corrections to Yvette Conry's *L'introduction du darwinisme en France au XIX^e siècle* (Paris: J. Vrin, 1974). Paul observes that "a clear separation of the religious beliefs and the technically scientific works of the group that can be vaguely identified as the Catholic scientific community is a development [only] of the latter part of the nineteenth century" (p. 31). Early French Catholic opponents of Darwin commonly argued that, while evolution was not contrary to Catholic doctrine, it was unacceptable because of scientific deficien-

cies. Understandably they were open to the charge that the real basis of their opposition was religious. On the other hand, Catholic intellectuals had strong grounds for suspecting the anti-religious nature of Darwinism because of the polemical uses to which the anti-clerical and anti-religious scientists and politicians put Darwin. Paul is correct in stating that "the persistence of a strong anti-Darwinist element in French Catholic circles cannot be explained completely without recognizing the existence of strong anti-teleological and anti-religious elements in the outlook of many of the leading Darwinists" (p. 53). In France the opposition of clerical intellectuals did drop off as the evolutionary hypothesis gained more support in the scientific community, but a fuller acceptance of the evolutionary paradigm, along with the hope of a new symbiosis of science and religion, would await a new generation.

The French case dispels the persistent myth that Catholics automatically were hostile to Darwin and evolution. A good deal of French clerical support was clandestine until the 1880s is explainable by the continual exploitation of evolution by anti-clericals, the hostility of an embattled church hierarchy, and the conservative editorial policies of clerical journals such as the Jesuit *Études*. Nonclerical Catholic writers such as the Comte Bégouën and Denys Cochin openly proclaimed that the principles of creation and evolution are not mutually exclusive and that Darwinism easily could accommodate the doctrine of final causes. A majority of French Catholic scientists did in fact accept evolution and it was the Dominican priest-scientist Dalmas Leroy who became their champion. His 1887 book, *L'évolution des espèces organiques* (Paris: Perrin), created "a sensation in the French Catholic world." Relying heavily on the work of the English Catholic zoologist St. George Jackson Mivart and limiting evolution to species below man, Leroy saw nothing in Scripture or in Catholic doctrine opposed to evolution. Another excellent touchstone for a change in French Catholic attitudes can be found in the *Compte rendu*s of the five international scientific congresses of Catholics held between 1888 and 1900 at which evolution was a frequent topic of discussion, and yet one finds embarrassingly obsolescent views generally absent. It is Paul's contention that the debate over evolution cooled towards the end of the century at least partly because of "the emergence of a new intellectual climate more favorable to religion," and because with Boutroux, Henri Poincaré, and Pierre Duhem "the nature of science itself had undergone a transformation that limited it to a severely circumscribed area" (p. 103).

Duhem is the key figure in this story, but before discussing him Paul gives us a chapter entitled "Albert de Lapparent: Religion and 'The End of the Laplacean Illusion.'" It is not clear that the views of Lapparent merit a whole chapter except as a case of a prominent Catholic geologist who, while reluctant to abandon the comfortable framework of nineteenth-century science, sought to accept "as much of the new paradigm as is consistent with maintaining the integrity of the old paradigm" (p. 121). Judging from his immensely popular work *Science et apologétique* (Paris, 1906), one might conclude that he chose his science with a clear eye to its implications for the Catholic faith. Like many scientists of his generation, Lapparent considered the religious implications of the laws of thermodynamics and invoked them to bolster the argument for the existence of a Deity who had created a perfectly ordered and harmonious universe. He declared that science could cast supportive light on religion, but in no way could it undermine belief. Lapparent felt his own Catholic beliefs were not a hindrance, but rather a help in his science as he sought to comprehend the order and harmony in the world.

Unlike Lapparent, Duhem never attempted to harmonize religion and science. When a Catholic writer benignly described his physics as that of a believer, Duhem's reaction was that he must have failed in his attempt to show that his scientific theories were completely autonomous, having no foundation in either religion or metaphysics. Duhem refused to grant validity to objections to religion derived from scientific theory, but did not think there was anything particularly Catholic in suggesting that physical theory is neither a metaphysical explanation nor a set of general laws. Suspicions were raised over the analogy Duhem drew between modern physics and the cosmology of Aristotle and the Scholastics, even though it implied no necessary adherence to Catholic doctrine. Duhem was convinced that his theories had no metaphysical or theological meaning which would favor either a believer or a nonbeliever, and that any metaphysical leaps from his scientific philosophy to Catholicism were being made by his readers. Of course, Duhem could not win this debate: he also was criticized severely in Catholic scientific and theological circles for having reduced science to an intellectual game and for destroying the scholastic view that science positively supported religion. It was clear that Duhem's insistence on the radical autonomy of physics was not entirely welcome in this the period of the revival of Thomistic philosophy.

The impact of the neo-Thomistic revival on the religion-and-science question is treated in the final and least penetrating of Paul's chapters. The entire question of French Catholic reactions to scientific change must be seen in the context of the extraordinary late nineteenth-century attempt to make Saint Thomas Aquinas the apostle of the modern age. Neo-Thomist thinkers assumed an intellectual harmony between science and religion and their obsession "with reconciling Thomism and modern science was closely linked with the attempt to create unity in the teaching of philosophy in Catholic institutions" (p. 183). But in the search for a modern symbiosis of science and religion it became clear that the "metaphysical quest for certainty that was so important a part of the Thomistic revival" was incompatible with the new paradigm of science taking form at the turn of the century (p. 186).

JOHN D. ROOT
Associate Professor of History
Illinois Institute of Technology

The Human Reflex: Behavioral Psychology in Biblical Perspective. By RODGER K. BUFFORD. San Francisco: Harper & Row, 1981. 215 pages. \$14.50.

This is the second in the series on Christian perspectives on counseling and the behavioral sciences published by Harper and Row in collaboration with the Christian Association for Psychological Studies and follows David G. Myers's *The Human Puzzle*. As the series editor, Graig W. Ellison states in the preface: "*The Human Reflex* represents the first thorough analysis in book form of the methodology, concepts, and implications of behavioral psychology by an evangelical scholar who is specifically trained in psychology." While this may indeed be the first book-length treatise on these issues, Roger K. Bufford stands in a prolonged tradition of those who have dialogued with

[*Zygon*, vol. 18, no. 1 (March 1983).]

© 1983 by the Joint Publication Board of *Zygon*. 0044-5614 83 1801-0010\$00.80

behaviorism from a religious point of view. To designate him as an “evangelical” scholar may evoke more active stereotypes than warranted among those less comfortable with labels; yet it does bespeak a strong, and not uninformed, inclination to take the Bible seriously. The subtitle of the book, *Behavioral Psychology in Biblical Perspective*, denotes this emphasis. “Biblical” is used self-consciously in preference to “Christian” or “theological.” It aligns Bufford solidly with that group of scholars who refers us back again and again to the content of the Jewish/Christian scriptures, not just to their interpretation.

The second part (“Major Issues: A Biblical Perspective”) is illustrative of this emphasis. Herein Bufford illustrates how the behavioral principles of reinforcement, punishment, and social influence are integral to the creation story, the Mosaic covenant, wisdom teachings on child rearing, and the prophetic calls for loyalty to Jehovah. It is Bufford’s contention that much Biblical teaching is compatible with behavioristic emphases. The major incompatibility he perceives is in the understanding of freedom, but even here he offers a reconciliation to which I will refer later in this review.

If Bufford’s intent is to be cognizant of the Bible, he attempts to be faithful likewise to behaviorism both in its theoretical as well as its practical modes. Parts 1 and 3 (“The Nature of Behavioral Psychology” and “Changing Human Behavior”) depict in a lucid and thorough manner the essential tenets of this approach from the time of John B. Watson through the theorizing of B. F. Skinner and the burgeoning procedures of behavior therapy.

Bufford is himself a behavior therapist who utilizes these practices in his clinical work. He evidences a wide acquaintance with the innovative methodologies characteristic of behavioral psychology and includes in part 4 (“The Church and the Family: Practical Applications”) specific suggestions for their utilization in child rearing, religious education, and pastoral practice.

The issue of freedom is a focal concern of the volume. Bufford evidences wide acquaintance with the subtleties inherent in this construct and does not succumb to the uninformed polemics which have characterized much of the debate between religion and behaviorism. He rightly notes that freedom from a Biblical perspective never means complete indeterminacy as some humanistic scholars have espoused. Instead, freedom in the Bible and in Christian faith always has been bound up with a person’s relationship with God. Freedom here implies freedom from the compulsion to sin and freedom for the possibility of serving God. Bufford suggests this is consonant with a behavioristic understanding of all human behavior as caused in the sense that Christian freedom means response to the influence of God.

This is a well-written, sensitive volume that cannot be faulted save in two areas. First, the author, while aware of much current literature, seems to have limited himself to the writings of a group of scholars like himself, namely evangelicals. For example, no references are included from *Zygon* although a number of its articles have dealt with these issues in the past. He seems, therefore, to be more conversant with the psychological than the theological literature on his topics. Perhaps one should not quibble over this lack of breadth but it does bespeak a continuing problem in the science/religion dialogue, namely that scholars who may label themselves as “evangelical” on the one hand or “liberal” on the other may not read each other and may be impoverished by the lack thereof. My suspicion is this habit goes both ways. I see very few references to evangelical scholarship in writing done by non-evangelical scholars.

The second area of concern is Bufford's lack of awareness regarding the roots of the behavioristic controversy in the last several hundred years of intellectual history, during which the issues of causation and freedom have been at the center of the science/religion dialogue. I should hasten to add that it could be said in retort that Bufford did not have an historical survey as his purpose in writing. With that I agree. Nevertheless, a number of his comments could have been enriched had he known more about these earlier developments. The same could be said about his attempts to apply his thinking to church life. He exhibits sound understanding of behavioral principles but shows less appreciation for the nature of the church and the pastoral task. But, then, one cannot know everything and he is to be commended for his boldness in offering these practical applications!

The book is written to the literate public and especially to scholars in the field. It is a noteworthy contribution, and Harper and Row as well as the Christian Association for Psychological Studies are to be commended for its publication. I predict it will provoke much comment and discussion.

H. NEWTON MALONY
Professor of Psychology
Fuller Theological Seminary

Interpretive Theories of Religion. By DONALD A. CROSBY. The Hague: Mouton, 1981. 335 pages. \$38.25.

For Donald Crosby an interpretive theory differs from an explanatory theory. He takes as his model of the latter a scientific theory, as in physics. By contrast an interpretive theory is a sort of philosophical account, which seeks to bring out the general nature of religion and thus to elucidate the structure of first-order systems of religious belief. He does not discuss the question of whether there is an intermediate kind of theory which explains religious developments or correlates some features of a religion with others (for instance explaining why it is that some religions have one sort of doctrine and others have other sorts, say in terms of differing types or combinations of religious experience). He therefore does not look to multidisciplinary religious studies (e.g., history of religion, anthropology, and sociology) as providing the framework for a "science of religion." For instance he does not look to such discussions as found in this reviewer's *The Science of Religion and the Sociology of Knowledge* (Princeton, N.J.: Princeton University Press, 1973). But in spite of this limitation he provides a clear and well-thought-out approach to the analysis of religion.

The heart of the book is a formulation of ten criteria that a well-formed interpretive theory should meet and then the propounding of a theory of his own. Within these two tasks he sandwiches a critique of some key theories of religion—those of Baruch Spinoza, Immanuel Kant, Rudolf Otto and Paul Tillich. The criteria he sketches are: (1) an interpretive theory should not be normative; (2) it should provide an illuminating set of categories for describing religion; (3) it should build on previous theories; (4) it should not give a causal explanation of why man is religious; (5) it should be heuristically fruitful for investigating the logic of religious systems; (6) it should provide a

perspective for seeing the differences and similarities between systems; (7) it should give equal weight to the personal (existential) and cosmic sides of religion; (8) it should be general not provincial in scope; (9) it should be able to show how religious interests differ from others and yet are interwoven with them; and (10) it should be able to tell us what it is *not* to be religious.

Of these criteria the fourth is most startling. The reason is twofold. First, Crosby is concerned with analytic or descriptive philosophy of religion—with what it means to be religious, not how it is that men have come to be religious. Second, he assigns the task of discussing the causes of religion to the social sciences and thus makes a sharp division between the descriptive task, whether particular or general, and the scientific task. This sharp division is in my view open to question as soon as we conceive of religious studies as analogous to economics or political science, that is, as dealing with the religious (compared with the political or economic) aspect of human existence. But he is right in thinking there is such a thing as an interpretive theory such as he delineates.

His critiques of the main figures' religious theories are well done, but I turn now directly to his own constructive theory. Here he deploys six categories which he tries to fit to the personal and cosmic sides of religion. They are uniqueness, primacy, pervasiveness, rightness, permanence, and hiddenness. The last is the most important, for some of the others could plausibly be held to characterize the objects of secular world views as well as religions. But this hiddenness refers to a richness and mysteriousness which transcends concepts, and in one sense of the slippery term it refers to the "transcendent."

Basically Crosby deals with the doctrinal and ethical dimensions of religion, and he builds on the important work of William A. Christian. He does not have much to say about rituals, except by implication. And, although he works in the field of analytic philosophy of religion, he ignores D. Z. Phillips and the Wittgensteinian approaches. I find his approach much better than theirs, but out of a sense of completeness it might have been useful to have shown the problems in such viewpoints.

What next? Beyond interpretive theories and generalizations in the history of religion, there lies the possibility of a new synthesis between interpretation and explanation in the emerging science of religion. Religion themselves increasingly have to come to terms with not just the natural sciences, but also the religious sciences.

NINIAN SMART
Professor of Religious Studies
University of California
Santa Barbara and
University of Lancaster England