BURHOE, BARBOUR, MYTHOLOGY, AND SOCIOBIOLOGY

by John A. Miles, Jr.

In a pessimistic assessment of the 1975 "Interdisciplinary Workshop on the Interrelationships between Science and Technology, and Ethics and Values," a project of the American Association for the Advancement of Science, William A. Blanpied wrote: "As the working group discussions developed, it became apparent that the modes of thinking and acting that characterize the different academic disciplines are not really understood or appreciated by scholars outside those disciplines. For example, for at least a century the humanities have been concerned with clarifying concepts. In contrast, practitioners of the social and natural sciences usually care little for such clarifications, but are more concerned with gathering data to test hypotheses suggested by them."[1] The humanistic discipline most concerned with the clarification of concepts is, of course, philosophy, and no discipline has been more affected by philosophy than has theology. In any dialogue between science and theology, therefore, we may expect the contrast noted by Blanpied to be particularly marked. Those who approach the dialogue from a scientific starting point will be eager for data and will be content with whatever concepts the data seem to suggest or require. Those who begin from a theological starting point will be concerned to clarify in advance the concepts used in the collection of data. Moreover, if, as is commonly asserted, science has assumed mythic proportions in secular society, we may expect the intrusion of concerns which regard neither the collection of data nor the clarification of concepts but rather the personal and social viability of those who do the collecting and clarifying.

In Ralph Wendell Burhoe, senior fellow of the Center for Advanced Study in Religion and Science and editor of *Zygon,* and Ian G. Barbour, professor of religion and physics and author of *Issues in Science and Religion* and kindred works, each of Blanpied's two approaches finds an articulate representative. Burhoe is in essence a

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sociobiologist of religion, while Barbour, notwithstanding his scientific expertise, is best described as a process theologian. Neither of these writers has written with the other particularly in mind, but between them they define the usual methodological poles of the dialogue to which they contribute. In the remarks which follow I shall, first, review the conclusions of each and, second, assess those conclusions against a very tentative mythological analysis of the same dialogue.

Ian G. Barbour

Barbour's first book was *Christianity and the Scientist,* a brief, popular essay in which, after Reinhold Niebuhr, the author distinguished five stances possible for religion vis-à-vis natural science: "Religion against Science" (the Amish and similar groups), "Religion under Science" (religious liberalism), "Religion above Science" (Roman Catholicism), "Religion Separate from Science" (Lutheranism, including the work of Karl Barth), and "Religion Transforming Science" (elements of Calvin and Wesley).[2] It was the invitingly open and unfinished fifth option that Barbour, a Quaker, made his own. The relationship between religion and science was to be a dynamic interaction, as decisions about the purposes science should serve were informed by values drawn both from the emerging new knowledge and from biblical tradition.

Five years after *Christianity and the Scientist* Barbour published *Issues in Science and Religion,* a work which a British reviewer described as "astonishingly surefooted" and which has become perhaps the one indispensable manual for students of religion interested in natural science.[3] Despite the suggestion of eclecticism in the title, *Issues* is a comprehensive survey of schools of thought in contemporary theology and philosophy of science. As such, for participants in a culture whose habitual philosophy is naive realism about the entities and theories of science, it is a primer in secular as well as religious sophistication. While Barbour never uses the anomalies of physics for purely rhetorical purposes, his presentation of the subtleties of physics and of the philosophy of science does, in a general way, tame the reader for the subtleties of theology. Barbour takes on philosophy, theology, and the history of science and religion as if they were a cluttered household which must be set straight before the entertainment—that dynamic interaction foreseen in *Christianity and the Scientist*—can begin. *Issues* is in good part a taxonomic book then, a kind of chart of who does what, how, for whom, and since when.

The book has a tripartite structure: part 1, "Religion and the History of Science"; part 2, "Religion and the Methods of Science"; and

part 3, "Religion and the Theories of Science." However, the methodological concerns of the second section are equally dominant in the first and third. It is as if, having surveyed the tangled history of religious and scientific methodology (part 1), Barbour induces a revised version of the treaty between them (part 2) and tests the revision against more recent developments (part 3).

Barbour calls himself a "critical realist" in both science and religion. In science his critical realism is a middle course between positivism and idealism; in religion it is a middle road between existentialism (including neoorthodoxy) and liberalism. Barbour accepts the separation of language functions in modern language analysis unhesitatingly and yet only as a "first approximation." It is true that religious language evokes worship and self-commitment, while scientific language aims to predict and control publicly observable, repeatable phenomena. However, "we cannot stop with an absolute separation of spheres. . . . Both scientific and religious language are realistic and referential in intent; in neither case can one remain satisfied with useful fictions."[4] Error, for Barbour, lies always at the extremes, in positions which assert either that one cannot or that one need not make any assertions about nature in religious discourse. The former position was that of Hume and, refined but recognizable, remains the position of modern positivism. The latter was the position of Kant and, equally recognizable after just as many transformations, remains the position of neoorthodoxy and existentialist theology.

Opposites have their strange congenialities, of course, in this as in any intellectual history; and so it is that Barbour can write:

It is not uncommon today for *neo-orthodox* or *existentialist theology* to be combined with *a positivistic view of science.* In such a combination, the separation of the spheres of science and religion is enforced from both sides. The metaphysical disclaimers of many scientists and philosophers today are welcomed by these men, for they help to "clear the field" for religion by undermining rival naturalistic faiths which once claimed the support of science. Neo-orthodox writers even welcome positivistic attacks on natural theology. Moreover, if science leads only to technical knowledge of regularities in phenomena, and if in addition philosophy is confined to the analysis of language, then religious faith is outside the scope of possible scientific or philosophical attack. The independence of the two fields is guaranteed from both sides if each is restricted to its own domain.[5]

This, broadly, is the thesis to which Barbour intends his work to be the antithesis.

Barbour does not aspire to an integration of the sort developed during the Middle Ages: "The connection of both science or [*sic*] religion with any metaphysical system must be a loose one, and the

integrity of both fields must be respected."[6] Nonetheless, beyond the differences of language there are structures of man and world which make such diverse languages complementary: "Let it be granted that the scientist is interested in nature as a lawful structure, whereas the theologian is interested in nature as related to God and to man's life-orientation. Despite the divergence of their interests, it is (according to critical realism) the same natural world to which they look, so their inquiries cannot be totally independent."[7]

The interdependence of science and religion in "the search for a consistent set of metaphysical categories" is like the interaction of technology and religious organizations in the search for social justice.[8] A perfect metaphysics is in the theoretical realm what a perfect society would be in the practical realm. And just as technology and the church do not contribute to each other directly but only indirectly through their separate contributions to society, so scientific and religious thought do not contribute to each other directly but only indirectly as each advances the search for a consistent metaphysics. Metaphysics can replace neither religious faith nor scientific insight. But there is something humanly important in the integration of world view to be gained from talking about religion in a language which has been nourished by and is available to science and, vice versa, about science in a language that has been nourished by and is available to religion.

Barbour's analysis of the methodological similarities and differences of science and religion is the heart of *Issues.* However, we may pass over that analysis in favor of a revised version which appeared eight years later in *Myths, Models, and Paradigms: A Comparative Study in Science and Religion.* Before writing the latter work, Barbour edited or wrote four books in which the ethics of technology and ecology is more prominent than the epistemology of science and religion. Of these the most important is *Science and Secularity: The Ethics of Technology,* a sustained attempt on Barbour's part to join his speculation on the methodological relationship of science and religion to a program for the redirection of technology.[9] We recall that in the earlier *Christianity and the Scientist* Barbour had looked forward to a transformation of science by religion. Here in a concluding chapter, entitled "The Redirection of Technology," Barbour contrasts the wastefulness of the American space program with American neglect of urgently needed population control and calls for new technological priorities and the appropriate political sanctions.

The casual reader of *Science and Secularity* might be surprised that Christianity plays no more direct role than it does in this crucial last chapter. Read apart from the rest of Barbour's work, it might betray

his Christianity scarcely at all. One must bear in mind, however, Barbour's belief, first, that science and religion contribute to each other not directly but only indirectly through their common enterprises and, second, that though religious language does serve to engender attitudes it does so not by mere propaganda but by directing attention to patterns in the facts. The pattern to be seen when overpopulation is juxtaposed to the space program is one which might be seen by anyone, or so Barbour seems to imply. Exposure to biblical language in which unmitigated poverty and unchecked power lead regularly to disaster might prompt a Christian to see the pattern more readily; indeed, the mediation of such an insight is just the sort of thing that Barbour understands to be the cognitive function of religion. However, in the public arena the Christian need deal only with the pattern itself. The religious experience that has enabled him to see it need play no public role at all. In saying this, however, we say rather more than Barbour himself does about how his general analysis of religious and scientific language has led to the program of social ethics that concludes *Science and Secularity.*

It was perhaps partly an awareness of the imperfect join of theory to practice in his work and partly the need to make some response to Lynn White, jr.'s, influential *Science* article, "The Historical Roots of Our Ecologic Crisis," that led Barbour to dwell at greater length on the direct relevance of biblical and process-theological ideas for a revised ecological ethic in his 1972 anthology *Earth Might Be Fair: Reflections on Ethics, Religion, and Ecology.*[10] White had asserted that Christianity and technology were not only compatible but actually conspiratorial: "Especially in its Western form, Christianity is the most anthropocentric religion the world has seen. Christianity, in absolute contrast to ancient paganism and Asia's religions (except perhaps Zoroastrianism), not only established a dualism of man and nature but also insisted that it is God's will that man exploit nature for his proper ends. . . . Hence we shall continue to have a worsening ecologic crisis until we reject the Christian axiom that nature has no reason for existence save to serve man."[11] Barbour admits that the desacralization of nature in the Judeo-Christian tradition has fostered the development of technology and at least often countenanced an exploitative attitude toward nature. However, he argues that some of the needed correctives can be found in the Bible itself, particularly in such neglected biblical themes as man's responsibility for nature and nature's intrinsic value.

White seems also to have left Barbour with a sharpened sense of how distressingly inconclusive have been the conclusions of a century of critical biblical scholarship. Barbour notes, at any rate, that "there

are, in the Bible itself and in subsequent Christian thought, a diversity of views articulated in a succession of historical contexts—from early nature-religions, the disintegrating Roman empire, and the medieval church, down to the rise of modern science and finally industrial technology."[12] He speaks of the Bible as "a source of insights that must be explored in the light of new knowledge in our contemporary situation," admitting thereby that to speak of "biblical religion" is to make a creative abstraction. In most of his earlier work Barbour had tended to make this abstraction without comment or hesitation. But if the Bible is "a diversity of views," some of which are ethically objectionable, then it would seem that Bible-based Christianity has a task before it which is at least logically prior to any collaboration with science toward a consistent metaphysics or with technology toward a more perfect society, the task, namely, of deciding how much of the Bible and how much of what else to include in a contemporary Christianity.

If the use of the Bible has become problematic, the use in conjunction with it of Whiteheadian metaphysics toward the development of a "theology of nature" is equally problematic. In *Science and Secularity* Barbour admits that secularity resists metaphysics almost as much as it resists religion. Metaphysics calls for its own kind of faith: "One facet of secularity is its skepticism, not just about classical Christian metaphysics, but about the possibility of any unified interpretative system—even a scheme which emphasizes nature, temporality, and human freedom. Secular man, it is said, accepts provisional answers to limited questions."[13] At this point Barbour's synthesis must and does become a confession: ". . . I can only say that there is in me—as I think there is in all men, especially in scientists—a drive to unity and coherence. I am convinced that beyond the fragmentation of unrelated languages there lies one world, though our understanding of it is always partial."[14]

Leaving aside the question of whether faith in the unity and intelligibility of the world can ever be logically justified, there remains the question of whether explicit metaphysics is the best or the only available expression for such a faith. If myth be regarded as implicit metaphysics and especially if, with Barbour, one expects metaphysics to be eternally tentative, then the search for a consistent metaphysics might differ little from the search for a satisfying myth.

Barbour is a philosophical rather than a mythological thinker and ill inclined, we may guess, to adopt the working habits of art to resolve speculative difficulties. Nonetheless, in his 1973 anthology, *Western Man and Environmental Ethics*, he includes for the first time contributions dealing with the relevance of fiction and poetry to the ecological

crisis; and his most recent book—*Myths, Models, and Paradigms*—reflects a growing sensitivity to the function of myth in any reconciliation of science and religion. Barbour abandons none of his basic positions. However, his earlier concern with the theology of nature is now paired with a concern for what we may call the anthropology of God. It is through this door that myth makes its entrance.

In discussing myth Barbour cites with approval the efforts of Peter Berger, Mircea Eliade, and Claude Lévi-Strauss to chart the interrelationship between the structures of myth and those of society; and yet, typically, he insists that the cognitive content of a myth has not been exhausted when its social function has been determined. The facts in which myths would have us discern patterns are not purely social facts, for embedded within them are models representing aspects of the cosmic order.

In insisting on models as representations of "the enduring structural components" of myths Barbour implies that, for the modern mind, narrative, though essential, is never enough; and, in saying this, he distances himself from myth criticism as it is practiced by most theologians of religion-and-literature leanings.[15] They defend the irreducibility of narrative. He implies that, unless a model can somehow be recovered from a myth, the myth under present circumstances cannot discharge its mythic function. "As model-building becomes increasingly commin in many fields," he writes, " 'thinking in models' may be a useful point of entry into theological reflection. The term 'myth,' by contrast, is so generally assumed to mean simply 'an untrue story' that it is probably impossible for most people to take the cognitive functions of myth seriously."[16]

In discussing scientific models Barbour again takes a middle course between naive realism and positivism, on the one hand, and instrumentalism and fictionalism, on the other, making his own the carefully nuanced position of Leonard Nash:

We must not then take a theoretic model too literally; indeed *we may err by taking the model too literally*. But, as we would realize the full heuristic power inherent in it, *we must take the model very seriously*. . . . If our models are to lead us to ask, and seek answers for, new questions about the world, we must regard them as something more than "logical superfluities," "illicit attempts at explanation," "convenient fictions," or the like. The lesson of scientific history is unmistakable. To the hypothetical entities sketched by our theories we must venture at least provisional grants of ontologic status. Major discoveries are made when invisible atoms, electrons, nuclei, viruses, vitamins, hormones, and genes are regarded as *existing*.[17]

Barbour acknowledges that a reformulated instrumentalism like that of Stephen Toulmin, one which remains noncommittal about the on-

tological status of its models and accords them explanatory force not just because of their usefulness as prediction formulae but also because of their intelligibility and generality, is very close to his own critical realism. But Barbour would go further than Toulmin, for scientists are right, as he sees it, "to hold that there are entities in the world something like those described in the model . . . some isomorphism between the model and the real structures of the world."[18] There is in a scientific model at least the "shy ontological claim" which Philip Wheelwright sees in a poem. And if this claim is an act of faith, then so be it: It is the act of faith that Barbour and, as he would judge, most working scientists would wish to make.

Religious models differ from scientific models in various ways. To begin with, they are not tools whose only role is the development of theories for experimental testing. Moreover, even after theories have been developed, religious models remain more important to the practice of religion than the theories themselves, while scientific theories quickly become more important to science than the models from which they arose. On the other hand, both scientific and religious models are systematic images with a continuing role in the selective interpretation of individual and corporate experience: "As models of an unobservable gas molecule are later used to interpret other patterns of observation in the laboratory, so models of an unobservable God are used to interpret new patterns of experience in human life."[19] Among the areas of experience which religious models aim to interpret, Barbour lists awe and reverence, mystical union, moral obligation, reorientation and reconciliation, interpersonal relationships, key historical events, and order and creativity in the world. No experience in any of these areas can constitute a proof for the existence of a personal God, but "it is reasonable to interpret them theistically and . . . it makes a difference whether one does so or not . . . a difference not only in one's attitudes and behavior but in the way one sees the world."[20] Barbour is speaking here of an instrumental use of religious models for the construction of a world view, a use which might not of itself seem to presuppose ontological reality; but Barbour maintains "that these *non-cognitive uses* presuppose cognitive beliefs" and do so for nontheistic as well as for theistic world views.[21] In other words, even though religious models cannot be developed into experimentally testable religious theories, those who use them grant them in practice the same sort of provisional ontological status that scientists grant their scientific models.

The question of falsification and paradigm choice is even more vexed in religion than in science. Conversion—rare, as paradigm shift is rare in science—is the preeminent form of change in religion. And

yet, though individual religious conversion may be frequent, religious tradition itself is notoriously—one might say compulsively—conservative. Religion is by turns the tamest and the wildest of social realities. Its revolutions, far more obscure in their structure than those of science, are for that reason beyond prediction. Barbour notes that each of the "subjective" features he lists in a review of Thomas Kuhn and his critics is more evident in religion than in science, while each of the "objective" features is less evident, And yet the objective features of scientific paradigm shift are at least minimally present in religious paradigm shift as well. Self-criticism of one's own basic beliefs—a common experience—would be impossible if all criteria were paradigm dependent. Communication among faiths—an equally common experience in an ecumenical era—would be equally impossible unless the different traditions' different paradigms of religious experience were to some degree commensurable. Finally, in religion as in science, "a commitment to honesty in the pursuit of truth is prior to commitment to a particular paradigm."[22]

Barbour concludes *Myths, Models, and Paradigms* with a discussion of the Christian paradigm, in which among various models for God—monarch, father, etc.—the person of Christ is most important. In modifying classical christological models as the needs of the Christian community have changed, theologians have inevitably used metaphysical categories. Augustine was indebted to Plato, Aquinas to Aristotle, and Barth to Kant. Barbour promises a new volume in which he will apply the insights of Whiteheadian metaphysics to modify further the Christian God-model.

RALPH WENDELL BURHOE

Since Barbour recognizes why and how his theological enterprise is incomplete and since most competing theologies are incomplete in much the same way, it is no rejection of his work to observe that it generates more light than heat. In the ethical and even hortatory writings that intervene between *Issues in Science and Religion* and *Myths, Models, and Paradigms,* unresolved epistemological questions still lurk in the shadows. By the end of the latter work, many of those shadows have been dispelled. But now what: The speaker's legitimacy is established, but what will he say? He has illumined. Can he also enkindle? Let us grant that Barbour has established that religious language is not merely evocative but is also cognitive. We may yet insist that it must be also and even primarily evocative, for if it is *merely* cognitive how many will trouble with it?

To say this is to say nothing that Barbour does not well know but is rather to indicate an unexpected point of entry into his work for that

of Burhoe. Burhoe founded *Zygon* in 1966, the year in which Barbour published *Issues;* and *Zygon,* like that book, has become something of an orientation point for Americans interested in questions of religion and natural science. But there, on the whole, the similarity between Burhoe and Barbour ends.

Both Barbour and Burhoe began their careers as natural scientists: Barbour in physics, Burhoe in meteorology. But Barbour, when he became professionally active in religion, found philosophical mediation necessary for his purposes. In the preface to *Issues* he complains: "Scientists and theologians have usually tried to relate science directly to religion, neglecting the contribution philosophy can make to the clarification of issues."[23] Since, as we have seen, it is very largely the clarification of issues that Barbour has had in mind, he does not repeat the earlier mistake. Burhoe, by contrast, has something rather more than, or rather different from, philosophical clarification in mind; and the approach he takes is precisely the one Barbour rejects, namely, a direct relating of science to religion. Burhoe finds philosophical mediation unnecessary. To the philosophers' disparaging observation that science has made a method into a metaphysic, he responds: ". . . such terms as 'metaphysics' and 'supernatural' actually connote [a] realm already penetrated by the conceptual system of physics to describe reality or nature at higher levels of abstraction than ordinary sense perceptions. . . . The miraculous applications of applied physics in electronic, biological, and other technologies have made 'science says' the synonym for 'truth.' If the term 'supernatural' is thus translated, I think we shall have little trouble in finding ways to link scientific and religious truth."[24] To most theologians and philosophers of religion, the fact that "science says" is a synonym for "truth" is a problem. Burhoe makes it a solution.

It would be misleading, however, to suggest that Burhoe began his effort to reconcile religion and science with a rejection of conventional metaphysics. He began instead with an intuition of the similarity between certain well-established scientific theories and certain key religious doctrines and a suspicion—or, better, a hope—that if religious practice, so salutary for social stability, could be made the reflex of these theories, then scientific society could recover religious faith.

In other words, where Barbour's goal was light rather than heat, Burhoe's goal is undisguisedly heat. And where Barbour's procedure, as suggested earlier, is housecleaning, Burhoe's is housemoving. The house of religion, now founded on crumbling myth, is to be moved—more or less intact—to a new foundation in science. Fortunately, the upper outlines of that new foundation conform to the lower outlines of the old house: "I am suggesting that a translation of

the gods of religions into the determining forces of the 'nature' or universe that the sciences reveal will prove to be the best way to recover and make effective for contemporary man the wisdom still embodied in those ancient traditions."[25] Thus, for God, we now understand Nature; for the immortal soul, the continuing genotype; for Providence, Natural Selection, etc. Our attitudes toward these are to remain the attitudes of piety, albeit a stoic piety; but this should be easy for us, for the roots of such a piety are now sunk deep in what our culture regards as most real.

In short, then, where Barbour is tenacious in philosophical analysis and hesitant in religious assertion, Burhoe is uninterested in philosophical analysis and extraordinarily aggressive in assertion. It will be our contention that, though Barbour offers a superior assessment of the logical issues separating science and religion, Burhoe's naturalism, despite obvious logical objections to it, is a crucial clue to what an actual reconciliation of science and religion is likely to look like.

Rather in the manner of an experimental psychologist, Burhoe has written articles and monographs rather than books, frequently coauthoring or coediting, and then always with a scientist as collaborator. His longest work is *Science and Human Values in the 21st Century,* an anthology which he edited and for which he wrote approximately half the contributions.[26] However, the progress of his work is to be recovered principally from *Zygon* itself. A partial list of his contributions over the past five years would include "What Specifies the Values of the Man-made Man?" (1971), "Natural Selection and God" (1972), "Evolving Cybernetic Machinery and Human Values" (1972), "The Concepts of God and Soul in a Scientific View of Human Purpose" (1973), "Evolutionary Aspects of Freedom, Death, and Dignity" (1974), and "The Human Prospect and the 'Lord of History' " (1975). It is to "The Human Prospect and the 'Lord of History' " that we shall here confine our attention not only because, at seventy-seven pages, it is Burhoe's longest self-exposition but also because it best discloses the mythological setting from which his naturalism derives the better part of its plausibility.

"The Human Prospect and the 'Lord of History' " was written for an issue of *Zygon* containing the proceedings of a symposium responding to Robert J. Heilbroner's *An Inquiry into the Human Prospect.*[27] In that book Heilbroner had portrayed mankind in extreme ecological and political peril. The Promethean powers of scientific knowledge had been harnessed to short-term self-interest, and the extinction of the species was in prospect. Voluntary restraint was impossible. The only alternative was authoritarian government

and an end to those civil liberties which, since the Enlightenment, had been the foundation of Western civilization.

The structure of Heilbroner's argument is the familiar structure of all statist argumentation. What made his book shocking, apart from its apocalyptic sanction, was that it advocated—or rather prophesied—rigid state control not only over education, industry, and commerce but also over science and all free inquiry. And necessarily so—for it was the unbridled exercise of scientific creativity as much as the unchecked development of commerce and industry that, in Heilbroner's opinion, had brought us to peril.

In remarks published after the appearance of *Inquiry* Heilbroner saw a quasi alternative to raw political authoritarianism in the monastic, renunciative ideology of Communist China.[28] But whether the coming Dark Ages were to be political or religious, he was convinced that they were nigh. The symposium to which Burhoe contributed tried to suggest that if the alternative was the right sort of religion the dark need not descend.

The "Lord of History" in Burhoe's title is an allusion to theologian Langdon Gilkey's contribution to the same symposium. Gilkey, like Burhoe, reads Heilbroner's book as a plea for religion: ". . . Heilbroner's analysis, whether he knows or likes it or not, comes pretty close . . . to the orthodox theological interpretation of man's situation, if not of ultimate reality. He does not say it, but he portrays an estranged and warped freedom, one whose unlimited use, guided by its heedless concupiscence, in the end destroys itself and its world."[29] To Heilbroner's suggestion that western man must now become Atlas uncomplaining rather than Prometheus unbound, Gilkey responds with a reference to the Zeus who is above both heroes and asks: "Is 'Zeus' providential creation and salvation as well as iron necessity and thus inexorable punishment?"[30] In so asking, he points to the Christian "Lord of History," who not only, like Zeus, judges the sinner but also redeems the repentant.

Burhoe agrees with Gilkey that the Lord of History can avert punishment but not that repentance is necessary. What is called for is reconception rather than repentance. Burhoe's goal is to find or create a religion which can save science and society alike. Unlike Gilkey, he does not take his stand within Christianity but within secular society. From this perspective, he finds religion necessary and sets about the task of providing it on a basis secular society will find acceptable.

If this is theology, then Burhoe is a theologian. But if Gilkey is correct in writing that "the role of the theologian is not so much to talk *about* religion as to talk *from* it and to interpret and understand

not so much religion as all else from a religious perspective,"[31] then Burhoe is a species of antitheologian, for he does indeed talk *about* religion and *from* a secular perspective.

To be sure, Burhoe does not believe that the realities referred to in religious language are merely social realities, but he troubles to discuss them only because, as he sees it, the needs of society require him to do so. If the ways of the Lord of History (Nature), as Burhoe understands them, did not bind the viability of society to religious faith, Burhoe would not look for other reasons to be a believer. A Unitarian, he finds his one true church in world society, and then only because world society must become something like a church if it is to remain a society at all.

Burhoe thus differs from Heilbroner scarcely at all in his perspective on religion, however differently he may evaluate the prospects for a new and humane religious synthesis. If Heilbroner judged that a religion fostering social coherence were possible without infringement of freedom of inquiry, he, too, would favor it. Indeed, it is precisely to those who, like Heilbroner, are as aware of the role of religion in public life as they are reluctant to allow it any role in their private lives that, by implication, Burhoe's religious message is addressed. Like Paul in Athens, he reassures such unbelievers that they are worshipping the true God without recognizing him. If they believe in science, then they are living in the foundation upon which the house of faith is to be installed. They need not move upstairs into the house themselves so long as they will abide its installation over their heads.

Implicit here is a much more trusting estimate of the ethical reliability of those who acknowledge no source of truth but science than one finds in Gilkey. Burhoe implies that if certain sorts of behavior, now chiefly encultured (a favorite word of his) by religion, can, in the light of well-established scientific theories, be shown necessary for human survival, then we may presume that the minority who already understand the science are, by and large, already behaving as required. "One need not fear any domination by scientists," he writes, "as one now may properly fear domination by one or another political dictator, for science is the element of human cultural evolution that has learned most deeply to understand that the evolution of valid knowledge is not to be entrusted to any individual human wish, prejudice, or person."[32] It is the others about whom we must worry, those, namely, who are neither critical enough to discern a scientific basis for morality nor pious enough to accept a traditional religious basis. It is to meet their needs that the old form of religion must be filled with a new scientific content. The elite need only consent to lend their

theories to that purpose. It is in the hope of persuading them to do so that Burhoe has written his scientific theology, attempting, first, to establish on scientific grounds the necessity of religion for human survival and, second, to determine a set of religious teachings using only scientific materials.

Terms may be defined in different ways. It will be our contention, however, that Burhoe's scientific theology is better understood as a scientific mythology, that is, as a narrative in which the Enlightenment myth of the overcoming of religion by secularity is carried through to the rediscovery and rehabilitation of religion in and through secular science. Even as myth, Burhoe's scientific theology is less than success-ful; and yet, as we shall see, there are extrinsic reasons why we may expect something like it to break the present impasse between science and religion.

A Mythological Matrix for the Reconciliation of the Scientist and the Saint

Anthropological analyses of myth have stressed the manner in which an effective myth makes a culture's present practice the logical out-come of a narrative in which objections to that practice are tacitly admitted. In the words of Claude Lévi-Strauss, who has pioneered this sort of analysis, "the inability to connect two kinds of relationship is overcome (or rather replaced) by the assertion that contradictory relationships are identical inasmuch as they are both contradictory in a similar way."[33] That is, the way of life which the myth endorses is made to emerge as a uniquely plausible alternative to two ways of life which, taken separately, are impossible and, taken together, are ir-reconcilable. The plausibility of the new alternative, however, is its success in finding—through a process of substitutions—a way to straddle the old:

... two opposite terms with no intermediary always tend to be replaced by two equivalent terms which admit of a third one as mediator; then one of the polar terms and the mediator become replaced by a new triad, and so on. Thus we have a mediating structure of the following type:

INITIAL PAIR	FIRST TRIAD	SECOND TRIAD
Life	Agriculture	Herbivorous animals
		Carrion-eating animals
	Hunting	Beasts of prey
Death	Warfare[34]	

Life and death are irreconcilable, but agriculture, which supports life, and warfare, which destroys it, may be mediated by hunting, which destroys life in order to support life. When a new opposition develops

between the mediator, hunting, and the first term, agriculture, the two are replaced by predators and herbivores, respectively, between which scavengers, which eat flesh but do not kill, may mediate.

This particular sequence of contradictions and reconciliations is Lévi-Strauss's analysis of the meaning of the characters Coyote and Raven in North American Indian mythology; and, though he does not correlate, in the passage cited, his analysis of Coyote and Raven with the social and ritual role of the trickster in Indian culture, it is his contention that such an articulation is not only possible but even mathematically describable: ". . . the kind of logic in mythical thought is as rigorous as that of modern science, and . . . the difference lies, not in the quality of the intellectual process, but in the nature of the things to which it is applied. This is well in agreement with the situation known to prevail in the field of technology: What makes a steel ax superior to a stone ax is not that the first one is better made than the second. They are equally well made, but steel is quite different from stone."[35] The regularities of myth—this is the central insight of Lévi-Straussian structuralism—are like the regularities of language; and the evolution of myth, though not a necessary process, is susceptible of as exact a description in retrospect as is the evolution of language. Given this and a reflex relationship between mythological and sociological structures, an exact description of mythic evolution will also be as exact a description as is possible of social evolution.

Myth is not literature, not "humanities." Lévi-Strauss insists that it

. . . should be placed in the gamut of linguistic expressions at the end opposite to that of poetry, in spite of all the claims which have been made to prove the contrary. Poetry is a kind of speech which cannot be translated except at the cost of serious distortions; whereas the mythical value of myth is preserved even through the worst translation. Whatever our ignorance of the language and the culture of the people where it originated, a myth is still felt as a myth by any reader anywhere in the world. Its substance does not lie in its style, its original music, or its syntax, but in the *story* which it tells. Myth is language, functioning on an especially high level where meaning succeeds practically at "taking off" from the linguistic ground on which it keeps on rolling.[36]

That myth can speak across cultural borders and yet stand in close articulation to a given cultural system is our clue that cultural systems have common structural principles. Mythology makes these visible and is, as a result, the royal road to anthropology.

Lévi-Strauss's debt to Hegel is so substantial that to write a Lévi-Straussian analysis of the myths of modern man or of the evolution of myth in modern times would in many particulars almost inevitably be to rewrite Hegel. Here we can do no more than suggest

that the inner contradictions of secularity and religion in Western culture are in some way complementary and then ask ourselves what sort of mean term could provide a plausible mythological mediation between them.

To begin with, then, we must suppose that there are inner contradictions in secularity as well as in religion. The inner contradiction of religion, as so frequently pointed out, is that its key terms—God, soul, heaven, damnation, etc.—have in Clifford Geertz's phrase lost their "aura of factuality."[37] Exhortations and condemnations based upon them have no force. The inner contradiction of secularity, on the other hand, is that it promises a utopia it cannot deliver. Daniel Bell writes: "Bourgeois society . . . is morally and intellectually unprepared for calamity. On the one hand, there is the liberal temper, which redefines all existential questions into problems. . . . On the other hand, there is the utopian assumption of limitless ends achievable through the marvelous engine of economic, if not technological, efficiency. Yet calamity has struck, and will strike again and again."[38] Secularity's discovery that its "utopian assumption" is indeed an assumption is very like religion's discovery that its heaven is an assumption. In either case, the result is a loss of faith.

The fact that these two losses have occurred in sequence rather than simultaneously has suggested to some that spiritual capital withdrawn from the new faith may be reinvested in the old. Gilkey comes close to suggesting this; and others, whose interest in traditional religion is less vested than his, seem to agree. *Time* interprets the 1976 presidential campaign as "The Search for Someone to Believe In."[39] The political columnist James Reston relates the early success of Democratic presidential candidate Jimmy Carter to the religious needs of the electorate. He quotes Walter Lippmann:

"Among those who no longer believe in the religion of their fathers, some are proudly defiant, and many are indifferent. But there are also a few, perhaps an increasing number, who feel that there is a vacancy in their lives.

"What most distinguishes the generation who have approached maturity since the debacle of idealism at the end of the First World War is not their rebellion against the religion of their parents, but their disillusionment with their own rebellion. It is common for young men and women to rebel, but that they should rebel sadly and without faith in their own rebellion . . .—that is something of a novelty."[40]

Reston judges that the number of those who feel a spiritual vacancy in their lives has increased since 1929, when Lippmann wrote, and that Carter's success lies in his response to this need. After Carter's tide-turning victory in the Ohio primary, Mayor Richard J. Daley of

Chicago said: "I have respect for any man with courage and he's got it. By God, you have to admire a fellow like that. He's got something we need more of. He's got a religious tone in what he says. Maybe we need a little more religion in the entire community."[41]

There are other straws in the wind. In 1975 the best-selling nonfiction title in the United States was Billy Graham's *Angels: God's Secret Messengers*. One hundred thousand copies are often enough to carry a hardcover book into the top ten. *Angels* sold a phenomenal eight hundred ten thousand. Catherine Marshall's *Something More: In Search of a Deeper Faith* —a much less successful religious title with only one hundred twenty-five thousand copies sold—nonetheless outsold by thirty-five thousand copies Saul Bellow's best-selling, Pulitzer Prize–winning novel *Humboldt's Gift.* In reporting these statistics *Publishers Weekly* noted that *Something More* had not appeared on the usual best-seller lists because the small religious bookstores where such books make most of their sales are not surveyed for those lists.[42] If we hazard the guess that some of the small religious bookstores do not sell all the usual best sellers, an important social fact begins to emerge, namely, that the overcoming of religion by secularity, that most important and impressive myth of modern times, has been recounted with too little qualification. It is simply incorrect to say, as Bell does, that "modern societies" have substituted utopia for religion. We must say rather that "large and influential populations within modern society, including most of the well educated, many of the wealthy, and key segments of the permanent government" have done so. Rephrasing the matter in this way, we direct our attention to the fact that if defections begin to occur from the secular elite there remains, still, an organized alternative to which the defectors may turn.

And yet what lies behind the new secular facade of Western society is not in the first instance an old religious alternative but rather a pair of alternatives. Secularity is itself the mean term that arose after the religious wars of the seventeenth century. If the adequacy of the secular resolution of those alternatives is called into question, then in principle both earlier alternatives should be open again. Imitating Lévi-Strauss, let us suggest the following development:

INITIAL PAIR	FIRST TRIAD
Life	Saint (unworldly, altruistic, dogmatic)
	Scientist (utopian, civil, empirical)
Death	Sinner (worldly, selfish, nihilistic)

Both Saint and Sinner are religious categories, and both contestants in the religious wars that preceded the Enlightenment were religious.

Lutherans saw the popes as worldly, selfish, and nihilistic; Catholics saw Luther in the same light; and wars were fought to resolve the matter. The Enlightenment called down a pox on both houses and sought to open a neutral space—eventually, the secular state—in which one could be neither a protestant nor a Catholic and so neither a friend nor a foe of those warring parties. But to do this it had to include elements from each party in precisely their most virulently mythologized, wartime guise, thus not Catholic and Protestant but Saint and Sinner.

As utopian, the mediating secularity—with the secular scientist as its culture hero—is both worldly and unworldly; as civil, it is both selfish and altruistic; and, as empirical, it is both dogmatic and nihilistic. Or one may say with equal justice that it is neither worldly nor unworldly, neither altruistic nor selfish, and neither dogmatic nor nihilistic. The fusion of sanctity and sin—not only illogical but, more important, unimaginable until it was accomplished—was irresistible thereafter.

If both religion and irreligion stand behind secularity, then while it would not be wrong to say that secularity is opposed to religion, it would be more accurate—at least at the start—to say that it is opposed to the opposition of religion and irreligion. One who is utopian, civil, and empirical is opposed not only to those who are unworldly, altruistic, and dogmatic but also to those who are worldly, selfish, and nihilistic. Accordingly, defectors from secularity would seem to find both earlier alternatives opening up to them.

An example of this terrifying perspective on the crisis in secularity may be seen in a recent Jehovah's Witnesses leaflet entitled "How Crime and Violence Will Be *Stopped*." The leaflet opens with an invitation to the reader to tell himself a parable against the secular assumption of civility: "CRIME IS HURTING YOU/ *Have you been mugged or robbed?* Has someone in your family been a victim? Then you know the hurt that crime is causing." The next two headlines read: "WHY THE FRIGHTENING UPSURGE?" and "CAN'T SOMETHING BE DONE ABOUT CRIME?" The concluding paragraph reads: "THE ONLY REAL SOLUTION/ *The chief instigator of lawlessness, Satan the Devil, must be eliminated. Men cannot do it. God can. . . . When will this come about?* Study of Bible prophecy has convinced millions of persons that it will be in our own day."[43] Jehovah's Witnesses would return to the total irreconcilability of Saint and Sinner and plead urgently for sanctity. Others, defying secular civility in the opposite direction, urge the opposite choice. It is no accident that the runner-up best seller to Graham's *Angels* was Robert Ringer's *Winning through Intimidation.*[44]

It is rare, however, to find secularity so totally despaired of. The

"doom boom" may have undermined the assumption of utopia, rising crime rates, the assumption of civility; and parapsychology, the assumption of empiricism. Still, for secular man, these developments most often raise a question without canceling the old answer altogether. As Lippmann had it, the loss of faith in these ideals is experienced as a "vacancy" without provoking a reversion. The true picture, after Lévi-Strauss, is one in which a new opposition has developed between a mediator and one of the terms between which it was to have mediated. Thus:

INITIAL PAIR	FIRST TRIAD	SECOND TRIAD	
Life	*Saint*	*Ecumenist*	
	(unworldly, altruistic, dogmatic)		*Naturalist* (earthly, communitarian, homeostatic)
	Scientist (utopian, civil, empirical)	*Ecologist*	
Death	*Sinner*		

A new polarity developing between religion and secularity can be mediated as their mythological heroes are replaced by, respectively, the ecumenist and the ecologist, who, without altogether abandoning the concerns of their religious and scientific communities, have further, explicitly global (whole-earth) concerns in common. Ecumenism is concerned with world religions and with their welfare and unity across national and cultural borders. Ecology is concerned with the impact of technology on the planet taken as a relatively closed homeostatic environmental system.

As a mediator between Ecumenist and Ecologist, we set the Naturalist, using a word which, interestingly, has a double meaning even in common usage. In science a naturalist is "a student of natural history, *esp:* a field biologist."[45] In religion he is an adherent of naturalism, that is, "a theory denying that an event or object has a supernatural significance; *specif:* the doctrine that scientific laws are adequate to account for all phenomena."[46]

Superficially considered, naturalism might seem merely the capitulation of religion to secularity. In fact, it is equally the capitulation of secularity to religion, for, empirically, scientifically, one can never assert that scientific laws are adequate to account for all phenomena,

and science never has done so. If it is possible to speak of the accep-
tance of an assumption as an act of philosophical faith, then
naturalism may be philosophy. But, surely, at the point where an
assumption begins to articulate itself into a code of ethics and a way of
life it is more reasonable to refer to it as a religion, understanding
religion now not as the reverse of irreligion but as the institutional
reflex of myth. (Henceforth, we will speak of religion only in this
sense.)

Perhaps the most famous attempts at naturalistic religion in the
past century were those of Thomas Huxley and Julian Huxley, in
which natural selection was made the central doctrine. Toulmin
sought to determine the Huxleyan naturalistic religions by pointing
out that their basis was mythological. In an essay entitled "Con-
temporary Scientific Mythology" he wrote: "When we begin to
look to the scientist for a tidy, a simple, and especially an all-purpose
picture of the world; when we treat his tentative and carefully
qualified conclusions as universal certainties; or when we inflate some
discovery having a definite, bounded scope into the Mainspring of the
Universe, and try to read in the scientist's palm the solutions of
difficult problems in other fields—ethics, aesthetics, politics, or
philosophy; then we are asking of him things he is in no position to
give, and converting his conceptions into myths."[47] Toulmin's refuta-
tion is logically impeccable if we assume that conceptions never
should and never need be turned into myths. On the other hand, if
we assume that myth is both inevitable and salutary, then in a
scientific culture we should expect mythology to borrow from science.
What else is there?

It is essential here to recall that the mythologist is not an artist but a
bricoleur, a junkman, or, at best, a junk artist. Unlike an artist, he does
not create new material but only arranges existing material. And if his
goal is the impossible one of speaking about the whole in a concrete,
unphilosophical language, a language explicitly designed to fit only
the part, we must expect him to stretch words and concepts to the
bursting point. We are accustomed to regard a certain style of lan-
guage as appropriate for religion, but in fact religion has no appro-
priate language, no proper language, no language of its own. It has
only what it can borrow; and what it borrows it never returns in good
condition. On Toulmin's line of argumentation, we could well object
that the psalmist who wrote "The Lord is my Shepherd" was asking of
animal husbandry what animal husbandry was in no position to give
and turning its conceptions into myths. Indeed he was, but so, *mutatis
mutandis,* must any mythologist. The question is not whether modern
religion will turn modern conceptions into myths but how well it will

disguise the fact that it has done so. *Ars est celare artem;* and, though myth is not art, it must lose itself in the mess of its borrowings if it is to be effective. The Huxleys were not wrong in what they did, just too clean about it.

One way of talking about what a myth must do to succeed is to say that it must arm itself against parable. In a brief but extraordinarily illuminating book, *The Dark Interval,* Dominic Crossan, working within a Lévi-Straussian framework, speaks of parable as the polar opposite of myth. Myth nerves, parable unnerves; myth creates, parable lays waste; myth builds, parable explodes. Myth, as we have asserted, is not literature; parable is the quintessence of literature, especially in modern times: "The surface function of parable is to create contradiction within a given situation of complacent security but, even more unnervingly, to challenge the fundamental principle of reconciliation by making us aware of the fact that *we made up* the reconciliation."[48]

A parable which has been told with increasing frequency against the myth of the triumph of secularity is the science-fiction apocalypse viewing our present utopia from some point long after its collapse. In movies as inept as *Planet of the Apes* and novels as accomplished as Walker Percy's *Love in the Ruins,* secular man is lulled to sleep by modernistic, usually scientific trappings and then jarred awake with the warning: You have no grounds for your hope!

The power of such parables is impressive, but myth has its defenses against them. The basic mythic defense against parable is the provision of a category within the myth for those who will object that it is humanely made up. The more subtle and flexible this category, the better the myth will be able to defend its claim to be based on some more than merely personal foundation, even as it luridly personalizes the parabler's own objections. George Orwell's *Animal Farm* begins as an allegorical presentation of the Communist Revolution and ends as a parable against it. But Orwell, despite his pretensions to the contrary, was an English aristocrat. How could he not be opposed to a classless society? Karl Kraus said, "Psychoanalysis is that spiritual disease of which it considers itself to be the cure,"[49] and yet Kraus, with his spiritualization of woman into the "eternal feminine" and his rage against women's rights, was plainly a latent homosexual. How could he not be threatened by analysis? Science-fiction writers say that the world that science has built is dying, but science-fiction writers are writers and not scientists: Their side of the two cultures has suffered a drastic loss of influence. Only the naive would doubt that what they present as the terror of the future is really nostalgia for the past. Bourgeois reaction, neurotic resistance, artistic escapism—these are

three of the more successful neutralizations of the parabler that this century has seen. No new myth will succeed unless it performs equally well against its opposition.

Of course, if all myths are "made up" and if there is no knowledge that is free of myth, then the parabler may plead guilty to the charge of personal fabrication and yet dissolve his sin in the original sin of speech. If there is no speech but falsification, then he can only act —never speak—for truth; and his action must be that of silencing mankind. Not a few critics have seen in the parabolic intensity of modern literature and art, in its institutionalization of revolt, precisely this nihilistic ambition. Thus Lionel Trilling speaks of the "adversary culture," and Daniel Bell of "the legend of modernism": ". . . that of the free creative spirit at war with the bourgeoisie. Whatever the truth of such a view when, say, Whistler was accused of having 'flung a pot of paint in the public's face,' in our time the idea is a caricature."[50] Bell's "legend of modernism" would be, in Crossan's terminology, the myth of parable. The trouble with such a myth, as Bell has tried to show, is that negation cannot be one's only affirmation, or rather it can, but only at the price of chaos and death.

The ultimates of parable are truth and falsehood, the ultimates of myth are life and death. The ultimate self-justification of myth—the justification for Yahweh's command to Adam and Eve not to eat of the Tree of Knowledge—is that, since human life outside society is impossible and individual human intelligence capable at any moment of a crippling fecundity in social contradiction, there ultimately can be no alternative but death to the social construction of reality. As the brain itself is both filter and net, so the social mind—the common sense—knows a little and excludes the rest in self-defense. Myth accepts this inevitability. Parable—reckless equally of self and of others, suicidal and murderous at once, devoted only to the truth or, failing that, to the negation of falsehood—rejects it.

I spoke earlier of the "doom boom" as a parable against the utopian assumption of secularity and described naturalism as "earthly," understanding thereby an attitude neither utopian nor unworldly but with elements of each: The planet transcends the individual, but our hopes for it, though high, will not again be what they have been. I spoke of crime in the streets as a parable against the secular assumption of civility and described naturalism as "communitarian," understanding thereby an attitude neither deontologically altruistic nor teleologically civil but with elements of each: Petit-bourgeois, private-citizen selfishness is not without its redeeming social value, and altruism itself as a communitarian virtue is only relatively recommended. Finally, I spoke of parapsychology as a parable against

empiricism, recalling those scientific dissidents—Arthur Koestler is one of them—who see science poised for a major methodological transformation. Koestler may be right, but in the shorter run the more powerful antiempiricist parables are those that point not to possibilities but to dangers.

The empirical, revisionist mediation which secularity provided between dogmatism and nihilism—the mediation that now seems to be in trouble—identified the pursuit of knowledge with the pursuit of life: "Better Living through Chemistry," in one celebrated formulation. That identification is now challenged by the dangers of particular kinds of research and technology—for example, genetic research and nuclear technology—as well as by programmatic misgivings like those of Heilbroner about the long-term compatibility of completely unrestricted inquiry and human survival. The empiricism that secularity substituted for dogmatism was completely open ended: There was no experiment that, in principle, could not be performed. When we describe naturalism as homeostatic, we understand an attitude that allows only those experiments to be performed and only those technologies to be developed that do not disrupt the homeostasis excessively. Though this attitude is not dogmatic, it has in common with dogmatism that it defends closure. In practice it might disturb little of the scientific establishment, as science in its first phases disturbed little of the philosophical and religious establishment; nonetheless, it is a decidedly different operating principle. More important in a mythological context, it acknowledges a tension between life and truth that secularity chose to forget. While one may always risk death—even mass death—rather than acquiesce in an intolerable homeostasis, it will be difficult in a culture characterized by such an attitude to duck the fact that the stakes are indeed that high. Myth, in naturalism, is rearmed against parable. Its reasons become reasonable once again.

THE MYTHOLOGIZATION OF NATURALISM

I ought now to show how a successful naturalistic myth will disguise its origins and neutralize objections against itself; but since I find the disguise at this point to be the soft skin itself, ripping it off offends my sensibilities. But enough of confession.

Naturalism, like all myths, must be narrative in form. Even when, as Barbour would have it, a model is extracted from a myth, the echoes of story remain. When we speak of "the myth of the melting pot," we seem to be referring rather to a model than to a myth; but "melting pot" is shorthand for "that set of stories which has as its point that immigrants disappear into the American culture like ingots into a pot

of molten metal." And as a set of stories, no one of which is complete, melting pot has no author; it is this which distinguishes it from propaganda. The play *The Melting Pot* contributed only the title to the myth; the myth was there before the play was written. So it must be, should naturalism become a new mythological reconciliation. Stories of how a nuclear plant was not built, how a town council voted not to build an airport, how a politician won an election on the slogan, "Ask not what your country can do for you, ask what you can do without"—all these will contribute to it, and it will live (myth is a beggar) on such contributions.

Myth differs from literature in that it always has a moral and never is complete on its own terms. In an effective myth the power of the narrative line is such that aesthetic response catalyzes moral responsibility, and the hearer is moved to enact the last chapter himself so as not to spoil the plot. Thus the last chapter of melting pot is the effort the immigrant makes to fit in and the applause of the native as he does so, and thus the to-be-enacted last chapter of the myth of naturalism must be the ethics of ecological homeostasis in all its many manifestations.

But neither the elusive anonymity of myth nor its subtly engaging incompleteness alone can guarantee its propagation. An effective myth also must provide for its own propagation by including as part of the hearer's responsibility a duty to retell it. A myth may be temporarily powerful without making this provision, but the longest-lived myths are those that make it most carefully. Thus in the Jewish Passover seder the ritualization of the meal is justified in the course of the ritual itself by reference to the miraculous survival of the Jewish people. It is not Jewish survival that guarantees the seder, if we are to believe the seder, but the seder that guarantees Jewish survival; or, if neither has priority, the two are at least inseparable and simultaneous. Myth, as I have been stressing, is not a matter of truth and falsehood but of life and death; and examples of similar weavings of myth and ritual into the understood life process can be found in every religious tradition.

If the myth of naturalism is to convince as a story, however, if the overcoming of secularity and religion is to be received gratefully as a triumph of the human spirit, then death must stare from its shadows as death stares from the shadows of the Jewish seder and from the founding moments and foundation rituals of all Western religions. Both Christianity and Islam were apocalyptic in their founding phases, and both continue to make converts in number only when their promise of life is closely coupled to the threat of death. It is scarcely too much to say that no new mythological synthesis has ever

come to birth without death as the midwife. The agony of the Thirty Years' War cannot be overestimated as a contribution to nascent secularity.

In the present instance, of course, the peril is ecological Armageddon, and so our naturalism must be tied directly to that peril in a mythologized natural history of how men once were apes, then slaves to blind gods, then blind gods themselves, and of how, when nearest to death, they became at length human beings. The overcoming of secularity and the rise of men to humanity, so the story must go, came with the discovery of a structure in reality which men had to honor if they wished to remain alive as men and with the further insight that part of the honor they owed it was the occasional, formal, public recounting of how they discovered it. Thus must the propagation of the myth be built into the myth itself, and it is in this connection that we turn our attention to sociobiology.

As defined succinctly by the neurobiologist Stephen Emlen, sociobiology is that branch of science that seeks "to interpret and partially predict the social structure of a species on the basis of a limited set of environmental or ecological variables—the type of food resource together with its degree of stability and predictability; the dispersion pattern of different resource bases in both time and space; the types and strategies of potential predators or parasites and means for counteracting them; the need (or lack thereof) for rapid information exchange about the environment. These and other ecological parameters impose limits on the range of types of social organization that will be adaptive."[51] The naturalistic case for religion must be a kind of ecclesiobiology in which the myth-parable parameter imposes its own limit upon the range of types of social organization that will be adaptive for man. In religion no less than in, say, industrialization there must be "a fine tuning of social organization to ecological constraints,"[52] and it is reasonable to postulate a genetic predisposition in man to those socioreligious forms, however numerous they may be, that are within the adaptive range.

Since Kant, the continual quest of philosophers of religion has been for a "religious a priori," an innate category of thought that would make religion inevitable even if knowledge of God could never be certain. In sociobiology the inevitability of religion and the unknowability of God would seem to be argued environmentally and ethologically, as in an aside by Donald T. Campbell, a psychologist sympathetic to sociobiology and to Burhoe's naturalism, under the heading "The Need for Epistemic Humility": "Although evolutionary epistemology makes clear that our predicament of epistemological relativity does not justify an ontological relativity, it portrays the scientist's

knowledge of hydrodynamics, for example, as a useful approxima-
tion on an epistemological par with the knowledge of hydrodynamics
embodied in a fish's musculature, for all its greater subtlety, mul-
tipurpose usefulness, and relative completeness."[53] What our knowl-
edge of animal knowing implies is that all knowing is ordered not to
the knowable as such but to survival in a particular environment. That
there is a truth about the human environment beyond what men can
know of it is thus as likely as that there is a truth—hydrodynamics
—about water beyond what fish can know of it. Language—and myth
as a part of it—is an inseparable part of the human habitat. Depar-
tures from linguistic or mythic homeostasis are, like other such depar-
tures, made at a certain peril. Speech is a physical event with physical
consequences, however imperfectly we may measure them. Given the
requisite epistemic humility, then, there need be no contradiction
between resignation to epistemological relativism and faith in an on-
tological absolute, and so none between practical adherence to a myth
and theoretical allegiance to the truth. If you like, this is the
justification on scientific grounds of the legitimate claims of religion
against the illegitimate intrusion of God.

Critics of sociobiology have seen in it the threat of the absolutization
of the political status quo through precisely such a reckless mythologi-
zation of scientific findings as has been just sketched. That
sociobiological arguments have this potential is undeniable, and yet
the line between a fearful absolutization and a desirable stabilization is
a difficult one to draw. Any stabilization that occurs will be the stabili-
zation at *quo* of some *status*. And no such stabilization, I have been
arguing, will occur without a relative stabilization of myth and a rela-
tive neutralization of parable. Whether sociobiology can serve such
mythological purposes responsibly is open for discussion, to put it
mildly. But, as the discussion begins, we ought at least to recognize
that it is not the loose coterie of biologists, ethologists, zoologists,
neurologists, etc., who call themselves sociobiologists or are so called
by others that is "in charge" of what is going on. That group is not, as
it were, foisting a disguised social program on an unsuspecting public.
It is rather the public that has seen something it thinks it needs and
snatched it from those who first discovered it. In an obituary of Lionel
Trilling, fellow literary critic Steven Marcus wrote that the meaning
of Freud to Trilling had been "an 'emphasis on biology' as 'actu-
ally a liberating idea.' It was liberating because 'it proposes to us that
culture is not all-powerful. . . . We reflect that somewhere in the adult
there is a hard, irreducible biological *reason,* that culture cannot reach
and that reserves the right, which sooner or later it will exercise, to
judge the culture and resist or revise it.' "[54]

The secular culture that threw off dogma, declared all things possible, and exhausted itself trying to do them is now being judged by a biological reason harder and less reducible than any Freud dreamed of; and yet the judgment, strangely, seems welcome. I have seen raucous schoolchildren fall silent in the darkened connecting chambers of "Man and His Environment," an exhibit at the Chicago Museum of Natural History. Reproduction, predation, biodegradation, the serene relentlessness of mortality fill every frame of the films one sees as he moves through the exhibit. Above the entrance to it is a Carl Sandburg couplet that, one suspects, Trilling would have endorsed: "Something began me and it had no beginning, / Something will end me and it has no end." And yet the mood is somber, not panicky, and reverent rather than worshipful. The children seem to catch on, and it is children, always, who live the mythological life of a culture most intensely.

BURHOE AND BARBOUR IN MYTHOLOGICAL PERSPECTIVE

I opened this paper with a discouraged comment by Blanpied on the clarification of concepts in the humanities versus the collection of data in science. I said that Barbour stood on one side in that opposition and Burhoe on the other. Then, after summarizing the work of Barbour and highlighting certain key ideas in the work of Burhoe, I said that a mythological analysis of the science-religion impasse might suggest how their work was related. The outline of that relationship should now be apparent.

Barbour does not aspire to a fusion of science and religion of the sort that mythology always seems to seek when, in a time of great danger, two powerful social realities are sharply opposed. The Whiteheadian metaphysics which he espouses is not a mythological midterm but only a way for each of the two contenders to talk about itself as a whole in a language accessible to the other. Barbour brings the logical differences between science and religion into the clearest possible focus. But when his work is completed and religion and science are both coherently "there," each with its own *raison d'être*, each with its own internal consistency, the "vacancy" that Lippmann spoke of still gapes.

Burhoe's work, by contrast, is closer to the naturalism that from a mythological standpoint seems likely to resolve the science-religion impasse. However, Burhoe fails to provide what Lévi-Strauss regards as the essential first step in any such mythological reconciliation, namely, a substitution of reconcilable mythological equivalents for the irreconcilable original terms. Neither of the substitutions we have proposed need be automatic. Ecology is now just a branch of science,

as science was once just a branch of philosophy. Ecumenism is even less important in the list of things that worry church leaders. Nor is naturalism an automatic mediator between them, any more than the coyote is an automatic mediator between the wolf and the buffalo. But if these substitutions are not adequate, others will have to be sought: Science and religion cannot be joined as immediately as Burhoe would join them.[55]

Finally, though Burhoe perhaps even less than Barbour would wish to see his work read as a contribution to mythology, he has made what must seem the right mythological decision in drawing all of science into his synthesis under the rubric of evolution. Since myth is always at least implicitly a narrative and since natural selection is unique among scientific theories in having a narrative structure with characters who enter and exit, there is every reason to expect scientific mythology to make evolution its basic story. Looking toward such a story, the sociobiologist E. O. Wilson wrote in a review of Robert Ardrey's *The Hunting Hypothesis:*

The great British biologist J. B. S. Haldane once said of science and writing, "I am absolutely convinced that science is vastly more stimulating to the imagination than are the classics, but the products of the stimulus do not normally see the light because scientific men as a class are devoid of any perception of literary form." This being the case, the best scientists might profitably form a symbiosis with first-class writers such as Ardrey, who can share their enthusiasm, touch the essence of discovery, and translate subjects into precise but affecting personal visions with an artistry beyond the scientists' reach. Thus might the two cultures join. If writers of Ardrey's caliber make mistakes, let half the blame fall on the scientists who have advised them or—worse—failed to advise them when they had the opportunity.[56]

I happen to find Ardrey's style neither precise nor affecting; but if this mythological analysis of Barbour and Burhoe must lead anywhere, let it lead to him and past him to the symbiosis for which Wilson is bold to hope.

NOTES

1. William A. Blanpied, *Interdisciplinary Workshop on the Interrelationships between Science and Technology, and Ethics and Values* (Cambridge, Mass.: American Association for the Advancement of Science, 1975), p. 9.

2. Ian G. Barbour, *Christianity and the Scientist* (New York: Association Press, 1960).

3. Ian G. Barbour, *Issues in Science and Religion* (New York: Harper & Row, Torchbooks, 1971); originally published by Prentice-Hall, Inc., 1966. See D. M. MacKay's review in *British Journal for the Philosophy of Science* 18 (1967): 259–61.

4. Barbour, *Issues,* pp. 4–5.

5. Ibid., pp. 124–25.

6. Ibid., p. 264.

7. Ibid., p 269.

8. Ibid., p. 270.

9. Ian G. Barbour, *Science and Secularity: The Ethics of Technology* (New York: Harper & Row, 1970).

10. Ian G. Barbour, *Earth Might Be Fair: Reflections on Ethics, Religion, and Ecology* (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1972).

11. Lynn White, jr., "The Historical Roots of Our Ecologic Crisis," *Science* 155 (1967): 1203.

12. Barbour, *Earth Might Be Fair*, p. 151.

13. Barbour, *Science and Secularity*, p. 56.

14. Ibid.

15. Ian G. Barbour, *Myths, Models and Paradigms: A Comparative Study in Science and Religion* (New York: Harper & Row, 1974), p. 27.

16. Ibid., p. 179.

17. Ibid., p. 38.

18. Ibid., p. 42.

19. Ibid., p. 49.

20. Ibid., p. 56.

21. Ibid., p. 58.

22. Ibid., p. 146.

23. Barbour, *Issues*, p. 11.

24. Ralph Wendell Burhoe, "The Human Prospect and the 'Lord of History,' " *Zygon* 10 (1975): 352–53.

25. Ibid., p. 361.

26. Ralph Wendell Burhoe, ed., *Science and Human Values in the 21st Century* (Philadelphia: Wesminster Press, 1971).

27. Robert J. Heilbroner, *An Inquiry into the Human Prospect* (New York: W. W. Norton & Co., 1974).

28. Nicholas Wade, "Robert L. Heilbroner: Portrait of a World without Science," *Science* 161 (1974): 599.

29. Langdon Gilkey, "Robert L. Heilbroner's Vision of History," *Zygon* 10 (1975): 224.

30. Ibid., p. 231.

31. Ibid., p. 233.

32. Burhoe, "The Human Prospect," p. 328.

33. Claude Lévi-Strauss, *Structural Anthropology* (New York: Basic Books, 1963), p. 216.

34. Ibid., p. 224.

35. Ibid., p. 230.

36. Ibid., p. 210.

37. Cf. Clifford Geertz, *The Interpretation of Cultures: Selected Essays* (New York: Basic Books, 1973), p. 90.

38. Daniel Bell, *The Cultural Contradictions of Capitalism* (New York: Basic Books, 1976), p. 28.

39. "The Search for Someone to Believe In," *Time* (April 26, 1976), pp. 12–13.

40. James Reston, *New York Times* (May 30, 1976), sec. E, p. 15; Reston's quotation is from Walter Lippmann's *A Preface to Morals* (1929).

41. As quoted in *Chicago Sun-Times* (June 9, 1976), p. 4.

42. *Publishers Weekly* (February 9, 1976), pp. 42–43.

43. "How Crime and Violence Will Be Stopped" (New York: Watchtower Bible and Tract Society of New York, undated), unpaginated.

44. See n. 42 above.

45. *Webster's Seventh New Collegiate Dictionary*, s. v. "naturalism."

46. Ibid.

47. Stephen Toulmin, "Contemporary Scientific Mythology," in *Metaphysical Beliefs*, ed. Alasdair MacIntyre (London: SCM Press, 1957), pp. 77–78.

48. John Dominic Crossan, *The Dark Interval* (Niles, Ill.: Argus Communications, 1975), p. 57.

49. As quoted in Allan Janik and Stephen Toulmin, *Wittgenstein's Vienna* (New York: Simon & Schuster, Touchstone Paperbacks, 1973), p. 75.

50. Bell (n. 38 above), p. 41.

51. Stephen Emlen, "An Alternate Case for Sociobiology," *Science* 161 (1976): 736.

52. Ibid.

53. Donald T. Campbell, "On the Conflicts between Biological and Social Evolution and between Psychology and Moral Tradition," *American Psychologist* (December 1975), p. 1120; reprinted in *Zygon* 11 (1976): 167–208.

54. Steven Marcus, "Lionel Trilling, 1905–1975," *New York Times Book Review* (February 8, 1976), p. 2.

55. The rhetoric of such agencies as the National Endowment for the Humanities reflects an assumption that if a new cultural or mythological (they no longer avoid the word) synthesis emerges it will emerge as literature. On my analysis, however, literature is parabolic, not mythic. Escapist literature offers an alternative world which we are not expected to regard as a serious alternative to our own. Protest literature—and modern literature is full of protest—is parabolic in the fullest sense, undermining the accepted world without offering an alternative: what more modern and more utterly trite a slogan than "I don't claim to have the answers, I'm just raising the question"? Between protest and escape, there is "serious literature," challenging the accepted world precisely because, in one particular or another, it does offer a beautiful or disturbing alternative. All of these are valuable, but all are challenging; and, though *finding* a myth is a challenge, myth itself does not challenge: It is what receives the challenge. A mythological synthesis from literature is therefore a contradiction in terms. If the good sought in government-sponsored humanities programs is, at some remove, a restoration of public faith, the government is wasting its money.

56. E. O. Wilson, "The Lyric Poet of Evolution," *Saturday Review* (April 3, 1976), p. 28. Apropos the same metascientific challenge, cf. the following exchange between Campbell and the late Jacques Monod: "*Monod:* . . . the increase of the efficiency of a group is not a measure of the objective validity of [an] idea at all, as we know it only too well. [But] the second and more mysterious, and in some respects more interesting, selective course is the question, unresolved question, whether we are preconditioned through selection to accept easily certain kinds of interpretation and to reject without even considering them other kinds of explanation. I am rather strongly of the opinion that there is such a predisposition in our genetic make-up, to the extent that the social level system has predetermined categories, and this exists and can be justified by considerations of natural selection. . . . a sort of wish to be brainwashed, as it were. . . . *Campbell:* If you agree now that these social customs are the products of a selective retention process, do you not end up then believing that they are functional, and in some sense wise? *Monod:* There is no doubt at all. . . . *Campbell:* . . . In so far as these are functional, you must see in their functioning a kind of truth. Rather than looking at their literal inconsistency with science, could you not attempt to translate that truth into a more acceptable language in so far as religious language is competing as a scientific language, which you seem to assume it is and I agree that it has been? *Monod:* I think so. I agree with you. I haven't tried to do anything of that kind, because it is beyond my capacity but I think it should be done . . . should be attempted" (as quoted in Theodosius Dobzhansky and Francisco Ayala, eds., *Studies in the Philosophy of Biology* [London: Macmillan Press, 1974]).