

TECHNOLOGY AND THE "SUPRANATURAL"

by Max L. Stackhouse

On the general problem of the relation of science to religion in the understanding of humanity in a technological society, Solomon H. Katz and Eugene G. d'Aquili and Charles Laughlin in their papers¹ have broken new ground in presenting rather convincing evidence that there is a biopsychological or biophysical basis for ritual behavior. Further, they suggest that recognition of this basis is necessary if we are to make any significant strides in understanding human wholeness from a scientific perspective. This breakthrough, if sustained by further research, will, I expect, force crude scientific perspectives to reexamine their hostility to certain religious phenomena which previous scientific models could not explain or understand. From a theological perspective, it would have been highly surprising and even incredible had they found that there was no biophysical base. Indeed, contemporary theology would expect a similar basis for myth and symbol formation, as these, too, are crucial ingredients of religion.

THE PROBLEM OF CHOICE

But a crucial question arises from the standpoint of religious social ethics, namely, if there is a biophysical basis for ritual, myth, and symbol, then which rituals, myths, and symbols ought we choose? Notice an important element of this question—the word “ought.” This implies that—within the natural human possibility, even necessity, of having ritual, myth, and symbol—it makes a moral difference which rituals, myths, and symbols are developed. Is it not the case that there are presumably a variety of rituals, myths, and symbols that could more or less adequately represent this natural necessity and

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more or less adequately fulfill this possibility than others? If one thinks of the ritual, mythological, and symbolic dimensions of, say, the Mass at Vatican II, the placing of the goddess Reason in Notre Dame during the French Revolution, the dynamics of a Nazi rally, the placing of a wreath at Lenin's tomb in Moscow, the slaughter of a sacrificial offering at a Kali temple in rural India, or a Quaker meeting in Pennsylvania, one only begins to recognize the fantastic variety of rituals, myths, and symbols that are made possible by this human necessity. And, at least from the standpoint of religious social ethics, each of these would represent alternative ways of dealing with the human potential that is pre-given in the structure of the biophysical order and with the environment in which expression of this possibility is developed. The question is whether the biophysical and environmental necessity of something in general tells us how, precisely, we are to cope with that necessity. Are the principles of selection of various means to meet a need given in the structure of the need itself?

This question is a deep one in terms of philosophical implications, and on it rest one's metaphysics, one's anthropology, and one's theory of historical development. Various monistic positions, whether of the theological monergist variety or the natural-evolutionist variety, would answer yes.² There is only one full and adequate means for dealing with pre-given necessity, and all other options which are imagined are idolatrous (for theological monists) or errors in the trial-and-error process of development (for natural monists).

There is a second option, namely, that the structure of reality is dual. This may occur in either a theological or a natural frame of reference also. The theological notion is often stated by reference to a supernatural being or revelation that is in tension with, encounters, or interrupts the natural sphere. In their natural forms, the yin/yang, form/context, or apollonian/dionysian distinctions are most pronounced as explanatory principles for the structure of reality. (D'Aquili and Laughlin seem to be concerned philosophically with this second form of the distinction.) The need which is most pronounced in life, in this case, is produced by the alienation of one from the other, and the very structure of that alienation dictates the only proper solution—the synthesis or integration of that tension.

A third answer can be and has been given to this question, however: There are an infinite number of possible solutions. The nature of reality is not monolithic or dualistic but ultimately pluralistic. This solution, too, comes in a theological form—polytheism—and in certain forms of nominalism and phenomenology on naturalist (especially epistemological) grounds. In these views, if pushed radically, the question itself is dubious, for all we can do is note that there is an

enormous variety and take each case in itself. Attempts to arrive at general statements of the human problem may be nonsensical; for each reality in the universe has its own irreducible integrity, and thus the many realities that are must be taken on their own terms.

These three major solutions (sketched very briefly here) all present a problem from the standpoint of social ethics.³ On these grounds, could it not be said that a Nazi rally—representing a distinctive ritual, myth, and set of symbols—is a fulfillment of the natural possibility of these given in the biophysical structure? Under the monist option, could we not say that this idolatry or error was but one dead end that would collapse under the weight of its own fault? Then why should we trouble ourselves intentionally to defeat it? Could it not be argued that the slaughter of six million Jews was itself a moment of rather dramatic negative natural selection? Teilhard de Chardin, much celebrated in some naturalistic circles, actually approached this position. But, surely, there is some principle whereby we can articulate our resistance to such proposals. Perhaps our opposition was given in the very structure of our needs, and we could do nothing else but resist. But that is not how we in fact understood ourselves in the struggle against such phenomena. We understood ourselves as believing we *ought* to struggle against them, as believing that if we did not heed this sense of ought, the rituals, myths, and symbols of Nazism might well survive and determine the structure of life and death in the predictable future. In short, when confronted with certain rituals, myths, and symbols, we feel that the ones which we concretely develop or endorse do make a great deal of difference, in part because rituals, myths, and symbols take on a power of their own, once generated out of the biophysical necessity. Under the dualist option could we not say that the euphoria gained by the blend of high, rational, technical development in Germany and the more intuitive, romantic, or emotive dimensions of human existence in the Nazi experience present a genuine overcoming of self-alienation among the Germanic peoples and rendered a synthesis of new wholeness? Still, there is the haunting sense that some forms of this integration are ethically pathological even if there is no biophysical basis for proclaiming it so. Or shall we turn to the third option and suggest that everyone must fulfill the particular genius of his or her own perceptions in the mode most fitted to the individual god or phenomenological perception? The logical consequence of this is the phenomenological statement that some people like to kill Jews.

These arguments are only an attempt to suggest that none of the major interpretations of reality—monist, dualist, and pluralistic phenomenological—appears to provide a critical principle by which

we can select among the possibilities presented by the fact of the necessity for human participation in ritual, myth, and symbol. The reason is, I think, that they do not account for the sense of "ought" as distinct from the sense of "is." At any given time, a given ritual, myth, or symbol may be actual; but whether it *ought* to be is a separable question.

I mentioned a hidden element in the question of which rituals, myths, and symbols we ought to choose even if there is a biophysical basis for them. It leads to a second, namely, the word "choose." That is, there is no sense in speaking of what one *ought* to do—whether to participate in Catholic, Nazi, Marxist, or Quaker rituals, myths, and symbols—unless there is some reality of the possibility of choice. Certainly, we empirically experience ourselves as having some choice, and we praise or blame ourselves and others for choices made. But if it is the case that what appears to be choice is actually the biophysical necessity of developing ritual, myth, and symbol—developed in each instance according to the conditioned responses, the rewards and punishments of a given environment—then, again, we could not really stand in opposition to any specific ritual, myth, or symbol except insofar as we ourselves have been conditioned to do so. Our choices, or apparent choices, are only the acting out of precoded influences for which no one is at any point responsible. Our situation is like that of the Hindu thug who pleaded that it was his *dharma* to commit the murder and therefore he should not be judged, or that of the judge who replied that it was his *dharma* to hang the thug. No choice was acknowledged and no decision was being rendered. Life's moral drama is but the occasion for the outworking of the inexorable logic of the universe.

I mention these matters at some length for it is the presupposition of my remarks, indeed of my discipline, that the words "ought" and "choose" are meaningful terms. Ethics deals with "oughts" and "choices," and religious social ethics deals with the theological and social-historical boundaries of these. It is presupposed that what is implied in these terms is what distinguishes humanity from other species in the biophysical universe. Humanity worries about "oughts" and "choices" at a level that sets it apart from animals. Presupposing the patterns of natural development that have produced humanity, recognizing that humanity always operates within certain natural constraints of biophysical necessity and learned behavior, and presuming that nothing real happens without a biophysical, empirical base, we find it nevertheless to be a basic presupposition of moral thinking that when we say we "ought to choose" we are moving into a range of discourse and activity that cannot, in principle, be exhausted in its

quality or its meaning by biophysical necessity or learned behavior. I will call this range of discourse and activity "the supranatural," a term that (with all its difficulties) represents an attempt to identify those human dimensions of thought and action not exhausted or exhaustible by natural explanations, models, and metaphors, and clearly to differentiate my argument from a supernaturalism that begins by postulating some existent being or beings outside the cosmos. The term is intended to point toward those possibilities for meaning, decision, or valuation that are, of course, produced or allowed by the natural order but which in their worth or significance and power cannot be captured by any analysis of the natural itself. Humanity constructs new syntheses, imagines new futures, selects some aspects of experience over others as more meaningful, and organizes life in general—by rituals, myths, and symbols in particular—around these possibilities in ways that cannot be read out of the facts of the natural possibility or even the necessity of doing these things. I would present five kinds of evidence for this:

1. The most direct empirical evidence is that we experience ourselves in relative freedom. At least, we imagine that we have to make choices that are real choices and not just the tally of necessity. And even when we make our choices by weighing evidence, we operate within the confines of previous choices as to what kinds of evidence are to count. We choose, as it were, to be obedient to those choices.⁴ This experience of ourselves in freedom, while in a sense subjective, is a universal and objective experience of humanity. Even those psychologists who have most intensively pressed the case for the sense of freedom as "instinctoid" and fully natural, such as Maslow and Jung, find it necessary to make the distinction between "lower nature" and "higher nature." Evidence for the content of the latter being instinctoid and "natural" is highly dubious, dependent upon such notions as "metamotivations" or the seeming inheritance of acquired characteristics. And radical, reductionistic statements on the topic, such as those of Skinner, are loaded with arbitrary valuations and philosophical presuppositions that his vision of the world cannot account for.

2. There seem to be logical gaps among those most committed to a purely scientific way of making choices. A large number of quite serious scientists, for example, have been warning us that the ecostructure is in danger of being disrupted due to our profligate use of resources, the population explosion, and pollution. There are two dimensions of this material that I want to draw to your attention. On the one hand, equally competent and earnest scientists show that the projections on this material are based upon highly selective premises.

Some dimensions of the ecological world are accented and some neglected according to a series of choices as to what is most important for the ecologists. But this principle of selection is not given in the data alone; it is always freighted with conceptions of the good life. And it is a leap of considerable size to get from the data of the ecological facts to conceptions of the good life. Extraempirical or, in my terms, "supranatural" concepts are smuggled in.⁵ On the other hand, the presentations of these materials are, more often than not, in the form of the ecological sermon: "We must do this, we must do that, the *quality* of life depends on it." I do not intend to deny the validity of preaching. I do want to stress the difference between that and scientific understanding. When the scientist begins to exhort as well as to explain, he or she is trucking with the supranatural, and it ought to be candidly acknowledged. If the Malthusian laws are working themselves out, why not let them do so? And why call upon humanity to imitate Prometheus or Atlas to prevent it?⁶

But these examples taken from contemporary ecological literature only exemplify and by no means exhaust the point. They can be duplicated in reference to current ethological literature, behavioral psychology, anthropology, and the more subtle philosophical reflections of "process" thought and other fresh attempts at a natural theology under the influence of contemporary physics.⁷

3. The above reflections lead to yet a third kind of argument for making a distinction between natural and supranatural dimensions of existence, entailing the necessity of at least two modes of discourse for the understanding of humanity. This argument rests on the fact that every philosophical position involves unprovable assumptions. There is a primordial decision that is at the root of every epistemology, every ontology, every metaphysic. The choice of the starting point, and it is presumed that that choice is a genuine one, is decisive for the ways in which various kinds of empirical evidence and rational argument get structured. It is quite possible, I think most philosophers would agree, that some choices are poor ones and can be shown to be poor. They just do not allow for the inclusion of certain kinds of evidence and argument that are unavoidable. But the negation of a series of poor choices does not unalterably lead us to a single affirmation. There has as yet been no point in which there are not live, genuine options as to the starting point with each providing relatively adequate ways of dealing with the same evidence and argumentation. Such a fact inclines this observer, at least, to suggest that we must have a mode of discourse about that primordial phenomenon of choice.⁸

4. A fourth kind of evidence can be adduced, I think, by conducting a "mental experiment" on the material presented in the papers men-

tioned at the outset of this paper. Suppose we came to a point in history, several years hence, when we had fully isolated the factors that lead to the interaction of parts of the brain that were the organic base of ritual. Suppose, further, that we were able to control brain behaviors so as to produce a common ritual behavior in all humanity. Three problems immediately would arrive: What proportion of right- or left-brained dominance or synthetic interaction should be developed? What is to be the "right" ritual behavior that should be induced—should it be more like the Nazi rally, the Catholic high mass, the Quaker meeting, or Zen meditation? And who would decide the two previous questions and by what criteria? It is highly likely that there would be a terrific debate between the predominantly right-brained, the predominantly left-brained, and the euphoric integrationists about what is genuinely human in terms of *quality* of human life, each claiming a biophysical base to prove that they are empirically the most human. Should such a scenario ever come to pass, I would expect that there are only a limited number of possible resolutions: A struggle for power and survival could take place and the survivors would argue that their survival was proof of the superiority of their quality of life. But this is to make the choice also for a moral principle that "might makes right"—a principle properly under much suspicion from the dialogues of Plato and the Exodus experience to the critiques of Spencer and the experiences of Hitler and Stalin. Or there could be a declaration of tolerance, a decision that would prevent the systematic use of the techniques of control. Historically, such a decision may derive from a "Mexican standoff." But arguments for toleration do not usually depend only upon the fact of a balance of power; they depend also upon a normative view of human existence that involves values beyond the fact of countervailing powers. Indeed, arguments for the balance of countervailing powers in human affairs usually rest on fundamental value commitments and philosophical choices that cannot be read from the data of natural phenomena.⁹ It would also be possible for there to be a quite serious moral discussion about which kinds of control ought to be exercised under what kinds of circumstances and what kinds of decisions people ought to make in such a situation. Among the features of such a debate, surely, would be the claims that because the left-brain features of our natural capacities brought us to such possibilities of control it was natural to pursue that control; that because the right-brain capabilities are underdeveloped in the modern pursuit of control we ought naturally to eschew such artificial control to focus on the intuitive as the recovery of what is natural to humanity; or that because the capacity of euphoric integration is present we must develop

techniques for that. How would one judge among such claims? This problem has been at the base of every unmodified natural-law ethic, for it inevitably selects certain features of nature which it lifts into normative position. The grounds for selecting one dimension of natural structure over others are not implicit in nature itself. They are inevitably given by supranatural decisions and senses of ought that inform the specific shape of every concrete ritual, myth, or symbol. Thus we are back to the question of how to adjudicate among them. But to engage seriously in this discussion presupposes that the criteria are not a priori given in the capacity for right- or left-brained dominance and their interaction through the *corpus callosum*, nor in the capacity to control this dominance and interaction.

It may be, of course, that it will also someday be possible to identify the processes of the brain that provide the biophysical basis for serious moral discussion itself. Indeed, it may be possible surgically or chemically to control those processes as well. But does not our problem remain? Our immediate response is, Who will control these processes? And implied in that question is the unavoidable problem of the controller's freedom to decide and the suspicion that the controller's sense of "ought" might be faulty even if some controllers "naturally" rise to the peak of control.

5. This line of argumentation brings me to the fifth and final kind of argument that I want to present on this point. It will serve to lead into some of the remarks that I had prepared before I came to the conference and was stimulated by the papers and the discussion. There is, I think, an important distinction between science and technology, each having different implications for the understanding of humans. By many, of course, they are understood as one. But they are actually quite distinct, certainly from the standpoint of social ethics.¹⁰ To oversimplify, the purpose of science is to understand the world. The purpose of technology is to change it. It is certainly the case that modern humanity has developed a scientific technology and a technological science. That is, we understand in order to control and we control in order to understand. But there is nothing in each of these to suggest that they must be together. We scientifically understand some things that we do not control and control some things we do not understand. Technicians in hospitals, data-bank terminals, industry, and government offices can perform highly technical operations and understand their social or moral purposes and consequences without knowing the fundamental scientific principles upon which these are based. And "pure" scientists are notoriously contemptuous of those who constantly want to know how this or that hypothesis or finding is relevant to technological application. Of

course, when they do come together we do know better *why* our technique works and thereby leave less to trial and error. But there is nothing in the logic of science itself that suggests that we must control what we understand, and nothing in the logic of technology that tells us we must understand what we control.

Alfred North Whitehead made this point some time ago when he wrote that a number of animals, including humans, were actively engaged in transforming the environment for their own purposes: "Of course all these operations are meant by the common doctrine of adaption to the environment but they are very inadequately expressed by that statement; and the real facts easily drop out of sight under cover of that statement. The higher forms of life are actively engaged in modifying their environment. In the case of mankind this active attack on the environment is the most prominent fact in . . . existence."¹¹

My reason for making this point is that when we decide to develop or employ a specific technology it is to intervene in the natural processes which the scientist might well understand; but there is something besides science that invites us to disrupt the natural order as given and to exercise the technological possibility of control. When we decide whether to use chemical or organic fertilizer in our gardens, when we use atomic power to desalinate water to make the deserts bloom, to make electric power for air conditioners, or to make bombs that make deserts of cities, we use nature against itself. Through technology the powers and structures of nature are intentionally interrupted for some "supranatural" human end not given by natural scientific findings. Is there any *scientific* reason, for example, why we ought to remove a cancer from an eighty-year-old widow in a charity hospital? Is there any *scientific* reason why we ought to employ our technology to dig wells to overcome a drought in the sub-Sahara, partly exacerbated by the overgrazing of a cattle-oriented civilization, in order to sustain that civilization? Is there any *scientific* reason why we should (or should not) engage in genetic engineering? And does science itself contain the evaluative principles to distinguish good from evil genetic possibilities? Technology, I suggest, is always in the employ of values that cannot be proven or disproven by natural science, values that are supported or sustained by specific and specifically chosen humanistic or religious loyalties—and organized into rituals, myths, and symbols—that are experientially and analytically distinct from the ordinary meaning of the "natural." Indeed, to state my thesis in its strongest fashion, both the drive to understand that eventuates in science and the drive to control that eventuates in technology are dependent upon fundamental supranatural decisions.

If this is so, then the drive to find a scientific basis or technical controls for ritual, myth, and symbol are surely rooted in a prior *decision* that such things are *valuable* for and potent in human life, a decision quite distinct from that of earlier scientific self-understanding.

SOME TOOLS FOR THE ANALYSIS OF SUPRANATURAL PHENOMENA

The supranatural dimensions of human experience are not totally arbitrary. They occur in social groups and, if they are consequential, involve rather wide spectra of human participation in similar decisions and senses of the ought. Any specific ritual, myth, or symbol is not only a product of the biophysical capacity for it but a series of supranatural decisions made in a social context. They occur in clusters or patterns that, structured into an ethos,¹² can be identified and studied. Thus, dealing with the normative or supranatural is not capricious.¹³ There are conceptual tools that can be developed to deal with such matters. In fact, there are three interrelated sets of tools. I will call them (1) "social axiology," the critical study of the values, purposes, and interpretive principles that become built into the ethos of various social structures; (2) "ethics," the critical study of the values, purposes, and interpretive principles themselves under the criteria of right/wrong, good/evil, and fit/unfit, the formal categories of moral reflection; and (3) "theology," the critical study of the formal content and claims of the rituals, myths, and symbols that are used to justify various perspectives on, evaluations of, and principles of selectivity about both the ethos and the ethics used to sustain or criticize the ethos.¹⁴

I want to focus on the problem of social axiology, with briefer references to both the specifically ethical and the theological tools for analysis of the supranatural. I focus on social axiology in order to elucidate the kinds of choices that are possible in selecting a specific ritual, myth, or symbol and because the question of the nature of humanity in a technological society can be, I think, sorted out by these tools.¹⁵

We begin with the claim that people, societies, and cultures choose (and think they ought to choose) the core rituals, myths, and symbols for their lives according to what they feel to be worthy and powerful. That is, in every specific choice there is an empirical claim that one or another set of social experiences is more potent and valuable in producing and sustaining the common life than others. Thus, they draw models and metaphors from the understanding of a specific dimension of existence, incorporate them in ritual, develop mythic stories that recount the appearance of that power, and symbolize that power with a variety of analogies and representations. Also, in every specific

choice, they identify a specific kind of human relationship that is deemed most worthy of bearing or exemplifying such a power. They locate normative worth in one or another dimension of our sociality. These human relationships are both rooted in the concrete, environmentally conditioned social history of a people and informed by supranatural decisions as to which dimensions of that social history or sociality are most worthy of loyalty. At almost every point in social history there are competing claims about what is worthy of loyalty and what is powerful in social history, and the triumph or demise of these claims about worthy power is decisive for subsequent social history.¹⁶

If we survey the major views of where power occurs in human affairs, we can generalize that there are three primary levels of human experience that are seen as decisive. First, the *ideational* view is accented by those who see nothing so powerful as an idea. The development, the expression, and the organization of ideas are seen as those features of experience that determine the shape of human affairs. The "good" resides ultimately in the mind, in "wisdom," "the word," "contemplation" of pure ideas, "expression," "reason," or "thought." What distinguishes humanity from the rest of the biosphere is the human capacity to know, creatively imagine, articulate, communicate, and judiciously weigh notions. The "realists" in the Platonic sense, the "idealists" in the Germanic sense, and the transcendentalists in the American philosophical tradition are of this sort. The human forms of association in human history and the means that humanity develops for coping with the natural environment are essentially products of the ideas developed in social history. Only humanity thinks.

A second basic view can be called "associational." This level of understanding suggests that the kinds and qualities of patterned human relationships are what make social history run. It is the kinds and qualities of experienced bonding and ordering of our relational lives that determine the ideas that we develop and that decisively shape the means that various societies develop to cope with the natural environment. The classic political theorists, the social and psychological historians, and the social anthropologists most frequently represent this view. Only humanity develops covenants of love and hate, forms committees and communities, and goes to war.

The third basic view can be called "material." In this view, the biophysical organization of the self is decisive—"anatomy is destiny"—and the organized means that collectivities develop to cope with production and distribution determine the shape of history—"hand labor produces feudalism, machine labor produces capitalism." (Both Freud and Marx are more complex than these

quotes suggest, but their disciples are often not.) Both ideation and the patterns of human association, in this view, are projections or rationalizations of the primordial organization of material energy. Humanity is known first by opposable energies which allow reorganizations and varied uses of the material environment.

No one of these three basic views in their sophisticated forms sees the other views as inconsequential, but each selects an aspect of human experience, deemed more primary than the others. Each has a fundamental theory of what is essentially powerful in human affairs and what it is that distinguishes the human from the nonhuman, that makes, as it were, the human "supranatural" and provides the impetus for the peculiar human capacity to develop civilization. Further, each entails a fundamental theory of what has the power for good or ill in human history.

Crosscutting these basic choices as to what is powerful in humanity and social history is a different set of variables. These have to do with where value and meaning are to be located.

Some identify meaning and value with the personal and interpersonal experiences that are the sources and focus of meaning and worth. Persons create culture and society.

Others see general cultural patterns into which individuals and institutions are enculturated or socialized or from which they are "individuated" as the primary locus of meaning and worth. The dominant patterns of a culture produce characteristic institutions and personality types, and there is no genuinely human self and no "state" without culture. Personal meanings and collective structures are individuated expressions or individual selective appropriations of general cultural meanings. Cultures allow and promote, or restrict and prevent, specific forms of personal and interpersonal meaning and institutional structures.

Still others argue that both personal meanings and general cultural patterns are born, sustained, or corroded according to collective institutional meanings. The specific locus of meaning is in the collective structures of law, governments, or economics. These are the arenas wherein persons and cultures forge their meanings and from which persons and cultures draw their sense of worth.

Now, if the two sets of variables presented above are in fact accurate as general statements of where it is logically possible to identify power and worth in social history, and if these brief statements of the options reflect where major theorists of human society in fact have put their valuational accents, then it is possible to present an axiological analysis of the alternative relationships of these factors and to place within the

appropriate categories those kinds of human meanings that are most characteristic of social ethical experience (see table 1).

Thus, the specific axiological function of, say, education, is the formation of persons by the communication, examination, and creative development of ideas, while the axiological function of economics is the formation of materials for the collectivity by the physical rearrangement and distribution of resources. When specific institutions in these sectors do not perform their axiological functions, we properly declare that they are powerless and worthless. Each of the sectors of this axiological map has, therefore, its own intrinsic moral function; it is the repository of specific "supranatural" senses of ought that must be sustained by human choice, commitment, institutional bonding, and conscious investment of group effort. Each develops its own rituals, myths, and symbols by which it expresses and sustains common involvement.

Although all the evidence of the importance of such an axiological chart cannot be presented within the limits of this paper, I would cite three kinds of evidence to suggest its utility.

First, when human societies develop so that mere survival is no longer the only question, people begin consciously to develop specific institutions to sustain these axiological functions. There are a number of ways to show this; perhaps the simplest is to note why people build buildings—schools, cultural centers, courts, homes, clubs or churches, palaces or government buildings, hospitals, craft or planning centers, markets, or factories. Ordinary experience and cross-cultural studies

TABLE 1
A SOCIAL AXIOLOGICAL MAP OF WORTHY POWER

LEVEL OF POWER	LOCATION OF WORTH		
	Personal Relations	Cultural Patterns	Collective Structures
Ideation	Education	Expression (language and the arts)	Law
Association	Family	Voluntary associations	Politics
Material	Health Care	Technology	Economics

NOTE.—This map is not intended to represent the relative weight at a given time in history of any one of these sectors. There are substantial debates in the social sciences as to which sectors influence which other sectors over time. Nor does this diagram pretend to sort out the drama of specific conflicts as when, for example, political leaders attempt to determine educational policy or economic considerations become decisive for law or family matters.

both suggest that people have to allocate space and time to do things that are believed to be worthwhile and effective beyond survival. (As classic moralists said, *bene esse*, and not only *esse* is decisive.)¹⁷

A second kind of evidence that might exemplify the kind of utility such an axiological map presents can be seen if we look at the "title" or "offices" which people throughout the world attribute to the gods. People see in various aspects of social axiology the superordinate realities that they worship. We can see this if we ask who the honored gods or representatives of the gods are and put on axiological spectacles to find the answer. Reading through the sectors of table 1, we can classify how people articulate the genuine supranatural sensibilities they have: teacher, source of wisdom, all-knowing; the Word, the muses, revealer of sacred texts, creative spirit; lawgiver, judge, advocate, source of justice and righteousness; father, mother, source of the brotherhood and sisterhood of people, giver of fertility and ecstatic mutual participation; divine will, former of peoplehood, source of community, one who calls to membership; ruler, king of kings, mighty in battle, sovereign; healer, source of health or disease or control over bodily impulses; creator, maintainer of the cosmic machine, controller of environmental happenings, fire giver; provider of plenty and prudence with wealth, hunter, source of mana, steward, lord. Each of these symbolizations involves a selection, a choice, as to what sector of the human social experience most adequately bears the worthy power. And each attribution, if taken seriously by those who offer it, becomes the center for normative ritual and myth and for the attribution of high honor to certain empirical social functions. An apparently esoteric debate about whether the god should be called, for example, sovereign or healer, then, is in part a question as to whether people should look for meaning and worth in the personal or in the structural areas of society and whether it is the focus on the restorative ordering of our materially given realities or on the associative relationships that most adequately illuminates the structures of decisive power and obedience.

Third, it is possible to suggest that the comparative study of high civilizations can be facilitated by such an axiological model. Max Weber's classic studies of the sociology of ethics in India, China, the ancient Near East, and the West, for example, can be understood as attempts to show how religious-cultural decisions constantly affected by and influencing environmental factors brought about the relative dominance or subdominance of one or another of these sectors in various contexts. While these, like all human choices, are not exercises in "pure" freedom and are always related to prevailing ideas, given patterns of association and material influences, they are nevertheless

choices in a genuine sense that are fateful. At any given moment of human history there seem to be several options open to a culture or civilization. It can adapt, rigidify, progress, regress, or develop in several possible directions. But when one or another choice is made, the consequences are long ranging. Ancient China chose to organize its political, economic, cultural, and family life around the wisdom of the sages and the enormously elaborate educational institutions and examination systems. Judaism, Islam, and, in a different fashion, the Catholic canon-law tradition built civilizations around the legal institutions that were seen to govern, shape, and express the familial, educational, economic, political, and other axiological institutions. Hinduism organized life around the family with the endogamous *jati* becoming the organizing principle for all the other sectors of society. In each of these and numerous others the specific religious choices about ritual, myth, and symbol—about what gods, understood in what metaphors, drawn from which axiological sector—were decisive. It is this choice or set of choices, I suggest, that determines the content and basic orientation, the ethos, of every civilization. It is this choice or set of choices that determines how and in what degree humanity is to understand and, indeed, to intervene in the natural order. Whatever the general biophysical possibility and necessity of ritual, myth, or symbol, it is choices of this sort that humanity has felt ought to be made and that specifically bring about a bonding of human wills to form the artifacts of civilization. People are socialized and enculturated into these choices, but they may choose against them or choose to modify previous choices also. The supranatural choices are in any case among the fateful choices for human civilization. They shape our metaphysics, our anthropology, our science, and our technology. Such choices are natural to humanity, but they are supranatural in their content and consequences.

FOCUS ON TECHNOLOGY

Modern technology is a sector of our axiological system that requires particular attention because of the new moral dilemmas which it poses, because it presently exercises such influence in the society as a whole, and because it is a particularly interesting and difficult example of the interplay of the natural processes and the supranatural intervention in them. We are at present rather confused as to whether we can or ought to build a civilization around technological models and metaphors as previous societies have around other sectors of the axiological system.¹⁸

It seems to me that the confusion about technology is of three sorts: We are not precisely sure what technology is, especially as it is related

to science; we do not know where precisely technology belongs in a modern axiological system; and we are not sure what values are intrinsic to it. Technology may be conceived of as applied science, as the rationalizing spirit of control and mastery, as the systematic application of technique (i.e., of means and ends), or as the cumulated tool-making and tool-using capacities of *Homo sapiens*.¹⁹ All these competing definitions, however, can be seen axiologically as deriving from the peculiar supranatural decisions made in the West that have brought about the problem of modern technology. The path from traditional society to modern industrial, differentiated society has been through the Reformation and related movements. That story is immensely complex, but some main lines of development can be traced. The Protestant choice about a radically sovereign God over and against nature broke the feudal, political-religious hierarchy and produced a number of pertinent results. It cracked open the political order, declared the ontocratic one illegitimate, and opened the way for modern notions of national sovereignty and democratic procedure.²⁰ The Calvinist understanding that nature had to be understood as nondivine and as in need of reordering after the Fall represents a theme that plunged the post-Reformers into natural sciences and technical tinkering in a new way.²¹ Nature was itself demystified and thus became open to investigation without fear of violating the divine. But perhaps, as decisive as these were, more important was the way in which the protestant ethic influenced the development of modern capitalism.²² The power and scope of this change is such that all has been touched by it. Most pertinent for our purposes, it meant that technology was taken under the wing of the developing corporations and made the instrument of their fantastic development.

Technology was no longer under the control of the craftsmen, the artisans, or the community at large but was appropriated and developed by business for business. All other axiological sectors of society had to adjust to this new reality.²³

This means that, when we want to deal with technology today, we may mean the tools that have been developed to *understand the* natural world through science—as occurs especially in academic science—or we may mean the whole area of bureaucratized corporation life that dominates the practical tools of our common life. Approval of or challenge to technology is properly understood by many to be approval of or challenge to the whole structure of modern economic life. The values of technology are constantly confused with the values of economic production, distribution, and consumption, while the promise of technology to provide new tools to cope with a

changing world are frozen by economic interests. Meanwhile, there is growing ecological, psychological, political, and moral evidence that the present power of this economic sector of our society, controlling a good bit of our technology, is leading us into difficulty.²⁴ We have made a fateful choice and are liking the results less.²⁵ Again and again the question comes up of how to remedy our present dilemmas. If the analysis presented so far is valid, there is one major element that cannot be avoided if the question is to be answered: We must redefine the object and nature of what we deem worthy and powerful. We alter our fate by, at most, choosing other gods, developing other rituals, myths, and symbols; at least, by modifying and reconstructing previous supranatural decisions.

There is at least one powerful objection to the perspective set forth above. This is the basic view that what technology does, especially as it is informed by science and increased economic complexity, is to displace the importance of traditional religious matters. Although contemporary sociological and theological scholars who only a decade or two ago were celebrating "secularization" have begun to have serious second thoughts, the questions posed by these presumptions remain important. Perhaps the brief examination of one major example of this perspective would be helpful. Gideon Sjoberg presents a representative attempt to deal with the development of civilization in terms of the kinds of human institutions that are worked out in human history. And the focus of his work is the city, the symbol of human rearrangement of the environment through the creation of massive intentional artifacts. In his attempt to account for the development of complex civilizations, he identifies three prerequisites for their development: (1) a favorable ecological base, (2) advanced technology, and (3) a complex social organization with a well-developed power structure.²⁶ It turns out, upon close reading, that what he means by favorable ecological base is one capable of being exploited by existing technology. And it turns out that what he means by complex social organization is the technology of manufacture, storage, and distribution as well as the capacity to mine and refine ores. And by a well-directed power structure he means a group with the technical skills to direct others in these activities.²⁷ Thus, what he, as a representative spokesman for a widely held perspective, cites as the prerequisites for complex civilizations are (1) technology, (2) technology, and (3) technology.

My question is, How can Sjoberg and so many lesser minds honestly view technology as an independent causative force in human society? While technology is sufficiently a distinct aspect of human endeavor that we can identify it as an axiological sector of society, and while we

experience changes brought by technological change, is it not the case that technology is inevitably dependent on the meanings and patterns, the senses of "ought" and "choice" that obtain elsewhere in society?

Sjoberg approaches the above question when he points out that in most ancient cities the religious structures dominate the horizon and that religious concerns dominate the motivations for the employ of technology. This shows up in architecture, among other examples one could cite. The temples, the palaces of the "holy" king, the pyramids, and cathedrals exemplify the most notable technical achievements of civilizations past. While there is an internal logic to technology itself, namely, that it has to have some measure of efficient functionality in producing desired results, it is always in the employ of some dominant pattern of power and worth that is extrinsic to it. But, Sjoberg argues, and many echo the view: "With the impact of industrial-urbanism, the impact of religion slackens. . . . The new technology creates unprecedented conflicts that cannot be handled . . . by appeal to the older sacred writings."²⁸ These changes are a threat to religion.

My problem with this view, and the reason for going into it at this point, is that I do not understand how it is that if religion actually dominated the life, mind, and purposes of society, and especially its technology, technology arose to displace religion. If religion is so dominant, whence came the emotional, intellectual, and social space for technology to develop? On the grounds of social axiology, I think there is no answer to this question except that there had to be a religious change, a supranatural choice with new senses of "ought" that allowed, legitimated, encouraged, or produced new identifications of worth and power, new rituals, myths, and symbols, and employing, therefore, technology in new ways. The lack of attention to religious, doctrinal, and sectarian conflicts, then, disarms serious scholars such as Sjoberg from recognizing primary, empirical causative factors in human history. They fail to see, therefore, that the intrinsic logic of technology can function only in relationship to extrinsic, "supranatural" factors of human experience. In order for people to do things in a new way, they have to be open to the possibility that new ways are not contrary to the purposes of the ultimate powers and values of life, and indeed that they are capable of choosing to enter into new meanings and relationships. There must be, as a precondition to significant technological development, a capacity for "ontological surprise" that releases us from the "ontocratic cage" framed by the given, empirically dominant structures of cosmos and inherited tradition, by biophysical necessity, and learned behavior.²⁹

If this is so, one could expect fruitful change in the development of technology only by redefinition of the gods; for the conflict is not technology against religion, but one theology with technology in its employ as against another theology with a different technology in its employ. Religion becomes opposed to technology per se only when technology is seen as autonomous, when those controlling it see it as cause, without boundaries, and as the source of meaning. To be sure, some religious orientations will be opposed to many scientific or technological perspectives because those orientations see in them the practical fruits of what they consider to be heterodox; but the debate is finally a theological one, not one between religion per se and technology per se. This also means that some scientific technology will see religion as its enemy, but this is a naive perspective that cannot be sustained; for it is fundamentally unscientific in regard to human social axiology. If I may paraphrase Max Weber, the lifeless machine of technology is in fact always congealed spirit, and only by being this has it the power to compel people into its service. It ought to be taught in the kindergarten of human self-understanding that all fundamental controversies are a conflict of the gods. Supranatural choices are unavoidable.

There are a number of contemporary thinkers around the world who have begun to recognize this. Gunnar Myrdal, after completing a massive study of Asia and the problems leading to its technical stagnation, concludes that "only a new Gandhi" can save such countries as India, that is, only a prophetic religious voice which evokes new choices for new senses of "ought." Technical and economic aid are not likely to be successful, although "we do it because we must morally."³⁰ Mao's *Thoughts* are introduced to the masses because they contain an "atom bomb of spiritual power."³¹ Closer to home, Theodore Roszak, the self-appointed guru to the Western youth disenchanted with the consequences of the protestant ethic as it has produced an economically dominated technology, calls for a "rebirth of the Old Gnosis."³² Robert Heilbroner, the progressive economist, concludes a widely read statement of the modern mood by appealing to us to adopt Atlas as our heroic-symbolic norm,³³ while the philosopher-theologian David Miller calls us to *The New Polytheism* to deal with the dilemmas of modern industrial society.³⁴ And Robert Bellah, the noted sociologist, initiates a major series of essays and books with a social-scientific statement about the reality of "Civil Religion." And so one could go on. Even the theologians who celebrated the end of ideology and secularization have rediscovered this fundamental dimension of human reality, although they do not know what to do with it. In any case, it seems possible to say that many of those

who have chipped away at the hard problem of meaning in the midst of modern technical, economic, and social problems have come to the view that the destiny of technology is dependent upon the values and choices that become woven into the other sectors of the axiological structure of modern society. And that depends upon supranatural choices and senses of "ought." By offering an axiological analysis, I hope to have brought some order to the kinds of choices available, especially as they pertain to technology.

NORMATIVE SCIENCES

Now, if there is merit in what has gone before, we are led to three interrelated questions. First, is there any one sector of the axiological system that is more important than the others, that can supply the models and metaphors for our supranatural choices or become the proper axiological locus for our rituals, myths, and symbols? Second, are there any scientific grounds for suggesting what we "ought" to choose? And, third, are there any criteria by which we can evaluate the relative merits of supranatural definitions of the supranatural itself to justify our participation in one or another axiological sector and our criteria? In short, if the "choosing of the gods" is so important, is it also absolutely arbitrary?

While it is not possible within the confines of this presentation to deal fully with this question, it is possible to make a few suggestions on each of these matters.

On the first question, it can be suggested that the voluntary associational sector of the axiological system is decisive. While every axiological sector depends upon the value constellation at its core and upon the voluntary bonding of people in a significant and quasi-religious way, it is in this sector that the definition and redefinition of the values, the bonding, and the rebonding decisive for all axiological sectors are lifted into most direct consciousness and patterned in human relations. This is the only sector that sees what is in all sectors as its primary *raison d'être*. Here "ought" and "choice" and "bonding" are central. Here the "natural" and the "divine" are seen as concrete "supranatural" realities. This sector represents the locus of primary human bonding beyond the family and the nation into which we are born and beyond an economic or educational system we inherit. The voluntary sector is the locus of those networks of group trust that become wedded to ideas and to material interests. It is here that common values and meanings that develop throughout society are forged. And they can be differentiated from the formal, institutional base in which they often occur. A "Whitehead Club" or "school of thought," for example, may develop in a university and even be quite

influential in the university; but the club or "school" is distinct from the university and can, axiologically, only be understood as a voluntary association. A "brotherhood" may develop in an industry but is clearly not the industry itself; a "sisterhood" may develop in a patriarchal caste but is distinct from it; the Civil Liberties Union may work on legal matters but is distinct from the legal system itself. The Institute on Religion in an Age of Science may work on medical, academic, and technological frontiers but as an organization it is a voluntary association distinct from those axiological sectors of society. All of these social-ethical phenomena and many more are, in fact, more like "church," the prototypical voluntary association, than anything else in that they organize around some rather clear, common ethical or spiritual purpose, feel called together (synagogue, *ekklesia*, congregation) for common sharing, and develop characteristic rituals, myths, and symbols to express their axiological choices that have social consequence. Indeed, many of these serve as quite viable substitute churches for those outside "organized religion." It is here, in any case, that, prior to full institutionalization in any of the other sectors of society, the major alternative possibilities of worth and power within the horizons of the people get hammered out.³⁵ Totalistic or dogmatic societies, whether ostensibly theocratic or scientific, always try to limit the voluntary association, for thereby they limit the relatively autonomous development of a sense of "ought" and the sense of freedom.

But if there is the social space for voluntary associations to develop, is there any "scientific" guide for the choices that they ought to make? On this second question, the questions of whether ethics is an art or a science and what, if anything, distinguishes a science of human affairs from the natural sciences come to the fore. In view of the extended discussion earlier in this paper, let me only suggest here that the forming of a moral choice is an art but that it is possible to show that some choices are of lower quality than others. Thus, through critical analysis of what is held to be right and wrong, good or evil, fit or unfit for humanity, it is possible to judge relative merits of the various moral claims. The tools for this criticism, however, are rather distinct from those of natural science as popularly understood, although more closely related to science as understood by Kuhn. In a real sense, that is what the "science of ethics" is about. It may not be able to construct or create an ethic on its own grounds, for that involves elements of art beyond its technical scope, but it can rule out some options and allow others to stand with relative precision.³⁶

In response to the third question, whether there are any criteria by which we can evaluate the relative merits of supranatural definitions

of the supranatural, I can only suggest that this is the specific domain of theology and, as it relates to our questions, theological ethics. And at this point I would claim that there are genuine theological principles that can be invoked to evaluate comparatively the possibilities of supranatural choice. Every viable definition of the supranatural, every image of the divine, must surely have at least a way of dealing with a number of perennial dilemmas of human meaning as it relates to the notion of ultimate power and worth. These are the relationship of our supranatural myths and symbols to the cosmos, the relation of the part to the whole (the individual to the collective), the relationship of the past to the future, and the relationship of form to content.

These brief responses to the questions of normative sciences will not and are not intended to end discussion. They are intended to suggest that there are normative areas that are not unscientific but are also distinct in their tools and object of study from the concerns of the natural sciences. They would become the agenda for further discussion between religion and science if the discussion is not to lapse into a monologue from the scientific side, a much greater threat in the contemporary world than in the ancient where the monologue was equally lopsided in the other direction. And they would be critical for an understanding of humanity in a technological society.

Finally, the practical consequences for the perspectives presented here could be seen in dealing with technology. If there is to be any serious alteration in our present course as a technological society, it is likely that we can cease our propensity to apotheosize or demonize technology. R. W. Behan recently wrote that "technology is no more or no less than the way a given culture does things with naturally occurring substances in order to fulfill that culture's needs and wants."³⁷ That implies that we must gain considerable clarity about what our needs and wants are and especially those wants and needs that are involved when we talk about the *quality* of life, about living *well*, or about the *good* life. In brief, the demystification of technology, and its present "lord," economics, will be accomplished only when we engage in the kind of redefinition of the gods and bind ourselves to the new choices in viable association; when we apply the critical tools for the consequent definitions of what is right, good, and fit and find that our choices can stand; and when we develop a definition of the supranatural that solves the perennial dilemmas of human meaning more adequately than previous options. Then, perhaps, we will have the wherewithal to challenge the protestant ethic and its secular correlate (the Marxist worship of Prometheus) that produce our modern economic-technological pretenders to the divine throne. Then we can use the fruits of economics and technology for a more universal human purpose. Then we can know better how to shape our common

ethos. And perhaps then we can make concrete choices of ritual, myth, and symbol that will more adequately fulfill our biophysical capacity to have them.

NOTES

1. Solomon H. Katz, "Toward a New Science of Humanity," this issue; Eugene G. d'Aquili and Charles Laughlin, Jr., "The Biopsychological Determinants of Religious Ritual Behavior," this issue.

2. The relationships between monergism and the natural scientific quest for monistic understandings have been traced by several sources. Let me mention a few that are most significant for the point: Ernest Tuveson, *Millennium and Utopia* (New York: Harper & Row, 1964); Robert Merton, *Social Theory and Social Structure* (Glencoe, Ill.: Free Press, 1957), esp. pt. 4 ("The Sociology of Science"); and David Bakan, *The Duality of Human Existence* (Boston: Beacon Press, 1966), chap. 1 ("Protestantism, Science and Agency").

3. The implication of these three options for social ethics and a potential resolution of these basic models are discussed in my *Ethics and the Urban Ethos* (Boston: Beacon Press, 1972), chap. 6 (see also Wayne Proudfoot, "Conceptions of God and the Self" [Ph.D. diss., Harvard University, 1971]).

4. The areas wherein we experience choice seem to be culturally conditioned. Hannah Arendt points out in *The Human Condition* (Garden City, N.Y.: Doubleday & Co., 1958) that ancient Greece considered the public arena, the *polis*, to be the zone of freedom whereas the private life was governed by the "fates." This is in contrast, she says, to modern life where the public domain seems to be governed by inexorable, uncontrollable forces and the private spheres, such as sexual behavior and life-style, are granted maximum freedom. Scholars of comparative religion have long noted that Hinduism, for example, is a religion of *orthopraxis* while one can *believe* a number of things about the gods or the world. This can be contrasted with certain forms of Christianity where *orthodoxy* in belief is the mark of true membership and a wide range of *practice* is allowed. Still other social historians and anthropologists argue that the sense of freedom is itself a product of a social history. In some societies failure to be obedient to pregiven *orthopraxis* and *orthodoxy* is punished by ostracism or death. But even here, presumably, the decision not to break the pregiven structure has to be made, and that very presumption points to the reality of freedom.

5. Richard Neuhaus's book, *In Defense of People* (New York: Macmillan Co., 1973), sorts out some of the key ideological and valuational biases that are current in the ecological arguments (see also R. W. Behan, "The Ecology Liturgy," *Worldview* [February 1974], pp. 34-46).

6. Here I make specific reference to one of the most influential contemporary statements of this mood: The concluding paragraphs of Robert Heilbroner's *An Inquiry into the Human Prospect* (New York: W. W. Norton & Co., 1974) invoke Atlas as the normative image of humanity if survival is to be our destiny. No longer, he argues, can we focus on Prometheus. My point is that such appeals to supranatural models and metaphors are inevitable in exhortation and invitation to decision and that there are, at least, two modes of discourse that must be reckoned with—the descriptive and the normative. The latter cannot be read out of the former. Something is inevitably added to it, as the classic Catholic theologians working with natural philosophical models recognized when they spoke of the necessity of *donum superadditum* even if their interpretation of the nature and source of this is unsatisfactory. Even more interesting is the question of why he felt compelled to invoke mythic symbols at all. Does he de facto admit the necessity of modes of discourse outside the boundaries of the assumptions of most of the book?

7. The problem shows up, if I may be so bold as to point it out, even in the "Proposal to Establish an Independent Center for Advanced Study in Religion and Science" (*Zygon* 7 [1972]: 168-87). A close reading of this intriguing statement reveals an interweaving of the descriptive and the normative, with occasional confusion as to which

mode of discourse is being invoked. This is not surprising. Max Weber argues that every significant social movement is formed by an "elective affinity" between empirical-material conditions and fundamental value commitments that are analytically distinct. But the recognition of this distinction is absolutely crucial if there is to be any genuine dialogical possibility between religion and science. Otherwise, "conversations" become a series of simultaneous lectures in separate halls.

8. This is the wisdom of the traditional theological formulation *fides quaerens intellectum*, whatever difficulties specific articulations of the principle have.

9. The distinction between fact and interpretation is another way of speaking of the kind of point I have been trying to make. It seems to me that, whatever the other faults of their thought, the problems posed by the "historicists"—Dilthey, Windleband, Rickert, and I would include Weber, Collingwood, and Troeltsch—remain with us. One distinction that was often drawn by this school of thought was that between the *Naturwissenschaften* and the *Geisteswissenschaften*. Generally, the argument is that there are particular ingredients in human existence that can be grasped scientifically but not by the same kind of science that describes the natural order. Thus at least two modes of scientific discourse must be employed to deal with empirical reality. This group of scholars erred, in my judgment, for they thought that the natural sciences moved from direct observation of facts to the articulation of the general laws about those facts. Thus they held with most nineteenth-century philosophy of science that in certain areas of knowledge, the natural sciences, the interpretation was implied in the facts. If Kuhn and others are accurate in their reading of the history of science, however, the interpretation of natural facts derived less from the facts themselves and more from the shifting models and metaphors that people brought to the facts. Thus the position of the historicists on natural science may well have to be modified. But the question still remains whether their understanding of the distinction between these two areas of human understanding does not remain valid, for that was the area where they concentrated their most creative attention. Now it is quite possible that the debate between this posture and that of contemporary natural philosophers and scientists who want to use a singular vocabulary to deal with the whole of experience rests on what is meant by the word "nature." Among the historicists, the word refers to those aspects of reality that are governed by regular laws, while the ideographic or *Geisteswissenschaften* deals with the specific and often idiosyncratic events, value-laden decisions, and meanings of human history. The naturalists often use the word "nature" to apply to the whole of reality. My difficulty with the latter position is that a word that comes to mean everything begins to mean nothing in particular, and there would be no reason to choose the word "nature" over "OM." Both are equally uninformative except as a confessional utterance that one perceives the whole to be whole. Another serious problem of the historicists, namely, the tendency of their historical and social thought to move toward a radical relativism in values, is beyond the scope of this paper. But on the strengths and weaknesses of this school of thought generally, see the superb study by Georg Iggers, *The German Conception of History* (Middletown, Conn.: Wesleyan University Press, 1968). From the perspective of modern religious ethics, Reinhold Niebuhr makes the point as follows: "Man's freedom is unique because it enables him, though in the temporal process, also to transcend it by conceptual knowledge, memory, and self-determining will. Thus he creates a new level of coherence and meaning, which conforms neither to the world of natural change nor yet to the realm of pure Being in which Greek idealism (and some theology) sought refuge from the world of change" (*Faith and History* [New York: Charles Scribner's Sons, 1949], p. 15). In terms more immediately familiar to *Zygon* readers, some quite analogous arguments are made by Theodosius Dobzhansky in his "Ethics and Values in Biological and Cultural Evolution" (*Zygon* 8 [1973]: 261-81).

10. One could also make this case on cross-cultural grounds. Ancient India, for example, had a number of the sciences highly developed—especially linguistics, grammar, mathematics (they invented or discovered, depending on your point of view, the zero and negative numbers)—but these were unrelated to the technical achievement of Indian craftsmen so far as is known. Similarly with ancient Greece. The separation of science and technology, their distinction, and their relation are known to *Zygon* readers

especially through R. B. Lindsay's "The Scientific and Technological Revolutions and Their Implications for Society" (*Zygon* 7 [1972]: 212-43).

11. Alfred North Whitehead, *The Function of Reason* (Boston: Beacon Press, 1958), p. 8. Whitehead proceeds to offer sharp criticism of those scientists and philosophers who dogmatically refuse to acknowledge the plain facts that there is a supra-adaptive "reason" involved in the concrete "interactions," "purposes," and "meanings" of human life. This "reason" transcends what Ulysses shares with the foxes and is much closer to what Plato shares with the gods. The latter cannot be reduced to the former, and it is the latter which is decisive for the development of civilization.

12. By "ethos" is meant that network of values, stories, metaphors, and meanings which operate to legitimate social institutions and undergird the way of life of a social system. It is this into which individuals are enculturated; it is in relation to these that any specific science or technology is developed; it is against this that moral and intellectual protest develops by selecting new values, stories, metaphors, and meanings and by negating old ones. The importance of the term "ethos" suggests that a proper designation for this kind of study would be "ethology." But that term has unfortunately been adopted by a group of scholars who attempt to analyze human communities on strictly animal-behavior terms.

13. Nor am I here arguing for the existence of any supernatural beings. Whether or not god(s) or value(s) exist independently from the fact that some people think they do is irrelevant to our concerns at this point. It is sufficient to suggest that, once believed to exist, the ideal informs action and has an empirical effect of ordering or reordering the ways in which humanity acts toward the biophysical order.

14. The first published outline of this way of looking at the matter is found in my "Ethics: Social and Christian," *Andover Newton Quarterly* (January 1973), pp. 173-91. The purpose of that essay was to outline the relationships between the ethical, the social axiological, and the theological or Christian dimensions of normative reflection. The fact that the third term is "Christian" may seem an undue confession of bias to some. I would make the point that critical theology is a peculiar product of the Judeo-Christian tradition. It does not occur in any other religion so far as is known, except as they have been influenced by the Judeo-Christian tradition. There are, of course, myths, rituals, symbols, wisdom, cosmologies, and philosophies in many if not all the world's religions, but none of the world religions except this one tradition has developed the comparable systematic tools for self-critical examination of religious claims and justifications. I have argued elsewhere (*Ethics and the Urban Ethos*) that this is one area that sets this tradition off from the rest of human religious sensibility and provides a distinctive legacy to all religions. I stress this point, for if there is to be any genuine discussion between those concerned with critical and systematic examination of the realm of the "natural" and those with the "supranatural," the discussion might best take place at the same levels of abstraction; and the self-critical abstract conceptuality of modern natural sciences is matched only by the theological tools hammered out in Western religious thought. Only the Indian religious philosophies are comparable epistemologically.

15. I must stress that the tools for axiological analysis suggested below are still in the process of being developed. There is no broad consensus in the discipline I represent that this is the best way to proceed. I think it can be shown that the following tools elucidate what a good number of persons in my discipline actually do as they perform their craft; but, as Paul Deats (*Toward the Discipline of Social Ethics* [Boston: Boston University Press, 1972]) and Glen Stassen, editor of *What Is Social Ethics?* (forthcoming), exemplify, the academic boundaries and many of the major terms of the discipline are in dispute. Thus the perspective presented here must be seen as one effort to bring some clarity to the social dimensions of our work. Other religious social ethicists rely more directly on specific sociological theories—most notably on Marx, Parsons, or the phenomenologists. By focusing on the sectors of society wherein specific senses of value or worth are linked with structures believed to wield social power, a social axiological approach is differentiated from a more strictly sociological perspective and brings the normative dimensions of a social system into our field of scrutiny because of its intrinsic relationship to ethics.

16. What is deemed as "worthy power" is what is seen as the essential character of

God or the gods, and it is this fact that links social axiology and theology.

17. The literature on this is far too vast to cite here. A number of recent studies confirm Weber's orientation, however, in spite of improvements on those data that are presently available as compared with what were at his disposal. Of special interest is Melford Spiro's *Buddhism and Society* (New York: Harper & Row, 1970) and a number of items mentioned in my "The Hindu Ethic and the Ethos of Development" (*Religion and Society* [December 1973], pp. 5-33). Or, if one goes to a library and looks at the chapter headings of the basic books in sociology, anthropology, or comparative culture, one finds them frequently organized around these nine axiology sectors, although there is seldom a systematic statement of why these areas were selected. It is a further hypothesis of my research and reflections, not yet fully confirmed in my own thinking, that a society to exist as a society, and not just as a "bunch," must at least have some minimal role differentiation to sustain and promote at least five of these axiological sectors of society: language, at least storytelling and/or dancing to express the commonality of the society; familial roles to care for the next generation; religious or voluntary bonding; some form of "political" leadership, at least when confronted with outside threats; and a technology that is a general cultural set of crafts for coping with the natural environment. I would designate these as "axial functions." Specific educational, health-care, legal, and economic institutions or roles, i.e., the professions, may not be required except as they are dealt with by the community as a whole, perhaps most often through religious means. Because research and reflection are as yet incomplete on this hypothesis, it is impossible to comment at length as to whether there is an evolution from the axial institutions to a fuller axiological system except to note that there are strong historical suggestions that while there is development—namely, constant change in the relations of these sectors and their mutual influence—it is not clear that there is a natural teleology in the general pattern of social or ethical development. A contrasting view is set forth by Talcott Parsons's *Societies: Evolutionary and Comparative Perspectives* (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1966). One might cite recent and intentional de-differentiation of these functions under socialism, where economic, political, legal, expressive, educational, health-care, and technological functions come under the direct control of the voluntary association—in this case, the party. (N.B. I am drawing upon social-ethical definitions of the terms "voluntary association" and "profession" that have been developed by James L. Adams.)

18. When Solomon H. Katz introduced Buckminster Fuller to this IRAS conference, he called him a living example of a "technological saint." That terribly interesting phrase poses many of the questions *in nuce*. Is it possible or desirable to lift up personal models of holiness in and for certain civilizational possibilities developing in our midst?

19. Victor Ferkiss's *Technological Man* (New York: George Braziller, Inc., 1969), Jacques Ellul's *The Technological Society* (trans. John Wilkinson [New York: Alfred A. Knopf, 1964]), Emanuel Mesthene's *Technological Change* (New York: Mentor Press, 1970), and William Leiss's *The Domination of Nature* (Boston: Beacon Press, 1972) represent major views and discuss the major options.

20. Although there are numerous intramural debates on this point, there is relatively wide consensus (see A. S. P. Woodhouse, *Puritanism and Liberty* [New York: Oxford University Press, 1954]; J. H. Nichols, *Democracy and the Churches* [Philadelphia: Westminster Press, 1951]; M. Walzer, *The Revolution of the Saints* [New York: Atheneum Publishers, 1968]; and David Little, *Religion, Order and Law* [New York: Harper & Row, 1969]).

21. Cf. esp. Robert Merton, "Puritanism, Pietism and Science," in *Social Theory and Social Structure*, pp. 574-606; and R. Hooykaas, *Religion and the Rise of Science* (Edinburgh: Scottish Academic Press, 1972).

22. There have been intense debates on this since Max Weber wrote *The Protestant Ethic and the Spirit of Capitalism* (New York: Charles Scribner's Sons, 1958), first published as essays in vols. 20 and 21 of the *Archiv für Sozialwissenschaft und Sozialpolitik*, 1904-5.

23. This eventually was most clearly articulated by Marx's notions of economic determinism and alienation, notions for which, in his context and in view of recent

history, can be understood. What the Marxist position cannot account for are the supranatural choices and sense of "ought" in the protestant ethic and spirit of capitalism that were contributing factors in the actual history that they attempt to explain. Further, Marxists made a fascinating supranatural choice and attempted to develop the "scientific" evidence to support it: They apotheosized the logic of economic development itself so that the very economic forces that produce the ills of humanity would also work out the "providential" destiny of human salvation by overcoming the contradictions. R. Tucker's *Philosophy and Myth in Karl Marx* (Cambridge: Cambridge University Press, 1961) is one of the better statements of the religious and ethical dimensions of this move. Modern communist states have pushed the logic of this further, for there the state becomes a total "theocratic" corporation, filled with ritual, myth, and symbol.

24. Frederick Carney, the noted ethicist, has pointed out in a recent essay ("Public and Professional Accountability," in Stassen [n. 15 above]) that the preoccupation with technology in economics is producing problems also. The methods of technology have been so successful in bringing about recent material prosperity that they are being imported into the realms of policy and morality. The cost-benefit analysis dominates. It is a mode of thought which is highly proper to technology and pertinent to the selecting of the proper means to desired ends; but it does not tell us the propriety of the desired ends. Economics as the "presiding queen of the social sciences" presumes that in all cases what people desire is desirable and can be measured in the profit ledger. Yet enormous amounts are spent trying to manipulate the images of the desirable.

25. It is fascinating, from an axiological perspective, to note how various theorists respond to such a general malaise. The educators suggest that we need more scientific education. People in the expressive sector suggest we need better communication or a rebirth of the arts. Those who specialize in law suggest that we need a new constitution or should reclaim the spirit of the law in contrast to modern permissiveness. Family experts trace our difficulties to the failure of the family and propose new family models or techniques for shoring up families in trouble; medical people speak of deep pathology in the modern psyche or suggest chemotherapies to control aggressiveness, etc. In each case, the source of the dis-ease with modern technology and the cure are located in a sector of the axiological map. Each betrays, however, the fact that the outside rings of axiological sectors are not finally decisive when they call for a new voluntary bonding among people around a different set of consciously chosen values (see next section ["Normative Sciences"] of this paper).

26. Gideon Sjoberg, *The Pre-industrial City* (Glencoe, Ill.: Free Press, 1960), p. 27.

27. *Ibid.*, p. 31.

28. *Ibid.*, p. 271.

29. I draw these terms from G. von Rad's *The Message of the Prophets* (New York: SCM Press, 1968), although they can be found in a number of contemporary authors. Von Rad argues that a major breakthrough of human understanding occurred when the biblical authors portrayed the Lord as staging an assault on humanity's ontocratic complacency and forced encounter with social-ethical reality. Whitehead makes a similar point in dealing with the speculative reason in ancient Greece in accenting what Plato shares with the gods.

30. See Gunnar Myrdal, *Asian Drama* (New York: Pantheon Books, 1968) and *The Challenge of World Poverty* (New York: Pantheon Books, 1972).

31. See the Introduction, in Mao Tse-tung, *Quotations from Chairman Mao Tse-Tung*, 1st ed. (Peking: Foreign Languages Press, 1966).

32. Theodore Roszak, *Where the Wasteland Ends: Politics and Transcendence in Post-industrial Society* (New York: Doubleday & Co., 1972).

33. See n. 6 above.

34. David Miller, *The New Polytheism* (New York: Harper & Row, 1974).

35. See James L. Adams, "The Geography and Organization of Social Responsibility," *Union Seminary Quarterly Review* (Spring and Summer 1974), pp. 245-60.

36. Stassen.

37. R. W. Behan, personal communication, July 1974.