A Cognitive Theory of Religion[1]

by Stewart Guthrie

In order to explain a fact as general as [religion] by an illusion, it would be necessary that the illusion invoked . . . have causes of an equal generality.
> EMILE DURKHEIM, *The Elementary Forms of the Religious Life*

This paper proposes a substantive definition of religion and suggests elements of a cognitive theory of religious thought and action. It asserts that anthropomorphism (the "interpretation of what is not human or personal in terms of human or personal characteristics": *Webster's Third New International Dictionary*) is common in the cognition of daily life and universal in religion. It asserts that anthropomorphism is a kind of reasonable illusion with highly general causes, and it invokes this illusion to explain religious belief. The paper addresses three broad, related questions: (1) Why do people hold "religious" beliefs? (2) How may "religion" best be defined cross-culturally? and (3) How are religious thought and action epistemologically and logically related to "secular" thought and action?[2]

I shall suggest that (1) people hold religious beliefs because they are plausible models of the world, apparently grounded in daily experience; (2) religion may be defined as systematic application of human-like models to nonhuman, in addition to human, phenomena[3] (e.g., in the discovery of "messages" in plagues and droughts as well as in human language); and (3) since all models, religious or secular, depend on analogy and metaphor—whether or not they also depend on logic—there is no fundamental disjunction between religious and nonreligious modes of thought, despite their differences in content. The relation of religious to nonreligious thought is one of similarity of form and continuity of substance.

The argument extends suggestions by Horton (esp. 1960, 1967, 1973a), Jarvie and Agassi (1967, 1973), Gellner (1970), Barnes (1973, 1974), Barbour (1971, 1974), and, to a degree, Skorupski (1976) that religious and nonreligious belief and behavior can best be understood as closely related variants of a single human cognitive process, not as polar opposites. It extends suggestions by Tylor (1873), Durkheim (1976 [1912]), Freud (1964 [1927]), Horton (1960), Goody (1961), Spiro (1966), Jarvie and Agassi (1967, 1973), and others that religion is, among other things, a form of anthropomorphization.[4] My approach is cognitive and rationalistic in that it holds that religion, like other systems of thought and action, is principally an effort to explain and control the world at large. It briefly answers the questions, among others, whether "religious" beliefs are true or false, and in what way, and, if false, why they persist.

THE NEED FOR A THEORY

Anthropology and other humanistic studies lack an adequate theory of religion. Despite Tylor, Freud, Durkheim, and theorists before and since, anthropological and other approaches have found no single paradigm. No theory or even definition of religion is generally accepted.

There are nearly as many definitions as writers, and they have produced "dissatisfaction" and "malaise" (Saliba 1976: 184). Bowker (1976:361) says of the study of religion that

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[2] These questions are broad, difficult, and old, and I address them sketchily. They are interrelated and as yet unresolved, and an answer to any implies answers to all. My purpose here is to outline an approach that I intend to develop later at more length. My temerity in addressing such a large topic with such a small essay may be extenuated by the lack of clear success to date of other anthropological and humanistic approaches (e.g., irrationalist, behaviorist, and structural-functionalist ones) to a definition and a general theory of religion and by what seems to me the economy and force of the intellectualist approach.

Although I compare and contrast religion to science among other kinds of secular thought, I try to characterize science (a topic in its own right) only in passing. I also omit reference here to historical, political, and (most) sociological accounts of religion, as well as to many anthropological ones.

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The present paper was submitted in final form 2 VIII 79.

[3] Similar definitions or descriptions have been proposed by Horton (1960), Goody (1961:157), Lévi-Strauss (1966:221), and Jarvie and Agassi (1967), among others, but I believe that the present one is an improvement.

[4] What I wish to claim is not exactly that religion is "nothing but" anthropomorphism (nothing is "nothing but" something else), but that anthropomorphism is fundamental to it and that if the various phenomena that have been called "religion" have anything in common, it is this. It seems likely that my approach will be met with the charge, among other responses, of reductionism—a charge seemingly apt concerning something so protean as religion. I admit that it is reductionist but submit that this is the nature of theories. They always necessarily simplify the reality with which they are meant to deal.

"nobody seems to know what [religion] is." Nadel (1954), Eister (1974), and Machalek (1977), among others, doubt the possibility of a definition. Eister (1974:2), for example, says that religion has defied social scientific consensus and may "not be definable in general terms."

Of theories themselves, Evans-Pritchard wrote in 1965 that to date "either singly or taken together, [they do not] give us much more than common-sense guesses, which for the most part miss the mark [and] of the many attempts [none] is wholly satisfactory" (1965:120–21). Geertz said the following year that the anthropology of religion was in a "general state of stagnation" and that there was no "theoretical framework . . . to provide an analytic account of religion" (1966:1–4). Despite Geertz's contribution and others, there is some consensus that anthropological theory of religion has "lagged" (Saliba 1976: 189) and that there still is no theory for "normal" research in the science of religion (Buchdahl 1977).

I shall not review present theories here (Saliba 1976 gives a recent short review), but shall mention relevant aspects of several major ones. I agree with Tylor, Durkheim, and Freud—otherwise sharply divergent on religion—that it anthropomorphizes the world in some significant way; with Geertz (1966), Bellah (1964), and Spiro (1966) that the use of symbols, characteristically human, is especially characteristic of religion; and with Horton (1960, 1967, 1973a) and Spiro (1966) that belief in the human-like beings of religion is based in experience. I disagree with Malinowski (1948) that religion is primarily wish fulfillment.

Tylor, who defined religion substantively as the "belief in Spiritual Beings" (1979 [1873]:10), was in my view right to define it as a kind of conception of the world. He was also right to say that religious conceptions may be reasonable attempts to understand the world at large and that they attribute human-like features such as language and ethics to nonhuman natural phenomena. Tylor's weakness is not so much his intellectualism or even individualism as his overestimation of two phenomena (dreams and death) as topics for human thought and therefore as sources of religious notions. His "spiritual beings" are composed of the ideas of the "phantom" and the "life force" that respectively arise from each person's experience of dreams and of death. Tylor's critics have noted that beings so abstractly conceived seem to lack the emotional force of religious conceptions. Nor are dreams and death apparently central (although they may be partial) concerns of all religions. Durkheim, Freud, and many ethnographers suggest instead the reverse: that the stuff of religious conceptions comes more from waking experience of oneself and other living humans than from dreams and death.

Durkheim (1976 [1912]), rejecting Tylor's theory, says that the real topic of religious thought is human social relations and that its distinctive feature is not belief in spirit beings (since these are illusions and therefore could not be the basis of anything so universal as religion), but a distinction of "sacred" and "profane." He points out that conceptions of the world are developed not by lone individuals but by members of society and that conceptions of the universe as a kind of society result from their social preoccupations. Still, he agrees with Tylor that religion is largely cognitive and practical (not, e.g., neurotic or expressive) and that it grapples with the world as a whole rather than (as he occasionally—but influentially—claims) with human society alone. Indeed, he says (in passages emphasized by Horton 1973a) that religion and science have the same aims (to interpret and influence the universe), the same topics (nature, man, and society), and the same logic. The difference between them is the greater perfection of scientific methods of inquiry. He also holds, but mistakenly I think, that since gods and spirits do not exist, the real object of religious thought can only be human society and that gods are simply society personified. In my opinion, it is more accurate to say that the object of religious thought is reality in general and that gods are con-

ceptions that conjoin human and nonhuman reality. As Horton (1973a) and Skorupski (1976) have said, Durkheim also includes this view: "the realities to which religious speculation is then applied are the same [as for philosophy and science]: they are nature, man, society" (1976 [1912]: 429).

Freud (1964 [1927]) also finds the source of religious belief in human experience with humans, namely, in the child-parent relationship.[5] Religion is the child's later unconscious projection of this relationship to the world generally. The "first step" into religion, Freud says (p. 22), is the "humanization of nature." He and Durkheim, as Spiro (1966:102) notes, "agreeing that the cognitive roots of religious belief are to be found in social experience, disagree only about the structural context of the experience." Freud also supposed, probably mistakenly (cf. Harman 1974 on the logic of unconscious thought), that these unconscious processes and early experiences typically are illogical and are the characteristic or even sole source of religious conceptions. Nonetheless, if the irrationalism of his description is tempered, it complements Tylor's somewhat one-sided rationalism and Durkheim's social functionalism. In any case, it is notable that these three, agreeing on little else about religion, apparently could agree that some "humanization of nature" is fundamental to it.

For Malinowski, religion is entirely different from science and other secular thought. It is motivated not by cognitive or practical needs but by "cultural" and emotional ones. It is (as for Freud) a fantasy, "more akin to daydreaming and wish-fulfillment" (Malinowski 1979 [1931]: 43) than to science. It is really an attempt not to explain experience, but to contradict it, motivated by "highly derived" cultural and individual "needs" (p. 45) to ritualize and regulate social relations and to deny the reality of death. The funeral is the most important rite, an afterlife the most important belief. Empiricism and logic are not merely irrelevant, but inimical, to religion.

In my opinion, Malinowski is right to say that religion and magic allow humans to act despite uncertainty, by providing schemes for interpretation and influence, but he is mistaken to think that this distinguishes them from science or from common sense. All equally are attempts to make experience coherent by formulating some adequate representation of it. Furthermore, his emotionalist and cultural conservationist theses are largely refuted by one religion or another. Shinto, Judaism, and most of the Japanese "new religions" (Norbeck 1970, Arai 1972), among others, hold death an evil but show little concern for an afterlife, seeking instead to improve and extend life in this world. Others, such as those of the Apache (Opler 1936) and other foragers and of the Homeric Greeks, depict an afterlife so bleak or vague as to offer cold comfort. They do not seem especially motivated by a desire to deny death, although they in part concern it. Many religions are not, as Malinowski alleged, indifferent to practical concerns, but are means to promote them. The fact that many religions have highly developed logical traditions weakens his claim that reason is irrelevant to religious thought. Finally, millennial and proselytizing religions undermine his claim that religion essentially is culturally conservative.

Among recent definitions of religion, Geertz's (1966:4) probably is best-known: "a system of symbols which acts to produce powerful, pervasive, and long-lasting moods and motivations in men by formulating conceptions of a general order of existence and clothing these conceptions with such an aura of factuality that the moods and motivations seem uniquely realistic." Geertz thus defines religion functionally, by its purpose: to construct, and to make people believe in, an ultimately reasonable universe. Such orientation is necessary because humans, unlike bees or beavers, are without genetically specified

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[5] I do not refer to *Totem and Taboo*, probably the best-known of Freud's other writings on religion, because it seems to me entirely without basis and because it has already been well dismantled by Kroeber (1920, 1939).

models of and for the world. Humans must make models, and do so constantly.

Here are welcome echoes of the rationalism of Tylor and Durkheim (humans must construct a reasonable world), of the psychology of Freud (they do not know how they do so), and of the psychological pragmatism of Malinowski (if they do not construct a reassuring universe, they will be too anxious to do anything at all). But Geertz fails to distinguish religious models from other models. Although religions generally do what his definition says, so do philosophies, ideologies, and science (Kuhn 1970; Harris 1975:546–47). The feature missing from Geertz's discussion, in my view, is the apparently universal anthropomorphism of religion, a feature not characteristic of (though it may be present in) philosophy, ideology, or science.

A further problem in Geertz's definition is that it implies that religious symbols are really directed not, as religious believers think, reciprocally between human and nonhuman (e.g., "divine") communicants, but only between humans: they are devised by men and "serve to produce . . . motivations in men" (p. 4). Geertz may be right and the believers wrong about what they actually communicate, and to whom. But what they believe (that they are addressing and being addressed by gods or spirits, or at least by deceased humans, not ordinary ones) must be mentioned in any attempt to define their activity, since intent is part of the meaning of action. Geertz's definition, then, although a good description, is neither a sound definition nor part of a complete theory, as it neither isolates the phenomenon it seeks to explain nor identifies the characteristic cognitive situation.

Another well-known functionalist definition, Bellah's (1970: 21) "set of symbolic forms and acts which relate man to the ultimate condition of his existence," uses Tillich's notion of "ultimacy" to identify religion. As this definition draws on an idea (indeed a claim) familiar in several major religions, it draws, to a degree, on common usage and "common sense." It is, however, as overly general and as ambiguous as Geertz's. First, use of the term "ultimate" as a criterion poses, as does any superlative, a difficult further question (i.e., what in fact *is* the ultimate condition?). Since the term can be defined only tautologically, its use to define anything else risks circularity. Moreover, this definition, like Geertz's, seems to make sets of symbols such as philosophy also "religion," depending on *whose* ultimate condition is in question. It, too, fails to circumscribe its topic.[6]

I turn last to two substantive definitions, much closer to my own. The first is Spiro's (1966:96) "institution consisting of culturally postulated interaction with culturally postulated superhuman beings." The problem here, I think, is the term "superhuman," which Spiro says describes "any beings believed to possess power greater than man, who can work good and/or evil, and whose relationships with man can, to some degree, be influenced by [ritual or symbolic actions]" (p. 98). Many religious systems (e.g., Judaism, Christianity, Hinduism, and Buddhism) include beings (e.g., demons) whose powers, though in some ways greater than those of men, are in other ways less and which are as well called "infrahuman" as "superhuman." Such beings may be reviled, tricked, or threatened—not treatment befitting superhuman beings. On the other hand, some humans (e.g., witches, magicians, and presidents) at least have greater power than ordinary men, yet are distinct from deities and often are nonreligious figures, so extraordinary power alone does not make an entity specifically religious. It might be better to say of the beings who are religious objects only that they are "nonhuman."

Yet they *are* at the same time human-like. They may, for example, be quite human ancestors and still human in principle if not in form. Their humanity is implied by Spiro's specification (not made in his definition itself, which would seem to admit such completely nonhuman, though in some way superhuman, beings as atoms or volcanos) that they can be influenced by symbolic action. This means that they do *not* include atoms, volcanos, or the universe as *impersonally* conceived, "superhuman" though these may be in respect of energy, mass, or extension. They include only beings that use and respond to symbols.

The beings that Spiro thinks "religion" postulates are human-like in their capacity for symbolism—in my view, too, their most human-like attribute. But why should believers in them postulate such hybrid beings? Instead of supposing that they may be thoroughly plausible or "good to think," Spiro says, as does Freud, that (although he grants them superficial plausibility) they are postulated because with them believers are able to "provide hopes, to satisfy wishes, to resolve conflicts, to cope with tragedy, to rationalize failure, to find meaning in suffering" (1972:6). They are "society's culturally structured fantasy system" and "a symbolic expression of a restricted set of needs, fantasies, wishes, conflicts, aspirations, and so on" (pp. 72, 14).

These assertions may well, to a degree, be true. But if religion may be called "fantastic" because it provides hopes, rationalizes failures, and so on, so too may science (Jarvie and Agassi 1967, 1973; Kuhn 1970; Popper 1976). Science recurrently has provided hope and rationalized failure. No narrow rationalism or empiricism can distinguish it. Religious thought is not sharply distinguished by intuitiveness, since, as Spiro acknowledges, it may include well-considered argument and since science and other secular thought may use fantasy, as in metaphor (Black 1962, Hesse 1966). Popper admits (1976:57) that an "intellectual revolution often looks like a religious conversion. A new insight may strike us like a flash of lightning." Furthermore, as Radcliffe-Brown (1945) and Geertz (1966) have argued in rebutting Malinowski's anxiety-allayment thesis, some religion seems to arouse as much anxiety as it allays. It therefore appears unlikely that the beings of religious thought are generated by such "emotional" needs as Spiro, Freud, and Malinowski (and Wallace 1966, among others) emphasize. As Lévi-Strauss (1966: 268) remarks, human thought, modern or savage, "proceeds through understanding, not affectivity, with the aid of distinctions and oppositions, not by confusion and participation." The relation of emotion to belief (although complex and reciprocal) seems at least as much one of effect as one of cause.

The approach to religion closest to mine and most influential on it is that of Horton (esp. 1960, 1967, 1973a),[7] who, in the

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[6] The ambiguity of both Geertz's and Bellah's definitions seems to me inherent in all functionalist definitions. All attempt to define means in terms of their apparent ends; since their ends, too, are often in doubt and since the same ends usually may be reached by different means, the phenomena included by such definitions are usually heterogeneous.

[7] The most thorough critique of Horton and of intellectualism is Skorupski (1976). I give no critique of Horton here but should note one result of changing, as I propose below, the phrase "social relationships" in his (1960) definition of religion to the more general "models." This result is to resolve his question whether one is obliged by his definition to include relationships with animals as "religion." By my definition, if the extension is systematic, the answer seems to be yes. This answer may raise the objection, based on the existence in the West and elsewhere of quasi-social relationships with pets, that the definition would include these relationships and thus depart from common sense and from such (allegedly) typical religious features as one-sided dependency and feelings of reverence.

Several replies may be made to such an objection. First, it does not seem strongly sustained by contemporary Western relations with animals, domestic or wild, since these relations are usually only very weakly human-like, very weakly featuring ethics, contract, and (apart from recent work with chimpanzees and gorillas, which perhaps is a limiting case) postulated symbolic communication. When individuals speak in private to their pets, they may perhaps be termed "idiosyncratic" rather than systematic. Where they do so in public, as in many foraging and pastoral cultures, they may well be called "religious." Second, the apparent contradiction of the existence of such nonreligious, though apparently human-like, relations with

tradition of Tylor and Frazer, thinks that religion, like other systems of thought and action, is principally an attempt at explanation and control. Its topic and object is the world at large, not society alone. This tradition is sometimes called rationalism, intellectualism, or neo-Tylorianism, and Horton (although Jarvie and Agassi, among others, have promoted it) has given it its "most thoroughgoing and explicit current exposition" (Skorupski 1976:178). His definition of religion as an "extension of the field of people's social relationships beyond the confines of purely human society" (1960:211) and the theory it represents can be developed farther and perhaps refined.

The behavioral terms in which Horton casts his definition raise the question why people should so extend their social relationships. The simplest answer, as he suggests, is that they think that (etically) nonhuman, yet human-like, entities exist, entities with whom such relationships can and should be maintained. That is, people apply human-like models to the nonhuman world and act accordingly. This situation leads to my definition, "the systematic application of human-like models to nonhuman in addition to human phenomena." This definition is meant to indicate the indirect, model-using nature of all knowledge of the world and to lead to an epistemology in which religious models are similar in construction and use to other models. It broadens the question What is a human social relation? to the question What does "human-like" mean? By stating that religion is a kind of model-use, it directly raises the question Why should human-like models be applied to the nonhuman world? and leads to the answer (Horton 1967): Because they appear the most orderly, economic, and plausible interpretations available for some nonhuman things and events.

Unlike Horton (1967), I see no sharp difference between "commonsense" explanations and "theoretical" scientific and religious ones. Common sense *is* theory, made axiomatic by usage and tacit consensus (Nietzsche 1966). All knowledge of the world is contingent and mediate, and all propositions about the world are theoretical. Evidently also unlike Horton, I think that human-like models are chosen not so much because they are the most "orderly" as because they are (for several reasons) the most "important" and because they can generate the widest variety of phenomena (I admit that importance, generality, and order usually are somehow proportionate, but they are not synonymous). In any case, I hope to support and extend Horton's rationalism by urging that anthropomorphism is inevitable in human thought; that it is, though by definition mistaken, not especially irrational; and that it characterizes "religious" thought in particular.

The observation that religion *includes* anthropomorphism has been made often before. Xenophanes (ca. 500 B.C.) said that Thracian gods had blue eyes and red hair while Ethiopian gods had black skin and snub noses, and that if lions and horses had gods they would resemble lions and horses. Aristotle said that "all people say that the gods also had a king because they themselves had kings . . . for men create the gods after their own image" (Evans-Pritchard 1965:49). Aquinas said that Christian conceptions of God are anthropomorphic, although reasonable and true. Hume (1957 [1757]:29) noted that "there is a universal tendency among mankind to conceive all beings like themselves and to transfer to every object those qualities with which they are familiarly acquainted, and of which they are intimately conscious." Feuerbach (1957 [1873]) said that deities are projections of the human mind's self-awareness and in

particular that the Christian God is a projection of the mind's perception of its own infinity. Tylor, Durkheim, and Freud, as noted, found it significant that religions in some way project humanity upon nature. Whitney (1881) wrote that religion is essentially anthropomorphism and mistaken although reasonable. Phelps (1881) and Craufurd (1909), like Aquinas, found religion "anthropomorphistic" but nonetheless reasonable and true. Lévi-Strauss (1966:221) has said that "religion consists in a *humanization of natural laws*" and has referred to the "anthropomorphization of nature (of which religion consists)." Jarvie and Agassi (1967:58; 1973) say that revelation and anthropomorphism distinguish religion from magic (although in the latter work [p. 239] magic too is "anthropomorphic") and science. Barbour (1971:217), among others, has noted that the biblical "model for God is a human person." Evans-Pritchard, although he says that the "anthropomorphic features of the Nuer conception of God are very weak," nevertheless notes that "man's relationship to him is, as it is among other peoples, on the model of a human social relationship" (1970:7). He notes also that the Nuer God "walks" with men, has a genealogical relationship to them, and is prayed to in human language. Some gods are less like humans than others, but all, in contrast to philosophical or scientific concepts, retain some human character.

All "religions," by any useful definition, include gods. Even Buddhism, perennially cited (e.g., by Durkheim 1976 [1912], Bambrough 1977, Winch 1977) as an "atheistic religion," is in fact, as religion, fully theistic. The misapprehension that Buddhism is an atheistic religion rests on a Western confusion of religion with philosophy that (as Leach [1968:1] notes) probably stems from influential early studies on philosophical writings rather than on popular belief and practice. Spiro (1966:93) puts it briskly: "There are, to be sure, atheistic Buddhist philosophies—just as there are atheistic Hindu philosophies—but it is certainly a strange spectacle when anthropologists, of all people, confuse the teachings of a philosophical school with the beliefs and behavior of a religious community." Evans-Pritchard also says that claims that Buddhism and Jainism are atheistic religions are "serious distortions" (1965:119), for the same reason. In my own experience, popular rural Sōtō Zen Buddhism certainly appears theistic: people pray to ancestors for various moral and material benefits. The popular Western conundrum of Buddhism as a "godless religion" appears largely our own product.

Not only sceptics, but also theologians, philosophers of religion, and comparative religionists widely recognize the anthropomorphism of religion. They often see it as a difficulty for theology. Tillich complains that "ordinary theism has made God a heavenly, completely perfect person who resides above the world" (1951:245). Palmer says that in theology "anthropomorphism is anathema" (1973:36) but nevertheless ubiquitous; he alludes to a resulting "difficulty all theologians have in meaning what they say" (p. xv). Newman (1870:3–4) approves of attributing to God "a mind that understands us and a soul that loves us [as] the core of religion," yet denounces attributing a face or hands to Him as an "ancient puerility" and a "pernicious superstition." Brandon (1970:86, emphasis mine) says that anthropomorphism in religion "*inevitably* follows from the fact that man can conceive of deity only in terms of his own mental categories . . . but theologians have been aware of this fact and guarded against its grosser forms."

Many writers (Nielsen, Barbour, Palmer, Meynell, Gallus, and Freud, among others) agree, however, that it remains a central problem for theology and for philosophy of religion. Theologians can guard *only* against its grosser forms, because guarding against all its forms changes religion into something else or eliminates it altogether. Nielsen (1974:199) says that "we seem at least to be at a loss to understand what it is we are asserting or denying when we use . . . nonanthropomorphic God-talk." Barbour (1974:19) says that "if familiar terms are predicated of God literally (univocally), one ends in anthro-

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animals as communication by signs (as when one tells a dog to roll over) is *only* apparent, since nonhuman animals signal naturally. Such human communication with them, then, is not "religious," since it does not anthropomorphize. Last, since (as I shall argue) religion is continuous with other kinds of belief and behavior, a substantive real definition of it can only indicate a type, not absolute boundaries. The type I shall try to establish does not necessarily include either one-sided dependence or feelings of reverence.

pomorphism. But if no familiar terms can be predicated, except equivocally, one ends in agnosticism. (If divine love in no way resembles human love, the term is vacuous. . . .)" Palmer (1973:xv) says that "if theologians use words in their ordinary sense, their theology will be anthropomorphic. If on the other hand a term is to mean something quite different when applied to God, then theology is incomprehensible." Meynell (1977:42) admits that his own notion of God is anthropomorphic but says that the "intelligence and will of the human subject provide the best model for the understanding of God" and asks, "if we can find no such analogy had we not better abandon all talk about God?" Gallus (1972:546), citing Jaspers (1958), says that "if religion is demythologized [i.e., depersonalized], it is no longer religion."

Barbour and Meynell, among others, hope to resolve this paradox while preserving religious belief, but they seem quixotic. Freud (1964 [1927]:51–52) finds philosophers of religion guilty of "dishonesty" and

intellectual misdemeanour. Philosophers stretch the meaning of words until they retain scarcely anything of their original sense. They give the name of "God" to some vague abstraction which they have created for themselves [and] boast that they have recognized a higher, purer concept of God, notwithstanding that their God is now nothing more than an insubstantial shadow and no longer the mighty personality of religious doctrine. Critics persist in describing as "deeply religious" anyone who admits to a sense of man's insignificance in the face of the universe, although . . . the religious attitude is not this feeling but only the next step after it, the reaction to it.

I am in good company, then, in noting that religion typically (always, in my opinion) is anthropomorphistic. Nonetheless, only a very few writers have thought that this fact provides either a definition or an explanation of religious belief, and many seem to think anthropomorphism incidental to religion, even if omnipresent. My assertion, in contrast, is that human-like but not human beings both are universal in and characterize religious belief and that they not only are made plausible by experience, but are made (at least contingently) persuasive by it.

RELIGIOUS AND SECULAR THOUGHT: SAME OR DIFFERENT?

Because they see real differences in content and apparent differences in form between religious and secular thought, many anthropologists and others (e.g., Leach 1954; Freud 1964 [1927]; Wallace 1966; Spiro 1966; Parsons 1968; Beattie 1970; Bellah 1970; Cohn 1970; La Barre 1970, 1978; Dunn 1972; Pruyser 1976) have thought religious models peculiarly nonrational and have sought irrational, expressive, or "symbolic" (in some especially strong sense) motivations and reasons for them. Barbour (a physicist and historian of science who does *not* so contrast them) says that "most writers today see science and religion as *strongly contrasting enterprises* which have essentially nothing to do with each other" (1971:1). Pruyser, a psychologist, alludes to a "profound but sublime irrationality of all religious propositions" and says that "religious thought is unlike common sense, scientific thought, or wit" (1976:18, 47). Philosophers Brown and Winch agree that, unlike secular practices, "religious practices are not, at bottom, informed by beliefs" (Brown 1977:254). Parsons says that "ritual" actions are "not to be measured by the standards of intrinsic rationality at all" (1968:431). Jarvie and Agassi say that "it is no longer controversial to regard religion as irrational," that "few people these days bother to claim that religion is rational in [any sense]," and that "religion defies most criteria of rational belief" (1967:57, 71). And Malcolm says that in Western academic philosophy, religious belief is "commonly regarded as unreasonable and is viewed with condescension or even contempt" (1977:148). It appears to me, however, that these distinctions of

religious from nonreligious belief have been overdrawn, and I stress some continuities between them instead.

One reason for the view that religion constitutes a separate mode of thought is that most 20th-century theorists either have found religious belief untenable or at least have seen that it is largely irreconcilable with science and have tried to account for the differences between religious and secular assertions by globally contrasting religion to science. They depict these two as at poles and deny that the goal of science—to understand and portray the real world—is the goal of religion. They give one or several of three kinds of evidence. First, they (e.g., Goldenweiser 1922; Norbeck 1961, 1974; Wallace 1966; Spiro 1966; Lowie 1970) distinguish religion by its alleged major premise, the existence of spirit beings, superhuman beings, or a supernatural or nonempirical realm, all often treated as synonymous. Second, they (e.g., Durkheim 1976 [1912], Radcliffe-Brown 1945) say that this premise, if taken literally, apparently is false and therefore really must be a metaphor for society, or at least that (Geertz 1966:24–25) it is so far from empirical evidence that observation and reason alone would never lead to it. Malinowski (1948) adds that since the premise apparently is false, it really must not have a technical or practical topic, since it would fail to provide an adequate account and would be obviously detrimental. Third, it is said (e.g., by Beattie 1970) that people do not want to know whether religious premises are true, since they do not actively test them, or that unlike the case in science (Popper 1959 [1935]), negative evidence either intrinsically is unavailable (Flew 1964) or, if available (Festinger, Riecken, and Schachter 1956), is dismissed or rationalized.

In my opinion, however (and in those of Horton 1967, 1973*a;* Barnes 1973, 1974; Barbour 1974; and to a degree Jarvie and Agassi 1967, 1973), none of these assertions clearly distinguishes religion from secular thought or even from science. First, the notion of "supernatural" upon which so many influential definitions[8] of religion rest is itself, like the term it is meant to distinguish, a Western folk category, not a cross-cultural one. It often is not found in non-Western religions (Hallowell 1960, Saler 1977). Saler notes that definitions using it are circular, since they rest on " 'beliefs' in 'supernatural' beings . . . without saying much about what they understand by either 'beliefs' or 'supernatural' " (1977:51). He calls this doubly regrettable and concludes that we should apply our "natural-supernatural opposition only when we can demonstrate that the natives make use of a similar opposition or when we explicitly desire to point out that they do not. . . . it is misleading to refer to beings or powers in non-Western world views as 'supernatural' when supernatural is not salient in native thought." In my own fieldwork, for example, the Japanese term for "supernatural" (*chōshizenteki,* possibly a translation of the Western term) seemed unknown to most people, some of whom said that it might mean "extremely natural."

While much religious belief does not include the "supernatural," it may on the other hand arguably occur in popular Western views of unidentified flying objects, astrology, quarks, black holes, and luck. Horton (1967) similarly suggests that "supernatural" is no more descriptive of African traditional thought than of Western lay understanding of nuclear explosions. Luckman (1976:678) calls the whole supernatural-empirical opposition a "vestige of 19th-century scientism" that has "misled much anthropological, sociological, and *religions-wissenschaftliche* theorizing about religion."

Similarly, the apparent (to anthropologists) falsity of spirits or superhuman beings hardly seems to distinguish them from such theoretical entities as neutrons or phlogiston. Nor is their resistance to disproof unique, since as Kuhn (1970) has shown

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[8] See Saliba (1976) for a list of anthropology textbooks using it to define religion and Saler (1977) for a demurrer to such definitions.

and Popper (1976) has agreed, the theoretical systems of science also show such resistance (and probably do so necessarily, although some philosophers of science have decried it).

I admit that religion and science (as the alleged type case of secular thought) may be distinguished as ideal systems by their methodologies and—contingently and partially—by their topical emphases and conclusions. Religion, as Horton (1967) puts it, has "mixed motives." It not only explains, but also entertains (e.g., with music and dance), undergirds morals, supports or attacks political systems, and so on. Science, in contrast, at least ideally, is restricted to proposing and criticizing theories. As Popper (1976:55) says, it is "essentially critical. . . . it consists of bold conjectures, controlled by criticism." Barnes (1974: viii) thinks that it is the "most elaborated and systematized of all forms of knowledge, and the least anthropomorphic." Religion, on the other hand, in part because, as I shall suggest, it ostensibly is a kind of social relationship, tends not to be self-critical, although it may be highly systematized. Most notably, it always is anthropomorphic. Nonetheless, it is important that religion and science both are concerned to explain and control experience coherently and economically.[9]

Moreover, they appear to be on common epistemological ground. The widespread notion that they are not on common ground arises in part from a faulty secular epistemology (naive realism) of common sense and science and in part from a faulty religious epistemology (the doctrine of revelation) of religion. Both epistemologies are associated with the assumption, denied above, that religion necessarily concerns a supernatural world and science and common sense a natural one. Both are refuted by the now apparent facts that religion, science, common sense, and indeed most "simple" sensory perception (Arnheim 1969, 1974; Piaget 1970) all are forms of model-use, that models are analogical and metaphoric (Nietzsche 1966; Hesse 1966; Barbour 1971, 1974), and that anthropomorphic analogy is, a priori, neither more nor less rational than any other analogy.

Assessing a model's rationality (its apportionment of means to ends) requires some independent examination both of the information available for it and of the phenomena it is meant to explain (requires knowing, that is, its ends and its means) and also some alternate model with which to compare it. One model may then be better than another, but all must actively be built upon ambiguous sensory data. Kant pointed out that we never know "things in themselves," but know them only as phenomena through the inevitable biases of our minds. Aquinas earlier said much the same of knowledge about God. Durkheim (1976 [1912]:237), following Kant, said that as our senses show it, reality has the "grave inconvenience" of inscrutability: "For to explain [even to 'perceive,' according to Wittgenstein (1953: 194e) and Arnheim (1974)] is to attach things to each other and to establish relations between them. . . . But sensations, which see nothing except from the outside, could never make them disclose these relations and internal bonds; the intellect alone can create the notion of them." Nietzsche (1966:315, translation mine)[10] concludes that the human world is an arduous and uncertain construction: "One may well admire man here as a mighty genius of construction, who succeeds in raising the superstructure of an infinitely complex conceptual cathedral on a moving foundation and, so to speak, on flowing water." Popper uses a similar metaphor of science as a "system of theories on which we work as do masons on a cathedral" (1976:57). Piaget also finds that conceptions of the world are built up laboriously

as increasingly comprehensive (and otherwise different as well, from childhood to adulthood) but still tentative schemes.

Like other structures on fluid footings, conceptions of the world are uncertain. Nietzsche (1966:315, translation mine)[11] says that the "cathedral" built on the flow of perception "must be a structure as of cobweb, so delicate that it is carried along by the waves, so strong that it is not blown apart by every wind." Douglas (1968) says that pollution taboos are designed to protect conceptual structures from disorder by guarding their borders. I think that anxiety persists nonetheless because perceptual ambiguity is inevitable. Geertz thinks that the "nervous cognitive stance" of some of his informants and the "dim, back-of-the-head suspicion that one may be adrift in an absurd world" (1966:16–17) are typically human. He cites Bateson (1958:130–31) on a similar uncertainty among the Iatmul, whose "characteristic intellectual enquiry [includes] the nature of ripples and waves on the surface of the water. It is said secretly that men, pigs, trees, grass—all the objects in the world —are only patterns of waves. . . . This perhaps conflicts with [their] theory of reincarnation."

Such uncertainty is intrinsic in the continuous genesis of knowledge. It need not result in the view that there is no external and independent reality or any sense to be made of it (that science is possible seems to refute such views). It does mean, however, that understanding the world is perpetually difficult and perpetually open-ended. When anthropologists (curiously) do not realize this, they are misled into arcane explanations of why otherwise reasonable people have specifically "religious" beliefs. These explanations follow separation of "beliefs into those which are 'rationally' intelligible and hence natural and not in need of explanation, and those which deviate from this ideal and are consequently in need of explanation" (Barnes 1973:182). They ignore the fact that all beliefs are similar in being attempts to resolve ambiguity.

Some other writers agree with me that religion and science are significantly alike in attempting interpretations of reality. Bowker (1976:369) says of them that there is "no reason why religion must have been a separable entity ab initio. What comes to be referred to as religion appears as a part and as a consequence of the general attempts of men to scan their environment." Durkheim, too, considered them more similar than different. They cannot be distinguished on grounds, e.g., of rationality: "Even the fact that religious forces are frequently conceived under the form of spiritual forces or conscious will, is no proof of their irrationality. The reason has no repugnance a priori to admitting that the so-called inanimate bodies should be directed by intelligences" (1976 [1912]:26). He concludes that scientific explanations are more "objective because they are more methodical and because they rest on more carefully controlled observations, but they do not differ in nature from . . . religious ones. . . . [B]etween the logic of religious thought and that of scientific thought there is no abyss" (pp. 238–39). Pareto (1935:591, cited in Evans-Pritchard 1965:93) similarly thinks it crucial that they share a single motivation, an interest in causality: "the search for causes, however imaginary those found may turn out to be, has led to the discovery of real ones eventually. . . . [theology, metaphysics, and natural science] are probably manifestations of one same psychic state."

Just as religion, science, and common sense have a common cognitive end, they seem to share a chief cognitive method, analogy (Frazer 1935 [1890], Black 1962, Hesse 1966, Ferre 1968, Barnes 1973), which Aristotle says exists whenever there are "four terms such that the relation between the second and the first is similar to that between the fourth and the third" (Maranda 1971:192). Science, religion, magic, and common sense all commonly state—in addition to, e.g., laws and identi-

[9] Horton (1967) makes a strong argument for this view, and Kuhn (1970), though not explicitly concerned to compare science and religion, seems to support it. The most thorough and explicit argument for it is that of Barbour (1970, 1974), although, unlike me, he hopes to show that religious beliefs are no less tenable than scientific ones.

[10] "Man darf hier den Menschen wohl bewundern als ein gewaltiges Baugenie, dem auf beweglichen Fundamenten und gleichsam auf fliessendem Wasser das Auftürmen eines unendlich komplizierten Begriffsdomes gelingt."

[11] "muss ein Bau wie aus Spinnefäden sein, so zart, um von der Welle mit fortgetragen, so fest, um nicht von jedem Winde auseinandergeblasen zu werden."

ties (e.g., "E=MC²" and "pigs is pigs")—such analogies as sun/planets = nucleus/electrons, children/parents = descendents/ancestors, needle/doll = enemy/spear, and "legs"/table = legs/human. In fact, since no two phenomena are exactly the same (as Heraclitus put it, one cannot step into the same river twice), even most apparent "identities" are, closely considered, merely close analogies. Although pigs may be pigs, one pig is not another, but only similar to it. Any description of the world, then, is a series of analogies (Nietzsche 1966:314–15). It depends on equating phenomena that are somehow similar although not the same (Black 1962, Hesse 1966). Models are metaphors (assertions of the identity of nonidentical phenomena) that have been extended, modified, and elaborated. One result is that, as Barnes (1973:183) thinks, "all belief-systems, scientific or preliterate, 'true' or 'erroneous,' are most profitably compared and understood within a single framework."

Because religious and nonreligious thought and action share, as it seems, a general cognitive framework of aim and method, attempts such as Malinowski's and Freud's radically to distinguish them encounter contradictions in fact and circularities in theory. A circularity noted above is the use of "supernatural" to distinguish religion. There are various related problems. When contemporary Westerners pursue some specific end such as health, are they really more empirical or logical about secular means (e.g., pills and physicians) than religious means (e.g., prayer)? If the distinctiveness of religion as a "mode" is self-evident, why do most non-Western cultures not (Smart 1976: 30) notice it? And, if religion and science really concern such different orders of experience that they hardly overlap (Parsons 1968, Beattie 1970, Pruyser 1976), how can they have contested common ground in such disputes as those over Galileo and Darwin? Eister (1978:348) recently has noted that many ostensible distinctions between them rest on "inappropriate terms," "questionable assumptions," and "other 'errors' " and that the "time seems . . . ripe for a reexamination of the intellectual relations between these two." As Skorupski (1976:173) remarks, we need "to be set free from the strait-jacket of 'ritual = sacred = symbolic' versus 'practical = profane = instrumental' and the contortions to which this simple-minded opposition leads."

I hope to dissolve these apparent problems by showing that no sharp distinction of religion as a separate mode can, or need, be made in principle or in practice. Instead, religion can be identified (though not sharply contrasted to nonreligion) as systematic use of a particular kind of model for a particular kind of phenomenon, viz., of anthropomorphic models for non-human things and events in addition to human ones. It arises, as do all systems of thought, from the need to account for the world and from the reasonable tendency to do this with models that already have proved significant.

My argument begins with the fact that anthropomorphic models usually are, for humans, because originally constructed of and for them, the most significant of models. They are with us from cradle to grave, explicitly and implicitly, from introspection, from observation of other people, and from instruction. They necessarily interest everyone (witness pervasive anthropomorphism in, for example, advertising, greeting cards, and other commercial art) and are constantly employed in everyday life. If the wind buffets one's front door, for example, one first thinks that it may be a visitor. A runner in the park wishes to know whether an upright shape glimpsed near his path is that of another human, or merely of a drinking fountain, a shrub, or a pile of trash bags against a tree, or whether a sound behind him is running human footsteps or blowing leaves, and if human whether it is merely an echo of himself. Although a human-like model subsequently may be discarded if another model clearly is better, it usually is tried before others.

Models of humans not only are "significant," but also are multifaceted and highly general. They enable us to hear voices in the wind, see the human form in diverse colors and shapes,

and perceive a plan in the change of seasons. Because of their significance and generality, we employ them more frequently than the realities—real humans—from which they derive actually occur. Nietzsche (1966:316, translation mine)[12] thinks it impossible to escape them. Even the natural scientist looks,

at bottom, only for metamorphoses of the world in man; he wrestles for an understanding of the world as a human-like thing, and wins at best a feeling of assimilation. . . . [He] regards the whole world as connected to man, as an infinitely broken echo of an original sound, that of man; as the manifold copy of an original picture, that of man.

Goethe says that "the human *never* grasps how anthropomorphistic he is" (cited in Liebert 1909:22, translation mine).[13]

Not all resulting perceptions are "religious," but all display the cognitive principles (though not the historical or political ones) underlying religions. These principles include the organization of all perception according to models; the choice of models from a limited set by criteria of adequacy, probability, and significance; and the resulting frequent choice of human-like models for ambiguous phenomena. Although these principles lead to religion, they are not unique to it, but are found in nonreligious thought as well.

A COGNITIVE APPROACH

My argument may be put in five propositions and two informal deductions,[14] as follows:

P1. Phenomena (aspects of the world as known through our senses) initially are ambiguous.

D1. Therefore phenomena (at least salient or potentially significant ones) must be interpreted.

P2. Phenomena are interpreted by a set of models based on experience of analogous phenomena.

P3. A model by which to interpret a phenomenon in a context is chosen from the set by (*a*) its capacity to generate the phenomenon, (*b*) the likelihood of occurrence of the phenomenon from which the model derives, and (*c*) its subjective importance to the observer.

P4. Humans, (*a*) because they are complex and multifaceted, generate a very wide range of phenomena; (*b*) as social beings, are likely to be wherever the human perceiver may be; and (*c*) are the most important factor in the human environment.

D2. Therefore human-like models frequently are chosen to interpret ambiguous phenomena.

P5. Generalization and systematization of this choice is the cognitive basis of religion.

I shall explicate and illustrate these assertions.

Phenomena (aspects of the world as known through our senses) initially are ambiguous (P1). In and of themselves, "phenomena" have neither identity nor meaning. When we first hear *Katze* it does not evoke a cat, nor does our first sight or smell of smoke mean fire; nor does either experience have definable form. Because of what Geertz (1966:13) calls the "extreme generality of man's innate . . . response capacities," the meanings of phenomena for us (unlike the apparent case for insects, for example) are not built into them, but conferred on them. Perception even of simple shapes is an "eminently active occu-

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[12] "sucht im Grunde nur die Metamorphose der Welt in den Menschen, er ringt nach einem Verstehen der Welt als eines menschenartigen Dinges und erkämpft sich besten Falles das Gefühl einer Assimilation. . . . so betrachtet ein solcher Forscher die ganze Welt als geknüpft an den Menschen, als den unendlich gebrochenen Wiederklang eines Urklanges, des Menschen, als das vervielfältige Abbild des einen Urbildes, des Menschen."

[13] "Der Mensch begreift *niemals* wie anthropomorphistisch er ist."

[14] The deductions are "informal" in being not fully syllogistic here. Several more propositions are necessary to make it so, but the argument seems clear as it is.

pation" (Arnheim 1974:43). Moreover, even after a given phenomenon has meaning, it must on every subsequent encounter still be identified as the "same" phenomenon. What appears to be a snake on the path may also be a rope or twig, and what seems a voice in the house may be a gurgle in the plumbing. Although we are made aware of ambiguity only occasionally, as when some salient datum such as snake/rope or voice/gurgle resists interpretation, all sense data are in principle ambiguous—or, more accurately, meaningless—until acted upon. Positive action is required to understand what impinges on us, to "grasp" reality, because as our senses show it it has the "grave inconvenience" of inscrutability.

Therefore phenomena (at least salient or potentially significant ones) must be interpreted (D1). We cannot allow phenomena to remain ambiguous, for practical reasons among others: we ask, e.g., "Is this paint wet or dry?" Our need is not only practical, however, but (and more immediately) "intellectual." As Geertz (1966:15) says, humans typically are unable to "leave unclarified problems of analysis merely unclarified," but the place of analysis is more fundamental than Geertz here implies. As Wittgenstein (1967), Hanson (1958, 1969), Arnheim (1974), Popper (1976), Lakatos (1976), and others have said, no perception is unprejudiced. All perception is theory-laden. To perceive is to construe. We do not simply "see" things, but always see them "as" something. Popper (1976:52) notes that "we approach everything in the light of a preconceived theory" and Geertz (1973:215) that "every conscious perception is an act of recognition."

Phenomena are interpreted by means of a set of models based on experience of analogous phenomena (P2). Ambiguity is resolved by selecting a model that somehow corresponds to the phenomenon in question. The set of available models is based somehow (evidently by "intuition" as well as by tuition) on experience and reason (cultural or individual), and choice from this set is based on some judgments of adequacy. As Pettit (1977:23) remarks of interpreting speech, this choice is a "self-corrective one in which a structure is assigned, the interpretation it gives examined and the structure accepted only where the interpretation seems reasonable."

A model . . . is chosen from the set by (a) *its capacity to generate the phenomenon* (P3). Some features of the model must "correspond" to some features of the phenomenon; i.e., model and phenomenon must constitute a more or less close "analogy." But analogy alone is not enough, since more than one model may provide it: a small serpentine object in one's path may match, more or less, one's model of a snake, a rope, a twig, or something else. So one also must judge (b) *the likelihood of occurrence of the phenomenon from which the model derives.* This judgment is very largely contextual: if the path is a city sidewalk, one will more likely think the object a rope than a snake; if it is a forest trail, one will more likely think it a snake. Empson (1930:304, cited by Pettit 1977:23–24), says similarly of interpreting a poem that

in accepting a syntax there is a preliminary stage of uncertainty; the grammar may be of such and such a kind; the words are able to be connected in this way or that. . . . a plausible grammar is picked up at the same time as the words it orders, but with a probability attached to it, and the less probable alternatives, ready, if necessary, to take its place, are in some way present in the back of your mind.

The third criterion is (c) *its subjective importance to the observer.* By "subjective," I mean not "unreliable," but "emic," and I assume it to be generally reasonable and adaptive. A model may be "important" for many reasons, but its level of organization surely is a crucial one. This reason is both intellectual and pragmatic. Intellectually, the more phenomena we can bring under a single organization, the more experience we "understand." Pragmatically, more highly organized things normally have a greater impact upon us than do less organized ones. Snakes are more highly organized than twigs and so in many

contexts take priority over them as interpretations of serpentine phenomena.

Nonetheless, if one is preoccupied with finding twigs, he may mistake a snake for a twig, because "our perception is organized in the light of particular interests" (Barbour 1974:120) and because of "preconceived theory" (Popper 1976:52). Preoccupation prejudices perception. But prejudice is justified. The art historian Gombrich has said that "the greater the biological relevance an object has to us, the more will we be attuned to its recognition—and the more tolerant will therefore be our standards of formal correspondence" (cited in Arnheim 1974: 51). Gombrich's point may be generalized by omitting "biological" (although "tolerant" must be modified by "temporarily").[15]

Nothing, on the whole, is more relevant to humans than humans. As we are necessarily preoccupied with each other, we are attuned to recognize each other, and our "standards of formal correspondence" accordingly are tolerant, at least for initial recognition. Ambiguous phenomena commonly are measured first against a human-like template. What fits is especially noted, and what does not may be held in suspension. An X-shaped reflection (as from garments of road crews or of runners) in our headlights is examined for analogy to the dimensions of the human chest and back and vertical stripes for analogy to arms and legs. Projective tests such as those of Rorschach confirm this priority of human-like models: responses to ambiguity most commonly invoke the human form. Beck and Molish (1967:405) report that "human [form] and human [anatomical] detail responses become a predominant response at age three. They increase steadily in the [next] eight year span" and remain predominant throughout life.

Humans, (a) *because they are complex and multifaceted, generate a wide variety of phenomena* (P4). Humans, especially clothed ones, appear in many shapes and colors. If camouflaged, they may not appear at all, even if "visible." Humans also communicate in many media: in "bird" calls, ciphers, flags, smoke signals, telegraphs, and others. Human capacities for behavior are so variously exploited in culture that it is difficult (particularly when humans deliberately disguise themselves) to distinguish phenomena that in principle could not be human from ones that could be. If it is important to detect humans, it is important to inspect many potential clues; and, as I shall argue, there is no clear, comprehensive division in fact between "human" and "nonhuman" clues. Even symbolism, often thought (e.g., by White 1969) exclusively human, must now to a degree be acknowledged in higher primates. Real continuities and similarities between ourselves and the nonhuman world, in shape, color, organization, volition, and intelligence, make "human" nature perpetually difficult to distinguish from nonhuman nature. Detecting misapplied human-like models, if it is possible, requires perpetual reflection.

Humans (b) *as social beings, are likely to be wherever the human observer may be* (P4). Since we are raised and usually live in groups, we usually and reasonably expect the presence of other humans. Few if any contexts rule out the possible presence, or at least traces, of other people.

Humans (c) *are the most important factor in the human environment* (P4). Objectively and subjectively, other people are, to virtually everyone, the most important entities in the world.

[15] It should be noted that the same high priority that makes our standards of correspondence tolerant for *recognition* of humans and human-like things makes them intolerant in the course of further inspection. Once one has decided that something is "human," one wants to know what kind of human, or human to what degree. Depending on the human's apparent relation to oneself (e.g., kinsman or stranger, encountered in a throng or in wilderness, seen at close quarters or at a distance), one's scrutiny may be more or less intense. But scrutiny normally does not cease—although it may become covert —upon the decision that an entity is somehow human. On the contrary, it normally intensifies. Theology, for example, asks intensely: supposing that the world is somehow human-like, how far and in what ways is this the case?

They are important objectively because virtually everyone is dependent on others for physical survival as well as for emotional and intellectual well-being. As the biologically and socially most highly organized beings, humans are uniquely powerful. Although our awareness of their importance may not always be articulated or even conscious, it is deep, omnipresent, and well founded. Its subjective role in visual perception, for example, is revealed in a refugee's account of escape from Nazi Germany: "all at once the guides directed us to drop to the ground. Up on the hill an unexpected sentinel seemed to stand guard. The guides scouted around and discovered it was only a young sapling tree on the hillside" (Ozick 1977:72) and in a taxi driver's remarks on requisites for his work: "I always have clean windows because you have to keep looking for fares. That's like a natural for a cab driver. You have to be always looking. Always. Sometimes you get carried away. A couple of times I pulled up to a mail box thinking it was a rider. It's happened to all of us" (Filipow 1977:5). The reader doubtless will recall similarly mistaking nonhuman things for humans. The reverse, of course, happens as well: we mistake people for nonhuman things, as when military camouflage makes men resemble trees or hillocks. But we probably initially mistake more things for humans than humans for things, because we are attuned to humans and employ "tolerant standards" for them.

Such mistakes, moreover, in principle are neither avoidable nor without basis, since, as I have mentioned, continuities in shape, intelligence, etc., link us to nonhumans. Phylogeny, and therefore homology as well as analogy, relate us to chimpanzees, rats, and living things in general, and various analogies relate us to nonliving things as well. Because of these similarities and the variety of human behavior, and because of the role of judgment in making models concerning them, there is no clear and comprehensive line between models of humans and models of other things and events.

This situation raises a crucial question: What exactly do I mean by a "human-like" model? A few characteristics seem most nearly to distinguish humans from nonhumans. These (orthodoxly enough) are—despite some symbolism in chimps and gorillas—language and symbolism generally and resulting capacities for formal and symbolic statements about, and using, social relations among other things. "Religion," then, means applying models to the nonhuman world in whole or in part that credit it with a capacity for language (as do prayer and other linguistic, including some "ritual," action) and for associated symbolic action (as do, e.g., sacrifice for rain and other "rituals"). Douglas (1978:86) points out, in a rather different context, some of the features I call religious in the world views of primitive societies generally: the primitive universe is "expected to behave as if it were intelligent, responsive to signs, symbols, gestures, gifts, and as if it could discern between social relationships." She notes that Frazer is "full of examples of belief in an impersonal universe which, nonetheless, listens to speech and responds to it one way or another. So are modern fieldworkers' reports" (pp. 86–87).

It is the use of language, then, vis-à-vis the nonhuman world that I think most characterizes religion. What leads to linguistic expectations of the nonhuman universe, which, I think, really neither listens nor replies? For the most part, a rationalistic view suffices: they are plausible applications of significant models to ambiguous phenomena. This view applies here, as to other human features in models.

However, because of the important but ill-understood relation of language to cognition generally, I would like to make some suggestions about a possible special relation between it and religion. As our principal means of communication, language is our principal means of comprehending and controlling the world in toto. Our capacity for it and inclination to use it are somehow "built in": not mere opportune exploitation of anatomy and neurology, but a biologically broadly based, deeply

integrated system (Lenneberg 1967, Geschwind 1970, Chomsky 1972, Lieberman 1975). Language may be distinguished from other natural communication by such features as productivity, displacement, and arbitrariness (Hockett 1973), but neither its form nor its content may be narrowly specified. Its "arbitrariness" means that the information it conveys depends not on the specific events that carry it, but on production and interpretation by a learned system. Sending and receiving "messages" by a learned system is a basic human orientation to the world, by genetic predisposition and by experience.

Although language typically is spoken, its media in principle are unlimited. It depends on a code, not a medium. Any and all events therefore may be—and in fact are scrutinized as—potential messages. We do not limit the environment we scrutinize and address to other humans. We find "messages" not only in books, road signs, and semaphores, where a human is not present but was at some time, but everywhere, in outer space (e.g., by radio astronomy; and we shoot messages into space as well) and in the flight or entrails of birds.

In prevailing scientific constructions of the world, signs and signals from and to the nonhuman sector are not linguistic. They do not display arbitrariness, productivity, and displacement, nor do most of them (*pace* Lévi-Strauss 1966:267–69, and excepting some higher primate behavior and some human behavior vis-à-vis outer space) have intention or meaning common to humans and nonhumans. Linguistic features have been dropped, as misleading, from most scientific models of the world as a whole. Scientists, unlike astrologers, diviners, and priests, now do not think that most natural "signs" that we do encounter are ethically or systematically related to humans and their purposes: stars do not chart our health, entrails forecast victory, or earthquakes punish sin. Many people (probably all, at some time and to some degree), however, continue to interpret the world at large in such linguistic and normative ways. Survivors of the 1970 Peru earthquake, for example, spontaneously assumed that it was a punishment (Bode 1974).

Religious models include human features in varying proportion, but a steady salience of linguistic ones seems to underlie such definitions of religion as Geertz's and Bellah's, as systems of symbols. Such definitions (and Firth 1973, Turner 1975, Barth 1975) suggest, implicitly or explicitly, that religions are chiefly systems of communication. Firth, for example, says that "ritual" is best considered a "formal set of procedures of a symbolic kind, involving a code for social communication (1967:12). Ricoeur says that religion can be "identified . . . as a kind of discourse" (1974:71), and Barth devotes a recent work to "analyzing ritual as a mode of communication" (1975:11).

So far, these descriptions are unexceptionable: religion surely is, among other things, largely a form of communication.[16] The question is, whose communication, with whom? Functionalists such as Firth, Geertz, and others suppose that the communication is internal to (etically) human society, whose members produce and "really" direct the symbols not to deities, but to other human members of society. Religious communicants suppose that they communicate not merely with each other, but with members of some larger system.

This situation suggests a description (which fits within my definition) of religion as a putative system of symbolic communication, in which some participants are human and others

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[16] Since a possible root of the word "religion" is *religare* (Latin "to tie up," i.e., bind together or link), and since what is "tied" or linked is persons (whether divine, human, or both), communication may perhaps be held (at least in the West) essential to religion on etymological as well as on ethnological grounds. But the etymological evidence is complex and unclear, as Smith (1964:23, 184–85) points out.

(etically) are not.[17] Psalm 19:1-4 (in Jones 1966:800-801), for example, asserts that

The heavens declare the glory of God,
the vault of heaven proclaims his handiwork;
day discourses of it to day,
night to night hands on the knowledge.
No utterance at all, no speech,
no sound that anyone can hear;
yet their voice goes out through all the earth
and their message to the ends of the world.

If religion may be described as a system of postulated communication at a linguistic level, perhaps magic and divination similarly may be described as postulated communication at the level of nonhuman animal call systems (which lack arbitrariness, displacement, and productivity and which—like magic— achieve their ends automatically). Religion and magic, aiming messages at and listening for messages from the nonhuman world, share an overestimation of its organization. Religion, using symbols, assumes a human level of organization, and magic, using signs, assumes a nonhuman (*pace* Agassi and Jarvie [1973:239], who call magic "anthropomorphic") animal level of organization in phenomena that (in the etic view) do not possess them. Religion credits the nonhuman world with speaking a language, and magic credits it with sending and receiving calls.

Horton (1967) somewhat similarly suggests that in African magic words act directly on things and that the material elements used may be thought of as concretized names. La Barre (1978) thinks that magic is an extrapolation of the power of words, especially as we first experience this power as infants. Douglas (1978:86) also nearly compares (but does not quite; nor does she here distinguish signs from symbols) magic to call systems:

The most obvious example of impersonal powers being thought responsive to symbolic communication is the belief in sorcery. The sorcerer . . . tries to transform the path of events by symbolic enactment. He may use gestures or plain words in spells or incantations. Now words are the proper mode of communication between persons. . . . the poison used [to detect] witches . . . is not said to be a person [yet] not only does the poison hear and understand the words, but it has limited powers of reply. Either it kills the chicken or it does not. . . . It cannot initiate a conversation or conduct an unstructured interview. . . . It is . . . like a captive interviewee filling in a survey questionnaire with crosses and ticks.

Why does such an overestimate of organization occur? This is a general question about thought that cannot be resolved here, but several answers accord especially with my approach. First, it seems that all thought assumes that the world is in *some* way organized and integrated, not random. This assumption has been called characteristic, variously, of religion, science, and magic. Geertz (1966:13) offers as a possible definition of religion "what Salvador de Madariaga has called 'the relatively modest dogma that God is not mad.' " Simpson (1961:5) says that science aims to take to the "highest possible degree the perceptual reduction of chaos. . . . the most basic postulate of science is that nature itself is orderly." Lévi-Strauss (1966:11) says that magic, "that 'gigantic variation on the theme of Causality'. . . can be distinguished from science not so much by any ignorance or contempt of determination but by a more imperious and uncompromising demand for it." Durkheim (1976 [1912]:28) similarly says that religious conceptions primarily concern "not that which is exceptional and abnormal in things, but, on the contrary, that which is normal and regular." A basic Buddhist doctrine is comprehensive causality, karma— that "there are no effects without causes." An assumption of

order, then, is not peculiar to religious, magical, or scientific thought, but may be found in them all. What varies is only the kind of organization thought to obtain.

Still, why are religion and, to a degree, magic so ambitious in the *level* of organization that they purport to see, a level from which science retreats? Why do they so reluctantly give up this ambition, despite evidence that they cannot attain it, and why does it spring up anew in every generation? As Durkheim (1976 [1912]:70) asks, rejecting Tylor's intellectualism, "How could a vain fantasy have been able to fashion human consciousness so strongly and so durably?"

As for the ambition of religious explanation, I (with Horton 1967) suggest that it is, first, an instance of the human tendency to economize thought and action by generalizing, ordering, and system-building. As Agassi and Jarvie (1973:242) say of magic, we create in religion a "smooth . . . world view which offers tools for explaining every phenomenon." Wittgenstein (1969) called this tendency "our craving for generality," and Campbell (1952:79) wrote of science that "it is one of the profoundest instincts of our intellectual nature to regard the more general principle as the more . . . satisfactory." Harman (1974:vii) has said that thought is largely a "matter of trying to increase the coherence of our total view," and Piaget (1970:19) has suggested broadly that not only humans, but all organisms produce "structures of inclusion ordering correspondence everywhere." Seen this way, the apparent ambition of religious aspirations to knowledge is fundamental to all thought; religious cognitive ambition is typical, not aberrant. "Science" is then a kind of restraint on this ambition, not a spur to it. But religion does seem to have one reason, different from those of secular thought, for expecting success: it assumes that the world is significantly human-like. The nature of the world in general is then accessible in the same way as the nature of other humans: by introspection, observation, and direct communication. Science, in contrast, is, in one sense, the abandonment of claims to direct insight into nature by analogy with ourselves.

To account for the persistence (as opposed to the ambition) of religious belief despite evident disconfirmation, two answers agree with my approach. First, as Popper (1959 [1935]) and Kuhn (1970), among others, have held, general theoretical systems are subject for confirmation or disconfirmation not to any single test, but only to broad considerations of coherence, of loosely measured correspondence to some range of interesting facts, and of comparison to other systems. Religious theory, then, shares its (allegedly peculiar) lack of testability with such systems as Copernican astronomy, Newtonian physics, and Lamarckian heredity. Theories are not overthrown by experiment, but displaced by more coherent and persuasive theories, which then can aim crucial tests back at their faltering predecessors.

A second and rather different explanation of the persistence of religious belief also is suggested by the present approach. My answer is that we have asked the wrong question: we should ask not why "religious" models persist although mistaken, but why human-like models persist. The answer then is clear: they persist because they are often right—real humans do exist, under many guises and everywhere in the human environment —and because they are singularly important. Models of humans are, as noted, important both for an intellectual reason (that they provide explanations for a uniquely wide range of phenomena) and for a pragmatic one (when they truly apply, we benefit by acknowledging it). Intellectually, they make the world coherent. Pragmatically, they make possible quick recognition of its most highly organized and powerful elements.

Although like all models they may be applied mistakenly, they are a good risk: it is usually better to err many times by applying them when they do not obtain than to err once by failing to apply them when they do. The guerrilla has good reason to see his enemy in every bush and hear him in every snapping twig: one real enemy justifies a hundred false alarms. The same principle is sometimes made a religious argument for

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[17] This description is similar to Spiro's (1966:96) definition of religion as an "institution consisting of culturally postulated interaction with culturally postulated superhuman beings," but it specifies that the interaction at least includes symbolic communication and it changes "superhuman" to "nonhuman."

religiosity: one may as well assume that God exists, because even if He does not, little is lost by the assumption, while if He does, much is gained.[18]

Only the hindsight supplied by an alternative, nonreligious view identifies religion specifically as treatment of nonhuman entities and events in a human-like way. Until this view emerges and identifies such entities and events as plagues and earthquakes as nonhuman and un-human-like, religion cannot be clearly distinguished from other social relations. This is why Durkheim and his followers thought it to be *only* social relations in disguise. It may be the same hindsight that makes Tillich say that "religion feels an assault is made on its innermost essence when it is called religion" (1973:28) and that " 'religion' is a derogatory term" (p. 127).

Apart from language and other symbolism, few traits make a model sharply human-like or un-human-like. Rather, any of many traits (music, laughter, breasts, buttocks) may place a model on a continuum more or less human-like. Although Western models of humans now exclude, for example, invisibility and the power of flight, some models of humans (of shamans, witches, and magicians, for example) include these or equivalents. Frazer (1935 [1890]:92) noted that no line necessarily is drawn between humans and gods: man in primitive societies makes no clear distinction between "a god and a powerful sorcerer. His gods are often merely invisible magicians who behind the veil of nature work the same sort of charms and incantations which the human works in a visible and bodily form among his fellows." Although Frazer here thinks that invisibility distinguishes gods from magicians, and although it has also been emphasized by people like Malinowski, Flew, and Beattie, who think a division between empirical and nonempirical distinguishes science from religion, I agree with Horton in seeing no difference between the (usual) invisibility of gods and that of electromagnetic waves or of "ether."

Moreover, humans and many other animals achieve a kind of invisibility by camouflage, which might equally account for the usual invisibility of gods and spirits. Complete invisibility is simulated in human games with blindfolds or darkness and widely exploited in fiction; it does not intrinsically seem nonhuman. On the other hand, gods are thought not always to be invisible, but to reveal themselves at will. They are revealed also, like atomic particles in a cloud chamber, by their actions. Mere invisibility, then, is no reliable measure of the supernatural, of the nonempirical, or of godhead.

The continuity between god and man that Frazer asserts for primitive cultures generally is clearly postulated by the indigenous Japanese religion, Shinto, in which all things are "deities" (*kami*). The 18th-century Shinto scholar Motoori said that "in principle human beings, birds, animals, trees, plants, mountains, oceans—all may be *kami*" (Matsumoto 1972:37). A modern scholar similarly says that "all beings have such spirits, so . . . all beings can be called kami" (Ono 1969:6). To repeat: because phenomena grade into each other and because our models of them vary and are recombined endlessly, our conceptions of humans are not always distinct from conceptions of the "divine"—or, in my terms, the "nonhuman"—world.

Conceptions that are anthropomorphic in some degree appear

everywhere, a fact I now wish to emphasize. I wish to assert that anthropomorphism is and, for reasons cited in the propositions and deductions so far, must be a cultural universal. Although steadily eliminated from scientific models (Barnes [1974:45] cites a "strong aversion to anthropomorphism and anthropocentrism" as an "important general characteristic" of science, and Agassi and Jarvie [1973:245] say that the "development . . . to current science" is away from anthropomorphism, among other earlier patterns), it remains unabated in art (Arnheim [1974:6], for example, remarks that artists "form the world after their own image"), in literature, and in commercial advertising, where it is so common as to be almost beneath notice. Nor—although by definition "mistaken"—is it, according to my argument, either peculiarly irrational (although, like other kinds of model, often habitual and unconscious) or in any other way distinct from nonanthropomorphic thought.

It is, we recall, by definition "an interpretation of what is not human or personal in terms of human or personal characteristics." Such interpretation occurs daily in diverse ways, momentarily or at length, in play or in earnest, religiously or not. If, for example, we hear a distant door closed by the wind and suppose that someone has entered the house, or if the wind makes a branch tap our windowpane and we think a friend has come to call, we have anthropomorphized the sounds; similarly if, passing a parked car, we mistake a raised headrest or bag of laundry for an occupant, or if we take the muffled sound of a toilet flushing or dishwasher starting for a voice, or—perhaps—if, while asleep, we hug a pillow as though it were a spouse; and again if we verbally abuse an engine for refusing to start or a vending machine for refusing change.

Not only such apparently spontaneous, individual interpretations, but also cultural ones, are anthropomorphic, at many levels of complexity and self-consciousness. Examples in Western language and literature are familiar and endless. In ordinary language, storms "rage," pines "whisper," brooks "babble," mountains are "majestic," ripe fruit and fresh paint "blush," and so on. More complexly (and probably in conscious metaphor; but all models are metaphoric, whether consciously or not), Helen Keller as a child wrote to a friend that "at first I was very sorry when I found that the sun had hidden his shining face behind dull clouds, but afterwards I thought why he did it, and then I was happy. The sun knows that you like to see the world covered with beautiful white snow" (1903:194). A recent news story shows two somewhat different anthropomorphizations of rain, the first perhaps self-conscious and the second probably not: "DRUOGNO, Italy, Aug. 8—The news that the Pope was dead came on Sunday night to this Alpine village, and the rain began with a biblical vengeance only a few minutes later. . . . The old people made the connection at once. The problem, explained an elderly woman dressed in traditional black, was that the angels were weeping for the Pope" (Apple 1978:A13).

Nor is anthropomorphism limited to views of nature in the strict sense. "Culture" itself may in a sense be anthropomorphized: a recent Citibank newsletter (March 1978, p. 3) says of the faltering economy that "many would attribute the slide to the frailties of advancing age, citing the fact that the recovery celebrates its third birthday this month." Here a national economy, more culture than nature, is compared to an aging human.

If the reader objects that such statements are "merely" poetic or metaphoric, I would point out that most of our comprehension of the world is metaphoric. As Nietzsche (1966:314, translation mine)[19] put it, "truth" (*Wahrheit*) is a "mobile army

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[18] The same principle seems again to apply, if I may speculate, in at least some nonhuman animals. It may be that they share the tendency to increase the coherence of thought by applying a model of the highest available level of organization. An apartment cat I know often stalks flies as though they were vertebrates, capable of perceiving him at a distance and of remembering him. He usually does not do the reverse: he does not apply a less demanding tactic to the other animal he stalks, another cat. Reindeer avoid piles of rocks built by Eskimos to resemble Eskimos (in order to frighten reindeer), avoidance which seems to reflect a model that, though both mistaken and nonadaptive here, usually may be applied safely to Eskimo-like shapes. If the shape really is an Eskimo, much is gained by avoiding it, while if it is not, relatively little is lost. The situation for theists, cats, and reindeer is perhaps an aspect of game theory: that the first bets to cover are those with the highest possible payoffs.

[19] "ein bewegliches Heer von Metaphern, Metonymien, Anthropomorphismen, kurz eine Summe von menschlichen Relationen, die, poetisch und rhetorisch gesteigert, übertragen, geschmückt wurden

of metaphors, metonyms, anthropomorphisms, in short a collection of human relations that have been poetically and rhetorically elevated, transformed, and decorated, and that after long usage appear to a people firm, canonical, and binding."

Non-Western anthropomorphism is as pervasive and diverse as that of the West. Japanese folk tradition, for example, personifies mountains, trees, animals (especially foxes and badgers), and other natural phenomena. Contemporary Japanese (as well as Western) art personifies shoe liners, vegetables, automobiles, and endless others. Automobiles as well as other things may be religiously anthropomorphic, as when a village acquaintance told me of ancestors' preventing a car from starting: "the ancestors said, 'It would be dangerous to go today, so you mustn't go!' You can't hear the ancestors speak in words, so they gave the message by keeping the car from going. If the car had gone, my [spouse] might have had the accident." Iban describe rice "in terms of human moods and attitudes: it is 'unhappy,' 'feels unwanted'—Iban women 'take pity' on small grains while harvesting, it 'catches cold,' 'needs company,' and 'likes attention' " (Jensen 1974:153).

Linguistic and paralinguistic interpretations of, and behavior toward, nature are especially telling examples. "Prayer" is typical, but such interpretations are highly diverse. They range from complex and sophisticated to simple and evidently spontaneous ones. The Japanese monk Dōgen says that "our Buddha's voice and form [is] in all the sounds of the rapid river" (Nakamura 1964:352). Stanner notes that Australian Aborigines move "not in a landscape but in a humanized realm saturated with significations" (Douglas 1978:87). In "As You Like It," the exile says of his forest life that "this our life, exempt from public haunt, finds tongues in trees, books in the running brooks, sermons in stones, and good in everything." The Irish writer Lawless (1898:21) says that "the Connaught or Kerry peasant still hears the shriek of his early gods in the sob of the waves or the howling of the autumn storms." And many modern Westerners talk to, and even suppose they are talked to by, their pets, automobiles, fruit trees, or house plants.

These few examples show that *human-like models frequently are chosen to interpret ambiguous phenomena* (D2) and that these models are diverse. They show also that while some anthropomorphism is religious, some is not. What is the difference?

According to my final proposition, the major difference is in degree of *generalization and systematization* (P5). This difference is accompanied by a complex of interwoven conceptions, including true observations about nature, man, and society, and by the greater credibility of more generalized, coherent systems of thought. "Religious" anthropomorphism is relatively systematic, generalized, and integrated, while "nonreligious" anthropomorphism is, like Lévi-Strauss's *bricoleur*, opportunistic, ad hoc, and idiosyncratic. When it is narrow and ad hoc, as when a commercial artist gives a candy bar a face, it may be unconvincing and not "true" in any extended sense. Even limited analogies may be useful, as when a human arm is compared to a mechanical lever or when a cave is said to have a mouth. When it is careful, elaborate, and well thought out, however, anthropomorphism achieves what Geertz calls the "aura of factuality" and the "uniquely realistic" mood (1966:4) of religion. Anthropomorphism, then, interprets not merely immediate experience, but things and events distant in time and space, that may set "ultimate conditions" of human life.

If religions are instances of generalized and systematized anthropomorphism, what can be said of the truth or falsity of their assertions? If false, why do they persist? These questions may seem overweening, but—contrary to some opinion—they do not seem to me to be unanswerable by social science. Nor are they irrelevant to it. Quite the contrary: they bear directly on our understanding of human thought and action and of the

human place in nature. My answers here must and can be brief. The characteristic religious assertion is, I think, false: the non-human world is, in fact, *not* a person or persons and does not interact linguistically or ethically with people. Other religious assertions (e.g., that human relations must be ethical or that some systematic relations exist between humans and non-humans) doubtless are often true. It is not necessary, however, to show that a human-like model well applies in a given case to show why it persists. It persists because it is an application—increasingly singled out by sceptics as peculiar—of models to the world generally that have been successful in dealing with the most important components of it. The extension of models, in turn, is an aspect of a general epistemological principle, that knowledge of the world is largely analogical.

Religious explanations continue analogy. Even spontaneous and unsystematic anthropomorphic analogies—voices in the wind and faces in clouds—are sufficiently plausible and compelling to recur endlessly. Their religious extension in ordered and abstracted forms economizes thought and action by system building. It exemplifies "our craving for generality" (Wittgenstein), our "regard [of] the more general principle as the more . . . satisfactory" (Campbell), and our "trying to increase the coherence of our total view" (Harman).

In sum, religion arises and persists because the models it uses often are right—although not as it characteristically uses them. Moreover, they are right about phenomena (aspects of ourselves and other real humans) that are uniquely important. The apt question has been not why religious models persist, but why human-like ones do. This question has been easier to answer.

In its aim—to articulate models of and for the world—and in its criteria for those models, religion is not unique among modes of thought and action, but at one with them. Contrary to Geertz's (1966:25) "frank recognition that religious belief involves not a Baconian induction from everyday experience—for then we should all be agnostics," we should see that it depends precisely on (though, like other beliefs, it is not restricted to) everyday experience. As Durkheim (1976 [1912]: 429) saw, the topics and methods of religious thought, as of philosophy and science, are

nature, man, society.... [Religion and science both attempt] to connect things with each other, to establish internal relations between them, to classify them and to systematize them.... It is true that [science] brings a spirit of criticism into all its doings, which religion ignores.... But these perfectionings of method are not enough to differentiate it from religion.... both pursue the same end; scientific thought is only a more perfect form of religious thought.

VIRTUES OF THE APPROACH

Barbour, drawing from Toulmin, Carnap, Popper, and Polanyi, lists three criteria of an adequate theory: "its agreement with observations, the internal relations among its concepts, and its comprehensiveness" (1971:144–45). That is, it has applicability to empirical data; coherence, consistency, and simplicity; and generality or "ability to show underlying unity in apparently diverse phenomena" (p. 146). The theory offered appears to satisfy these criteria.

First, it agrees with observations, theistic and atheistic, from Xenophanes to Brandon. Spiro (1966:102) remarks that most theorists in this century "seem to agree that religious statements are believed to be true because religious actors have had social experiences which, corresponding to these beliefs, provide them with face validity." Although few of these theorists seem to think anthropomorphism the *basis* of religious belief and behavior, few, even in theology, deny its virtual universality there.

Besides agreeing with many past observations, this approach lends itself to further observation, because the definition it uses is substantive and because its principal terms ("human-like,"

und die nach langem Gebrauch einem Volke fest, kanonisch und verbindlich dünken."

"model," and "phenomena") are themselves relatively easily defined. Like other substantive definitions, it claims to point to a recognizable phenomenon, religion, but it does not depend on showing that religion serves such a specific purpose as producing certain moods and motivations or articulating "ultimate" values. It avoids the difficulty of trying to observe something defined with superlatives such as "ultimate concern" (Lessa and Vogt 1972:1), "ultimate conditions . . . of existence" (Bellah 1970:21), or "uniquely realistic" (Geertz 1966:4).

Second, it has coherence and simplicity. It depends on a few general principles of cognition, and it claims no universal functions for religion other than comprehension and control, shared by *all* models. Since it does not claim such special functions as providing emotional expression or social solidarity (I also do not claim that these and other aims may *not* be served), it is not subject to controversy over such claims. Neither is it subject to controversy over the general rationality of religion, for if, as I have proposed, religion is simply a kind of model-use, it may, like other model-use, be rational in one instance and not in another.

Third, it is general, in two ways. It claims to unite religion, itself broad and diverse, with anthropomorphism, which is even broader, more diverse, and more pervasive; and it asserts and depends on unity in the principles of religious and secular thought.

One result of this generality is an answer to the question whether nonhuman animals have anything analogous to religion. The orthodox and commonsense answer is that they do not. This answer, when given by anthropologists (e.g., La Barre 1978:57; Kluckhohn 1979:v) and by humanists generally, is usually based on the observation that religion, whatever else it may be, is largely a "symbolic" activity and on the observation that symbolism is virtually absent among nonhuman animals. However, two contemporary anthropologists (Wallace 1966 and van Lawick Goodall 1975) have suggested, on nonsymbolic but quite different grounds, that animals may have something comparable to religion. Wallace supposes that the essence of religion is to accustom people to close cooperation by providing practice in a noninstrumental, "ritual" activity. It produces social unity by rehearsing "stereotyped communication" (1966:233–42) that really communicates nothing but the intent to cooperate. Wallace suggests that the nonhuman animal analogue is such "ritual" as the courtship patterns of birds, which similarly prepares them for cooperation. This functionalist analogy seems to me very limited, since it ignores intention and understanding and cannot distinguish a prayer from a handshake.

Van Lawick Goodall has a different, emotionalist suggestion. She mentions the threat displays with which chimpanzees face rainstorms and waterfalls and, although she cautions that "it makes no sense to talk about 'religion' in relation to the chimpanzee," says that the "awe and wonder, that underlie most religions" may have originated in "such primeval, uncomprehending surges of emotion" vis-à-vis nature as those of chimpanzees (1975:163–64).

My own suggestion, though well illustrated by van Lawick Goodall's chimps, is again different. It is that if "religion" is defined as the systematic application of human-like models to nonhuman in addition to human phenomena, then the animal analogue is the application of animal-like models to inanimate phenomena. If human religion is a kind of anthropomorphism, the animal analogue is a kind of zoomorphism. This, it seems to me, is what chimps exhibit when they threaten storms and waterfalls: they suppose that these, like chimpanzees, baboons, or leopards, are capable of being frightened. Like van Lawick Goodall, I hesitate to call chimpanzees "religious"; but since they seem similarly to attribute to phenomena a higher level of organization than these really possess, I suggest that their situation is closely analogous to that of religious people. Unlike her, I think that any emotions that may be felt by chimpanzees are secondary in a proper analysis of the situation,

since emotions themselves may be, like behavior, more results than causes of the models and events that inform them. What is important is the nature of the models that the animals employ and the relation of those models to reality.

Last, I wish briefly to note that the approach also provides possible accounts of ideas like "sacred," "faith," and "supernatural," all often held (especially by Western writers) to distinguish religion from nonreligion in general and from science in particular. These accounts can be given only a few words here but suggest both that these ideas in fact are not unique to religion and why they are sometimes prominent in it. My opinion (with Durkheim and Horton, among others) is that these three ideas all characterize relationships of humans with humans. Where they occur in attitudes toward nature, it is because nature has been interpreted as human-like.

"Faith," for example—often thought the antithesis of the scientific attitude—is an attitude toward persons, not toward nature or even culture. It is an aspect of a social relation. Because religion is a kind of social relationship, it tends to be "nonempirical": open testing of it typically is discouraged because calling a social relationship (unlike a relationship with an atom or computer) into question undermines it. Testing therefore may be antisocial and explicitly prohibited. Judeo-Christian tradition, for example, forbids experimentation on the covenants between God and man. Moses tells the Israelites not to "put Yahweh your God to the test" (Deuteronomy 6:16 in Jones 1966:228), and Jesus, challenged by the devil to hurl himself unharmed from a parapet, says " 'Scripture also says: "You must not put the Lord your God to the test" ' " (Matthew 4:7 in Jones 1966:20). Nevertheless, gods, like people, may be abandoned if they seem to have failed. The Japanese, for example, widely considered Shinto deities discredited by defeat in World War II, and many ceased Shinto observances. The importance of "faith" to religion does not mean that empiricism is irrelevant to it, as positivists and others have thought, but the converse: that it is all too important.

The same argument applies to the notion of the "sacred," which, as Durkheim suggested, is at base also an aspect of human social relations (although often thought peculiar to religion). Social relations submit us, Durkheim notes, to "inconvenience, privation, and sacrifice, without which social life would be impossible" (1976[1912]:207). It is these requirements, he says, that are "sacred," because vital, and hence isolated and protected by interdictions. In my view, religion posits these requirements also in relations between men and the world generally: without them not only human society, but the world society, would be impossible. If the relation between man and nature is social, it is also sacred. Testing it is prohibited for the same reason that testing relations among humans is prohibited: that to test a social relation is to assault it. It is not necessary to agree with some of Durkheim's followers that human relations are the *only* real topic of religious thought or that sacredness is unique to religion to agree that human relations provide principal elements of religious models.

The present approach further suggests that the long Western association of religion with the "supernatural" really is an aspect of the Western opposition of man to nature. In this opposition (often linked to "free will"), man is above nature, not part of it. What is "supernatural" in religion similarly is what is above nature. Gods, like men, are unpredictable and are irreducible to natural law because they are above, not subject to, that law. When religion is seen as a concern with the supernatural, it is because it applies models of humans that are supernatural.

Finally, my approach suggests why the "ultimate conditions" (Tillich, Bellah) of human existence are more typically thought the domain of religion than of science or even of philosophy. My argument already will be familiar. Any "ultimate" condition of

human existence consists of some relation between humans and the sum of existing things and events. But humans know things and events through human models. These filter things and, events and, for reasons discussed, most readily admit those that fit the human template. They thus anthropomorphize the world. This is to a degree inevitable, since we are, justifiably, more concerned with humans than with nonhumans and since our "standards of formal correspondence" for them are tolerant. When the nonhuman things and events are relatively simple and close to hand—mailboxes and saplings, wind sounds and household pets—our conceptions of them are relatively easily compared with alternate conceptions. Anthropomorphism may, if necessary, relatively easily be weeded out. When the things and events in question are "ultimate conditions," the weeding becomes Herculean. To the degree that it is not done, our world is Nietzsche's above-cited "infinitely broken echo of an original sound, that of man . . . the manifold copy of an original picture, that of man."

I have tried to show that this echo and this copy constitute the "illusion [with] causes of an equal generality" that Durkheim, in rejecting Tylor's intellectualism, held would be necessary "to explain a fact as general as [religion] by an illusion." My own suggestion, while intellectualistic, is also both commonsensical and rather different from Tylor's. It is simply that, just as anthropomorphism reasonably although mistakenly pervades our conceptions of those conditions that are proximate, so it pervades our conceptions of those that are ultimate. To the extent that it pervades them systematically, they, and our resulting actions, are "religious."

Comments

by JOSEPH AGASSI
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To define religion, magic, art, science, culture, nation, is impossible, because each has diverse ingredients and functions, and the functions determine how important an ingredient may be under what circumstances. Even the nuclear family as a social institution has many functions. If we agree with Russell (1929) a priori that its main function is the raising of children, then we can define it—and be forced to agree with Plato that in his Republic the state constitutes the nuclear family. Defining the institution of scientific theory, as does Popper (1959 [1935]), is not defining science. Popper offers but a sketch of a sociological definition of the scientific character of a theory, i.e., its refutability, as the institutions fostering and encouraging empirical tests, etc. He emphatically refrains from defining the functions of scientific theory. He corrects this mistake in "The Aim of Science" (1957), but not sociologically, much less functionally. Doubtless, science is not scientific theory alone, and scientific theory as a social institution has a diversity of functions.

Guthrie defines religion as cognitive and relies heavily on Popper. This is reasonable, since Guthrie takes religious doctrines to be false, and it is Popper alone who dares view most known scientific theories as false too. Yet, viewing scientific theory as explanatory, Popper can assign cognitive value even to refuted scientific theories. Guthrie says religion is explanatory, yet he uses the term much less rigorously than Popper. This is not to deny that religious doctrine is cognitive, especially since, as Gellner has argued, positivistic and functionalist attempts to empty religious utterances of their cognitive elements have failed so miserably. Guthrie relies on Gellner, yet he attempts (unsuccessfully) to empty magical utterances of their cognitive value. (Gellner finds meaning in the purest mumbo jumbo.) He seems to be attempting to exclude the lowest level of cognitive value so as to raise the stakes when bidding it for religion.

The 17th-century view of religion as doctrine concerning the divine plus ritual was designed to incorporate into the body of religion natural religion, with natural theology, and the ritual of scientific research (consider Robert Boyle's *Seraphick Love*). This view ignores the social ingredients rather intentionally. In the same tradition, we may take science as a *Weltanschauung*, including Einstein's cosmic religion, to be a distillation of the cognitive function of traditional religion as expressed in Russell's (1917 [1903]) "The Free Man's Worship"—but this is a very partial view of religion (for more details see Agassi 1975, 1977).

I have refrained from discussing Guthrie's view on anthropomorphism, as it seems to me to be rather inessential to his thesis (see Agassi 1973).

by KARIN R. ANDRIOLO
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It is a pleasure to read once again in one of the fine American journals of anthropology that man thinks—beside arranging his culture around the procurement of his daily protein. It is the more pleasing in that Guthrie employs urbane language and impressive references to present a cognitive position long due—the isomorphisms between religious thought and thought in general, traced successfully by means of the concept of anthropomorphism.

However, the substantive definition of religion promised at the beginning of the article is still lacking at the end. Instead, we are presented with a definition of certain *aspects* of religion. According to the high standards which Guthrie brings to his discussion of existing definitions—pointing out, for example, that Geertz "fails to distinguish religious models from other models"—we expect both necessary and sufficient characteristics of religion to be delineated. A satisfying definition could either unambiguously demarcate religion from related phenomena or else deny religion the status of a separate phenomenon. In the work of Lévi-Strauss (1962) we encounter an example of the latter when he reduces totemism to classificatory systems. Rappaport's (1971) functional definition of Tsembaga ritual presents a model of the former; any ritual sends information, but the religious ritual provides dependable information by invoking sanctity and its quality of unquestionable truthfulness. Guthrie drifts between these two options of greater analytic utility. He is not prepared to dissolve religion, which he considers "a special case of a general phenomenon," the substantive definition of which he attempts. Yet, he merely hints at the vague distinction that the anthropomorphic models employed by religion are more "systematic, generalized, and integrated" than are nonreligious ones, from which they also differ "in content."

by DAVID BUCHDAHL
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What Guthrie gives us here is a cogent, if fairly self-evident, intellectualist explanation for why anthropomorphism is so often an essential aspect of whatever we call religion. This is news to practically no one, though it is good to be reminded occasionally about obvious facts. Still, facts do not a theory make, nor does Guthrie seem to realize that *this* kind of search for a definitive theory of religion is simply another variety of scientism—a deeply held faith in the activities of science (viz., theory building) that, failing to examine its own premises, bears no fruit. Certainly a "theory of religion" would have to consider the fact of anthropomorphism, but unless both categories—*religion* and *anthropomorphism*—are viewed more critically, all we can do is repeat ourselves, as Guthrie's exhaustive documentation demonstrates.

It is time to ask, as Schneider (1972) asked some years ago

about kinship, what religion is all about; and we must see religion as our category, plainly and simply. Guthrie is right in citing Nietzsche on *Wahrheit*, but he stops short of seeing its imperative: the categories *science* and *religion* must also be viewed as metaphors and metonyms—metaphors that have hardened until they appear to us as "canonical and binding," as if we could not have a world without them. "Anthropomorphism" is a term that mediates these categories for a community of discourse whose focus is not always entirely clear, but recognizable as part of what Geertz (1968) called "the struggle for the real" between science and religion. We do not need theories of religion, or definitions, or logico-deductive hypotheses. (Heaven forbid!) We need instead two things: (1) intellectual history, so that we see how the categories of science, magic, and religion have developed from the 16th century until now in the West, and comparative studies with other civilizations (and a lot of work of this sort has been done); and (2) studies of "religious" traditions and institutions and individual lives within these. There is no real problem of method or meaning here. A commonsense definition of religion (which can be left tacit!) supports the second area of work even while the category is critically examined by the first.

The study of religious traditions, institutions, and lives begins not with our theories but with their activities—prayer, worship, meditation, pilgrimage, sacrifice, dying and mourning —and the belief systems which are a part of these activities. To the extent that studies of religion slight these activities, they lack substance, for this is what religion is all about. We can have a theory of pilgrimage (e.g., Turner and Turner 1978), but not a theory of religion. A theory of pilgrimage enables us to understand a particular religion more thoroughly; it may even aid in the practice of religion—surely some indication of its relative accuracy. A theory of religion, on the other hand, is a scientific arrogance, glorious or dull entertainment.

What happens, then, to problems of truth and error and the often contradictory claims of competing systems of beliefs, symbols, models, and paradigms? Perhaps we will see; but it will not be revealed by the philosophers (wonderful as they are) or by prolonged attempts to compartmentalize varieties of systems as religion or science or magic. What will become of the Popes, of Israel, of the Dalai Lama, of Zen Buddhists in America or Islam in Iran? What will neurology discover or biology yield? What new beast is forever slouching toward Bethlehem? What anomaly will there be to explain and interpret?

by H. Byron Earhart
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The most important contribution of Guthrie's theory of religion is probably its bold attempt to include religious behavior with all other human behavior, including the scientific. The common denominator is language, necessarily based on analogies and metaphors whose final aims are to explain and to control the world. Therefore, religion and science are seen to shade imperceptibly into one another—they are of the same substance, although differing in some emphases. They depend on the same tool—metaphorical language—and they share the motivation of explaining and controlling the world.

This unitary theory contrasts sharply with the tendency in scholars such as Frazer, who studied superstition in order to overcome it. This tendency is not extinct, but has only grown more subtle; between the lines of contemporary scholarship there is often a condescension on the part of "modern" scholars towards the traditional cultures they are studying. Guthrie insists that *all* language is metaphorical, reminding anthropologists and all scholars of religion of their common humanity with their object of study and with their scientific (natural science?) colleagues. This is in itself a valuable corrective.

However, the burden on such a unitary theory is heavy, and the argument for the proximity of religion and science may be somewhat overstated here. If Guthrie is to carry this argument forward, he may want to reconsider some aspects. Although one cannot disagree with the commonality to science and religion (indeed, to all life) of language and metaphor, is this the defining characteristic of each activity? In terms of his own argument, this does not seem possible, since language is common to all life and therefore not specifically characteristic of any one area of it (such as religion or science). In my own estimation, religion is, whatever else, inevitably culture-specific; science, although metaphorical, is universal in its claims. (Even Guthrie's article is "scientific" in its claim to be a systematic treatment of religion in all times and places.) In this regard, Guthrie's theory might be stronger if it compared theology (and Buddhology, etc.)—the more theoretical aspect of religion—with science, the theoretical aspect of knowledge. Similarly, religion and technology seem to be the pragmatic counterparts for more fruitful comparison.

The heart of Guthrie's theory of religion—anthropomorphism —is an old theory, and Guthrie has used his wide reading in philosophy and language to refine it. However, he does not really pin down the "human-like," but only returns to the tautology that language is human, concluding that anthropomorphism is "inevitable." Since this is known by definition (all human behavior is based on language and model-use), the question is simply pushed back one more step: what is the human-like? Phrased in the simplest philosophical terms, this is the age-old question of what it means to be human. I am surprised that Guthrie does not at least refer to the common anthropological answer that to be human means to be a part of a culture (although he does preface an anecdote about an advertisement with the statement that " 'Culture' itself may in a sense be anthropomorphized").

I think that a crucial aspect of anthropomorphism that Guthrie has underestimated is projection. All the Greek theories of religion were based on the rationalistic premise that religion is something other than it appears or claims to be— that it is actually a projection of human perceptions (fantasies, fears, wishes, etc.). But if it is something else, then what is it? Guthrie's answer of "the human-like" is inadequate, because by definition all language (including religion) is human-like. (The theory would be strengthened if it could develop a contrast with that in culture which is *not* human-like.) To say that being religious is equal to being human (projecting the human-like on the nonhuman) simply raises the question of what the human is. Here Guthrie has attempted to resolve the question by pointing to the idea of projection, siding with Greek rationalism filtered through Freud and modern language studies. But if he is to maintain his theory, then he must be much more specific about the nature of projection and not refer tautologically to language. The two basic questions here are (1) *What* is being projected? and (2) *How* is it projected (from the human mind into culture)? Jung has not found favor in anthropological circles, but at least his projectionist theory of archetypes (a set of analogies, to be sure) accounted for a universal psychological basis for culturally divergent forms of religion. I am not favoring Jung over Freud here, however, but suggesting that all projectionist theories reduce the diversity of human culture to a too simply psychological mechanism. This is a point that Guthrie might consider more thoroughly. In this regard he comes close to falling under his own criticism of seeing religion as a form of (projectionist) aberration.

There are a number of minor points of agreement and disagreement that might be mentioned, but one further suggestion will suffice. In his eagerness to emphasize the unity of religion and science, Guthrie runs roughshod over the term "ambiguous," assuming that both religion and science want to banish

ambiguity by superimposing (projecting) a model that explains and controls. But just as ambiguity is, as Leonard Bernstein has suggested, a clue to our appreciation of music, so is it a key aspect of religion. In addition to control and explanation, religion thrives on mystery, openness, spontaneity, surprise. Sharing Guthrie's interest in Japanese religion, I would remind him that a Japanese festival is fun.

Guthrie deserves our thanks for continuing the attempt to find a more widely accepted definition of religion.

by MOSHE GREENBERG
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The most remarkable thing in Guthrie's erudite paper is its leap from analysis of the language of religion to evaluation of the truth of religion's alleged cognitions. Contemplative thinkers among Jews, Christians, and Moslems have always recognized the predominance of anthropomorphism as the mode of religious perception and discourse and have declared it an obstacle to true knowledge of God. When Guthrie writes that "anthropomorphism . . . is . . . by definition, mistaken," he echoes much more vehement denunciations of it by ancient and medieval theologians, whose sophisticated analysis of religious language was stimulated by the raillery of opponents who (not altogether unlike Guthrie) argued that since the language of revelation was puerile the God of revelation could not be taken seriously. Guthrie has shown forcefully and well why anthropomorphism is the universal language of discourse about nonhuman phenomena, including, eminently, the religious. He goes on, however, to say: "The characteristic religious assertion is, I think, false: the nonhuman world is, in fact, *not* a person or persons and does not interact linguistically or ethically with people"; or again, less "overweeningly," "the nonhuman universe . . . I think, really neither listens nor replies." Many have thought, through the ages, that the nonhuman world neither listens nor replies (a caustic Yiddish translation of a Jewish litany entitled '*imru lelohim* "Say to/of God" is *ret zu di vant* "Speak to the wall"); on the other hand, many others have thought that (at least an aspect of) it did. How is Guthrie's (or the "many"'s) thinking on this subject more valid than the speculations of, say, medieval theologians? If God existed and communicated with mankind at large (as the multiplicity of religions might suggest) and not only with theologians and anthropologists, such communication—as Guthrie has demonstrated *more geometrico*—would perforce be anthropomorphic. But be it ever so sophisticated, no analysis of the language of man suffices to pronounce on the reality of its referents. It may be that, as some religious texts have it, the organizing aspect of the universe is in some way affinite to humanness (man as "the image of God") and that anthropomorphism is therefore a key to some sort of true perception of reality. Or, as "many" (Guthrie among them) "think" (= doubt), it may not be so. A radio receiver scanning space may be so constructed that it can only emit sounds. This is not enough to prove that out there sound as we know it is to be found, but neither is the nature of the instrument a ground for asserting that nothing out there corresponds in any way to the sounds emitted. Guthrie appears to hold to a kind of metaphysical solipsism; its artless insinuation into his scientific paper strikes me as curious. But then if the anthropomorphism of religion did correspond somehow to an aspect of nonhuman reality, Guthrie's sweeping reduction of religion to a special case of anthropomorphism (by definition mistaken) would of course lose cogency.

by IAN JARVIE
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Much of Guthrie's argument I find plausible and pleasing, even when he chides Agassi and me for calling magic "anthropomorphic" when clearly we should have said "animistic." I want to offer not so much criticisms as extensions of his line of thought that all those who would classify themselves as "neo-intellectualist" thinkers might consider. We give a purchase to our critics, whether they be functionalist, symbolist, materialist, or religious-apologist, by our adoption of their basic assumption: that there are, as it were, in nature three or more distinct categories labelled by us "magic," "religion," and "science." Religion particularly is singled out as something special; intellectualists want, I believe, to assimilate it to other things.

Intellectualism with regard to science is not uncontroversial, but our ancestors Tylor, Frazer, and Mannheim would not deny it. The intellectualist account of magic that assimilates it to the history of science *is* disputed. Intellectualism towards religion, however, brings forth the stiffest resistance. A special air hangs about religion: some people cannot bear to see it assimilated to the other two. Things like prayer, mystery, sacredness, ritual, system, deep philosophical reflection are held to mark it off from magic and science. So, if religion is an error, it is not on a par with superstition or simple mistake; it has to signify something beyond itself, some sort of human universal.

Intellectuals can try, as for example Agassi and I (Agassi 1977, Jarvie 1976, Agassi and Jarvie 1973, Jarvie and Agassi 1967) have tried, to show how symbolism, ritual, system, mystery, and so on, are all to be found in the so-called scientific tradition. One can try to show that thinking of religion as an error is not an adverse judgement on its participants (Horton 1968). One can also try to show that religions make a lot of sense when they are assimilated to the cognitive enterprise (Jarvie 1964, Lawrence 1964, Horton 1967, 1973a, b). Yet despite these arguments the current of anti-intellectualism flows strong.

Perhaps this is because we are overlooking the most fundamental issue, which is that the intellectualist asserts that there is a strong continuity or connection between magic, religion, and science: that they are not naturally differentiated social institutions, but convenient categorizations and distinctions for and under the control of certain theoretical purposes. Intellectualism is that theoretical purpose which holds it to be unsatisfactory to distinguish between man's cognitive endeavours on any other grounds than their truth or falsity, or their capability of being true or false, or their practical efficacy when applied to the world.

Whether substances and medicines are used, whether pervasive social forces are invoked, whether angels and gods are involved in the content of the cognition is for intellectualist purposes irrelevant. The assertion of continuity is made in order to assess our cognitive efforts: penicillin is more effective than prayer; germs are a better explanation of disease than divine punishment (Agassi 1968a). Any assessment leaves some people disgruntled. We are unlikely to hear from the witch doctor, but we certainly hear from all those who have a soft spot for religion. After all, were they to accept intellectualism their own religious practice or that of their family and friends would be rendered superstitious. Religion and magic can rarely be shown directly to be in error, but once they are assimilated into the history of pre-science they tend to get discredited.

Intellectualists need not and for simplicity's sake should not deny that religious institutions, beliefs, and practices can for certain purposes be looked on as distinct. They also need not deny that all communication—the very possibility of social life itself—turns on the use of symbols to make sense of the world. These are not concessions. That anti-intellectualists flourish them triumphantly shows how highly charged their reaction to cognitive assessment is.

The strongest argument in the anti-intellectualist's hands is Durkheim's view that in order to explain a phenomenon as general as religion as an illusion it would be necessary that the illusion have causes of an equal generality. I'm not sure that Guthrie's anthropomorphism does the trick. A simpler reply

would be to suggest that Durkheim's positivism has resulted in his getting it all wrong. The natural condition of mankind is error and illusion, and this error and illusion is socially embedded and sustained. The real problem is to explain how on earth man ever managed to free himself from his benighted condition—how cognitive vested interests were dislodged to allow a little progress in cognition.

Popper has given an individualistic account of this in two works (1945, 1958). He conjectures that cognitive progress began when a teacher challenged his pupils to criticise and improve upon his ideas in a genuine spirit of cooperation. He sees this event as taking place in Ionia in the relations between Thales and his students Anaximander and Anaximines. Popper further conjectures that this took place in Greece because of the culture clash that resulted from trading contacts. More recently, Gellner (1974) has come up with a complementary and even more sociological account. In the great social changes of the 17th century he sees an enormous cognitive break. More or less at the same time we see philosophers striving to detach the notion of knowledge from the received, traditional, socially embedded stock of beliefs. This precedes or is simultaneous with the birth of modern science. Gellner considers this break, with the dramatic rise in man's power over nature that results, to be the decisive event in the history of human cognition. In a suggestive argument Gellner endorses relativism towards all prescientific cognitive efforts. Magic, sorcery, witchcraft, astrology, monotheism, polytheism, animism, or whatever, the differences between them in cognitive power pale into insignificance on the scale measuring the difference between any of them and science. Science is novel in that it raises cognition out of the clutches of society and tradition, beyond even human wishes. It does not comply with power groups, taboos, the established. Instead it postulates as an arbiter of its efforts an abstraction called nature that is but dimly present in earlier cognitive endeavours. Guthrie, then, does not go far enough. He diagnoses what he takes to be the most general error in religion. There will doubtless be a smokescreen of objections put up to this by anthropologists sympathetic to religion, but in my view the debate has to move on to consider Popper's and Gellner's arguments about how the scientific breakthrough came about.

by BENSON SALER
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That men may be disposed to "anthropomorphize the world" seems decidedly plausible, for the reasons cogently set forth by Guthrie. To say, however, that "religion may be defined as systematic application of human-like models to nonhuman, in addition to human, phenomena" and that it "can be identified . . . as systematic use . . . of anthropomorphic models for nonhuman things and events in addition to human ones" strikes me as an unfortunate choice of emphasis. The excerpts quoted recognize that nonhuman phenomena remain nonhuman, however anthropomorphized they may be. The thrust of Guthrie's essay, however, is to focus our attention on the "human-like" aspects or qualities of nonhuman "events" and "things," while effectively relegating the vital and often dramatic nonhuman character of such phenomena to a subsidiary position.

The really fascinating thing about "religion," as I view it, is its partial break with anthropomorphism—or, if you like, its postulated transcendence of anthropomorphism. While religions do indeed demonstrate more or less systematic applications of anthropomorphic models, they also typically envision crucial departures from such models. A reasonable perspective on this issue has been stated by Ehnmark (1935:1) with regard to Homer's description of the gods:

To a modern reader the most striking characteristic of the Homeric gods is their humanity; but this cannot possibly have been their chief attribute. What constitutes their divinity is not their likeness to man but the quality that distinguishes them from him. From our point of view the most important criterion for the distinction between gods and men is the fact that the gods only existed in the belief of their worshippers. Such a view, however, necessarily implies that one has ceased to believe in the gods in question; for a living religious faith the gods are just as real as anything else. If they are conceived anthropomorphically they must consequently possess some other quality which renders them divine and distinct from man. It thus follows that if Homer's description of the gods embodied a living religious faith, if it was genuinely felt to represent reality, the gods cannot have been regarded as wholly human and their human attributes must have been of secondary importance. If on the other hand the gods are human throughout it is definitely improbable that they were the objects of faith.

Guthrie states that "theologians, philosophers of religion, and comparative religionists widely recognize the anthropomorphism of religion" and that they "often see it as a difficulty for theology." He cites several examples, but he does not pursue the point. I think that it would prove productive to pursue it, at least with regard to Western religions. Many Western theologians have regarded anthropomorphism not only as "a difficulty for theology," but also as a stumbling block for the development of an authentic religious consciousness. Others within the Western religious camp (biblical exegetes, for example, and "religious virtuosi" as typified by mystics) have often shared that view.

There is a strong strain in Western religions that emphasizes the "otherness" of deity vis-à-vis man. For some religiously oriented Westerners, indeed, authentic religion is to be identified by the intellectual and affective transcendence of anthropomorphic models. Hodges (1956:229) expresses that viewpoint when he declares that the truly religious conception of God "is the conception of something essentially mysterious and incommensurable with all objects of our experience. . . . Yet it is just this mysterious character which makes God really God, which gives the specifically religious quality to the concept of Him."

Now, not all Westerners who deem themselves religious equally advocate or achieve breaks with anthropomorphic models. Some would seem to come closer to doing so than others. This might very well be the case in non-Western societies also, and it would be interesting to explore the possibility, perhaps along lines suggested by Radin (1937, 1960 [1953]).

In summary, I contend that what may be most interesting about religion is the break with (but not the total rejection of) anthropomorphic models. I do not think that it suffices to define religion in the way that Guthrie does, nor am I inclined to suppose that anthropomorphism "constitutes the fundamental explanation of religious belief." While I accept Guthrie's arguments about man's proclivity to anthropomorphize, and while I acknowledge that various apparent expressions of anthropomorphization can be found among many (and perhaps all) religions, I think that what really needs further exploration and explanation is, in a manner of speaking, the incompleteness of anthropomorphism.

If space permitted I would comment extensively on Guthrie's treatment of the "supernatural." I think that he makes an interesting point with regard to some Western usages of supernatural. The problem is complex, however, because in the intellectual history of the West "nature" has meant many different things, the relation of man to nature has been variously conceived, and the term supernatural has been assigned a variety of senses—ranging from one so technical that God himself, strictly speaking, is not called supernatural except by a sort of appreciative extension of the technical term (Baltazar 1966:35; Kenny 1972:14) to one so broad that, as Evans-Pritchard (1937:80) would have it, "supernatural means very much the same as abnormal or extraordinary."

by John Saliba
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Guthrie's article takes up seriously the critique that anthropological theory of religion has not made much progress in the 20th century. His results may be summarized as a development of several anthropological insights, notably those of Geertz and Horton, into the nature of religious beliefs and practices. The introduction of "anthropomorphism" into the discussion is certainly a contribution to anthropological reflection on the subject.

Like so many anthropologists before him, Guthrie has assumed that the only way to proceed is to choose between intellectual and emotional approaches to the question of religion. In the tradition of Frazer and Tylor and, more recently, Horton, he has chosen the former, and thus he leaves himself open to the same critique which anthropologists have levelled against this position for over half a century. While the attempt to treat religion as rational human behavior and to look on science and religion as part of the same system of thought is commendable, for a general theory of religion one must also take into account the "mystery" element so prominent in many, if not all, religions. Revelation and faith cannot very easily fit into a purely intellectual or cognitive explanation. Besides, stressing the similarities between religion and science as models for understanding ambiguous phenomena might be desirable, but it has the disadvantage of neglecting or minimizing the obvious differences that exist between them. Surely, the conflict between religion and science has not been founded on shallow grounds. Genuine progress in anthropological theory of religion will be slow or nonexistent unless both the cognitive and the experiential aspects of the human person are given equal importance.

Again, Guthrie is faced with the choice of an emic or an etic interpretation of religion. His analysis shows clearly that he prefers the latter. In so doing he ignores one major element in religious thought and practice, namely, that for the believer religion is not just a way of knowing, understanding, and interpreting the world around us, but also, and especially, an affirmation of another kind of reality. In other words, the believer asserts that what he or she believes in actually *exists*. This is quite different from saying that religious beliefs are some kind of rational model for interpreting ambiguous phenomena. One might add that religious statements may have solved several of these puzzles, but only at the expense of creating new paradoxes.

The tendency among anthropologists has been to assume, tacitly at least, that religious beliefs and practices, while performing useful and maybe necessary intellectual, emotional, and sociological functions, are basically illusions. Guthrie has joined the crowd. He states without much ado that "the characteristic religious assertion is, I think, false." But isn't this a rather casual dismissal of a thorny problem, and won't it influence how he thinks about religion and what conclusions he draws about its nature? Guthrie has paid great attention to several epistemological issues of cognition. He has, however, avoided discussion of one major problem: Can we arrive at a satisfactory definition and understanding of religion without examining, and to some degree answering, the question of the truth or falsehood of religious statements? If the answer is no, then we must logically question anthropological endeavors which claim to supply us with a kind of "ultimate" answer to what religion is rather than limiting themselves to the place of religion in social life and the cognitive and emotional functions it performs.

The above comments are meant not to detract from Guthrie's contribution, but to draw attention to several philosophical assumptions which cannot be simply taken for granted. The merit of emotional or intellectual theories of religion lies in their capacity to generate research rather than in their answers to the question of what religion is. Guthrie's theory will no doubt stimulate research even though it fails to supply a satisfactory answer to the fundamental question of why people believe.

by Kevin J. Sharpe
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I applaud Guthrie's aim of developing a cognitive conception of religion and, towards this end, his thesis of anthropomorphic model making. I think, however, that his presentation needs considerable lengthening if it is to do justice to a number of points. I wish to raise a few of them.

Firstly, the roles and nature of models and metaphor need elucidation. It is too easy to make a blanket comparison of the scientific and religious modes of thought with this insight (see, e.g., Ross's [1978] review of the similar approach by MacCormac [1976]). For instance, one can ask if different levels and types of models exist in a system of religious knowledge and, if so, how they are related.

It is important to spell out fully the criteria for the choice between competing models, both between different religious comprehensions and between, say, religious and atheistic or religious and scientific models. What is the basis for Guthrie's criteria? The first criterion he suggests is that a model should somehow correspond to the phenomena in question. Assuming he means there to be some "picturing" of reality itself, wherein lies this objectiveness? Is it that, when religious models conflict in what they say about reality, what are conflicting are the "noncorrespondence" parts of the models? How are *we* as moderns to choose between competing religious systems (assuming we wish to select more of the "correspondence" parts)? When Guthrie asks, "Why do they [religion and magic] so reluctantly give up this ambition [to see nonhuman reality at the human level of organization], despite evidence that they cannot attain it?", what is his justification, and does he mean that reality in no way corresponds to human-type models? The universality and persistence of anthropomorphic model making might imply that there is some factual truth in this approach. Furthermore, could reality, beyond being perceived in an ambiguous way, be at root ambiguous in itself?

"The characteristic religious assertion is, I think, false: the nonhuman world is, in fact, *not* a person or persons and does not interact linguistically or ethically with people." For some ungiven reasons Guthrie dismisses the religious anthropomorphic type of model as having any truth value. (His reasons would help in understanding his criteria.) Christian theologians often insist that God is utterly different from any sort of world —that the function of the word "God" is to relativize everything and anything (Kaufman 1972, 1975; Sharpe 1979). Guthrie's view of what is characteristic of religious assertions may not be correct. Furthermore, granted that it is the nonhuman world which is the reference for religious models, some would suggest it to be "human-like" rather than to be "a person or persons." Guthrie is probably trying to suggest the former, but this distinction is important. Not all religions and theologies suggest that reality is a, or many, superhuman persons; rather, for some religions, human-type categories are the most useful in attempting to understand reality.

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Guthrie's proposal is a good occasion for reflection on knowing and on religion as a form of understanding. I offer three comments, interrelated and inconclusive:

1. It seems to me that Guthrie is arguing that religion (*a*) is but a variant of a cognitive process centered on explanation and control; (*b*) is a lower form on the scale than scientific thought; (*c*) can be thought of as a separate realm because we live in a "secular" world; (*d*) being enmeshed in anthropomorphism, can be distinguished only on the basis of the content of the models applied; (*e*) can be explained fundamentally on that basis; (*f*) shows that humans find humans more appropriate as models to construct the ambiguous "out-there"; and (*g*) is distinct on the basis of a discontinuity between what is and what is not human.

2. A basic and rigid separation is postulated between the human and the nonhuman. Then a relationship is established between the two, notwithstanding the gap: one is held to explain and control the other. From this behavioral relationship the "out-there" is interpreted—that is, moves from ambiguity to nonambiguity—and this in turn clarifies the separation of the two. How is all this circularity accomplished? Very simply. Through models, appropriately chosen, ambiguity becomes nonambiguity. Do humans know something about the nonhuman? Yes. We know that it conforms to laws, to logic or necessity, etc. How do we know this? If we claim to know and control the nonhuman with the necessary and appropriate hermeneutics, etc., are we not modeling the world in terms of humanness or giving the "out-there" the character of a being with "reason"? Reason constructs a universal order and then behaves in such a way as to produce certainty or persuasion. At one time, reason sanctioned its behavior through a transcendent guarantee; its declaration about the world was rooted in a sacred narrative stating that an ultimate being guaranteed truth. Now this time has passed, and reason finds in itself and its somehow spontaneous exercise the "natural" power to declare the "out-there" intelligible—to assert that the events of nature have the capacity to signify. If they do not, then reason alone construes the other realm. Does it not then submit the "out-there" to its own constructions and in these find roots which can only lie in a very particular human state or way of being? Is it not the motivation of the construction generated by the being who separates "reality," called human, that can shed some light on rational behavior and help us in discovering what we understand about that process? The scientific project is rooted in a belief in intelligibility or, more precisely, in a belief in the intelligibility of the real. Inherent in it is an alliance between the "powers" given to the mind and the "powers" given to repetitive recurrences of events in the "out-there." The history in Western thought of what Guthrie calls anthropomorphism might reveal its extension and, according to his reasoning, show that in fact science is very religious.

3. Taking religion as an object of inquiry is an old phenomenon. It involves a point of view on man and man's position in the world. One can observe that position and decipher the so-called magical stance: scientific logic and religious logic are related in that they promote a metaphorical realism in which sign and the real are obscured. Both "systems of thought" develop in the dynamics of belief. One constructs a certain rationality with the mission of explaining and controlling what that rationality reveals: that events of nature are "signifiers," that the object is "rational," or that the cosmos "parle raison." The other stipulates that there is a daily exchange, more or less rewarding, with the gods and organises that exchange in a way that keeps man in check (e.g., culpability).

Is it enough to identify in religion a generalized and systematized anthropomorphism and not ask about the "reason" that is making that universal determination? Our reason gives certain "idealities," such as causality, determinism, necessity, logic, and law, situated in things and in thought, the power of the explanatory word. Don't they produce an understanding of the universe as rational? Idea, then, plays a totemic role in matter (de Diéguez 1970, 1974, 1979).

Reply

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The comments are so diverse that most responses must be individual. Some of the criticism, however, does fall at one of two poles: either my assertions are true but obvious (Buchdahl and, to a degree, Greenberg) or they are new and interesting but untrue (Sharpe, Saliba, and Saler). This would seem an odd dilemma but for Agassi's (1968*b*) observation of a similar polarity in early responses to Popper's philosophy of science. Agassi says that innovation such as Popper's usually is first rejected as new but false and then, when it starts to establish itself, called self-evident by some critics before others have even accepted it. Being assailed from both sides simultaneously sometimes marks the early maturity of a theory. I do not otherwise compare myself to Popper, but it is comforting that he has shared the experience.

I shall deal first with the least consequential objections. Buchdahl, to begin, apparently is not even interested in the problems I address, since he feels that "we do not need theories of *religion*, or definitions," and that "a commonsense definition of religion (which can be left tacit!)" suffices. This faith in the cross-cultural utility of Western folk categories is not shared by most anthropologists, who will be surprised to hear that we do not need to define our terms. Many will also be surprised to hear that we do not need a theory of religion. For some unstated reason (perhaps, as Jarvie suggests of similar critics, because of a "soft spot" for religion), Buchdahl thinks that "we can have a theory of pilgrimage . . . but not a theory of religion." At another point, he misreads me to say merely that anthropomorphism is "often" an aspect of religion. If that were so, it would, as he thinks, be a trivial observation; but in fact I say that it is "always" an aspect and indeed the defining one. Last, in supposing that the study of religions starts "not with our theories but with their activities," he seems unaware of the host of modern philosophers (Wittgenstein, Popper, Hanson, and Lakatos, among others) who have pointed out that all perception is theory-laden. There is no such thing as study of "their activities" without our theories. Since they are present in any case (certainly by the time we go to the field, and usually long before that), our theories require scrutiny, at the least, and improvement where possible.

Andriolo, though a more careful and sympathetic reader than Buchdahl, says that my definition is not really substantive because it neither unambiguously demarcates religion from related phenomena nor denies it separate status and because I "drift" between these two (for her, better) possibilities. There is some truth in the charge that I take an intermediate position: I do think that "religion" is—at least potentially—a useful analytic category, and so I have spent some time trying to define it. On the other hand, I also think that (as I wrote in n.7) since "religion is continuous with other kinds of belief and behavior, a substantive, real definition of it can only indicate a type, not absolute boundaries." But this continuity does not preclude a substantive definition ("the systematic application of human-like models . . ." etc.), which I offered on the first page. Perhaps we simply differ on the meaning of "substantive," which I take to describe a definition allowing identification of a belief, action, or other phenomenon *in itself* rather than (as in "functional" definitions) by what it accomplishes.

Greenberg, like Buchdahl, seems to start from a religious orientation and hence takes exception (as Jarvie, again, anticipates) to my verdict on the truth of religious assertions. He claims that the "organizing aspect" of the universe may in *some* way be human-like and that anthropomorphism may

therefore have a basis in reality. This claim seems vague. The universe *may* be human-like in some significant way (it surely is human-like in insignificant ways), but there is no good evidence that it is. The fact that many people think that it is is not good evidence, since they spontaneously but mistakenly think many things to be human-like. To adopt Greenberg's radio analogy, it is as if a radio which had been emitting sounds of static when oriented to an earth station continued to emit static when oriented to outer space. The uniformity of its behavior despite a change in orientation does not prove that nothing in space corresponds to static, but it does suggest that the static has more to do with the internal state of the radio or with meaningless interference than with signals from a coherent source. Similarly, the uniform pervasiveness of anthropomorphism in mundane human cognition—Chiquita Banana and Mickey Mouse among myriad others—suggests that the same principles are at work in perception of the world (either as a whole, or of its guiding principle) as God. If anthropomorphism (by definition—I must insist—mistaken, which is what distinguishes it from perception of the *real* continuities and similarities of human and nonhuman nature) occurs throughout perception and cognition of the immediate, tangible world, there is no reason to think that it suddenly ceases in perception of the less tangible aspects of the world. That is the significance of my claim (and that of Barnes [1973], among others) that the processes of human thought are uniform from one domain to another.

Agassi limits debate at the outset by declaring that it is impossible to define religion (among a number of other terms in common use), so I shall limit myself to a brief comment on this view and on two apparent misreadings, one minor and one major, of my article. First, he seems to confuse nominal and real definitions when he says that it is impossible to define religion and other words because "each has diverse ingredients and functions" which vary with circumstance. I strongly agree that the reality which we try to comprehend, by carving it up and labelling and forming models of the pieces, is in fact diverse and continuous. The continuity and similarity of religion with other belief and behavior is one of my major, explicit themes. I therefore have not proposed that reality be divided into boxes, but only suggested how a given word may best be used, and why. If discourse (perhaps especially anthropological discourse, because it aims to be cross-cultural) is to be possible, we need to share understandings about what terms shall represent what bands on the spectrum. Such preliminary understandings, not an absolute partitioning of reality, are the first aim of definition. In addition, for theoretical purposes some definitions are better than others because their referents appear (in the light of theory) to have more internal coherence (the referent of "dog," for example, or "cat") as natural complexes. Terms are defined best when they are made to refer to such relatively coherent (for some purpose) phenomena.

Agassi also says in passing that I attempt (unsuccessfully) to empty magic of its cognitive value. This reading bemuses me, since what I said is that magic assumes an "animal level of organization in phenomena that (in the etic view) do not possess" it. That is, it is animistic. To say that a view conflicts with some other view is of course not to deny it cognitive value, as Agassi doubtless knows. I can only claim innocence of any intent to strip magic of meaning.

Last, Agassi thinks that anthropomorphism is "rather inessential" to my thesis, but since he does not say why except to refer to a work of his to which I do not at the moment have access, I cannot answer what seems a major disagreement.

I agree with Saliba that the conflict between science and religion has good grounds and do not mean to minimize their differences either in content or in method; I feel, however, that these have already been sufficiently noted by others. Saliba also makes a widely followed but, to me, untenable distinction between the aspects of religion as "just a way of knowing . . .

the world around us" and as an "affirmation of another kind of reality" and says that any theory of religion must account for the difference. The difference Saliba sees here may perhaps be significant, but it seems to me (and to Horton [1967]) the same as that between our ordinary view of tables and chairs and the "other kind" of reality of molecules and atoms which the physicist says underlies them. Finally, Saliba says that I too casually dismiss, or even avoid, the thorny problem of religious truth. The problem *is* thorny and of course deserves discussion at great length. Several factors prevented this here. One of them is simply the length limitation of articles; this one may be too long already. A more troublesome factor is that the assertions that have been made by religions are extremely heterogeneous. Many of them doubtless are true and many doubtless not true. Any overall assessment of their assertions in general, or even of those of a single religious tradition, is far beyond my capacity. My intended evaluation here has been rash enough, though only an evaluation of what seems to be the assertion that distinguishes religion from philosophical, scientific, and other categories of thought, namely, that some important part of the nonhuman world is, like humans, so organized as to be capable of symbolism. I neither dismiss nor avoid evaluation of this assertion, since my entire argument tries to show that it is one aspect of comprehensive anthropomorphism, plausible but mistaken, in human cognition.

Tissot begins with a lucid, accurate, and even-handed summary of my argument. He then poses some classic questions about the relation of human understanding to that which it understands. Does "understanding" not require some isomorphism between the mind and its object? If the human mind is rational, does isomorphism not imply that the object of its thought is rational too? If science assumes that the universe is intelligible to humans, does science not assimilate nonhuman reality to itself, anthropomorphistically and thus "religiously"?

These problems disappear if we can agree (with Piaget [1970] and others) that to "understand" something means to form an acceptable model of it. The isomorphism, then, is between a particular phenomenon and a particular model rather than between reality and the mind as wholes. The model, as a product of mind, is part of it but not equivalent to it. Further, "rationality" in mind, as I understand it, is not so much a particular structure as a capacity—a capacity to apportion means (in this case, particular metaphors) to ends (in this case, a model of some phenomenon). The rationality of the model maker, then, has nothing to do with that of the phenomenon modelled, and people can understand whirlwinds and plagues while having very little in common with them. The answer to Tissot is that understanding does require isomorphism between model and phenomenon, but not between mind and reality as wholes.

Saler, like Greenberg, thinks that the attitudes of theologians toward anthropomorphism need more attention, and he thinks also that the fact that religious conceptions are not *fully* anthropomorphic—i.e., that gods are distinguishable from men—needs special attention. I agree that the extensive attempts of theologians to resolve what most though not all of them see as the problem of anthropomorphism do deserve more consideration, and I hope to examine them at another time.

The facts that religious anthropomorphism does not make gods into exact copies of men, however, and that some religious themes emphasize the "otherness" of deity when compared to man do not seem at all surprising. The objects of religious thought often *are* other than man: plants and animals, rain and drought, moon and stars, in short, the phenomena of the universe at large. Direct observation of these and calculation of any more general principles that may underlie them must suggest that none of them, singly or together, are exactly the same thing as humans. Pray as one may, the gods responsible for rain do not reply in an audible voice as humans do, nor can they be imprisoned or otherwise held to account. In actual

fact there is nothing exactly like humans but humans. When we use human-like principles to account for nonhuman things, some adjustments must be made, just as when the analogy of water waves is invoked for electromagnetic radiation. That human-like models are modified when invoked for nonhuman things is similarly explained by the discrepancies that immediately arise if they are applied directly. One does not say that God *is* a human any more than one says that light *is* water despite its apparent partial sharing of wave phenomena, and for the same reason. Analogy asserts partial equations between phenomena, not exact ones. What is surprising is rather that the human analogy has been stretched as far and as persistently as it has.

I am grateful for Sharpe's endorsement and agree that my position needs a longer presentation, particularly regarding the roles and natures of models and metaphors and the criteria for choosing between competing models. These topics have only been sketched here. In addition, Sharpe asks several questions that may be answered briefly. He mentions my claim that religion cannot achieve its ambition of interpreting reality at the human level of organization and asks for my justification. This is a difficult question, since my claim reflects my total assessment of the truth of the central religious assertion. Like other general paradigmatic assertions, religious ones can, to draw on Jarvie once more, "rarely be shown directly to be in error"; but they can be gradually discredited by more persuasive ones. Once these latter arise, the enterprises of their predecessors appear hopeless, as, for example, the enterprise of geocentric astronomy appeared hopeless after its succession by heliocentric astronomy. It appears that the religious enterprise is inexorably yielding to a variety of others, usually lumped as "scientific." My justification for my claim that religion cannot achieve its cognitive ambition is that I believe, partly for the reasons given as propositions and deductions, that its fundamental premise is mistaken. Related evidence may be found in the fact that nonanthropomorphic, secular explanations of natural phenomena, for example, are continuing to supplant anthropomorphic religious ones. Contemporary meteorological models give better accounts of rainfall and drought than do models of a benevolent or punitive deity, and Darwin and Lyell give a better account of human and world origins than does Genesis.

The answer to Sharpe's second question, raised also by Greenberg and Tissot—whether I mean that reality in no way corresponds to "human-type" models—is no. There are many homologies and analogies between us and the rest of the world. However, in the crucial way—its evident lack of ability to communicate symbolically, owed evidently to its lack of the necessary organization—reality at large does *not* correspond to human-like models.

Earhart's questions center on this identification of language and symbolism as most characteristically human, which he finds a tautology "since this is known by definition" and "since language is common to all life." He also says that this emphasis on language use will not help identify religion, since language is also used by science and other systems. There seem to be several confusions here. First, although there is some consensus among anthropologists both that "language" is somehow qualitatively different from other kinds of communication and that it is more or less peculiar to humans, this has not arisen by definition alone, but by research. Second, it follows that it is not true that language is common, as Earhart twice says, to "all life." He may have meant to say "to all human life." Last, I did not say that the use of language characterizes religion (or that "being religious is equal to being human"), but rather that (systematic) use of language (and other symbolism) to deal with the nonhuman world characterizes it. Physicists, as physicists, talk to other people, but they do not seriously talk to atoms; priests do address the heavens and make sacrifices to cure plagues, and religious farmers pray for rain.

I especially welcome Jarvie's support and extension of my position because he has written extensively on the same subject from an allied point of view and because much of his commentary clarifies my argument, often by paraphrasing it. I am both encouraged and enlightened by his remarks. I find myself at odds with him in only a few places. He alludes to my epigraph from Durkheim and agrees that it is the strongest antiintellectual argument but, without a word of explanation, doubts that anthropomorphism is the necessary illusion. He suggests that a better solution is to say that Durkheim is wrong and that the "natural condition of mankind is error and illusion." However, this solution does not suggest (as mine does) why error and illusion should take a *religious* form, which after all has been the chief competitor of science, Jarvie's main interest. Moreover, if the statement is taken at face value, it is hard to see how mankind could ever have coped with the world. It seems more accurate to say that the natural condition of mankind is incomplete understanding, or *partial* error.

Later, in the midst of (seemingly pre-Kuhnian) assertions that science, unlike all prescientific cognitive efforts, is immune to distortion by society and tradition, Jarvie suddenly says that "Guthrie, then, does not go far enough." Far enough with what? He does not say plainly, but evidently I should have addressed myself to Popper and Gellner on the scientific breakthrough rather than to a theory of religion.

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