DOES IT MATTER HOW WE GOT HERE? DANGERS PERCEIVED IN LITERALISM AND EVOLUTIONISM

by Eileen Barker

Abstract. Creationism and evolutionism are taken to typify a fundamental opposition among the diverse beliefs about creation to be found in the United Kingdom and the United States. A comparison between the two types and the two countries suggests that people may be more concerned about the credibility and consequences of belief in an alternative account of our origins than about the actual method by which we were created. Examples of concern include interpretations of the Bible, ethical implications, and the epistemological standings of revelation and/or science that are thought to follow from acceptance of a particular belief concerning how we got here.

Keywords: creationism; evolutionism; religion and science; science and religion; scientific creationism.

Almost all known societies have produced a creation myth of some sort or another to explain how men and women came into being. Anthropologists and historians have pointed to some of the ways in which a particular creation myth will reflect and/or reinforce a particular kind of society. Rarely, however, has it been an issue of much importance within a particular society, or even within a particular religion, whether or not the account of origins was true or false—except insofar as the whole belief system was questioned. Evolution is not a new idea; a version of it is to be found in classical Greek thought. It was not until the second half of the last century, however, when Charles Darwin (and Alfred Wallace) suggested that the mechanism of natural selection could account for the emergence of the human species, that the question of questioning origins was to take on the importance that it appears

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to have done for the protagonists in the Genesis/Evolution debate. The rise of "creation science" during the second half of the present century has added a new dimension to the renewed controversy.

In this paper I do not intend to enter into the debate as to whether or not either creationists or evolutionists are obviously "wrong"; nor shall I pursue theological or epistemological questions concerning criteria by which we might judge the relative truths and/or untruths of the theory of natural selection on the one hand and a literal acceptance of the first chapter of Genesis on the other; nor yet do I wish to offer a sociological description of who believes what or of why creationist science might be accepted—insofar as it is in the United States and, on the whole, is not in the United Kingdom. I have written on such subjects elsewhere (Barker 1979a; 1985). What I do want to do is to look at some of the reasons that are given in explaining why it is important to people whether other people accept or reject their account of our origins.

BRITISH ACCEPTANCE OF EVOLUTIONARY THEORY

Perhaps the first point to be made is that most people in Great Britain do not seem to have spent hours agonizing over the origins of the human race. They tend to accept, pretty well as part of the conventional takenfor-granted wisdom, that we are the most advanced manifestation of an evolutionary process which was set in motion by God. God may be conceptualized in anthropomorphic terms—through more or less sophisticated images of the Old-Man-with-a-White-Beard (with, perhaps, a pair of calipers in His hand); alternatively, God may be conceived as a force (or energy) of creation, life, goodness, or what have you.

DIVERSITY WITHIN EVOLUTIONARY PERSPECTIVES

The next point is that, just as there seem to be comparatively few creationists, there are in Great Britain very few avowed atheists; but there are numerous ways in which the relationship between the evolutionary process and God as Creator can be perceived. For some, God merely started it all but has played no further role; for others, God plays an occasional, miraculous role; for yet others, God is continually present and active as an integral, immanent part of the ongoing process of creation.

Very few of those who accept the evolutionary version of origins (in either its more theistic or its more secular guises) are likely to believe that human beings are *merely* animals. The "something extra" may be related to language (to the ability to handle abstract concepts) or the

ability to reflect (for the "I" to contemplate the "Me"); alternatively, men and women may be seen as set apart from the rest of the animal kingdom through their sense of morality, their sense of humor, and/or their sense of God. Sometimes it is believed (by some theistic evolutionists) that the something extra is "popped in" as it wereadded by God ontogenetically—as each individual person is conceived (or becomes implanted in the womb, or reaches a certain stage of development, or is born) and, thus, he or she becomes truly and uniquely human-created in His/Her image. Others (theistic and atheistic) will believe that the extra something consists of properties which emerged phylogenetically as a result of the increasingly complex process by which increasingly complex forms were created.

The apparent "direction" of evolution may be seen as the result of God's plan unfolding in a Teilhardian way towards an omega point, or it may be seen as the result of chance mutations which gave rise to new forms that managed to pass the rigorous test of what Jacques Monod (1972) called a "teleonomic filter." The filter "allows through" only those new species that are viable both internally (that can, for example, reproduce themselves) and externally (that can survive in the current environment). Thus, although there may originally have been no plan, the development of structures, patterns, and, most recently, cultures has had a feedback effect in that these have played a role in "directing" the process along one path rather than another.¹

DIVERSITY WITHIN CREATIONIST PERSPECTIVES

Continuing on the subject of diversity, let it also be stressed that there is an enormous variety to be found within the creationist camp itself. At one extreme there are those who believe that God started to create the world at 12:00 A.M. on Monday, 1 January 4004 B.C. and that He had finished by teatime on Saturday the sixth. For such believers, each "kind" would be roughly equivalent to what we would today call a species. They might use Philip Gosse's argument that God created the fossils as if they had been there for millions of years. Others believe that day cannot be taken to mean a twenty-four-hour day as we know it, and that kind is a broader category than species.

Nonetheless, central to, and shared by, all special creationists is the belief that Genesis clearly indicates that, however long creation took and however the concept of kind is defined, each kind was created in and of itself, out of nothing, right from the beginning of its existence, and that, although natural selection may occur within kinds, no plant or animal of one kind has ever evolved from or into another kind. It is this belief which I shall be using to demarcate creationists from evolutionists (although I am perfectly well aware that many theistic evolutionists would call themselves creationists in the sense that they believe that the world was created by God—using the evolutionary process).

It should also be pointed out that there are considerable differences between creationists according to the extent to which they will justify their position by reference to the Books of Scripture and/or of Nature. Some will say that they point to science alone for their rejection of evolution and acceptance of the Genesis account; most will supply a mixture of empirical evidences and biblical texts; some insist that the Bible is the textbook of science (Morris 1966, 108).

IMPORTANCE OF CONSEQUENCES OF ORIGIN BELIEFS

Let us now turn to the main theme of this paper, that is, the variety of ways in which people will respond to the question: Does it matter how we got here? For both creationist and evolutionist Christians, it often seems to be less important whether or not evolution *did* occur than whether people *believe* it did, and one of the most important reasons is that this has implications for how Holy Scripture is seen and interpreted.

Interpretations of Scripture

For the creationist, to believe in evolution is to reject God's Word. To concede an error anywhere would be to allow for errors everywhere. Creationists fear that once people begin to question the literal truth of the Bible they will have started down the slippery road on which they rely on their own, eminently variable and eminently fallible, interpretation of God's Word, rather than listening to and accepting what God Himself has to say. Creationists tend to be of the opinion that to deny that God created the world and all-that-therein-is in the manner described in Genesis is to deny Him His role as Creator. Many of their publications and speeches denounce evolutionary theory as atheistic—or as pushing God back into such insignificance that He can no longer be recognized as the omnipotent, omniscient, and almighty God that He is.

Furthermore, if the Fall was not an historical fact, then Jesus' supreme sacrifice of dying for our sins is reduced to a vain and empty gesture. What happens then to the concept of being born again in Christ's redemptive love? Creationists will argue that the evolutionary account denies the saving sacrifice of Christ and, thereby, threatens the dignity of man. Bishop Samuel Wilberforce of Oxford, in the debate with Thomas Huxley which followed the publication of Darwin's *The Origin of Species*, wrote that Christianity "was utterly irreconcilable with

the degrading notion of the brute origin of him who was created in the image of God" (Stanesby 1985, 127).

The creationist points out that the original Fall was the result of disobedience: Adam and Eve did not heed God's Word. It is not up to men or women to question what they are told by God-although, of course, if one looks at the world of nature properly one will find that it does not contradict the Truth of God's Word as revealed in Genesis and the rest of the Bible. In Great Britain there has recently been considerable media coverage over the airing of doubts about literal beliefs in Anglican Christology by the Dean of Emmanuel College, Cambridge, Don Cupitt, and by the Bishop of Durham, David Jenkins. "What else can you expect?" the creationists are sagely commenting. "Once Genesis goes, why should one expect the incarnation or the resurrection to remain sacred?"

On the other side of the coin, one can find an atheistic position which agrees with the creationists that the Bible is unambiguously stating that the world was created in a short time in the recent past and that "God made the beast of the earth after his kind, and cattle after their kind, and every thing that creepeth upon the earth after his kind" (Genesis 1:25). The difference between the two views is that the atheists (or at least the atheists about whom I am talking) take it that the Bible, by asserting that evolution was not the method by which we got here, has been proved wrong and is, therefore, an unreliable source of knowledge and, perhaps, a useless or irrelevant piece of literature.

Theistic evolutionists would, of course, vehemently deny both the creationists' and the atheists' positions. Many of them would insist that a God who could use a process by which free men and women would evolve in His/Her image is a far more impressive God than one who just "waved His wand," as it were, and then watched the world make a mess of itself. It is not altogether irrelevant that I was asked to write this paper for the annual meeting of the Science and Religion Forum, which was founded in the early 1970s because Arthur Peacocke thought it important that a body of scientists with an interest in the Christian faith should be set up in order to prevent either biblical literalists or atheists "rocking the boat" with respect to the relationship between religion and science—a relationship that the majority of the membership of the Forum sees as one of complementarity rather than as one of competition.

While the creationist fears what will happen to the authority of the Bible if people do not accept a literal translation, the theistic evolutionist fears the effects of taking Genesis 1 too literally. First, there is the risk that people, if they believe that the Genesis account is literally true and are subsequently told (and accept as a fact) that we got here through a process of evolution, could reject the *whole* of the Bible as untrue. By taking one piece out of a too precisely built edifice, the whole structure can collapse.

Second, by looking at the Bible as a document to be taken literally, the theistic evolutionist fears that there is a danger of not understanding the wealth of meaning that is to be found below the immediate surface at the symbolic or mythical level and, thus, of losing sight of the fact that the Bible is much more than a blow-by-blow account of what happened in history. The Bible is to be seen as a book of faith rather than a book of fact. In response to the creationist's question "What happens to our view of the Bible—what can we still learn from it—if we start questioning bits and pieces according to some criterion other than Holy Scripture itself?" comes the answer: "Lots! This is where we begin to work out and to understand. This is where we get beyond the level of Sunday School stories—where we start to see the real, underlying meaning of the Bible in the context of modern knowledge. Insofar as the natural and social sciences are used in biblical criticism, they can help us to transcend the time-bound stories and see the timeless (and currently relevant) truths that the Bible offers us about God and the creation."2

In short, theistic evolutionists may find the Darwinian account of our origins infinitely more aweful, exciting, and challenging than a literal interpretation of Genesis; and they are almost certain to believe that the literal interpretation threatens the authority of not only the Bible but also all empirical science and reason.

Epistemological Authorities: The Bible and/or Science?

The ways in which our view of the Bible is seen to follow from our acceptance or rejection of evolution are, to some extent, mirrored by (and/or overlap with) the implications that are supposed to follow from the weight of credence which we do accord the Bible in deciding whether or not to accept or reject evolution. Now we are focusing on the question of epistemological authority. How far is this a simple clash between Divine Revelation through the Book of Scripture on the one hand and (possibly Divine) revelation through the Book of Nature on the other hand? Christian fundamentalists accept that the ultimate authority for all knowledge is God's Word as revealed through Holy Scripture. This they hold to even when it seems as though the Bible clashes with "received science." What "scientific" creationism has done is to claim that there is no clash after all.

It is not only fundamentalist Christians but also the adherents of *all* kinds of ideologies who seek the scientific stamp of approval with which

to package and to justify their wares in the modern supermarket of beliefs and dogma. To be without scientific backing, if not absolute, scientific "proof," is something that few of the competing world views would risk today—even if they use "science" to prove that their beliefs transcend science. A new priesthood of scientists has emerged during the past two decades or so, ready to certify as scientific almost any belief that one may care to consider (Barker 1979b or 1980). Creationists have their full quota of socially accredited members of this new priesthood. The creation scientists claim to have lifted the question of origins away from reliance on the Bible and straight into contemporary science. Their arguments cover a wide range of fields—taxonomy, cosmology, paleontology, embryology, the second law of thermodynamics, probability theory, and so on. They explain that it is not the facts of nature that are in dispute, only the interpretation that atheistic (as they see them) scientists have put on the facts-facts which, the creationists claim, fit the theory of Genesis more clearly than they fit the theory of evolution.

Karl Popper's argument that a line of demarcation should be drawn between scientific and nonscientific theories according to whether or not statements deduced from the theories can be refuted is frequently quoted with approval by creationists (despite the fact that Popper himself is an evolutionist par excellence). What the creationists, or at least some of their number, argue is that evolutionary theory is bad science: it is a metaphysical theory illegitimately claiming to be a scientific fact. But they are also liable to argue that the facts disprove evolution and prove Genesis to be correct. God does not lie; there is no contradiction between the Bible and Nature, and any decent scientist would be able to see that this is the case if he or she were only honest enough to admit it.

Evolutionists are, however, unlikely to accept that the creationists are doing proper science. They are more likely to claim that once one starts to accept the Bible as an authority (which, they say, constitutes the real starting point for the creationists) everything that modern science has discovered since the dark ages goes by the board. Darwin's theory of natural selection is just one of the discoveries that has added to our knowledge of the origins and functioning of life, but if we accept that special creation did occur within the last 10,000 years (as almost half the American population apparently does),³ then we might as well give up all the knowledge of astronomy, cosmology, physics, atomic theory, and everything else that we have acquired since our creation. This, such evolutionists believe, is a major reason why the creationists—or at least the so-called creation scientists—have to be fought tooth and nail (Kitcher 1982; Ruse 1982).

RELIGION IN THE SCHOOLS?

Nowhere has the battle raged so loudly since the rise of creation science in the 1960s as in the United States educational system. An argument frequently put forward is that, insofar as the fundamentalists' acceptance of the Bible is instilled into the younger generation, it undermines the authority of empirical science and, perhaps, rational thought, and it threatens the possibility of scientific, technological, economic, social, and military advance through the growth of scientific knowledge. According to Dorothy Nelkin (1982), it was anxiety about the technical growth of Russian weaponry that led to a revision of the schools' science curricula and, indirectly, the attempt to expunge creationism from the classroom where it had, despite the Scopes trial, frequently continued (and continues) to be taught *rather than* (not merely alongside) evolutionary theory.

The fight over whether or not creation should be given "equal time" in the schools also has its repercussions as part of a wider issue concerning the distinction between Church and State—a distinction that the First Amendment of the United States Constitution demands must be made and adhered to in all areas of public life. It is a strange irony that, while religion is the one subject which must not be taught in American public (that is, state) schools, it is the one subject which must be taught in British state schools according to the 1944 Education Act—a position that was upheld by the 1985 Swann report, Education for All. It is a further irony that it is possible that more religion gets into American schools through one door or another than gets into English schools, where the religious education lesson is quite likely to concentrate on subjects (such as sexual relationships) which would seem to be more socially acceptable for discussion than serious religious questions.⁴

MORAL CONSEQUENCES OF BELIEFS

Let us now turn to some of the ethical considerations that arise (or are thought to arise) out of a belief in evolution. One of the reactions to evolutionism which can frequently be heard from creationists is, "If you tell people that they are descended from the apes, you can hardly be surprised if they start behaving like beasts." The belief in evolutionary theory—presumably not the fact of evolution—is considered to be responsible for the promiscuity of the age, the breakup of the family, violent, uncontained aggression, and all manner of immoral excesses. The idea of evolution, as opposed to the idea that God created us separately in His image, is responsible, it is believed, not only for the atheism which, it is claimed, it inspires but also for practically every contemporary sin. Adolf Hitler's "final solution" was the result of his

belief in Darwinian selection and in the emergence of a superior, pure Arian race. Karl Marx is said to have wanted to dedicate Das Kapital to Darwin. Evolutionary ethics have, it is claimed, encouraged a secular humanism to erode the inspired moral standards of the Old and New Testaments.

Of course, not all (probably only a tiny proportion of) evolutionists have espoused evolutionary ethics. There have, however, been some very distinguished scientists who have argued that we can look at the direction revealed by evolution and, as a result, derive a code of ethics (Huxley 1947; Waddington 1961). Such arguments must, however, be regarded with suspicion since, if moral responsibility has any current meaning, our capacity to perform wrong actions must have evolved with our capacity to perform good actions. The "is" which has evolved must include not only the "ought" but also the "ought not." Some criterion that is *independent* of what "is" (and/or has evolved) must be invoked to separate the "ought" from the "ought not" (Barker 1976). But even if we do not accept the logic of the naturalistic fallacy (deriving an "ought" from an "is"), history has shown us all too clearly that what most of us would consider as pretty immoral ideas have been suggested by evolution.

It may be argued less controversially that we can learn from the trial and error of the evolutionary process by observing which patterns of behavior are more likely to be selected and which rejected in certain environments, and that it might suggest or indicate some of the costs which we may incur should we decide to pursue one line of action rather than another. Here I am referring primarily to knowledge of social environments rather than those of nature, but it might be added that creationists are as likely as evolutionists to want to preserve the environment, its rare species, and an ecological balance. They will point out that we have already lost thousands, perhaps millions, of the original kinds; and they will include the additional argument that, as no new kinds have come into existence since creation, we have a particularly pressing responsibility not to lose any more.

THE NEED TO KNOW

I have been told by both evolutionists and creationists that, if they did not know where they came from, they would not know where they were going. As I indicated at the beginning, most people in Great Britain do not seem to mind very much how the human species arrives on this planet. It is not a burning issue. They do, however, like to know that it is known. Most of us know who our parents were and, even if we are not all that delighted with them, we are likely to accept without much thought

that we have inherited our genetic make up from them-and that is that. For the person who does not know who his or her parents were, however, the details of his or her origins are likely to be of considerable concern. In other words, it is only once the question has arisen that we are likely to spend much time thinking about who or what we would prefer to have been responsible for our existence. In the United States one can hear the question of origins polemically argued or heatedly debated not only in the pulpit but in the media, on the campuses, and even in the political arena. In the United Kingdom, however, the question rarely arises. I have asked numerous Britons if they minded whether or not the human race was created according to a literal reading of Genesis or by evolution, and in almost every case I have been greeted by the sort of blank stare that one might expect if you were to ask someone in Oxford whether he minded if it rained in Cincinnati that afternoon. The question itself makes perfect sense, but one is hard pressed to think why, in the context, it might make sense to ask it.

Nonetheless, if these same Britons are challenged about their belief in evolution, and it is suggested that the Genesis story might be literally true, they will respond immediately that that is rubbish and that evolution is a scientifically proven fact. If one then starts to question the scientific validity of their beliefs by using some of the arguments that the creation scientists use, the response is, first, mild irritation, then an exasperation that is supported not by rational argument or reference to empirical evidence but by what can only be described as an increasingly furious blind faith. If readers wish to witness the effect that I am talking about, they might like to try advocating a creationist position to a British acquaintance whose friendship they do not mind sacrificing.

In North America increasing numbers of scientific evolutionists have emerged to take up the gauntlet thrown down by the scientific creationists. Anti-creationists are now producing responses to the creationist claims at a number of different levels, in order to provide people with more enlightened rejoinders when their evolutionary assumptions are attacked. Perhaps we should not be all that surprised to find that some of these pamphlets, books, and journals seem to engage in the same kind of fanatical evangelizing fervor that much of the creationist literature displays.

The hypothesis that I am tentatively proposing is that, so long as people's taken-for-granted assumptions about origins (be they creationist or evolutionary) are not threatened by an alternative account, it does not seem to matter to them all that much what the story (theory) is; but once the theory is challenged, the challenge is seen as threatening at a fairly basic level. In other words, it is possible that "knowing that" is more important than "knowing what," but this does

not mean that the "what" (or in this case the "how") is not important *once* the question has been raised. For the creationists, the importance lies, it has been suggested, in the literal truth and absolute authority of the Bible, and in the moral implications of evolutionary theory and the epistemological and ethical relativism that they see resulting from any questioning of the absolute truth of the Bible.

One can find a sort of insurance-policy reason for rejection of evolutionary theory being advocated by those of a literalist persuasion: "Believe and you will be all right; don't believe, and—you've asked for it!" Less crudely, literalism offers absolute standards and absolute, unchanging knowledge in the face of the shifting relativisms of modern morality and modern science. Indeed, one of the most common arguments that creationists put forward is that scientific knowledge is always changing while the Bible has *not* changed its story for thousands of years.

It is fairly easy to argue that the fundamentalism that accepts a literal account of Genesis provides a warm, back-to-the-womb sense of security and knowledge of who one is and where one is going. The world is divided into black and white, good and bad—or, more usually, good and evil. Society consists, moreover, of those who believe and those who do not, for one of the most important defining characteristics for one's own (and others') identity is whether or not one belongs to the community of true believers.

However, being a creationist in a society in which most people (the educational system and the media) accept evolutionary theory as a taken-for-granted background assumption can be a far from comfortable position. In fact, it can require a great deal of courage, and a far greater awareness of the arguments at stake, to stand up and be counted as a creationist in England than to go along with the unquestioning evolutionist majority. Nonetheless, insofar as they can identify with a community of fellow believers, and insofar as they know where they belong and that they are unambiguously right, the literalists can enjoy a sort of security which is not available to the evolutionist. There are, of course, evolutionists who are "true believers." They might be true believers in Christianity, Marxism, or some other faith, but evolutionary theory per se does not offer the certainty and knowledge of how one fits into the scheme of things in the way that fundamentalists' beliefs do. Evolutionists may, however, celebrate the lack of certainty that is entailed in an open-ended evolutionary process, and delight in the recognition of the tensions and paradoxes of life. They may respond with excitement and/or trepidation to the challenge of accepting some responsibility in the construction of an ever-changing teleonomic filter that will influence the future direction (for good or ill) of a continually evolving creation.

CONCLUDING REMARKS

In this paper it has been stressed that in contemporary Western society one can find considerable diversity of beliefs concerning our origins. This diversity has been simplified by making a distinction between, on the one hand, those who believe that the Genesis account of creation is literally true, that each "kind" of plant and animal was originally created ex nihilo, and that no kind has ever evolved into another kind, and, on the other hand, those who believe that men and women evolved from the lower animals (although they are, in various possible ways and for various possible reasons, not to be thought of as "nothing but" animals). The general lack of awareness of the importance of the question of origins within British culture, where there is a generally taken-for-granted assumption that evolution is a proven fact, is not entirely dissimilar from the lack of importance afforded to the Genesis story in pre-Darwinian times. Where alternatives are readily and visibly available, as within the pluralistic supermarket of North American culture, it would seem that the question of origins becomes significantly important—not because of fears about the assumed consequences of the fact of either evolution or special creation but because of fears about the assumed consequences of a belief in the "wrong" account of our origins.

NOTES

- 1. There are further positions, not all of which will be referred to directly.
- 2. Biblical scholars, for example, will argue that Genesis, unlike other creation myths which were around at the time, makes it plain that there is *One* Creator and that monotheism, rather than pantheism or dualism, is one of the central messages of the Genesis account. The dualism that I am referring to here is not, of course, the Cartesian dualism between mind and body (or soul and extended matter) but one between the powers of light and darkness—God and Satan—as two original Beings or Forces.
- 3. In a national Gallup survey, 44 percent of Americans said that they believed "God created man pretty much in his present form at one time within the last 10,000 years" (Princeton Religion Research Center [1982]).
- 4. The Religious Education Council's submission to the British Secretary of State in 1980 stated that 25 percent of comprehensive schools provide no religious education and that a great number of secondary schools omit it after the third year (Cox 1983, 128).
 - 5. This quotation is taken from a creationist pamphlet entitled Big Daddy.

REFERENCES

- Barker, Eileen. 1976. "Value Systems Generated by Biologists." Contact 55 (no. 4):2-14.

 _______. 1979a. "In the Beginning: The Battle of Creationist Science against Evolutionism." In On the Margins of Science, ed. Roy Wallis, 179-200. Keele: Keele Univ. Press.
- ______. 1979b. "Thus Spake the Scientist: A Comparative Account of the New Priesthood and its Organizational Bases." The Annual Review of the Social Sciences of Religion 3:79-103.
- ______. 1980. "Science and Theology:Diverse Resolutions of an Interdisciplinary Gap by the New Priesthood of Science." *Interdisciplinary Science Reviews* 5 (December):281-91.

. 1985. "Let There Be Light: Scientific Creationism in the Twentieth Century." In *Darwinism and Divinity: Essays in Evolution and Religious Belief*, ed. John Durant, 181-204. Oxford: Martin Robertson.

Cox, Edwin. 1983. Problems and Possibilities for Religious Education. London: Hodder and Stoughton.

Huxley, Julian. 1947. Evolution and Ethics. London: Pilot Press.

Kitcher, Philip. 1982. Abusing Science: The Case Against Creationism. Cambridge, Mass.: MIT Press.

Monod, Jacques. 1972. Chance and Necessity: An Essay on the Natural Philosophy of Modern Biology. London: Collins.

Morris, Henry. 1966. Studies in the Bible and Science. Grand Rapids: Baker Book House. Nelkin, Dorothy. 1982. The Creation Controversy: Science or Scripture in the Schools. New York: W. W. Norton.

Princeton Religious Research Center. 1982. "Public Found Evenly Divided in Debate on Evolution, Creationism." *Emerging Trends* 4 (October):4-6.

Ruse, Michael. 1982. Darwinism Defended: A Guide to the Evolution Controversies. Reading, Mass.: Addson-Wesley.

Stanesby, Derek. 1985. Science, Reason and Religion. London: Croom Helm. Waddington, C. H. 1961. The Ethical Animal. London: Allen and Unwin.