

# EVOLUTION AS A RELIGION: A COMPARISON OF PROPHECIES

by *Mary Midgley*

*Abstract.* The idea of evolution functions today as a myth as well as a scientific theory. This use distorts it in some surprising ways. In particular, predictions of the predestined future development of superhumans (Omega Man) are sometimes treated by scientists as if they were an established part of the theory of evolution. Since they rest on the endless-escalator model of evolution, incompatible with Darwinian methods and not separately argued for, they have no standing at all. This phenomenon, and others like it, seem to indicate spiritual needs which are being ignored and thus finding illicit satisfaction. The position is dangerous and needs more attention.

*Keywords:* Omega Man; pseudo-scientific fantasies; science and faith; scientism; supermen.

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Evolution is the creation myth of our age. By telling us our origins it shapes our views of what we are. It influences not just our thought but also our feelings and actions in a way which goes far beyond its official function as a biological theory. In calling it a myth I am not saying that it is a false story. I mean that it has great symbolic power, which is independent of its truth. Is the word *religion* appropriate to it? This depends on the sense in which we understand that very elastic word. I have chosen it deliberately because I want to draw attention to the remarkable variety of elements which it covers and to their present strange behavior. While traditional Christianity held these elements together in an apparently changeless and inevitable grouping, we did not notice how diverse they were. Now that the violent changes of modern life have shaken them apart, they are drifting about and

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cropping up in unexpected places. If we ask today “by what myths do people support themselves?” we shall often find them doing it by ones which they wrongly suppose to be part of science.

My first task here is to draw attention to this phenomenon. It seems an alarming one, particularly for those quite numerous people who hold that getting rid of religion is itself a prime aim of science. If the fungicide shares the vices of the fungus, something has surely gone wrong. However, I think that the matter has a wider interest than this, an interest which concerns all of us.

Let us start by glancing at a few cases of the procedure in question—occasions when “science” appears to be stealing its supposed opponent’s clothes. In this paper, I shall concentrate on prophecies, because they provide an exceptionally clear example.

#### PROMISING THE MOON

It is a standard charge against religion that it panders to wish-fulfilment, consoling people for their present miseries by dishonestly promising wonders for the future. It offers “pie in the sky.” With this charge in mind, let us look at the concluding passage of an otherwise sober, serious, and reputable book by a molecular biologist about the chemical origins of life on earth. William Day, having dealt with proteins and having discussed critically various possible conceptions of primal soup, turns in his last chapter from the past to the future. Evolution, he says firmly, is essentially a development of intelligence. *Therefore*, humanity can be expected to evolve in the future a new, distinct, and much more intelligent type, which will then become “reproductively isolated.” He continues as follows:

He (man) will splinter into types of humans with differing mental faculties that will lead to diversification and separate species. From among these types, a new species, Omega man, will emerge, either alone, in union with others, or with mechanical amplification to transcend to new dimensions of time and space beyond our comprehension—as much beyond our imagination as our world was to the emerging eucaryotes. . . . If evolution is to proceed through the line of man to a next higher form, there must exist within man’s nature the making of Omega man. . . . Omega man’s comprehension and participation in the dimensions of the supernatural is what man himself yearns for, but cannot have. It is reasonable to assume that man’s intellect is *not the ultimate, but merely* represents a stage intermediate between the primates and Omega man. What comprehension and powers over Nature Omega man will command can only be suggested by man’s image of the supernatural (Day 1979, 390-92).

Are there any reservations about this prediction? Only one, which concerns time. There is a difficulty here because (as Day explains) major steps in evolution have been occurring at steadily decreasing intervals, and the next one may be due shortly. It must be the one for

which he is waiting. "On such a shortened curve," he explains, "conceivably Omega man could succeed man in fewer than 10,000 years."<sup>1</sup> Ordinary evolution, however, is too slow to allow this startling development. What is to be done?

How then (Day asks) can Omega man arise in so short a time?  
 The answer is unavoidable.  
 Man will make him.

This is apparently a reference to genetic engineering, something especially important to those whose faith leans heavily on the dramatized idea of evolution. They demand from that idea not just a satisfying account of the past but also hope for continued progress in the future. However, there is a real problem about expecting the human race to evolve further in literal, biological terms. Human social arrangements tend to block natural selection, even in simple cultures; and the more elaborate cultures get, the more this happens. Nineteenth-century Social Darwinists attacked this problem with a meat axe, calling for deliberate eugenic selection and harsh commercial competition, so that the race could go back to being properly weeded and could still progress. As we now know, however, these schemes were not just odious but futile. Commercial competition has no tendency to affect reproduction. As for "positive eugenics," it is not possible to identify desirable genes nor to force people to breed for them. Even if it were, the genes' spread would still be hopelessly slow. The whole time-scale of evolution makes such schemes ridiculous.

The natural conclusion is that such ideas should be dropped. The human race must take itself as it is, with its well-known vast powers of social adaptation, and make the best of its existing capacities. This thought, however, is unbearable to those whose faith in life is invested in the future and pinned to the steady, continuing, upward escalator of evolution. "If evolution is to proceed through the line of man to a next higher form" as Day puts it, there simply must be another way. That wish, rather than the amazingly thin argument about recurrent evolutionary steps, seems to be the ground of his confidence.

#### THE QUESTION OF PROGRESS

Where, however, does the evolutionary model come from? It is not part of regular, Darwinian scientific theory. The idea of a vast escalator, moving steadily upwards from lifeless matter through plants and animals to humanity, and inevitably on to higher things, was coined by Jean Baptiste de Lamarck and given currency by Herbert Spencer under his chosen name "evolution." Charles Darwin utterly distrusted the notion, which seemed to him a piece of baseless theorizing, and he

avoided the name. As far as he could see, he said, "no innate tendency to progressive development exists. . . . It is curious how seldom writers define what they mean by progressive development" (Moore 1979, 151). His theory of natural selection gives no ground for it and does not require it. As has been pointed out, it arranges species in a radiating bush or seaweed rather than on a ladder. It demands no orthogenesis or predestined straight line, whether in terms of intelligence or of anything else. It accounts equally for all kinds of development and also for some cases of unchangingness or regression in terms of limited responses to particular environments. The notion of a climbable ladder was of course derived from the older image of the stationary one, the *scala naturae*, which combined some sensible ideas about increasing complexity with some much less useful ones about hierarchy and government. It was not necessary for classification nor relevant to the process of natural selection.

Darwin, therefore, saw no reason to posit any law guaranteeing that any of the changes noticed hitherto would continue indefinitely. He also saw no reason to pick out any particular change, such as an increase in intelligence, as the core of the whole process. Spencer's approach was quite different. To him it seemed at once obvious that the whole business could be reduced to one simple law, which he formulated in terms of increasing heterogeneity. As he stated it, "Brief inspection made it manifest that the law held in the inorganic world, as well as in the organic and the superorganic" (Duncan 1908, 556). Accordingly, as one of Spencer's followers pointed out with pride, "The theory of evolution dealing with the universe *as a whole*, from gas to genius, was formulated some months before the publication of the Darwin-Wallace paper" (Armstrong 1904, 48)—a priority-claim which Darwin never wanted to dispute.

#### SCIENTISTS AS RULERS

From that time to this, Spencer's bold, colorful, and flattering picture of evolution has constantly prevailed over the more sober and difficult one of Darwin, not only in the public mind but surprisingly often also in the minds of scientists who had reason to know its limitations. Thus that very reputable physicist J. D. Bernal shaped it in a way that bears some relation to Day's in a remarkable Marxist utopia published in 1929. Bernal pointed out that things might become a trifle dull and unchallenging in the future, after the triumph of the proletariat and when the State had withered away. He predicted that only the dimmer minds would be content with this placid Paradise. "The aristocracy of scientific intelligence," would, he said, therefore start new developments and create a world run increasingly by scientific experts. Scientific

institutions would gradually become the government, and thus achieve “a further stage in the Marxian hierarchy of domination.” In the end, scientists “would emerge as a new species and leave humanity behind” (Bernal 1929, 73).

This scheme gives a clue to Day’s otherwise startling and mysterious prediction that the new superhumans would be reproductively isolated. Why should they be? What made this idea seem plausible was surely the already existing thought that scientists ought to form a caste apart, running the world without any possibility of interference by politicians, historians, voters, or members of any other alien and intrusive group. This idea was strongly promoted by H. G. Wells and was popular between the First and Second World Wars. It is still often found in science fiction and in other literature where fantasies are openly revealed, such as comics. It is a mysterious suggestion because training in physical science does not of itself qualify people as administrators. Accordingly, the word *science* often seems to get a rather odd meaning. It seems, then, to center on membership in the club or tribe of scientists and on rejection of other competing clubs or tribes, rather than on the scientific training itself or on acceptance of theories or even methods of inquiry.

Although it is still with us, this idea of a separate hereditary caste or ruling race of scientists took a considerable knock to its prestige after the rise of fascism and the Second World War. Since then, it has not in general been so openly supported. Instead, the emphasis of those who want to improve the species has usually been on a simple general rise in intelligence. However, this still seems to be seen often as equivalent to a proposal to produce more and better scientists. This interpretation seems the only possible explanation of these people’s strange lack of interest in the problem of conflicting ideals. What sort of intelligence ought we to aim for? Indeed, more basically still, why is intelligence as such to take precedence over all other human ideals? Such problems tend to be bypassed entirely. Thus, the Nobel prize-winning biologist J. Lederberg writes in *Towards Century 21*: “Now what stops us making supermen? The main thing that stops us is that we don’t know the biochemistry of the object that we are trying to produce” (Walla 1978, 52). It does not seem to strike Lederberg, any more than Day, that we cannot identify or conceive that supposed object at all. What is the model for the Omega factory? There is an immense range of human ideals. Do we want superEinstein, superNietzsche, superBeethoven, superDarwin, superConfucius, superBuddha, superShaw, superNapoleon, or some highest common factor between all of them, designed by a committee? Where do the superwomen come in? Even if we somehow made a choice, the idea of the lesser designing the greater

seems incoherent. Could a child invent an adult, a fool, a genius, or a crook an honest person? Each of us projects our faults into our work, and the more ambitious the work, the more glaring the faults become. If some previous century had been given the chance to put its ideals in concrete form—to design its own superman—we know just what faults we should expect to find in the products. Other cultures, too, would do the job in their own way. How could we possibly have a claim to transcend this kind of limitation?

Superman-fanciers, both inside and outside the scientific professions, commonly resist this charge of partiality by assuming, first, that what is needed is simply more or a single timeless abstraction (namely intelligence measured by intelligence tests) and, second, that this abstraction is a single genetically distinct characteristic, controlled by its own gene or genes. Both these assumptions seem fanciful. Intelligence in this sense—cleverness—is certainly useful, but how it is used depends on the aims of those using it. Like other powers, in bad hands it is simply an added danger. Clever people, as such, can be just as weak and just as wicked as stupid ones. What we normally mean by intelligence is not just cleverness. It includes such things as imagination, sensibility, good sense, and decent aims—things far too complex to appear in tests or to be genetically isolated. Further, even if this quality of intelligence as the testers define it were what we wanted, there is no reason to expect it to be packaged conveniently for us by the genes. It is just a convenient compromise-entity especially evolved for use in the social sciences, handy no doubt for many purposes but not related to the biological complexity of nerves and brain any more than speed in race horses is so packaged. As a distinct, genetically heritable characteristic it is a non-starter.

#### THE DEMAND FOR FAITH

If I seem to be telescoping possible arguments about this rather briskly, I apologize. What concerns us now is that those “prophets” whom I quote do not give any arguments at all but present their assumptions about the prospects of superman-development openly as matters of faith. If one questions the possibility of genetically engineering improved hominids or of producing them by artificial intelligence, one is usually accused of lacking faith in science. It is pointed out that, in the early days of locomotives, people did not believe that it was possible to travel at more than twenty miles an hour. The moral, it seems, is that we should have more faith, as George and Robert Stephenson and their backers had faith in the possibility of railways.

This is odd reasoning. The Stephensons were specialists, highly pragmatic, experienced engineers who tested their work every step of

the way. Their backers could see just what they were about. Those who now ask us for faith in their prophecies about the hypothetical technology of the imagined future, based on theories which are alien to science, are not in this position. Certainly the Stephensons needed to have faith in their new project. All bold advances in science and technology do need this kind of faith. Faith as such is not an alternative to science, nor the enemy of science; it is a necessary part of it. However, the faith which inventors like the Stephensons need is a limited one, for which they can to some extent give appropriate reasons. The faith which their backers have in them is based partly on seeing those reasons, partly on a direct impression of their personalities and their attitude to their work. If we are expected to extend this faith elsewhere, these are the kinds of grounds which we need to be given.

We need to ask, what in general distinguishes "blind faith," which has always been supposed to be the vice of religion, from the legitimate, "open-eyed faith," which is called for by good scientific projects? It may look at first as if this is a simple question; scientific projects deserve faith while nonscientific ones do not. Yet, this cannot possibly be right, because there can easily be bad scientific projects. There is as much bad science around as there is bad logic, bad history, bad mathematics, or bad law.

The argument most commonly put forward to recommend the superman-project is one from the *Destiny of Man*. The prophets ask us whether we are really so mean-spirited, so lacking in vision, as to deny the human race the crown which is promised it? Thus Francis Crick, no less, remarks loftily: "Provided mankind neither blows itself up nor completely fouls up the environment, and is not overrun by rabid anti-science fanatics, we can expect to see major efforts to improve the nature of man himself within the next ten thousand years" (Crick 1981, 118). If we ask in what way science commands us to endorse this project, the answer will usually be some theory about evolution on the general lines of those just glanced at, and certainly Spencerian rather than Darwinian. Intelligence, it seems, ought to go further—it will go further—it *must* go further—but this time its fate is in our hands. Dare we let it slip?

Since I am chiefly occupied here with the religious parallels, the first thing I find striking about this argument is its likeness to one which has commonly been seen as a defect both in Marxist writings and in the Gospel according to Matthew. Matthew often says that certain things were done "so that it might be fulfilled which was spoken by the prophets." The idea of a duty to produce the inevitable does not seem a very satisfactory one. If, however, we avoid this kind of appeal and rest the case for superman-building on its own desirability, it must then

compete on its own merits with other proposed human schemes. If it does this, its most striking feature is its irrelevance to all current or reasonably predictable human needs and problems. It is no answer to immediate ills like world famine or the arms race or the erosion of the biosphere because, even if it were capable of eventual success, it would be much too slow. People are not fruit flies; they take twenty years to grow up. If, on the other hand, we are thinking in terms of long-term aims, it is again irrelevant because aims of that sort ought to be things with value in themselves, like perpetual peace and human brotherhood. These are real ideals which can inspire our efforts now and which also to some extent are already being practiced. The idea of a superman-blueprint somewhere in the pipeline does not seem to have any such moral application. All it seems likely to do is to demand resources, and perhaps to make us shelve immediate problems in the hope that the superpeople will solve them for us. It is not an ideal at all but an expedient, and one which could not be put in hand until existing clashes of ideals had been resolved. This probably means, not until the millennium.

#### THE PROBLEM OF THE MULTITUDES

Theodosius Dobzhansky, who held a much more clear-headed, sensitive, and humane variant of the same general evolutionary faith in Omega Man, was seriously worried by the difficulty of placing it acceptably as a human ideal. He rightly worried about what it could mean to the nonscientist. Could people outside laboratories find that it gave their lives much meaning? Dobzhansky asks: "Are the multitudes supererogatory? They may seem so, in view of the fact that the intellectual and spiritual advances are chiefly the works of elite minorities. To a large extent, they are due to an even smaller minority of individuals of genius. The destiny of a vast majority of humans is death or oblivion. Does this majority play any role in the evolutionary advancement of humanity?" (Dobzhansky 1967, 132). Dobzhansky concludes cautiously that it probably does, conceding that we are not just "manure in the soil in which are to grow the gorgeous flowers of elite culture." He adds: "It is imperative that there be a multitude of climbers. Otherwise the summit may not be reached by anybody. The individually lost and forgotten multitudes have not lived in vain, provided that they too made the effort to climb." This is a strangely Nobel prize-bound view. In what sort of spirit could we complacently write that as the epitaph for nearly all the human race?

In the end Dobzhansky does not leave them in quite this dreary situation. He signs up, after some hesitation, for Teilhard de Chardin and the noosphere. Whatever its drawbacks, this means that the final



ideal is not just the intellectual self-perfection of a separate caste but brotherly love achieved by the whole human race. This is something which can be immediately practiced, not just a remote biochemical possibility for the future. All the same, the passage just quoted shows the dismal limitations of an ideal which is both centered on a narrow set of intellectual faculties and placed entirely in the future. The trouble is not just that only scientists will benefit but that even for them a very narrow aspect of their natures will be involved. When we turn to prophets like Day and Crick, these limitations are a ruling factor. The position of nonscientists is not considered at all. The scientists are to find their fulfilment in the superman-project. *They* will be inside the laboratory designing him, not only to their own specifications but in their own improved image. For them, self-worship is available, but what anyone else could get from the transaction never emerges.

#### THE ACADEMIC STANDING OF PROPHECY

Let us turn now to a slightly different kind of prophecy, concerned with the rosy future of science itself, though involving also some surprisingly confident views about other aspects of life. It is from the sociobiologist Edward O. Wilson in the concluding chapter of *Sociobiology*:

When mankind has achieved an ecological steady state, probably by the end of the twenty-first century, the internalization of social evolution will be nearly complete. About this time biology should be at its peak, with the social sciences maturing rapidly. . . . Cognition will be translated into circuitry. Learning and creativeness will be defined as the alteration of specific portions of the cognitive machinery regulated by input from the emotive centers. Having cannibalized psychology,<sup>2</sup> the new neurobiology will yield an enduring set of first principles for sociology. . . . Skinner's dream of a culture predesigned for happiness will surely have to wait for the new neurobiology. A genetically accurate and hence completely fair code of ethics must also wait (Wilson 1975, 574-75).

This means, however, that we shall get happiness in the end, once the neurobiologists have done their stuff. (Neurobiologists themselves are not particularly keen on this kind of story, but there is not much they can do about it.) Wilson, to do him justice, does go on to admit that some of us may not like his future world very much when we get it, partly, it seems, because of doubts about genetic engineering; but this will be due to our unscientific attitude. What we like or do not like affects neither the dogmatic confidence of the prediction nor the desirability of the outcome from the impersonal, scientific point of view.

A very interesting point about the predictions we are making is, then, dogmatic confidence. Scrupulous moderation in making factual claims is commonly taken to be a central part of the scientific attitude. Julian Huxley, listing the bad habits which infest religion, naturally mentions

“dogmatism” and “aspring to a false certitude” among them; he explains that science corrects these vices (Huxley 1927, 372). Remarks like those just quoted do not on the face of it seem to meet this standard.

When I have complained about this sort of thing to scientists, I have found that some of them make a rather surprising defense. They reply that these remarks appear in the first or last chapters of books and that everyone knows that what is found there is not meant to be taken seriously. It is just fluff for the general public. The idea seems to be that this fluff constitutes a kind of a ritual. If so, it must surely strengthen our present uneasiness. Addiction to ritual is another fault supposed to be characteristic of religion. It might, of course, just be meant to sell the books. If grossly inflated claims to knowledge are being used for that purpose, there seems to be either common dishonesty for personal profit or an attempt to advertise science by making claims which are alien to it—which, again, have always been thought disgraceful to religion. Putting these prophecies in a special part of the book will not disinfect them.

What would be needed to do that would be Plato’s method of adding a myth at the end, saying that it is just a myth and explaining how it is meant to illuminate the serious argument. The category of science fiction is sometimes invoked in a halfhearted way as some sort of an excuse for loose speculations which are beginning to look more than usually inexcusable. It will not work unless it is fully explained, with an explicit withdrawal of all the claims to scientific status which these speculations otherwise carry. Also, in fact one cannot write science fiction merely by launching some unfounded guesses on scientific subjects. It is a demanding art, having its own rules and standards. This is not a defense which can cover these fantasy-laden first and last chapters. The fact that they are aimed at the defenseless general public makes their tendentiousness worse, not better.

#### WHAT IS A RELIGION?

I hope that these few examples may be enough to show that the contrast between science and religion is unfortunately not as clear, nor the relation between them as simple, as is often believed. Does it make sense to speak of the aberrations I have discussed as flowing from a religion of evolution? In one simple sense it obviously does not, and perhaps we had better get that sense out of the way. The simple sense was illustrated when, during the Second World War, recruits entering the armed forces were being asked for their religion, and one of them replied, “Marxist-Leninist-Dialectical-Materialist.” “Can’t spell it,” said the sergeant, “put him down as Church of England.” The Army was not going to provide Marxist chaplains, and that settled the matter, but it does not exhaust the subject.

We can understand the recruit's reply. He was speaking of the faith by which he lived. A faith is not primarily a factual belief, the acceptance of a few extra propositions such as "God exists" or "there will be a revolution." It is rather the sense of having one's place within an ordered whole greater than oneself, one whose larger aims so enclose one's own and give them point that sacrifice for them can be entirely proper. This sense need not involve having any extra beliefs about existing facts. Taoism does not, nor does Marxism. Both call centrally for changes in attitude to the facts which one already accepts—changes in connection, in emphasis, in the meaning and importance attached to particulars. Sometimes changed opinions about outlying or future facts will follow. Thus Marxism (but not Taoism) calls for a new set of expectations about the future. Yet, even when there are such new opinions, it is not they but the attitude which generates them that is central. Converts who only have the new factual beliefs and not the appropriate attitudes will not last long.

This kind of faith is plainly something widespread and very important in our lives. It need not be formalized. People, in fact, often do not notice that they have it until the entity they have faith in—perhaps their culture or their occupation—is threatened. This faith is not itself a religion, but it is one source of religions. In cultures where a strong, dominant religion already rules, new minor faiths are simply absorbed into it as they arise. They are not usually noticed unless they are so distinctive as to demand widespread change. However, in our own culture, where many people officially have no religion at all, and those who have can chop and change, new faiths have much more scope and can make much more disturbance. They are hungrily seized on by people whose lives lack meaning. When this happens, there arise at once, unofficially and spontaneously, many elements which we think of as characteristically religious. We begin, for instance, to find priest-hoods, prophecies, devotion, exaltation, heresy-hunting and sectarianism, ritual, sacrifice, fanaticism, notions of sin and absolution and salvation, and the confident promise of a heaven in the future.

Marxism and evolutionism, the two great secular faiths of our day, show all these features. They have also, like the great religions and unlike more casual local faiths, large-scale, ambitious systems of thought, designed to articulate, defend, and justify their ideas. Is there still some plain, simple mark by which we can establish their nonreligious character? This really is not as easy a question as it may appear. It is certainly not enough to say, on the one hand, that they do not involve belief in God. Taoism does not do this either, nor does Buddhism in its original form. Also, the question whether the Buddha is now "a god" is not a simple one at all; he is, after all, to be sought and found within us. Moreover, where there are gods, their nature varies enormously. They

certainly need not be creators; the world is often held to be timeless or to have some other origin. Neither, on the other hand, does religious necessarily involve the immortality of the soul. Judaism in its early form does not seem to have involved human survival after death. Even for Buddhism the soul will eventually be dispersed into its elements. The same problems would arise with other similar attempts to distinguish simply the nonreligious character of these "secular" faiths.

I think it worth our while to refuse to draw a firm line here and to go on considering these borderline areas impartially, because where religious elements arise outside their familiar limits, we are liable to miss the special shapes which they contribute to the systems they affect. For this reason, I think that to say that Marxism or evolutionism, or indeed art or science, is serving as a religion can be a useful way of speaking today. It is not the same as saying that golf is someone's religion, which is probably just a joke, and at most means only that it is the most important thing in a person's life, the thing to which the rest gives place. There is not likely to be any system of thought behind golf, arguing that it ought to take precedence and giving reasons why it should do so. Moreover, devotion to golf is likely to have only a negative effect on those parts of life which do not take place on the golf course. It leads to their being neglected, not to their being differently conducted. However, the other candidates we are now considering do have those thought-systems and that wider impact. They are, not accidentally but by their very nature, dominant creeds, explicit faiths by which people live and to which they try to convert others. They tend to alter the world.

#### THE REVERENT SCIENTIST

In doing this, faiths such as these certainly do not act merely on self-interest, by the promise of future pie. The pie indeed is too distant to be grabbed; its appeal is of a more subtle and indirect kind. The emotions involved are those of awe, veneration, a sense of vastness and mystery, and much of the appeal to self-interest is of the more indirect kind which offers prestige by association with this cosmic vastness. Reverence for the thing studied is perhaps even a necessary part of the scientific spirit, one with a strong tendency to generate parallels with religion. Today this is a rather surprising matter, and there are certainly plenty of scientists who dislike this kind of suggestion and would declare war on the whole notion of revering anything. Others insist that, merely because our relation to the universe is that of tiny part to whole, our study of it cannot but be a reverent one. In humanity, says Julian Huxley,

for the first time life becomes aware of something more than a set of events; it becomes aware of a system of powers operating in events. . . . Man frames his own idea of these powers. . . . We call it religious when on the one hand it involves some recognition of powers operating so as to underlie the general operation of the world, and, on the other hand, when it involves the emotions (Huxley 1923, 209-10).

In such an attitude, awe and reverence are (he insists) entirely appropriate emotions, and an investigator who lacks them will make a bad scientist. Bertrand Russell, although he does not use the word religion as widely, makes a very similar point:

In religion, and in every deeply serious view of the world and of human destiny, there is an element of submission, a realization of the limits of human power, which is somewhat lacking in the modern world, with its quick material successes, and its insolent belief in the boundless possibilities of progress. "He that loveth his life shall lose it," and there is danger lest, through a too confident love of life, life itself should lose much of what gives it its highest worth. The submission which religion inculcates in action is essentially the same in spirit as that which science teaches in thought (Russell 1917, 29).

Similarly, Dobzhansky writes:

Rejecting vitalism in no way conflicts with what Albert Schweitzer has called "reverence for life." Man's conscience, the existence of life, and indeed of the universe itself, all are parts of the *mysterium tremendum*. . . . There is no more succinct, and at the same time accurate, statement of the distinctive quality of human nature than that of Dostoevsky; "Man needs the unfathomable and the infinite just as much as he does the small planet which he inhabits." . . . In every known human society . . . peoples have arrived at some system of religious views concerning the meaning and the proper conduct of their lives. . . . Religion enables human beings to make peace with themselves and with the formidable and mysterious universe into which they are flung by some power greater than themselves (Dobzhansky 1967, 25, 62, 92).

This attitude owes a good deal to the fact that Dobzhansky, like Albert Einstein, is the kind of scientist who emphasizes the inevitable slightness of the whole scientific achievement and its absurd disproportion to the vastness of what there is to be known, rather than the kind who claims (like Wilson) that the job is nearly finished, or that, as Crick puts it,

While a scientist is sobered by the economic and political problems he sees all around him, he is possessed of an almost boundless optimism concerning his ability to forge a wholly new set of beliefs, solidly based on both theory and experiment, by a careful study of the world around him and, ultimately, of himself and other human beings. . . . The feeling is that within a few generations we shall have got to the heart of the matter (Crick 1981, 165).

The matter in question is "the intricacies of the brain," but Crick is just as cheerful about all other ranges of scientific inquiry, including "major efforts to improve the nature of man himself" (1981, 118). Readers will

inevitably tend to divide here into those who think that the difference between these two groups of scientists is due to the startling scientific progress made in the decade or two between their times of writing, and those who explain it, more simply, by a sharp decline in the quality of scientific education. The point I am currently making about the idea of “the universe” as a whole is that, if one means by it not much more than is already written down in scientific books, one is less likely to be deeply impressed with its vastness and mystery than if one regards those books as small mirrors reflecting only parts of its more superficial aspects.

Is it in order for Dobzhansky and Huxley to describe their world view as religious or even as a religion? It is obviously not a religion in the full sense if that requires—as perhaps it does—that a recruit, for instance, can put it down in the appropriate column of his army form and expect suitable provision for worship. However, as I suggested at the outset, some of the elements combined in Christianity and its more familiar alternatives seem to be dispersing, and many other religions never combined them in the first place. The intellectual attitude necessary for science, if given its full scope and not reduced artificially to a mere mindless tic for collecting, is continuous with a typically religious view of the physical world. This is one of the varieties of religious experience. The sense of a sharp opposition here is misleading. When this connection is noticed, however, very fishy conclusions are sometimes drawn from it, which tend to produce the bizarre and sometimes monstrous prophecies that I have cited. Scientists who see that they are in some sense neighbors of religion are sometimes moved, not to an exploration of shared interests, but to a sudden hope of loot and plunder. Huxley often notes with exasperation that orthodox religion, of a kind which he himself finds pointless, still seems to retain its force, while science, even when believed, has less influence. He wants a transfer of spiritual assets. Wilson, noting the same phenomenon, wastes no time complaining but spits on his palms to set the matter right: “The time has come to ask: Does a way exist to divert the power of religion into the services of the great new enterprise that lays bare the sources of that power? [See note 2 above.] . . . Make no mistake about the power of scientific materialism. It presents the human mind with an alternative mythology that until now has always, point for point in zones of conflict, defeated traditional religion. Its narrative form is the epic, the evolution of the universe from the big bang . . .” (Wilson 1978, 193, 192).

Wilson’s attitude here may look a little superficially like Dobzhansky’s, but they differ profoundly. Dobzhansky is expressing his own highly complex faith, and he is much concerned with its difficulties. Wilson, in a manner all too familiar to Christians, is asking “what faith

does the age require?" He is in no doubt about the answer, which he gives in the conclusion of *On Human Nature*: "The true Promethean spirit of science . . . constructs the mythology of scientific materialism, guided by the corrective devices of the scientific method, addressed with precise and deliberately affective appeal to the deepest needs of human nature, and kept strong by the blind hopes that the journey on which we are now embarked will be farther and better than the one just completed" (Wilson 1978, 209). (It is of some interest that the hopes are blind.) He is chiefly concerned with how best to make converts. Dobzhansky, being deeply interested in other people's faiths and the problems which surround them, recognizes at once the religious elements in his own position and maps out the various religious and nonreligious paths which neighbor his own, considering them as real options. For Wilson the word *religion* seems to be little more than the banner of an alien tribe, whose assets are to be stolen. He seldom mentions any manifestation of religion which is not openly crude and contemptible. Dobzhansky sees that science and religion cannot, properly speaking, be in competition: "Science and religion deal with different aspects of existence. If one dares to overschematize for the sake of clarity, one may say that these are the aspect of fact and the aspect of meaning" (1967, 96). He deals with many local conflicts between views on both sides, but aims steadily to bring both into focus together. Wilson never doubts either that there is direct competition or that it has been won, since he thinks that science (in the form of sociobiology) has "explained" religion while religion cannot explain science (Wilson 1975, 559-62; 1978, 192)—a desperately confused suggestion. What Wilson is really trying to do is to account for the existence and power of religion on the uncriticized assumption that its whole content is nothing but a load of rubbish. Some people approach questions about the existence and power of sociobiology in the same sort of way, but it is not a very useful way to understand either phenomenon (see note 2 above).

One last contrast—Dobzhansky really does see the difference between ideals and predictions, and Wilson does not. Prophets can fairly deal in both these wares, but they must never mix them up. Predictions get their support from factual evidence. Ideals get theirs from considerations of value. From its outset the Wellsian tradition of prophecy, centering on a distorted, emotive notion of science, has mixed these methods. It has tended to represent its chosen version of the future as obligatory because it was going to happen anyway and also as inevitable because it was good. This confusion launches, under the banner of science, a farrago of ideas which are as indefensible scientifically as they are morally and which carry all the drawbacks of a religion without its advantages. In this paper I have dealt chiefly with one segment of such

ideas—a particular range of prophecies—because their remoteness both from real biological theory and from humanity's current problems is exceptionally plain. There also are plenty of other confusions which are just as dangerous. I think it will pay us to attend to them.

## NOTES

1. Terms such as *Omega Man* and *Destiny of Man*, as well as the related usage of *man*, in this essay are historical and reflect old and recognized "sexist" views. This word usage does not reflect my position, but to change it would obscure the point being presented.

2. Wilson, who shows considerable power to learn from controversy, has modified his simple predatory attitude in his later writings (1980). His book *Biophilia* (1984), makes a still further advance by admitting explicitly the lasting need for humanistic ways of thinging which will work alongside the sciences on an open-ended interpretative task, rather than being displaced and rendered obsolete by them in the crude way suggested by his earlier books. The crude pattern is, however, still so widely advertised and accepted that I have thought it best to point its weaknesses out explicitly here.

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