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The Evolutionary Basis for Religious Belief: Marx's Takeover Bid for Darwinian Sociobiology¹

May I begin with a word about the levels of approval which are enjoyed today by religion and science. The two stand in unexpected and reciprocal relations, where the predicted directions of their growth patterns are not borne out by events. On the one hand formal religion, which has been on the decline ever since the Renaissance, has failed to regress towards its final extinction, which was supposed to accompany the wider spread of the Enlightenment. It is evidently more deeply rooted in our behaviour patterns than had been thought. On the other side science has, during the centuries, been coming up towards its final triumph as the universal remedy for life. But instead of the expected adulation it is increasingly embattled by groups of critics whose attacks are many-sided and include:

Damage to the environment, such as destruction of the ozone layer by escape into the upper atmosphere of chemicals used in aerosols, or the killing of children by spruce budworm sprays;

fears about the outcome of "genetic engineering", perhaps through the accidental production of a pathogenic organism immune to antibiotics, or even eventually tinkering with the gene pool of humanity;

all sorts of doubts about nuclear research and development, ranging from over-costly proposals such as the Chalk River project to build a super-reactor called ING (rejected), to fears about our inability to find safe storage places for radioactive waste, or concern about the costs of power plants in both energy and money compared with their expected returns;

"subversive knowledge" which is seen as conflicting with the theories of ruling authorities, and ranges all the way from Galileo to the subject of the present report.

When theory and fact are at odds it is worthwhile to enquire why, and my purpose today is to look at one facet of the general dilemma.

The centrepiece of this paper is a dispute which has arisen about whether the behaviour and social structure of mankind is more correctly to be interpreted by the theories of Darwin or of Marx. It may be asked where religion comes in, since both of these gentlemen were atheists. But if, as evidence suggests, the tendency to religious belief is among our genetic characters, subject to the laws of heredity, then it may be argued that Marxism itself has become a theology. In many countries Marxism is part of a state-religious-complex which, as we shall see, is one of the oldest systems known to human civilizations. The Marxists then, may be taken to occupy the position in the modern dispute that was filled by the Bishops in the Darwinian debates of a century ago.

Our discussion is about recent expansions which have taken place in the scope of several familiar ideas. One of them concerns the term religion which, among materialist groups aggressively opposed to the supernatural, tends to become confused with political and social movements. Another is in the field of human evolution, evidence for which was originally developed from an examination of structures, but whose study today is concerned as well with behaviour. A third area of vigorous contemporary research is in the study of animal and human social groups, whose survival through natural selection may be aided by unit characters—Mendel's term, today we say genes—units for altruism and, among human beings, for religion.

Our central figure is Edward O. Wilson, who has written a trilogy that unfolded, like Mendel's laws or Darwin's thesis, out of his own field of research. The first volume was on insect societies, which led him in turn to apply to vertebrates the approach to population biology that had worked so well in explaining the social systems of insects. In the final chapter of the second book he argued that his approach could profitably be extended to the social sciences to explain the behaviour of man. "This suggestion" as Wilson remarks in understatement, "created an unusual amount of interest and controversy". In truth it evoked a renewal of the furore that had greeted Darwin's research findings a century earlier. The debate has now led Wilson to amplify his views in a third volume *On Human Nature* in which he develops, among other topics, his conclusion that religious practices can be mapped onto the two dimensions of genetic advantage and evolutionary change. But, as he warns, even if there is a material basis for religion, its comparative study will be difficult to in-

terpret, because human mythologies are unique and not derived in any direct way from animal behaviour.

The balance between heredity and environment could be examined using evidence derived from any of our elemental bases of behaviour: of sex and the family, of aggression and possession, of race relations, of food habits, or of altruism and religion. I have chosen religion because it invites a comparison between the early attacks on Darwin and the recent ones on his successor.

GODLESS RELIGIONS

In his Massey lectures, *Nostalgia for the Absolute*, George Steiner talks about the effects of the decline in influence of formal religions and churches on Western society. Various causes for the decrease have been cited, including the rise of scientific rationalism since the Renaissance; scepticism about superstition and the supernatural; Darwinism; modern technology. But really the causes are secondary—the point is that in the West the life-springs of theology have dried up.

When men are deprived of the beliefs which have governed their lives, and their father's lives, they are left with a deep-seated nostalgia for the absolute. That nostalgia—profound in most of us—was brought on by the decline of the ancient and magnificent architecture of religious certainty. We hunger for total explanation; we are starving for guaranteed prophecy. The response to our hunger has been to create substitute theologies or, as Steiner prefers to call them, mythologies. To qualify for the status of mythology, that is to attract widespread belief, a doctrine or body of thought must meet the criterion of totality; it must affirm that the analysis which it puts forward of your life and mine, is a total analysis. To become a religion, a mythology must claim to draw a complete picture of "man in the world" and invite people to offer themselves totally to a Founder, say Marx. Secondly, religious movements have usually begun with a remarkable event from which the entire system springs (publication of *Das Kapital*). Soon some of the disciples break away into rival groups or sub-mythologies or heresies; the orthodox in the movement will hate such heretics more violently than if they were heathen unbelievers, recognizing that heretics are the real threat. As its third criterion a true mythology will develop its own language, its own characteristic idiom, its own images, metaphors and dramatic scenarios, to be found for example in the Marxist analysis of capitalism.

Steiner goes on to suggest that our political and philosophic history of the past 150 years represents a series of attempts to fill the central emptiness left by the erosion of theology. The "Little Green Men" as he calls them, encompass one of the most discouraging and inadequate of the series of post religious mythologies. They flourish especially on our continent and include such beliefs as Astrology and Horoscopes, Flying Saucers, Clairvoyants, the Hidden Atlantis, saffron-robed votaries of Hare Krishna, Chariots of the Gods, and all the rest of the spooks.

Another post religious theology, whose description I shall not pursue, is called by Steiner "Voyages into the Interior", and deals with the variants of the science, or pseudo-science, of Freudian psychoanalysis. The classical theories of Freud, we are told, are already receding into history; they are not clinically verifiable and his techniques are falling into disuse.

Of all the substitute theologies, Marxism is the one that has had the widest acceptance and greatest influence. For millions it satisfies the criteria for a mythology. From the believer it asks for total commitment of conscience and person. In return it offers a complete explanation of man's biological and social reality and a hope for society's future redemption. It had an identifiable founder with his original small group of followers. Soon it acquired heretics like Trotsky and Mao who have been in ferocious conflict with the orthodox. To bring about the promise of Marxism: the withering away of the state and the classless society without poverty, oppression or war, generations of idealists have sacrificed their lives and have visited untold suffering on dissenters and heretics. In the academic world Darwinism has for a long time been an heretical view and today the chief dissenter-in-residence is Edward O. Wilson.

Like other materialistic faiths Marxism was from its outset savagely anti-religious with its Godless world and denial of an after life. Nonetheless its claims on the believer have always been religious in strategy and effect and have shown at decisive points the marks of a theological past. As we shall see later, it is central to Wilson's thesis that religion is a genetic character with a survival advantage for man; accordingly one may anticipate the gradual acceptance of the supernatural by Marxism.

The direction towards re-entry is evident in these quotations (cited from Wilson, the second one abbreviated):

From Mao Tse-tung: We must persevere and work increasingly, and we

too will touch God's heart. Our God is none other than the Chinese people.

From a Lenin disciple and spokesman: A real Communist becomes in a way a miracle man and will readily cast from his mind ideas in which he has believed for years, and will submerge his personality in the collectivity of the Party.

ORIGINS OF IMMORTALITY

The predisposition to religious belief is one of the universals of social behaviour, taking recognizable form in every human society from hunter-gatherer bands to socialist republics. Sixty thousand years ago, Neanderthal people in Iraq decorated a grave with seven species of flowers having medicinal and economic value, perhaps to honour a priest (Solecki). From the beginnings of divine belief in earliest times, authorities have traced the expansion into organized religions which accompanied the change from hunting, fishing, and nomadic herding into agriculture, some ten thousand years ago. Farming required a more reliable water supply than on-the-spot rainfall. Wittfogel documents in detail how the earliest civilizations, with their structured societies, originated around rivers, where elaborate and parallel class structures arose. The systems were first described for the East, and since then similar civilizations have been studied in Mexico and elsewhere in the Americas. Theirs were despotic governments whose heads included a ruler, peace chief, war leaders, and priests.

Commenting on the systems, Karl Marx noted that "climate and territorial conditions made artificial irrigation by canals and water-works the basis of Oriental agriculture" primarily rice. Construction activities led to the development of engineering and mathematics. Prediction of seasonal events led to calendar-making and astronomy, while the necessity to keep records led to counting and writing. While discussing the regulation of water in Egypt, Marx further observes "The necessity to calculate the periodic movements of the Nile created Egyptian astronomy and with it the rule of the priest cast as leader of agriculture". (*Das Kapital*, vol. 1.)

The prestige and maintenance of power by the rulers were closely linked to that of their divine protectors, who were eager to bulwark the legitimacy of the heads of state by underlining their supernatural support. The government engineers who created palaces also constructed temples to provide the supreme gods and their earthly functionaries with adequate surroundings for worship and residence.

From the dawn of the river civilizations, it was upon the head of state that the magic powers of the commonwealth converged. He was a god, or the descendant of a god, or a high priest with divine powers. He attached to himself and the government the symbols of supreme authority. Religious functionaries were the best educated class of society and were entrusted with many administrative and fiscal tasks. Through the priesthood, the ruler could claim divine sanction instead of using force to assist in keeping peace; the distinction between politics and religion virtually disappeared.

The West has followed a different and later route, with a feudal system changing gradually into capitalism and at the same time entering the age of science and materialism. Our rulers have found it necessary or prudent to renounce divine origin although the priesthood continues to claim supernatural powers with accompanying divine rights for themselves. In the nations still practicing oriental despotism (usually under its modern term "Dictatorship of the Proletariat") an inevitable struggle for dominance has taken place between state and church. Where the people need to be supplied with some absolute in which they can believe, it must be a secular one which can, as already noted, be gradually shifted to take on a divine status. Marxism fits divinity well since it stems from a metaphor of original sin and ends with a promise of redemption.

BIOLOGY'S UNIQUE HANDICAP

Our first effort in this discourse was to clarify a certain confusion which exists between religious and secular convictions. We turn now to peculiarly biological involvements. The history of science has been a search for principles which could bring order to a large body of hitherto discrete facts. Take chemistry for instance: its earliest classification was into four elements, earth, air, fire and water. Gradually knowledge was extended until, about the middle of the last century, Mendeleev unified the subject with his remarkable periodic table, which was so advanced that it was even capable of predicting the properties of still-undiscovered elements. During the early years of this century his table was expanded by the addition of radioactive elements which decayed into other ones. In the '30's another great expansion began with Urey's discovery of heavy hydrogen and the manufacture by the Joliot-Curies of the first of the long series of artificial elements. Throughout all these developments Mendeleev continued to be held in high honour and repute, as researchers developed, modified, and expanded his unifying principle.

The illustration provided by chemistry could be paralleled in other fields; indeed we think of science in general as a disinterested search for truth with no evident ideological base. Biology, like other sciences, has a long history of its search for order. In early times the variety of living creatures was encompassed by two classes, animals and vermin. Refinements to this simplistic explanation of life continued to appear until, just ten years before Mendeleev, Darwin offered in *The Origin of Species* his great unifying principle of natural selection. But, as we all know, Darwinism turned out to be too dangerous to the interests of churchmen to be left free for objective evaluation. It aroused a protracted storm of controversy which during this century has gradually become less prominent. But quite recently a new flare-up has appeared and a new idea is being pressed by some scientists—call it religious or political or ideological—an idea that in certain aspects of biology, research should be restricted so that unwanted conclusions may not appear. Questions concerned with the inheritance of human behaviour, or possible differences in intelligence between sexes or between races are to be regarded as “off limits”, and prudent scientists are warned to stay in an acceptable stream of research if they are to hope for funding and for publication in reputable academic journals (Graham, 1978).

As an aside to the activities of the private critics, one may query the prediction of George Orwell that by 1984 the control of thought would be in the hands of the state. It has turned out instead that in the West the pressures to conform come from private groups who are claimants of a certainty of rightness which is above scientific findings and for that matter above law.

ON SOCIOBIOLOGY

In the modern extension of Darwinism called Sociobiology, behaviour is studied as well as structure. Darwin's famous dictum “Man still bears in his bodily frame the indelible stamp of his lowly origin” is considered to take in his mental operations as well as his flesh and bones. It is held that behaviour should be pursued and its findings weighed as the best means we have of tracing the evolutionary history of the mind. Sociobiology carries with it the implication that much of man's behaviour towards his fellows may be a product of evolution. But how much? A key scientific issue concerns the extent to which human social behaviour is genetically determined (see Caplan, 1978).

Our nearest relatives, structurally, are the Old World monkeys and the great apes, and with them we share such behavioural patterns as these among others:

Our intimate social groups are about ten to one hundred adults, not two as in most birds, or thousands as often with fishes and insects. Males are larger than females and the larger among males compete more successfully for females. There is mild polygamy, so that the average male consorts with up to three females.

The young are moulded by a long period of social training with the mother, then with other children.

Social play is strongly developed, featuring mock aggression, sex practice and role practice.

Altruism and food-sharing with close relatives have been observed among chimpanzees.

There are parallels in styles of facial expression and in grimaces of fear, smiles and laughter.

Added to these shared characteristics, our own species is distinct in ways that can only be explained as a result of our unique set of some 250 thousand genes which bring about the composite human behaviour patterns. From a list of 67 cited by Wilson, here is a random sample: athletics, adornment, cooking, education, food taboos, hairstyles, language, law, medicine, propitiation of supernatural beings, religious rituals.

The heart of Darwinian evolutionary theory, as applied by Wilson, is that during the past five million years or so, genes determining many of the specifics of human behaviour spread through the population. Changes occurred under the influence of natural selection, random drift, etcetera, just as with the genes that determined the characteristics of human anatomy. Individuals who displayed the traits now considered distinctly human, stood a better chance of having their genes represented in the next generation. When the process began, man's progenitors were not yet in the genus *Homo*, much less the species *Homo sapiens*. Genetic fitness for human behaviour offered improved chances for personal and reproductive survival for the individual, as well as for his or her close relatives who shared the same genes.

Taboos against incest are among the universals of social behaviour which are supported by religious sanctions. In the case of the brother-sister taboo there is an even stronger than cultural enforcement, namely a physical sexual aversion which develops between small children. These taboos confer genetic fitness and a corresponding loss of fitness results from incest. Even a moderate amount of inbreeding

results in children who are diminished in stature, in muscular coordination, and in academic performance. More than one hundred recessive genes have been associated with hereditary diseases. It appears that natural selection has guided human beings into a favourable instinct based on genes.

THE NEW ANTI-DARWINISM

The general modern charge, which reaches back a century for its attack on Darwin, is that he was a product of his times, born in the England of *laissez-faire* capitalism. Presumably, like citizens of all ages, he did have the bias of his times, surely a stricture that could be universally applied. His critics have developed a sort of natural-selection-in-reverse theory, which is that Darwin looked at the structure of human society in England (so-called social Darwinism) and then applied it to nature generally (Gould, 1977). It is conceded by the critics that Darwin himself did not say that nature was constructed according to the business principles of early capitalism. But Karl Marx did. He wrote:

It is remarkable how Darwin recognizes among the beasts and plants, his English society with its division of labour, competition, opening up of new markets, 'invention' and the Malthusian 'struggle for existence'.

Marx was an admirer of Darwin and asked him to accept dedication of the second volume of *Das Kapital* but Darwin declined.

The overt attacks on Darwinism have come, first from the Right and latterly from the Left. The early critics of human evolution were church people who objected to Darwin as a materialist who threatened their established religious systems. Under the climate of materialism, which had come into vogue in Darwin's time, his ideas flourished and were accepted and his opponents were vanquished. In recent years the vigorous new assaults on the study of human evolution have been made by biologists of the radical Left, comprising an anti-Wilsonian centre of Harvard heretics. Prominent amongst the officially unled group are Richard Lewontin and Richard Levins (Allen, 1975; Wade, 1976). It is sometimes said that the new objectors to Darwinism differ from those of the past century because they are led by practicing biologists and are proponents of social change rather than stability. But the difference disappears when it is realized that the new assailants of natural selection are fundamentalist Marx-

ists who, like the Bishops, are fearful that their particular version of Truth might not survive the results of free scientific research.

The Bishops objected to Darwin on the ground that his ideas degraded the quality of man's spiritual life; the Marxists object to Wilson because his ideas are thought to reduce incentives for good behaviour. Both groups seek more agreeable ideas about the nature of man than science is likely to produce.

The acceptance of Darwinism was aided in his time by the general approval of free-enterprise capitalism. Today the situation is reversed and contemporary criticism of natural selection as applied to man derives its plausibility and effectiveness from disapproval of a human world of unrestrained competition. Darwin upsets the Left, according to whom the behaviour of animals ought to be presented as showing a socialist ideal of equality and sacrifice for the general good. Mutual aid or altruism becomes the theme. It is desirable among human beings and it can be observed among social animals: certain small birds, robins, thrushes, and titmice for example, warn others of the approach of a hawk by a distinctive whistle (Wilson).

One more aside: the attacks on evolutionary discoveries could lead easily to a denial of evolution itself, and so allow the advocates of Genesis to say "We told you so". It would be a weak debating position to deny Darwinism but affirm that evolution had indeed occurred through some mechanism not yet understood.

ALTRUISM

My own introduction to this section came many years ago from remarkable papers published by Trotter in 1908 and 1909. As he tells us, there are some animals whose conduct can be generalized very readily into the categories of self-preservation, nutrition, and sex, for instance the tiger or cat. The three solitary drives or primitive instincts attain their maximal activities only over short periods of time and in special circumstances, and are fundamentally pleasant to yield to. When the circumstances are appropriate for yielding to one, the others automatically fall into the background, so that they are only infrequently in conflict.

The behaviour of other animals is more complex, for example the dog, with his conscience, his humor, his terror of loneliness, and his devotion. A little examination will show that the animals whose conduct is difficult to generalize under the three primitive instincts are gregarious. Gregariousness then, is to be taken as a major biological

instinct. Trotter, following Karl Pearson, holds that there have been two very striking advances in complexity and in the size of the unit upon which natural selection acts. These are the passage from the unicellular to the multicellular, and from the solitary to the social. The appearance of the herd instinct introduces a conflict with the other three, since its sanctions inhibit physically pleasant acts and ordain deeds that may be unpleasant.

Trotter pointed out what a large segment of our lives is taken up with derivatives of the three primary instincts. The fear and aggression syndrome has evoked police forces, the legal profession, and the vast military array. Secondary sex activities include clothing habits and the social permissions and sanctions of betrothal, marriage and living together. From the requirement to eat has arisen all the preparatory techniques for food and drink and the customs developed for dining together in family or larger groups. On social occasions a cultured gentleman might be defined as one who knows what kind of wine he is sipping at a dinner.

It is a corollary of gregariousness, expounded originally by Pearson, that human altruism is a natural instinctive product. Man is altruistic because he must be, not because reason recommends it, for herd suggestion opposes any advance in altruism. When it can, the herd executes an altruist, not of course as such, but as an innovator.

And now let us return from the London of 1908 to the Harvard of 1978. As Wilson notes, generosity without hope of reward is the rarest and most cherished kind of human behaviour. However, any study of the evolutionary basis of self sacrifice and altruism is complicated by the many unselfish acts that are products of social development rather than of genetic inheritance. Wilson calls the latter "hard-core" altruism and suggests that it is restricted to helping close relatives and declines in intensity as relationship becomes more distant. It is reasoned that the Darwinian advantage of hard-core altruism of an individual lies in the improved chance of survival of his closest relatives who carry the same generous genes. Hard-core altruism or nepotism is an enemy of the development of civilizations beyond the small-tribe size. Family-style cooperation would soon reach its upper limit and be replaced by the imperatives of blood and territory. The genes of religion, however, may enter here to permit hard-core altruism to co-exist with large-size civilizations. For religion, with its system of supernatural rewards, bridges the gap between individual aggression and acceptable behaviour within national groups. The third-century dictum of Tertullian that "The blood of martyrs is the

seed of the church" and its contemporary reiteration by the Ayatollah of Iran, intimated that the purpose of sacrifice is to raise one human group over another. The effect of the policy has been to sanctify and channel individual aggression and bloodshed into the socially acceptable direction of large-scale war.

To accept the probability that supernatural religion has an hereditary basis is a blinding flash of the obvious. It clears up at once the difficulty of accepting the existence of group-selection altruism as well as the already genetically reasonable kin selection. The reward expected for the hard-core altruism of martyrs for the faith is to be obtained after death in a future world.

"Soft-core" or culturally evolved and selfish altruism is too familiar to warrant extended treatment. It is the predominant variety in our daily lives. The "altruist" expects rewards for himself and his relatives. Wilson rather cynically lists its psychological vehicles as lying, pretense, and deceit, including self-deceit.

REDEMPTION

Discussions about the control of man's behaviour in this world by the will of genes, invite comparison with the theological doctrine of predestined salvation or damnation of souls in the next world by the will of God. Marxist theologians do not accept gene predestination, but rather affirm that Marx wills the salvation of all souls. Capitalists however may be damned by reason of their resistance to the grace offered them. The natural selection of Darwin (who did not himself write on human behaviour) would reject the role of free will and imply that from eternity some souls are foreordained to success and others to failure. Wilson, a modernist, teaches that predestination is consistent with free will, since an individual is moved to behave according to his nature.

The position of Wilson's Harvard-centred critics seems to set up a distinction between our earth-bound human bodies with gene controlled animal functions, and something comparable to a soul through which desired motives can be evoked, and where heredity through natural selection no longer operates. By some philosophers, the soul has been seen as a useful element in a system of ethics, and a worldly soul would be equally useful to biologists and others who did not wish to confront unacceptable scientific directions.

From the Left it is held that people, free from the blight of heredity, can be brought by indoctrination into the attitudes and behaviour

towards social equality that socialist theory requires them to have. (It will be recalled that in earlier times the Russians denied the general rules of heredity, as the name of Lysenko will bring to mind.) The relatively recent scholarly attempt to undermine Darwin has turned to active hatred of Wilson's supposed claim that human beings are fixed in an important fraction of their behaviour, by their genes.

The pivotal indictment against Wilson is that he follows Darwin as the new leader of the long parade of advocates of biological predestination, whose work has served to excuse society from the acceptance of its responsibility for social problems. Such people provide the scientific base for expectation that the world will continue with existing social arrangements which include racial and anti-feminist prejudices, genocide and the rest. So even if Wilson's argument is right, is not research in sociobiology so fraught with the possibility of misuse that it should be stopped? Scientists in this field, it is asserted, must be held accountable for the political consequences of their academic activities, such as policy towards discrimination, militarism, and social injustice. Theirs is indeed a heavy burden, to be escaped only by offering up their souls to Marx and coming forward to be born again.

THE FUTURE OF TRUTH

The belief that the natural sciences would fill the emptiness left in the human spirit by the decay of religion was one of the major forces bringing about the decay:

To pragmatic thinkers the rise of the sciences was logically inseparable from the decline of religion. As Marx argued, religion itself would be recognized as having been little more than a naive, anthropomorphic attempt by the human species to understand the natural world and its many enigmas. By moving from the spurious explanations of theology to genuine scientific understanding, man would satisfy the cravings of the human spirit and of the human soul for truth.

But can science assuage the nostalgia, the hunger for the absolute? What, today, is the status of the classical concept of truth? There is, for the first time in the Western tradition, an incongruence, a coming out-of-phase, between truth and human survival, between the rational pursuit of truth and contrasting ideals of social justice. It is not only that the truth may not make us free, but that it may destroy us. (Steiner)

How should we respond to the political and social implications of the

dilemma? Should we say with the antagonists of Wilson's Darwinism: we are not interested in your results, we do not even want to know them? Society has not reached a point of balance in which it can handle that kind of dynamite. Stop your research. We won't finance it. We won't accredit your laboratories. We won't give degrees for theses written in that field. Or do we say, on the contrary, all right, go ahead, pursue your research to whatever end of truth it leads. And if the end is totally unbearable in moral terms, too bad, that's how the universe is built and we simply cannot stop research.

Wilson's solution is to recognize that religion as well as altruism is to be considered as part of our genetic inheritance, which will make it respectable for materialists to adopt. He hopes to abolish the dilemma by bringing biological thought into the centre of the social sciences and humanities. Recognizing that religious mythology will remain with us, he offers the evolutionary epic as probably the best base for a myth that we will ever have. Its particular merit is that scientific materialism can rearrange its great goals from the pursuit of pure knowledge.

The social scientists and humanistic scholars, not omitting theologians, will eventually have to concede that scientific naturalism is destined to alter the foundations of their systematic enquiry by redefining the mental process itself.

The rituals of religion, especially the funeral rites and the sanctification of nationhood, are deeply entrenched and incorporate some of the most magnificent elements of existing cultures. They will certainly continue to be practiced long after their etiology has been disclosed. The anguish of death alone will be enough to keep them alive. It would be arrogant to suggest that a belief in a personal God will disappear. (Wilson)

There have been many other proposals for secular, materialistic religions. One wonders how we have come so far without having the environment presented as a claimant to status as the real, all embracing, formal mythology. Some have made approaches to the idea (Hayes, 1976). Environmental idealism is rooted in our Western religious traditions, according to which the quality of our surroundings has fallen, because of our sins, from some Garden of Eden ideal to its present deplorable state. Through our faith and work it is eventually to be redeemed to new glory (formerly only in Paradise, now thought to be awaited in this world).

And so one could go on and on through science-based theologies. But in the end the essential fault remains: no matter how much you

fiddle with definitions, materialism and myth remain complementary if not contradictory terms. In the face of real human needs and experience, both have failed in the totality test.

Science cannot really satisfy our nostalgia for the absolute because the disinterested pursuit of truth, subject to logical constraint, is not a universal. Science has withheld recognition of the other vision of truth, beyond rational grasp, or experimental control; this is the mystical tradition, the part of Asia inside Western man. The churches have fought for ownership of the mystical tradition, claiming that any "truth higher than truth" comes under their control; it is revealed to man by divine intervention. And science, in the heat of its general struggle against the supernatural, has been led to overstate its own case; has pretended that it can offer total explanations; has neglected to develop an alternative mode of thought and feeling.

Although science's brand of truth cannot offer a complete picture of man, and hence is found wanting as a substitute theology, it does supply fully the need of half the brain, and it might use the new sociobiology in its possession to buy half ownership in a more comprehensive mythology. At stake is the most interesting question in the world today: whether our civilization, or our species, or for that matter all higher life, can be saved from imminent extinction. Can the trick be accomplished by channeling the primary instincts, moderated by family ties, through the religious genes, to bring about a strong enough unity of purpose among mankind to oppose destruction successfully? My own experience offers nothing to contradict the verdict given by Trotter at the end of the First World War:

Throughout the enormously long period during which modern man has been established on the earth, human society has been left to the uncontrolled contention of constructive and destructive forces, and in the long run the destructive have always proved the stronger. Whether the general level of consciousness will reach the height necessary to give a decisive predominance to constructive tendencies, and whether such a development will occur in time to save Western civilization from the fate of its predecessors, are open questions. The small segment of the social process of which we have direct knowledge in the events of the day has no very encouraging appearance.

NOTES

1. The third A. C. Neish Memorial Lecture, delivered at Dalhousie University, March 16, 1979. Roger Doyle has kindly furnished assistance and advice and has critically read the manuscript.

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