

Commentary

THE PARADOX OF HUMAN GOODNESS

by Max Hamburg

Edward O. Wilson in a chapter entitled "From Sociobiology to Sociology" of his monumental *Sociobiology: The New Synthesis* suggests that scientists and humanists should consider together the possibility that the time has come for ethics to be removed temporarily from the hands of philosophers and be biologized.¹ Although most scientists have joined humanists in disdaining this suggestion, this is exactly what has happened. I can think of no better example of the "biologization of ethics" than the theologian-scientist Ralph Wendell Burhoe's paper, "Religion's Role in Human Evolution: The Missing Link between Ape-Man's Selfish Genes and Civilized Altruism," which is written with a sophistication and command of genetic and evolutionary theory until very recently expected only of a handful of specialists or their graduate students at the most prestigious universities.²

The rubbing of elbows of biology with ethics has of course considerable history and goes back to the popularizers of Charles Darwin and those who attempted to translate the "theory of evolution" into a system of ethics or rather nonethics. Attempts to jump from scientific analysis of naturalistic processes to their philosophical and ethical implications impose on biologists an awful responsibility not only because of the nonsense that can be written but because of the consequences inherent if that nonsense ever becomes a call for action. To paraphrase P. B. Medawar, people who have brandished naturalistic principles at us in the past have usually been up to no good. Think only of what we have suffered from a belief in the existence and overriding authority of the fighting instinct, from the doctrines of racial superiority, the metaphysics of blood and soil, from the belief that warfare between men or nations represents fulfillment of historical as well as biological laws. If the biologist wants to justify schemes of

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conduct and reject others he must do better than point to the living arrangement of some successful species and suggest "please copy."³

The so-called sociobiology debate between humanists and scientists has been carried on with renewed vigor and at a level of knowledge-ability of each other's territory that was altogether lacking among the neo-Darwinists of a generation ago. It also has been carried on in a relatively free, conversational style that is conducive to the generation of new, unorthodox, and provocative ideas.⁴ In this spirit I wish to respond to Burhoe's essay with considerable informality, with more of a "stream of consciousness" style than with a classic, precise, neat, and orderly rebuttal or point-by-point evaluation. This reflects a lack of certainty that is part of my mood as I ponder the ancient questions of the "moral imperative," its origins and validity that have been raised anew by the sociobiology debate and critically reviewed by Burhoe. Furthermore, the measure of a new theory, such as the one offered by Burhoe, is not the totality of eternal truths it may reveal but the stream of new ideas that are released when the mind of the creator of a new hypothesis collides with the minds of his readers. Therefore I will set down some of the reverberating circuits that have been generated in my mind by "Religion's Role in Human Evolution."

The central issue to which Burhoe addresses himself is the so-called paradox of human altruism. The intellectual dilemma biologists find themselves in when called upon to explain altruism is briefly this: According to L. Tiger and R. Fox, "we are wired for hunting, for emotions, the excitements, the curiosities, the regularities, the fears and the social relationships that were needed to survive in the hunting way of life. And we are wired basically on a primate model. This primate wiring was adjusted and re-adjusted for over seventy-million years before we emerged as distinct from the rest of our order. In this perspective even the forebrain is an afterthought. The cerebral cortex struggles with a heritage it did not ask for and has frequently wished aloud it did not have."⁵ But how shall we explain behavior that invests efforts for the benefit of others at the expense of self with no immediate or at best only delayed reward in sight?

INADEQUATE EXPLANATIONS OF ALTRUISM

Kin selection, group selection, and reciprocal altruism, all have been invoked to explain such biological, unlikely behavior as the dedication to others of Albert Schweitzer or the saintliness of a Francis of Assisi.⁶ Kin selection, first developed by W. D. Hamilton, asserts that benefits of altruistic behaviors always accrue to the kin of self-sacrificing animals that share sufficiently large amounts of genetic substance with

the benefactor to justify the cost of self-denial.⁷ For example, a parent who sacrifices himself for his child is directing his altruism toward one-half of his own genes.

Kin selection strikes indeed a familiar cord, for it is not altogether new concept. It merely restates that "blood is thicker than water." It is of course easiest for parents to be good to their children, less easy though for children to be good to their parents, in spite of the fact that in either case one-half of the DNA is shared by one with the other. I am not convinced though that parents of adopted children are less inclined to be self-sacrificing than are parents of natural children as would be expected by the logic of kin selection. I also like to think that on a sinking boat it will still be women and children first—not offsprings, then parents, then brothers and sisters, after that uncles, aunts, cousins, and nephews in that sequence, and only then, if at all, strangers with whom we share no genes. Furthermore, the fireman who risked his life carrying a child out of a burning building or my Dutch lady friend who thought it her duty to hide ten Jews on her farm during the Nazi occupation will be surprised to learn that they were merely acting on behalf of their own DNA, intent on preserving and maximizing it over and above all others.

I am not trying to make fun of the concept of kin selection or deny its role as a point of origin and as a strong propellant toward ethical behavior of an evolving humanity. But the totality of the finished product cannot be ascertained from knowledge of the precursor just as the workings of a sophisticated jet or of a modern car cannot be derived from the blueprints of the brothers Orville and Wilbur Wright's Kitty Hawk or Henry Ford's Model T. Somewhere along the "ascent of man," we must have learned to fool ourselves that our brothers or sisters include those with whom we share no genes.

An alternative explanation is offered by the theory of reciprocal altruism first proposed by R. L. Trivers and strongly defended by Wilson.⁸ Trivers argues that natural selection indeed can favor individuals who commit benevolent acts toward strangers even though they do not share in their gene pool. Such individuals temporarily may ignore their needs and neglect their own survival, provided there is a reasonable likelihood that their efforts will be reciprocated in time. In such a scheme natural selection should favor the altruist. By this strategy his overall survival chances should be increased over that of the egoist because the ratio of benefit obtained over the cost expended remains in his favor.

Group selection constitutes the third alternative that has been proposed to explain altruism to mankind. As J. Maynard Smith points

out, selection of a group, population, or deme instead of selection of an individual organism can work only in reproductively totally isolated populations, a condition which seems to exist rarely in nature.⁹ To paraphrase Theodosius Dobzhansky, are we to conclude that in man natural selection favors the ethical codes, which benefit the group at the expense of the individual? Such a view would leave unresolved the ethical paradox of conflicting interests between the individual and the society to which he belongs. Should he always sacrifice himself to the interest of his group, and does the group always have the right to expect its members to do so? This is of course one of the greatest problems facing mankind. All the great literatures and philosophies have struggled to resolve this conflict, and most of them have found that the only solution is to accept a divine sanction as the foundation of ethics. The crumbling of this foundation in our day leaves a terrible void in the human soul.¹⁰

I share then with the author of "Religion's Role in Human Evolution" the reservation he expresses with respect to the validity of either kin selection, reciprocal altruism, or group selection to explain the paradox of man's ethical behavior.

BURHOE'S PROPOSAL

Burhoe offers us another way out of the puzzle of human altruism by proposing the following theory: Society operates like an independent species which we as individual organisms are adapted to serve. Non-selfish behavior then can be explained as genetically programmed reciprocity with a "creature" with which we have entered into a symbiotic relationship.

The idea of the symbiosis of man with a "sociocultural organism" that is itself the product of his own creation would have been a difficult concept to swallow for the classical biologists and ethicists of only a generation ago. But Burhoe's concept may seem neither incongruous nor far out to the generation that enters the 1980s in anticipation of the possibility that soon the computers they themselves created may talk back and challenge them in a battle of wills, which the computers probably will win.

The similarities between the information transfer that perpetuates a biological species and the one that perpetuates a culture and civilization has been referred to frequently in the literature of sociobiology. Further, another type of similarity between biological evolution and the progression of cultures and civilization has been pointed out by Oswald Spengler and more recently by Arnold Toynbee in his study of history.

Spengler, it may be recalled, proposed that civilizations or cultures be conceived as organisms undergoing youth, maturity, and unavoidable decline. Taking his cue from history, Toynbee's conception resembles Spengler's with civilization going through the same cycles. Growth and differentiation depend on the emergence of what Toynbee calls the "creative minorities," the equivalent of biological mutants, who must come up with the ideas by which to shape governments, strategies, social contracts, and codes of laws and ethics, all of which are endowed with a life of their own. The emergence of a multiplicity of voices in the form of creative minorities should infuse the community with a polymorphism of its own which would guarantee that new solutions can be found to meet new challenges if and when they present themselves.

Of course, Toynbee's biological parallel is to J. B. de Monet Lamarck, not Darwin, and to the evolutionary synthesis formulated by modern geneticists. Yet this brief statement of Toynbee's thesis may suffice to convey the similarity of his conception of a "society civilization" with the biological "species population" and Burhoe's model of a "sociocultural organism" independent of but symbiotic with man.

Suggestive as many of Toynbee's, Spengler's, and Burhoe's conclusions may be, a growing number of historians have found it ever more difficult to overlook the rather far-reaching differences between organisms and society, thus qualifying the similarities upon which their theses are erected. Nevertheless, the idea that man may be double programmed—by DNA transfers as well as by the sociocultural modification of his nervous system (learning) that makes him a reasonable, willing, pliable, and beneficial symbiont to that other nonbiological entity—offers a useful model for explaining human altruism, a model that has never been explored with greater imagination than by Burhoe.

TELEOLOGICAL VIEWS AND A NEUTRALIST ALTERNATIVE

Before following Burhoe any further onto the path of "symbiosis" we may ask once more if this trip is really necessary. The search for the resolution of the paradox of man's goodness which is the central theme of Burhoe's article is itself occasioned by the loyalty which biologists share with the theologians' "teleological-type" arguments.

For the theologian there is a divine purpose for everything that "is." The purpose of any part of creation is, up to a point, recognizable to all who are capable of intense introspection and beyond that to the few who are the recipients of the grace of divine revelation. Accord-

ing to another type of teleological article of faith shared by many respectable biologists, who are also good students of Darwin, whatever "is" (whether structure, physiological mechanism, or behavior) exists because of the benefits provided to the strategy of life.

Lately there have appeared some cracks in the certainty with which theologians predicate "divine purpose" for whatever "is" or happens and also in the almost universal prejudice subscribed to by biologists that natural selection alone determines the spread of a gene in a population.

Theologians, especially the Jewish ones who cannot come to terms with the Holocaust, have proposed the concept of the finite God. According to this concept the grandeur of God who sets into motion the drama of evolution would be diminished greatly should he insist on constant and repeated intervention and interference with the execution of the grand design. Every act of creation carries with it the loss of control, lest the product be robots rather than creatures. The idea of a finite God originated with Edgar Sheffield Brightman, who defined it thus: "God may be omniscient, he may be omnipresent, but according to this view, he is not omnipotent. This view of God puts forth the idea that in the universe there is a kind of irrationality over which God has no control. For the theory of the finite God is the more coherent view that takes account of the factual situation of the world with all its evil and seeming irrationalities, and still permits recourse to a God, for those who are in need of it."¹¹

In biology, according to self-respecting neo-Darwinists, the nature of the game is survival. Events that are associated with survival and reproductive success will be selected preferentially in succeeding generations. Gene mutations that tend to obstruct this strategy are not likely to be preserved in the population but fall victim to extinction, which is in the cards for almost all species that fail to make proper adjustment to changing environments.

This theory has been challenged recently by the theory of neutral genes.¹² According to the neutralist theory of evolution, most molecular changes and variability within a species resulting from them are caused not by selection but by random drift of mutant genes that are selectively equivalent. Most of the mutant genes that are detected only by the chemical techniques of molecular genetics are selectively neutral, that is, they are adaptively neither more nor less advantageous than the genes they replace. At the molecular level most evolutionary changes are caused by the "random drift" of selectively equivalent mutant genes.

It would be conceivable that, insofar as it is genetically dependent, ethical behavior like any other gene mutation or block of gene muta-

tion became fixed by accident or by "random genetic drift." There is no need to search for selective advantages where only pure chance has operated, say the neutralists.

For them the "ethical animal" that evolved by genetic drift is engaged in the most unlikely of biological behavior. The "moral imperative" as such is therefore totally unrelated to the "biological imperative," but both are selectively equivalent. Therein may be the real paradox of "human altruism"—at least for the neutralists.

But the laws governing molecular evolution are clearly different from those governing phenotypic evolution, and Darwinian selection acts mainly on phenotypes that are shaped by the activity of multiple sets of genes. So, upon surveying existing genotypes, the more conservative of us most likely will continue to search for "selective advantages" whose existence we postulate a priori, convinced that in time we can demonstrate them also a posteriori.

ALTRUISTIC AND SOCIAL BEHAVIOR

To get some leverage on the so-called paradox of human altruism it might be worthwhile to distinguish altruistic from just social behavior.

Social behavior whether in ants or primates, as everyone having taken a course in biology knows, is rarely as unselfish as the poets think. There is always a quid pro quo. Thus to quote William Etkin:

The ant nurses are not such disinterested martyrs to maternal love after all. In fondling and in feeding the young they receive a reward in the form of secretions formed by the larvae. Being a biologist, we use an appropriate Latin polysyllable to describe this exchange; we call it trophallaxis. Experiments indicate that the mammalian mother's appetite is specifically stimulated for the substance contained in the fluids and coverings of the fetus. In almost all mammals, when the infant is born the mother licks it clean. She does so because she likes to. She not only licks the fluids but eats the placenta [afterbirth] and the umbilical cord right up to the umbilicus where fortunately she stops.¹³

I venture to guess that any behavior pattern that was initially invented to assure the survival of the species probably does so by providing some deep and continuous satisfaction to the individual organism also. Thus feeding is tied to the taste buds, reproductive behavior assures propagation of the species by giving release to the libido of the individual members of the population, and aggression probably became so firmly established as a strategy of life by satisfying the need to release frustration. Also socialization and mutual cooperation probably carry their own deeply satisfying rewards, such as the overcoming of fear as we find safety in numbers, or the sense of self-

confidence as we change places in the pecking order and take turns at being hammer or anvil respectively.

The great moral heroes, whom we often try so unsuccessfully to emulate, have taught us, however, a much more advanced practice than the mutual aid exercised routinely by socializing animals of the kind first described by Peter Kropotkin.¹⁴ The immortal sergeant who shot himself so that the rest of his company could escape the enemy trap, the Catholic priest who changed places with a Jew in the line that was destined for the gas chamber, Francis of Assisi who cared enough about the birds to preach to them—their examples inspire in us something more than just socializing.

Ethics, like music or the sense of numbers, really may constitute a skill or talent that is distributed very unequally among the members of the species. If skill is defined as an adequate or more than adequate response to perceived reality, like the facility to recognize relationships between numbers and the ability to manipulate them, sensitivity to the needs of others may constitute the basic “ethical skill” which is requisite for the recognition of the “moral imperative” and the readiness to act on it. The example of Francis of Assisi may be so inspiring not because preaching to the birds or, for that matter, helping animals is morally relevant but because we instinctively trust a person who can sense the needs of creatures that are incapable of communicating them to be more talented also in the recognition of the need of his fellow men. Conversely we suspect anyone who abuses animals as morally not trustworthy and ethically retarded, although his actions or lack of them may be morally irrelevant.

If it is indeed true that major strategies of life are reinforced by linking hypothalamic rewards to them—such as stimulation of the taste buds for feeding, release of libido for reproduction, release of frustration for aggression—then the genes for altruism may be pleiotropic (having multiple phenotypic expressions) for a program that also predisposes the limbic system for the emotion of pity.

Arthur Schopenhauer, who was probably the only neo-Kantian philosopher who might have understood Darwin, emphasized the importance of pity as the prime propellant for moral behavior. In fact Schopenhauer based his whole system of ethics on the emotion of *Mitleid*, long before Konrad Lorenz recognized pity as a major ingredient of quasi-ethical behavior.¹⁵ Schopenhauer’s concept of *Mitleid* was of course not restricted to the ability of commiseration but encompassed the ability of total identification with the plight of a fellow human being.

A moral situation is really a very specific and very unique rendezvous in which two partners are cast, the one(s) in need vis-à-vis the

one(s) who can meet that need. The “ethical skill” required to solve a moral situation depends on the threshold of perception of the other’s need and the willingness to act on it.

While one does not want to derive normative ethics from evolutionary descriptions of nature in a way that commits the naturalistic fallacy, still a legitimate issue on which bioethicists can speculate is whether ethical behavior makes sense in the evolutionary scheme.

The name of the game in human evolution may well be maximal genetic diversity. Altruism may be a most effective tool to increase and preserve genetic diversity insofar as it leads to the protection of genotypes that, if left to their own devices, may be lost to the gene pool or be prevented from teaching other members some of the tricks they have learned.

The creation of diversity, which in all other species is met by filling the genetic reservoir with sufficient variations, may have to be supplemented by more Lamarckian methods in the human situation. In a species like the human, where individual differences must be maximized far in excess of that required in all other species, neither genetic mutation and selection nor the stereotyped altruism of the kind practiced in the beehive or anthep will suffice. Instead an altruism based on the perception of and sensitivity to the very specific, extraordinary, and often unique needs of the “other” may constitute the basic “ethical skill” requisite for the exercise of all subsequent forms of altruistic or benevolent behavior.

BIOLOGY AND RELIGION

On the question of whether religion sufficiently represents the link between primitive man’s selfish genes and his civilized behavior—especially in pluralistic sociocultural systems that have other institutions besides organized religion that shape the values of persons—I should like to pass.

Yet, while I find it difficult to follow Burhoe’s speculation all the way, something rings a bell when he says: “The gods were indeed proper symbols of the hidden realities that explained why life was as it was and why men do what the combined and fairly well coadapted cultural and genetic information in them told them they must do.”¹⁶ The over 2,500-year-old efforts, dating back to Socrates and Plato, to find a rational justification for “moral law” have not really attained their objective. This is not to belittle the many insights to be found in a good textbook of the history of ethics. But the various formulae equating the good with the utilitarian whether measured in economic, evolutionary, or more recently genetic terms are really variations of

the same "naturalistic fallacy" that stopped us from embracing John Stuart Mill or Jeremy Bentham when we took our first course in philosophy. The "ought" can never be derived logically from the "is."

The source of the "moral imperative" presents of course no problem for those, and only for those, who accept the authority of God as the ultimate law giver. Those of us who cannot do this will have to give assent to a law whose source of authority remains anonymous and for which man seems genetically ill equipped. It is probably no accident that the sense that ethical injunctions are imposed from outside is shared by both those who uphold their belief in an outside authority for validation of their moral beliefs and those who reject such authority.

Sociobiology lists a number of gene-controlled behavior traits which we share with the old primates and others that are uniquely human, such as facial expressions, elaborate kinship rules, incest avoidance, semantic symbol language that develops in the young on a relatively strict timetable, close sexual bonding, parent-offspring bonding, male bonding, and territoriality. Sociobiology claims that all these are species-specific traits, the consequence of the unique human genetic program or biogram.

If Burhoe makes a similar claim for the construction of belief in a transcending God, or other religious beliefs and practices, he will get the same argument sociobiology got from cultural anthropologists, namely, that religious theory, like most of the other traits enumerated, is not on the ethnographic record universal. The ease with which multitudes in the West have abandoned belief in a transcendent being and its corresponding set of practices, they would argue, suggests that the construction of such beliefs and their ritual is per se not a consequence of a peculiar human biogram.

This possible reservation does not obscure my fascination with attempts to find in the great religions, such as Hinduism, Buddhism, Judaism, Christianity, Confucianism, and Islam, awareness foreshadowing recognition of profound truths about the human condition that also are discovered by scientists. For example, biologists, anthropologists, and psychologists traveling by different routes have come to favor quite independently the theory that altruistic behavior may have originated and evolved from the bond that is established between parents and offspring, which is unusually strong in primates and among those in hominids. W. Gaylin notes how in superior prose Genesis and Exodus and the Gospels stress the importance of this bond: "The tenth and most awful plague on the house of Egypt was the death of the firstborn; when God wished to test Abraham, the

sacrifice of Isaac was demanded; and finally, the only offering sufficient to demonstrate the extent of God's love of man was the sacrifice of His Son."¹⁷

The bible admonishes that "thou must love thy neighbor as thyself." Translated into modern bioethical theory, this injunction may read: "Act toward your neighbors as if they were closely related to you, or as if they shared a considerable number of identical genes with you."

To all those whose interest in the evolution of altruism and of ethical behavior has been sparked by recent trends in biology, sociobiology, genetics, and evolutionary theory and by theories of the promotion and propagation of the selfish gene, I recommend the scriptures as a gold mine of insight about the human condition and the human predicament. The evolution of ethical behavior that transformed a stereotyped, genetically fixed program regulating social behavior to the practice of altruism directed at first mainly toward those who share our gene pool—eventually to be extended to all members of the species—presents us with a story, the telling and interpretation of which cannot be monopolized by genetics, ethology, sociobiology, and anthropology. Some of the highlights of this story are recorded metaphorically but with supreme eloquence and insight in the scriptures, which I recommend for this reason, but not only for this reason, to every biologist and to nonbiologists as well.

NOTES

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