Do Genes Determine Morality?

An Adventist scientist examines the challenge of sociobiology to Christian concepts of values and behavior.

by Ronald L. Carter

What is love? How does one define beauty? Are hope and faith related? Is altruism inherited or cultivated? Who or what decides issues of morality and questions of value?

Time was when such concerns were the uncontested responsibility of philosophers and theologians. Christians, for example, looked at love, faith, hope, and moral values as uniquely human qualities that were evidence of God's special creation of humanity. Those who believed in a personal God took solace in the fact that science held little authority in the study of the origin of human values and faith.

But today, the ground seems to be shifting. The theory of organic evolution has affected society in profound and fundamental ways. Deeply rooted as it is in the paradigm of naturalistic evolution, modern science ventures into areas that were once the primary responsibility of metaphysics or religion. Evolutionary biologists, particularly those who specialize in sociobiology, propose purely naturalistic theories of how social and "moral" behavior have evolved.

For example, sociobiologists claim to understand the genetic nature of altruistic (selfless) behavior. Some even propose the evolutionary steps that supposedly produced the human concept of "righteousness" and triggered the human need for religion.

A biological basis for social behavior?

In 1975, Edward O. Wilson, a Harvard University entomologist, published his now famous book, *Sociobiology: The New Synthesis*.[1] Wilson defined sociobiology as the "systematic study of the biological basis of social behavior and the organization of societies in all kinds of organisms, including human beings." This definition combined genetic concepts from the 1930s and fitness concepts from Hamilton[2] and Williams[3] in a creative and comprehensive manner. Wilson's new synthesis precipitated a surge of interest in social behavior. It fired the imagination of behavioral scientists and became a popular topic for discussion and debate. The discussion on this subject in the late 1970s and early 1980s was quite contentious. Many laypersons as well as scientists, especially anthropologists and social scientists, reacted violently to Wilson's book. Their concerns were tinged by fears that such sociobiological reasoning would revive forms of racist social Darwinism.[4]

The debate created confusion primarily because it proposed evolutionary mechanisms that seemed to threaten aspects of Darwinian evolution, which viewed the action of natural selection to be primarily focused at the level of the individual organism. Darwin's theory had become synonymous with the phrase, "survival of the fittest." Sociobiology appeared to challenge this interpretation by promoting the idea that the gene, not the individual, is the primary unit of evolution. Thus, from this perspective the individual is just a vehicle to transfer genetic material from one generation to another.[5]

Rather than destroying Darwinian evolution, as some predicted, sociobiology in a sense came to the rescue of natural selection theory for selfless behaviors. Curious and bizarre behaviors that perplexed Darwin and his followers came to be interpreted in the light of sociobiology.

The role of genes in behavior

The centerpiece of sociobiological theory integrated an understanding of altruistic and cooperative behaviors into three concepts: inclusive fitness (Hamilton[6]), kin selection (Maynard-Smith[7]), and reciprocal altruism (Trivers).[8] Hamilton first enunciated the general principle that natural selection tends to maximize not individual fitness but inclusive fitness; that is, the probability of a gene being passed on depends not only on the survival of a specific individual carrying the gene, but on the total number of copies of the gene that may be transmitted by an entire group of related individuals: Kin selection, or the ability to perform acts of altruism to benefit close relatives, is an important part of the inclusive fitness theory.

According to this concept, it would be adaptive for an individual to lay down its life for two or more brothers or eight or more first cousins. Brothers share, on the average, half of their genes, and first cousins share one-eighth of their genes. Altruistic acts are adaptive only if one's inclusive fitness produces a net gain for a particular gene.[9] Thus, the inclusive fitness of an individual depends not only upon the survival of its descendants but also of its close relatives.

If one assumes that behavior is genetically caused, altruism towards kin can be regarded as selfishness on the part of the genes responsible, because copies of the same genes are likely to be present in close relatives. Altruism could also be regarded as a form of gene selfishness if by being altruistic an individual could ensure reciprocal altruism at a later date. The concept of genetic altruism, along with various forms of "cooperation," provides examples of ways in which non-kin "altruism" can result from selfish genes that seek to increase their probability of perpetuation.

One animal's risking its life for another or giving up its reproductive opportunities to assist other adults in care of young appeared to Darwin to be against the "survival of the fittest" concepts that he had so carefully documented. A mother bird feigning a broken wing to lead a predator away from its chicks; a prairie dog acting as a sentinel to stand watch for other prairie dogs; adult Florida jays forgoing their own breeding while assisting other adults in nest care are but a few examples of behaviors that were inexplicable by Darwinian concepts of survival of the fittest.

By applying inclusive fitness concepts, sociobiology has provided answers to these and many other apparent dilemmas for Darwinian concepts of selection. For example, the prairie dog giving an alarm call when a predator appears may decrease its individual fitness or survival, but may increase its inclusive fitness by helping its close relatives. Behavior and genetic studies have discovered that when young ground squirrels mature, the males disperse to distant places before they settle down and choose a territory. Young females don't disperse, but set up territories nearer home. Consequently females have many close relatives living near them, but males do not. Just as the theory predicts, it is the females who give the alarm calls and therefore risk their lives.[10] The altruistic acts of "helper" Florida scrub jays as well as many other acts of apparent selflessness have been shown to be genetically consistent with kin selection predictions.[11]

Within insects Wilson observed forms of social behavior ranging from hermit-like solitary behavior to fully developed caste systems where complex societies divide labor and enslave other species to work for them. He combined his observations on the evolution of various forms of social behavior with the new understanding of altruism (true genic selfishness) and proposed these mechanisms as the seed from which human morality and religion grew. In his view, kin groups cooperating for mutual aid and inclusive fitness maximize behaviors that help each other, not out of "brotherly" love, but because their genes have been selected to produce behavior that maximizes the probability of their transmission to succeeding generations.

Implications for Christians

While sociobiology has proven to be a useful theory in the study of behavior ecology and social behavior, its logical conclusions when applied to human behavior have very troubling implications for Christians.

Sociobiology advances the belief that human and animal behavior results solely from interaction between genes and environment under the forces of natural selection and chance. Wilson says that "no species, ours included, possesses a purpose beyond the imperatives created by its genetic history" and that the human species "lacks any goal external to its own biological nature." Our selfish genes have therefore created "the human mind as a device for survival and reproduction."[12] Essentially this makes us selfish gene producing machines.[13]

Naturalistic evolutionary biology leaves no room for God or moral absolutes. From this perspective, right and wrong can be measured only in the context of evolutionary outcomes. "Innate censors and motivators exist in the brain that deeply and unconsciously affect our ethical premises; from these roots, morality evolved as instinct."[14]

Morality in the Christian or in the traditional sense is absent from evolutionary theory. Even in the concept of Darwinian fitness—that which is "best" or "fittest"—can only be defined and said to be true for a particular set of ecological conditions at any particular time. Therefore any attempt to draw a set of ethical standards from evolutionary theory will at best be relativistic and conditional.

Sociobiologists have applied their theories to a wide range of social issues. They have developed ideas based on inclusive fitness to answer questions regarding rape, homosexuality, infanticide, incest taboos, sexual dimorphism, polygamy, and monogamy. Their explanations are rooted in the belief that our selfish genes have made us what we are, because any behavior fixed into our gene pool must have been advantageous for survival.

Sociobiology has attempted to put the study of morality and ethics on a purely materialistic basis. Wilson says that science "may soon be in a position to investigate the very origin and meaning of human values, from which all ethical pronouncements and much political practice flow."[15] He further suggests that scientists and humanists should together consider the possibility that the time has come for ethics to be removed temporarily from the hands of philosophers and theologians and entrusted to biologists.

Although most scientists disdain this suggestion, in reality this is exactly what has happened.[16] Sociobiologists who speak out on the subject of morals and altruism are often accused of committing the "naturalistic fallacy" (is/ought fallacy), which was made famous by social Darwinists who attempted to justify a survival of the fittest-based natural theology or rationale. Wilson and other leading sociobiologists are not advocating that we create ethics based on what is in nature. Many of them believe humans should use their highly evolved brain to go beyond instinct. In their view, the use of intellect and group consensus can lead to a higher ethic through cultural evolution. Wilson believes that religion evolved via natural selection and is therefore useful for our survival, but that it is now time for science to help create religious expression that will contribute to preserving life on earth.

Says Wilson: The "principal task of human biology is to identify and to measure the constraints that influence the decisions of ethical philosophers and everyone else, and to infer their significance through neurophysiological and phylogenetic reconstructions of the mind....In the process it will fashion a biology of ethics, which will make possible the selection of a more deeply understood and enduring code of moral values."[17]

A Christian Response

Any attempt to define morals and ethics on the basis of evolutionary theory clearly challenges core beliefs of the Seventh-day Adventist Church and the Christian community at large. How should we respond? Some students confronted with the logic of sociobiology and its utility in the study of animal behavior have abandoned faith in the Bible. Others have rejected all forms of evolution. At first it may seem that sociobiology requires a choice between the Scriptures and evolution theory.

Certainly, theories of naturalistic evolution that reject God are incompatible with the Bible, but this does not mean that the Scriptures and aspects of sociobiological reasoning are incompatible. Most of what is known about the evolutionary process, its mechanisms and selection forces are understandable with even a conservative reading of the Scriptures. The Bible tells us that since the beginning great changes have occurred within God's creation, particularly as a result of the Fall, and that these changes have been passed down from generation to generation.

I believe that God's laws of nature apply to both human and other creatures and that organisms were created with behaviors as well as morphologies that have since undergone generations of change driven by mutations and recombination and have been shaped by natural selection. As a result, part of human character reflects generations of natural selection that has emphasized the selfish side of our nature. The Bible tells us that humans are not totally biologically determined but have a measure of free will that allows them to seek the ability from God to act in ways that are truly altruistic. Such behavior is not just the result of gene modification and biological determinism.

It is possible that the basic process of kin selection and its effect on inclusive fitness has operated within humans and within the other created groups of organisms. Acceptance of this notion does not require that one assume that all of life has evolved from one cell or that evolution has created morality.

Having said all that, the Christian response to the challenge of science in the arena of morality and values remains inescapable.

First, a commitment to truth. More than ever before, it is necessary for

Christians to develop ways to integrate truths that are revealed from a variety of sources, biblical as well as scientific while maintaining a high view of Scripture. A commitment to one need not imply a denial of the other.

Second, a more active involvement in developing values. There is much that Christians can learn from other methods of inquiry, including sociobiology, about how values are learned, developed, and nurtured, and how moral development takes place. At a time when humanity, including the scientific community, is searching for ways to replant the seeds of morality and values into society, and at a time when once cherished moral and value systems seem to be collapsing all around, the Christian has both a religious and sociological duty. Surely Christians, particularly Adventists, who have a compelling commitment to an objective value system and unshakable faith in God's power to transform human beings, must not shirk their responsibility to society in fostering the development of solid values.

Third, a challenge to life-style. Ultimately the belief that God is the Giver of all moral laws and the Enabler to keep them will be tested in the court of human life-style. Do we in our conduct show evidence that, because of our trust in God, are able to be self-interested and at the same time selfless? ❑

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