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Sociobiology— Another Biological Determinism

Sociobiology Study Group of Science for the People

Biological determinism represents the claim that the present states of human societies are the specific result of biological forces and the biological "nature" of the human species. Determinist theories all describe a particular model of society which corresponds to the socioeconomic prejudices of the writer. It is then asserted that this pattern has arisen out of human biology and that present human social arrangements are either unchangeable or if altered will demand continued conscious social control because these changed conditions will be "unnatural." Moreover, such determinism provides a direct justification for the status quo as "natural," although some determinists dissociate themselves from some of the consequences of their arguments. The issue, however, is not the motivation of individual creators of determinist theories, but the way these theories operate as powerful forms of legitimization of past and present social institutions such as aggression, competition, domination of women by men, defense of national

territory, individualism, and the appearance of a status and wealth hierarchy.

The earlier forms of determinism in the current wave have now been pretty well discredited. The claims that there is a high heritability of IQ, which implies both the unchangeability of IQ and a genetic difference between races or between social classes, have now been thoroughly debunked.

The simplistic forms of the human nature argument given by Lorenz, Ardrey, Tiger and Fox, and others have no scientific credit and have been scorned as works of "advocacy" by E. O. Wilson, whose own book, *Sociobiology: The New Synthesis*, is the manifesto of a new, more complex, version of biological determinism, no less a work of "advocacy" than its rejected predecessors. This book, whose first chapter is on "The Morality of the Gene," is intended to establish sociology as a branch of evolutionary biology, encompassing all human societies, past and present. Wilson believes that "sociology and the other social sciences, as well as the humanities, are the last branches of biology waiting to be included in the Modern Synthesis" (p. 4).

This is no mere academic exercise. For more than a century the idea that human social behavior is determined by evolutionary imperatives operating on inherited dispositions has been seized upon and widely entertained not so much for its alleged correspondence with reality as for its more obvious political value. Among the better known

examples are Herbert Spencer's argument in *Social Statics* (1851) that poverty and starvation were natural agents cleansing society of the unfit, and Konrad Lorenz's call in 1940 in Germany for "the extermination of elements of the population loaded with dregs," based upon his ethological theories.

In order to make their case, determinists construct a selective picture of human history, ethnography, and social relations. They misuse the basic concepts and facts of genetics and evolutionary theory, asserting things to be true that are totally unknown, ignoring whole aspects of the evolutionary process, asserting that conclusions follow from premises when they do not. Finally, they invent ad hoc hypotheses to take care of the contradictions and carry on a form of "scientific reasoning" that is untestable and leads to unfalsifiable hypotheses. What follows is a general examination of these elements in sociobiological theory, especially as elaborated in E. O. Wilson's *Sociobiology*.

A VERSION OF HUMAN NATURE

For the sociobiologist the first task is to delineate a model of human nature that is to be explained. Among Wilson's universal aspects of human nature are:

- territoriality and tribalism (pp. 564-565);

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- indoctrinability—"Human beings are absurdly easy to indoctrinate—they seek it" (p. 562);
- spite and family chauvinism—"True spite is commonplace in human societies, undoubtedly because human beings are keenly aware of their own blood lines and have the intelligence to plot intrigue" (p. 119);
- reciprocal altruism (as opposed to true unselfishness)—"Human behavior abounds with reciprocal altruism," as for example, "aggressively moralistic behavior", "self-righteousness, gratitude and sympathy" (p. 120);
- blind faith—"Men would rather believe than know" (p. 561);
- warfare (p. 572) and genocide (p. 573)—"the most distinctive human qualities" emerged during the "autocatalytic phase of social evolution" which occurred through intertribal warfare, "genocide" and "genosorption."

The list is not exhaustive and is meant only to show how the outlines of human nature are viewed myopically, through the lens of modern Euro-American culture.

To construct such a view of human nature, Wilson must abstract himself totally from any historical or ethnographic perspective. His discussion of the economy of scarcity is an excellent example. An economy of relative scarcity and unequal distribution of rewards is stated to be an aspect of human nature:

"The members of human society sometimes cooperate closely in *insectan* fashion [our emphasis], but more frequently they compete for the limited resources allocated to their role sector. The best and the most entrepreneurial of the role-actors usually gain a disproportionate share of the rewards." (p. 554)

There is a great deal of ethnographic and historical description entirely contradicting this conception of social organization. It ignores, for example, the present and historical existence of societies not differentiated in any significant way by "role sectors"; without scarcities differentially induced by social institutions for different subpopulations of the society; not differentiated by lower and higher ranks and strata (Birket-Smith 1959; Fried 1967; Harris 1968; Krader 1968).

Realizing that history and ethnography do not support the universality of their description of human nature, sociobiologists claim that the exceptions are "temporary aberrations" or deviations. Thus, although genocidal warfare is (assertedly) universal, "it is to be expected that some isolated cultures will escape the process for generations at a time, in effect reverting temporarily to what ethnographers classify as a pacific state" (p. 574).

Another related ploy is the claim that ethnographers and historians have been too narrow in their definitions and have not realized that apparently contradictory evidence is really confirmatory.

"Anthropologists often discount territorial behavior as a general human attribute. This happens when the narrowest concept of the phenomenon is borrowed from zoology. . . it is necessary to define territory more broadly . . . animals respond to their neighbors in a highly variable manner. . . the scale may run from open hostility. . . to oblique forms of advertisement or *no territorial behavior at all*" (our emphasis).

"If these qualifications are accepted it is reasonable to conclude that territoriality is a general trait of hunter-gatherer societies." (pp. 564-565)

Wilson's view of aggression and warfare are subject to this ploy of all-embracing definition on the one hand and erroneous historical-ethnographic data on the other. "Primitive" warfare is rarely lethal to more than one or at most a few individuals in an episode of warfare, virtually without significance genetically or demographically (Livingstone 1968). Genocide was virtually unknown until state-organized societies appeared in history (as far as can be made out from the archeological and documentary records).

We have given only examples of the general advocacy method employed by sociobiologists in a procedure involving definitions which exclude nothing and the laying of Western conceptual categories onto "primitive" societies.

HUMANS AS ANIMALS—THE MEANING OF SIMILARITY

To support a biologicistic explanation of human institutions it is useful to claim an evolutionary relationship between the nature of human social institutions and "social" behavior in

other animals. Obviously sociobiologists would prefer to claim evolutionary homology, rather than simple analogy, as the basis for the similarity in behavior between humans and other animals; then they would have a *prima facie* case for genetic determination. In some sections of *Sociobiology*, Wilson attempts to do this by listing "universal" features of behavior in higher primates including humans. But claimed external similarity between humans and our closest relatives (which are by no means very close to us) does not imply genetic continuity. A behavior that may be genetically coded in a higher primate may be purely learned and widely spread among human cultures as a consequence of the enormous flexibility of our brain.

More often Wilson argues from evolutionary analogy. Such arguments operate on shaky grounds. They can never be used to assert genetic similarity, but they can serve as a plausibility argument for natural selection of human behavior by assuming that natural selection has operated on different genes in the two species but has produced convergent responses as independent adaptations to similar environments. The argument is not even worth considering unless the similarity is so precise that identical function cannot be reasonably denied, as in the classic case of evolutionary convergence—the eyes of vertebrates and octopuses. Here Wilson fails badly, for his favorite analogies arise by a twisted process of imposing human institutions on animals by metaphor, and then rederiving the human institutions as special cases of the more general phenomenon "discovered" in nature. In this way human institutions suddenly become "natural" and can be viewed as a product of evolution.

A classic example, long antedating *Sociobiology*, is "slavery" in ants. "Slavemaking" species capture the immature stages of "slave" species and bring them back to their own nests. When the captured workers hatch, they perform housekeeping tasks with no compulsion as if they were members of the captor species. Why is this "slavemaking" instead of "domestication"? Human slavery involves members of one's own species under continued compulsion. It is an economic institution in societies producing an economic surplus, with both slave and product as commodities in exchange. It has nothing to do with ants except by weak and meaningless analogy. Wilson expands

the realm of these weak analogies (chapter 27) to find barter, division of labor, role playing, culture, ritual, religion, magic, esthetics, and tribalism among nonhumans. But if we insist upon seeing animals in the mirror of our own social arrangements, we cannot fail to find any human institutions we want among them.

GENETIC BASES OF BEHAVIOR

We can dispense with the direct evidence for a genetic basis of various human social forms in a single word, "None." The genetics of normal human behavior is in a rudimentary state because of the impossibility of reproducing particular human genotypes over and over, or of experimentally manipulating the environments of individuals or groups. There is no evidence that meets the elementary requirements of experimental design, that such traits as xenophobia, religion, ethics, social dominance, hierarchy formation, slave-making, etc., are in any way coded specifically in the genes of human beings.

And indeed, Wilson offers no such evidence. Instead, he makes confused and contradictory statements about what is an essential element in the argument. If there are no genes for parent-offspring conflict, then there is no sense in talking about natural selection for this phenomenon. Thus, he speaks of "genetically programmed sexual and parent-offspring conflict" (p. 563), yet there is the "considerable technical problem of distinguishing behavioral elements and combinations that emerge . . . independently of learning and those that are shaped at least to some extent by learning" (p. 159). In fact, it cannot be done.

Elsewhere, the *capacity* to learn is stated to be genetic in the species, so that "it does not matter whether aggression is wholly innate or acquired partly or wholly by learning" (p. 255). But it does matter. If all that is genetically programmed into people is that "genes promoting flexibility in social behavior are strongly selected" (p. 549) and if "genes have given away most of their sovereignty" (p. 550), then biology and evolution give no insight into the human condition except the most trivial one, that the *possibility* of social behavior is part of human biology. However, in the next phrase Wilson reasserts the sovereignty of the genes because they "maintain a certain amount of influence in at

least the behavioral qualities that underly the variations between cultures." It is stated as *fact* that genetical differences underly variations between cultures, when no evidence at all exists for this assertion and there is some considerable evidence against it.

Since sociobiologists can adduce no facts to support the genetic basis for human social behavior, they try two tactics. First, the suggestion of evolutionary homology between behavior in the human species and other animals, if correct, would imply a genetic basis in us. But the evidence for homology as opposed to analogy is very weak. Second, they postulate genes right and left and then go on to argue as if the genes were demonstrated facts. There are hypothetical altruist genes, conformer genes, spite genes, learning genes, homosexuality genes, and so on. An instance of the technique is on pages 554-555 of Wilson's book: "Dahlberg showed that *if* a single gene appears that is responsible for success and upward shift in status. . ." and "Furthermore, *there are many* Dahlberg genes. . ." (our emphases throughout). Or on page 562: "*If we assume* for argument that indoctrinability evolves. . ." and "Societies containing higher frequencies of conformer genes replace those that disappear. . ." (our emphasis). Or consult nearly any page of Trivers (1971) for many more examples.

Geneticists long ago abandoned the naive notion that there are genes for toes, genes for ankles, genes for the lower leg, genes for the kneecap, or the like. Yet sociobiologists break the totality of human social phenomena into arbitrary units, which they reify as "organs of behavior," postulating particular genes for each.

EVERYTHING IS ADAPTIVE

The next step in the sociobiological argument is to try to show that the hypothetical, genetically programmed behavior organs have evolved by natural selection. The assertion that all human behavior is or has been adaptive is an outdated expression of Darwinian evolutionary theory, characteristic of Darwin's 19th century defenders who felt it necessary to prove everything adaptive. It is a deeply conservative politics, not an understanding of modern evolutionary theory, that leads one to see the wonderful operation of adaptation in every feature of human social organization.

There is no hint in *Sociobiology* that at this very moment the scientific community of evolutionary geneticists is deeply split on the question of how important adaptive as opposed to random processes are in manifest evolution. More important, there is a strain in modern evolutionary thought, going back to Julian Huxley, that avoids much of the tortured logic required by extreme selectionism, by emphasizing allometry. Organs, not themselves under direct natural selection, may change because of their developmental links to other features that are under selection. Many aspects of human social organization, if not all, may be simply the consequence of increased plasticity of neurological response and cognitive capacity.

The major assertion of sociobiologists that human social structures exist because of their superior adaptive value is only an assumption for which no tests have even been proposed. The entire theory is so constructed that *no tests are possible*. The mode of explanation involves three postulated levels of the operation of natural selection: (1) classical individual selection to account for obviously self-serving behaviors; (2) kin selection to account for altruistic behaviors or submissive acts toward relatives; (3) reciprocal altruism to account for altruistic behaviors toward unrelated persons. All that remains is to make up a "just-so" story of adaptation with the appropriate form of selection acting. For some traits it is easy to invent a story. The "genes" for social dominance, aggression, entrepreneurship, successful deception, and so on will "obviously" be advantageous at the individual level. For example, evidence is presented (p. 288) that dominant males impregnate a disproportionate share of females in mice, baboons, and Yanamamo Indians. In fact, in the ethnographic literature there are numerous examples of groups whose political "leaders" do not have greater access to mates. In general it is hard to demonstrate a correlation of any of the sociobiologists' "adaptive" social behaviors with actual differential reproduction.

Other traits require more ingenuity. Homosexuality would seem to be at a reproductive disadvantage since "of course, homosexual men marry much less frequently and have far fewer children" (Dr. Kinsey disagreed, and what about homosexual women?). But a little ingenuity solves the problem: "The homosexual members of primitive

societies may have functioned as helpers. . . [operated] with special efficiency in assisting close relatives" (p. 555). Kin selection saves the day when one's imagination for individual selection fails.

Only one more imaginative mechanism is needed to rationalize such phenomena as friendship, morality, patriotism, and submissiveness, even when the bonds do not involve relatives. The theory of reciprocal altruism (Trivers 1971) proposes that selection has operated such that risk taking and acts of kindness can be recognized and reciprocated so that the net fitness of both participants is increased.

The trouble with the whole system is that nothing is explained because everything is explained. If individuals are selfish, that is explained by simple individual selection. If, on the contrary, they are altruistic, it is kin selection or reciprocal altruism. If sexual identities are unambiguously heterosexual, individual fertility is increased. If, however, homosexuality is common, it is a result of kin selection. Sociobiologists give us no example that might conceivably contradict their scheme of perfect adaptation.

VARIATIONS OF CULTURES IN TIME AND SPACE

There does exist one possibility of tests of sociobiological hypotheses when they make specific *quantitative* predictions about rates of change of characters in time and about the degree of differentiation between populations of a species. Population genetics makes specific predictions about rates of change, and there are hard data on the degree of genetic differentiation between human populations for biochemical traits. Both the theoretical rates of *genetic* change in time and the observed *genetic* differentiation between populations are too small to agree with the very rapid changes that have occurred in human *cultures* historically and the very large *cultural* differences observed among contemporaneous populations. So, for example, the rise of Islam after the 7th century to supreme cultural and political power in the West, to its subsequent rapid decline after the 13th century (a cycle occupying fewer than 30 generations) was too rapid by orders of magnitude for any large change by natural selection. The same problem arises for the immense cultural differences between

contemporary groups, since we know from the study of enzyme-specifying genes that there is very little genetic differentiation between nations and races.

Wilson acknowledges and deals with both of these dilemmas by a bold stroke: He invents a new phenomenon. It is the "multiplier effect" (pp. 11-13, 569-572), which postulates that very small differences in the frequency of hypothetical genes for altruism, conformity, indoctrinability, etc., could move a whole society from one cultural pattern to another. The only evidence offered for this "multiplier effect" is a description of differences in behavior between closely related species of insects and of baboons. There is, however, no evidence about the amount of *genetic* difference between these closely related species nor how many tens or hundreds of thousands of generations separate the members of these species pairs since their divergence. The multiplier effect, by which any arbitrary but unknown genetic difference can be converted to any cultural difference you please, is a pure invention of convenience without any evidence to support it. It has been created out of whole cloth to seal off the last aperture through which the theory might have been tested against the real world.

AN ALTERNATIVE VIEW

It is often stated by biological determinists that those who oppose them are "environmental determinists," who believe that the behavior of individuals is precisely determined by some sequence of environmental events in childhood. Such an assertion reveals the essential narrowness of viewpoint in determinist ideologies. First, they see the individual as the basic elements of determination and behavior, whereas society is simply the sum of all the individuals in it. But the truth is that the individual's social activity is to be understood only by first understanding social institutions. We cannot understand what it is to be a slave or a slave owner without first understanding the institution of slavery, which defines and creates both slave and owner.

Second, determinists assert that the evolution of societies is the result of changes in the frequencies of different sorts of individuals within them. But this confuses cause and effect. Societies evolve because social and economic activity alter the physical and social

conditions in which these activities occur. Unique historical events, actions of some individuals, and the altering of consciousness of masses of people interact with social and economic forces to influence the timing, form, and even the possibility of particular changes; individuals are not totally autonomous units whose individual qualities determine the direction of social evolution. Feudal society did not pass away because some autonomous force increased the frequency of entrepreneurs. On the contrary, the economic activity of Western feudal society itself resulted in a change in economic relations which made serfs into peasants and then into landless industrial workers with all the immense changes in social institutions that were the result.

Finally, determinists assert that the possibility of change in social institutions is limited by the biological constraints on individuals. But we know of no relevant constraints placed on social processes by human biology. There is no evidence from ethnography, archeology, or history that would enable us to circumscribe the limits of possible human social organization. What history and ethnography do provide us with are the materials for building a theory that will itself be an instrument of social change.

REFERENCES CITED

- Birket-Smith, K. 1959. *The Eskimos*, 2nd ed. Methuen, London.
- Fried, M. 1967. *The Evolution of Political Society*. Random House, New York.
- Harris, M. 1968. Law and order in egalitarian societies. Pages 369-391 in *Culture, Man and Nature*. Crowell, New York.
- Krader, L. 1968. Government without the state. Pages 29-42 in *Formation of the State*. Prentice Hall, Englewood Cliffs, N.J.
- Lorenz, K. 1940. Durch Domestikation verursachte Störungen arteigenen Verhaltens. *Zeitschrift für angewandte Psychologie und Charakterkunde* 59: 56-75. (As quoted in Cloud, W., 1973, *Winners and Sinners. The Sciences* 13: 16-21).
- Livingstone, F. 1968. The effects of warfare on the biology of the human species. Pages 3-15 in M. Fried, M. Harris, and R. Murphy, eds. *War: The Anthropology of Armed Conflict and Aggression*. Natural History Press, Garden City.
- Spencer, H. 1851. *Social Statics*. Chapman, London.
- Trivers, R. 1971. The evolution of reciprocal altruism. *Q. Rev. Biol.* 46: 35-57.
- Wilson, E. O. 1975. *Sociobiology: The New Synthesis*. Harvard University Press, Cambridge, Mass.