



SOCIOBIOLOGY, ANTI-SOCIOBIOLOGY, AND HUMAN NATURE

by Anthony Leeds

The acclaim that greeted Edward O. Wilson's *Sociobiology* as a breakthrough in various domains of biological and social sciences has had its match in critical attacks on the author's failure to understand human cultural and social organizations as well as attacks on some basic misconceptions in biology itself. In this essay, I address only the question of "human nature," specifically Wilson's sociocultural misconceptions about human nature, which is also a central, unresolved problem for his critics.

The key issue with which both sides must deal is this: Innumerable human sociocultural universals clearly indicate a biological basis. At the same time *all specifics* of these universals are highly varied in form and content (e.g., all aspects of culture and social organization), exchangeable among distant populations (e.g., the diffusion of Western-style haircuts around the world), and rapidly responsive to changes in situation (e.g., rapid social reorganization after a crisis such as the Irish famine of 1845-48).

That these specifics cannot be genetically determined is clear. All human sociocultural behavior is based upon postulation, on the taking for granted, on assumption, that something exists, is real, or necessary, without proof. *What* is postulated has no genetic foundation whatever. Moreover, a uniquely human reflexivity permits man to observe himself as object—to detach himself from his physical, biological, or cultural self—with profound consequences. A quite different model of the relationship between the *genetic* foundation of the species and its *behavior* is needed for human beings than the models afforded by any other species. The model for humans must deal with

genetic structures generating broad, formless universals, within which nongenetic generators of behavior define form, content, and meaning.

The biological sciences are far from dealing with such a problem. Despite Wilson's 500 pages of data and argumentation about various animals purporting to show the evolution of characteristics such as altruism and self-interest (based on the conceptual work of Robert Trivers), the behavior of even the most highly organized social animals and insects does not provide a satisfactory model for the behavior of postulating and reflexive humans.

Wilson's Human Nature and Epistemology

Wilson's book presents a theory of human nature that can be set forth fairly simply despite elements of contradiction within the text and in the author's own post-publication statements.* In his text, Wilson conceives human nature to be biologically based; Hence the subject matters of the social sciences and humanities—human societies and cultures—constitute essentially biological phenomena. The ultimate reduction of the social sciences and humanities to branches of the biological sciences appears to be the object of Wilson's polemic; his title indicates the road.

Wilson's conception takes many shapes. It includes the postulation of genes for this or that supposed single attribute of human behavior, such as guilt, homosexuality, spite, gullibility, etc. (and postulation it is, since no "homosexual gene" or "gullibility gene" has been identified). Numberless passages indicate that human nature is based in specific genes, produced

* "Variation in the rules among human cultures, however slight, might provide clues to underlying genetic differences, particularly when it is correlated with variations in behavioral traits known to be heritable" (*Sociobiology: The New Synthesis*, p. 550). The entire section of which this passage is an example attempts to geneticize human behavior. Yet Wilson, in an interview published Nov. 9, 1975, told the *New York Times*, "I see maybe 10 percent of human behavior as genetic and 90 percent as environmental." The two positions are incompatible.

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through a Darwinian natural and sexual selection. This notion is one for the geneticists and biochemists to argue, but it does seem palpably contrary to what is known of the biochemical make-up and the genes.

A key aspect of Wilson's conception of human nature, which sets the arguments of the entire book, appears on the opening page:

Camus said that the only serious philosophical question is suicide. That is wrong even in the strict sense intended. The biologist, who is concerned with questions of physiology and evolutionary history, realizes that self-knowledge is constrained and shaped by the emotional control centers in the hypothalamus and limbic system of the brain. These centers flood our consciousness with all the emotions—hate, love, guilt, fear, and others—that are consulted by ethical philosophers who wish to intuit the standards of good and evil. What, we are then compelled to ask, made the hypothalamus and limbic system? They evolved by natural selection. That simple biological statement must be pursued to explain ethics and ethical philosophers, if not epistemology* and epistemologists, at all depths. Self-existence, or the suicide that terminates it, is not the central question of philosophy. The hypothalamic-limbic complex automatically denies such logical reduction by countering it with feelings of guilt and altruism.

Here we have a traditional Western mind/body dualism, sanctified by apparently scientific backing. Wilson's dualism counterposes, on one side, reason, rationality, mind, intellect and, on the other, unreason, irrationality, body, emotions. The emotions are irruptive, violent, bestial: They "constrain our knowledge," "flood our consciousness," and prevent "logical reduction." Emotions located in an archaic system in the evolution of animal species—"the hypothalamic-limbic complex"—destroy the order of the world. Suicide is an irrational, not a moral-philosophical act. Because the limbic system appears relatively early in the evolution of higher animals, Wilson assumes that this "system" is bestial in character, a major *a priori* that provides the structure for his whole argument.

Knowledge and knowing, for Wilson, come not from emotions but from "reason," exemplified entirely by predicative discourse, as in language and mathematics. Wilson either does not

* Or theory of the nature of knowledge.

know or simply avoids mentioning epistemologies that deny this entire mode of thought, such as that of Lancelot Law Whyte, a physicist and biologist (not listed in Wilson's immense bibliography or index), who turns the entire conception upside down. In *The Universe of Experience: A World View Beyond Science and Religion* (Harper, 1974), Whyte sees all primary knowledge as coming from the unconscious and emotional life.

SSG's Human Nature and Epistemology

Shortly after Wilson's book appeared, an outcry against its conception of human nature arose. The earliest and still one of the main antagonists was the Boston-based Sociobiology Study Group (hereinafter SSG or "antagonists"), which published the first broadside against *Sociobiology* in the *New York Review of Books* on November 13, 1975. I have been a member of the SSG* since shortly after its inception and was also a signatory to a second article, "Sociobiology—Another Biological Determinism," published in *BioScience* in March 1976. In essence, the SSG asserted that Wilson's whole conception of human nature was limited to our time and place in the universe—ours, as a capitalist, competitive, invidiously alienated people in a United States that is now the central world power. I think this criticism is substantially true, but not basic.

The SSG also asserted that a scientific basis for attributing genetic foundations to human sociocultural characteristics was entirely absent. No specific genes for specific attributes have been isolated (nor could they be, since genes do not work that way). The similarities of human genetic structures are far greater among human populations than the enormous diversity of sociocultural manifestations, which can change drastically at very rapid rates in a given population and be diffused from population to population—or can even be taught to *older* generations.

Some broad relationship between genetically structured species characteristics of *Homo sapiens* and specifiable sociocultural domains cannot be avoided, however. The relationship is clearly *not* Wilson's simple-minded genetic determinism, but it is also not his antagonists' environmentalism. This point is absolutely central to understanding and moving beyond the

* Members included microbiologist Jon Beckwith, biologist Richard Lewontin, zoologist Steven Gould, biologist Ruth Hubbard, microbiologist Hiroshi Inouye, all of Harvard; psychologist Steven Chorover of M.I.T.; and psychiatrist Herb Schreier of Massachusetts General Hospital.

controversy involving Wilson, other sociobiologists, and their antagonists.

The SSG's form of argument is called environmentalism. By some it is called (rightly in my view) "extreme environmentalism," because it regards humans as essentially beings of cultural norms and the institutions derived from them. Environmentalism ascribes the characteristics of (human) behavior to environmental conditions and situations; its extreme version denies that any significant human behavior has biological foundations. In SSG's initial attack in the *New York Review of Books*, this statement was included (over my strong objection): "We suspect that human biological universals are to be discovered more in the generalities of eating, excreting, and sleeping than in [highly selected human habits]."* These functions are shared with, among other animals, the dog, viper, goose, and ass, with which I prefer not to be identified.

The SSG, then, found itself in a very peculiar position. It had, in fact, stated that the only attributes common to humans—regarding which *Homo sapiens* might be said to have a human nature—were essentially identical to those of other animals, the "bestial" ones.

At the same time, these antagonists of Wilson claimed that all those things that make *Homo sapiens* distinctively human—culture, institutions, "rationality" as contained and expressed in science and language—were denied the status of human nature on the grounds of the relativism of sociocultural variability. In so doing, the SSG denied the goals and activities of the social and humanistic sciences searching for universals—particularly anthropology, which looks not only for sociocultural universals but also for their basis in *Homo sapiens'* biological species characteristics. The SSG's gross evasion of specifically human universals (discussed below) and failure to deal with the disciplines that study them strike me as thoroughly anti-intellectual and nihilistic. In effect, the SSG adopted the same basic epistemology as Wilson's—one that separates mind and body and opposes cultural rationalities to "bestialities." It thereby denies a large body of contemporary thought offering alternative epistemologies. In the present controversy between Wilson and one group of his critics (the SSG), the antithesis echoes the thesis.

In what follows, I present several problems that now one, now the other, party to the controversy—and sometimes both, given their philosophical and substantive positions—cannot treat. These problems come in part out of various sorts of inquiry in

* *New York Review of Books*, Nov. 13, 1975, p. 43.

AGAINST "SOCIOBIOLOGY"

Excerpt from a letter to the editors of the New York Review of Books, November 13, 1975, from a group of students and professors in the Boston area, sharply critical of Edward O. Wilson's Sociobiology:

What Wilson's book illustrates to us is the enormous difficulty in separating out not only the effects of environment (e.g., cultural transmission) but also the personal and social class prejudices of the researcher. Wilson joins the long parade of biological determinists whose work has served to buttress the institutions of their society by exonerating them from responsibility for social problems.

anthropology, although they are not restricted to that discipline, in part out of my own work and experience. Each area is one in which major research should and could be carried out.

The first problem is that of human universals. Historically, the idea of universals was not phrased in terms of a set of elements, but appeared in such concepts as the universality or catholicity of the Church, along with its explanatory theology. A later idea is that of the "psychic unity of mankind," which has permeated anthropology explicitly, and other disciplines implicitly, for at least a century. It asserts that all human populations are characterized by the same attributes and functions of mind. Thus, the basic perceptual and cognitive processes are identical. In effect, we can all understand each other fully; cultural and language differences are only local and secondary. In principle, total translatability within our species is possible, while interspecies translatabilities scarcely exist. Our concepts of most, or all, major human sociocultural processes are built on this idea.

More recent inquiry has been more analytic and less concerned about the species as such than about behavioral domains. Linguists are concerned with "language universals"—structural properties such as negation, predication, and question formation, found in all languages.

Many disciplines are concerned with the universal occurrence of metaphor—visual, aural, and especially, linguistic. In a sense, all language is metaphor, since all words are, at best, arbitrarily encoded allusions to selected attributes only (a strictly human phenomenon involving *postulation*) and *not* to the totalities of

situations experienced. In a narrower, more usual sense of metaphor, images from varieties of settings and times and in various distortions are juxtaposed in the single expressive form, a possibility uniquely afforded by the abstracted and arbitrarily referential, postulational, extra-somatic human symbol. (Only for humans does the tyger burn bright in the forest of the night.)

Other scholars in various disciplines concern themselves with roles. All humans operate in society only through roles—arbitrary, relativistic, and situational concatenations of non-somatic rights, duties, obligations, and prerogatives, without known parallel among other species. All humans potentially can, and do, change roles by choice, and the same role can be filled by genetically quite different individuals. This includes the 'father' role, universal among humans and including the recognition of paternity, *biological or not*—a normative status unknown to animals. No human kinship role is necessarily a biological one. This fact should present insurmountable difficulties for sociobiologists. Given the sociological characteristics of roles, transfers and exchanges—the foundations of economic and political systems among humans—are entailed *normatively*, not biologically.

When Postulation Ceases

All human beings exist in a universe whose structures and meanings are "known" to them only through postulation. The capacity or "drive" to postulate may be biologically-genetically based, but *what* is postulated and *what* is known have no known genetic bases at all. When postulation ceases, meaning ceases, too—including Wilson's meaning and that of the SSG's sciences and epistemologies. Finally, postulation is intimately connected with human reflexivity, which is discussed below. The reader will think of many other human universals which cannot be discussed here—music, art, humor, suicide.

This brief review suffices to establish the nature of the problems of universals for the sociobiologists and their antagonists. *Logically*, since many of these universals appear to be strictly human and occur in all human societies, these *species* characteristics must be dealt with by Wilson's antagonists as "human nature." Such universals are no mere arbitrary abstract categories but descriptively established domains of common human experience. The proof of commonality lies in the fact that, *in principle*, anyone can, with time and effort, learn culturally different forms, as any anthropologist, or, say, art historian, knows.

That is, universal translatability from culture to culture exists *within* domains and, in certain senses, from domain to domain within a culture (as symbols of prestige can be translated into power).

The *fact* of the universality of the various experiential domains requires an explanation of terms of inherent, and ultimately *genetic*, human capacities, as Noam Chomsky has argued in the case of language. That there should be such species characteristics seems to me wholly unobjectionable on genetic grounds. I cannot understand why some of the geneticists of the SSG reject it. The problem is to formulate the *characteristics* of this unique kind of genetic foundation and to specify how it constrains and shapes human behavior, not to reject it out of hand.

Rule-Breaking and Reflexivity

Wilson's disregard for the fact that human sociocultural features can be created, diffused, lost, or translated into each other is clearly seen in his book's distressing Chapter 27 on human beings.* The tendency of cultural *expressions* of human universals to vary immensely from population to population, to move around among them, to appear and disappear cannot be coped with at all in terms of Wilson's simplified genetic causality. Clearly what genetic determination there is does not apply to any particular expression but constrains all-possible-expressions. This aspect the sociobiologists—Trivers and Wilson in particular—treat inadequately or not at all. In fact, Wilson beat a drastic retreat in his claims for a sociobiology that would account for human behavior and subsume the social sciences by saying that perhaps only 10 percent of human behavior is genetically determined, as he did to the *New York Times* in the interview noted earlier. (What a sad social science it would be that explained only one-tenth of its material.)

All "normal" humans know that they can break rules. Rule-breaking, an important fact related to the points raised above against Wilson, is one any child can tell you about. Specific rules are widespread, sometimes virtually universal, among cultures

* "The transition from purely phenomenological to fundamental theory in sociology must await a full, neuronal explanation of the human brain. Only when the machinery can be torn down on paper at the level of the cell and put together again will the properties of emotion and ethical judgment come clear. Simulations can then be employed to estimate the full range of behavioral responses and the precision of their homeostatic controls. Stress will be evaluated in terms of the neurophysiological perturbations and their relaxation times. Cognition will be translated into circuitry." (*Sociobiology: The New Synthesis*, p. 575.)

in time and space. But exceptions may also be widespread. If these "rules" have a genetic component, it is the case that recognition of *any* pattern, rule, or norm allows humans, upon reflection, to break or modify them and change behaviors. Reflexivity, recognition, and rule-breaking of this sort are all strikingly human.

Clearly, the relation between "the rules," their genetic foundations, and rule-breaking must be dealt with by both the sociobiologists and their antagonists in a comprehensive theory. Sociobiologists must cope with the fact that "rules" are, for humans, at best, "tendencies" that can be dealt with only statistically and can always be broken. The antagonists must deal with the fact of the statistical tendency toward "rulefulness" as a human-species characteristic. The strongest possible environmental position the anti-sociobiologists can take, I believe, is that departure from the biologically based human "rule" tendencies is a slow process of cultural evolutionary cumulation, itself an uncertain tendency.

Reflexivity, which allows persons to look at their acts, their bodies, or parts thereof, or their psychocultural self-configurations as external objects, is almost certainly a unique human characteristic and conceivably a genetically-based capacity. Together with *postulation*, it permits rule-breaking, including breaking the human rule of postulation itself. It is through reflexivity and the breakdown of postulation that humans arrive at suicide—a uniquely human phenomenon, probably known in all societies but practiced in ways suggesting no significant genetic patterning. Since suicide involves postulation and meaning problems, it remains, despite Wilson, a philosophical, not a biological problem.

Emotions and Epistemology

Lancelot Whyte, cited above, has argued that fundamental knowledge comes from the inner intuitive world and is merely given justification and communicable order in language. I concur fully and hold that Wilson's epistemology is wholly untenable and very narrowly culture-bound. These contrary positions will not be resolved here, but it is worth sketching the issues.

In any reasonable theory, human or animal emotions are very complex processes, involving sensory inputs, cognitive assessments and evaluations of both. Key, here, is that the emotions are always *directed* at, and are about, *externalities*—including, as Edmund Jacobson points out in *Biology and Emo-*

tions (Thomas, 1967), reactions about other parts of the body from some other sensory locus in the body. In short, the emotions are object-oriented, assessing objects and their states of being, contexts, and dispositions: The emotions are the sources of basic knowledge. Language and all logical forms derived from it merely translate this knowledge into our major form of communication by abstracting and decontextualizing (with much loss of *objective* information). One consequence of this view is that most of the central core of the "subjective"/"objective" distinction falls to pieces. "Rationality" and "irrationality" display themselves equally in the worlds of scientists' postulations ("the ether," "phlogiston," "ant slavery") and in all human beings' object-oriented, emotional sorting out of meanings through sensory scanning of the external world.

Among human beings, however, the emotions take on a special character, which Wilson, from the perspective of nonhuman animals, seems thoroughly unaware of and, given his paradigm, cannot deal with. All known humans, at least for the last 40,000 years or more, have lived in cultural environments. I mean this in two fundamental senses.

First, all human beings shape their environments (as do innumerable animals and even many plants). But human beings use cultural means, especially technology, in terms of cultural, normative conceptions, formulated as goals and ends. The degree of shaping varies, of course, with the effectiveness of the technology and probably with the scope of the conceptions. But shaping, in some degree or other, takes place in some culturally, that is, *not* biologically, determined way.

Second, all humans define their environment conceptually (postulation, again). All human action is directed *only* at objects so defined and given value. In effect, whatever is undefined conceptually does not exist, although, as external analysts, we may say that these cultural nonexistents in fact affect the culture-carriers. All culture-carriers live exclusively in culturally conceptualized environments—including that very Nature that the Enlightenment and the French sage Claude Lévi-Strauss set against Culture. For example, the concept that there is a "struggle" between "Man" and "Nature" is a relatively recent Western *cultural* artifact, implying an ontology and epistemology of the sort Wilson accepts as "natural": "rational" Man vs. "bestial" Nature. By his very acceptance of it as "natural," it becomes ideology, as well as being philosophically naive.

Thus, from an individual developmental point of view, human beings' chief mode of knowing—the emotions—are *neces-*

sarily shaped from birth by externalities which, in a double sense, are cultural or culturized and also encoded in language, itself a cultural form and the basic respiratory of "reason." The very form and content of human emotions are therefore necessarily *cultural*, not *bestial*, and *encompass all the logics, rationales, and rationalities* that Wilson denies them, including even "reason" itself. The human beast, Wilson included, lives in an almost (but not quite) tautological world: the means of knowing are shaped by what the means of knowing permit us to create, in an *almost* closed circle. This view of the nature of human knowing is at sharpest variance both with Wilson's conceptions of human nature and with his epistemology. Since the book is built on these two conceptions, much of the logical structure and interpretation would collapse if they were untenable. Particularly, his views on the genetic basis of human behavior become still more ambiguous or entirely untenable.

Human Sexual Dimorphism

Wilson's antagonists have accused him of "sexism" in his sociobiology: the pervasive reading into animal and human life of the *particular cultural* norms of relations between the sexes in American life. Although I think the assertion true, the SSG itself fails to deal with systematic cross-societal expressions of sexual differences discussed here as sexual dimorphism. However, the "rules" of sexual dimorphism can be and are broken, a fact the sociobiologists must cope with.

The general proposition is as follows. Under primitive techno-social conditions, there is a sharply marked tendency for statistically relatively standard cross-societal *forms* of the division of labor to occur, though ecological bases vary the *content*. This patterning of the division of labor is based, hypothetically, on systemic aspects of the sexual differences between male and female humans: If, *a priori*, one denies that such differences have significant effect, one tends not to look for their existence. But if one asks if it is possible that they have significant sociological consequences, two interesting observations begin to emerge from a systematic pursuit of the question.

One is that the characteristics involved are consistently patterned: Distribution differences by sex are demonstrable and the *directions* of differences tend to fit each other—pattern for males, pattern for females. The other is that, with one exception, they never require sexual exclusivity, although the distribution is heavily lopsided. The implication of the second point is

that the effects of these dimorphisms *sociologically* appear as tendencies, not as absolutes: Though men and women can both do the same work and sometimes do, the division of labor is significantly differentiated by sex. The absence of exclusivity is demonstrably related to choice, i.e., to reflexivity and "rule"-breaking.

The exception, of course, is the pregnancy-childbirth-lactation sequence. This exclusively female set of attributes is accompanied by *statistically* significant dimorphisms of body build, especially the pelvic area and leg articulations, gait, and possibly other motor behaviors, such as squatting. Not clearly related to reproduction are other accompanying statistically significant dimorphisms in leg-bone proportions, foot structure, etc. All these clearly suggest differential male/female behavior, in part linked to reproductive functions selected for in the primate evolutionary process leading to *Homo sapiens*. "Man the Hunter" and "Woman the Gatherer" (and Baby-Producer) have a major genetical-biological basis, which it is, in my view, folly to deny as long as one recognizes that the behavior observed is a variable statistical distribution, not a biologically absolute requirement (as is the queen bee's performance, for example). Women *can* hunt and men *can* gather; both do. But in the divisions of labor observed, they tend statistically not to. In my language, the rule, though it can be broken, tends to be observed. The cross-societal data leave no doubt about this. This argument can be extended by considering endless arrays of distributions.

Sexual Divisions of Labor

The important thing to note is that, though aspects of dimorphism are found for other animals, especially the higher primates, their human occurrence must be dealt with as part of human nature and their implications even for contemporary human life assessed. Clearly, the evolution of extra-somatic technology loosens the biological hold. Clearly, the "principle" of rule-breaking means that any of these tendencies can be disregarded—and increasingly tend to be. Yet all societies display sexual divisions of labor. On the whole, this pattern is still evident in our society.

The problem of human sexual dimorphism requires major research. It means that the sociobiologists must review their entire approach to the relations between the sexes, especially where humans are concerned, and particularly their highly individualistic conception of genetic competition be-

tween the sexes. The anti-sociobiologists must deal with the possibility of systemic, rule-breaking distributions of male and female characteristics seen in relation to sociocultural evolution. The characteristics discussed occur in all human populations and may be seen as species characteristics (some overlapping with other animals) hence, as aspects of human nature, rooted in biology.

The polar positions of the sociobiologists and the anti-sociobiologists lead to stalemate. In basic ways, both sides are locked into the same rules of the game. The result is that crucial questions are not posed because crucial aspects of human beings are not examined, namely: the virtually universal appearance of specific attributes, most of them uniquely human, in all kinds of domains; the great variability of form and content in which these universals appear; the detachability, diffusability, learnability, and loseability of these forms and content; and mankind's peculiar capacity to break practically any "rule," including, perhaps, even those epistemological rules rooted in the biology of his sensory equipment. In a generic sense, the variability within the species' universals, the spatial and temporal unfixeness of the universals, and the rule-breaking are core aspects of human nature.

Both camps avoid consideration of those central capacities of human beings—postulation and reflexivity. Their statements indicate their scientific and philosophical inability to treat the nonbiological, purely human dilemma. Those who have agonized at the sheer edge of convention, where ambiguous culture and its postulational underpinnings erode and reflexive, rational, emotional assessment of self in a universe empty of intrinsic meaning follows, will find that Wilson's *Sociobiology*, for all its monumental amassing of data, has little to say. They will find truth, if little comfort, in Camus' view that the only serious philosophical problem is suicide.

