

SOCIOBIOLOGICAL VERSUS SOCIO-CULTURAL EVOLUTION:

Douglas B. Gutknecht, Chapman College, California

INTRODUCTION

Since Wilson's (1975, 1978) emergence on the science scene, sociobiology has moved from obscurity to become a focal point in the social sciences, (Caplan, 1978; Gregory, et al., 1978). The principle question for sociobiologists becomes: how to absorb the social sciences and thus rescue them from intellectual adolescence, primitiveness and obscurity? Sociologists have responded with a range of social interpretations and emotions that suggest "one dimensional man" is not yet dominant-from declaring "war" on sociobiology, to laughing at their short memories regarding historical ideological misuse of social Darwinism and other genetic and eugenic theories. Some sociologists have expressed toleration and others clamor for dialog. However, the problem becomes how to determine legitimate possibilities for dialog and the development of balanced integration of insights without approving of outright "invasion" by the dominant natural sciences. The metaphor of invasion is appropriate because arrogant, trained, and latent natural scientists act like colonizers intent upon pillaging the already underfunded and politically maligned social sciences.

Thus the question for many sociologists and social scientists, who are mainly interested in cultural not genetic evolution becomes one of explaining cultural evolution to sociobiologists. In order to gain a legitimate hearing sociologists need to reformulate the rigid dichotomy of nature and nurture in order to evaluate newly emerging natural science ideas. Part of this task is convincing sociobiologists not to view culture as a rationalization of genetic evolution. Milton Gordon (1980:60) has conceptualized this side of the debate:

"... when we find constant manifestations . . . that appear to be little subject to cultural variation, we will then be on sounder grounds for hypothesizing the presence of constant biological predispositions which have produced those uniformities."

SOCIOBIOLOGY AND EVOLUTION:

Sociobiology studies the evolutionary roots of social behavior. To do this it has created a new combined discipline rooted in biology and genetics. The importance of genetics is great because as Barash (1977:63) argues: "When any behavior under study reflects some component of genotype, animals should behave so as to maximize their inclusiveness." In this view natural selection operates on genes over a long span of time. The key concept is 'inclusiveness' (Barash, 1977:329) which means "the sum of an individual's fitness as measured by personal reproductive success and that of relations, will those relations devalued in proportion to their genetic distance, i.e., as they share fewer genes." Natural selection operates as some sort of independent gene producing machine where individuals are unconsciously or genetically maximizing their own genes in subsequent generations. Dawkins (1976) aptly speaks of the "selfish gene." Traditional views of natural selection focus on the survival of special characteristics which have adaptive value. A principle weakness of sociobiology is its failure to recognize the importance of group selection, particularly how the evolution of human cultural and social systems.

The question becomes one of explaining how the primacy of long term slow and gradualistic genetic changes determine more rapid morphological changes in brain size, and body form and even more rapid genetic or cultural changes. Genetics may have allowed the eventual speed up of evolution by promoting human flexibility via neoteny: evolution that slows developmental rates which allows the retention for longer periods of time of traits that in the distant past disappeared early in life. Neoteny allows a longer state of receptivity to culture. But what real relevance does this fact have for the socio-cultural fact that humans are taught to be racists or sexists. However the question of cultural evolution and a longer time frame within sociology must be explored. Hopefully then we can show once again the fallacies in the sociobiological view for our latent natural scientists.

Primates belong to a group of mammals that are quite remarkable in that they are sufficiently unspecialized in body form and thus adapt to a wide range of environments. Here culture becomes relevant because the evolution of body form set the stage for culture and intelligence. Humans were physically unspecialized enough that they could adapt to diverse environmental conditions. More specifically the evolution of free forethumb and generalized hand is related to the evolution of intelligence and ultimately ability to manufacture tools. Here it must be remembered that body form is still a relatively shorter run evolutionary phenomenon than brain size.

The most rapid evolutionary changes are related to sociologically significant onto-genetic factors like environmental learning and general developmental processes. Sociologists can't deny the influence of evolution or biology but dislike arguments which reduce complex organism-environment interactions to the chemistry and physics of constituent parts. The fact that we do think in vertical terms is certainly more sociological than biological.

Evolutionary theory in its most recent views also appears to undermine the sociobiologist argument. The latest paleontological research suggest not a uniform, slow, cumulative emergence of life forms but complex, sporadic movement occurring in rapid steps (Stanley, 1981). The traditional gradualistic theory of evolution, compatible with the sociobiological view, argues that the human species evolved via a process of gradual modification of an ape like creature during an interval of several million years. The entire evolutionary process is assumed to display a gradualist improvement of species forms in a linear branching. The ladder metaphor implicit in this view is an implicit metaphor of improvement of species forms indicating support for a form of a "great chain of being."

The new view of evolution appears to challenge a simple hierarchy and the implicit hubris or human arrogance. Such a view suggests that discreet evolutionary branches may have produced two or more humanoid species that walked the earth together. In addition homo sapiens have existed unchanged for long spans of time, indicating that important biological changes occurred as one species branched rapidly to another. One implication is

that such sudden shifts in species character cannot be explained by natural selection operating on individuals via genes. This is particularly important for the evolutionary homo sapiens because the idea of evolution in a single phylogenetic line could be false. Another implication is that the act of already emerging cultural evolution, intelligence and learning, may have more influence than uncausal biological evolution. If we abandon the linear and gradualist view, the sociobiological perspective loses its leverage for explaining biological causation of human culture, as a continuation of extremely long standing evolutionary trends operating at the genetic level.

SOCIOBIOLOGIST AND EVOLUTION:

Many sociologists' interest in the question of evolution, social Darwinism and the culture of science suggest that mechanisms of evolution are not genetic but cultural. Biological evolution provides the raw material for the playing out of cultural evolution, according to sociologist Kunkel (1977:71):

"Genetically based biochemical factors delineate the parameters of behavioral variations while culture determines which of several possible and useful actions are learned, performed in various circumstances . . ."

Sociologists, like Kunkel, seem to believe that sociobiologists are trying to assert genetic and biological primacy at the level of casual, reductionist and systematic theory. I also generally believe that human sociobiologist's explanatory statements are not as law like and systematic as one would find in the natural sciences. This is because biologists in the neo-Darwinism mold, try to dissolve entire organisms into genes, which in turn shape natural selection. Sociobiologists in this view turn metaphoric words, like genes, that are only part of the process of transmission over the long evolutionary past, into a single cause like the selfish gene. Such metaphors become reality instead of revealing relationships.

Natural selection in this view cannot somehow pick and choose genes in some conscious strategy, it can only work through survival of human social groups with culture. Most genes have multiple effects, many of which are irrelevant to adaptation. Such multiple effects are also extremely difficult to measure and

predict. Individuals are not Frankenstein monsters, which are assembled from the most fit genes. Human anatomy and the evolution of the brain and morphology cannot be changed piecemeal by selective pressures acting on individual genes. Organic developments are not always uniform nor do they necessarily provide slow evolutionary improvements. Several humanoid species with the same biological potential may have co-existed (Stanley, 1981). If so, cultural adaptations may provide the key. The reduction of human behaviors into genetic traits such as aggression, homosexuality, and male dominance, each of which has selected advantages, is difficult to verify or disprove. Such criticisms are particularly pointed for short run historical time frames because adaptive behavior includes cognition, perception, and developmental maturation which become incorporated into cultural survival strategies.

"The example of human social behavior, which is thought to be determined by biological factors, are few, overly general, and from a sociological point of view, involve quite unsophisticated analysis." (Kunkel, 1977:70)

One can see here the difficulty when trying to disprove the sociobiological theory of adaptive significance of genetically rooted behavioral traits. Thus we can see the circular reasoning: a trait becomes adaptive, once genetically selected, because it had an alleged function. Of course a trait is also reasoned to be functional because it explains adaptation.

The key problem here for sociologists interested in the upsurge of sociobiological hubris, is the application of speculative genetic causes for specific behaviors like aggression, homosexuality, male dominance. Empirically testing their links is virtually impossible. Sociobiology has difficulty trying to verify the evidence, a goal of all science worthy of the name. Wilson (1978), in a latter work, backs away from many reductionist arguments in favor of suggesting that genetics sets the limits, or provides physically formed dispositions, or internalized needs. However, the problem remains the hypothetical method of transmitting human predispositions and constants. Thus social customs and human traits become *naturally* selected, *physically transmitted* tendencies, whatever shape or content they may have.

Even to address the problem one needs to

recognize here that the primary ingredients of cultural transmission and society, including the social construction of meaning and reality, beliefs, values, ideologies, become mere appendages to biology. In this view human nature is genetically encoded, programmed or limited. However, this preprogramming is relatively unspecific compared to other species, as a result of our large brains and neo-cortex. How can Wilson thus acknowledge the great variety of behavioral possibilities and elaborations, while still formulating such concepts as inheritance, built in programs, or constancies? One technique used by sociobiologists to get around such complexities such as our great variety of cultural responses, organizations and behavior, is to assert some explanatory mechanism — a multiplier effect (Wilson, 1975: 11-13; 569-73). This concept defines faster genetic change as occurring during the latter stage of evolution. The multiplier allows the fact of short term cultural change to influence the more long term genetic program. Thus multiplier effect implies the acceptance of a hypothetical mechanism which speeds up genetic processes in the short run.

In contrast what sociologists critical of sociobiology need only argue is that the independence of human culture is not a rejection of biology or failure to recognize the importance of evolution. One need only recognize that sociologists and social scientists need different, not reductionist, principles for explaining the facts of human, cultural evolution.

CONCLUSION

The potential ideological misuses of any set of ideas, including science, tells us more about the forces of social class, historical and cultural needs than about genes. Humans are different not better than other species, as a result of how we may organize our social-cultural system to pacify diverse ecological environments. However, such rapid movements into previously unoccupied niches and environments may also cause problems where assertion of aggressive self interest fails to protect the public interest. Again the problems of homo sapiens cannot be explained using genetic arguments.

P. Wilson (1980) speaks of man as the "promising primate" because our very biological flexibility created a large brain and the op-

portunity for culture. Cultural evolution has certainly greatly increased the pace of evolution in the broadest sense and ultimately created new possibilities for abstraction. Human cultural evolution occurs at a different level of abstraction than physical or biological evolution. The fast pace; the multiple directions; the ability to immediately project oneself backward or forward in time via consciousness; the increasingly sophisticated mechanisms for learning and technologies of the intellect (Goody, 1977). Analogies may be drawn between biological and cultural evolution but one must not reify metaphors and symbols. The study of social cultural evolution needs its own structures of explanation and theory.

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one is upset and on the verge of crying, the breath is usually held back for long periods. Staying in contact with and maintaining the breath during emotional experiences, especially during negative experiences, may serve to ease the discomfort.

Many eastern disciplines emphasize control of breathing. They believe that inherent in the air we breathe is a quality known as "prana" which is defined as "absolute energy," or "life force." Prana in the air we breathe is analogous to vitamins in the food we eat. Proper contact with and control of the breath at all times allows one to obtain prana. The cultivation of prana over time may result in one having better control over intra-psychic conflict.

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