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THE IMPACT OF DARWINISM ON SOCIOLOGY

An Historical and Critical Overview

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INTRODUCTION

What has been the relationship between the social sciences, sociology in particular, and Darwin's theory of evolution by natural selection? In a famous statement, Darwin said that the theory of natural selection would "lead psychology to be based on a new foundation." In the late nineteenth and early twentieth centuries, some social scientists followed Darwin's lead. In his book *In Search of Human Nature: The Decline and Revival of Darwinism in American Social Thought*, the historian Carl Degler (1991) shows that at this early point in the development of the social sciences Darwinism was highly regarded by social scientists, and biology was considered a major underpinning of human behavior.

In sociology, the lead was clearly taken in the most emphatic way by Edward Westermarck, a Finnish sociologist who became a major figure in both Finnish and British sociology. In the second volume of his three-volume *The History of Human Marriage*, Westermarck (1922b) developed the hypothesis on the origin of incest avoidance and exogamy for which he is today most famous, the "familiarity breeds indifference" theory. Westermarck argued that children brought up in close physical contact with each other in the early years of life would acquire a mutual sexual aversion, an emotion that had evolved by natural

selection because of its ability to prevent the damaging genetic consequences of close inbreeding. Although Westermarck's theory has been much maligned, it was revived in the 1970s and considerable data now support it (Shepher 1983; McCabe 1983; Wolf 1995; Wolf and Durham 2004; Turner and Maryanski 2005).

Westermarck was also keenly interested in the source of moral concepts and judgments, and their evolution, which was the subject of his *The Origin and Development of the Moral Ideas* (1906, 1908). Once again we find Darwinian natural selectionist reasoning at work. Westermarck argued that moral concepts are generalizations or objectifications of the moral emotions of indignation or approval, which have evolved by natural selection because they promote the interests of the individuals who feel them.

Westermarck established a reputation as a leading sociologist of his day, but one of his chief opponents was the formidable Émile Durkheim (see Roos, Chapter 12 this volume). As all sociologists know, it was Durkheim's ideas that prevailed, and Westermarck's reputation declined in the 1920s and 1930s to the point where he was no longer taken seriously as a scholar (Sanderson 2007a). The tide in sociology turned entirely toward an environmentalist or cultural determinist position and biology was pushed aside. It was not until the 1970s that Darwinian ideas would come to be revived and once again pursued by sociologists.

EARLY CONTEMPORARY WORK, 1970S AND 1980S

Some social scientists were beginning to take the biological foundations of human behavior seriously before Edward O. Wilson wrote his famous book launching sociobiology in the mid-1970s (Wilson 1975). At the beginning of the 1970s, Lionel Tiger and Robin Fox (1971), two anthropologists, wrote *The Imperial Animal*, and four years later Pierre van den Berghe (1975), a well-known sociologist, wrote *Man in Society: A Biosocial View*. These were what might be termed "protosociobiological" works. Tiger and Fox argued that humans come equipped with a *biogrammar*, or a basic set of biological templates that predispose their behavior along certain lines. Van den Berghe made the same point, referring to the human biological predispositions as *Anlagen*. The predispositions suggested by these authors overlap extensively, and they can be combined into a single list:

1. aggression
2. hierarchy
3. male dominance
4. mother-infant bonding
5. territoriality
6. incest avoidance.

Once sociobiology came to be established by Wilson, Martin Daly and Margo Wilson (1978, 1988), John Tooby and Leda Cosmides (1989; Cosmides and Tooby 1989), and others, van den Berghe readily adopted it and used it as a guiding explanatory framework for a great deal of work. Like Westermarck, van den Berghe has been much concerned with incest avoidance, and accepts Westermarck's theory as the basic explanation.

Several years after publishing *Man in Society*, van den Berghe (1981) wrote *The Ethnic Phenomenon*, a book in which he argued that ethnicity was a primordial human attachment that was rooted in kin selection. Indeed, ethnicity is an extension of kinship, and ethnic groups may thus be viewed as exceptionally large extended kin groups. However, van den Berghe also argued that ethnicity had an important social dimension, and he identified several main forms of ethnic conflict and the reasons why one type rather than another prevails at a given place and time.

With his student Joseph Whitmeyer, van den Berghe has studied the relationship between social status and reproductive success in industrial societies (van den Berghe and Whitmeyer 1990). Using the concepts of r and K selection, Van den Berghe and Whitmeyer have suggested that three different reproductive strategies can be found in industrial societies. The stable working class and the middle and upper-middle classes tend to follow an extreme K strategy. Here people limit themselves to two or three children in whom they invest heavily. There is a quality-quantity tradeoff in favor of quality. Parental investment involves high-intensity care and the investment of economic and educational resources in order to equip offspring for success in a highly competitive environment. A second strategy is employed by the upper classes, whose members can have both quantity and quality. This is a less extreme K strategy. Finally, the lower classes, especially stigmatized racial and ethnic minorities, adopt a more r strategy. In this case fertility is higher and parental investment is lower; quantity is preferred over quality as a strategy of reproductive success.

Joseph Lopreato was another sociologist to accept Darwinian thinking from an early point. In his book *Human Nature and Biocultural Evolution* (1984), Lopreato identified a set of four human biological predispositions:

1. *Predispositions of self-enhancement*, which involve the search for individual advantage through the pursuit of status and wealth (which may include the urge to victimize others).
1. *Predispositions of sociality*, which involve reciprocity, but also dominance and deference, and the needs for conformity and social approval.
2. *Predispositions of variation*, which include the need to avoid incest and to form family and ethnic groups.
3. *Predispositions of selection*, which include the denial of death, the susceptibility to charisma, and the need for ritual. Here we find the biological roots of religion.

To his credit, Lopreato situates these various predispositions, or at least most of them, within the context of the reigning sociobiological paradigm, the main principle of which he calls the *maximization principle*: People act so as to maximize the representation of their genes in future generations. However, Lopreato gives this a neat twist, reformulating it in terms of what he calls the *modified maximization principle*: Humans tend to behave so as to maximize their inclusive fitness, but this predisposition can be at least partially neutralized by the quest for creature comforts, by self-denying or ascetic tendencies often stimulated by sacred beliefs and practices, and by motivations that once produced fitness maximizing behaviors but that no longer do so in modern environments, such as sexual activity between individuals using some method of contraception.

Lee Ellis has written several articles lamenting the extremely limited use of biosocial thinking in sociology (Ellis 1977; 1996), but he has also done a good deal of empirical research. For example, in an article written with Ashley Ames (Ellis and Ames 1987), Ellis reviewed biologically oriented research on homosexuality and argued that sexual orientation in humans, as in all mammals, is primarily determined by the degree to which the nervous system is exposed to testosterone and other sex hormones during the period in which neurological organization is taking place in the developing fetus. Homosexuality develops when, during the critical developmental period, the fetus's brain receives an excess of the hormone(s) of the opposite sex. Ellis (1995) has also conducted an exhaustive review of research on the relationship between dominance and reproductive success in a wide range of animal species. For males in particular, the vast majority of studies report a positive relationship between dominance and reproductive success. He has also written on stratification and crime from a biosocial perspective (Ellis 1993; Ellis and Hoffman 1990)

In the early 1970s, Steven Goldberg wrote a book with the very politically incorrect title *The Inevitability of Patriarchy* (1973), which he revised in the early 1990s and with a new title, also very politically incorrect, *Why Men Rule* (Goldberg 1993). Goldberg is primarily concerned with explaining why men everywhere monopolize the political leadership and high-status positions of their societies. He concentrates on hormone differences between the sexes, pointing out that adult males have testosterone levels about 10 times as high as those of adult females. Testosterone is known to be closely linked to aggression and to dominance and competitive behaviors. Women are at a natural disadvantage in the competition for positions of leadership and high status.

The president of the American Sociological Association in 1983 was Alice Rossi, who took the very bold and courageous step of making her presidential address an exercise in the application of biosocial thinking to gender. Rossi (1984) argued that a pattern of social behavior can be suspected of having a biological basis if two or more of the following criteria are met:

1. There are consistent correlations between a behavior and a physiological sex attribute (body structure, sex chromosome type, hormonal type).
1. The pattern is found in infants and young children prior to the occurrence of major socialization influences, or the pattern emerges with the onset of puberty.
2. The pattern is stable across cultures.
3. Similar behavior patterns are found across species, especially the higher primates.

Using these criteria, Rossi concluded that there are important biological dimensions to gender differences. She has summarized evidence showing that compared to males females show greater sensitivity to touch, sound, and odor; have greater fine motor coordination and finger dexterity; pick up nuances of voice and music more readily; are more sensitive to context; and are more attracted to human faces. These traits are precisely ones that would contribute heavily to the successful rearing of a small infant. Rossi notes that, because of long infant and child dependency, prolonged infant care through intense attachment of the mother and the infant is critical to human survival, and that in hunter-gatherer societies there is extremely close contact between mother and infant and infants are often nursed for as long as five years. Under such conditions, it is almost inconceivable that the female of the species would not have been selected for strong nurturant tendencies.

LATER CONTEMPORARY WORK, 1990S-PRESENT

An important study of how both biological predispositions and socialization contribute to gender differences has been carried out by the sociologist J. Richard Udry (2000). Udry studied a sample of pregnant women from whom blood samples were taken between 1960 and 1969. Samples were collected for every trimester and then frozen for 30 years. In 1990 and 1991 Udry and his research team interviewed many of the daughters born to these women between 1960 and 1963. The respondents completed a variety of questionnaires and checklists design to determine their degrees of femininity or masculinity and their sex role socialization experiences. Udry then looked at the relationship between these sex role orientations and the levels of various sex hormones in the mothers' blood samples when their daughters were *in utero*. He found that prenatal levels of sex hormone binding globulin (SHBG) had a strong effect on the daughters' levels of femininity or masculinity when they were adults. Women who had low prenatal SHBG levels were significantly more masculine in their orientations and behavior than women with high SHBG levels. However, this was true only for SHBG levels during the second trimester of pregnancy; SHBG levels during the first and third trimesters were unrelated to masculinity-femininity. This is an extremely important finding, because it is

only during the second trimester that fetal neurological organization is taking place; this is the time when the brain is being “sexed.”

Udry found that socialization also played a role in determining levels of masculinity and femininity, but that socialization experiences interacted in an important way with prenatal hormone levels. Women who had low prenatal exposure to androgens were fairly responsive to their parents’ socialization efforts; feminizing socialization efforts made them even more feminine, and, presumably, masculinizing socialization efforts could turn their behavior in a more masculine direction. By contrast, women who had high prenatal androgen levels, and thus who tended to be more masculine right from the start when they were young girls, were almost completely resistant to their parents’ efforts to encourage feminine behavior.

Jonathan Turner and Alexandra Maryanski are recent converts to a biosocial perspective in sociology. Turner (2000) wrote a book on the sociology of emotions in which he argued that the standard sociological perspective – that emotions are simply social constructions – was much too extreme and that emotions have a deep neurobiological substrate. Most recently Turner and Maryanski (2005) have produced a comprehensive work on the incest taboo that makes a good deal of use of primatological data. They argue that out of a primitive “horde” nuclear family patterns began to emerge around the time of *Homo erectus*, and the bonds between family members grew stronger. At the same time, old transfer patterns at sexual maturity declined and people remained in their nuclear families longer. Fathers and daughters, brothers and sisters, and mothers and sons became increasingly attached and, as they did, the potential for incestuous behavior loomed larger. This was especially the case for fathers and daughters, because, in Turner and Maryanski’s view, there was no “hard wiring” in this dyad against incest (no strong “Westermarck effect”). Turner and Maryanski accept the existence of a Westermarck effect for brothers and sisters (and possibly a more limited effect for fathers and daughters), but argue that mother-son incest avoidance was especially hard wired, being a carryover from our hominoid ancestry. A culturally imposed taboo was thus needed to prevent sexual relations between fathers and daughters, and sometimes between brothers and sisters, in order both to maintain solidarity within the family and to avoid the costs of inbreeding depression. The incest taboo was therefore not the exclusive result of either biological or cultural evolution, but rather resulted from the *coevolution* of cultural and biological forces (for a more detailed summary, see Sanderson 2005).

SOCIOBIOLOGY PROPER

The sociobiology proper that was born in 1975 was rooted in an explicit theory known as the *theory of inclusive fitness* or *kin selection*, which is a specific dimension of neo-Darwinian evolutionary biology. The basic principle, of course, is the maximization principle, as Lopreato has called it, which is that

people behave so as to maximize the representation of their genes in future generations. Of course, as we saw earlier, Lopreato reformulated this as the modified maximization principle.

In addition to van den Berghe and Lopreato and Crippen, the only sociologists who have accepted this basic sociobiological principle and used it to guide their work have been Lee Ellis (although to a limited extent), Satoshi Kanazawa, Rosemary Hopcroft, and myself.

In an extremely important book, *Crisis in Sociology: The Need for Darwin* (1999), Lopreato and Crippen identify a major crisis in sociology, saying that this once promising science “is now awash in the flotsam of extreme cultural relativism and multiculturalism, postmodernism, political correctness, and, permeating these and other isms, an ideological agenda driven by provincial concerns of race, class, and the many grievances of a radical brand of feminism” (1999, xii). They fear that this crisis is so severe that sociology risks being eliminated from academia altogether within the next few decades. What sociology needs is a general unifying paradigm, and they believe that sociobiology is it. They then proceed to show how this paradigm can make much sense of sex and gender, social stratification, and ethnicity.

Satoshi Kanazawa is a sociologist who has taken to evolutionary thinking like a duck to water. In an article written with one of his students (Kanazawa and Still 2000), Kanazawa invokes classical evolutionary principles to understand the immense overrepresentation of young men in crime, especially violent crime, all over the world. Young men are competing for status and resources in order to get access to mates, and those who commit crimes are those who otherwise have lost out in this competitive struggle. With the same student, Kanazawa proposes a *female choice theory* of monogamy (Kanazawa and Still 1999). This theory assumes that it is females rather than males who determine who mates with whom, and therefore whether monogamy or polygyny prevails in a society depends on what women want. Kanazawa and Still argue that women will choose polygyny when the resource inequalities among men are great, because it is better to be, say, the tenth wife of a wealthy man than the only wife of a man of modest means. But when resource inequality among men is relatively low, then women will choose monogamy because there is no advantage to be gained from polygyny. (For a critique, see Sanderson 2001c.)

Before discussing Rosemary Hopcroft’s work, I need to make a detour by discussing the ideas of Jeremy Freese, who has been difficult to pin down in terms of exactly what he thinks of sociobiological arguments. Early on Freese was highly critical of these ideas. With Brian Powell he has attempted to test the well-known hypothesis of Robert Trivers and Dan Willard (1973) that parental investment in children of a particular sex varies by social status (Freese and Powell 1999). Parents of high social status will tend to invest more in sons than in daughters, whereas parents of low social status will tend to invest more in daughters than in sons. Although much research on a variety of preindustrial societies shows considerable support for the Trivers-Willard hypothesis, Freese

and Powell wish to determine whether it will apply to the contemporary United States.

Freese and Powell's test uses nearly 25,000 eighth-graders and several thousand high school students. Their results show that high-status and low-status parents invested about equally in both sons and daughters. When there was a difference in the nature of parental investment by social status, it usually went in the opposite direction: High-status parents invested more in daughters than in sons (although the degree of differential investment was not large). On the basis of these findings, Freese and Powell claim that suspicion is cast upon sociobiology because one of its most important hypotheses has been shown to be defective.

More recently, Freese has seemed more receptive to Darwinian thinking. Freese and two coauthors surveyed literature on the potential relevance of biology to social inquiry (Freese et al. 2003). They looked at research guided by what is now essentially called evolutionary psychology, at research by behavior geneticists on the role of genetics in individual differences in behavior, and at the relevance of such proximate variables as hormones, especially testosterone, for social behavior. They are very much aware that sociology is far behind psychology and anthropology in incorporating biological variables into their explanations and conclude that sociologists need to do more in this regard. Their grand conclusion is that, "As science continues to reveal more about the biology of behavior . . . sociology should seek and support ways of understanding the interrelationship of biological and social influences that will allow our discipline to gain strength from these new developments rather than be diminished by them" (2003, 248).

Rosemary Hopcroft (2005) has carried out her own test of the Trivers-Willard hypothesis using a large sample of 10,000 Americans. She claims to find support for the hypothesis, but I am not so sure that her data actually point to this conclusion. To me, they suggest that in fact the differences in parental investment in sons vs. daughters by social class are quite small – much too small really to support Trivers and Willard. Hopcroft's data are no stronger than Freese and Powell's, and those researchers drew the conclusion that Trivers and Willard is not supported for the contemporary United States.

Hopcroft (2006a) has also studied the relationship between social status and reproductive success in one industrial society, the United States. Her findings, summarized crudely, show that higher-income men have slightly more reproductive success than lower-income men, but that for the women the pattern is just the opposite. In her sample, Hopcroft found that higher-income women had only about half the completed fertility of lower-income women.

I have space only to mention other sociologists who have taken Darwinism seriously in one way or another: Ullica Segerstrale, who has written an important book, *Defenders of the Truth: The Battle for Science in the Sociobiology Debate and Beyond* (2000); Michael Hammond (1999; 2003), who has done some provocative work on what he calls "arouser depreciation" and its relationship to social inequality, as well as on the neurological roots of

Durkheimian solidarity; Richard Machalek, who has studied expropriative crime, social exploitation, and the formation of macrosocieties from a biosocial perspective (Machalek 1992, 1995, 1996; Cohen and Machalek 1988; cf. Machalek and Martin 2004); François Nielsen (2006), who has started to do work on the genetic contribution to academic achievement and social mobility (see also Nielsen 1994); Penny Anthon Green (1991, 1995), who has written on the biological foundations of revolution and class circulation; Thomas Smith and Gregory Stevens (2002), who have done research on the biology of interpersonal dependence, especially reciprocity and altruism; and Douglas Massey, who, in his presidential address to the ASA in 2001 stressed that sociology has not been as successful as it should have been because of three major conceits, one of which is the persistent elevation of the social over the biological (Massey 2002). Of course there is also my own work, in particular my Darwinian conflict theory (see below), which is the subject of many of the papers in this book.

And, in Europe, we find a number of sociologists who have been influenced by Darwinism, especially Peter Meyer, Tamás Meleghy, Heinz-Jürgen Niedenzu, Anna Rotkirch, J. P. Roos, W. G. Runciman, Michael Schmid, and Nico Wilterdink, all of whom are contributors to this volume. I should also mention Frank Salter, another contributor to this volume, who started out in sociology but then switched to political science. He has done important work in a variety of areas bridging both human ethology and sociobiology (e.g., Salter 1995, 2006), and is now doing work along the lines of Nielsen. And in England there are a number of Darwinian sociologists, such as Christopher Badcock (1991).

DARWINIAN CONFLICT THEORY

Since it plays such a large role in the present volume, a discussion of my own Darwinian conflict theory seems essential. Darwinian conflict theory is a synthesis of two great social science traditions, the Darwinian evolutionary tradition that has now produced sociobiology and evolutionary psychology, and the tradition of economic and ecological materialism begun by Marx and developed and modified by Marvin Harris with his theoretical strategy of cultural materialism (Harris 1968, 1979; Kuznar and Sanderson 2007). Both of these theoretical traditions are materialist in the broadest sense, one focusing on the materialism of the body and brain and the other on the materialism of the physical environment and the struggle for survival and success. Obviously, therefore, Darwinian conflict theory is a *materialist* version of social theory.

It is also a *conflict* theory. In sociology, conflict theories assume that humans are locked into various forms of competition with one another to survive and be successful, and that much of the structure of society is a product of such competitions. The best-developed conflict theory in all of sociology is that of Randall Collins (1975, 1988), whose theory stems primarily from the Weberian tradition (although with some Marxian elements) and makes no use of biological

variables. However, much of Collins's conflict theory is compatible with Darwinian conflict theory, and Darwinian conflict theory pushes Weberian conflict theory to a deeper level. Collins assumes that humans are naturally conflict-prone organisms, but he takes this as an unexplained given. Darwinian conflict theory takes the conflict-prone nature of humans, and the particular forms of conflict they are most prone toward, as something that must itself be explained. It therefore biologically grounds sociological conflict theory.

It is critical to recognize that conflict theories do not take as their *explananda* only forms of social conflict. Conflict theories are so named because they draw on conflict as *explanans*. Humans with competing and conflicting interests also produce various forms of social cooperation, which is an important *explanandum* in Darwinian conflict theory. Darwinian conflict theory is applicable to all social phenomena – conflict and cooperation, stasis and change, micro and macro, and so on.

I first presented Darwinian conflict theory in my book *The Evolution of Human Sociality* (Sanderson 2001a). Here I give a somewhat abbreviated version of the theory as it stood several years ago. However, Darwinian conflict theory is a work in progress and thereby unfinished. I intend to modify and elaborate it in several successive installments, and in my response to critics in Chapter 17 of this volume I explain some emendations that have already been made.

1. Principles Concerning the Deep Wellsprings of Human Action

1. Humans as organisms have been built by natural selection, not only in their anatomy/physiology, but in their behavioral predispositions. This means that theories of social life must take into consideration the basic features of human nature that are the products of human evolution.
2. Like all other organisms, humans compete with other conspecifics to survive and reproduce. Since the resources necessary for survival and reproduction are inevitably in short supply, humans are caught up in a continual struggle to achieve these goals, and this struggle is inevitable and unceasing. Human social life is the complex product of this ceaseless struggle for survival and reproduction.
3. In the struggle for survival and reproduction, humans give overwhelming priority to their own interests and to those of their kin, especially their close kin.
4. Humans have evolved strong behavioral predispositions that facilitate their success in the struggle for survival and reproduction, the most important of which are:
 - Humans are highly sexed and are oriented mostly toward heterosexual sex. This predisposition has evolved because it is necessary for the promotion of humans' reproductive interests, i.e.,

their inclusive fitness. Males compete for females and for sex, and females compete for males as resource providers.

- Humans are highly predisposed to perform effective parental behavior, which is behavior that will optimize the number of surviving offspring. Mating and marriage serve the function of reproductive success, and marriage is primarily a reproductive contract. Thus the family as a social institution rests on a natural foundation.
 - The female desire to nurture offspring is stronger than the male desire, and the mother-child bond is the most basic familial unit. Such differences in parental solicitude have arisen as a result of the natural and sexual selection of different reproductive strategies for each of the sexes. Mating effort is greater in human males, parental effort in females. These differences in reproductive strategies have consequences for gender arrangements.
 - Humans are naturally competitive and highly predisposed toward status competition. Status competition is ultimately oriented toward the securing of resources, which promotes reproductive success. Because of the natural and sexual selection of different reproductive strategies, the predisposition toward status competition is greater in males than in females.
 - Because of the natural competition for resources, humans are economic animals. They are strongly oriented toward achieving economic satisfaction and well-being, an achievement that promotes reproductive success.
 - In their pursuit of resources and closely related activities, humans, like other species, have evolved to maximize efficiency. Other things equal, they prefer to carry out activities by minimizing the amount of time and energy they devote to these activities. A Law of Least Effort governs human behavior, especially those forms of behavior that individuals find burdensome or at least not intrinsically rewarding. The Law of Least Effort is a major constraint on the behavior of humans everywhere; much behavior can only be explained satisfactorily by taking it into account.
5. None of the tendencies identified above are rigid. Rather, they are behavioral *predispositions* that move along certain lines rather than others but that interact in various ways with the total set of environmental contingencies within which humans find themselves. The behavioral predispositions tend to win out in the long run, but they can be diminished or even negated by certain environmental contingencies. At the same time, other contingencies can amplify these tendencies, pushing them to increasingly higher levels.
 6. From the above it follows that humans' most important interests and concerns are reproductive, economic, and political. Political life is primarily a struggle to acquire and defend economic resources, and

economic life is primarily a matter of using resources to promote reproductive success. But at the experiential level individuals have no conscious recognition that their behaviors are driven by these motives. People often experience economic and political behaviors as valuable in themselves and are often highly motivated to continue and elaborate such behaviors in their own right.

7. Many, probably most, of the features of human social life are the adaptive consequences of people struggling to satisfy their interests.

2. Principles Concerning Group Relations

1. Individuals pursuing their interests are the core of social life. The pursuit of interests leads to both highly cooperative and highly conflictive social arrangements.
2. Many cooperative forms of behavior exist at the level of social groups or entire societies. Cooperative social relations exist because they are the relations that will best promote each individual's self-interests, not because they promote the well-being of the group or society as a whole. The selection of cooperative social forms occurs at the level of the individual, not the group or society.
3. Cooperative forms of interaction are found most extensively among individuals who share reproductive interests in common, i.e., among kin and especially close kin. This is the basis for the family as a fundamental social institution.
4. Outside of kinship and family life, cooperative relations are most likely to be found among individuals who depend heavily on each other for the satisfaction of their basic interests.
5. When competitive and conflictive behavior will more satisfactorily promote individual interests, cooperative relations will decline in favor of competitive and conflictive relations.
6. People are unequally endowed to compete in the social struggle – some are bigger, more intelligent, more aggressive or ambitious, more clever, more deceitful, etc. – and as a result social domination and subordination are common and frequent features of social life.
7. Members of dominant groups benefit disproportionately from their social position, and frequently they are able to make use of subordinate individuals to advance their interests. Their use of these individuals frequently takes the form of economic exploitation or social exclusion.
8. Because they benefit from their situation, members of dominant groups are highly motivated to structure society so that their superior social position can be preserved or enhanced.
9. Social life is therefore disproportionately influenced by the interests and actions of the members of dominant groups.

3. Principles Concerning Systemic Relations within Societies

1. Human societies consist of four basic subunits:
 - Individuals themselves as biological organisms, which we may call the *biostructure*.
 - The basic natural phenomena and social forms that are essential to human biological reproduction and economic production, i.e., the ecological, demographic, technological, and economic structures essential for survival and well-being; this we may call the *ecostructure*.
 - The institutionalized patterns of behavior shared by individuals, especially the patterns of marriage, kinship, and family life; the egalitarian or inegalitarian structuring of the society along the lines of class, ethnicity, race, or gender; its mode of political life; and its mode or modes of socializing and educating the next generation; these patterns may be identified as the *structure*.
 - The primary forms of mental life shared by the members of the society, i.e., beliefs, values, preferences, and norms as these are expressed in such things as religion, art, literature, myth, legend, philosophy, art, music, and (to some extent) science; these we may refer to as the *superstructure*.
2. These four components of societies are related such that the flow of causation is primarily from the biostructure to the ecostructure, then from the ecostructure to the structure, and finally from the structure to the superstructure; the flow may sometimes occur in the reverse manner, or in some other manner, but these causal dynamics occur much less frequently.
3. According to the logic of 3.2, it is clear that the forces within the biostructure and the ecostructure are the principal causal forces in human social life; the biostructure structures social life both indirectly, i.e., through its action on the ecostructure (which then acts on the structure and superstructure), and through its direct effect on some of the elements of the structure and superstructure. It follows that the superstructure has the least causal impact on the patterns of social life, but this impact is in some instances more than negligible.
4. The components of societies are related as they are because such causal dynamics flow from the deep wellsprings of human action. The biostructure and the ecostructure have a logical causal priority because they concern vital human needs and interests relating to production and reproduction.
5. Once structures and superstructures have been built by biostructures and ecostructures, they may come to acquire a certain autonomy. New needs and new interests may arise therefrom, and these new needs and interests, along with reproductive, economic, and political interests,

may form part of the human preference and value structure characteristic of the members of a society, and thus become new environmental contingencies constraining the expression of human biological predispositions.

4. Modes of Darwinian Conflict Explanation

1. As is obvious from the principles stated in Section 3, Darwinian conflict explanations are materialist in nature; these explanations may take any or all of three forms: biomaterialist, ecomaterialist, or polimaterialist.
2. *Biomaterialist* explanations explain a social form by direct reference to a basic feature of the human biogram. That is, an explanation is biomaterialist if it links a social form to the human biogram without reference to any mediation of the causal relationship by some other social form. *Example:* Polygyny is a widespread feature of human societies because it springs from an innate desire of males for sexual variety and from the tendency of females to be attracted to resource-rich males. (*But note:* The *extent* of polygyny cannot be explained merely by invoking the biogram.)
3. *Ecomaterialist* explanations explain a social form by linking it directly to the influence of ecological, technological, demographic, or economic forces, and thus only indirectly to a feature of the human biogram. *Example:* Hunter-gatherer societies frequently display intensive sharing and cooperation because these are behaviors that promote individuals' interests within the configuration of hunter-gatherer technoeconomic systems and natural environments.
4. *Polimaterialist* explanations explain a social form by linking it directly to the political interests or situations of the participants. Political interests or situations ordinarily spring from the participants' economic interests, which in turn are ultimately derived from the character of the human biogram. *Examples:* Democratic forms of government emerged earliest in those Western societies with the largest and most politically organized working classes. Third World revolutions occur most frequently in societies where the state is highly vulnerable to a revolutionary coalition.

THE STILL UNFRIENDLY RECEPTION OF SOCIOBIOLOGY BY SOCIOLOGISTS

Despite the excellent work of these and other sociologists, sociobiological thinking has still made very limited headway in sociology. Lee Ellis (1977)

predicted thirty years ago that sociobiology would absorb much of sociology by the year 2000. It hasn't happened, not even remotely. Will it ever happen? This is a very difficult question to answer, but if it does happen it will clearly not be soon.

There appears little doubt that sociologists have remained more opposed to sociobiology than the members of their closely related sister disciplines, anthropology and psychology, although people in those fields often say that sociobiology – or evolutionary psychology, as it is usually known in those disciplines – is still very much a minority point of view there as well. Most sociologists range from being either indifferent to sociobiology or downright hostile to it.

Why have sociologists been so persistently negative? Van den Berghe (1990) has suggested that sociologists don't and won't think evolutionarily for two main reasons: anthropocentrism and trained incompetence. Anthropocentrism is a major characteristic of the human species, social scientists included, who base most of their claims on the uniqueness of humans. Sociologists emphasize this uniqueness more than any other social scientists, and sociobiology is a major threat to sociologists' anthropocentric conceit. As for trained incompetence, van den Berghe notes that sociologists are taught as undergraduate and graduate student not only to be oblivious to biology, but to be militantly and proudly ignorant of it. They spend many years being disciplinarily indoctrinated into the dogmas of environmentalism and antireductionism.

I would add that students of sociology seem to be especially vulnerable to such dogmas. It has been my experience in over three decades of university teaching that students who go into sociology, even at the undergraduate level, are individuals who are already predisposed to think in terms of social and cultural determinism. Many sociology students start out as psychology majors, and many of these have told me that the reason they switched to sociology was because of its emphasis on the role of society in conditioning the individual. They did not like what they regarded as the overemphasis of psychologists on the individual person and organism. Van den Berghe is right: Sociologists are the victims of trained incompetence. However, they have been remarkably willing victims.

But sociological resistance to evolutionary thinking also has a great deal to do with politics and ideology. Most people who go into sociology want to change the world, and that is their motivation for becoming sociologists. Such people are ideologically convinced in advance that human behavior has little to do with biology. They believe this, and they fervently want to believe it, because they see the acknowledgment of biological factors as indicating that behavior is resistant to fundamental change. So sociologists dislike sociobiology because they are severely threatened by it politically, and it must be said that sociology has become an increasingly politicized discipline over the past two or three decades.

There is another threat perceived by sociologists, though, that must be recognized. Most sociologists believe that their claim to importance is to show

that social and cultural forces shape everything. They seem to feel that without this they have nothing to distinguish themselves and make themselves important. We might call this sociologists' "Durkheimian mandate": Social facts can only be explained in terms of other social facts. Stressing the importance of biology, they think, undermines this, and robs their discipline of its unique importance. Thus sociologists feel threatened disciplinarily. As van den Berghe (1990) has noted, sociologists use antireductionism as a territorial display especially against psychologists, whom they regard as their nearest intellectual rivals (but they fear the biologists even more).

Is there any hope? There are perhaps a few glimmers. There has been some increase in the number of sociologists who are now doing serious evolutionary work, as discussed in the previous section. Another potentially encouraging sign is the formation of an Evolution and Sociology section of the American Sociological Association. I say "potentially" because this section barely achieved the minimum membership for official ASA recognition (300), and it accomplished this only because many of the sociologists who joined did so as a favor to friends and fully intended to drop their membership after a short period of time. (As of this writing, membership has declined from 326 to 213, and I fear it will drop even lower.)

Before concluding, let me contrast the situation in sociology with that in psychology and anthropology. Considerable evidence suggests that psychologists and anthropologists are a good deal more sympathetic to sociobiology/evolutionary psychology than sociologists. Both psychologists and anthropologists are prominently represented as authors of books and articles written from an evolutionary psychological perspective. Evolutionary psychologists founded the major scientific society for Darwinian social science in North America, the Human Behavior and Evolution Society (HBES), and they are currently its most numerous representatives and leading figures. Several textbooks in evolutionary psychology have already appeared, as have two handbooks. HBES is not only thriving, but is growing significantly, and is clearly where the action is today. This organization is composed mostly of psychologists and anthropologists, and only a small handful of sociologists attend its meetings (I am one of those few).

The sad fact is that, not only have psychologists and anthropologists taken to the study of the biological foundations of behavior much more than sociologists, but even the majority of biologically oriented sociologists continue to strongly resist the classical neo-Darwinian paradigm, seeing it as a threat to sociology. Unsurprisingly, it is the younger sociologists who have been most inclined to adopt classical evolutionary psychological principles and to use them to guide their research. Kanazawa and Hopcroft are the most notable in this regard, although older sociologists such as van den Berghe and Lopreato (along with the latter's former student Crippen) have largely accepted the main claims of the sociobiologists and evolutionary psychologists.

And, of course, I have done so myself in my synthesis of neo-Darwinism with materialist social theory to create Darwinian conflict theory. But only a

minority of sociologists looking at the biological foundations of human society embrace sociobiology or evolutionary psychology, and some reject it emphatically. Steven Goldberg, for example, wants to pursue a biological theory of gender by staying at the level of hormonal differences between the sexes and without invoking evolutionary principles at all. Goldberg is like Chomsky in linguistics, who famously claimed that humans possess an innate language acquisition device but at the same time denied that this device had evolved by natural selection or that it was even adaptive. And a number of sociologists who have embraced an evolutionary perspective in its broadest sense continue to resist the more specific principles of evolutionary psychology, claiming that it has produced mostly “just-so stories” unsupported by convincing evidence.

So, let me finish with two grand conclusions. First, sociology is not the optimal discipline for the Darwinian study of human social life. People who go into sociology are primarily concerned with changing society for the better and they see understanding it as simply a means to that end. In this light, they resist biological explanations because such explanations do not resonate with their goals – indeed, are seen as highly antagonistic to them. The Darwinian action today is in psychology and anthropology. I urge sociologists who want to be Darwinians to join HBES and to present papers there. Sociologists aren’t listening, and aren’t likely to listen any time soon. (Unfortunately, HBES is dominated by psychologists, whose substantive foci are rather different from those of sociologists, and often quite narrow. But sociologists could help to expand the substantive foci of HBES.)

But perhaps this conclusion is too pessimistic. Therefore, let me state a second one, which is that, although I am a short-term pessimist, I am a long-term optimist. I predict that sociologists for the most part will persist in their repudiation of sociobiology, not forever, but very likely until it is too late. Sociology’s reputation, never all that strong to begin with, will drop even lower and sociology will eventually become marginalized within the social sciences and within the academic world more generally. Many sociologists may wake up, but not until the damage cannot be undone. By the time sociologists finally begin to realize they have to take sociobiology seriously – that they must change or die – the core of our field will have been stolen away from us by the evolutionary psychologists, Darwinian anthropologists, behavior geneticists, and others currently hard at work exploring the biological foundations of human behavior. Sociology will not disappear altogether, but the field will shrink considerably and will have even less credibility within the academic world and with the educated public than it already has. My message to sociologists in 2008 is thus that we are sailing on the Titanic and it is late afternoon on April 14, 1912. Let’s get the lifeboats ready before we hit that iceberg. I, for one, am not going to go down with the ship!