CHAPTER 21

Evolutionary Theorizing

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SOCIAL EVOLUTIONISM AND ITS CRITICS

Social evolutionary theories have held a prominent place in the history of the social sciences. Although there are many kinds of evolutionary theories, the essential element that they hold in common is their assumption that history is more than just a lot of noise signifying nothing—more, in other words, than a series of particular and unique events revealing no noteworthy patterns. On the contrary, the evolutionist assumption is that history reveals a certain directionality in the sense that there are similar processes occurring at similar times at various points throughout the globe. As theories, evolutionary analyses of human society do not limit themselves to simply describing directional patterns, but go on to provide causal explanations for the observed sequence or sequences.

Elsewhere, I (Sanderson, 1990) have written a detailed history of evolutionary theories, but a brief synopsis may be presented here. Evolutionary theorizing goes back to the beginning of both sociology and anthropology as disciplines in the middle of the 19th century. Indeed, sociology and anthropology were both born evolutionary. In anthropology the two most important evolutionary theorists were Lewis Henry Morgan (1974) and Edward Burnett Tylor (1871), both among the most important founding fathers of that discipline. Morgan identified three stages of social evolution, which he called savagery, barbarism, and civilization. Societies in the stage of savagery are technologically rudimentary and survive mostly by hunting and gathering. The transition to barbarism is marked by the invention of pottery and the domestication of plants and animals. For Morgan, the stage of civilization was achieved with the invention of the phonetic alphabet and writing. Tylor employed the same three stages used by Morgan, but he was more interested in the evolution of the ideational rather than the material dimensions of culture, especially with the development of language, myth, and religion. In sociology the leading evolutionist of this time was Herbert Spencer (1972) (cf. Peel, 1971; Turner, 1985), whose evolutionism is very familiar to sociologists even today. Spencer set forth a famous law of evolution that he thought governed not only changes in society, but changes in all of nature. Like all phenomena, societies had a tendency to change from a highly undifferentiated to a highly differentiated state, thus becoming more complex

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and more functionally integrated. At a more concrete level, Spencer spoke of the evolution of the institutions of societies, especially their economic and political institutions, and he identified such factors as population pressure and warfare as primary determinants of evolutionary change. There were many other evolutionists in both disciplines during this period, and even thinkers whose main contributions are not usually thought of as evolutionary commonly held deep and often implicit evolutionary assumptions. I think especially of Durkheim. Anyone familiar with his *The Division of Labor in Society* (Durkheim, 1933) cannot help but notice his strong and completely unquestioned evolutionary assumptions about the world historical shift from mechanical to organic solidarity. He even explained the shift from mechanical to organic solidarity in Darwinian natural selectionist terms.

By the last decade of the 19th century evolutionary theorizing had waned and social science, anthropology in particular, fell under the spell of an "antievolutionary reaction" (Harris, 1968; Sanderson, 1990). In anthropology, evolutionism became virtually disreputable at the hands of Franz Boas (1932, 1940) and his disciples, who dominated anthropological thinking, at least in the United States, until the 1930s. Boas thought that evolutionism was flawed in many ways. He was an extreme historical particularist who argued that neither history nor cultures had any patterns at all. Every culture was just a polyglot of shreds and patches put together largely by culture contact and diffusion. Each culture had its own unique structure and its own unique history. Generalizing about either history or culture was foolhardy in the extreme, if not utterly impossible. However, despite Boas's enormous influence, evolutionary thinking during this period by no means disappeared entirely. Indeed, it was embraced by such prominent scholars as William Graham Sumner and his disciples (Sumner & Keller, 1927), L. T. Hobhouse (Hobhouse, Wheeler, & Ginsburg, 1965), and a number of other thinkers. But evolutionary thinking had acquired a bad reputation among many of the intellectual leaders of the social sciences, and the students of these leaders realized that to think evolutionarily was to place one's intellectual career at risk.

And yet, evolutionism revived. The first stirrings of this revival came in the 1930s in the work of V. Gordon Childe (1936, 1951, 1954), an Australian archaeologist living and working in Scotland. Childe argued that history seemed to reveal few patterns if we look at it close up or in minute detail; but if we stand back and view it from a very long-term perspective, patterns begin to reveal themselves. Childe thought of himself as a kind of Marxist and gave technological change the primary role as a prime mover of social evolution. He identified two great evolutionary transformations in human history and prehistory, what he called the Neolithic and Urban revolutions. The former was associated with the development of agriculture and animal husbandry, along with settled village life, whereas the latter was associated with the rise of civilization and the state and all their accoutrements. Childe was followed in the 1940s by two other anthropologists friendly to evolutionary theory, Leslie White (1943, 1945, 1949, 1959) and Julian Steward (1949, 1955). White was a maverick who had been taught by the Boasians but who rebelled against them when he actually began to read the works of the evolutionists, Morgan's in particular. By the 1930s, he had become a vigorous evolutionist, a position that he defended the rest of his life. Like Childe, White emphasized the causal role of technological change. He formulated his own evolutionary law, which stated that culture developed according to the amount of energy harnessed per capita per year. Julian Steward was more cautious than either Childe or White in reviving evolutionary thinking, insisting that for the most part evolution was multilinear rather than unilinear. Although an overall line of evolution could be traced, culture also developed along many different lines and it was these divergent lines that most interested Steward. Like Childe and White, Steward was a materialist, but he emphasized the role of ecological rather than technological factors as causal forces.

Along with Childe and Steward, White not only resurrected evolutionary theory, but played a major role in bringing about what I have called the second generation of the evolutionary revival (Sanderson, 1990). By the 1950s, and especially by the 1960s, evolutionism became not only respectable again in anthropology but actually a perspective of major significance. The most important evolutionists in this period were, in anthropology, Marvin Harris (1968, 1977, 1979), Robert Carneiro (1970, 1973), Marshall Sahlins (1958, 1960, 1963), and Elman Service (1960, 1962, 1975), all students of either White, Steward, or both. Harris, Carneiro, and Sahlins were all materialists who gave primacy to such factors as technology, demography, and ecology as prime movers, although Sahlins was eventually to abandon and reject both evolutionism and materialism altogether. In his *Cannibals and Kings: The Origins of Cultures* (1977), Harris, the most important evolutionist of the period, attempted to explain social evolution over the past 10,000 years by emphasizing a continuing cycle of environmental depletion and intensification. We all would have remained hunter–gatherers if such groups had been able to achieve zero population growth. But they could not do so, and the resulting population growth and population pressure depleted hunter–gatherer environments and necessitated the shift to agriculture. As population continued to grow (now even faster), new depletions of the environment had to be followed by various forms of the intensification of agricultural production in order to maintain the standard of living, until eventually we were brought to the doorstep of the Industrial Revolution. Societies thus have grown larger and more technologically sophisticated and their institutions have been remade again and again, as a result of the constant pressure of numbers.

In sociology, which by this time had become almost hermetically sealed off from anthropology, these ideas had little influence—indeed, were probably largely unknown—but evolutionism was revived there by such thinkers as Gerhard Lenski (1966, 1970) and Talcott Parsons (1966, 1971). Lenski was actually one of the few sociologists to be strongly influenced by anthropology, and the evolutionary model he formulated in his major work on stratification, *Power and Privilege* (1966), and in his textbook, *Human Societies* (1970), was very similar to White's. Lenski took over White's basic causal model—technological change leads to changes in social systems, which in turn produce changes in ideologies—but produced a more adequate typology of evolutionary stages, distinguishing between hunter–gatherers, simple horticulturalists, advanced horticulturalists, agrarian societies, and industrial societies. With Parsons the situation was quite different. Stung by the criticism that his structural–functional model was incapable of dealing with social change, Parsons responded by formulating an extremely ambitious evolutionary interpretation of the past 5000 years of human history. This theory was strikingly different from the evolutionary theories dominant in anthropology at this time, as well as from Lenski's. It was a highly idealist and by all appearances teleological type of evolutionism that retained the functionalist assumptions for which Parsons was so well known (Sanderson, 1990). In many ways it was highly Spencerian. Societies changed by a process of increasing differentiation, and as they became more complex and more functionally integrated their "adaptive capacity" was enhanced.

The second generation of the evolutionary revival had begun to burn out by the late 1970s in both anthropology and sociology, and today antievolutionism has become rampant again in both fields. Both disciplines seem to be beating a hasty retreat to a modern version of Boasian historicism, arguing that history reveals few if any directional patterns and that we must be extremely cautious about generalizations. In sociology, Weberians like Randall Collins (1986) and Michael Mann (1986) are suspicious of evolutionary thinking, as are most Weberians, but they are hardly alone. In anthropology the situation in some respects is even worse. But what is it exactly that modern critics of evolutionism object to in this form of social theory? Let me

take up and respond to six different criticisms (for a much more detailed analysis of these criticisms, see Sanderson, 1990):

1. It frequently has been charged that evolutionary theories are illegitimate because they explain history and social change teleologically, thus conceiving history as nothing but the unfolding of predetermined patterns toward some ultimate goal. My own reading of evolutionary theories is that this criticism, while not entirely wrong, grossly overstates its case. The classical evolutionists of the second half of the 19th century often seemed to employ this kind of model of change, but I think it has largely disappeared since that time. Virtually all forms of evolutionism in the 20th century have abandoned such thinking in favor of looking at social evolution as the outcome of particular conditions operating at particular times in the lives of particular individuals. (The most striking exception may be Parsons's version of evolutionism.) In other words, evolutionists attempt to explain social evolution in terms of simple causal models.

2. It often is asserted that evolutionary theories have a strong endogenous bias, i.e., that they look at evolutionary events as occurring entirely within societies and fail to consider the role of various external influences, such as diffusion or political conquest. Leslie White took up this criticism in the 1940s with respect to the evolutionism of Morgan and Tylor and showed it to be manifestly false: both Morgan and Tylor, in fact, gave diffusion an important role in the evolutionary process itself. More recent versions of evolutionism, while perhaps more endogenist than exogenist, usually leave plenty of room for the role of external factors.

3. Critics of evolutionary theories such as Giddens (1981, 1984) and Irving Zeitlin (1973) have objected to them on the grounds that they employ a specious concept of adaptation. This objection seems to be rooted in the notion that the concept of adaptation is incurably functionalist, and since both thinkers object to functionalism, this makes evolutionary versions of functionalism highly suspect. It must be conceded that some versions of evolutionism do employ a functionalist notion of adaptation. This is most apparent in Parsonian evolutionism, whereby it is societies that do the adapting, and in which societies evolve toward continually higher degrees of "adaptive capacity." But the concept of adaptation can be reformulated so that it is individuals rather than societies that do the adapting, and so that notions of evolution as producing increasing adaptive capacity are cut away. In fact, there are current evolutionary theories that do precisely that.

4. Many critics also object to evolutionary theories for being inherently progressivist, i.e., for assuming that social evolution is tantamount to one or another form of improvement in the human condition. In fact, the vast majority of evolutionary theories *are* progressivist, some of them strongly so. The question then remains as to whether progressivism is justified by the actual historical record. My view is that this is an extremely complicated question that permits no easy or simple answer. History really is a mixed bag in which some things have gotten better and others gotten worse. The answer also depends on whether you are looking at social evolution over its entire course or simply at some phases of it (cf. Sanderson, 1995, 1999b, pp. 336–357). For example, it matters a great deal whether one is talking about social evolution before the rise of capitalism in the 16th century or social evolution since that time. But the real issue is whether evolutionary theories are inherently progressivist, i.e., whether or not they must be such. The answer to this question is no; there is no inherent association between evolution and progress. The best example of this is the work of the anthropologist Marvin Harris, who has formulated an evolutionary theory that, while viewing history as a mixed bag, often is antiprogressivist, and his antiprogressivism is supported by striking empirical data. I have developed my own version of evolutionism directly on the basis of Harris's model (see below).

5. Anthony Giddens (1981, 1984), one of the leading antievolutionists in sociology today, has made a special point of criticizing evolutionary theories for their lack of any concept of human agency, which for Giddens completely invalidates any social theory. In Giddens's view, evolutionary theories are hard forms of determinism that see individuals as just the playthings of blind social forces. My reading of evolutionism, or at least of the best current evolutionism, is quite different. I see the best current evolutionary theories as clearly implicating the individual and his or her choices in social evolution. For example, what was going on in the first great evolutionary transformation, the Neolithic Revolution, which brought agriculture and agricultural communities into the world? My answer, based on the work of many anthropologists and archaeologists, is that individuals were making choices about shifting toward a new mode of production in terms of their various interests: the standard of living they wanted to enjoy, the amount of time and effort they wanted to expend in making a living, and so on. The Neolithic Revolution was a human creation, just as later evolutionary transitions were. No one was reacting blindly to unseen social forces. Agency and structure were intertwined. Now, of course, the notion of agency I am employing here is one that sees individuals as making choices within the context of a set of constraints, and thus these choices are not truly voluntaristic, which may cause Giddens to object that this is no real concept of agency at all. But to my mind it is. It is just what Marx was talking about when he declared that men make history, but not just as they please.

6. Perhaps the biggest objection to evolutionary theories today, especially among sociologists, is that they impute far too much directionality to the flow of history. Weberian sociologists like Collins (1986) and Mann (1986), for example, see history in terms of particularity and the general absence of definable patterns. This is perhaps the most difficult of all the criticisms of evolutionism to answer. In his famous critique of evolutionism written over 30 years ago, Robert Nisbet (1969) claimed that the detection of historical pattern is not a property of history itself, but simply is in the eye of the beholder. To a large extent this is correct, but Nisbet refuses to play fairly. He claims that pattern is in the eye of the beholder, but that the absence of pattern apparently is not; it is just the way things are. But how can that be so? I would argue that both pattern in the form of directionality and historical uniqueness are fundamental parts of the historical record. Some scholars seem more attuned to one, others more attuned to the other, for reasons that are not very well understood. This seems to be like one of those Gestalt drawings where first you see a woman's face, then you see a candlestick rather than the face, and then you see the face again. My point is simply this: Why not play it both ways and recognize that pattern and unique event are there to be observed? Why deny the one in order to embrace the other? Evolutionists do not deny the existence or the importance of historical uniqueness and divergence, but simply try to discern directional patterns that may be, in all candor, a lot more difficult to pick out.[1]

[1]It is interesting to see how critics of evolutionism sometimes become, *malgré eux*, evolutionists of a sort. In his famous book, *The Sources of Social Power*, Michael Mann (1986) argues against evolutionary interpretations of history, at least with respect to the last 5000 years. However, one of the major points his book establishes is the steady concentration of power over time, or increasing "power capacity," as he prefers to call it, and he spends a lot of time talking about how this has come to be so. That looks very much like a type of evolutionary argument to me. Consider Anthony Giddens, an even more severe critic of evolutionism. Giddens's (1981, 1984) own alternative to evolutionism is a theory of what he calls increasing time-space distanciation. If this theory is not a theory of directional social change, and thus a version of evolutionism, I am at a loss to know how to describe it. The reason that Giddens thinks it is nonevolutionary (or possibly even antievolutionary) is because he has a very narrow and restricted conception of what an evolutionary theory actually is (cf. Sanderson, 1990).

A COMPREHENSIVE MODEL OF SOCIAL EVOLUTION: EVOLUTIONARY MATERIALISM

Recently I have developed my own comprehensive model of social evolution largely by formalizing and extending Harris's materialist model (Sanderson, 1994, 1995, 1999b). I call my model "evolutionary materialism." An abbreviated version of evolutionary materialism is presented below (for the full model, see Sanderson, 1994, 1995, 1999b, pp. 3–16):

1. World history displays social transformations and directional trends of sufficient generality such that typologies of social forms may be usefully constructed. Social evolutionists concentrate on general and repeatable patterns of social evolution, but at the same time take note of the unique and nonrecurrent. They also take note of social stasis, devolution, and extinction. A proper theory of social evolution must explain all of these phenomena.
2. Social evolution is not a teleological process somehow operating "behind the backs" or "over the heads" of individuals. Rather, it is the accumulation of the acts of individuals in concrete circumstances responding to their biological, psychological, and social needs and aims.
3. Social evolution occurs at all levels of social life, i.e., from simple dyads to world systems, but macrolevel evolution is simply the aggregation of microlevel evolution.
4. Increasing social differentiation is an important evolutionary process, but it is neither the only nor the most important evolutionary process. Much social evolution has little to do with differentiation.
5. Social evolution is both similar to and different from biological evolution. It is similar in that both forms of evolution involve adaptational processes and both are characterized by specific as well as general forms of change. However, social evolution differs from biological evolution in that (1) biological evolution is largely divergent, whereas social evolution is largely parallel and convergent; (2) biological evolution depends on random variations (genetic mutations), whereas social evolution results largely from variations that are deliberate and purposive; (3) social evolution is much more rapid; and (4) natural selection is not a sufficient explanation of social evolution. Because of these differences, social evolution must be studied as a process (or set of processes) it its (their) own right rather than simply by way of analogy with biological evolution
6. The principal causal factors in social evolution are the material conditions of human existence, i.e., demographic, ecological, technological, and economic forces. These factors operate probabilistically, i.e., in the long run and over the majority of cases; they have the significance they do because they relate to the most basic of human needs, i.e., those concerning production and reproduction.
7. Which of the material conditions (or which combination of conditions) is of greatest causal importance varies from one historical period or evolutionary stage to another. Thus, different types of societies in different historical epochs have different "evolutionary logics." There is no universal cause of social evolution.
8. Much of social evolution results from adaptational processes. *Adaptation* must be sharply distinguished from *adaptedness*. Adaptation is the process whereby individuals create social patterns intended to meet their needs and desires. Adaptedness involves the extent to which a social pattern arising as an adaptation actually meets

the needs and desires of individuals. All adaptations must originally lead to adaptedness, but in the long run the original adaptedness may be lost (or even turn into maladaptedness).

9. The extent to which adaptations lead to adaptedness can vary dramatically from one set of individuals or from one time period to another. The greater the level of differentiation of a society, the more this is likely to be the case. For example, what is adaptive for dominant groups may well be maladaptive for subordinate groups.
10. Adaptation is a process pertaining to individuals rather than to groups or societies. Only concrete individuals can be adaptational units because only they have needs and wants.
11. Adaptedness is not a process that necessarily increases or improves throughout social evolution. New social patterns are adaptations to local conditions only and lead to adaptedness only relative to those conditions. Social evolution is not necessarily progressive.
12. Individuals are egoistic beings who give priority to the satisfaction of their own needs and desires. They behave adaptively by attempting to maximize the net benefits of any given course of action. This egoistic behavior is the proper starting point for evolutionary analysis.
13. Individuals acting egoistically create social systems that are frequently constituted in ways those individuals never intended. Social evolution is driven by purposive human action, but it is often an unintended process.
14. The social systems that individuals create act as new sets of constraints acting on both themselves and their progeny. Social evolution is the result of the continuous interplay between individual agency and social structure.
15. Social evolution is the result of both endogenous and exogenous forces, i.e., forces operating within societies on the one hand and on the other hand forces operating within the framework of intersocietal networks or "world systems."
16. Social evolution varies in its pace, becoming more rapid at later stages. However, like biological evolution it is a "gradualist" process, i.e., one that occurs as the result of relatively small, step-by-step changes.

In formulating evolutionary materialism, I have attempted to eliminate the most objectionable features of evolutionary theories (more or less epitomized by the Parsonian functionalist evolutionary model). Evolutionary materialism reconceptualizes adaptation as the striving of individuals to reach their goals and satisfy their interests, and there is no suggestion that societies achieve higher levels of adaptive capacity as they evolve. The model is explicit in its claim that imputing progress to social evolution is always problematic; whether progress or regression is occurring is always an empirical question that must consider the historical time period and the particular dimension of social life. Most importantly, evolutionary materialism is explicitly antiteleological; evolution is simply the response of particular individuals located at particular points in time and space to the conditions that they face. Evolution over the longest periods of time is the sum total of these responses. A great deal of room is allowed for a variety of evolutionary responses, i.e., no assumption is being made that social evolution is a unitary, purely unilinear process. It involves not only parallel lines of change undergone by different societies, but divergent lines of change as well.

I have reviewed in great detail elsewhere the evidence supporting my evolutionary materialist model (Sanderson, 1995, 1999b). I find it impossible to see how the broad features of human history can be viewed in anything except evolutionary terms. There were three great

social transformations in world history and prehistory: the Neolithic Revolution, beginning some 10,000 years ago; the evolution of civilization and the state, beginning some 5,000 years ago; and the transition to the modern capitalist world, beginning some 500 years ago. The Neolithic Revolution occurred in at least six (and probably eight) different parts of the world at remarkably similar times and the social outcomes were strikingly similar in each case. The rise of civilization and the state was another instance of remarkable parallel evolution on a world scale. The modern capitalist world can be dated to about AD 1500 and was to a large extent a European phenomenon, although Japan provides a strikingly parallel case (Sanderson, 1994), and in fact much of the world was evolving in a more capitalistic direction after about AD 1000 (McNeill, 1982; Modelski & Thompson, 1996). Nor should we overlook the long time period between about 3000 BC and AD 1500. All over the world during this time we find striking directional trends in the form of population growth, technological change, increasing commercialization, increases in the size and scope of political empires, and even ideological changes associated with the rise of Greek philosophy and the major world religions (Sanderson, 2000). These changes, which to me are highly deserving of the name evolutionary, were fundamental in setting the stage for the events after AD 1500 (Sanderson, 1994, 1995, 1999b). With the Industrial Revolution and the rise of industrial capitalism, we see remarkably parallel changes throughout the societies of Western Europe, North America, and Japan. For the past century or more these societies have been evolving very similar divisions of labor, forms of social stratification, political systems, systems of mass education, and have placed very similar emphases on large-scale scientific and technological development (Sanderson, 1995, 1999b).

FROM EVOLUTIONARY MATERIALISM TO DARWINIAN CONFLICT THEORY

Evolutionary materialism as I have formulated it was about 20 years in the making. During that time I struggled to see how biological evolution—not the evolution of species per se, but rather human nature as conceived by sociobiology—fit together with it, or even could become part of it. In the last 5 years or so my thoughts have crystallized along these lines. As a result I have come to see that evolutionary materialism can be made part of a more general and abstract theory, one that I call Darwinian conflict theory (previously called synthetic materialism—see Sanderson, 1998, 1999b). Darwinian conflict theory is a synthesis of the economic and ecological materialism and conflict theory stemming from Marx and Marvin Harris and the biological materialism of Darwin. Evolutionary materialism now may be regarded as a subtype of Darwinian conflict theory especially intended for explaining evolutionary phenomena; Darwinian conflict theory itself is assumed to be applicable to explaining all social phenomena, not just sequences of social evolution.

The basic principle of sociobiology is that many features of human behavior have evolved as adaptations designed to promote an individual's reproductive success (Daly & Wilson, 1978; Alexander, 1979; Symons, 1979; Lopreato & Crippen, 1999). In a sense, sociobiology is the ultimate form of sociological materialism and conflict theory, and economic and ecological forms of materialism and conflict theory must be grounded in it. Sociobiology establishes essential "first principles" for social theory. Many sociologists will question this attempt to synthesize sociobiology with Marxian conflict theory and Harris's cultural materialism. Both Harris and the Marxists have been extremely critical of sociobiology (cf. Harris, 1979, pp. 119–140, 1999, pp. 99–109). But a connection is there. Darwinian natural selection is, after all, a conflict theory of nature and society that actually predicts many of the phenomena

observed by Marx, but explains them differently and at a deeper level (cf. Barkow, 1989; Betzig, 1986). As for Harris, his most important theoretical principles are not only compatible with sociobiology, but make sense only in light of it (van den Berghe, 1991; Alexander, 1987). As Richard Alexander (1987) has pointed out, Harris explains many phenomena (as do the Marxists) in terms of the search for wealth and power, but he fails to see that this proximate goal is intimately linked to a deeper ultimate goal, that of achieving reproductive success. On many occasions Harris has spoken of the importance of the modes of production and reproduction in social life without appearing to realize the full implications of his assertion. Many of Harris's explanations are not so much wrong as simply incomplete.

In a forthcoming work, I (Sanderson, 2001) present the principles of Darwinian conflict theory in full, along with a detailed summary of evidence that I believe supports its principles. Here I will provide a somewhat truncated version of the theory.

Principles Concerning the Deep Wellsprings of Human Action

1. Like all other species, humans are organisms that have been built by millions of years of biological evolution, both in their anatomy/physiology and 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. The resources that humans struggle for, which allow them to survive and reproduce, are in short supply. This means that humans are caught up in a struggle for survival and reproduction with their fellow humans. This struggle is inevitable and unceasing.
3. In the struggle for survival and reproduction, humans give overwhelming priority to their own selfish interests and to those of their kin, especially their close kin.
4. Human social life is the complex product of this ceaseless struggle for survival and reproduction.
5. Humans have evolved strong behavioral predispositions that facilitate their success in the struggle for survival and reproduction. The most important of these predispositions are as follows:
   - 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 and the female desire to nurture is stronger than the male desire. Effective parental behavior has evolved because it promotes reproductive success in a species like humans. The family as a social institution rests on a natural foundation.
   - 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 sexual selection, 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 being 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 rewarding in and of themselves. The law of least effort places major limits on the behavior of humans everywhere; much behavior can be explained satisfactorily only by taking it into account.

6. 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 physical and sociocultural environment. The behavioral predispositions tend to win out in the long run, but they can be diminished or even negated by certain environmental arrangements. At the same time, other environments can amplify these tendencies, pushing them to increasingly higher levels.
7. 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. However, 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.
8. Many, probably most, of the features of human social life are the adaptive consequences of people struggling to satisfy their interests. The following provisos concerning the notion of adaptation are in effect (deleted here, but these are essentially the same as principles 8-11 of evolutionary materialism).

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 selfish 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 conflictive behavior will more satisfactorily promote individual interests, cooperative relations will decline in favor of conflictive relations.
6. People are unequally endowed to compete in the social struggle (i.e., some are bigger, more intelligent, more aggressive or ambitious, more clever, more deceitful, etc.), and as a result social domination and subordination often appear as basic 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 therefore is disproportionately influenced by the interests and actions of the members of dominant groups.
10. The primary forms of social domination and subordination in human social life relate to gender, ethnicity, social class, and politics, although other forms of domination and subordination occur as well. These forms of domination and subordination are most basic because they stem directly from the deep wellsprings of human action.

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 and feeling shared by the members of the society, i.e., its beliefs, values, preferences, and norms as these are expressed in such things as religion, art, literature, myth, legend, philosophy, art, music, and 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 second principle, 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, then, that the ideas and feelings within the superstructure have the least causal impact on the patterns of social life.
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 ecostruc-

tures, 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.

Modes of Darwinian Conflict Explanation

1. As is obvious from the principles stated in the preceding section, 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 to say, 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.
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 techno-economic 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.

In my forthcoming book (Sanderson, 2001), I have developed Darwinian conflict theory and the background to it at much greater length and have applied it to several of the dimensions of social life of primary concern to sociologists: reproductive behavior; human sexuality; sex and gender; marriage, kinship, and family patterns; economic behavior and economic systems; social hierarchies; and politics and war. Here space permits only a brief discussion of one of these substantive phenomena as understood by Darwinian conflict theory, social hierarchies.

DARWINIAN CONFLICT THEORY APPLIED AND ILLUSTRATED: THE CASE OF SOCIAL HIERARCHIES

Social hierarchies are a universal feature of the human condition, although their nature and extent vary greatly from one society to another. At one end of the continuum, marked by hunter–gatherer and simple horticultural societies, we find few or no differences in wealth or power between individuals and only differences of social esteem or rank. At the other end, marked by agrarian and industrial societies, we find highly stratified societies with major

differences in wealth and power between relatively distinct social strata or classes (Lenski, 1966; Sanderson, 1999a). My argument is that social hierarchies have to be explained by all three modes of Darwinian conflict explanation, i.e., bio-, eco-, and polimaterialistically. Social hierarchies are biologically rooted but elaborated by a range of social and cultural conditions, especially those relating to economic and political organization.

A number of social scientists have stressed that hierarchies are biologically rooted. Somit and Peterson (1997) have noted that all human languages contain words referring to distinctions of honor and status. James Woodburn (1982) and Elizabeth Cashdan (1980) point out that, whereas there are a number of societies that have been able to maintain very high levels of social and economic equality, this equality seems to be constantly challenged. In order for it to be maintained, people must be ever vigilant and constantly enforce the tendency of individuals to seek dominance over others. Joseph Lopreato (1984) claims that humans have an innate desire for creature comforts, and Jerome Barkow (1989) argues that there is a natural human hunger for prestige that dominates much human behavior. Why should such innate human motivations exist? The answer is that competition for status and resources, not only in the human world but throughout the animal world as well, is essential for mating and thus the promotion of an individual's reproductive success. Hundreds of studies show that social rank and reproductive success are highly correlated among mammals, humans included (Ellis, 1995; Betzig, 1986). However, it should not be assumed in the human case that people seek status and resources only to reproduce. At the proximate level of human experience, humans seek status and privilege for their own sake and find achieving them inherently pleasurable (Green, 1994). Nonetheless, the human brain has evolved for status and resource seeking because throughout hominid evolution those individuals who displayed such behavior (especially those who displayed it most vigorously) left more offspring than those who did not.

Alice Rossi (1977, 1984) has argued that a pattern of human behavior can be assumed to have a biological basis if two or more of four conditions are met: the behavior is universal or at least widespread in human societies; the behavior is widely found among other animals, especially nonhuman primates and other mammals; the behavior is found in young children prior to major socialization influences or emerges at puberty; the behavior is closely associated with anatomical or physiological attributes. In the case of hierarchy formation, all four of Rossi's criteria are met. In terms of the second condition, Pierre van den Berghe (1978) is only one of many scholars who have pointed to the virtual universality of hierarchy among primates. Van den Berghe notes that some primate societies display only minimal hierarchies, but among terrestrial primates, from whom humans are descended, strongly hierarchical societies are the rule.

As already noted, hierarchies are universally found in human societies (Rossi's first condition), and in terms of Rossi's third condition dominance- and rank-oriented behavior appears to be characteristic of infants and young children, as shown by a variety of ethological studies (Bakeman & Brownlee, 1982; Missakian, 1980; Strayer & Trudel, 1984; Russon & Waite, 1991; Omark & Edelman, 1975; Weisfeld, Omark, & Cronin, 1980). Most of these studies have been of children in American society, but an important cross-cultural study has been carried out by Barbara Hold (1980). She looked at the behavior of German and Japanese kindergarten students and children of comparable age from the G/wi San, hunter–gatherers from southern Africa. The children established dominance hierarchies in all three societies. In all cases, there were children who sought the limelight. Those children who became the center of attention were much more likely to initiate activities than lower-status children and the lower-status children frequently imitated the behavior of the dominants. The G/wi children, however, were distinctive in two ways: They did not try to dominate or manipulate other

children and their hierarchy seemed to be less rigid than those of the German and Japanese children. These are differences that likely spring from the more greatly enforced egalitarianism characteristic of G/wi society, an egalitarianism that stems from their economic situation.

There are also ample data to show that Rossi's fourth condition also is well met. Height is a widespread and possibly universal indicator of social status. In a well-known study (reported in Freedman, 1979), ostensible job recruiters were asked to choose between two applicants for a position, one of whom was much shorter than the other. The vast majority of the recruiters chose the taller applicant. In presidential elections throughout the history of the United States, the taller candidate nearly always has won the election. In Africa, shorter tribes have been dominated by taller tribes. In many horticultural societies, the highest-ranking man in a village is often called by a word that literally means "big man" (Hogbin, 1964; Harris, 1974, 1977; Brown & Chia-yun, 1993). In Russia and England higher-status individuals have tended to be much taller than those of lower status (Freedman, 1979). A common expression of submission throughout the world is bowing or crouching (van den Berghe, 1974). It is not likely that the correlation between height and social status can be explained simply by the better nutrition of high-status individuals, an explanation apt to be favored by most sociologists. Even in societies where there are no significant differences in nutritional intake, higher-status individuals tend to be taller. Furthermore, many studies show that most of the variance in human height results from genetic rather than social factors (Ellis, 1994), and thus it would appear that individuals acquire high status because they are tall rather than the reverse.

If human anatomy is related to status, is physiology as well? The answer appears to be yes. The best candidate for a neurochemical substrate of status-seeking behavior is the neurotransmitter serotonin. Research showing that serotonin and dominance-seeking are related in vervet monkeys (McGuire, 1982; McGuire, Raleigh, & Johnson, 1983) has been replicated for humans (Madsen, 1985, 1986, 1994). In one of the most recent studies, Douglas Madsen (1994) examined the relationship between blood serotonin levels, social rank, and aggressiveness in the context of a game-playing situation. He found that the serotonin levels of the participants who played the game nonagressively declined as their perceived social status rose. By contrast, the serotonin levels of the participants who played the game in an aggressive fashion increased as their perceived social status climbed. Moreover, serotonin is known to play a major role in the regulation of mood, with low brain serotonin levels being associated with depression. Many individuals who have been treated for depression with fluoxetine (trade name, Prozac) have not only seen their mood improve, but also have experienced personality changes in the direction of less shyness or reticence and more confidence and boldness (Kramer, 1993). Confidence or boldness are very likely correlated with status-seeking behavior.

How does this natural status- and resource-seeking behavior of humans get translated into the actual systems of inequality and stratification that we observe in human societies? It seems to be the case that where societies are small, simple in scale, technologically rudimentary, and incapable of producing economic surpluses, hierarchies are minimally developed because there is no real wealth that can be contested, and thus no basis for the formation of classes (Lenski, 1966). In these kinds of societies no one is in a position to compel others to work for them and create wealth. Moreover, where people live only or primarily by hunting and gathering, intensive cooperation and sharing seem to derive from a sensible strategy of variance reduction (Wiessner, 1982; Cashdan, 1985; Winterhalder, 1986a,b; cf. Kelly, 1995). Hunting success varies greatly from time to time and place to place, and thus by sharing with others when you have resources others will share their resources with you when you are in need. In fact, this may be the reason why egalitarianism is so strongly policed in most hunter–gatherer societies: It is in everyone's long-term self-interest. But when societies evolve in size

and scale, become more technologically advanced, and become capable of producing large economic surpluses, competition and conflict begin to replace cooperation at the level of the wider society because now there are resources that individuals deem it useful to compete for (Lenski, 1966). Inequalities of esteem or status not only get magnified, but come to be accompanied by differences in wealth that develop a rigidly hereditary character. Also critical to this process seem to be changes in political relations that allow some people to be in a position to compel others to produce the economic surpluses that more advanced technology makes possible, i.e., surpluses are usually only potential rather than actual until someone can coerce someone else to work harder and longer to produce them (Sanderson, 1999a, 2001). As technological, economic, and political evolution continue, stratification systems become more elaborate and extreme.

A close examination of hunter–gatherer societies will show that they seldom extend hierarchies beyond the level of status differences, and often these differences are minimal. Yet we know that the tendency toward stratification is there because under certain conditions hunter–gatherer societies have become stratified, sometimes markedly. One of these conditions is the presence of an environment or economy sufficiently productive to allow people to accumulate and store foodstuffs. Alain Testart (1982) has divided hunter–gatherer societies into two types: those who store food and those who do not. Upon examining a sample of contemporary hunter–gatherers ($N = 40$), he found that the vast majority who stored food had genuine class stratification compared to only a small handful of the nonstorers. One of the most ethnographically famous of all societies is the Kwakiutl of the Northwest Coast region of North America. The Kwakiutl were hunter–gatherers who lived in one of the most bountiful societies on earth, with seemingly endless supplies of fish, berries, and other food substances. They were storing hunter–gatherers par excellence, and as a result had developed a highly stratified society led by ruling chiefs who ranted about their own prestige and displayed it by giving away resources to neighboring chiefs.

In simple horticultural societies the technological and economic base usually is not sufficient to allow for the creation of stratification, but because such groups depend much more on cultivation than on hunting or gathering the need for variance reduction is considerably lessened. Therefore, the desire of some individuals for high status and even deference from others can be given freer rein. These societies are often characterized by status-seeking men known in the local language as "big men" (Harris, 1974, 1997; Brown & Chia-yun, 1993). Big men are village leaders and economic organizers. They push people to work harder and produce more food so they can hold feasts and distribute this food widely, certainly to all the members of their own village but usually to some of the members of other villages as well. Big men are greatly admired and often given considerable praise and deference. One sees individuals like this among hunter–gatherers only seldom.

Compared to simple horticultural societies, advanced or intensive horticultural societies cultivate the land more intensively and more permanently, squeezing more out of it, and thus are more economically productive. These societies often are divided into social strata or classes that have a highly hereditary or self-perpetuating character. A common pattern is a division into three main social strata, consisting of chiefs, subchiefs, and commoners, respectively (Lenski, 1966). These strata are distinguished by differences in social status, political power, dress and ornamentation, consumption patterns, the extent of direct involvement in subsistence production, and styles of life. Many African horticultural societies in recent centuries have had stratification systems of this type, as have a number of Polynesian societies. Precontact Hawaii, for example, had a hierarchy consisting of a paramount chief and his family at the top, regional or village subchiefs in the middle, and a large class of commoners

at the bottom (Sahlins, 1958). The paramount chief and subchiefs organized and administered economic production, which was carried out by the commoner class. The paramount chief was considered divine and many taboos existed concerning contact with him, such as prohibitions on touching anything he used.

Agrarian societies have been devoted to the cultivation of large fields with the use of the plow and traction animals. As a result, they have been far more economically productive than horticultural societies, with their gardens and hand tools. Agrarian stratification systems have been the most extreme of any found in human history and they contained numerous social classes (Lenski, 1966). However, the most important of these classes, those that related to the primary axis of economy activity, were the political–economic elite and the peasantry. Lenski (1966) has divided the elite class into two segments: the ruler and the governing class. The ruler was the official political leader of society, and he (or she) surrounded himself (or herself) with an administrative apparatus of government. What Lenski calls the governing class might be more accurately called the landlord class, since its members were the major owners of land. The political–economic elite as a whole usually consisted of no more than 1 or 2% of the population but controlled perhaps as much as half to two-thirds of the total wealth. Wealth was created by imposing rent and taxation on the peasantry, or perhaps by exploiting slave labor, and thus was skimmed off as an economic surplus. It also was created by plundering other societies and incorporating their land, peasants, slaves, and other economic resources and by receiving economic tribute from them (Snooks, 1997). Elites in most agrarian societies created an elaborate status culture that distinguished them sharply from the rest of society. For example, among the Chinese gentry emphasis was placed on the idle and highly cultivated man, and extremely long fingernails were worn in order to indicate a detachment from physical labor. The gentry developed a "high culture" of arts, cuisine, architecture, and furnishings (Annett & Collins, 1975).

As Lenski (1966) has noted, in the transition from agrarian to industrial societies after the Industrial Revolution of the last two centuries, there occurred something of a reversal in the relationship between the level of stratification and the degree of technological development. In many respects, modern industrial societies are less stratified than their agrarian predecessors. Agrarian elites controlled much more wealth than do elites in modern industrial societies, and industrial societies also have witnessed a much greater diffusion of income and wealth throughout the large mass of the population. However, industrial societies still exhibit very high levels of stratification. Kevin Phillips (1990) has reported levels of income inequality for several industrial societies expressed as the ratio of income of the top income quintile to the bottom quintile. The figures, which are for the late 1970s and early 1980s, are United States, 12:1; France, 9:1; Canada, 9:1; Britain, 8:1; West Germany, 5:1; Sweden, 5:1; the Netherlands, 5:1; and Japan, 4:1. The level of inequality in the distribution of wealth rather than income—total assets minus total liabilities—is much greater than this.

Another major change in the nature of stratification in the transition to industrial societies is the decline in status and deference cultures and the emergence of a widely accepted ideology of egalitarianism, especially in the United States (Annett & Collins, 1975). This decline, along with the greater economic equality of industrial societies, might be thought to undermine biologically oriented theories of society, such as Darwinian conflict theory. But this is not the case. Once again it is a matter of biological tendencies interacting with a wide array of social conditions. These changes in industrial stratification systems can be linked to the emergence of mass consumer capitalism and the rise of democratic forms of government (Annett & Collins, 1975; Lenski, 1966). Democratic governments, themselves the result largely of the rise of large and powerful working classes (Rueschemeyer, Stephens, & Stephens, 1992), allowed the

many to combine against the few in order to restructure society more in their favor. The rise of mass consumer capitalism led to the disintegration of the old patterns of status and deference for several reasons, but especially because increases in the financial resources of the working and middle classes have allowed them to maintain a lifestyle closer to that of the upper classes (Annett & Collins, 1975). In the end, status distinctions have shrunk not because society dominates biology, but because of the very existence of natural status desires on the part of the large mass of the population. It has been through their status-seeking behavior that the status gap between themselves and the old elite has been reduced.

The industrial societies we have discussed have been industrial capitalist societies. So-called state socialist societies emerged earlier in the 20th century as an alternative form of society that would eventually become highly industrialized and attempt to equal or surpass the capitalist societies in the standard of living and the quality of life. The Soviet Union, of course, was the primary exemplar of this type of society. One of its official aims was to create a "classless" society and it attempted to accomplish this by means of socializing the means of production. This was rooted in the Marxian assertion that social classes could not exist if there was no private ownership of the means of production. However, despite these changes in the economic system a classless society did not emerge; what developed instead was a new type of class society. Broadly speaking, the most privileged social class was the so-called white-collar intelligentsia, which comprised some 20% of the population and consisted primarily of top Communist party bureaucrats, managers of state-owned companies, and learned professionals (Parkin, 1971). This class received higher incomes than the rest of society, but also had access to a range of special privileges unavailable to others. A small segment of this class, consisting of full-time, high-level party bureaucrats and known most often as the *apparatchiki* or *nomenklatura*, constituted a ruling class virtually in the Marxist sense of the term. Milovan Djilas (1957) called this class a "new class" and claimed that it was the most powerful class known to history. These developments, occurring as they did in the face of an official policy of classlessness, strongly suggest that biological realities were at work under the surface and behind the scenes, realities that would make a mockery of public declarations.

It also is highly instructive to see what has happened in Russia since the collapse of Communism in the Soviet Union in 1991. Increasing privization has created far greater economic inequalities that probably will expand even further, perhaps much further, in the years to come. The old *nomenklatura* has been broken up, with the careers of many of its members virtually ruined, but other members of this ruling elite, often fortuitously, have found themselves in a position to benefit from the economic changes. They seem to be forming a new class of private entrepreneurs and have become extremely wealthy, often displaying their wealth in the most garish and ostentatious ways (Zaslavsky, 1995). These changes of the last decade are also strong evidence for a human primal urge for status seeking and resource accumulation. Although this urge was always present in the old Soviet Union, privatization of the economy has given it much freer rein and the results are apparent to all.

CONCLUSION

Let me conclude this chapter by connecting the discussion of social hierarchies back to the earlier discussion of long-term social evolution. One of the most striking features of this evolution is the existence of parallel trends all over the world. What we see are remarkably similar patterns of increasing inequality and stratification everywhere as societies have grown in size and scale and changed their technological foundations, their modes of economic

ownership, and their types of political organization. This growth of increasing inequality and stratification surely must be explained in ecomaterialist and polimaterialist terms. But we cannot stop there, because there is no major exception to the trend of increasing hierarchy, at least among preindustrial societies. In no part of the world do we find societies changing their technological and economic foundations and maintaining old patterns of hierarchy, let alone regressing to some earlier form of hierarchy. It is true, of course, that with the transition to modern industrial societies the extreme differences in status, lifestyle, and standard of living characteristic of agrarian societies were reduced, but industrial societies have remained strikingly hierarchical nonetheless. All this can only mean that long-term social evolution, like many other features of social life, has been subject to strong biological constraints. If this were not the case, then we should see much more variation than we do in the historical and prehistorical record of the world's societies. We have now come full circle. Social evolution, though quite different as a process from biological evolution, has been underlain by biological evolution in the sense of being constrained by the biological nature of humans as a species. The quest to understand in much greater detail how this nature exerts its impact on social life and the major changes therein seems to me one of the most fruitful lines of investigation that sociologists should be pursuing in the years ahead.

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