



UNIVERSITY OF CALIFORNIA PRESS
JOURNALS + DIGITAL PUBLISHING

Pacific Sociological Association

Evolutionary Materialism: A Theoretical Strategy for the Study of Social Evolution

Author(s): Stephen K. Sanderson

Source: *Sociological Perspectives*, Vol. 37, No. 1 (Spring, 1994), pp. 47-73

Published by: [University of California Press](#)

Stable URL: <http://www.jstor.org/stable/1389409>

Accessed: 07/02/2014 21:59

Your use of the JSTOR archive indicates your acceptance of the Terms & Conditions of Use, available at
<http://www.jstor.org/page/info/about/policies/terms.jsp>

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact support@jstor.org.



University of California Press and Pacific Sociological Association are collaborating with JSTOR to digitize, preserve and extend access to *Sociological Perspectives*.

<http://www.jstor.org>

EVOLUTIONARY MATERIALISM: A Theoretical Strategy for the Study of Social Evolution

STEPHEN K. SANDERSON*
Indiana University of Pennsylvania

ABSTRACT: Existing approaches to the study of social evolution are insufficient for the task of explaining the full range of social evolution from the Neolithic Revolution down to the present day. Some anthropological approaches shed considerable light on the evolution of preindustrial and precapitalist societies but are less capable of explaining the evolution of the modern world. Sociological approaches usually have the opposite result: they shed light on the evolution of the modern world but falter with respect to premodern times. This article presents a comprehensive formal-propositional theoretical approach to social evolution that combines the strengths of anthropological and sociological approaches while minimizing their weaknesses. The theoretical approach offered, referred to as evolutionary materialism, comprises propositions concerned with the directional nature of world history, the substance or content of social evolution, the principal causal factors in social evolution, the adaptational character of social evolution, the interplay of agency and structure in social evolution, the units of social evolution, the pace of social evolution, and methods of studying social evolution. The second half of the article attempts a brief logical and empirical justification of evolutionary materialism.

Numerous approaches to social evolution have been developed within the social sciences over the past century and a half. These approaches vary greatly in terms of their underlying assumptions, explanatory logic, and many other dimensions, and all have strengths and weaknesses (Sanderson 1990). But even the best of these approaches, which I believe to be Marvin Harris's (1968, 1977, 1979) cultural materialist version of social evolutionism, suffers from a significant flaw, which is a failure to apply adequately to the full range of world historical phenomena. Harris's materialist evolutionism is exceptionally well suited to deal with the kinds of evolutionary phenomena of most concern to anthropologists and archaeologists—for example, the origins of agriculture, the emergence of social stratification, and the evolution of chiefdoms and states. However, it has much more difficulty

*Direct all correspondence to: Stephen K. Sanderson, Department of Sociology, Indiana University of Pennsylvania, Indiana, PA 15705-1087.

coming to grips with those evolutionary events that most interest historians and sociologists, which generally concern evolutionary events that occur within complex agrarian civilizations and modern world capitalism and industrialism—the rise and fall of dynasties, the commercialization of agrarian states, the rise of Europe to world dominance after the sixteenth century, or the evolution of the contemporary world economic system. Although historians and sociologists have generally done a better job of explaining these kinds of phenomena, they have unfortunately not done very well with just those things at which Harris and other anthropologists have succeeded. What is needed, I believe, is a comprehensive theoretical model that can successfully explain all of the important evolutionary events revealed by world history.

This article develops a theoretical strategy for studying social evolution, which I shall call by the name of *evolutionary materialism*, and which I believe can successfully explain, at least at a general and abstract level, the most crucial evolutionary events in world history: the worldwide origin of agriculture starting 10,000 years ago; the worldwide transition to civilization and the state starting some 5,000 years ago; the evolutionary dynamics of agrarian civilizations; the rise of modern capitalism in Japan and western Europe starting approximately 500 years ago; the evolution of the modern world-system in which most of the world's societies now participate; and the emergence of the basic institutional features of modernity. The main parent theoretical tradition of evolutionary materialism is Harris's cultural materialism. However, evolutionary materialism also borrows extensively from various currents of contemporary Marxism, especially world-system theory, and blends in certain features of Weberian historical sociology, interpreted as a version of conflict theory à la Randall Collins (1975, 1986a, 1986b). A few other theoretical notions also go into the attempted synthesis.

Evolutionary materialism is an example of what I prefer to call a *theoretical strategy*, or what others have variously called a *paradigm* (Kuhn 1970), a *research tradition* (Laudan 1977), or a *research strategy* (Harris 1979). A theoretical strategy is a highly abstract set of assumptions, concepts, and principles designed to serve as a broad theoretical guide to explaining empirical reality. It functions as an orienting device for the formulation and empirical assessment of theories. As such, it contains numerous theories, which are limited, and specific propositions (or sets of propositions) designed to explain specific phenomena. All of the theories within a given theoretical strategy are similar in that they spring from the same underlying foundations. However, these theories may be and sometimes are mutually contradictory. Commitment to a theoretical tradition does not imply commitment to any particular theory within that tradition. It is the theories that really count intellectually in the end, because it is they that are focused on the particular content of what we want to explain, and it is they that are directly subjected to empirical testing. Theoretical strategies are tested, but only indirectly through the testing of their constituent theories. A good theoretical strategy is one that has generated many empirically successful theories and is capable of being extended to larger and larger bodies of empirical phenomena. It should also be parsimonious—simple

and economical in its employment of assumptions, concepts, and principles—and provide a coherent picture of the world in the sense that it brings into sharp relief the interconnectedness among the phenomena it studies.

It should perhaps be stressed that as I have developed and applied it, evolutionary materialism is conceived to be primarily oriented to the study of long-term sociohistorical development rather than to the myriad evolutionary events that form all of the details of social evolution. I believe that this strategy does have considerable applicability to the great variety of evolutionary events, at least in a general sort of way. However, to be truly useful in this way, various aspects of the approach would have to be worked out in more detail. As applied to long-term sociohistorical development, however, I think that evolutionary materialism is a remarkably comprehensive and useful guide. At least, that is what I try to show in the second half of the article.

This article lays out the general character of evolutionary materialism as a theoretical strategy, mixing in as needed various discussions to serve as important background information for understanding the parts of the theory. (In my book *Social Evolutionism: A Critical History* [1990; hereafter *SE*] can be found extensive background discussions that are shortened dramatically here.)

EVOLUTIONARY MATERIALISM AS A THEORETICAL STRATEGY

I. The Nature of World History

A major bone of contention between sociologists and historians for most of the present century has been the degree to which human history reveals basic regularities. Sociologists have usually lined up on the nomothetic side of the matter, holding that history reveals many regularities that can be understood in terms of general theories, whereas historians have generally opted for an idiographic or particularist stance in which few historical regularities are seen and general theories are strongly eschewed. Social evolutionists, even more than most sociologists, have subscribed to the view of regularized developmental trends in history. In recent years, there has been an idiographic turn even in sociology (especially in historical sociology) and such well-known sociologists as Robert Nisbet (1969) and Michael Mann (1986) have argued against evolutionary interpretations. In contrast to them, I am led to assert Proposition I-1:

I-1. World history reveals social transformations and directional trends of sufficient generality such that typologies of social forms can be fruitfully constructed. These directional sequences of change constitute the bulk of what is known as social evolution. Social evolutionists concentrate on general and repeatable patterns of social evolution, that is, on parallel and convergent evolution. (Parallel evolution involves directional sequences in which two or more societies evolve along similar lines and at similar rates; convergent evolution occurs when two or more societies that are initially dissimilar evolve in a manner so as to become increasingly similar.) However, social evolutionists show due respect for the unique and nonrecurrent in world history. The unique and nonrecurrent may legitimately be called social evolution (i.e.,

divergent evolution) so long as they mark out a directional sequence. Divergent evolution should be explained by using the same general explanatory principles designed to explain parallel and convergent evolution (SE:216-219).

It is frequently charged that evolutionary theories are falsified by the fact that social stasis or continuity is a more common phenomenon than evolutionary change (Nisbet 1969), or by the existence of various forms of sociocultural regression or extinction (cf. Tainter 1988). However, in contrast to such arguments, I present Proposition I-2:

I-2. Social stasis, devolution, and extinction are basic facts of world history that should not be ignored by evolutionary theory. Stasis involves the preservation of the basic social patterns of a social system; devolution involves a retrogression to an earlier historical state or evolutionary stage; extinction involves the elimination of the basic patterns of a social system, either through the death of its members or its absorption into another social system. Stasis, devolution, and extinction do not undermine an evolutionary interpretation of world history, and themselves should be explained in terms of the same general evolutionary principles that explain parallel, convergent, and divergent evolution.

A great deal of discussion in regard to evolutionary theories has concerned whether these theories are teleological or developmentalist in nature, that is, whether they assume that directional patterns of social change represent the automatic unfolding of inherent tendencies toward some preordained goal or endpoint. The philosopher of history Maurice Mandelbaum (1971), for example, has asserted that evolutionary theories are by their very nature teleological or developmentalist, and the sociologists Robert Nisbet (1969) and Anthony Giddens (1981, 1984), along with numerous others, have made similar claims. However, such a view is, when not downright wrong, a clear exaggeration, virtually a caricature. Most recent social evolutionists have not been developmentalists or teleologists, and certainly social evolution is not a teleological process. This leads to Proposition I-3:

I-3. World-historical transformations, whether parallel, convergent, or divergent evolution, are not the unfolding of predetermined patterns; that is, they are not teleological processes. Instead, they represent the grand aggregation and multiplication of the actions of individuals and groups in concrete historical circumstances as these individuals are responding to a multiplicity of biological, psychological, and social needs (see section III). Social evolution is to be accounted for by using the sorts of ordinary causal explanations that are basic to science as a mode of inquiry. (SE:16-27, 54-59, 64-68, 113-116, 124-126).

II. The Substance of Social Evolution

The nature of social evolution and the types of units within which it occurs are specified in Proposition II-1:

II-1. Social evolution involves processes that occur within social systems of all levels, for example, dyads, age sets, kinship groups, social classes, complex organizations, societies, any of the institutional sectors of societies, and various types of intersocietal networks. Although it is studied mostly at a macrosociological level, evolutionary events occur also at the simplest microsociological levels. Macrolevel social evolution represents the temporal and spatial aggregation of microlevel evolutionary events.

Recent evolutionists within the functionalist tradition (especially Talcott Parsons [1966, 1971]), and even evolutionists outside that tradition (especially Robert Carneiro [1972]), frequently have claimed that the evolutionary process is essentially one of increasing social complexity or differentiation. However, not all evolutionary theories focus on differentiation as the great evolutionary trend, nor is increasing differentiation necessarily the most important component of the evolutionary process. Accordingly, Proposition II-2 reads:

II-2. *Increasing social complexity or differentiation is a basic evolutionary process. However, much social evolution involves transformations that have little or nothing to do with differentiation, and dedifferentiation is an important evolutionary (actually, devolutionary) phenomenon. Differentiation is only one of many important evolutionary processes. (SE:119-120, 190-195).*

A great deal of attention has been given over many years to discussing social evolution by means of an analogy with biological evolution. In a textbook discussion of social evolutionism, for example, Randall Collins (1988) seemed to suggest that biological evolutionism ought to serve as some sort of model for social evolutionists. In view of these considerations, I offer Propositions II-3 through II-6:

II-3. *Social evolution is both analogous and disanalogous to biological evolution. The major similarities between social and biological evolution concern the fact that both are adaptational processes (see section IV), as well as the fact that both exhibit both general (parallel and convergent) and specific (divergent) sequences of change (SE:169-208).*

II-4. *The basic differences between social and biological evolution are (SE:169-208):*

- (a) *Biological evolution consists mainly of divergent evolution (cladogenesis), whereas social evolution is more frequently parallel and convergent evolution;*
- (b) *The genetic variations that provide the basis for biological evolution arise randomly, but the variations in human thought and action on which social evolutionary selection operates arise primarily in a deliberate and purposive manner (there is no strict equivalent of genetic mutation in social evolution);*
- (c) *As a consequence of (a) and (b), if we started biological evolution all over again, we would get very different results; however, if we started social evolution all over again, we would get very similar results (social evolution, therefore, has a predictive quality that is lacking in biological evolution);*
- (d) *Social evolution is extremely rapid compared to biological evolution (even allowing for "punctuationalist" bioevolutionary changes);*
- (e) *The social evolutionary process of diffusion has no counterpart in the organic world; and*
- (f) *Natural selection operates to a substantial extent in social evolution, but as such is only a process, not an actual cause of evolution; social evolutionists cannot stop their analyses with the identification of social evolution as a process of natural selection, but must go on to identify the specific causal factors that operate within the context of the process of natural selection.*

II-5. *The differences between social and biological evolution are great enough to require that social evolution be studied as a process in its own right, and not merely along the lines of an analogy with biological evolution (SE:170-174.)*

II-6. *Coevolution, or the simultaneous evolution of genes and social patterns, must be acknowledged as a process of some significance. However, most social evolution neither produces nor results from significant changes in gene frequencies and, therefore, is independent of biological evolution (SE:174-180.)*

In nineteenth-century evolutionary theories, and in some evolutionary theories developed earlier in the twentieth century, social evolution was often seen as a process closely akin to, and in fact intertwined with, the psychological development of the individual. In the twentieth century, Lucien Lévy-Bruhl (1923) has been the foremost proponent of this idea. However, in contrast, Proposition II-7 states:

II-7. *Social evolution is a process entirely separate from the psychological development of individuals. Any analogies that might be drawn between social evolution and individual psychological development are artificial and cannot imply any causal connection between the two kinds of processes (SE:215-216).*

III. The Principal Causal Factors in Social Evolution

Evolutionary theories have differed greatly in terms of the basic causal mechanisms they espouse. The nineteenth-century theories of Lewis Henry Morgan ([1877]1974) and Edward Burnett Tylor (1871, [1881]1916) were somewhat eclectic but tended strongly toward theoretical idealism. Herbert Spencer (1972) was a materialist who emphasized population growth, warfare, and economic factors. In the twentieth century, there also has been a considerable mixture of theories. Of the two best-known twentieth-century theories developed by sociologists, one (that of Talcott Parsons [1966, 1971]) is strongly idealist, while the other (that of Gerhard Lenski [1966, 1970]) is decidedly materialist. By and large, in the twentieth century materialist theories have dominated. The revivers of evolutionism after the long period of Boasian antievolutionism between the 1890s and the 1940s—V. Gordon Childe (1936, 1951, 1954), Leslie White (1943, 1959), and Julian Steward (1949, 1955)—were strong materialists, with Childe and White emphasizing the causal role of technological advance and Steward emphasizing the role of ecology. Students and followers of these thinkers—in particular, Robert Carneiro (1970, 1981), Marshall Sahlins (1958, 1960), and Marvin Harris (1968, 1977, 1979)—have also been materialists. Harris has been the most vigorous champion of materialism, emphasizing the combined or individual effect of four kinds of material conditions: technology, economics, ecology, and demography. My theory follows in the evolutionary tradition of Harris. Its chief causal arguments are set forth in Propositions III-1 through III-5:

III-1. *The principal causal factors in social evolution are the material conditions of human existence, that is, the demographic, ecological, technological, and economic forces at work in social life. Demographic factors basically concern variations in human population, especially the growth and pressure of population on vital resources. Ecological factors involve all aspects of the natural or physical environment, especially as these interact with technology and*

demography. Technological factors are those related to the inventory of knowledge, tools, and techniques available to the members of a society or other sociocultural system. Economic factors relate to the modes of social organization whereby people produce, distribute, and exchange goods and services; an especially important dimension of economics is the nature of the ownership of the basic means of production (SE:153-166.)

III-2. *These causal factors operate probabilistically—in the long run and over the majority of cases—and allowance is made for “superstructural feedback.”*

III-3. *The material conditions of human existence have the causal significance they do because they relate to basic human needs concerning the production of subsistence and the reproduction of human life. Human needs relating to production and reproduction have an “ontological priority” that translates into a causal priority.*

III-4. *Which of the material conditions of human existence, or which combination of these conditions, is most causally important varies from one historical period and evolutionary stage to another, and therefore cannot be stated on a priori grounds. The precise identification of the causal significance of the material conditions of human existence, alone or in particular combinations, is a matter for empirical study.*

III-5. *Different types of social systems in different historical epochs and at different evolutionary stages embody different “evolutionary logics.” The driving engines of social evolution differ from one social-systemic type (historical epoch, evolutionary stage) to another. There is no such thing as a universal cause of social evolution. The causes of social evolution are themselves evolving phenomena.*

IV. The Adaptational Character of Social Evolution

At the very heart of debates about social evolutionary theories has been the concept of adaptation. Irving Zeitlin (1973) and Anthony Giddens (1981, 1984) have correctly pointed out that this concept usually figures prominently in theories of social evolution, even those that may otherwise be quite disparate. Zeitlin and Giddens, in common with other social theorists, link the concept of adaptation with functionalism and, since they are antifunctionalists, recommend the abandonment of this concept. My own view is that the concept, while often problematic, can be reformulated so as to rid it of functionalist baggage; it can be rehabilitated and made into an extremely useful point of departure for theories of social evolution. With respect to the concept of adaptation, I submit Propositions IV-1 through IV-10. (I strongly recommend the reader consult my discussions of this concept in SE:97-98, 108-09, 120-121, 180-190. It might also be desirable to go back to some of the original sources cited in these discussions.)

IV-1. *Much social evolution results from adaptational processes. The concept of adaptation is, therefore, a useful starting point for evolutionary analyses. Even when evolutionary events are not adaptational, the concept retains a heuristic significance because it helps us gain more insight into evolutionary phenomena than would otherwise be possible.*

IV-2. *Adaptation must be sharply distinguished from adaptedness. Adaptation is the process whereby individuals originate (inherit, borrow) social patterns that are devoted to meeting various of their needs and wants (it refers to the origin or persistence of a social pattern). Adaptedness involves the extent to which a social pattern actually benefits the individuals who*

originated (inherited, borrowed) it. That is, it refers to the consequences of a social pattern, whether that pattern is an adaptation or not.

IV-3. Although adaptations frequently lead to adaptedness, there are numerous instances in which this is not the case. Although adaptations must logically create adaptedness (or at least the perception of adaptedness) in the short run (otherwise they could not exist as adaptations), in the longer run this adaptedness may disappear and even lapse into maladaptedness.

IV-4. The extent to which adaptations lead to adaptedness varies greatly from one set of individuals and from one time to another. The more complex and unequal a society, the more this rule of thumb applies. Adaptations that are adaptive for the members of dominant groups may be nonadaptive or maladaptive for the members of subordinate groups. A social pattern that is adaptive for the members of one group at one time may become nonadaptive or maladaptive for the members of that same group at another time, and vice versa.

IV-5. Adaptation is a process pertaining to individuals and never to any social unit larger than the individual. Social groups and societies cannot be adaptational units because they are only abstractions. Only concrete, flesh-and-blood individuals can be adaptational units, because only they have needs and wants. Any social pattern that might be said to be adaptive for a group or society as a whole is so only because it is adaptive for all (or nearly all) of the individuals within that group or society. Patterns that are adaptive for groups or societies are but statistical aggregations of individual adaptedness.

IV-6. Adaptations may arise in response to either the physical environment, the social environment, or both. Many adaptations arise in response to any number of features of the total social environment. The total social environment exerts powerful constraints on the nature of the adaptations that are likely to arise. The total social environment makes some adaptations possible or likely and renders others impossible or unlikely.

IV-7. When identifying a social unit as an adaptation, it is incumbent upon the social scientist to specify the sense in which it is an adaptation. That is, the social scientist must specify the particular needs or combination of needs that provide the basis for the origin of an alleged adaptation.

IV-8. Individuals who originate (inherit, borrow) adaptations are not necessarily engaging in a process of attempted optimization. Individuals are frequently content with a satisfactory, rather than an optimal, way of meeting their needs and wants. In other words, adaptations are often (probably most often) the products of satisficing rather than optimizing behaviors.

IV-9. The concept of adaptation implies no universal tendency toward human mastery that is the driving engine of social evolution. This drive is absent in many preindustrial societies, where a "technological inertia" commonly prevails. When a drive for mastery exists in a human social system, it is a culturally conditioned motive rather than a universal human biopsychological drive. If such a culturally conditioned motive exists in a social system, it will constitute a powerful adaptational mechanism driving social evolution at that particular time and place. A drive for mastery sets a goal or set of goals to which the adaptational behaviors of particular persons are strongly directed.

IV-10. Given no transcendent human drive for mastery involved in social evolution, new social forms cannot be regarded as higher on some proposed scale of adaptedness. Adaptedness is not a quality that somehow increases or improves throughout social evolution. New social

forms are adaptations to local conditions and lead to adaptedness only relative to those immediate conditions (rather than in some general or absolute sense). Social evolution is not to be taken as equivalent to, or necessarily even indicative of, social progress. Social evolution produces outcomes that may be evaluatively progressive, regressive, or neutral; which of these outcomes is occurring can only be assessed in evaluative (rather than theoretical or empirical) terms. Objective assessments of social progress or regression are not possible.

V. Agency and Structure in Social Evolution

The debate over the role of structure and agency in human society has been at the forefront of discussions among social theorists in recent years, and it cannot be denied that the issue is a vital one. Perhaps no one has contributed more than Anthony Giddens (1984) to bringing this issue to our attention. Giddens quite properly argues that good social theory recognizes the continuous interplay between structure and agency. However, he seems to go overboard in characterizing some social theories as heavily biased in the direction of structure. He considers Marxism, as well as evolutionism, as giving virtually all the weight to structure and none to the role of humans as active creators of their world. I would argue that this presents a distorted picture. Whereas evolutionary theories on the surface may seem to be biased toward structure, and whereas some of them (such as Leslie White's) actually are biased in this way, a closer look will reveal that most contemporary evolutionary theories give due weight to agency—perhaps not enough for Giddens's taste, but a conception of agency nonetheless. I think the claim can be supported that two of the most successful recent theories, those of Lenski and Harris, are in fact operating with a conception of the continuous dialectical interplay of structure and agency. This leads to four basic propositions, V-1 through V-4 (SE:212-215):

V-1. *Human individuals are egoistic beings who are highly motivated to satisfy their own needs and wants. They seek to behave adaptively by maximizing the benefits and minimizing the costs of any course of action (or at least generating more benefits than costs). This egoistic and adaptive behavior must be a central focus of evolutionary analysis.*

V-2. *Nevertheless, individuals acting in their own interests create social structures and systems that are the sum total and product of these socially oriented individual actions. These social structures and systems are frequently constituted in ways that individuals never intended; therefore, individually purposive human action leads to many unintended consequences. Social evolution is driven by purposive or intended human actions, but it is to a large extent not itself a purposive or intended phenomenon.*

V-3. *The social structures and systems that individuals create through their purposive action reflect back on them in the sense that they create new sets of constraints within which individually purposive action must operate. Social evolution represents the long-term consequences of the dialectical interplay between human agency and social structure.*

V-4. *Human agency is never something that occurs "freely"; all purposive human action is constrained by both the biopsychological nature of human organisms and by the social structures that previous generations of individual actors created through their agency. Agency, therefore, is never to be taken to be action that is "free" or "voluntary."*

VI. The Units of Social Evolution

Evolutionary biologists are currently debating whether the basic unit of natural selection is the organism, the gene, the population, the species, or even some higher-order phenomenon. Most have come out in favor of selection operating either at the level of the organism or the gene. I myself regard selection at any level above the organism as incomprehensible within any natural selectionist framework that regards the intensely selfish struggle for survival as the driving force of evolution. Correlatively, I argue that there is no such thing as "group selection" in human societies. Nevertheless, it is groups and societies that do the actual evolving, even if only by virtue of selection and adaptation taking place at the level of individuals. It should be stressed that this position does not amount to methodological individualism because, as stated in Propositions V-2 and V-3, individuals pursuing courses of action inevitably create structures that further constrain action. It is those structures that evolve. Thus, we have Proposition VI-1:

VI-1. *Although individuals are the units of adaptation, they are not the units of actual evolution. The units of evolution are necessarily social groups, structures, and systems at all levels of size and complexity. It is they that evolve, even though they do so only through the purposive action of individuals.*

Sociologists have long debated the extent to which social change results from endogenous (internal) or exogenous (external) processes, and a frequent criticism of evolutionary theories is that they give far too much emphasis to endogenous mechanisms and processes, perhaps even ignoring exogenous processes altogether. This was, for example, a central argument in Nisbet's (1969) famous attempted demolition of evolutionary theories. The alleged endogenous nature of social evolutionism, though, is really a caricature, and there is no reason in principle why evolutionary theories cannot emphasize exogenous factors as much as, or even more than, endogenous ones. Indeed, the question arises: endogenous or exogenous *to what*? Followers of the work of Immanuel Wallerstein (1974a, 1974b, 1979, 1980, 1989) on world-system theory stress exogenous variables over endogenous ones, and some of these thinkers are trying to extend this kind of argument back into ancient history and prehistory and, thus, to the study of long-term social evolution (cf. Chase-Dunn and Hall 1991). Accordingly, I offer Proposition VI-2, which stresses both endogenous and exogenous dimensions of social evolution:

VI-2. *Much social evolution is endogenous to societies as politically and geographically bounded systems. However, societies are seldom closed off to interactions with, and influences from, other societies. Societies are frequently integrated into larger "world-networks" or "world-systems" that greatly affect their evolutionary dynamics. The possible existence of these intersocietal networks must always be taken into consideration in evolutionary analysis. Social evolution occurs both endogenously (as the result of forces within a society) and exogenously (as the result of intersocietal relations), and neither of these can be causally privileged on a priori grounds. Determining the balance of endogenous and exogenous evolutionary forces occurring at any given time and place is an empirical matter that must be pursued case by*

case. In some cases, it is the intersocietal network that is the basic unit of social evolution, within which societies evolve only as parts of the whole (SE:210-211).

VII. The Pace of Social Evolution

The recent debate over "gradualism" versus "punctationalism" in biological evolutionism has had some spillover effect on discussions of social evolution. Randall Collins (1988), for instance, although not particularly sympathetic to evolutionism, nonetheless holds that if theories of social evolution are appropriate then they must be formulated in "punctationalist" terms. However, punctuated equilibrium theory is still a minority view among evolutionary biologists, and its applicability to social evolution is very questionable. Clearly, much social evolution is best characterized in gradualist terms. Taking a pluralistic position on this issue, I offer Propositions VII-1 and VII-2 (SE:207-208):

VII-1. *Both "gradualist" and "punctationalist" forms of change characterize social evolution. The pace of social evolution varies from one historical epoch and evolutionary stage to another, and is a matter for empirical study.*

VII-2. *Nonetheless, it is likely that social evolution at earlier historical periods and evolutionary stages was considerably slower and more gradualist than social evolution in more recent times and at later evolutionary stages. Social evolution is itself a process that evolves.*

VIII. Methods of Studying Social Evolution

A standard criticism of social evolutionism, made by Franz Boas ([1896]1940) and his fellow antievolutionists in the late nineteenth and early twentieth centuries, and repeated today by such contemporary anti-evolutionists as Nisbet (1969), is that it is invalidated by reliance upon an inappropriate methodology. This is the comparative method, which relies upon the ordering of synchronic data so as to make diachronic (evolutionary) inferences. However, this method has been defended by such recent evolutionists as Elman Service (1971) and Marvin Harris (1968), and it is a perfectly legitimate method as long as certain precautions are taken. Moreover, in recent years the enormous growth of archaeological data has made the comparative method less necessary, and evolutionary reconstructions can be tested against detailed prehistoric sequences known archaeologically. Accordingly, the theory of evolutionary materialism sets forth four basic methodological claims (SE:37-41, 211-212):

VIII-1. *The comparative method is an important, and sometimes necessary, tool of evolutionary analysis. This method involves ordering synchronic data into typologies that are assumed to reflect an actual historical transition from one evolutionary stage to another. This method is justified to the extent that an evolutionary typology can be independently corroborated by historical and prehistorical data.*

VIII-2. *For evolutionary analyses, diachronic (historical and prehistorical) data acquired by historians and archaeologists are generally to be preferred to synchronic data. The historical method is a more suitable method for evolutionary analysis when it can be employed.*

VIII-3. *Evolutionary analysis is not something separate and distinct from historical analysis. On the contrary, it is a form of historical analysis. Just as much as archaeologists*

and historians, social evolutionists must spend time analyzing concrete historical and prehistorical cases in detail.

VIII-4. *In the end, proper evolutionary analysis requires the extended acquisition and synthesis of data from ethnographic, archaeological, historical, and sociological sources. Each of these contributes vitally to the development of evolutionary theories about world history over the very long term.*

TESTING EVOLUTIONARY MATERIALISM

It remains now to show how this strategy can be applied to world history so as to generate and test evolutionary materialist theories. What follows is a summary of many of the leading lines of evidence that I believe support the preceding theoretical propositions. These lines of evidence are derived from archaeological, historical, anthropological, and sociological data. I start with the period immediately preceding 10,000 BP and end in the present. The emphasis on prehistorical and historical data instead of the comparative method is intended to provide the most rigorous test of the theory possible by disarming anti-evolutionists who see evolutionary theories as resting on static comparisons.

I-1. *World history reveals social transformations and directional trends of sufficient generality such that an evolutionary interpretation of world history is both possible and necessary.* The first great evolutionary transformation in world history was the Neolithic Revolution, which ushered in agriculture and settled village life. This was the first great instance of parallel evolution in world history. The Neolithic Revolution occurred independently in at least eight major regions of the world—Southwest Asia, Southeast Asia, China, Africa, Europe, Mesoamerica, South America, and North America—and also in many different subregions within each of these regions (Fagan 1989; Wenke 1990; Cohen 1977). The fact that the transition to agriculture and settled village life was made independently in region after region all over the world, and the fact that these transitions occurred at remarkably similar times, is extremely strong evidence for parallel evolution. Such a dramatic worldwide directional trend can only be accounted for in evolutionary terms (Cohen 1977). Within a few thousand years, most of those regions of the world where the Neolithic occurred evolved the much more complex and elaborate forms of human society that we know as civilization and the state. Once again, we have a major example of parallel evolutionary trends from many different world regions and subregions, and a phenomenon that can only be explained in evolutionary terms (Fagan 1989; Wenke 1990; Harris 1968, 1977; Carneiro 1970).

The agrarian civilizations that evolved after 5000 BP became the dominant form of society of their time. After the evolution of this kind of society, social evolution essentially slowed its pace, and no fundamental evolutionary transformations out of the agrarian stage occurred until just the last few centuries (Lenski 1970). However, a careful scrutiny of the “evolutionary logic” of agrarian civilizations reveals some surprises. The great agrarian societies were not simply characterized by a kind of “stagnation” associated with a cyclical process of dynastic rise and

fall. They did undergo various forms of social growth in terms of technological advancement (Lenski 1970; Mann 1986), growth in the size and scope of political empires (Taagepera 1978), and increasing commercialization and urbanization (Wilkinson 1992, 1993; Chandler 1987; Sanderson in press). These processes of social growth over several millennia seemed to provide an important foundation for the emergence of the modern world in the last few centuries (Sanderson in press). In other words, there were definite directional trends even in an epoch of world history normally regarded as primarily one of stasis.

I regard the third great evolutionary transformation in world history as the rise of modern capitalism after the sixteenth century. It is usually assumed that this was an occurrence unique to Europe, but a remarkably similar transition to capitalism occurred as well at approximately the same time in Japan (Sanderson in press). The rise of capitalism is the whole context for understanding the evolutionary dynamics of the modern world (Wallerstein 1974a, 1974b). The evolutionary logic inherent in capitalism—the ceaseless accumulation of capital—has brought into existence the major features of the modern world, and so we find a remarkable parallel evolution of the basic institutional characteristics of modernity: industrialism, the nation-state, parliamentary democracy (although totalitarianism for a while in socialist states), class stratification with substantial mobility levels, mass education, advanced science and technology, secularism, the privatized nuclear family, rationalism and rationalization, and egoistic individualism.

I-2. *Stasis, devolution, and extinction are important processes to be explained by the same evolutionary principles as parallel, convergent, and divergent evolution.* Social stasis is abundant. Many societies of a preindustrial and precapitalist character have survived into the twentieth century, and some still remain. The record of extinction, of course, is well known, having been assembled by archaeologists, anthropologists, historians, and other social scientists. Devolution is a less common feature of world history, but the agrarian epoch reveals much of it. The great agrarian civilizations and states had a remarkable tendency toward spectacular collapse. This phenomenon has been carefully studied by Tainter (1988), who has put forth a theory to explain it that is highly consistent with evolutionary materialism. This theory holds that the collapse of agrarian civilizations results from the enormous investment in technological, economic, and political infrastructure. The massive infrastructure that is created leads to costs that eventually can no longer be met, and the whole system ultimately fails.

I-3. *The directional trends of world history and prehistory are not teleological processes.* As far as I can tell, this proposition cannot be tested empirically, at least not directly. However, it can be made highly plausible through the demonstration of the range of basic causal mechanisms that drive social evolution. For this, see the discussion regarding Propositions III-1 to III-5.

II-1. *Social evolution occurs at all levels of social organization, but macroevolutionary phenomena are only the aggregation of microevolutionary phenomena.* It is clear enough that, when societies evolve, all of their basic features undergo modification, usually

as "packages" of institutions and organizations. This is not likely to be in dispute. However, the additional claim that macroevolution is aggregated microevolution is difficult to demonstrate empirically, but a plausible case can at least be made. We can take as an example the evolution of the state. Marvin Harris (1977) has claimed that in the evolution of the state, the process itself was not exactly intended, and people really did not know what their actions were leading to. Harris goes on to say that there were perhaps such small changes in political organization from one generation to the next that people were only dimly aware of what was happening. We describe the evolution of the state as a long-term historical process with dramatic consequences for political life, but this process could only have occurred as the result of changes in individual behavior from generation to generation. The evolution of the state over thousands of years was but the temporal aggregation of small changes in the behavior of millions of individuals. Another example might be the prevalence of intense forms of reciprocity and sharing in hunter-gatherer societies (Harris 1974; Sanderson 1991). This social practice has been interpreted as resulting from the severe temporal and spatial fluctuation of resources commonly found in hunter-gatherer environments. People generally establish and follow strong norms of giving and sharing because it is in their long-run self-interest to do so, that is, because they must depend intimately on one another during times when they have little. This is a social pattern that involves the entire society, but it evolved as a result of selection at the level of individual benefit.

II-2. *Increasing social complexity is an important evolutionary process, but social evolution is much more than just increases in the level of complexity.* It has become very clear that considerable social evolution can be described as a process of growing complexity and the differentiation of institutions. However, there are important evolutionary events that have nothing to do with complexity. For example, the great evolutionary transformation that Marxists call the transition from feudalism to capitalism cannot be meaningfully described as a process of growing complexity. This transition represented a shift from one qualitative mode of economic organization to another. Even if we admit that capitalism did ultimately inaugurate a much more complex mode of social life, the transition from feudalism to capitalism in itself is not a matter of growing complexity. By concentrating only on complexity, we lose much information about the process of social evolution. A second example might be the shift from the premodern to the modern family system (Shorter 1975). The important differences between modern and premodern family systems are primarily qualitative rather than quantitative and have little to do with complexity. It is possible to make a similar statement with respect to the evolution of gender roles, human sexual behavior, and numerous other social phenomena.

II-3. *There are important similarities between biological and social evolution.* The fact that social and biological evolution both exhibit parallel, convergent, and divergent processes is readily seen and probably not seriously disputed. The claim that both are adaptational processes is more contentious. However, for discussion of this point see Propositions IV-1 through IV-10.

II-4. *There are also important differences between biological and social evolution.*

(a) *Biological evolution mainly involves divergence, whereas social evolution mainly involves parallelism and convergence.* The divergent character of biological evolution has been well established by evolutionary biologists. That parallelism and convergence dominate social evolution is a highly contentious statement about which social scientists vehemently disagree. To some degree, assessing this is a matter of determining what counts as parallelism, convergence, or divergence. For example, Michael Mann (1986) has claimed that the origin of the state cannot have been an evolutionary process because it occurred in only half-a-dozen or so instances. For Mann, half-a-dozen instances is not impressive, but for many anthropologists and archaeologists (Harris 1968; Carneiro 1970), half-a-dozen instances is a striking parallelism. To some degree, this is a “beauty-is-in-the-eye-of-the-beholder” phenomenon. This point is not easily settled, but I would claim that, at a minimum, there is enough parallelism and convergence in social evolution to show that it is indeed different in fundamental respects from biological evolution. Demonstration of the amount of parallelism was given in regard to Proposition I-1.

(b) *Random genetic variations provide the basis for biological evolution, but no such process is involved in social evolution.* The randomness of genetic variations has been conclusively established by evolutionary biologists and geneticists. There is obviously no strictly equivalent process in social evolution. However, the issue arises as to whether sociocultural variations are random or deliberate and purposive. That many of them are deliberate and purposive is beyond doubt. This is especially the case with respect to the evolution of technology (Lenski 1970), but the same point also holds for the evolution of the basic institutional sectors of human societies. However, there is an important difference between saying something is deliberate and purposive and saying it is clearly recognized by the individuals who are carrying it out. A good example concerns the Industrial Revolution. What we now call the Industrial Revolution could only be named, and thus clearly recognized, long after the fact. At the time, people were only dimly aware of just how dramatic were the changes that were occurring, which could only be recognized in retrospect. Nevertheless, the actions of various individuals—capitalists, inventors, workers, and so forth—were certainly not random in any meaningful sense. People knew what they were doing, and they did it deliberately, but the process as a whole was not intended or deliberate. Anthony Giddens (1981, 1984) has argued that society is the result of human intention but is not an intended project. That is precisely the point I am making, and that makes social evolution different in one crucial respect from biological evolution.

(c) *If we started biological evolution all over again, we would get different results, but if we started social evolution over again, we would get very similar results.* The first part of this statement is established biological knowledge. The second part has not been conclusively established by social scientists, but it follows logically from point (b) above. Moreover, the frequency of parallelism and convergence in social evolution, and the infrequency of such processes in biological evolution, are evidence in support of this part of Proposition II-4.

(d) *Social evolution occurs at a much faster pace than biological evolution.* This is exceptionally easy to document. The earth is about 5 billion years old, and life apparently originated on it approximately 3-1/2 billion years ago. From that point until about 600 million years ago, not much biological evolution occurred. After that point, with the so-called Cambrian explosion (Gould 1989), life began to proliferate, diversify, and evolve in earnest. By almost anyone's standards, this process of evolution has been extremely slow. By contrast, the bulk of social evolution has been compressed into a period of about 10,000 years. Within this period of time, we see the shift from nomadic hunting and gathering bands to settled, autonomous agricultural villages; the shift from autonomous agricultural villages to centrally organized chiefdoms; the shift from chiefdoms to agrarian states; and the shift from states to multistate empires (Sanderson 1991). We also see during the long era of the agrarian civilizations, as mentioned earlier, a process of technological change, growth in the size of empires, expansion in the size and density of trade networks, and large-scale urbanization. In the last 500 years, the world has been radically transformed by the rise of modern capitalism and the emergence of a highly industrialized, global order. This should be sufficient to show how much faster social evolution is than biological evolution, and how it undoubtedly must operate on the basis of different mechanisms.

(e) *There is no counterpart in biological evolution to the social evolutionary process of diffusion.* Self-evident.

(f) *The concept of natural selection is, by itself, inadequate as an explanation of social evolution.* Much of social evolution may work, in a general way, as a process of natural selection. For example, Charles Tilly (1990) has argued that the evolution of national states in Europe after the fifteenth century was a kind of selection process. Once one society had adopted such a political form, its advantages were such that other societies had to adopt it or suffer enormous consequences, possibly including extinction. Tilly's argument seems eminently reasonable, but if we were to stop there—to his credit, Tilly does not—we would fail to learn what we really need to know: why the very first national state was created when and where it was. It is only by knowing this that we can actually understand the basic causes of the evolution of the national state.

II-5. *Social evolution must be studied as a process in its own right, not simply in terms of an analogy with biological evolution.* This proposition logically follows from the basic differences between biological and social evolution stated above.

II-6. *Coevolution is an important evolutionary process, but most social evolution has nothing to do with changes in gene frequencies.* Excellent examples of coevolution have been provided by Robert Boyd and Peter Richerson (1985), by Marvin Harris (1985) concerning the evolution of dairying and milk drinking in prehistoric northern Europe, and by Pierre van den Berghe and Peter Frost (1986) in regard to the fact that upper social strata all over the world tend to be lighter in skin color than subordinate classes. Coevolution is certainly a real phenomenon. However, it constitutes only a small portion of social evolution, and there is little evidence that

social evolution is associated with important changes in gene frequencies. Indeed, most social evolution has been far too rapid for this to be possible. As noted earlier, most social evolution has occurred within the past 10,000 years, and this is much too brief a time for any major biological evolution to have occurred.

II-7. *Social evolution is a process entirely separate from the processes involved in the psychological development of individuals.* There really should be no need in the late twentieth century for this proposition, which few social scientists would dispute any longer, but Giddens (1984) has made the assertion that theories of social evolution tend to see social evolution as a process intertwined with the psychological development of the person. I think Giddens is beating a dead horse and that few social evolutionists would any longer accept such a notion. Indeed, I know of no social evolutionist who would. On the other hand, there can sometimes be a problem because scholars looking at the two processes from the other direction—that is, psychologists making inferences about social evolution—sometimes do see the two processes as intertwined. The developmental psychologist Lawrence Kohlberg (1981), for example, has asserted that stages of moral development are intertwined with stages of social evolution, and that the former have been driving the latter. However, I know of no evidence to support this notion.

III-1. *The principal causal factors in social evolution are the material conditions of human existence, that is, the demographic, ecological, technological, and economic forces at work in social life.* The evidence for this proposition is enormous, but to conserve space I shall provide only three illustrations. The first great social transformation in world prehistory, the Neolithic Revolution, appears to have been most clearly linked to population growth and subsequent population pressure. This type of argument has been favored by numerous scholars (e.g., Johnson and Earle 1987; Pryor 1986; Redding 1988), but has been developed most thoroughly and carefully by Mark Cohen (1977). Cohen argued that a general theory of the Neolithic is demanded by the striking parallelism it displays. Cohen's basic argument is that prehistoric hunter-gatherers had long understood the basics of agriculture but had failed to implement it because their food supply was sufficient to satisfy their basic needs. Over time, however, with the growth of population, a disequilibrium between hunter-gatherers and their environments emerged, and they had to begin the shift toward agriculture to produce the greater amounts of food needed to feed larger and denser populations.

Population pressure was also involved in the rise of civilization and the state (Johnson and Earle 1987). Perhaps the most widely favored theory is that of Robert Carneiro (1970, 1981, 1987). Carneiro's theory makes population pressure, warfare, and environmental circumscription the basic causal factors in the rise of the state. Carneiro argues that the first states arose in environments that either were highly circumscribed or prevented the movement of people beyond their borders. Circumscription could be caused by such things as large bodies of water, mountain ranges, or areas of nonarable land adjacent to the fertile areas people were already occupying. Circumscribed regions would not pose a problem for human adaptation

so long as populations were sparse. When one group attacked another, the second could simply move elsewhere. But as population density grew, this would become less possible, and eventually there would be no escape from invading groups. Warfare would then lead to political conquest, and increasingly complex and powerful political systems would be created, the culmination of which would be states and multistate empires.

I have developed my own materialist theory of the rise of modern capitalism (Sanderson in press). Capitalism as a mode of production arose first in northwest Europe and Japan around the sixteenth century. I believe that capitalism arose first in these regions because they had the most suitable preconditions for capitalist development. Four factors were critical. First, Japan and the major European capitalist countries (especially England and the Netherlands) were small in size and thus avoided the large costs of systems of transportation and communication that large centralized empires, such as those of China and India, incurred. Second, Japan and the European countries were located on large bodies of water and thus could concentrate on maritime rather than overland trade. Maritime trade is much more efficient and permits a much greater volume of trade and, hence, high levels of commercialization. Third, the temperate climates of Japan and Europe meant that these regions were not suitable for economies based on the production of raw materials for export, the type of economy that Europe would later develop in her colonies. One of the secrets to Japan's capitalist development was undoubtedly that it never became a colony of Europe, thus remaining able to harness its resources for its own development. Finally, and most importantly, Europe and Japan both had feudal politico-economic systems (Anderson 1974). The importance of these is that they were highly decentralized systems of political economy that permitted enormous freedom to the merchant classes. Mercantile activity could get a much firmer foothold in these regions than in such large bureaucratic empires as China and India, where merchants were put on a much tighter rein.

I argue that these four factors operated within the context of a major world-historical trend, that of expanding world commercialization. For some 4500 years prior to the sixteenth century A.D., world trade had grown in size, complexity, and density. Trade was first local, then regional, then took in large portions of the globe. By about the period A.D. 1000-1500, the level of world commercialization had built up sufficiently to trigger a capitalist explosion in those regions that had the most suitable preconditions. A kind of "critical mass" of commercialism had been reached.

III-2. *Material conditions operate probabilistically, and allowance is made for "superstructural feedback."* No assertion is being made that the material conditions of human existence determine, by themselves, all social evolution. It is claimed only that the bulk of long-term evolution, and especially the biggest transformations, are rooted in material factors. However, plenty of allowance is made for nonmaterial conditions to operate causally. For example, Christianity arose out of the exploitation and oppression of Jews in the Roman Empire (Harris 1974), but since it evolved, it has exerted its own force as a causal agent in the

world. Likewise, parliamentary democracies began to emerge in conjunction with the rise of capitalism in the seventeenth and eighteenth centuries; after the middle of the nineteenth century, much of the Western world began to adopt systems of universal suffrage to go with their parliamentary regimes (Rueschemeyer, Stephens, and Stephens 1992). The rise of democracy seems to be rooted in changing material conditions, but who would deny the force it has been in the world after it truly began to bloom.

III-3. *Material conditions have the significance they do because they relate to basic human needs concerning production and reproduction.* This is a nonempirical, ontological proposition that is used as a grounding assumption. It cannot really be empirically evaluated.

III-4. *The causal importance of any particular material condition varies from one historical period and evolutionary stage to another.* We can use the examples given with respect to Proposition III-1 to illustrate this point. The Neolithic Revolution seems to have been rooted fundamentally in changing demographic conditions. The rise of civilization and the state was also rooted in demographic change, but other factors, such as environmental conditions and warfare (the latter a nonmaterial condition), were also involved in an important way. Moreover, it is likely that changing economic conditions and the emergence of more intensive forms of class stratification, even though Carneiro's theory does not employ these factors, played a significant role in the rise of the state (Sanderson 1991). As for the rise of capitalism and the evolution of the modern world, I have conceptualized these evolutionary phenomena as being driven by a great historical economic process, expanding world commercialization, working in conjunction with such conditions as size, geography, climate, and feudal politico-economic arrangements. Different evolutionary events require different theories, but the theories proposed above are all part of the evolutionary materialist theoretical strategy.

III-5. *Different types of social systems and different historical epochs embody different "evolutionary logics."* A few brief examples should suffice. Hunter-gatherer systems seem to have a strong aversion to basic change, a kind of "evolutionary inertia." They change only by disruption from the outside, or because factors such as population growth or ecological degradation disequilibrate them. Their evolutionary logic is a deeply conservative one. The long agrarian epoch that ranged from about 5000 B.P. until the last few centuries also had a kind of inertia based on the dominance of the economy by landlords. Perhaps the dominant tendency in agrarian societies was that of dynastic cycles—the continual rise and fall of empires. However, agrarian societies were changing, and in ways that we have only recently come to appreciate. But they were changing slowly, and much more so than would have been anticipated on the basis of the rapidity of social evolution between the Neolithic and the rise of the state. Finally, with the rise of capitalism after the sixteenth century, a whole new evolutionary dynamic was introduced into the world. Capitalism has been by far the most fast-paced mode of production in history. Its evolutionary logic is not demographic or ecological or even technological, but primarily economic: it is premised on the continual

accumulation of capital. This evolutionary logic is such that the pace of social evolution has been accelerating by leaps and bounds, and so much so that contemporary humanity has become dizzily disoriented by it (Harvey 1989).

IV-1. *Much social evolution results from adaptational processes.* This is a grounding assumption used to orient evolutionary analyses. It assumes that much social evolution arises from the efforts made by individuals to meet particular sets of needs and desires. Although not all social evolution is necessarily adaptational, starting from an adaptational assumption has heuristic value because it allows us to determine whether an evolutionary phenomenon is an adaptational product and, if it is, how it is. The grounding assumption also allows us to determine which evolutionary phenomena are not adaptational products and therefore must be explained in other terms.

IV-2. *Adaptation must be distinguished from adaptedness.* This is a definitional statement rather than a causal proposition.

IV-3. *Many adaptations lead to adaptedness in the short run but may become nonadaptive or maladaptive in the long run.* Marvin Harris (1974) has argued that the Hindu cow-love complex is an adaptation to the particular combination of economic, ecological, and demographic circumstances of peasant farmers in India, and that it has indeed been highly adaptive for hundreds of years. However, here are two examples of adaptations turning nonadaptive or maladaptive. It can be argued that the high birth rates of peasants in contemporary Third World countries are adaptations to the economic circumstances in which they live—that is, that many children are desired as farm workers. This may be adaptive for any particular peasant couple in the short run, but in the long run it is maladaptive for peasants in general because it produces high rates of population growth which eat up whatever economic gains are otherwise made. Another example concerns Randall Collins's (1979) demonstration of the role of credential inflation in educational expansion in the contemporary United States and other industrial societies. Individuals choose education as a means of economic success, but as more people attain higher levels of schooling, the value of diplomas and degrees is cheapened, leading to the need to stay in school even longer. A spiral of positive feedback is set up that drives large segments of industrial societies to invest more money and more time in educational attainment. Individuals begin running as fast as they can just to stay where they are and, thus, a maladaptive and "irrational" element is introduced into behavior that was highly "rational" to begin with.

IV-4. *The extent to which adaptations lead to adaptedness varies greatly from one set of individuals and from one time and place to another.* In complex agrarian and industrial societies that are highly class divided, many features of social life derive from the needs and desires of dominant groups and work to their advantage. Caste rules regarding ritual purification, for example, benefit dominant castes at the expense of subordinate ones. In agrarian societies, which are normally intensively male dominated, elaborate ideologies of male supremacy benefit men and tremendously disadvantage women. Examples like this can be multiplied endlessly. As to time, ritual slaughter of cattle was before about A.D. 700 highly adaptive for Hindu

priests, but after this time it gradually became maladaptive. As a result, Hindu priests gave up ritual slaughter of cattle and adopted a new practice of ritual protection of cattle now deemed to be sacred (Harris 1977, 1985).

IV-5. *The individual is the basic unit of adaptation; any social pattern said to be adaptive for a group or society as a whole is so only as the result of the statistical aggregation of individual adaptations.* Let us return to the example of hunter-gatherer generosity. This is a strategy stemming from each individual's pursuit of self-interest and, to the extent that the "society as a whole" benefits from the practice, it is simply the case that all individuals have their individual self-interest satisfied as a result of the practice.

IV-6. *Adaptations may arise in response to either the physical environment, the social environment, or both.* Marvin Harris (1974, 1977) has argued that the evolution of the Jewish and Moslem abomination of pork resulted from the extremely dry environments these religious groups inhabited. It was too costly and impractical to raise pigs in such an environment and, thus, the pig came to be tabooed. As for an adaptation arising from the social environment, we could take as an example the marked rise in the divorce rate in Western societies since 1960. It can be argued that the divorce rate skyrocketed during this time as a result of changes in the sexual division of labor. The movement of married women with children into the labor force in large numbers increased women's level of economic power, which gave women options previously unavailable. One of these options was to end unhappy marriages with greater and greater frequency (Cherlin 1992).

IV-7. *When identifying a social trait as an adaptation it is necessary to specify the particular need or set of needs that are the basis for the origin of the trait.* This is a guiding premise not subject to empirical evaluation.

IV-8. *Adaptations developed by individuals are not necessarily the product of maximization or optimization strategies, but rather of "satisficing" strategies.* This is not really a proposition subject to empirical verification but, again, a guiding premise. Like the concept of adaptation itself, this notion is a heuristic device.

IV-9. *The concept of adaptation implies no universal tendency toward human mastery that is the driving engine of social evolution.* It has become very clear in recent years that the drive for "mastery" is simply absent in many (probably most) preindustrial societies. What we find in such societies among the bulk of the population is a conservative attachment to existing forms of technology and social life. There seems to be a tremendous "technological inertia" among hunter-gatherers, and in horticultural and agrarian societies as well (Sanderson 1991). The drive for mastery is a socially conditioned motive that is to a large extent the product of modernity. This drive is reflected in the ceaseless accumulation of capital and the intensity of technological advancement that are the hallmarks of the modern world.

IV-10. *Adaptedness is not a quality that increases or improves throughout social evolution.* Perhaps the best example is this: Much anthropological and archaeological research in recent years shows that, in many ways, prehistoric hunter-gatherer populations were better nourished than later agricultural populations (Cohen and Armelagos 1984; Sanderson 1991:85-87). A very good empirical case can be made that the standard of living for a majority of the

population actually declined with the shift from hunting and gathering to horticulture, and fell again with the transition from horticulture to intensive agriculture. A very good case can also be made for increases in the workload and in the alienating character of work, a shift from highly egalitarian to highly stratified and tension-ridden societies, and a movement from highly democratic arrangements to various forms of tyranny and despotism (see Sanderson 1991:480-487). Thus, in some respects, the level of adaptedness has actually declined during long-term social evolution. Actually, history reveals a mixed bag with respect to adaptedness, but the point is that it cannot simply be assumed that later social forms are automatically more efficient and organizationally superior, for in many ways this is not the case.

V-1. *Humans are egoistic beings who are highly motivated to give priority to the satisfaction of their own needs and wants; individual self-interest is therefore the starting point for any evolutionary analysis.* Although many sociologists argue that selfishness is culturally conditioned, any careful inspection of the world's societies through time and space shows that most human behavior is motivated by the pursuit of self-interest. That the individual organism is highly self-oriented should be obvious to any parent undertaking the socialization of a child, and it should also be obvious that even the most intensive forms of socialization cannot eliminate the desire to give priority to one's own interests.

V-2. *Individuals acting in their own interests create social structures that are frequently—indeed, perhaps usually—constituted in ways that the individuals never intended.* To illustrate this point, we can simply refer back to the examples of high birth rates among contemporary Third World peasants and the pursuit of higher and higher levels of schooling in modern industrial societies. Here we find classic instances of the sum of individual action producing structures and effects that are unintended and unwanted.

V-3. *The social structures that individual action creates establish new constraints on the course of individual action. Social evolution involves the continuous interplay between structure and agency.* Take the following example, which comes from Marvin Harris's *Cannibals and Kings* (1977). The Neolithic Revolution resulted from the agency of individuals who were trying to prevent further declines in living standards due to population growth. However, once the transition to fully agricultural societies had been achieved, a situation was created in which individuals had committed themselves to a more intensive form of subsistence adaptation. There was no turning back, and now populations grew faster than they did previously, which led to new forms of environmental degradation that necessitated a new intensification of production. This new wave of intensification led to even more dramatic ecological and economic effects, which led to a new wave of intensification, and so on throughout the last 10,000 years. Here, we find humans constantly acting as agents in pursuit of their self-interest, yet constantly being constrained by the results of their previous actions or those of their ancestors. This should give the lie to the belief that social evolution is some sort of deterministic process having nothing to do with individual choice and action.

V-4. *Human agency is not something that occurs "freely"; all purposive human behavior is constrained at every moment.* This is really an ontological rather than an empirical proposition; it is used to orient analysis. It simply notes that all individual action occurs within a context and that context is constantly evolving and constraining action.

VI-1. *Although individuals are the units of adaptation, they are not the units of actual evolution; the units of evolution are groups and societies at all levels of size and complexity.* As asserted previously, individuals are the basic units of adaptation; however, because individuals must live socially and interact with others to satisfy their individual needs, they create groups and societies of various types, and it is these groups and societies that do the actual evolving and that are the focus of evolutionary analysis. Basically, this proposition is essentially ontological rather than empirical.

VI-2. *Social evolution occurs through the action of both endogenous and exogenous forces, and priority cannot be given to either set of forces on a priori grounds. Determining the balance of endogenous and exogenous forces occurring at any time and place is an empirical matter to be pursued case by case.* Ever since the work of Immanuel Wallerstein (1974a, 1974b, 1979, 1980, 1989), it has become clear that much social evolution occurs as the result of the effects of large-scale intersocietal networks within which individual societies are located. At earlier stages of social evolution, endogenous forces may be of greater significance, but even here intersocietal forces are often important, as Carneiro's theory of the origin of the state shows. This proposition is simply a procedural one that asks social scientists to be sensitive to the existence of both endogenous and exogenous forces, and their interaction, in social evolution.

VII-1. *Both "gradualist" and "punctuationalist" forms of change characterize social evolution (see VII-2, below).*

VII-2. *Social evolution at earlier stages and historical periods is slower and more gradual than evolution in more recent times and at later stages.* The notions of slow and fast are obviously relative terms, but as humans measure and perceive time, most social evolution must be regarded as slow. The Neolithic Revolution affords an excellent example. The term "revolution" is actually misleading with respect to time, for the Neolithic Revolution was a very slow and gradual process. For several thousand years prior to it, all over the world hunter-gatherer societies gradually were intensifying their foraging practices, and the move toward agriculture occurred in a very piecemeal way. Hunter-gatherers would begin practicing some agriculture while continuing to live mainly by foraging, and then over time they would gradually replace foraging with cultivation. The shift from complete reliance on hunting and gathering to complete reliance on agriculture usually took several thousand years in all of the regions of the Neolithic (Cohen 1977). What I have called the third great transformation in world history, the rise of modern capitalism, was, by contrast, a considerably more rapid evolutionary shift. Nevertheless, even it should be thought of as slow and gradual in the sense of human time perception. It took several hundred years for the feudal societies of Europe and Japan to disintegrate and evolve into societies dominated by capitalism, and it took several hundred years more to get to the point where we are today. However, it should

be noted that the pace of social evolution has been increasing tremendously in the last 200 years, and especially in the twentieth century. Therefore, the pace of social evolution is itself an evolving phenomenon.

VIII-1. *The comparative method is appropriate for the study of social evolution to the extent that it can be independently corroborated by historical and prehistorical data.* There is now a large mass of prehistorical and historical data suggesting that world history can certainly be intelligibly interpreted in evolutionary terms. Some of these data have been presented in this article.

VIII-2. *Diachronic data are preferred to synchronic data in the study of evolutionary processes.* For this reason, social evolutionists have relied increasingly in the past few decades on the use of prehistorical and historical data, and less on the comparative method.

VIII-3. *Evolutionary analysis is not separate and distinct from historical analysis; it is a form of historical analysis.* This is a methodological proposition not subject to empirical scrutiny in the usual sense. It simply states that the analysis of concrete historical events is not something to be left to historians with their idiographic outlook. The examination of particular historical events is an important part of evolutionary analysis.

VIII-4. *Proper evolutionary analysis requires data from ethnographic, archaeological, historical, and sociological sources.* By this point, this proposition should be self-evident.

REFERENCES

- Anderson, Perry. 1974. *Lineages of the Absolutist State*. London: New Left Books.
- Boas, Franz. [1896]1940. "The Limitations of the Comparative Method of Anthropology." Pp. 270-280 in *Race, Language, and Culture*, by Franz Boas. New York: Macmillan.
- Boyd, Robert, and Peter J. Richerson. 1985. *Culture and the Evolutionary Process*. Chicago: University of Chicago Press.
- Carneiro, Robert L. 1970. "A Theory of the Origin of the State." *Science* 169: 733-738.
- . 1972. "The Devolution of Evolution." *Social Biology* 19: 248-258.
- . 1981. "The Chieftdom: Precursor of the State." Pp. 37-79 in *The Transition to Statehood in the New World*, edited by Grant D. Jones and Robert R. Kautz. New York: Cambridge University Press.
- . 1987. "Further Reflections on Resource Concentration and its Role in the Rise of the State." Pp. 245-260 in *Studies in the Neolithic and Urban Revolutions* (British Archaeological Reports, International Series, No. 349), edited by Linda Manzanilla. Oxford, UK.
- Chandler, Tertius. 1987. *Four Thousand Years of Urban Growth*. Lewiston, NY: St. David's University Press.
- Chase-Dunn, Christopher, and Thomas D. Hall, eds. 1991. *Core/periphery Relations in Precapitalist Worlds*. Boulder, CO: Westview Press.
- Cherlin, Andrew J. 1992. *Marriage, Divorce, Remarriage*. Rev. edn. Cambridge: Harvard University Press.
- Childe, V. Gordon. 1936. *Man Makes Himself*. London: Watts & Co.

- _____. 1951. *Social Evolution*. London: Watts & Co.
- _____. 1954. *What Happened in History*. Harmondsworth, England: Penguin Books (first edn. 1942).
- Cohen, Mark Nathan. 1977. *The Food Crisis in Prehistory: Overpopulation and the Origins of Agriculture*. New Haven: Yale University Press.
- Cohen, Mark Nathan, and George J. Armelagos, eds. 1984. *Paleopathology at the Origins of Agriculture*. New York: Academic Press.
- Collins, Randall. 1975. *Conflict Sociology: Toward an Explanatory Science*. New York: Academic Press.
- _____. 1979. *The Credential Society: An Historical Sociology of Education and Stratification*. New York: Academic Press.
- _____. 1986a. *Max Weber: A Skeleton Key*. Beverly Hills, CA: Sage.
- _____. 1986b. *Weberian Sociological Theory*. New York: Cambridge University Press.
- _____. 1988. *Theoretical Sociology*. San Diego: Harcourt Brace Jovanovich.
- Fagan, Brian M. 1989. *People of the Earth: An Introduction to World Prehistory*. 6th edn. Glenview, IL: Scott, Foresman.
- Giddens, Anthony. 1981. *A Contemporary Critique of Historical Materialism*. Berkeley: University of California Press.
- _____. 1984. *The Constitution of Society*. Berkeley: University of California Press.
- Gould, Stephen Jay. 1989. *Wonderful Life: The Burgess Shale and the Nature of History*. New York: Norton.
- Harris, Marvin. 1968. *The Rise of Anthropological Theory*. New York: Crowell.
- _____. 1974. *Cows, Pigs, Wars, and Witches: The Riddles of Culture*. New York: Random House.
- _____. 1977. *Cannibals and Kings: The Origins of Cultures*. New York: Random House.
- _____. 1979. *Cultural Materialism: The Struggle for a Science of Culture*. New York: Random House.
- _____. 1985. *Good to Eat: Riddles of Food and Culture*. New York: Simon & Schuster.
- Harvey, David. 1989. *The Condition of Postmodernity*. Oxford: Basil Blackwell.
- Johnson, Allen W., and Timothy Earle. 1987. *The Evolution of Human Societies*. Stanford, CA: Stanford University Press.
- Kohlberg, Lawrence. 1981. *The Philosophy of Moral Development*. New York: Harper & Row.
- Kuhn, Thomas S. 1970. *The Structure of Scientific Revolutions*. 2nd edn. Chicago: University of Chicago Press.
- Laudan, Larry. 1977. *Progress and its Problems: Towards a Theory of Scientific Growth*. Berkeley: University of California Press.
- Lenski, Gerhard. 1966. *Power and Privilege: A Theory of Social Stratification*. New York: McGraw-Hill.
- _____. 1970. *Human Societies: A Macro-level Introduction to Sociology*. New York: McGraw-Hill.
- Lévy-Bruhl, Lucien. 1923. *Primitive Mentality*. Trans. by Lilian A. Clare. London: George Allen & Unwin.
- Mandelbaum, Maurice. 1971. *History, Man, and Reason: A Study in Nineteenth-Century Thought*. Baltimore: Johns Hopkins University Press.
- Mann, Michael. 1986. *The Sources of Social Power, Vol. 1: A History of Power from the Beginning to AD 1760*. Cambridge: Cambridge University Press.
- Morgan, Lewis Henry. [1877]1974. *Ancient Society, or Researches in the Lines of Human Progress from Savagery through Barbarism to Civilization*. Gloucester, MA: Peter Smith.

- Nisbet, Robert A. 1969. *Social Change and History: Aspects of the Western Theory of Development*. New York: Oxford University Press.
- Parsons, Talcott. 1966. *Societies: Evolutionary and Comparative Perspectives*. Englewood Cliffs, NJ: Prentice-Hall.
- . 1971. *The System of Modern Societies*. Englewood Cliffs, NJ: Prentice-Hall.
- Pryor, Frederic L. 1986. "The Adoption of Agriculture: Some Theoretical and Empirical Evidence." *American Anthropologist* 88: 879-897.
- Redding, Richard W. 1988. "A General Explanation of Subsistence Change: From Hunting and Gathering to Food Production." *Journal of Anthropological Archaeology* 7: 56-97.
- Rueschemeyer, Dietrich, Evelyn Huber Stephens, and John D. Stephens. 1992. *Capitalist Development and Democracy*. Chicago: University of Chicago Press.
- Sahlins, Marshall D. 1958. *Social Stratification in Polynesia*. Seattle: University of Washington Press.
- . 1960. "Evolution: Specific and General." Pp. 12-44 in *Evolution and Culture*, edited by Marshall D. Sahlins and Elman R. Service. Ann Arbor: University of Michigan Press.
- Sanderson, Stephen K. 1990. *Social Evolutionism: A Critical History*. Oxford: Basil Blackwell.
- . 1991. *Macrosociology: An Introduction to Human Societies*. 2nd edn. New York: HarperCollins.
- . In press. "Explaining the Transition from Feudalism to Capitalism: The Japanese Case and its Theoretical Significance." *Review*.
- Service, Elman R. 1971. *Primitive Social Organization: An Evolutionary Perspective*. 2nd edn. New York: Random House.
- Shorter, Edward. 1975. *The Making of the Modern Family*. New York: Basic Books.
- Spencer, Herbert. 1972. *Herbert Spencer on Social Evolution*. Edited by J.D.Y. Peel. Chicago: University of Chicago Press.
- Steward, Julian H. 1949. "Cultural Causality and Law: A Trial Formulation of the Development of Early Civilizations." *American Anthropologist* 51: 1-27.
- . 1955. *Theory of Culture Change: The Methodology of Multilinear Evolution*. Urbana: University of Illinois Press.
- Taaagepera, Rein. 1978. "Size and Duration of Empires: Systematics of Size." *Social Science Research* 7: 108-127.
- Tainter, Joseph A. 1988. *The Collapse of Complex Societies*. New York: Cambridge University Press.
- Tilly, Charles. 1990. *Coercion, Capital, and European States, A.D. 990-1990*. Oxford: Basil Blackwell.
- Tylor, Edward Burnett. 1871. *Primitive Culture: Researches into the Development of Mythology, Philosophy, Religion, Language, Art, and Custom*. 2 vols. London: John Murray.
- . [1881]1916. *Anthropology: An Introduction to the Study of Man and Civilization*. New York: D. Appleton.
- Van den Berghe, Pierre L., and Peter Frost. 1986. "Skin Color Preference, Sexual Dimorphism, and Sexual Selection: A Case of Gene Culture Co-evolution." *Ethnic and Racial Studies* 9: 87-113.
- Wallerstein, Immanuel. 1974a. "The Rise and Future Demise of the World Capitalist System: Concepts for Comparative Analysis." *Comparative Studies in Society and History* 16: 387-415.
- . 1974b. *The Modern World-system: Capitalist Agriculture and the Origins of the European World-economy in the Sixteenth Century*. New York: Academic Press.
- . 1979. *The Capitalist World-economy*. New York: Cambridge University Press.

- _____. 1980. *The Modern World-system II: Mercantilism and the Consolidation of the European World-economy, 1600-1750*. New York: Academic Press.
- _____. 1989. *The Modern World-system III: The Second Era of Great Expansion of the Capitalist World-economy, 1730-1840s*. San Diego, CA: Academic Press.
- Wenke, Robert J. 1990. *Patterns in Prehistory: Humankind's First Three Million Years*. 3rd edn. New York: Oxford University Press.
- White, Leslie A. 1943. "Energy and the Evolution of Culture." *American Anthropologist* 45: 335-356.
- Wilkinson, David. 1959. *The Evolution of Culture*. New York: McGraw-Hill.
- _____. 1992. "Cities, Civilizations, and Oikumenes: I." *Comparative Civilizations Review* 27: 51-87.
- _____. 1993. "Cities, Civilizations, and Oikumenes: II." *Comparative Civilizations Review* 28: 41-72.
- Zeitlin, Irving M. 1973. *Rethinking Sociology: A Critique of Contemporary Theory*. Englewood Cliffs, NJ: Prentice-Hall.