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Anthropology: Ships That Crash in the Night

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Anthropology in the closing years of the twentieth century is a complex and fractious collection of disciplines and subdisciplines. Although the traditional four fields of specialization (sociocultural, physical, archaeological, and linguistic anthropology) are still preserved in the organization of the larger graduate departments in the United States, an individual's expertise rarely extends to more than one subfield. In addition, new subfields based on narrower common interests have proliferated in recent years.

This chapter is concerned with the principal paradigmatic options that are currently represented primarily in the work of sociocultural and archaeological anthropologists. Although some of the paradigmatic options found in sociocultural anthropology are also found in one or more of the other subfields, it should be made clear at the outset that my viewpoint is primarily that of a sociocultural anthropologist. A further bias to be reckoned with is that any presentation or evaluation of the state of anthropological theory and knowledge is necessarily influenced by the nature of one's own paradigmatic commitment. In the present instance, I am closely identified with the cultural materialist paradigm. Although I seek to be objective about rival paradigms, the grounds of objectivity are themselves relative to the categorizations, puzzles ("problematiques"), and basic principles of one's own paradigmatic commitments (whether coherent and conscious, or incoherent and unconscious). It is without apology therefore that I begin with an overview of cultural materialism and use its categorizations, problems, and basic principles as points of comparison in the subsequent presentation of other currently important anthropological paradigms.

Cultural Materialism

Paradigms stipulate the principles that govern the conduct of research. Principles fall into two classes: rules for acquiring, testing, and validating knowledge, that is, epistemological principles; and rules for generating and evaluating theories, that is, theoretical principles. Cultural materialism is based on certain epistemological principles that are held in common by all disciplines that claim to have scientific knowledge. Scientific knowledge is obtained by public, replicable operations (observations and logical transformations). The aim of scientific research is to formulate explanatory theories that are predictive (or retrodictive), testable (or falsifiable), parsimonious, of broad scope, and integratable within a coherent corpus. This view of science corresponds to the logical positivist and empiricist philosophical traditions and their modern critiques in the works of Popper (1965), Lakatos (1970) and Kuhn (1970, 1977).

The same criteria distinguish scientific theories that are more acceptable from those that are less acceptable. Scientific theories find acceptance in accordance with their relative powers of predictability, testability, par simony, scope, and integratability as compared with rival theories about the same phenomena. Because these criteria can only be fulfilled asymptotically, scientific theories are held as tentative approximations, never as "facts."

There is a common misapprehension about the epistemological status of scientific paradigms that needs to be set aside before we can proceed. Neither a paradigm's epistemological or theoretical principles nor the paradigm as a whole has the status of a scientific theory. Principles such as creationism, natural selection, or infrastructural determinism are not falsifiable. This does not mean however that paradigms are "ships that pass in the night." Paradigms can be compared with each other and evaluated from two standpoints: one, their logical structure and internal coherence; and two, their respective abilities to produce scientific theories in conformity with the criteria listed above.

In addition to the general epistemological principles shared with other scientific disciplines, cultural materialism is also based on epistemological principles that are specific to the study of human sociocultural systems. These involve: (1) the separation of mental events (thoughts) from behavior (actions of body parts and their environmental effects) and (2) the separation of emic from etic views of thoughts and behavior. The reason for the epistemological distinctions between mental and behavioral events is that the operations (observational procedures) used to obtain knowledge of mental events are categorically distinct from those needed to obtain knowledge of behavioral events. In the former, observers depend on actors to communicate what is going on inside their heads; in the latter, observers are not dependent on actors to identify the actors' body motions and the environmental effects of those motions. The reason for the further distinction between emic and etic events is that the separation of mental from behavioral events does not exhaustively specify the epistemological status of the categories (data language) employed in the identification of mental or behavioral events. Observers have the option of describing both kinds of events in terms of categories that are defined, identified, and validated by the community of participants (emics) or by the community of observers (etics). Four types of knowledge stem from these distinctions:

(1) emics of thought, (2) emics of behavior, (3) etics of behavior, (4) etics of thought.

To illustrate, consider the practice of indirect infanticide in northeast Brazil: (1) A sample of economically and socially deprived mothers condemns and abhors infanticide. (2) These mothers insist that their own behavior has been devoted to sustaining the life of their infants. (3) Observers note, however, that some of these mothers actually withhold food and drink from certain infants, especially from infants that are first and last born. (4) On the basis of the observed occurrence of maternal neglect and high infant mortality, it can be inferred that these disadvantaged women have thoughts that are contrary to or that modify their elicited emics of thought and behavior (adapted from Scheper-Hughes, 1984). Returning to participants for additional emic data may result in the elicitation of emic thought and emic behavior that correspond to the etic inferences. Emic and etic versions of social life are not necessarily contradictory. (See Headland, 1990, for a full discussion of the history and significance of the emic/etic distinction.) But failure to distinguish between emic and etic and between mental and behavioral data renders much of the sociocultural literature of cultural anthropology useless by literally preventing researchers from understanding what they are talking about (Harris, 1968; Marano, 1982).

The theoretical principles of cultural materialism rest on the assumption that certain categories of responses are important to the survival and well-being of human individuals and that it is possible to identify among such responses more and less efficient means of achieving an individual's survival and well-being. This assumption lies at the basis of the "costing" of alternative patterns of behavior which in turn is essential for identifying optimizing behavior and the development of materialist theories of sociocultural evolution.

The categories of responses whose costs and benefits underwrite cultural selection and cultural evolution are empirically derived from the biological and psychological sciences that deal with the

genetically given needs, drives, aversions, and behavioral tendencies of Homo sapiens. These include sex, hunger, thirst, sleep, language acquisition, need for affective nurturance, nutritional and metabolic processes, vulnerability to mental and physical disease and to stress by darkness, cold, heat, altitude, moisture, lack of air, and other environmental hazards. This list is obviously not intended to encapsulate the whole of human nature. It remains open- ended and responsive to new discoveries about the human biogram and population-specific genetic differences.

Various currencies can be used to measure the costs and benefits of behavior that have optimizing consequences such as morbidity and mortality rates, differential sexual access, monetary costs and benefits, energetic inputs and outputs, and nutritional inputs and outputs. (The omission of currencies directly linked to differential reproductive success should be noted. This will be explained in the section which deals with human sociobiology.)

Infrastructure

The components of social life that most directly mediate and facilitate the satisfaction of biogram needs, drives, aversions, and behavioral tendencies constitute the causal center of sociocultural systems. The burden of this mediation is borne by the conjunction of demographic, techno logical, economic, and ecological processes—the modes of production and reproduction—found in every sociocultural system. More precisely, it is the etic behavioral aspect of the demo-techno-econo-environmental conjunction that is salient, and hence it would be more precise (but too cumbersome) to define the causal center as the etic behavioral infrastructure (or the etic behavioral modes of production and reproduction). Infra structure constitutes the interface between nature in the form of unalterable physical, chemical, and biological constraints and culture which is Homo sapiens' primary means of optimizing health and well-being. It is the unalterability of the laws of physics, chemistry, biology, and psychology therefore that gives infrastructure its strategic priority in the formulation of cultural materialist theories. Cultural optimizations and adaptations must in the first and last instance conform to the restraints and opportunities of the environment and of human nature.

Structure and Superstructure

In addition to infrastructure, every human sociocultural system consists of two other major subsystems: structure and superstructure, each with its mental/behavioral and emic/etic aspects. Structure denotes the domestic and political subsystems, while superstructure denotes the realm of values, aesthetics, rules, beliefs, symbols, rituals, religions, philosophies, and other forms of knowledge including science itself.

The basic theoretical principles of cultural materialism can now be stated: (a) optimizations of the cost/benefits of satisfying biogram needs probabilistically (i.e., with more than chance significance) determine (select for) changes in the etic behavioral infrastructure; (b) changes in the etic behavioral infrastructure probabilistically determine (select for) changes in the rest of the sociocultural system. The combination of a and b is the principle of infrastructural determinism.

As a guide to theory-making, the principle of infrastructural determinism enjoins anthropological researchers concerned with the explanation of sociocultural differences and similarities to concentrate on and to give priority to the formulation of hypotheses and theories in which components of the etic behavioral infrastructure are treated as independent variables while components of structure and superstructure are treated as dependent variables. The practical consequence of such a commitment of research effort is that the search for causal infrastructural

variables will be conducted with decisively greater persistence and in greater detail than is likely under the auspices of alternative paradigms. The history of anthropological theory demonstrates that those who lack a paradigmatic commitment inevitably "quit early" when confronted with refractory puzzles.

A point of recurrent concern expressed by anthropologists is whether cultural materialism insists that every sociocultural difference and similarity can be explained by infrastructural determinism (Magnarella, 1982). This concern is misplaced. Clearly it is very likely that some sociocultural traits are the consequence of arbitrary, idiographic events. Yet it is not the task of cultural materialists to search for such refractory cases. Rather it is the task of cultural materialists to examine seemingly refractory cases as they are brought to light by alternative research strategies and to concentrate on building a corpus of testable theories that is broader, more coherent, and more interpenetrating than the theories of alternative research strategies.

Another aspect of the principal of infrastructural determinism that needs clarification is the feedback between infrastructure and structure or superstructure. Infrastructure and the other components are parts of a system characterized by negative and positive (system-maintaining and system-changing) feedbacks. To say that structure and superstructure are causally dependent on infrastructure is not to say that in the processes of continuity and change, selection pressure is exerted only from infra structure to superstructure. Without structural and superstructural instrumentalities the infrastructural subsystem would have evolved in a radically different direction from those that we now observe. Structure and superstructure are not mere passive, epiphenomenal products; rather, they actively contribute both to the continuity and the change of infra structures. But they do so within the limitations and possibilities inherent in a given set of demo-techno-econo-environmental conditions. They almost always initiate and select for change in conformity with but almost never in opposition to those conditions. To illustrate, consider the changes in U.S. family life since World War II with reference to the disappearance of the male breadwinner role, the demise of the multiparous stay-at-home housewife, and the rise of feminist ideologies emphasizing the value of sexual, economic, and intellectual independence for women. As I have proposed elsewhere (Harris, 1981a), these structural and superstructural transformations are the determined outcome of a shift from goods- producing industrialism to service-and-information-producing industrialism, mediated by the call-up of a reserve army of housewives into low- paying, nonunion service-and-information jobs. The infrastructural trans formations themselves were related to the use of electronic technologies and to declining productivity in the unionized smokestack industries that had created and sustained the male-breadwinner-stay-at-home-housewife families. The rise of a feminist ideology that glamorized the wage labor market and the intellectual, sexual, and emotional independence of women was the determined outcome of the same infrastructural force. However, it is clear that both the structural and superstructural changes have exerted and continue to exert an amplifying, positive feedback effect on the infrastructural transformations. As the consequences of the call-up of the female labor force manifest themselves in higher divorce rates, lower first marriage rates, and historically low fertility rates, service-and- information industrialism is in turn amplified into an ever-more dominant mode of production and reproduction. Similarly, as feminist ideologies continue to raise consciousness against the vestiges of male breadwinner sexism, men and women find themselves locked into the labor force as competitors, wages for both are driven down, unions are driven out, and the profitability of the service-and-information industries rises, encouraging more diversion of capital from goods-producing enterprises into service-and-information production.

Although deviation-amplification can occur as a consequence of changes initiated in any sector of the sociocultural system, the infrastructural components remain causally dominant. Relations among

the components remain causally asymmetrical because changes initiated at the structural or superstructural level are only selected for if they facilitate or help to optimize crucial aspects of the infrastructure. In the example under consideration, it is clear that neither feminism nor the demise of the breadwinner family selected the technological innovations that initiated the transformation of the smokestack infrastructure.

For proposing that changes in sociocultural systems are selected for in conformity with optimizing principles, cultural materialism has been caricatured as a form of functionalism in which all is for the best in the best of all possible worlds (Diener et al., 1978). This accusation cannot be reconciled with cultural materialism's longstanding focus on problems of class, caste, racial, and sexual inequality and exploitation (Harris,
F 1964a, 1988a, 1988b; Ross, 1978a; Murray, 1980; Mencher, 1980). Indeed, the critique of Panglossian functionalism—even the coining of the phrase—is a basic preoccupation of cultural materialism (Harris, 1967:252).

The fact that modes of production and reproduction are selected for in conformity with optimizing principles does not mean that every member of a society benefits equally from this selection process. Where marked differences of power have evolved as between sexes and stratified groups, the benefits may be distributed in a completely lopsided and
exploitative fashion. Under such circumstances, the cost/benefits must be reckoned not only with respect to individuals in their infrastructural context but also with respect to the political-economic decisions of power holders. This does not mean that all changes that benefit ruling class interests necessarily have adverse effects on everyone else. For example, as indicated above, the rise of the service and information sectors in
hyperindustrial mixed economies reflects the higher rates of profit to be obtained from unorganized labor. Thus, an increasing portion of the industrial labor force consists of women who have to some extent risen above their previous condition as unpaid housewife-mothers dominated by blue collar chauvinist husbands. There is no contradiction involved in holding that the greater advantages accruing to U.S. capitalist interests are facilitated by a lesser but still favorable balance of benefits over costs accruing to women. The behavior of both strata exhibits the predicted optimizations even though one might hold that the gain for most women, especially for minority women, is slight by comparison.

Cultural materialism is thus no less emphatic about the importance of political-economic inequality as a modifier of optimization process than are various Marxist theoreticians who claim to have a monopoly on the defense of the oppressed (see "The New Marxist Anthropology" below). Moreover, full recognition is given to conflicts engendered by
unequal allocations of costs and benefits between stratified groups and the system-changing potential of such conflicts. One can never escape the question of benefits for whom nor of costs for whom. Far from neglecting or "covering up" the effects of political factors on optimizations, cultural materialists recognize regular systemic feedbacks from the structural to the infrastructural level that give rise to political economy, political demography, political technology, and political ecology. One cannot, for example, explain the adoption and spread of technological devices such as shotguns, of new varieties of wheat and rice, tractors, or solar-cell generators apart from the interests of trading companies, agribusiness, and petrochemical transnational corporations, local landowners, banks, and so on.

Infrastructural determinism has frequently been criticized as a teleological principle that denies the importance of stochastic processes in evolution. This is clearly an incorrect portrayal, given the formulation of causality in terms of selection processes. **B. F. Skinner (1984) has appropriately designated the genre of evolutionary process in question as selection by consequences.** In biological evolution, in operant behavior conditioning, and in cultural evolution, selection operates on variations whose origins may be indeterminate. Cultural materialism is thus no more teleological than Darwinian evolutionism. In this limited sense, cultural evolution is analogous to biological evolution (and to the development of individual learning repertories). As in biological evolution, there is innovation and selection for or against. Innovations occur at massive rates in socially conditioned human response repertories (culture). Some are selected for (retained and propagated across generations), others are selected against (extinguished). Selection for or against is probabilistically determined by the infrastructural consequences (costs and benefits) of the innovative behavior.

Despite this analogy, there are specific differences in the mechanisms of selection by consequences that characterize biological and cultural evolution. Selected biological innovations are stored in the form of information in the organism's genome; selected cultural innovations are stored in the form of response repertories in the organism's neural pathways. It is this difference that dooms the attempts to reduce socio cultural phenomena to the level of biology (see "Sociobiology" below). Additional aspects of cultural materialism will be clarified during the discussion of alternative paradigms.

Cultural Idealism

Historically, the most fundamental schism in anthropology (and the other social sciences) is that between materialist and idealist paradigms. Materialist paradigms (of which cultural materialism is an example) give causal priority to etic behavioral infrastructural conditions; idealist paradigms give causal priority to the mental and emic components of superstructure. Idealist paradigms flourished in the nineteenth century as a heritage of the Enlightenment. Hegel's notion of a world historical spirit struggling to achieve freedom through the perfection of human reason exemplifies a genuine full-blown form of superstructural determinism. For Hegel, world historical stages of thought create successive forms of politics in which no one is free, only one man is free, and finally all are free. In the same genre, Auguste Comte attributed the progressive evolution of society to the replacement of religious ideologies by metaphysical ideologies and of metaphysical ideologies by science. Similarly, Lewis Henry Morgan (1977:59—60 [1878]) attributed the passage from savagery to barbarism to civilization to the maturation of "a few germs of thought conceived in the early ages."

These determinist forms of cultural idealism have been thoroughly discredited. Hunter-collectors, for example, had more "freedom" than citizens of modern states. Without metaphysical excuses such as world spirit or germ thoughts, ideas do not follow each other in any necessary progression, apart from their materialization in artifacts and behavior. Nothing restrains individuals who are living in patrilineal societies from thinking it would be nice to live in matrilineal societies or vice versa. Uncountable numbers of innovative thoughts pour through people's heads. How are they selected for or against? Apart from their support by world spirits, rationality, "progress," or similar discredited teleological concepts, there is no basis in cultural idealism for explaining why certain ideas are selected for in one society but selected against in another, nor for explaining the astonishing recurrence of vast categories of social arrangements that we summarize under such concepts as bands, tribes, chiefdoms, states, and so on.

Interpretive, Phenomenological, and Postmodernist Anthropology

Few modern anthropologists consistently adhere to a pure form of superstructural determinism. This does not mean that there is a dearth of idealists and mentalists in the anthropological vineyards. On the contrary, late twentieth century cultural anthropology is permeated by idealist and mentalist thought and practice, starting with the very concept of culture itself which is widely defined as a set of mental rules. These rules supposedly find expression in behavior, while behavior itself is not deemed part of culture (see Harris, 1980, for a critical history of this definition of culture). What prevents these idealist tendencies from developing into full-fledged cultural idealist paradigms is that contemporary anthropological idealists and mentalists are, with few exceptions, anti positivists and antideterminists. Indeed their "approach" is overtly (and often aggressively) antiscientific in the sense that they deny the validity of the canons of operational replicability, testability, parsimony, and theoretical coherence. Their paradigm—if it can be called such—claims that the social sciences lack legitimacy and should dissolve themselves back into the humanities where anthropological knowledge is limited to artful descriptions that have the capacity to tell outsiders what social life means to insiders. For these "humanists" (read idealists, phenomenologists) testability, replicability, causation, determinism, prediction, retrodiction, nomothetic recurrences, and etic behavioral events are all will-o'-the-wisps born of an infantile desire to ape the "hard" sciences.

Clifford Geertz, generally recognized as a preeminent guru of interpretive genres, is an advocate of making "thick descriptions" the main if not the exclusive objective of the fieldwork of cultural anthropologists. Thick descriptions are intended to provide detailed contexts of significations and meanings without which one culture cannot be interpreted to another. According to Geertz, generalization "grows out of the delicacy of its distinctions, not the sweep of its abstractions" (Geertz, 1973:25). While Geertz recognizes that the "sin of interpretive approaches . . . is that they tend to resist or to be permitted to resist, conceptual articulation and thus to escape systematic modes of assessment" (ibid. :24), his suggestion for telling the difference between a good and a bad inter pretation scarcely seems to be aimed at absolution from the aforementioned "sin": "a good interpretation of anything—a poem, a person, a history, a ritual, an institution, a society—takes us into the heart of that of which it is the interpretation" (ibid.: 18). But how shall we know we have found the heart and not the liver?

Despite this unrepentant affirmation of resistance to "conceptual articulation," Geertz insists he is committed to methodology: "I think it is terribly important" (Geertz, 1979:7). He has a methodology—every good piece of scholarship has a methodology, he maintains. But his methodology is unlike the methodologies of science-aping positivists who teach their research techniques to their students: "I do not think there is any way simply to transfer techniques that I have to a student. That is not what teaching in this area is, and that is not what good students are looking for" (ibid.).

The sad prospect raised by Geertz's obscurantist creed (to be discussed at the end of this chapter) is that anthropology may indeed soon dissolve itself into oblivion. Not into Geertzian *belles lettres* but into a branch of biology whose practitioners are convinced that sociocultural evolution is too important a subject to leave to people who boast that they have no methods or testable or replicable knowledge to pass on to their students.

It should be made clear that cultural materialists are not antagonistic to arbitrary, literary, or phenomenological interpretations. The true sin of Geertzian anthropology is not that it rejects the

epistemological basis of modern science—there are many ways of knowing—but that it explicitly represents itself as a superior way of knowing the social world, and as 80 Marvin Harris

an explicit replacement for positive social science, which it characterizes as a deluded and bankrupt intellectual effort. As Shankman (1984:264— 265) writes:

Geertz ... views interpretive theory not merely as a legitimate alternative to conventional social science, seeking parity with it, but rather as a theoretical framework that will "challenge" and ultimately replace the tired mechanistic, reductionist approach of positivism with a "refiguration of social thought." That is, he suggests that interpretive theory is superior to conventional social science, arguing that the road to discovering the causes and effects of social phenomena "lies less through postulating forces and measuring them than through noting expressions and inspecting them."

The denunciatory animus of interpretationists and symbolists toward positivist paradigms ill-becomes scholars who claim to be interested in the phenomenology of human experience. For the Geertzian condemnation of "conventional social science"—that it is "uncritical of its own short comings" and "ill-suited to the treatment of semantically complicated observation" (Davis, 1985:285), productive of "tired," "paltry" theories (Dutton, 1984) places itself on the exterior rather than the interior of scientific projects. The only way that such statements can be meaningful to those who follow the rules of science is by following the rules of science. To reiterate, nonscientific paradigms remain immune to scientific criticism if they do not claim to know better what science claims to know.

Following Geertz's lead and under the direct influence of postmodern philosophers and literary critics such as Paul de Man, Jacques Derrida, and Michel Foucalt, interpretationist anthropologists have adopted an increasingly apodictic, arrogant, and intolerant rhetoric aimed at ridding the world of all "totalizing" paradigms. According to Stephen Tyler (1986:130) for example, sociocultural anthropologists should abandon the inappropriate mode of scientific rhetoric that entails "objects," "facts," "descriptions," "inductions," "generalizations," "verification," "experiment," "truth," and like concepts that, except as empty invocations, have no parallels either in the experience of ethnographic fieldwork or in the writing of ethnographies. The urge to conform to the canons of scientific rhetoric has made the easy realism of natural history the dominant mode of ethnographic prose, but it has been an illusory realism, promoting, on the one hand, the absurdity of "describing" nonentities such as "culture" or "society" as if they were fully observable, though somewhat ungainly, bugs, and, on the other, the equally ridiculous behaviorist pretense of "describing" repetitive patterns in isolation from the discourse that actors use in constituting and situating their action, and all in simpleminded surety that the observers' grounding discourse is itself an objective form sufficient to the task of describing acts.

Tyler's totalizing renunciation of the search for objects, facts, descriptions, inductions, generalizations, verification, experiment, truth, and "like concepts" (!) in human affairs mocks itself so effectively, that any attempt at rebuttal would be anticlimactic. I do think it may be useful, however, to point out that the "simpleminded surety" with which positivists and behaviorists are alleged to view human social life flagrantly distorts the entire history of science in general, during which all sureties, simpleminded or not, have been subject to relentless skepticism, and the history of logical positivism in particular, during which the struggle to create objective data languages has constituted the central focus of a vast and continuing philosophical effort.

Postprocessualism

The rhetoric of postmodern literary criticism is not confined to cultural anthropology. Its slogans and mottos have also appeared among archaeologists who identify their perspective as "postprocessual," "symbolic," and "structural." Richard Watson (n.d.) has aptly summed up the project of the more extreme varieties of postprocessualists in the following terms: "They use deconstructionist skeptical arguments to conclude that there is no objective past and that our representations of the past are only texts that we produce on the basis of our socio-political standpoints. In effect, they argue that there is no objective world, that the world itself is a text that human beings produce."

According to Ian Hodder, the leading although not the most extreme figure among postprocessual archaeologists, nomothetic and evolutionary archaeological theory is defective because it fails to deal with "the meaningful construction of social acts and the historical particularity of human culture" (Hodder, 1985:22).

Rather than pursue a research strategy that envisions the possibility of giving nomothetic answers to questions about the origins and causes of sociocultural differences and similarities, postprocessual archaeology is committed to a strategy that regards the origins and causes of cultural differences and similarities as fundamentally unknowable. Like a pre Darwinian propounding the doctrine of immutable species, Hodder (1986:2) claims that: "Cultures . . . are arbitrary in the sense that their forms and content are not determined by anything outside of themselves.

… Culture then is not reducible, it just is."

In Reconstructing Archaeology, Michael Shanks and Christopher Tilley (1987:38) are not mollified by the proposal that probabilistic forms of generalization, rather than exceptionless laws, constitute the goal of positivist sociocultural science. They ask how general a statement must be before it counts as a generalization: "two cases? three? fifty?" They also ask:

If the generalizations made are not laws they cannot be expected to be applicable in any particular case so why are these generalizations of use to us? Why must the business of doing science necessarily be equated with the ability, or the will to generalize? This appears to be a procedural rule founded on the basis that generalizing, rather than considering all the particularity of the individual case, is a superior kind of activity. There seems to be no compelling reason why we should accept this (ibid.:38).

The fallacies that embolden these queries are so transparent that one must wonder if the interlocutors really intend to be taken seriously. (This is a serious concern on my part because Derrida and his followers are not above celebrating the ludic consequences of deconstructionism.) Yet given the current popularity of antiscientism, their questions, serious or not, cannot be left unanswered.

Question: Just how often does something have to recur in order for it to serve as the basis for a generalization?

Answer: The more times the better.

Question: If generalizations cannot be expected to be applicable to any specific case, what good are they?

Answer: The better the generalization, the more probable its applicability to the particular case. (It is certainly useful to know that a particular person who smokes four packs of cigarettes a day is ten times more likely to get lung cancer than one who does not smoke, even though not all heavy smokers do get lung cancer.)

Question: Why must science be equated with generalizing?

Answer: Because science is by definition a generalizing form of knowledge.

Question: Is the mandate to generalize nothing but a "procedural rule?"

Answer: Of course. And anyone is free to ignore the rule but to do so is to cease to be doing science. (It is also likely to get you killed the next time you step off the curb against the light or the next time you light a match to look inside your gas tank.)

Last question: Instead of generalizing, why not consider "all the particularity of the individual case?"

Answer: Because there are no limits to particularity. Any project that proposes to deliver all the particularities of any macrophysical event, human or not human, therefore makes a preposterous claim on our time

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and resources. For this reason, in science, endless particularity is the exact equivalent of endless ignorance.

A recurrent claim of both sociocultural interpretationists and post processual archaeologists is that positivist anthropology deservedly collapsed because of its failure to produce a coherent body of scientific knowledge about society and culture. According to George Marcus and Michael Fischer, for example, there is a crisis in anthropology and related fields because of the "disarray" in the "attempt to build general and comprehensive theories that would subsume all piecemeal research" (1986:118). This implies that the Geertzians and postprocessualists have made a systematic study of the positivist corpus of theories that deal with the parallel and convergent evolution of sociocultural systems. But they have not done this. It was only after World War II that nonbiological positivist cultural and archaeological paradigms gained acceptance among anthropologists. Yet in the ensuing years unprecedented strides have been made in solving the puzzles of sociocultural evolution through a genuinely cumulative and broadening corpus of sophisticated and powerful theories based on vastly improved and expanded research methods. The cumulative expansion of knowledge has been especially marked within archaeology and at the interface between archaeology and cultural anthropology (e.g., Johnson and Earle, 1987). It is ironic then, that at the very moment when anthropology is achieving its greatest scientific success, anthropologists who have never tested the positivist theoretical corpus that they condemn, hail the death of positivist anthropology and the birth of a "new" humanistic paradigm. Only those who know little about the history of anthropological theories could hail such a paradigm as "new," much less as "a refiguration of social thought." As Regna Darnell (1984:271) states: "Geertz's kind of anthropology has been around since the German idealist philosophers to whom its roots are traced. Franz Boas himself had intellectual roots in that tradition, taking for granted the inseparability of perceiver and perceived."

This raises the question of why antipositivistic humanism has become so attractive to a new generation of anthropologists (and other practitioners of social "science"). One reason may be that the generation of students reared during the 1960s and early 1970s continues to believe that positivist social science is responsible for such twentieth century scourges as fascism, Stalinism, U.S. imperialism, corpocracies, and the educational-industrial military complex. (The feminist rejection of positivist science as an androcentric conspiracy is another reason for the surge of postmodernism in anthropology—see "Feminism" below.) No doubt hyperindustrialism, high-tech, and the "technological fix" lead to feelings of dehumanization and alienation. But the association between all of this and positivist social science is spurious. The problem is not that we have had too much of positivist social science but that we have had too little (Harris, 1974:264W). The atrocities of the twentieth century have been carried out precisely by people who were ignorant of or vehemently opposed to positivist social science (e.g., Lenin, Stalin, Hitler, Mussolini), Too many anthropologists seem to have forgotten that there is a flip side to relativism, phenomenology, and

antipositivism—the side on which relativists who denounce reason and scientific knowledge construct the world in their own image. Benito Mussolini put it this way:

> Fascism is a super-relativistic movement because it has never attempted to clothe its complicated and powerful mental attitude with a definite program but has succeeded by following its ever changing individual intuition. Everything I have said and done in these last years is relativism by intuition.
>
> If relativism signifies contempt for fixed categories and men who claim to be bearers of an external objective truth ... then there is nothing more relativistic than Fascist attitudes and activity From the fact that all ideologies are of equal value, that all ideologies are mere fictions, the modern relativist deduces that everybody is free to create for himself his own ideology and to attempt to carry it out with all possible energy (quoted in Ross, 1980b:xxvii).

The proposal that there is an association between antiscience relativism and fascism cannot be dismissed as a mere intellectual scare tactic. Mussolini's fascist philosophy borrowed heavily from Friederich Nietzsche, especially the latter's concept of the "will to power" as the source of truth. Paul de Man, who was as important as Derrida in the development of deconstructionism, warmed up for his role as literary critic by studying Nietzsche and by broadcasting propaganda for the Nazis during World War II, a fact which he effectively concealed from his colleagues at Yale until 1988 (Lehman, 1988). And Michel Foucalt, the postmodernist whose cachet among anthropologists is ascendant, is also much indebted to Nietzsche as his aphorism "another power, another knowledge" reveals (Foucalt, 1979, quoted in Hoy, 1986:133).

Feminism

Feminist anthropology is a distinct intellectual tradition that seeks to establish a balance between androcentric and gynocentric perspectives, theories, and data bases (Moore, 1988; Morgen, 1989; Mukhopahyay and Higgins, 1988). In view of the virtual hegemony of androcentrism in anthropology during the first sixty or seventy years of this century, it is not surprising that feminism in practice often seems to give way to an attempt to substitute gynocentrism for androcentrism. It would require much more than the available space to begin to review the strengths and weaknesses of the specific modifications of anthropological data bases and theories that have been introduced under feminist auspices or in response to feminist critiques. But there is a general point that must be made if one is to understand the surge in postmodernist antiscientism and relativism. The corpus of positivist-scientist theories about gender issues was impoverished when not grossly counterfactual, prior to the rise of feminism. Feminists therefore tended to identify science with androcentrism. They saw scientific theories as male concoctions designed to confuse and disempower women. There was a parallel reaction to Marxism, with its claim that it was a science of society while focusing on class exploitation to the neglect of gender exploitation. In this context, postmodernist attacks on the distinction between the observer and the observed and the advocacy of the idea that truth is relative and a political construction seemed to constitute an appropriate paradigm for carrying out the feminist project in anthropology. (Some feminists argue that these perspectives had an independent and antecedent development within feminism itself [Sharpe, and Cohen, 1989].) From a cultural materialist perspective, however, the feminist response to past inadequacies of positivist formulations of gender is both intellectually and politically counterproductive. In the long run anthropological feminism has little to gain by throwing its weight on the antiscience side. Scientific anthropology is completely open to feminist researchers and to their contribution to the improvement of anthropological theories in any domain of their choice. The most productive

intellectual response to the exposure of biases, hidden agendas, and lack of certainties in anthropology is not to adopt paradigms that from the outset promise even greater biases, more cryptic agendas, and total uncertainty. Rather it is to work within scientific paradigms to reduce biases, expose hidden agendas, and decrease uncertainties. For feminists whose political interests are foremost, adoption of the postmodern program portends unintended social consequences in which women are hurt more than they are helped. Some examples: the relation between no-fault divorce laws and the feminization of poverty; the relation between the feminization of the labor force and the increased marginalization of Afro-American males, with its contribution to the multiplication of impoverished black female-headed households; the low priority given by middle-class feminists to unionization and the falling take-home pay of both male and female wage earners. Like the failure of Soviet Marxist theoreticians to calculate the objective extent of the inefficiency of their command economy (see "The New Marxist Anthropology" below), these are not problems that can be identified, much less solved, by musing about the relativity of truth, or the nonexistence of such things as facts.

Eclecticism

Eclecticism is based on the principle that causal priorities shift from infrastructure to structure or superstructure relative to the society or topic being studied, or that all the components of sociocultural systems— infrastructure, structure, and superstructure—are simultaneously and equally determinative of differences and similarities. In the history of the social sciences, Max Weber is the preeminent advocate of eclecticism as an alternative to idealism and materialism. Weber felt that both Hegel and Marx had erred in not seeing that in some societies, such as India or Medieval Europe, it was religion that played the dominant role, while in other societies such as twentieth century Europe, it was economics that played the dominant role. In his most famous eclectic foray, Weber set out to correct Marx's materialism by showing that as much weight had to be given to the "Protestant ethic" as to the expansion of commerce in explaining the rise of capitalism. Weberian eclecticism has recently replaced Marxian materialism in the work of European anthropologists who call themselves "Marxists" (see "The New Marxist Anthropologist" below).

Eclecticism achieved its paradigmatic eminence in anthropology through the work of Franz Boas and his students. The Boasian rejection of causal priorities valid for all sociocultural systems continues to serve as a model for current eclectic advocacy. Boasian eclecticism was also rooted in a conscious rejection of Marxist historical materialism. Hence it was ex pressed primarily in negative form as the rejection of any necessary causal connection between infrastructural and structural or superstructural components.

There is no reason to call all other phases of culture a superstructure on an economic basis, for economic conditions always act on a preexisting culture and are themselves dependent upon other aspects of culture. It is no more justifiable to say that social structure is determined by economic forms than to claim the reverse, for a preexisting social structure will influence economic conditions and vice versa, and no people has ever been observed that has no social structure and that is not subject to economic conditions. The claim that economic stresses preceded every other mani festation of cultural life and exerted their influences on a group without any cultural traits cannot be maintained. Cultural life is always economically conditioned and economics are always culturally conditioned (Boas, 1948: 193).

As we shall see below, many self-identified new Marxists would find little to dispute in this formulation.

While it claimed to be based on high standards of ethnographic data collection, Boasian eclecticism rose to reckless levels of negativity on the basis of an incomplete knowledge of ethnographic "facts." According to Boas there was no possibility that art, ritual, or religion could regularly be caused by anything like economics: "We do not see how art styles, the form of ritual or the special forms of religious belief could possibly be derived from economic forces," he wrote (1948:256). Nor could there possibly be any recurrent relationship between economics and political organization: "We have simple industries and complex organization," and "diverse industries and complex organization" (ibid.:266). As for a geographical (environmental) basis: "It is fruitless to try to explain culture in geographical terms" (ibid.). It is also fruitless to try to link demo graphics, settlement patterns, or economic statuses with social organization: "There is no evidence that density of population, stability of location, or economic status is necessarily connected with a particular system of relationship kinship relations] and of behavior connected with it" (Boas, 1938:680).

The most intrepid Boasian critic of infrastructural determinism was Robert Lowie (1920). Ranging over the entire ethnographic literature, Lowie cited example upon example of traits and institutions that appeared to be inexplicable from a materialist viewpoint: class stratification and irrational destruction of property among the hunting-gathering Nootka; private land holdings among the hunting-gathering Algonkians, Veddas, and Queensland aborigines; warfare among the Crow and other Plains Indians for the prestige that came from acts of bravado; rejection of milk by the Chinese for aesthetic reasons; failure of the Shilluk, Zulu, and other African peoples to use their cattle for meat except on festive occasions; greater attention paid by such peoples to twisting the horns of their cattle into "grotesque shapes" than to their economic utility; pigs raised in Melanesia "without noticeably adding to mass subsistence"; horses eaten but not milked in Western Europe; pigs raised in Egypt "with not one practical purpose"; Aborigines keeping the dingo as a pet "without training it to catch game or render any service whatsoever."

Lowie's problem is that he lacked any firm commitment to the possibility of infrastructural explanations of these apparent aberrations. The con sequence was that he "quit early" (see "Infrastructure" above), never probing deep enough into the data to form plausible hypotheses (see Harris, 1968, 1979b, 1985, for such hypotheses).

Despite Lowie's emphasis on the dominance of structural and super structural components in specific cases, he readily admitted that in other cases, infrastructure (which he restricted to "economic factors") was dominant: "I have pointed out the potency of economic forces, not in abstract, which is hardly necessary nowadays, but by suggesting that certain specific changes in economic life have led to specific modifications in the social life, even affecting sentimental attitudes" (1948:v). Vacillation between no determinism and one form of determinism or another is the essence of eclecticism. From this vacillation the great weakness of eclecticism arises: its inability to produce logically coherent theories of broad scope much less a corpus of integrated and interpenetrating logically coherent theories.

As another example of the results inherent in eclecticism, consider the work of Raoul Naroll. In discussing the option of explaining human behavior in terms of genes, climate, diet, pathology, roles, values, social relationships, or "psychogenic" factors, Naroll states: "It seems clear to me that each of these modes of explanation is sometimes important; conscientious behavioral scientists seeking to explain culture cannot a priori rule out any one of them" (1973:348). The predictable contradictory effects of this principle can be illustrated by Naroll's explanation of why crime (theft and personal assault) is more common in some cultures than in others. His explanation is that theft and personal assault are "more frequent where opportunity for the young boy to identify himself with his father was limited or absent altogether" (Naroll, 1973:346). Yet the theory that crime is caused by the

absence of fathers is fundamentally misleading. Obviously there are other factors in theft and assault that are not implicated in Naroll's theory—such factors as class, ethnic, and racial conflicts, glaring wealth differences, unemployment, and urban decay. To be sure, Naroll's theory does not state that the absence of fathers is the only cause of theft and assault. But it leaves the question of what these other factors are and what weight they should be given entirely unexamined. It remains a likely possibility, therefore, that other variables can completely cancel out or even contradict the association that Naroll stresses. Indeed, this is borne out by Naroll's explanation of internal war—which follows immediately after the discussion of crime. According to Naroll, in primitive societies, "strong internal conflict such as feuding . . . stems from the presence of localized groups of related males who support one another in conflict situations" (ibid.:346). Now these "fraternal interest groups" include fathers and sons. Hence this theory manifestly contradicts the previous one, which in effect attributes a high incidence of violent assaults to the absence of fathers. Present fathers in one case and absent fathers in the other; both lead to violent assaults. The theory that absent fathers lead to belligerent sons might be improved by adding the proviso "except in band and village societies." But many other provisos are needed. The effect of father's absence upon juvenile assault rates is modified by whether residence is urban or rural; by whether there are capitalist or socialist economies; by whether there are superordinate or subordinate classes, castes, and ethnic statuses; and so forth. In other words, the theory that crime is caused by absent fathers is a middle-range theory that can be saved from falsification only by drastically restricting its range of applicability. Such a theory explains neither crime and violence nor relationships between fathers and sons.

Let me offer another instance of the quandary of eclecticism, this time from the work of George Foster. According to Foster (1967), the peasants of Tzintzuntzan, a village in the Tarascan region of Mexico, are the victims of an emic and mental complex which he calls the "Image of Limited Good." This image consists of a set of values, attitudes, and beliefs to the effect that life must always be a dreary struggle, that very few people can achieve "success," and that those who achieve success do so at the expense of other people:

> By Image of Limited Good, I mean that . . . Tzintzunrzenos see their social, economic, and natural universes—their total environment—as one in which all desired things in life such as land, other forms of wealth, health, friendship, love, manliness, honor, respect, power, influence, security, and safety exist in absolute quantities insufficient to fill even minimal needs of villagers. . . . Consequently . . . it follows that an individual or a family can improve its position only at the expense of others. . . . Hence . . . any significant improvement is perceived . . . as a threat to all individuals and families (ibid.: 123—124).

Foster's study is concerned in its entirety with showing how this cognitive orientation expresses itself in every domain of village life. Speaking like a cultural idealist, Foster declares:

> The first, and basic argument advanced in these pages, from which the other arguments follow, is that all normative group behavior—the culture of every society—is a function of a particular understanding of the conditions that delimit and determine life, a correlate of certain implicit assumptions, of which the average person is totally unaware. In Tzintzuntzan (and in other peasant societies), this "particular understanding" can be described by the Image of Limited Good (ibid.:35; italics added).

Continuing in the same emic superstructuralist vein, Foster claims that if the changes that are going on in Mexico are going to lead to a "better and happier life for Tzintzuntzenos," instead of to "social unrest," then the first thing that must be gotten rid of is the image: "Hence in listing the fundamental factors which hold back the village, and which must be solved if the first of our two alternative futures [and happier life] is to be achieved, we must put at or near the top increasingly outdated

assumptions about conditions that govern life" (ibid.). This conviction, however, does not prevent Foster on the very same page from assuring us that the image is not "the major factor holding back Tzintzuntzan and other peasant villages" (ibid.). Invoking infrastructural factors, he goes on to declare that the "village's inherent economic potential, its natural resources, its geographical location, the national and international demand for its present and its potential products, and its population growth . . . is the key factor" (ibid.:351; italics added). (If that is the

case, why then did Foster devote his book to the study of the image? Why did he not study the "inherent economic potential," "geographical location," the national and international markets, and so forth?) Noting that it is the image and not the infrastructure that Foster discusses, James Acheson (1972) takes Foster to task for exaggerating the superstructural and emic variables in underdevelopment. Acheson shows on the basis of his own research in another Tarascan community that when economic opportunities are present in the infrastructure, the "image" does not prevent people from taking advantage of them. Defending himself; Foster says he holds with Acheson "that the primary reasons that most individuals do not act to raise per capita income is that no opportunities exist" (Foster, 1974:55).

But in the very next paragraph, Foster once again contradicts himself:

> Acheson's understanding of the economic motivation, however, is Un necessarily limiting. He fails to recognize that the bare presence of economic opportunity alone is not what counts. It is the perception of this opportunity, the recognition of its possibilities on the part of the entrepreneur, his basic ability, and the absence of sociocultural and personality factors sufficiently strong to dissuade him from action that converts the potential of the situation into an actuality (ibid.:55—56).

Foster then reaffirms his commitment to eclecticism. We shall never formulate development theory from "simplistic economic explanations alone, but from careful, cautious, broadly based analyses of all the economic, political, historical, social, and psychological factors that are at play in modern Mexico" (ibid.:57). Unfortunately, no one can study all the economic, political, historical, social, and psychological factors at play in modern Mexico! And even if one could, the result would lack any organizing principle and hopelessly confound the dependent and independent variables for reasons that I have already touched on in discussing postprocessual archaeology. In sum, eclecticism is akin to a naive faith in the power of unorganized inquiry to produce coherent knowledge. But why doesn't the jumble of isolated and contradictory theories hitherto produced under eclectic auspices act as a deterrent? Because it is believed that with the passage of time and the accumulation of more data, a more unified vision will emerge. If this does not happen, then one can conclude that the chaotic condition of theory is faithful to the disorderly nature of human phenomena. (At this point, eclecticism helps to set the stage for postmodernism—indeed, the Geertzian and postprocessualist disparagement of positivist anthropology cannot be refuted by appeal to any set of eclectic theories). It seems clear, however, that the larger the number of eclectic theories, the more incoherent the corpus, and that the orderliness of nature and culture reveals itself only to those who look for it in an orderly manner (see Sanderson, 1987, for a parallel critique of eclecticism in sociology).

The New Marxist Anthropology

Cultural materialism has been heavily influenced by the work of Marx and Engels and by the pre-Leninist and pre-Stalinist Marxist theoreticians Karl Kautsky (1988 [1927]) and Georgii Plekhanov (1940). Because of the salience of the principle of infrastructural determinism, it would not be inaccurate to describe cultural materialism as an indigenous American variety of Marxist anthropology. One might expect that because of cultural materialism's clearly stated recognition of

the importance of pre-Stalinist Marxism for anthropological theory (Harris, 1968, 1980), post-Stalinist European Marxist anthropologists who also reject the Marxism of the Stalin era (if not Leninism as well) would find it appropriate to engage in a constructive dialogue with cultural materialists. Nothing of the kind has occurred. To the contrary, European neo-Marxists have from the outset regarded cultural materialism as an anathema worse than idealism, eclecticism, or any other avowedly non-Marxist or even anti-Marxist anthropological paradigm. To the self-appointed true followers of Marx, cultural materialism is a "crass," "one dimensional," "crude," "vulgar," "mechanical" blot on human thought. (All these adjectives are regularly used to describe cultural materialism by contemporary Marxist anthropologists). Despite the obvious relationships between infrastructural determinism and Marx's up-ending of Hegel's causal relationship between ideas and material conditions—called by Marx and Engels, "base" and "superstructure,"—Europe's neo-Marxist anthropologists insist that "there is nothing in [materialism] which is particularly Marxist" (Bloch, 1985:135).

Paradigms are to be judged by their intellectual achievements, not by their intellectual pedigree. Nonetheless, the reasons European neo-Marxists find cultural materialism abhorrent are essential for understanding the distinctive aspects of their paradigmatic commitment. Western European Marxist anthropology is based on the premise, never conceded by Leninists and Stalinists, that Marx's and Engels's treatment of so-called precapitalist formations, and especially their treatment of band, village, and chiefdom societies, was fatally flawed. According to the Communist Manifesto, "the history of all hitherto existing society is the history of class struggle." While this aphorism served to stoke the flames of revolutionary sentiment, it was clearly either in error or inapplicable to the span of prehistory that encompasses the most common experience of the greatest number of human beings who have ever lived. There were no social classes as Marx and Engels understood classes to be during this vast span of sociocultural evolution, a fact that Engels acknowledged in the 1888 edition of the Manifesto with his famous footnote: "That is, all written history." Marx turned his attention to filling this great hole in his science of history only during his last years. On reading Lewis Henry Morgan's Ancient Society (1977 [1878]), Marx received an impression of prehistory that appeared to be at once authentic and readily capable of a materialist interpretation. (Morgan himself was no materialist—see "Cultural Idealism" above). Marx died before his marginal notes in Ancient Society could be made into a book. It fell to Engels alone, therefore, to complete the first Marxist foray into prehistory and ethnography, The Or of the Family, Private Property and the State. Morgan's stages of sociocultural evolution were associated with technological markers—bows and arrows for upper savagery; pottery for barbarism, metallurgy for upper barbarism; writing for civilization. Engels elevated these technological markers into causal agents, as the replacements for class struggle. Furthermore he shared with Morgan and virtually all twentieth century anthropologists an inability to distinguish cultural selection from natural selection. Thus, in explaining the crucial transition from the supposed early forms of incestuous matings to the exogamous mating system of the gens (matri-sibs), both Engels and Morgan invoked alleged biological benefits of "outbreeding." Bloch (198 5:96) is therefore correct in his view that Engels, followed by Marxists in general up until the end of the Stalinist period, saw the preclass epoch of human history as subject to a form of causality that ceased to be the principal engine of change after the appearance of societies with classes and class struggles. Bloch is also analytically correct when he sees both post-Stalinist Western European Marxist anthropology and cultural materialism as attempting to substitute a single set of causal principles applicable to prestratified and poststratified societies for the double set found in Engels's Origin of the Family, Private Property and the State (1954b [1884]). B loch's next maneuver, however, is unacceptable. He attempts to write off the mixture of technological and biological determinism in Engels's book— one of the most important pillars of dialectical materialism until the

end of the Stalin epoch—as "vulgar materialism" (Bloch, 1985:97)—the very same "vulgar materialism" that cultural materialists allegedly practice in lieu of real Marxist materialism. This simply will not do, since it was Engels more than anyone else who was responsible for dividing the world into good materialists (dialectical materialists) and bad materialists (mechanical and vulgar materialists) and for making the distinction a central part of the communist world view. Engels devoted two books—Anti Duhring (1947 orig. 18881) and Dialectics of Nature (1954a [1878])—to proving that a dialectical (nonmechanical, nonvulgar) mode of analysis provided the key to the understanding not only of all sociocultural phenomena but also of all biological and physical phenomena as well.

Not content with calling Engels a vulgar materialist, Bloch sweeps on to another consummate act of intellectual treachery and tries to link cultural materialism to Darwinian principles as espoused by Morgan, Engels, and other late nineteenth century evolutionists: "Harris's Marxism is only nineteenth-century Darwinism" (Bloch, 1985:133). On the contrary, infrastructural determinism resembles the principle of natural selection only to the extent that both are examples of selection by consequences (see "Infrastructure" above). Cultural materialists regard the Darwinian principle of natural selection as essential for understanding the processes responsible for the origin of Homo sapiens' unique ability to adapt through cultural traditions, but once the capacity for culture was achieved, sociocultural systems evolved through infrastructural determinism which is explicitly phrased as being largely independent of gene-culture feedback and of currencies that measure reproductive success. Cultural materialism shares nothing with Morgan's and Engels's biological reductionism. If Darwinism lies at the roots of cultural materialism, what accounts for the antagonistic postures of cultural materialism and sociobiology (see "Sociobiology" below)?

A further contemporary Marxist fantasy regarding cultural materialism is that it "extended forward" Engels's analysis of primitive societies to include class stratified societies. This has already resulted in "a theory [where human institutions and concepts are seen as the direct results of natural circumstances" (ibid.: 133). Thus, "What Harris means by materialism is that the ideas by which men live have no importance for their action" (ibid.: 134).

Concern with showing that good materialism acknowledges the "ideas by which men live," while bad materialism sees ideas as irrelevant, Peter Worsley (1984:28—29) likewise declares that the economic base is no more "material" than "cognitive knowledge" and "norms of behavior." But what materialist has ever asserted that some portions of the known universe are more "material" than others? Certainly cultural materialists have no interest in this absurd distinction. Materialist paradigms are opposed to idealistic paradigms, as discussed earlier, with respect to the relative causal priorities of infrastructure and superstructure in selection for and against sociocultural innovations, not in terms of whether ideas are material or "have no importance." Kicking the vulgar straw materialists again, Worsley declares: "It is therefore simply not true that man must eat before he can think. People would not find food at all if they did not think" (ibid. :36). It would be pointless to pursue the question of whether less brainy primates than Homo sapiens have to think to eat (perhaps even invertebrates have some kind of "thoughts"). But it is an anthropology not a biology lesson that Worsley needs. The essential point is that while humans might manage to eat with a good deal less thought than we give to it, the fact is that we live not by actions nor by thoughts, but by sociocultural systems in which both thoughts and actions have vital roles to play.

The new Marxists' attempt to portray cultural materialism as a paradigm in which ideas count for nothing is totally at variance with the prominence of the phrase "sociocultural system" in the specification of cultural materialist principles. Why does one bother to talk about the systemic role of structure and superstructure if infrastructure alone has importance for action? Do cultural

materialists propose that people go about producing and reproducing at random and without an idea in their heads? Could sociocultural life as we know it exist if there was nothing but infrastructure? Certainly not. No more than one can imagine people living without an infrastructure—living on ideas alone. Boas was absolutely right when he noted that "no people has ever been observed that has no social structure." But who has ever been so certifiably insane as to suggest the contrary? To say that humans must think to live, however, is to say nothing about the roles of behavior and thought in the processes responsible for sociocultural evolution. The issue is not whether thought is important for action, but whether thoughts and actions are equally important in the explanation of the evolution of sociocultural systems. Cultural materialism—indeed any genuinely materialist paradigm in the social sciences—says no. The system is asymmetrical. Infrastructural variables are more determinative of the evolution of the system. But this does not mean that the infrastructure can do without its superstructure.

The initial task of any truly anthropological study of sociocultural evolution is to situate sociocultural systems within the grand sweep of infrastructural changes that have led to the emergence of hunter-collector, agricultural, pastoral, and industrial societies and to the specific demo techno-econo-environmental conditions that have selected for the myriad types and subtypes of these culturo-phyletic categories. In this macro- perspective, the asymmetry of sociocultural feedback processes reasserts itself at the junction between all major transformations, and the subsequent histories of events must then be read forward to the next major transformation.

The charge that cultural materialists assign a completely passive, epiphenomenal role to superstructure has been rebutted again and again but to no avail. In the sacred cow controversy, for example, no amount of explicit reference to the active role played by Hindu ideology in shaping the treatment of India's bovines has been able to prevent idealists, eclectics, and Marxists from insisting that cultural materialism claims technoenvironmental factors were "solely" responsible (Freed and Freed, 1981:483). In the reply section of the original article (Harris, 1966:64) I sought to dispel any such interpretation by listing five ways in which religion (ahimsa) influenced the management of Indian bovines: "(1) safeguarding milking and traction breeds; (2) preservation of temporarily dry or barren but still useful animals; (3) prevention of growth of energy-expensive beef industry; (4) protection of cattle which fatten in public domain or at landlord's expense; (5) protection of herd's recovery potential during famines." The whole point of that article was to show that Hinduism had contributed to the maintenance of a useful, positive-functioned, or "adaptive" ecosystem involving bovines and people; therefore, it is clear that I never originally claimed that "technoenvironmental" factors were solely responsible for anything in India (or elsewhere). In my comments on Simoons's article (Harris, 1979a:481), I reiterated that religion influences the management of bovines in India and that the beef and slaughter taboos "probably shift the definition of old and infirm cattle to favor borderline specimens, [are] probably preventing the development of an agri-business form of beef production for the elite and international market, slowing down the conversion to a landless peasantry, and lowering the rate of urban unemployment." Does that sound like the writing of someone who holds that the composition of the Indian cattle population is "determined solely by technoenvironmental factors?"

It is difficult to leave the example of the sacred cow without responding to another of Bloch's imaginary distinctions between cultural materialism and true Marxism. Bloch (1985:133) states that for cultural materialism, "the explanation of people's beliefs and values is to be found directly in the nature of the techno-environmental combination." He makes the additional charge:

> Harris notes that cows are holy in India and then looks around for anything that will show the belief to be reasonable in terms of the economy; he does not specify a general theory of what

> kind of conditions will cause cows to be considered holy. Since he does not do this, his theory cannot be challenged by the numerous cases where similar conditions to those he notes for India occur but where the cow is not held holy. In this way his theory protects itself from the challenge but also from the ability to say anything but the obvious. An instant of thought will show that an "explanation" of this sort could be given for any and every phenomenon. Supposing that the Indians abhorred the cow and would not allow it in their country; it would be just as easy for Harris to explain the custom by saying that this abhorrence was due to the fact that if the Hindus allowed cows to wander about the place they would ravage crops and bring disease, two things which Indian cows undoubtedly do (ibid.: 133—134).

First, the origins and evolution of the sacred cow complex were never conceived as involving only technology and economy, but demography and environment as well. Second, the initial presentation (Harris, 1966) of the utilities of Indian cattle was carried out to refute the widespread conviction that the management of cattle in India had a strictly negative cost/benefit balance. As in the case of the other extravagant claims about the disutilities of cattle, pigs, dingoes, and so on (discussed above in "Eclecticism"), this task did not depend on an evolutionary account of the origins of the complex. Third, there is nothing but misinformation in Bloch's claim that no general theory about taboos on the consumption of animal flesh has been offered (see Harris, 1977, 1979a, 1985, 1987; Ross, 1978b, 1980a, 1983, 1987). Fourth, it is again sheer misinformation to state that the question of why cattle were apotheosized in India and not some other species was never answered (see previous citations). Bloch has a right to reject these theories, but not to write that they do not exist. Fifth, it is false to state that these theories were merely "ad hoc." On the contrary, they arise out of the systematic cross-cultural study of the energetic costs and benefits of producing meat and other animal products in relation to the intensification of preindustrial modes of production, population increase, depletions of natural resources, and consequent increase in adverse balance of costs and benefits of raising animals primarily for their flesh. Sixth, there is Bloch's suggestion that because cows have costs (ravaged crops and disease), one might just as well expect them to be abominated as to be venerated. Apparently Bloch does not understand that it is the balance between costs and benefits, not costs or benefits taken separately, that selects for cultural innovations (see Harris, 1985, for a discussion of the conditions under which animals that are not eaten are abominated or venerated and Harris, 1988b, for a balance sheet on the costs and benefits of selecting for cattle over swine as the principal domesticated animal in the Middle East). Finally, no one proposes that the sacredness of cattle rises directly out of infrastructures. Rather, it arises as the consequence of thousands of years of interaction (positive and negative feedback) between infrastructural, structural, and superstructural factors leading to the transformation of Vedic life, the rise of Buddhism and other nonkilling religions, the struggle between Buddhism and Hinduism, and the final co-option of nonkilling themes by Hinduism. Nothing in evolution is "direct" because in every evolutionary process there is both continuity and discontinuity, and selection is by consequences not by design.

To pin the donkey tail of ideas-have-no-importance on cultural materialism, Bloch and his new Marxist collaborators have to forget that it was Marx who wrote that "religion is the opium of the masses." No cultural materialist would wish to categorize religion as exclusively involved in system-maintaining negative feedback (Harris, 1990). The fact is that Marx never solved the problem of the relationship between thought and behavior precisely because he could only rely on Hegel's vague, unoperationalized, and hopelessly metaphysical notion of dialectical processes. In their commitment to this (crude? vulgar?) nineteenth-century precursor of feedback concepts, Marxist anthropologists are clearly motivated by something other than the desire to construct scientifically advanced theories.

Let us turn now to the question of how the new Marxists have attempted to cope with the errors of Morgan and Engels. One strategy is to argue that all history, including prehistory, is indeed a matter of class struggle. This can be done by defining antagonistic sex and age groups as classes (e.g., Terray, 1972). While it is important to realize that severe internal tensions exist in so-called egalitarian societies—the new Marxists were scarcely the first among modern anthropologists to point this out—these internal structural "contradictions" cannot be understood apart from their demo-techno-econo-environmental context. Thus, for many of the new Marxists, the reinsertion of "class" conflict into prehistory has merely served as a pretext for avoiding the examination of the infrastructural conditions that underwrite the structural level of sociocultural systems.

Another strategy pursued by new Marxist anthropologists such as M. Godolier, P. Worsley, J. Friedman, J. Kahn, and J. Llobera attempts to remedy Engels's sin of vulgar materialism by abandoning the notion of infrastructural determinism. Precapitalist societies differ from capitalist societies not only in being classless but also in being "dominated" by noneconomic motives and forces. Infrastructure, it is proposed, does not have a fixed content that can be identified cross-culturally. Referring for example, to native Australian societies, Godolier (1984:10) states: "We are here clearly dealing with kinship relations that function simultaneously as infrastructure and superstructure." In some societies, religion "dominates"; in others, kinship; in others, politics; and so on. The word "dominates" plays a crucial role in preserving some semblance of continuity with the historical materialism and dialectical materialism that most scholars as well as ordinary people the world over associate with Marxism. "Dominates" is said to be different from "determines." It is the "economic base" that ultimately—"in the last instance"—determines the limits of the "autonomy" of structure and superstructure. Or in a slightly different formulation, "it is the economic function of the non-economic structures which determines their pre-eminence" (Kahn and Llobera, 1981:307).

The notion that structure or superstructure can at various times be dominant is easily reconciled with the cultural materialist proposal that infrastructure selects for structural and superstructural components that once selected, amplify their infrastructural basis. This amplification readily gives the impression that "religion is in control" or that "politics is in control." But the impression arises from isolating an arbitrary moment in history from its evolutionary context. In Iran, for example, it was the struggle over oil that created the Shah; and it was the struggle over the Shah that created Khomeini and the Islamic Revolution. To predict the fate of the Islamic Revolution, one must get back to the problem of how the Iranian people are to be fed, housed, and clothed. To see "religion in command" or "politics in command" is to suffer the kind of mystification that Marx sought to remedy in his study of the infrastructural basis of the capitalist superstructure. It is, in fact, to dissolve Marxism into eclecticism, quite literally, as I predicted some time ago (Harris, 1979b:229). Influential self-identified European Marxists now not only deny that infrastructure denotes cross-culturally recurrent categories of institutions but also propose to do away with the very notion of infrastructure and of "economy" as well. According to Peter Worsley:

> The basic theoretical blockage is a concept incompatible with a dialectical sociology: the materialist image of base and superstructure. It is time, now, to pay tribute, a century after Marx's death, to his own criticality as a man whose favorite slogan, he said, was de omnibus dubitandum—everything ought to be questioned by consigning that concept to the same place to which Engels wanted to consign the State: "the Museum of Antiquities, alongside the spinning-wheel and the stone axe" (Worsley, 1984:41).

Indeed, an avant garde of especially "creative Marxists" (Worsley's phrase) finds their less creative colleagues (e.g., Godolier and Jonathan Friedman) to be scarcely distinguishable from the

abominated cultural materialists because they "retain a category of economy which purports to be general to all societies" (Kahn and Llobera, 1981:307).

Worsley raises the interesting possibility that the new Marxists are

really best described as "closet Weberians!" He states that:

> Many Marxists I know will admit, in private, to being closet Weberians. But never in public, since they do not wish to be pigeon-holed with enemies of democracy and socialism Conversely many who are very radical and engaged politically reject the intellectual crudities of dogmatic Marxisms, and their political counterpart—sectarianism (1984:37).

For Worsley as for Weber:

> Causal connections were often oblique and mediated: capitalism no more caused Protestantism than Protestantism caused capitalism. Religious ideas were important elements—but not all of them, only those which had a bearing on people's economic behavior—not the theology, but the ethic, the code of conduct (ibid.:38).

The surrender of anthropological Marxism to Weberian eclecticism cannot be understood apart from the vicissitudes of the Western European communist establishment, especially with respect to the attempt of the French communist party to explain the phenomenon of Stalinism and to escape from its intellectual and political onus. The Marxist philosopher Louis Aithusser emerged as the leading figure in these endeavors during the 1970s. He confronted a difficult task: how to sanitize the scientific determinism of Marx's historical materialism (essential to the prediction of the triumph of the proletariat) at a time when the odor of Stalin's prolonged reign of terror in the name of Marx's "science of society" hung over all of Europe. Althusser's solution involved on the one hand a defense of Marx as a scientist, but on the other a weakening and watering down of historical determinism to conform to the celebration of individual freedom and the growing prosperity of the mixed economies of Western European democracies. It was Althusser who introduced the idea of determination of economic factors in the last instance, dominance instead of determination, and the indeterminate structure of modes of production in different social formations (Benton, 1984). Althusser's influence proved to be short-lived. By the end of the 1970s, the opening toward eclecticism and voluntarism had swallowed up his defense of historical materialism. And by the middle of the 1980s, as discussed earlier, the antiscientist, relativist, phenomenological, and interpretationist influence of Derrida, Foucalt, and other postmodern literary critics had virtually achieved hegemonic status among left-leaning intellectuals.

These trends will no doubt be further strengthened by the spectacular and still on-going dissolution, overthrow, democratization, and widespread reintroduction of private property and labor markets throughout Eastern Europe and within the Soviet Union itself. Inevitably, these vast changes in the communist block will be viewed as a repudiation of every vestige of historical materialism and of its goal of achieving a science of society. Yet from a cultural materialist perspective, those aspects of Marxism that are compatible with a positivist materialist rather than a dialectical materialist analysis of the development of hyperindustrial societies, and that are predicated on the separation of actors from observers, and of infrastructure from the structure of the relations of production, find the strongest possible confirmation in the same ongoing upheavals. Indeed, the very features of cultural materialism that card-carrying Marxists found most objectionable—the insistence on the asymmetrical influence of environmental, demographic, technological, and economic costs and benefits as the key to the evolution of structure and superstructure—emerge as the only part of Marxism that has survived the test of world events. For nothing is clearer in the recent history of Europe than that the downfall of the so-called communist systems has been caused by their colossal

failure to provide the standards of production and consumption inherent in high-tech, computer-age industrialism despite enormous costs suffered in the form of environmental pollution, shoddy goods and services, inadequate housing, and monotonous diets. (I do not doubt that the deprivation of the right to travel and the right to elect political representatives and other civil liberties were costly as well, but these deprivations were themselves the determined outcome of a system that could not objectively confront its own failures and that attempted to perpetuate itself through the repression of the knowledge of its true condition.)

However great the seeming paradox, it is Marx himself who must be credited with stating in the preface to A Contribution to the Critique of Political Economy, the general formula governing the processes that have brought "communism" to its knees:

> At a certain stage of development the material productive forces of society come into conflict with the existing relations of production or—this merely expresses the same thing in legal terms—with the property relations within the framework of which they have operated hitherto. From forms of development of the productive forces these relations turn into their fetters. Then begins an era of social revolution (Marx, 1970:21 [1859]).

The whole problem with Marxism as a guide to the evolution of industrial modes of production and to political praxis in the late twentieth century, is that it has dogmatically dismissed formalist cost/benefit analysis as economism and vulgar materialism. It was thus slow to realize and to see the significance of the fact that highly centralized command economies placed more of a fetter on—were less efficient than—the mixed economies that had evolved in post—World War II Europe and North America. These mixed economies replaced the completely unregulated forms of capitalism that prevailed during Marx's and Engels's lifetimes, precisely because they unleashed more of the productive potential of smokestack industrialism. Communist theoreticians refused to admit that they were falling behind. As long as the industrial mode of production remained at the smokestack level, they could argue plausibly that the command economies would soon begin to gain on the mixed economies and that they would eventually surpass them—"bury them" as Nikita Khrushchev boasted. Since the mid-1960s, however, modes of production in the West have evolved toward a new information-and-service phase of industrialism in which smokestack factories are fast becoming obsolete. Clearly the totally centralized and bureaucratized relations of production in Eastern Europe and the Soviet Union now came to constitute the fetters on the productive forces that Marx predicted would be broken only by an era of social revolution, In view of the immense social upheaval that is now taking place in Eastern Europe and the Soviet Union, Marx's general theory of the selective principles that operate in sociocultural evolution remains essentially correct, even if in its application to the specific infrastructural conditions of late twentieth-century industrial societies it yields results that Marx did not and could not foresee.

Sociobiology

Sociobiology and cultural materialism share a strong commitment to: (1) positivist science; (2) a broad evolutionary perspective (i.e., continuity and change in the emergence of new entities); and (3) selection by consequences. They are fundamentally opposed, however, on the question of the use of Darwinian fitness (i.e., reproductive success) as the currency for measuring the cost/benefits of sociocultural innovations. For socio biologists, cultural innovations are selected for or against in relation to their contribution to the reproductive success of the innovating individuals. For cultural materialists, reproductive success accounts for the evolutionary emergence of the cultural competence of Homo sapiens. Thereafter, cultural innovations are increasingly selected for or

against independently of the reproductive success of the innovators (i.e., with a diminishing incidence of gene-culture evolution). Sociobiologists regard currencies that measure cost/benefits in terms of caloric inputs and outputs, morbidity, longevity, nutritional factors, or monetary units as proxies for or contributors to reproductive success. Cultural materialists, on the other hand, regard reproductive success as a proxy for or contributor to those currencies that measure the differential cost/benefits involved in satisfying an individual's biopsychological needs, drives, aversions, and behavioral tendencies.

Human sociobiology has attracted a large following among anthropologists who have been highly productive of theories that purport to explain both cross-cultural uniformities and cross-cultural differences (see Gray, 1985, for a survey of sociobiological theories). Let us first consider some theories that deal with uniformities. These in effect amount to identifying and describing human nature, or the human "biogram"— the equivalent of cultural materialism's biopsychological givens. For example, some sociobiologists propose that individuals who have been brought up together in the same household have an instinctive aversion against mating with each other; that human males are instinctively jealous; that females tend by nature to be more selective of their mates; and that fear of snakes is instinctive. It would not be possible to present a definitive list of such biogramatic traits, since sociobiologists scarcely agree on how many there are. The point to be made, however, is that sociobiologists are predisposed to accept a much broader range of widely recurrent aspects and elements of human social life as being genetically programmed as compared with proponents of other anthropological paradigms. While universal or near-universal occurrence automatically signals "biogram" for sociobiologists, universal or near-universal occurrence for cultural materialists signals nothing of the kind. Rather, cultural materialism seeks to explain such occurrences in terms of infrastructural determinations that have been culturally selected for in a large number of societies. Reduction of such puzzles as male jealousy, incest aversions, female reproductive strategies, and fear of snakes to the level of genetic programming is a maneuver of last resort. Thus, male jealousy can be viewed as a component in a widespread male supremacist complex related to warfare (in turn related to reproduction pressures); nuclear family incest aversions are related to exchange of women between groups and sexual rights associated with marriage; female mate selectivity can be considered as a defense against male supremacist complexes; fear of snakes may be seen as a culturally selected defense against encounters with poisonous reptiles. It may not be possible to resolve which set of theories is correct on the basis of empirical testing alone. The problem is that none of the genes that sociobiologists postulate as the cause of these (and other) universal traits have as yet been identified. The only way to falsify the sociobiological contention would be to show that there are no genes for regulating the behaviors in question. Given the state of molecular genetics, and the impossibility of performing controlled human subject experiments, this lowers the level of testability of the sociobiological theories. It is true that cultural materialism also assumes genetic programming for a hunger drive, sex drive, aversion to high temperatures, and so on. But these assumptions are shared by sociobiologists. Adding more hypothetical genes, therefore, results in lower testability for sociobiology. It should be stressed that leading contributors to sociobiological theory emphatically deny that there is a one-to-one correspondence between cultural behavioral traits and particular genes. The programming in question is broadly "facilitative" rather than narrowly determinative:

> The hypothesis that human behavioral propensities are adaptations shaped by natural selection does not imply that human behavior is not plastic or that differences in behavior among human populations are the result of genetic differences. The most reasonable hypothesis is that the behavioral differences exhibited by different populations are environmentally induced variations in the expression of basically similar genotypes, and that

> the ability and propensity to vary behavior in response to environmental differences is itself an adaptation (Irons, 1979a:5).

While this relieves sociobiologists of the burden of a narrow form of genetic determinism (with its racist implications), it renders their hypotheses even more vulnerable to the charge of nontestability. The genes at the bottom of human sociocultural differences and similarities are not the familiar Mendelian units of population genetics: "Thus, to explain adaption we postulate "genes" for the trait. These are no ordinary genes. They do not necessarily correspond to a cistron. If we postulate a "gene" for altruism, all that is meant is that there could at some time have been a heritable difference in the tendency to behave altruistically" (Ridley, 1981:250).

The reason why this license to postulate genes that have no definite locus and that merely determine tendencies seems not to bother human sociobiologists is that similar assumptions about hypothetical genes are routinely made in the construction of sociobiological and other Darwinian theories about cross-species differences. But hypothetical genes for explaining human social tendencies are far less plausible than hypothetical genes for explaining nonhuman social tendencies because we know in the human case that social learning and traditions play a vastly more important role. In the nonhuman cross-species comparisons, we are in a sense compelled to postulate heritable differences in tendencies to behave; in the human intraspecies case we are compelled not to make such postulates until we have exhausted the alternative of cultural adaptations. Now for the sociobiological theories that purport to explain cross cultural variations. From a cultural materialist perspective, two kinds of these theories need to be distinguished.

1. Theories that are based on energetic costing and that are in effect cultural materialist theories in all respects except for their tacked on assumptions about hypothetical facultative genes.

2. Theories based on the distinctive principles of inclusive fitness for which rival cultural materialist theories based on more testable or more powerful theoretical principles also exist.

Optimal foraging theory is an example of the first kind of theory. When a list of the gathered or collected species is analyzed for energetic inputs and outputs and time costs, it is predicted that each item on the list adds to the overall efficiency of the foraging process, including encounter and handling time (Hawkes, Hill, and O'Connell, 1982). This prediction conforms precisely to cultural materialist principles predicting that the satisfaction of nutritional needs will be carried out through the optimization of costs and benefits in production and in its prediction that the ideology of food preference and avoidances is a consequence of infrastructural activities and not the reverse. Optimal foraging studies are not predicated upon measuring reproductive success or inclusive fitness, and to the extent that there is a genetic component underlying the optimal adjustment of benefits to costs, it is a component that is so basic to the behavior of organisms as to be shared by all vertebrates if not by all animals. Ironically, therefore, some of the most sophisticated tests of cultural materialist theories regarding food preferences and avoidances have been carried out by anthropologists who identify them selves as sociobiologists.

Another example of cultural materialism masquerading in sociobiology is Kaplan and Hill's (1985) explanation of why more successful Ache hunters share food with less successful hunters (i.e., why they practice reciprocal exchange). Since there is no meat storage, and wide day-to day variation, "almost all individuals achieved higher nutritional status by sharing food" (ibid.:236). But the same point was made independently and without invoking reproductive success by Richard Gould (1981:76): "the greater the degree of risk, the greater the degree of sharing." In addition, Hill and Kaplan go on to explain why highly successful hunters should consistently give away more food than they get: the "low producers accord . . . benefits to high producers" (ibid.:237). For Kaplan and

Hill, these benefits must be fitness benefits. But from a cultural materialist perspective the benefits need not increase fitness in order to balance the exchange. Increased sexual access, for example, might in itself be a sufficient reward for giving away extra meat. ("Sex for meat" is a common feature of many Amazonian reward systems.) Since Kaplan and Hill do not provide measures of increased fitness benefits, their explanation corresponds precisely to a cultural materialist cost/ benefit explanation of reciprocity, except for the tacked-on restriction to fitness benefits.

At the true heart of human sociobiology one encounters such neo Darwinian principles as inclusive fitness, parental investment, and paternal certainty applied to the explanation of human mating patterns, food sharing, family structure, descent systems, and village fissioning. In each instance the central idea is that human social behavior has been selected for its consequences for maximizing reproductive success. For example, a sociobiological explanation for the occurrence of matrilineality and matrilineal inheritance is that when males are uncertain of paternity because of their wives' extramarital affairs, male inclusive fitness will be greater if males pass on supportive resources to sisters' children rather than their own (Hartung, 1985). To test this theory, a 2 X 2 table was constructed showing that there is indeed the predicted association between lack of paternal certainty and matrilineal descent and inheritance. (Hartung argues that even greater reproductive success is achieved by women under this arrangement, but this refinement does not change the point to be made here.) This association, however, tells us nothing about the causes of matrilineality (or patrilineality). It has long been observed that women have greater sexual freedom in matrilineal than in patrilineal societies. Is it the exercise of this freedom that causes matrilineality? If so, under what conditions do women find themselves in a position to have such freedom? To answer, "where descent and inheritance are matrilineal" does not advance our understanding unless we can explain the causes of matrilineality.

Cultural materialist theories of the causes of matrilineality and patrilineality are not predicated on a calculus of reproductive success through inclusive fitness. Rather, they start from a consideration of the energetic, nutritional, and other infrastructural costs and benefits associated with postmarital locality. Where modes of production require men to leave their towns and villages to go on prolonged trading-raiding-hunting forays, sisters take precedence over wives as guardians of lineage property (brothers and sisters are members of the same lineage; husbands and wives are members of different lineages). With uxorlocality, husbands are strangers in their wives' households; women achieve a high degree of domestic independence; and this manifests itself in easy divorces and frequent affairs. It is clear, therefore, that the cultural materialist theory not only predicts the association between uncertain paternity and matrilineality but also predicts the conditions under which matrilineality will be selected for, which the principle of inclusive fitness shows no signs of being able to do. (See Harris, 1990, for a discussion of the causes of matrilineality.)

"Nepotism theory" is another central concern of human sociobiology. It is held that altruistic (i.e., supportive) behavior occurs more frequently between biologically closely related individuals than between distantly related or unrelated individuals because such behavior increases the inclusive fitness of the altruistic individual. Much effort has been expended on more or less successfully showing that a correlation exists between closeness of relationship and altruistic behavior (or distance of relationship and agonistic behavior), but virtually no effort has been expended on showing that the altruistic behavior in question increases the altruist's inclusive fitness in a cost-effective manner (Gray, 1985:77ff). From a cultural materialistic perspective, the correlation between degree of relatedness and supportive behavior follows from the distribution among individuals of the costs and benefits of rearing children. Biological parents, siblings, and other close relations tend to be more closely involved in various forms of reciprocal exchanges as a consequence

of the structure of most domestic groups. The link between mating and parenting that lies at the heart of these groups has been selected for its optimization of a variety of productive and reproductive functions and not solely or mainly for its optimization of reproductive success. From the nuclear constellation of parents and children, there radiate outward complex patterns of learned behavioral interdependencies that roughly match closeness in time and space with biological relatedness and supportive behavior.

This approach is superior to nepotism theory because it is capable of a more efficacious explanation of the occurrence of agonistic behavior between relatives and altruistic behavior between nonrelatives. The wide spread practice of infanticide requires sociobiologists to argue that the inclusive fitness advantage associated with nepotism can be overridden by the inclusive fitness advantage to be derived by killing a close relative. This need not be fatal to the principle of inclusive fitness (and nepotism theory) if the conditions under which one or the other course of action is likely to occur could be stated. Thus far, sociobiologists have not attempted to reconcile the contradictory consequences to which the logic of nepotism theory and of inclusive fitness can lead. Cultural materialism, however, has no difficulty in dealing with divergent outcomes of kin- related behavior. Since reproductive success is not one of the currencies used for calculating cultural materialist costs and benefits, it is not logically embarrassing that close relatives may sometimes kill each other while nonrelatives may sometimes help each other.

Nepotism theory fares even worse when we consider the degree to which supportive behavior in industrial societies involves nonrelated individuals (friends) and the extent to which close relatives are excluded from everyday reciprocities as a result of geographical and social mobility. (The claims of close kin on a deceased individual's property follow from the continuing centrality of biological parents to the child-rearing process.)

This brings us to the central conundrum of human sociobiology: how to explain the reproductive behavior of individuals in industrial societies. As Vining (1986) has shown, social and reproductive success are inversely related in modern societies that have undergone the demographic transition. Inclusive fitness cannot account for the demographic transition during which fertility falls while the resources for rearing children become more abundant. Nor can it account for the failure of urban industrial middle and upper classes to rear more children than the lower classes. Every basic tenet of sociobiology predicts that industrial wealth should lead to record high levels of fertility rather than to record low levels. And every basic tenet also predicts that the wealthiest classes should have higher fertility than the poorer classes. No satisfactory explanation of the failure of these predictions has yet been produced. Three defenses have been offered (see the discussion section of Vining, 1986, for specific instances).

Some claim that the data are faulty and that the rich and powerful still show a slightly greater degree of reproductive success than the poor and weak. But even if it turned out that the completed fertility rate of the rich is higher by one or two children (and no one suggests that it could be larger), we are still left with the fact that the rich are not maximizing their reproductive success in relation to their resources. Other sociobiologists accept the data but claim that industrialization has occurred too recently for fertility rates to rise to their predicted high levels. This argument carries little weight because it can be evoked to save any falsified theory and is in effect the death knell of the testability criterion. Finally, there are those who also accept the data but who dismiss their significance for sociobiology on the grounds that industrial societies are a tiny group of doomed maladapted societies that are not representative of our species' prior or future existence. Such arguments also carry little weight since the number of deviant individuals as distinct from the number of deviant societies is too

large to be dismissed as a mere aberration; one could also speculate that the number of maladapted societies will increase not diminish.

It should be emphasized that the puzzle of contemporary reproductive strategies that sociobiology finds so difficult to handle is merely one aspect of a much bigger puzzle that extends to changes in sexuality, gender roles, family structure, and work patterns (as discussed above). What is really at stake here then is the relevance of sociobiology to modern life. Sociobiologists cannot simply walk away from this problem as if what is happening now is of no great significance to anyone but a handful of yuppies. Nor can their promise be taken seriously that some day (you'll see) reproductive success will be vindicated. Not as long as there is the alternative explanation offered by cultural materialism whereby changes in infrastructure raise and lower the costs and benefits of rearing children and thereby account for the evolution of reproductive strategies (plus sex and gender roles, the sexual composition of the labor force, family structure, and so on) in preindustrial as well as hyperindustrial societies. (See Harris and Ross, 1987, and Edmondson, n.d., for cultural materialist theories of fertility rates.)

Despite its theoretical inadequacies and its implausible principles, human sociobiology has a bright future in anthropology. Sociobiology's strong commitment to positivism guarantees it the support of the larger scientific community, especially the support of biologists, who have always been eager to see anthropology become a branch of biology.

Notes

1. The American Anthropological Association in 1990 consisted of the following formally organized "divisions," "sections," "branches," or "interest groups": The American Ethnological Society; Association of Black Anthropologists; Association of Feminist Anthropologists; Archaeology Section; Association for Political and Legal Anthropology; Biological Anthropology Society; Council on Aging; Central States Anthropological Society; Council on Anthropology and Education; Council on Nutritional Anthropology; General Anthropology Division; National Association for the Practice of Anthropology; National Association of Student Anthropologists; Northeastern Anthropological Association; Society for Anthropology in Community Colleges; Society for the Anthropology of Europe; Society for Cultural Anthropology; Society for Humanistic Anthropology; Society for Latin American Anthropology; Society for Medical Anthropology; Society for Psycho logical Anthropology; Society for Urban Anthropology; Society for Visual Anthropology. In addition, three large self-identified anthropological organizations operate independently of the American Anthropological Association: The American Association of Physical Anthropologists; The American Archaeological Association; and the Society for Applied Anthropology.

2. This corpus now includes theories about: general evolution (Leavitt, 1986); the origin and evolution of sex and gender roles (Divale and Harris, 1976; Harris, 1977, 1981a; Hayden et al., 1986; Maclachlan, 1983; Margolis, 1984; Miller, 1981; Leavitt, 1989); warfare (Ferguson, 1984, 1989; Morren, 1984; Balee, 1984; Harris, 1984; J. Ross, 1984); class, caste, and ethnic relations (Harris, 1964a, 1964b; Despres, 1975; Mencher, 1980; Abruzzi, 1982, 1988; Ross, 1978a); origin of religions (Harner, 1977; Harris, 1977, 1979c, 1989); origins of food preferences and avoidances and of major world cuisines (Ross, l 1983, 1987; Harris, 1985, 1987; Vaidyanathan, Nayar, and Harris, 1982); settlement patterns, demographic trends, and modes of population regulation (Good, 1987; Gross, 1975; Harris and Ross, 1987; Hayden, 1986; Keeley 1988); the origins of agriculture (Hayden, 1990); the origin of chiefdoms and the state (Kottak, 1972, 1977; Sanders and Price, 1968; Price, 1984; Webster, 1985; Sanders, Santley, and Parsons, 1979; Haas, 1982; Milanich, 1980;

Paulsen, 1981). Anthropologists who carry out research in conformity with cultural materialist principles, to avoid controversy, often prefer not to label themselves as contributors to the cultural materialist corpus. The unmarked influence of cultural materialism has been especially significant in American archaeology where, as one archaeologist has written: "The principle of infrastructural determinism, of course, underlies modern archaeology, at least in North America" (Schiffer, 1983:191). An interest in cultural materialism among behavioral psychologists should also be noted (Biglan, 1988; Glenn, 1988; Lloyd, 1985; Malagodi, 1986; Vargas, 1985; Warner, 1985).

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