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Cultural materialism has many virtues, foremost among them its explicit appeal to the epistemology of science, but the paradigm is fundamentally flawed in ways that will severely limit its usefulness as a guideline for future anthropological research and analysis. When anthropology finally emerges as a mature scientific discipline (one devoted exclusively to discovering *facts* and generating *theories* in the genuine scientific senses of the terms), the theoretical principles of cultural materialism will not play a major role. On the other hand, Marvin Harris was a proponent of several essential propositions that will serve as a blueprint for the construction of a mature science of anthropology. The legacy of cultural materialism will be distinct from the legacy of Marvin Harris.

The Legacy of Cultural Materialism

There are several fundamental difficulties with the paradigm of cultural materialism, as various critics have pointed out (Robarchek 1989; Barkow, Cosmides, and Tooby 1992; Magnarella 1993; Sperber 1996; O'Meara 1997; Lett 1997), but I will mention just four interrelated problems that seem to be especially damaging.

Problem # 1: Cultural Materialism is based upon a form of functionalism that lacks genuine explanatory power. As Barkow, Cosmides, and Tooby (1992:625) explain, cultural materialism is based upon a “present or future oriented” form of functionalism which seeks to account for any particular phenomenon by asking “How is it explained by the utility of its consequences?”—a question that makes the fundamental error of placing the consequence before the cause. Given that “causal explanations must necessarily focus on antecedent conditions,” it follows that the “consequences of a phenomenon can be neither the cause of the phenomenon nor its explanation” (Barkow, Cosmides, and Tooby 1992:625). The only form of functionalism that is tenable is a “past-oriented” form of functionalism, such as that found in evolutionary theory: “Darwin’s theory of natural selection provides an explanation of how functional design can emerge from a noneforesightful causal process...[based on the notion that] a design feature’s functional consequences *in earlier generations* explain its presence in this one” (Barkow, Cosmides, and Tooby 1992:625).

Even if the principle of infrastructural determinism claimed only to account for the *persistence* of cultural traits rather than the *emergence* of cultural traits, it would still lack explanatory power, because, unlike the principle of natural selection, it fails to identify a *feedback mechanism* with sufficient selective power to accomplish the task that is purportedly accomplished (Sperber 1996:47-48). What, for example, is the feedback mechanism between a superstructural element such as religion and an infrastructural element such as the mode of production that is comparable to the feedback mechanism between protective coloration and reproductive

success in a biological organism? There is a fundamental reason cultural materialism cannot identify a satisfactory answer to this question: protective coloration and reproductive success are material phenomena, whereas religion and the mode of production are abstractions—which illustrates a second fundamental problem facing the paradigm.

Problem # 2: Cultural Materialism is not based upon an ontology of materialism. As Sperber (1996:10) observes, “ontological questions have practical implications for anthropological research,” and they include such questions as “what kinds of things are cultural things?” and “how do cultural things fit into the world and how do they relate to things other sciences are about?” He maintains that anthropology lacks well-developed answers to these questions, and that the paradigm of cultural materialism is no exception: “The difference between self-proclaimed materialists and those whom they accuse of idealism is that ‘materialists’ see representations [such as “belief,” “culture,” or “superstructure”] more as *effects* of material conditions, while ‘idealists’ see them more as *causes* of material conditions” (Sperber 1996:64). It does not matter which direction the causal arrows are said to point, however—the problem is that both ‘materialists’ and ‘idealists’ imagine that material and non-material “things” enter into causal relationships with one another, and that simply cannot happen. According to the ontology of materialism (as opposed to the ontology of dualism, for example), *everything* is material, including religious beliefs and modes of production. “From a truly materialist point of view,” Sperber (1996:11) observes, “effects cannot be less material than their causes.”

Cultural materialists are aware of this criticism, but the response they have offered is indicative of the ontological confusion that is inherent in their paradigm. Rather than describe the infrastructure, structure, and superstructure as material entities with material connections, cultural materialists maintain that cultural things are *both* material and non-material: “the identification and analysis of empirical (physical) but abstract, superorganic entities is a necessary and feasible component of sociocultural science” (Harris 1997:412). “[E]ven though some cultural things cannot be touched or seen,” Harris argues (1999:52), “they are nonetheless real.” But what does “real” mean in this context? Harris (1999:53) maintains that “as long as the model is constructed on an identifiable physical base and is built up according to explicit logical and empirical steps, it can lay claim to having a physical reality.” This is hardly what “physical reality” means in the natural sciences, and it is hardly an unambiguous answer to the questions posed by Sperber and other critics of cultural materialism: *what kinds of things are cultural things, how do they fit into the world, and how do they relate to the things studied by other scientific disciplines?* The fact that cultural materialism is not based on an ontology of materialism leads directly to another fundamental problem: the paradigm cannot hope to identify causal forces, because “everything that has causal powers owes those powers exclusively to its physical properties” (Sperber 1996:10).

Problem # 3: Cultural materialism’s causal principle (i.e., infrastructural determinism) does not identify agents or forces that have genuine causal power. Among anthropologists, Tim O’Meara (1997; 2001) is the scholar most responsible for developing this argument. Following the philosopher of science Wesley Salmon (1984), O’Meara (1997:405) “distinguishes ‘causal processes’ such as baseballs, windowpanes, and electromagnetic fields, which have causal efficacy in themselves, from ‘pseudo processes’ such as shadows and spots of light, which do not.” He argues that “superorganic” entities (such as infrastructures, structures, and superstructures) are pseudo processes; they cannot possibly have causal efficacy because they are not physical entities. Bloch and Sperber (2002:727) concur on this point: in a recent article, they argue that non-physical phenomena do not “possess causal powers,” and that only “material events...can be invoked as causes and effects in naturalistic causal explanations.” According to O’Meara, “explanations of human affairs [such as

those generated by cultural materialism] are necessarily faulty if they assert or imply that supra-individual or otherwise superphysical patterns or entities have causal efficacy in themselves”; instead, he argues, legitimate explanations of human affairs must be “limited to causal-mechanical explanations of the operations and interactions among individual human beings and other physical entities” (O’Meara 1997:408). Robarchek (1989:904) made this same point earlier when he argued that “any factor purported to have causal efficacy must in some way articulate with human motivational complexes if it is to find behavioral expression...[and that any] theoretical formulation that purports to offer a causal explanation of human behavior in terms of some extrinsic factor must explicitly specify the mode of this articulation.”

O’Meara does not deny that cultural materialism identifies useful correlations among different types of events (such as the correlations between modes of production and forms of religious organization). Such correlations, however, are not indications of causal relationships. “Patterns of behavioral events in human affairs are not laws that ‘determine’ individual behaviors or their aggregates,” O’Meara (1997:406) explains; instead, those patterns are simply “clues to the causal-mechanical properties of humans and their constituent parts.” Identifying those causal-mechanical properties of humans entails identifying the evolved features of human minds and bodies, and those features have a physical reality in human anatomy and physiology. Thus, O’Meara (1997:410) concludes, “if only physical entities have causal efficacy by virtue only of their physical properties, then ‘objective’ or ‘empirical’ science literally means ‘physical’ science.”

Many scholars have observed that the natural or “physical” sciences, unlike the social sciences, have achieved a high degree of mutual consistency, interconnectedness, and explanatory power stemming from a shared set of ontological and epistemological assumptions (Tooby and Cosmides 1992:19; Sperber 1996:10; Wilson 1998:49-71). By insisting that its subject matter is unique to the social sciences, cultural materialism refuses to embrace that entire set of ontological and epistemological assumptions characteristic of the natural sciences, and it separates itself from the possibility of complete integration with the more successful fields of scientific inquiry. This reflects a fourth fundamental problem with the paradigm.

Problem # 4: Cultural materialism is insufficiently grounded in biological evolution. The evolutionary processes that produced human beings are the same processes that have shaped the morphology, physiology, and behavior of all organisms on the planet. Thus understanding the selective forces that shaped human evolution is essential for understanding human nature—and understanding human nature is essential for understanding why humans behave the way they do (Boyd and Silk 2000). Cultural materialism largely ignores the specifics of human nature and the details of human evolution. Instead, cultural materialism is content to posit the existence of four “bio-psychological constants:” humans need to eat, they prefer to minimize the amount of work they have to do, they enjoy sexual intercourse, and they seek to increase the love and affection that others offer them (Harris 1979:62-63).

In comparison to the expansive list of human universals identified by the newly emergent paradigm of evolutionary psychology (Brown 1991; Barkow, Cosmides, and Tooby 1992; Buss 1999), the list suggested by cultural materialism is strikingly incomplete. Cultural materialism’s *raison d’être* is to explain the reasons for the similarities and differences among the world’s cultures, but when cultural materialism attempts to explain human universals without reference to the evolved details of human nature, it is doomed to failure. The principle of infrastructural determinism will not explain, for example, the universality of violent male sexual jealousy, nor will it explain the fact that, on average, husbands are older than their wives in every society in the

world. These human universals can only be explained by a shared human nature, and that shared human nature can only be explained by the evolutionary forces that shaped it.

Marvin Harris explicitly rejected the “Neo-Darwinism” of evolutionary psychology; in the Boasian tradition, he remained “opposed to the application of these bioevolutionary principles to culture,” and he continued to regard culture as a distinct ontological realm that must be understood in its own unique terms (Harris 1999:106). That was his major mistake. As Donald Brown (1991:6) convincingly demonstrates in his book *Human Universals*, “human biology is a key to understanding many human universals.” Lacking sufficient “conceptual integration” with the biological sciences, cultural materialism cannot hope to achieve the same level of success enjoyed in the various disciplines of the natural sciences. The laws of chemistry may not be reducible to the laws of physics, but they are compatible with them; that degree of mutual consistency is characteristic of all the natural sciences, and it is largely responsible for their unparalleled success (Cosmides, Tooby, and Barkow 1992:4). By declaring its subject matter to be a separate ontological domain, cultural materialism removes itself from the possibility of “consilience” with other realms of scientific knowledge. This is a fatal error, because Wilson (1998:53) is undoubtedly correct in observing that the “explanations of different phenomena most likely to survive are those that can be connected and proved consistent with one another.”

Tooby and Cosmides (1992:23) describe the set of assumptions underlying cultural materialism as the “Standard Social Science Model,” and they argue convincingly that the Standard Social Science Model “suffers from a series of major defects that make it a profoundly misleading framework.” More than a decade ago, Marvin Harris (1994) asserted that “cultural materialism is alive and well and won’t go away until something better comes along.” Fair enough: something better *has* come along. It’s called evolutionary psychology, and it takes an epidemiological rather than a superorganic approach to culture (see Bloch and Sperber 2002). It conceives of socio-cultural phenomena as “ecological patterns of psychological phenomena” (Sperber 1999:31), and the psychological phenomena to which it refers are the universal cognitive mechanisms shaped by human evolution. Cultural materialism was a brave, ingenious, and well-intentioned effort to achieve an objective understanding of sociocultural systems, but it will be supplanted by paradigms that apply the ontology of materialism and the epistemology of science more consistently, more thoroughly, and more productively.

The Legacy of Marvin Harris

Nevertheless, if Marvin Harris was wrong on several of the particulars about the best way to approach understanding and explanation in anthropology, he was right on virtually all of the principles. The work of Marvin Harris embodies at least six propositions that will prove to be of lasting value for anthropology.

Proposition # 1: Anthropology should be thoroughly and exclusively grounded in the epistemology of science. Marvin Harris was not the first anthropologist to maintain this proposition (see White 1949; Steward 1955; Dole and Carneiro 1960), but in the second half of the twentieth century he was its foremost proponent (at least among cultural anthropologists). The necessity of a scientific foundation for anthropology was the central theme of what was probably his most important book, *The Rise of Anthropological Theory* (Harris 1968), and it was the explicit goal of what was perhaps his second most important book, *Cultural Materialism* (Harris 1979). *Cultural Materialism* is subtitled *The Struggle for a Science of Culture*, and that phrase aptly summarizes Harris’s lifelong ambition.

Even if Harris made some errors when he applied the epistemology and ontology of science to cultural materialism, as various critics have alleged (e.g., Lett 1990; Sperber 1996; O'Meara 1997), the definition of science that he propounded throughout his career was fundamentally sound. For Marvin Harris (1979:27), science was "an epistemology which seeks to restrict fields of inquiry to events, entities, and relationships that are knowable by means of explicit, logico-empirical, inductive-deductive, quantifiable public procedures or 'operations' subject to replication by independent observers." There are many other ways of expressing these essential ideas, of course (e.g., O'Meara 1989; Lett 1996), but the influence of Marvin Harris's conceptions (if not his exact phraseology) can be readily discerned in most contemporary cultural anthropologists who identify themselves as scientific anthropologists (e.g., Gellner 1988; Sangren 1988; Appell 1989; O'Meara 1989; Reyna 1994; Carneiro 1995; D'Andrade 1995; Murphy and Margolis 1995; Cerroni-Long 1996; Spiro 1996; Kuznar 1997; Lett 1997; Cronk 1999).

Marvin Harris believed that anthropology would be irrelevant if it were not scientific, and he was right. In the Distinguished Lecture he delivered to the American Anthropological Association at its annual meeting in 1991, he reflected upon the unanticipated and revolutionary collapse of state communism in Europe in the late 1980's and early 1990's: "What do anthropologists have to say about all this? A branch of the human sciences that ignores these immense events, that interprets them exclusively in terms of relativized 'local knowledge,' or that derides the attempt to understand them in terms of nomothetic principles runs the risk of being confined to the backwaters of contemporary intellectual life" (Harris 1992:295). It speaks well for anthropology that Marvin Harris enjoys many supporters on this point. Spiro (1986:278), for example, poses this pointed question: "For if, in principle, ethnographic studies...can only contribute to unique understandings of this or that belief or custom or this or that primitive or peasant culture in all of its particularity, *what possible intellectual relevance might such studies have?*" [emphasis added]. In the same vein, D'Andrade (1995:4) observes that "anthropology without science is not much," and Carneiro (1995:14) comes to a similar conclusion: "For it is here, in ethnology, that broad theories are built and generalizations crafted; where the major questions of anthropology are asked and answered...What have post-modernists contributed to these great problems? Nothing." The problem with anthropology, Marvin Harris (1991:83-84) was fond of saying, "is not that we have had too much of positivist social science but that we have had too little." He was right again.

Proposition # 2: Anthropology should be resolute and resourceful in responding to competitive approaches based on irrationality, pseudoscience, and/or anti-science. Marvin Harris was a persistent and powerful critic of "obscurantism," the term he applied to the common set of assumptions underlying "astrology, witchcraft, messianism, hippiedom, fundamentalism, cults of personality, nationalism, ethnocentrism, and a hundred other contemporary modes of thought that exalt knowledge gained by inspiration, revelation, intuition, faith, or incantation as against knowledge obtained in conformity with scientific research principles" (Harris 1979:316). He forcefully rebutted the challenge posed to scientific knowledge by Carlos Castaneda's Don Juan fantasies (Harris 1979:319-324), and he warned about the moral and political dangers inherent in the rising tide of Evangelical Protestantism and other religious movements in the United States in the second half of the twentieth century (Harris 1987:141-165). Marvin Harris was unhesitant in confronting the errors of "ethnomania," or the irrational tendency of each racial and ethnic group "to pay far more attention to its own origins, history, heroism, suffering, and achievements than to those of other racial and ethnic groups" (Harris 1999:111), and he took great trouble to expose the myriad fallacies and shortcomings inherent in the anti-science of postmodernism (e.g., Harris 1995b; 1999:153-160).

Proposition # 3: Anthropology should be a holistic discipline that integrates the methods and findings of the four sub-fields of archaeological anthropology, biological anthropology, cultural anthropology, and linguistic anthropology. In the later stages of his career, Marvin Harris (1994:62) opened one of his essays with a comment that expressed a long-held conviction: “At the outset, I wish to disassociate myself from the impression, sometimes carelessly and sometimes deliberately conveyed, that anthropology can be equated with cultural anthropology, or much less, with ethnography.” He proceeded to argue that the strength of anthropology lay in the fact that cultural anthropologists, archaeologists, biological anthropologists, and linguists were involved in a collaborative effort to understand a wide range of interrelated problems, including “the origin of the hominids, the emergence of language and culture, [and] the evolution of cultural differences and similarities” (Harris 1994:62). Marvin Harris’s commitment to holism in anthropology was genuine and deep (Harris 1997a). He was the author of a four-field introductory textbook, *Culture, People, Nature*, that was in its seventh edition at the time of his death (Harris 1997b), and he served as President of the General Anthropology Division of the American Anthropological Association.

Proposition # 4: Anthropology should be a discipline whose practitioners communicate in language that is clear, direct, intelligible, and unambiguous. Marvin Harris had no patience with sloppy, inexact, or pretentious writing. He was especially impatient with the typical writing style of postmodern anthropologists: “Their neobaroque prose style—with its inner clauses, bracketed syllables, metaphors and metonyms, verbal pirouettes, curlicues and filigrees—is not a mere epiphenomenon; rather, it is a mocking rejoinder to anyone who would try to write simple intelligible sentences in the modernist tradition” (Harris 1999:156-157). With the principal exception of *The Nature of Cultural Things*, which he published early in his career (Harris 1964), Marvin Harris almost always achieved his goal of writing simple intelligible sentences. You may not have agreed with what he said and you may not have liked him for having said it, but you rarely had trouble understanding what he meant to say.

Proposition # 5: Anthropology should be a discipline whose practitioners reach out beyond the academy to communicate anthropological knowledge, perspectives, and insights to the general public. Among anthropologists, Marvin Harris was not only one of the leading theoreticians of his time—he was also one of the best-selling popular authors of his generation (Harris 1974; 1977; 1985; 1987; 1989). On the whole, his trade books have stood the test of time well. *Cows, Pigs, Wars and Witches* is still fun to read, full of provocative ideas and interesting connections, as is *Cannibals and Kings*. *Good to Eat* may be good to debate, as far as some anthropologists are concerned, but it is still good to read, as far as many in the general public are concerned (it certainly shows off to good advantage the anthropological penchant for cross-cultural comparisons and counter-intuitive explanations). *Why Nothing Works* is still intriguing for its synthesizing overview of contemporary American culture, even if some of the details are becoming dated, and anyone who reads *Our Kind* will walk away with the accurate impression that anthropology is a varied, exciting, and dynamic discipline.

Proposition # 6: Anthropology should be thoroughly grounded in a well-developed sense of morality that champions the cause of social justice. Marvin Harris was an uncompromising advocate of scientific objectivity, but at the same time he was also an unwavering proponent of humanistic morality. “I agree that scientific inquiry must be carried out in a manner that protects its findings from political-moral bias to the greatest possible degree,” Harris (1999:58-59) declared, “but this does not mean that scientific inquiry should be (or can be) conducted in a political-moral vacuum.” He was proud of the fact that “science-oriented anthropologists have a long history of contributing to the struggle against racism, antisemitism, colonialism, and

sexism” (Harris 1999:62), and he resented the fact that anti-scientific anthropologists attempted to claim a more developed sense of morality for themselves: “To claim the political-moral high ground one must have reliable knowledge. We have to know what the world is like, who is doing or has done what to whom, who and what are responsible for the suffering and injustice we condemn and seek to remedy. If this be so, then science-minded anthropologists can plausibly claim that their model is not only moral but morally superior to those that reject science as a source of reliable knowledge about the human condition” (Harris 1995a:424).

Conclusion

Marvin Harris was passionate about his convictions, and he could be uncompromising in their defense. He was, at times, dismissive of colleagues with whom he disagreed, and he did not suffer fools gladly. He was regarded by many of his critics as arrogant, but that may have been largely due to the fact that he was more intelligent, more articulate, more creative, and more productive than most of his critics. Even if Marvin Harris was wrong about cultural materialism (as, ultimately, I believe he was), he was right about the scientific and humanistic principles upon which he based his paradigm. Marvin Harris possessed an unusual combination of keen intellectual curiosity, acute intellectual capacity, and exceptional intellectual creativity, and he used all of his remarkable talents in trying to solve the riddles of culture. When even more satisfying solutions to those riddles are eventually developed, they will be developed by anthropologists who adhere to the fundamental principles Marvin Harris espoused.

If I may end on a personal note, I consider it ironic that so many of Marvin Harris’s critics found his personality to be off-putting. I found him to be considerate, fair-minded, and capable of exceptional charm. When I was a graduate student at the University of Florida, Marvin Harris frequently conducted graduate seminars in his home, where he was a gracious and genial host. When he decided to change the venue for his seminars from the sterile concrete-block basement where the Anthropology Department was housed to his spacious glass-walled house set in the midst of a densely wooded lot, he fundamentally improved the tone of the course (and displayed his humanistic appreciation for the value of aesthetics in the process). In one of his seminars on anthropological theory, I submitted a term paper extolling the merits of interpretive anthropology (I was much younger then, and considerably more naïve and impressionable). In his evaluation of my paper, Harris offered these comments: “While ultimately unconvincing as far as I’m concerned, this is an excellent paper—thoughtful and thought-provoking.” Those are the comments of a reasonable man who recognized the value of reasoned debate, and they provide a model that anthropology would do well to emulate.

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