

ETHNOSCIENCE VS. CULTURAL MATERIALISM:  
A STUDY IN FALSE OPPOSITIONS<sup>1</sup>

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The complex and sometimes bitter debate between proponents of "idealism" and advocates of "materialism" has long been with us in Anthropology. The conflict between these two perspectives centers on theoretical and political differences too numerous to detail. However, an examination of a particular instance of this general debate may shed some light on the sorts of issues involved. Specifically, this paper attempts to analyze the basis of the dispute between the two subdisciplines of Anthropology known as ethnosciences and cultural materialism, which represent the idealist and materialist traditions respectively. At varying points in time, both ethnoscientists and cultural materialists proclaimed their theoretical and methodological contributions as the foundation of a "new" anthropology, thus rejecting as inadequate what had come before (Sturtevant 1964; Harris 1968, 1975; Goodenough 1970; Kottak 1975). However, a closer examination of the differences between cultural materialism and ethnosciences suggests that to view them as competing paradigms is to create an unjustified and false dichotomy.

It may be useful to approach the dispute between cultural materialists and ethnoscientists from the vantage point of the following three questions: 1) What is the proper domain of study for Anthropology? 2) In what way does the analysis of this domain contribute to an understanding of causality in social evolution? and 3) What are the appropriate methods for the investigation of this domain? Cultural materialists and ethnoscientists offer very different answers to each of these questions. However, I shall argue that their differences, while profound, are theoretically compatible.

Classical ethnosciences, as it was developed by individuals such as Frazer, Goodenough, Conklin, Sturtevant and others, had as its major focus the discovery and description of culture. This is not a particularly earth-shattering proposal since the study of culture has always been a major concern within anthropology. However, the early ethnoscientists had developed a new, though certainly not unanticipated, sense of what culture was. They proposed that culture be regarded as a shared

*grammar of behavior* for particular social systems. Just as linguistic grammars provide rules for the production of acceptable utterances, so a cultural grammar guides the social actor in the production and interpretation of socially appropriate behavior. The cultural grammar itself, the cognitive rules which were thought to underlie social interaction, was to be the focus of the so-called New Ethnography. Moreover, this new orientation toward culture was intended to replace, rather than merely complement, what the early ethnoscientists felt were the inadequate and unscientific definitions used by more traditional anthropologists.

"Classical" ethnosciences had a distinctively programmatic quality about it. "Transcultural Studies in Cognition," the special publication of the American Anthropologist dedicated entirely to cognitive anthropology, announced to the field that the new approach was the wave of the future:

Ethnosciences shows promise as the New Ethnography required to advance the whole of cultural anthropology. (Sturtevant 1964: 101)

The insistence that culture be studied as a cognitive grammar evoked criticisms from all sides. Anthropologists schooled in the tradition of participant-observation argued that people seldom follow the "cultural rules" imparted to anthropologists during interviews. The whole point of the fieldwork emphasis was to reveal "what was really going on," something which the native of the culture was thought not to be fully aware of (Rappaport 1967; Vayda and Rappaport 1968). Thus, some individuals attacked the major premise of ethnosciences, namely, that the native is the most reliable authority where underlying rules of behavior are concerned.

Adherents of the humanistic, wholistic view of anthropology complained that the new view of culture was devoid of the essential spirit of the discipline, which is its concern with the human experience and all of its problems:

. . . I think . . . that much of the current effort . . . has the effect of sacrificing the insight into the nature of human behavior which is the ultimate aim of all ethnography.

It results in astoundingly pallid, sterile, and fragmentary ethnography. It is effectively a retreat to method without sufficient reference to goals. [Berreman 1966]

However, the most vehement critics of early ethnoscience were the cultural materialists, led by the well-known Columbia anthropologist, Marvin Harris. The cultural materialists' critique focused on the issue of the proper domain of study for anthropology. Harris did not deny that cognitive systems existed, nor did he suggest that these systems were not involved in the production of social behavior. What the cultural materialists did balk at was the apparent exclusion of non-cognitive, and especially non-linguistic, realities: technological development, the organization of production, and other material constraints on the content of cognitive codes. They argued that whether or not such basic economic facts were part of "culture," these facts certainly should be included in any ethnography. Perhaps more importantly, cultural materialists insisted that the examination of the "substructural" components of social systems had to take priority in any causal understanding of social evolution.

Here I come to the crux of the matter insofar as the initial question is concerned. According to the classical ethnoscientists, the subject matter of Anthropology was particular native semantic systems. Cultural materialists, on the other hand, proposed that anthropology return to its original 19th century focus on evolutionism, the "science of history" (Harris 1968). This renaissance of interest in the topic of social evolution was to be undertaken from a particular point of view, namely, a neo-Marxian perspective which strongly emphasized economic imperatives as the driving force behind social change. Thus, at the very outset, ethnoscience and cultural materialism took entirely different stands on the question of what anthropology was all about. Each was equally adamant about the importance of reorienting the field around its own particular interests. This insistence on a unilateral "program" for anthropology won both subdisciplines substantial criticism from colleagues outside either orientation. However, for the present purposes it will be argued that these two proposals were only contradictory in the sense that the total amount of resources expended in the pursuit of anthropological knowledge is finite, and therefore, choosing one strategy over another may result in downplaying the value of other theoretical alternatives. However, this point aside, I would argue that the programs of ethnoscience and cultural materialism easily could be taken as complementary.

If we proceed to the second question, namely, the relevance of the subject matter of anthro-

pology to the question of causality in social evolution, we may find the root of the cultural materialists' misinterpretation of the ethnoscientific quest. The key word to consider is *causality*. We generally expect theories of social change and evolution to provide more than just a sequence of historical stages in the development of societies or culture areas. Evolutionary theories also must attempt to supply an explanation for the underlying causal mechanisms which "push" social evolution in a certain direction.

Harris maintained that ethnoscience, as an outgrowth of idealism, was particularly incapable of providing an adequate theory of techno-economic and social evolution. In fact, in *The Rise of Anthropological Theory*, Harris suggested that ethnoscience was an anthropological descendant of the classical idealism of Hegel, who proposed a theory of evolution based upon the unfolding of reason (Harris: 1968; Hegel: 1956). On Harris' first point I would certainly have to agree; ethnoscience, like all other subdisciplines interested in the "native worldview," is not well suited for (or, for that matter, particularly interested in) providing evidence for causal mechanisms of social evolution. In fact, during the early days of ethnoscience, scarcely any attention was paid to the whole issue of evolution.

On the second point, however, I must disagree with Harris. Hegel and his intellectual descendants in the idealist tradition did have a theory of social evolution which saw the development of reason as the guiding force behind change. Ethnoscience does not now, and never did to my knowledge, partake of this theory of evolution. Nowhere in the literature of cognitive anthropology do we see a theory of causality in social change, and certainly not a theory which could be construed as being in opposition to a materialist one. Harris, and other critics of the ethnoscientific movement, assumed that because ethnoscience and the idealist tradition have certain common interests, they overlap in all of their theoretical assumptions. This simply is not the case. As I pointed out earlier, the classical ethnoscientists were not concerned with the topic of evolutionism.

Precisely the reverse is true of contemporary ethnoscience. Native systems of classification represent one of the primary source materials for the study of cognitive culture. As the data base on these systems of classification grew, it became clear that there were identifiable regularities in the formal structure of many semantic domains in unrelated language families. The work done by individuals such as Brent Berlin, Paul Kay, and others, in such areas as folk biology and color lexicons, marked the end of the classical period in eth-

noscience and the beginning of the comparative/evolutionary era (Berlin 1972); Berlin and Kay 1969; Kay 1975). The orientation of these cognitive anthropologists is almost exclusively evolutionary in nature. However, it is crucial to the argument presented here that we understand the present status of this universalistic-evolutionary trend in ethnoscience. What Berlin, Kay and their associates have uncovered are sequences in the encoding of lexical items. They have been able to establish that these developments in the lexicons of unrelated languages are followed with surprising regularity across a very large sample of the world's languages. Clearly, this work is still at the descriptive level—no definitive theory is offered which would provide the causal mechanisms underlying language evolution in the domains investigated by these individuals. Where tentative observations regarding theories of change have been advanced, they have been unquestionably materialist in character:

Consonant with our suggestion that the color lexicon evolves in a specifiable order is the additional observation that languages which possess few basic color terms . . . are invariably spoken by peoples which exhibit relatively primitive levels of economic and technological development . . . On the other hand, languages possessing rather full color lexicons are characteristically spoken by the more civilized nations of the world. [Berlin 1970: 14]

Perhaps the most telling evidence of a materialist theory of evolution in ethnoscience is to be found in the work of Berlin, Breedlove, and Raven on the effects of agricultural technology on native systems of biological classification (Berlin 1972; Berlin, Breedlove, and Raven 1970). This research demonstrates that the lexicon for plant names undergoes certain identifiable linguistic changes when cultivation is present. Specifically, Berlin and his colleagues show that the more significant (i.e., cultivated or protected) a plant is, the more resistant the lexical items representing the plant are to linguistic change. What we have here is not so much a completely developed theory of lexical change in ethnobotany, but rather, a recognition of the important role played by technology in lexical development and some empirical support for Berlin's view that causal explanations for language evolution will probably be found "with some more general, technologically based theory of cultural evolution." (Berlin 1972)

In order for the materialist critique of ethnoscience to stand, it would have to demonstrate that the focus on the realm of ideas (e.g., semantic classification, linguistic categories, etc.) has led to an idealist theory of social evolution. It is true that

ethnoscience spend little time concentrating on the sorts of topics of primary concern to Harris, Kottak and others in the materialist "school." However, ethnoscience has not developed an alternative to the materialist theories of social change, nor does it show any signs of moving in that direction.

What cognitive anthropology can contribute to the study of social change is an understanding of the "emic" face of "etic" processes. Having accepted materialist explanations of social evolution, ethnoscience proceeds to discover what the consequences of that process have been for semantic systems. Surely both aspects of the human experience are essential to any comprehensive theory of change.

While these theoretical issues have been raised repeatedly since the publication of *The Rise of Anthropological Theory* (Harris 1968), perhaps the most bitter argument between materialists and ethnoscience has revolved around the issue of research methodology. Clearly, the methods employed by the two subdisciplines are different, but again, I suggest, they are complementary. This should come as no surprise, for as I have argued in the preceding pages, proponents of the two "sides" are interested in different, but certainly complementary issues.

The emphasis of the early ethnoscience was at least as much methodological as it was substantive or theoretical. In systematizing their theory of culture, they found it imperative to develop research approaches which could be replicated and formalized into predictive statements in the tradition of classical scientific methodology. Lack of a reliable research methodology within traditional anthropology was one of the key concerns of the founders of ethnoscience. Consequently, they placed a very strong emphasis on strict research designs which could be duplicated by other workers in the field for comparative purposes. This preoccupation with rigorous data collection and analysis served to place the issue methodology in the foreground (which is rarely the case in anthropology), where it was attacked rather vehemently by Harris among others (Harris 1968).

We have already noted that cognitive anthropology, as a science of the "superstructure," took as its major concern the structure and content of cultural rules as they exist in the minds of native informants. One of the primary sources of information about these cultural rules is the semantic categories present in the native language, for one of the prerequisites to "acting appropriately" by the native definition, is a grasp of the meanings of words, and the capacity to structure those meanings into ordered categories. This shared knowledge

was thought to underly "grammatical" activities, be they linguistic or interactive in some other sense. As the investigation of semantic properties of native languages assumed prominence in ethnoscience, the methodology naturally focused upon the most efficient and rigorous ways of elucidating this type of information. Various methods of elicitation, modeled loosely after techniques in field linguistics, were developed. They ranged from highly controlled elicitation techniques which minimized the influence of external environmental/social influences on the informant ("White Room" ethnography), to the more naturalistic, contextualized strategies which utilized the external environment as a source of question frames ("Grass Hut" ethnography). However, the general thrust of all these efforts was the same: to uncover the basic cultural grammar, beginning with the semantic properties of the native language.

The methodology of cultural materialism could not have been farther removed from that of ethnoscience. The materialists' interests in aggregate phenomena (e.g., food production, economic input/output, resource distribution and consumption, etc.) led to the use of research techniques of "objective" measurement. By objective I mean, in this case, the use of measurement systems which were not necessarily familiar to the native culture under investigation. Utilizing measurements of kilocalories, crop yields, and other indicators of aggregate economic/ecological activity, the cultural materialists have attempted to provide information on the productive forces which are seen to underlie social organization, political alliance, ritual activity, and a host of other sub-systems (Rappaport 1967; Vayda and Rappaport 1968).

It seems only fitting that the two subfields, with their divergent interests, would have developed different methodological approaches. It is inconceivable that the methods of either side would have been applicable to the research topics of the other. However, both methodological approaches can coexist; as with all other research endeavors, the selection of a methodology should be governed by the type of information required. Proclaiming the superiority of one strategy over another makes sense only where the same data base is the object of concern. Insofar as ethnoscience and cultural materialism are concerned, it is rarely (if ever) the case that the same kind of data would be required.

In this paper I have argued that to view ethnoscience and cultural materialism as *conflicting* approaches is to create an unnecessary and unjustified opposition. The contrasts between the two sub-disciplines of Anthropology are more a matter of interests and emphases than of irreconcilable differences. Each subdiscipline has a distinctive but

complementary view of the basic concerns of the field. These views both contribute to our understanding of social evolution, the oldest of anthropological problems, without contradicting each other. Finally, as we would expect, each sub-discipline adopts a different research strategy in an attempt to uncover fundamentally different bodies of information.

At the outset, it was suggested that the debate between ethnoscience and cultural materialism is a subset of a larger, longstanding controversy in Anthropology. I think it is helpful to view the conflict in this context, and in this sense I would agree with Harris that much of anthropological theory since the mid-19th century has involved a certain amount of shadow boxing with the work of Marx and his followers (Harris: 1969). At the same time, however, it is important to recognize that in the case of ethnoscience vs. cultural materialism, the difficulty is more a matter of two fields talking past each other than it is one of fundamentally conflicting views on the driving forces behind social change. Both subdisciplines accept the materialist-oriented view of the primacy of technology and economy.

While we may wish to claim priority of one sub-discipline over the other, given some sense of urgency for discovery or some recognition of the limited resources available for research in general, we must admit that neither perspective invalidates or contradicts the other.

#### NOTES

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## REFERENCES CITED

- Berlin, B.  
1970 A Universalistic-Evolutionary Approach to Ethnographic Semantics. *Bulletins of the American Anthropological Association* 3: 19-31.
- Berlin, B. and P. Kay  
1969 *Basic Color Terms: Their Evolution and Universality*. Berkeley: University of California Press.
- Berlin, B., D. Breedlove, and P. Raven  
1970 Cultural Significance and Lexical Retention in Tzeltal-Tzotzil Ethnobotany. *In* *Meaning in Mayan Languages*, M. Edmundson, Ed. The Hague: Mouton Press.
- Berreman, G.  
1966 Anemic and Emetic Analyses in Social Anthropology. *American Anthropologist* 68: 346-354.
- Goodenough, W.  
1970 *Description and Comparison in Cultural Anthropology* (Chapter 4). Chicago: Aldine Publishing Co.
- Harris, M.  
1968 *The Rise of Anthropological Theory*. New York: Thomas Crowell.  
1975 "Cultural Materialism," a paper presented at the annual meetings of the American Anthropological Association, San Francisco.
- Hegel, G.  
1956 *The Philosophy of History*. New York: Dover.
- Kay, P.  
1975 Synchronic Variation and Diachronic Change in Basic Color Terms. *Language in Society* 4: 257-270.
- Kottak, C.  
1975 "Ethnoscience and Structuralism," a paper presented at the annual meetings of the American Anthropological Association, San Francisco.
- Sturtevant, W.  
1964 Studies in Ethnoscience. *American Anthropologist* 66: 99-124.
- Rappaport, R.  
1967 *Pigs for the Ancestors*. New Haven: Yale University Press.
- Vayda, A. and R. Rappaport  
1968 Ecology, Cultural and Noncultural. *In* *Introduction to Cultural Anthropology: Essays in the Scope and Method of the Science of Man*, J. Clifton, Ed. Boston: Houghton-Mifflin Publishing Co.