Book Reviews

Anthropological Strategy

Description and Comparison in Cultural Anthropology. WARD H. GOODENOUGH. Aldine, Chicago, 1970. xiv, 174 pp., illus. $6.95. Lewis Henry Morgan Lectures, 1968.

For as long as anthropologists have sought to specify just what it is that comprises mankind's common human nature they have had to contend with a complex and fundamental problem: how to construct methodological and theoretical strategies that will permit the unbiased description of particular cultures and, at the same time, generate concepts of sufficient relevance and precision to facilitate meaningful multicultural comparisons. In the volume under review, Ward Goodenough addresses himself to this problem and in a succinct discussion of basic topics in the study of human social organization—marriage, parenthood, kindred, descent groups, and kinship terminology—points the way to what he believes to be a viable and productive solution.

Goodenough's views on ethnography and ethnology are not altogether novel, but they are unquestionably significant and have already had a measurable impact on anthropological thinking. They have also provoked controversy and criticism, the latter coming mainly from individuals who have construed his previous writings as advocating a return to an earlier period in the history of American anthropology when obsessive concern with ethnographic detail impeded attempts to formulate general cultural "laws."

In his new book, Goodenough makes it clear that this is neither his wish nor his intention. He is not opposed to the search for cross-cultural generalizations, nor does he believe they are out of reach. He simply maintains—and then proceeds to demonstrate—that before such generalizations can be made several key conceptual problems which have hindered the formulation of adequate comparative typologies must be squarely faced and overcome.

Culture, in Goodenough's view, consists of a set of rules or standards which, when acted upon by the members of a society, produce behavior that falls within a range of variance the members consider proper and acceptable. Thus defined, culture is not to be confused with a society's structure, which is of a different order of reality and refers to the statistical patterns and regularities exhibited by a material system of interacting persons and objects. The chief task in describing a culture, then, is not to make a record of the things that people do or say but rather to specify their rules for doing and saying them.

It follows from this that ethnographers must endeavor to understand the conceptual categories according to which the people they study perceive, classify, and organize the world of phenomenal experience. If these categories and the distinctions between them are ignored, or if they are arbitrarily replaced with categories and distinctions derived from the ethnographer's own culture, the result is almost certain to be distorted description—a cultural caricature, so to speak, in which standards for behavior are presented in terms that are both alien and irrelevant to the people who subscribe to them.

But a problem arises. How are native concepts (sometimes called "emic" concepts) to be described so that those from one culture can be objectively compared with those of another? What is called for, says Goodenough, is an inventory of "distinctive features," that is, a set of universally applicable criteria (or "etic" concepts) that serve in various combinations to formally define the categories in question and thus facilitate comparison on the basis of how they contrast. Professional linguists have employed just such a strategy for defining and comparing the sound units of particular languages (with marked success), and Goodenough himself has played a central role in devising similar methods—commonly known as "componential analysis" (*Science* **156**, 1203–09 [1967])—for defining semantic units. In chapter 3 he outlines these procedures and presents a detailed discussion of the etic concepts (such as sex, consanguinity, affinity, and relative age) that have proven useful in the formal description of kinship terminologies.

In a subsequent chapter, Goodenough treats the role of such criteria in more general terms:

> As a kind of typology, a systematized set of etic concepts is a tool for describing and comparing cultural forms. Its adequacy is judged by its ability satisfactorily to describe all the emic distinctions people actually make in all the world's cultures in relation to the subject matter . . . for which the etic concepts were designed . . . Such etic concepts satisfy the criteria for a comparative study of cultural forms free of ethnocentric or specific cultural bias.
>
> Something even more important derives from such etic concepts. If they embrace all of the distinctive features needed to describe the elementary emic units of any culture, they constitute the minimum number of concepts needed to determine empirically what are the universal attributes of culture and, by inference from them, the universal attributes of men as creators and users of cultures. Such universals help delineate the nature of the human species as such [pp. 129–30].

All this is well and good, but another problem remains. When a comparison is made, how are emic concepts from different cultures to be equated with an appropriate set of etic concepts? For example, if we are interested in comparing marriage relationships in two cultures, on what basis do we decide that in each case we are dealing with something that can properly be called "marriage"? These decisions, Goodenough argues, should not proceed from the content of cultural forms but from the roles these forms play in people's lives. In other words, etic-emic equations should be made on the basis of functional considerations. Such considerations, he writes,

> . . . enter implicitly, if not explicitly, into almost all the comparisons of culture that anthropologists have made. They have provided the one set of presumed universals or common denominators of culture, taking for granted that all people everywhere have similar problems and concerns arising from their common humanity [p. 120].

The central relevance of these "similar problems and concerns" emerges most clearly in chapter 1 when Goodenough defines marriage, family, and parenthood with reference to functional universals such as the formation of emotional bonds, processes of physical and social maturation, male dominance, and

male competition for sexual access to females.

In closing, Goodenough responds to the criticism that emic ethnography, by virtue of the importance it attaches to what is distinctive about particular cultures, is opposed to the search for cross-cultural regularities. To the contrary, he says, the two enterprises are complementary and logically related. Emic concepts provide us with what we need to know to construct valid etic concepts, and the latter, besides being the elements in terms of which comparative propositions must be framed, help to expedite discovery and description of the former. This holds true not only for propositions about the interrelations of cultural forms, but for propositions about the relations of cultural forms to extracultural variables as well. With the consideration that attention to both emic and etic concepts is indispensable for achieving the aims of scientific anthropology, Goodenough rests his case.

Description and Comparison in Cultural Anthropology is a tightly written work which, though intricate and technical in parts, is rarely obscure. It makes a substantive contribution to the theory of human society and, simultaneously, represents a timely and valuable excursion into contemporary anthropological epistemology. On both counts it is challenging and stimulating. And on both counts it merits the careful study of all professional anthropologists.

KEITH H. BASSO
Department of Anthropology, University of Arizona, Tucson

The Post-Newtonian Period

Jean d'Alembert. Science and the Enlightenment. THOMAS L. HANKINS. Clarendon (Oxford University Press), New York, 1970. xii, 260 pp., illus. $11.25.

Not so long ago there was an inaccurate saying that Newton's achievement was of such a magnitude that a century was to elapse before other scientists could go beyond it. One suspects the myth was English in origin, for although British science subsided a bit in quality after the activity that culminated in Newton, science on the Continent continued to be vigorous. Yet even today we are scarcely flooded by books on 18th-century science, at least prior to Lavoisier. What is available is largely in articles, chapters of books devoted to longer sweeps, or volumes that are not handy—an example being Truesdell's important work on rational fluid mechanics in Euler's *Opera Omnia.*

It is therefore with a good deal of interest that one takes up Hankins's book on d'Alembert. D'Alembert is often treated in one-sided fashion, either as the coeditor of the *Encyclopédie* and literary *philosophe*, or else as a brilliant if confusing mathematician. And yet he ought to be of great interest in his entirety, since he did have a foot in each camp and since his thought was probably not as bifurcated as historians tend to see it as being. In Hankins's view, the predominant aspect of that thought was more Cartesian than anything else, an idealizing rationalistic mentality that, in spite of the vogue of English empiricism, sought to root philosophy in necessary and certain principles. To d'Alembert, rigor in concept and demonstration was the highest goal.

Such an attitude brought d'Alembert into conflict with those, like Clairaut, who were striving to match the mathematics to the phenomenal world. It also brought him into conflict with those, like Diderot, who wearied of mathematical rigor that did not take into account the foibles of humanity. Hankins's accounts of d'Alembert's disputes with his fellow *philosophes* and scientists are a necessary part of the story of the Enlightenment, when the search for a new kind of secular basis for all knowledge was a central aim.

In this light, some of the arguments between Enlightenment thinkers that seem only curious today take on a better perspective. For behind these arguments were philosophical commitments and logical difficulties that could not be resolved by mere mathematical formalization. It turns out that the common characterization of 18th-century science as "Newtonian" appears, on close inspection, to be virtually useless, and indeed misleading. Part of the trouble is due to the *philosophes* themselves, of course; it was stylish to claim to be Newtonian. That claim, however, seldom went far beyond the acceptance of Newton's law of gravity and his celestial mechanics. Furthermore, Newton had certainly not completed the study of celestial mechanics, and many questions remained that he had not envisaged. To call mechanics "Newtonian" in 1760 would be much the same as calling quantum mechanics "Planckian" today; at once the statement is a truism and empty of any deep significance.

The organization of Hankins's book is worth mentioning. He begins by discussing d'Alembert's education, his debut into the scientific community, his work with Diderot, and his eventual shift of emphasis to literature and the politics of the academies. Slowly, however, the discourse shifts away from the biographical scenario to a more topical one. Toward the end of the book are the more technical treatments of the notion of force, of the *vis viva* controversy, and of the general manner in which physical laws were conceptualized. These more technical details are discussed intelligently and, for the most part, with clarity. They form an important reprise of items discussed earlier so that both the mathematically adept reader and the one who is less so can profit. One can see the nature of the problems faced by d'Alembert and his colleagues.

In short, Hankins's effort is to be applauded. It is to be hoped that more monographs will appear in this curiously neglected period of post-Newtonian science.

J. MORTON BRIGGS, JR.
Department of History, University of Rhode Island, Kingston

Reminiscences

My World Line. An Informal Autobiography. GEORGE GAMOW. Viking, New York, 1970. xiv, 178 pp., illus. $5.95.

This is an *informal* autobiography (as claimed by the subtitle) in the sense that it is neither a detailed historical document nor a deeply analytical account of the author's life and times, and it is somewhat sketchy. However, it is *good* autobiography, as far as it goes, for each incident gives a vivid glimpse of some aspect of George Gamow or of his environment, and the account is chronological and apparently reasonably complete, up to the time of his arrival in the United States in 1934, at the age of 30. The descriptions of his major contributions to physics in that period, though brief, are clear and even rather exciting, at least to a physicist. For the later period, they are sporadic and less satisfactory. (For example, there is a two-page account of a problem in the theory of white dwarfs which does not say what Gamow's contribution to it was.) Gamow's personal life in the United States is almost completely neglected. Although his parents and