Book Reviews

Culture as a Meaningful Order

Culture and Practical Reason. MARSHALL SAHLINS. University of Chicago Press, Chicago, 1976. xii, 252 pp. $17.50.

Undergraduate anthropology students have been heard to lament that in the West we have no "real" culture. Everything is so practical and "secular" here; nothing has the interest and mystery seen in those fortunate societies with masked dancers, cross-cousin marriage, and marvelously complex symbolisms of right side, left side. Others are less romantic than the students, but the idea that Western society is to be understood in terms of rational, utilitarian principles while other societies are to be explained differently is very widespread and has a latent influence on the thinking of people who could be expected to know better. In *Culture and Practical Reason* Marshall Sahlins takes it as one of his central tasks to demonstrate the falsity of the notion that Western society needs a different type of explanation from that called for by other groups. He notes that the illusion that our society is a strictly pragmatic and gain-oriented one is very old and cites Hobbes's view of the nature of man as entailing a "perpetual and restless desire of power after power, that ceaseth only in death" as evidence of how we view the base from which we have developed. He charmingly notes that "we are the only people who think themselves risen from savages; everyone else believes they descend from gods" and claims that the development from "a Hobbesian state of nature is the origin myth of Western capitalism."

Sahlins shows, in fact, that Western society—like all others—simply cannot be understood without reference to the symbols and meanings that constitute its culture. This is so even in the realm of production and economic relations in general. Sahlins demonstrates the importance of symbolism in this realm with a brief but telling examination of American food preferences and taboos. He notes that our views about what constitutes a "meal" together with the meanings given horses and dogs as opposed to those given cattle and pigs play a crucial role in how the American environment is exploited and, even, how American agriculture articulates with world markets. Our insistence on meat, and on steak as the cut above all others, combined with our absolute refusal to eat dogs or, less vigorously, to eat horses (while feeding them to dogs), lies at the base of our use of the land and choice of crops. It is only after taking these meanings as given that our agricultural system can be looked at in terms of the usual economic rationalities of supply, demand, and price. Sahlins puts it, "The 'opportunity costs' of our economic rationality are a secondary formation, an expression of relationships already given by another kind of thought, figured *a posteriori* within the constraints of a logic of meaningful order" (p. 171).

The demonstration that culture in the sense of meanings and symbols is essential to the operation of Western society is only part of a more general interest: to show that society and human activity can never be understood on the basis of "practical reason" alone. Sahlins maintains that since the 19th century anthropology in its broadest sense has been subject to an opposition between utilitarian and cultural accounts of social life. This opposition has been expressed as a conflict concerning "whether the cultural order is to be conceived as the codification of man's actual purposeful and pragmatic action; or whether, conversely, human action in the world is to be understood as mediated by the cultural design, which gives order at once to practical experience, customary practice, and the relationship of the two" (p. 55).

Sahlins sets out to examine the two sides of the "venerable conflict between utilitarian and cultural accounts" through the work of some of the well-known proponents of each. He divides the holders of the utilitarian or practical view into two camps: one taking an ecological approach referring all human action to its adaptive value and the other taking a "utilitarian [approach] in the classical sense invoking the means-end calculus of the rational human subject." He is at his impressive best laying low the utilitarians as those whose objective is "the elimination of culture as the distinctive object of the discipline." L. H. Morgan, Julian Steward, the contemporary ecological anthropologists, Malinowski, and Murdock all come under his hammer. Those who invoke adaptation are pounded with their inability to explain the presence of one functionally adequate set of practices rather than any of a vast number of equally adequate others and for failing to see how humanity makes its own environment. The means-ends calculators are battered with having abandoned "culture as a meaningful order" in favor of "culture—reduced to an epiphenomenon of purposeful 'decision-making processes' (as they say)."

In considering the cultural side of the "venerable conflict" Sahlins examines Boas's position with unusual acuity, rightly crediting him with a major contribution in interposing the *Völkergedanken* (dominant patterns of culture) between raw nature and human relations with that nature. Most of his attention, however, is given to Karl Marx and Lévi-Strauss. His handling of Marx is learned and especially impressive in its defense of Marxism against trendy Marxists. He also brings out some of the best in Lévi-Strauss, making his more often professed than understood position clearer than is usually done. Sahlins forcefully advocates the Lévi-Straussian view of meaning—that it is generated from symbols by virtue of their position in a system of symbols—as *the* cultural (in his sense) approach to understanding society and human activity. He attempts to make structuralism more dynamic and illustrates his approach with a new and provocative analysis of his Fijian data.

Here one lodges certain reservations. Sahlins tellingly indicts Durkheim for his misleading distinction between culture ("collective representations") and social structure, but he then uses this as a stick to beat Mary Douglas in her interpretation of the social reference to symbols and, perhaps, as a basis for failing to discuss Victor Turner's important views of symbolism. The exclusive validity of Sahlins's views of meaning is by no means established through the vigorous presentation he gives them. Further, he unaccountably fails to discuss the work of A. I. Hallowell, which takes as thoroughly cultural a view of human action as could be wished and which, with-

out violating Sahlins's strictures, offers a quite different approach from Lévi-Straussian symbolism to the problems Sahlins sets.

The reservations, then, are that the book should have done even more than it did, that it should have taken us even further. Still it is a noteworthy achievement.

MARC J. SWARTZ
Department of Anthropology, University of California at San Diego, La Jolla 92037

Planetary Geology

The Geology of Mars. THOMAS A. MUTCH, RAYMOND E. ARVIDSON, JAMES W. HEAD, III, KENNETH L. JONES, and R. STEPHEN SAUNDERS. Princeton University Press, Princeton, N.J., 1977. x, 400 pp., illus. $35.

T. A. Mutch published the classic lunar stratigraphic study *The Geology of the Moon* in 1970, late enough to summarize all pre-Apollo knowledge but too early to reflect the discoveries of Apollo. Now Mutch and his associates have done the same with Mars, summarizing the pre-Viking results but going to press too soon to do more than include an appendix of Viking photos and results from the August 1976 preliminary Viking report. The authors' preface explains how this happened and predicts criticism for doing the right thing at the wrong time; and a reviewer is obliged to make the criticism. Does one really want to pay $35 for a book on Mars that, if it had been published six months or a year later, could have included actual measurements of martian soil chemistry, seismology, atmospheric composition, and so forth?

Having made that obligatory criticism, one can make a fair, if not totally convincing, argument that the book's excellent qualities override its timing. Mutch, Arvidson, Head, Jones, and Saunders together possess a significant fraction of this nation's expertise in interpreting spacecraft photos and geophysical data concerning terrestrial planets. There is no better-reproduced or better-explained collection of photographs of the martian landforms than that in this book. Furthermore, the book could well have been subtitled "A Text in Comparative Geology of the Planets." It includes splendid photographs and discussions of features and processes on the earth, the moon, and Mercury paralleling those on Mars. It thus should have a broader appeal to geoscientists than a mere review of pre-Viking knowledge of Mars. There is also a comprehensive review of the pre-Viking literature, with approximately 600 references. Significant findings about processes that shaped the planet Mars (and may have shaped earlier landforms of the earth)—such as cratering, volcanism, wind erosion, and the cutting of the mysterious arroyo-like channels—are described in detail.

One should remember that the Mariner 9 orbital photos and measurements, acquired in 1971–72 and here used as the primary data base, covered virtually the whole planet, with the resolution of the photographs nearly equaling that of most Viking orbital pictures. As a result, the basic outline of martian geological evolution developed from Mariner 9 data remains current. Viking has added evidence that there was once a more massive atmosphere (as hypothesized by Mutch *et al.*), that water exists in the soil, that iron minerals have oxidized to form the red color, that some seismic activity still occurs, and that, although the chemistry of the soil is peculiar, life did not evolve to a thriving state. This evidence outdates the book somewhat, but it does not require the revision of whole chapters. Some subjects are still quite controversial: the last sentence of the book concludes that martian volcanism "continued past 3 b.y. [billion years] ago, the age of lunar maria, perhaps extending close to the present." My own recent work, based on dividing known numbers of impact craters on volcanic flows by calculated crater production rates, supports this conclusion. Yet a paper recently published as a lead article in *Science* (24 December 1976) concludes just the opposite, that most martian volcanism occurred prior to 3.4 billion years ago and that "the last great volcanic construct is 2.5 billion years old." The section on the mysterious channels presents strong evidence (in my opinion) that many of them were formed by flowing water, indicating a dramatically different martian climate at some time in the past; but some planetary geologists, including a few Viking team members, attribute the channels to lava or wind action. The channels are currently an important puzzle, and study of them may lead to the discovery of general planetary climate oscillations. Very recent work by Ward, Burns, and Toon (not included in this book) suggests that these climate changes on Mars resulted from dynamic changes in martian obliquity, caused by volcanic changes in the planetary mass distribution. Geoscientists should consider the ramifications for the earth, whose climate has also varied.

Some question may remain about the use for this excellent review of martian and planetary geology. The preface indicates three goals: preparation of a martian atlas, compilation of planetary comparisons, and production of a textbook with references. The first goal is not truly met, since the book is not an atlas of maps or of geographically ordered photos, though it does include many geologically organized maps and photos. The second goal is well met. Although the book would make an excellent text, one might question whether the price and the heavy emphasis on Mars are conducive to use in existing courses. Nevertheless, the book is bound to become a classic reference on the pre-Viking knowledge of Mars and an invaluable historic document when the time comes to review how we learned about that planet. Any researchers concerned with terrestrial geology and climate history would benefit by considering the "textbook examples" of the processes that have been discovered to have taken place on Mars and are described here. Let us hope for an update in a year or two, with the final Viking data woven in.

WILLIAM K. HARTMANN
Planetary Science Institute, Tucson, Arizona 85719

Magma Formation

Generation of Basaltic Magma. H. S. Yoder, Jr. National Academy of Sciences, Washington, D.C., 1976. xii, 266 pp., illus. Cloth, $8.25; paper, $5.50.

It is currently accepted that the earth's crust has evolved from magmas generated by partial melting in the mantle, and in the broadest sense the term "basaltic magma" covers the full range of mantle-derived silicate liquids. Since the recognition of different "primary" magmas by Bailey and his colleagues in the Scottish Tertiary province in the 1920's, the problem of the generation of basaltic magmas has underlain much petrologic research. The generation and extrusion of magma have come to be recognized as complex processes, the full understanding of which requires diverse contributions from geochemistry and geophysics. In this book, Yoder attempts to provide "a comprehensive summary and synthesis of current knowledge" in the field and