# Book Reviews

## Cultures under Stress

**Extinction and Survival in Human Populations.** CHARLES D. LAUGHLIN, JR., and IVAN A. BRADY, Eds. Columbia University Press, New York, 1978. xviii, 328 pp. Cloth, $20; paper, $8.95.

*Extinction and Survival in Human Populations* is not, as the title would seem to suggest, about the biological survival of groups through the balance of birth and deaths. Most of the groups described as being threatened with extinction are actually growing in numbers, and with respect to a group that declined by 50 percent in a two-year period the author and the editors choose to stress that they have adapted remarkably well and that their chances for continued survival are good. The unit of analysis, then, is not the breeding group or the collection of individual members but what we usually call the society or the culture of a group.

Laughlin and Brady, the editors of this book and authors of several of the papers, want to understand how cultures adapt or fail to adapt to environmental change. They compare their approach to that of learning about brain function through the study of lesions, arguing that groups suffering from deprivation or disaster can teach us a great deal about the mechanisms by which social groups persist and change. With this goal in mind, they have assembled a rather grisly collection of eight short ethnographies of groups variously afflicted by climate, famine, epidemic, loss of land, and enslavement. Because of the format of the book, all the ethnographic accounts are brief, and none could be considered a complete account of the culture before, during, and after the deprivation in question. But this is a measure of the difficulty of the task the editors have undertaken, and we cannot fault them on this score. The empirical papers are interesting in their own right, and some of them are fascinating.

Several authors compile data from historical archives. In a report on the West Indian slave societies, Robert Dirks relates seasonal food supplies and nutritional needs to the timing of revolts and rebellions. Charles Bishop uses the archives of the Hudson's Bay Company to document the effects of the fur trade on Northern Ojibwa social organization. Two other authors focus on small island populations. John Cawte, a psychiatrist, examines the Australian aboriginal populations of Bentinck and Mornington islands for indications of varying psychiatric disorder in more and less distressed groups. Ivan Brady tells of the effects of a cyclone on an already deprived group living on a Pacific coral island, Funafuti. By studying the myths of the Tsimshian (using Boas's collection of myth) and the Kaguru of Tanzania (using Beidelman's work), John Cove shows how myths can instruct people in ways of dealing with famine. Finally, Larissa Lomnitz describes life in a contemporary Mexican city slum.

But the most interesting articles report on two neighboring groups in northern Uganda. Laughlin shows that a hundred years of big game hunting, cattle keeping, raiding, and wage labor have changed the So culture beyond recognition. He does not contend that the old culture has died, but rather that the So group, in continuing to adapt to its available resources, has changed its culture markedly.

The case of the Ik, discussed by Colin Turnbull, is already well known to anthropologists. Although Turnbull entitles his paper "Rethinking the Ik," he reiterates what many have already heard and found incredible: that the Ik accept continual suffering and starvation as normal. They display an almost total absence of sharing and caring for others; after children have passed the age of three even their parents reject them, neither feeding them nor permitting them to sleep within the parental home. Turnbull numbs the reader with shocking observations about the Ik—that the pleasures of defecation are preferred to those of copulation, that conscious pleasure is taken in the misfortunes of others, that infants are deliberately abused, and that moral outrage would be expressed if healthy people shared with sick or starving kin. And Turnbull makes no effort, in the usual anthropological tradition, to explain, or "explain away," behavior that at first glimpse seems inconceivable. Instead he sees the Ik as occupying an extreme end of the spectrum of deprivation and disaster, where, though the people may survive, social life itself becomes extinct.

Turnbull's essay brings the theoretical problems that Laughlin and Brady are trying to solve into high contrast. We ordinarily suppose that social patterns such as child care, sharing, and morality have some adaptive significance, increasing the probabilities of survival, whereas Turnbull is arguing that these traits are luxuries the Ik can no longer afford. The concept of adaptation has frequently been given a circular definition in social science theory: for if all existing societies are ipso facto adapted to their circumstances, all observed social patterns or behaviors must have adaptive significance. True to this pattern, Turnbull and the editors insist that the Ik are well adapted to their extreme circumstances. But this sort of use of the concept of adaptation, though probably necessary at a certain stage of the history of ideas in anthropology, takes all the explanatory power from the application of evolutionary theory to the study of societies. No doubt it is in part the longing for a clear-cut mechanism for differential reproduction of cultural traits in the next generation that has made the sociobiologists, especially those from anthropology, so quick to posit genes for specific behaviors in humans.

Laughlin and Brady are not making the sociobiological argument. In a long introductory essay, and in an epilogue, they lay out an abstract framework of concepts for thinking about the ways in which environments can change (progressive vs. cyclical deprivations and disasters) and the levels of structures (neural, cognitive, societal, and symbolic) found within societies able to adapt to such changes. The four levels of structure postulated and the discussions of flows of energy and control among them are strikingly similar to what the sociologist Talcott Parsons and his interdisciplinary collaborators at Harvard—among them the sociologist Edward Shils, the anthropologist Clyde Kluckhohn, and the psychologists Henry Murray and Gordon Allport—formulated as "the functionalist paradigm" almost 30 years ago in such works as *Toward a General Theory of Action*. The functionalists are not cited, and indeed Laughlin and Brady's approach to the problem of the adaptive process is independent of and different from it in a number of important theoretical respects. Yet there

are two crucial reasons for wishing that Laughlin and Brady had paid far more attention to avoiding the pitfalls of the Parsonian model.

One of these is stylistic: Laughlin and Brady have unwittingly reinvented the painful prose style of the functionalists. Take, as an example, Laughlin and Brady's most general proposition:

> If a decremental shift in basic resources is due to recursivity in the environment of an individual organism or society, then the adaptive infrastructure of that organism or society will at all times be organized to respond and adapt to that eventuality. This proposition may be referred to as the Principle of Adaptive Diaphasis.

Granted that theory construction demands careful phrasing and technical use of terms, the statement cries out for a translation into plain English, such as C. Wright Mills provided for Parsons in *The Sociological Imagination*.

The second issue is more serious. After years of debate over functionalist theory construction, George Homans pointed out that the theory is not a theory at all. Laughlin and Brady, like Parsons before them, have written what Homans calls an "orienting statement," which identifies an area of concern without making it possible to quantify variables, apply the framework precisely to particular situations, or infer anything from the theory. As even one of the contributors points out, applying a cyclical theory to contemporary events is difficult, since one never knows what part of the cycle a group is on. The authors and editors of *Extinction and Survival in Human Populations* are aware of some of these logical problems of application of the abstract theoretical framework to particular events but are a long way from solving them.

In a passage expressing irritation with his critics, Turnbull suggests that anthropologists have a "mystic mountain" called Statistics, for which they play a ritualized "numbers game." The editors and authors of this book are completely innocent of this charge: only Dirks, in his extremely interesting account of the West Indian slave societies, uses numerical data in a systematic way. But success in the difficult project these authors have undertaken would seem to call for more, not less, attention to operationalization of variables, quantification of observation, and statistical description and inference.

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## Physiological Adaptations

**Environmental Stress.** Individual Human Adaptations. Proceedings of a symposium, Santa Barbara, Calif., Aug. 1977. LAWRENCE J. FOLINSBEE, JEAMES A. WAGNER, JULIAN F. BORGIA, BARBARA L. DRINKWATER, JEFFREY A. GLINER, and JOHN F. BEDI, Eds. Academic Press, New York, 1978. xvi, 394 pp., illus. $16.

This volume is a collection of papers read at a symposium held to honor Steven Horvath, who is an environmental physiologist with a long record of significant contributions to research in human adaptability. His approach has emphasized factors that modify individual responses and cause people to respond in different ways to environmental stress. The volume considers factors that seem to produce significant variation in response between people.

The papers are by collaborators and former students of Horvath's who have studied the impact on human physiology of stress arising from the physical environment. Topics include heat, cold, altitude, air pollution, and the physiology of work. Each topic is introduced with a short summary by a senior investigator, which is followed by four or five more limited experimental papers. The experimental papers emphasize age, sex, acclimatization, and ethnic background. Horvath has written a concluding summary suggesting some unsolved problems.

To the reader who has kept up with the field of stress physiology and is seeking some new insight, this collection will be disappointing. Most of the material has been seen in major physiological journals for some time and many of the experimental presentations are simply reviews of earlier publications. However, the volume is not entirely devoid of new material. Kuehn *et al.* report on a study of the relationship between ethanol consumption and body heat balance in a cold environment. They found that, contrary to what has been believed, there was no appreciable increase in heat loss or in surface temperature as a result of ethanol consumption. Spurr *et al.* make some interesting observations on the influence of childhood malnutrition on adult work capacity. They suggest that despite dietary supplementation in childhood early malnutrition still results in a reduction in adult work capacity. In a more general way, Rowell gives an excellent update of his earlier work on cardiovascular function, emphasizing heat acclimatization changes.

The strength of the collection is in its emphasis on human variation in response to physiological stress. All too often in our quest for basic mechanisms we have tended to treat the results our human subjects give us as if emanating from clones of laboratory rats. Age, sex, acclimatization, and ethnic background have been ignored as factors producing variations in response. As Grover puts it, "Such variability is usually considered anathema to the physiologist for he believes that he will be unable to see the forest for the trees" (p. 327). A quick pass through this book will certainly help delineate the forest. The book should be of interest to the environmental scientist because it provides an up-to-date compendium of factors that serve to differentiate human response to the environment. The book is not comprehensive or complete, but many sources of variation are described and the up-to-date bibliography should assist in the collection of background material.

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## A Renewable Source of Fuel

**Wood as an Energy Resource.** DAVID A. TILLMAN. Academic Press, New York, 1978. xiv, 252 pp., illus. $13.50.

During the last four years much has been written on the prospects of utilizing more wood for energy. There has been much conjecture, some denigrating and some bordering on fantasy.

Tillman's book goes a long way toward developing a more reasonable perspective. He makes projections of the total use of wood for energy in the United States to the year 2000 based on logical and reliable projections of total employment, availability of alternative fuels, characteristics and quantity of wood supply, and changes in fuel cost relationships. His estimate that wood will supply 4.2 percent of our energy requirements with a contribution of 4.1 quads (1 quad = $10^{15}$ Btu) in 2000 is lower than some other recent projections, which range up to a constant supply of 15 quads. He shows overall efficiency advantages for the use of wood fuels both in solid form and converted to gas or to gas plus oil and char and points out difficulties of using wood fuels as a base for liquid fuels.

Wood is combusted at around 70 percent efficiency. A multiple-product pyrolysis system producing oil, gas, and char and a wood gasification system