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0521288770 - Archaeology as Human Ecology: Method and Theory for a Contextual Approach

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# Archaeology as human ecology: Method and theory for a contextual approach

KARL W. BUTZER

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For ELISABETH

*Beethoven Op. 138 ("Leonore")*

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## Preface

I have chosen the title *Archaeology as Human Ecology* to emphasize the dynamic interactions between human groups or societies and their environments. This book is intended to provide an introduction to the methodology and theoretical framework for such a study. The central concept is the human ecosystem. This serves as an organizing principle to illuminate the interdependence of cultural and environmental variables, as well as an organizational framework within which to discuss the various scientific approaches critical to understanding the processes of such interaction. The *context* of the book's subtitle refers to both the locus of and the dynamic processes that define human ecology.

The first section, the introductory part of the book, explains and elaborates the ecosystem approach. A second section then develops the three subsidiary fields of study that contribute the substantive data critical to understanding prehistorical and historical human ecosystems: (a) geo-archaeology, the study and interpretation of sediments and physical landscapes; (b) archaeometry, the use of physical and chemical methods of measurement, including raw-material provenance, dating, and site prospecting; (c) bio-archaeology, the study of plant and animal remains that reflect subsistence activities as well as biotic environments.

The third and final section of the book integrates these components within a spatial framework as well as a temporal or diachronic framework. Spatial archaeology can be seen as a fourth field of study, although it is closely interwoven with the others. The spatial dimensions of component data, at different scales (micro, meso, macro), are developed in each chapter, and the spatial paradigm has been chosen to serve as one of the frameworks for synthesis in this final section. This is complemented, in the last two chapters, by theoretical and interpretative discussions within an adaptive paradigm. These deal with the

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major systemic transformations and modifications of the prehistorical and historical record: hominization, the taming of the environment, and the growth and decline of high civilizations.

The methodological emphasis is directed to geo-archaeology and a spatial paradigm. This reflects my own training and experience in geomorphology and geography. Bio-archaeology and paleoeconomy could have served equally well, but I would have been unqualified to write such a book. Furthermore, bio-archaeological concepts have already been incorporated into archaeological research with some measure of success, whereas geo-archaeology has tended to remain a field apart. I therefore believe that the systematic development of geo-archaeology, in six chapters, as a theme of central archaeological significance, serves a broad professional need. This same framework could, alternatively, be developed in similar detail for bio-archaeology. The two related chapters on archaeobotany and zoo-archaeology are designed to serve as a syllabus for such a development. I believe that more detailed treatment of these themes would be redundant, and classroom testing of this manuscript during two years has reinforced my opinion that the syllabus approach to bio-archaeology is particularly effective in stimulating term-paper formulation. The chapter on archaeometry is deliberately brief. I do appreciate the important long-term contributions of archaeometric research, particularly dating methods, to archaeology. But I also believe that these play a relatively subordinate role in an ecosystemic framework, and I have therefore limited discussion to the essential components and their integration within the whole.

*Archaeology as Human Ecology* proposes a new paradigm (complementary, rather than exclusive) for the study of archaeology. By focusing on human ecosystems and by integrating methodologies from the physical, biological, and social sciences, this theoretical approach complements that of the social archaeology championed by many New Archaeologists. The book was developed in courses directed to graduate and undergraduate students in archaeology, Near Eastern civilizations, and geography. Consequently, no special science training was or is required, and the themes are developed from first principles up, with as little jargon as the subject matter permits. The emphasis is not on techniques but on understanding interrelationships—which is the spirit of ecology. The goal is to educate the reader in terms of productive interdisciplinary thinking. I hope that students and professional archaeologists can share some of the contagious excitement to which I have been exposed during more than 20 years of collaborative work, an

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enthusiasm that has sustained me during the four years of writing this book.

First and foremost I owe a debt of gratitude to the archaeologists with whom I worked, discussed, and argued during the course of productive field projects that took me to Egypt, then Spain, sub-Saharan Africa, and eventually to my own turf in Illinois. It was a former student, Daniel Bowman, who on a Spanish hillside in 1969 wondered about my preoccupation with empirical objectivity, and so redirected my thinking toward theoretical issues. At about the same time, an exchange of letters with the late David Clarke, an unsurpassed theoretical archaeologist, drew my attention to the potential of explicit model building. During those critical years of reorientation, countless discussions with Elisabeth Butzer provided a major stimulus toward formulation of a more ecologically oriented, behavioral approach. A Guggenheim fellowship in 1977 gave me breathing space, after 18 years of uninterrupted teaching and fieldwork, to develop many of the intellectual threads that converged in the end.

Richard Klein was a constant source of encouragement, and he made many valuable suggestions for the manuscript. Individual chapters and sections were also read by Thomas Bell, Vaughn Bryant, David Helgren, and Richard Morrill, and Cambridge University Press's reviewer, Geoff Barley, helped me sharpen my thinking during the final stages of revision. Dan Greenway drafted the illustrations with his usual professional care. The final drafts of the manuscript were cheerfully typed by Diana Valdivia on a very trying schedule. Preparation was supported by the University of Chicago and by the Swiss Federal Institute of Technology, Zurich. To all, my sincere thanks.

*Flossmoor, Illinois*  
*October*  
*1981*

Karl W. Butzer