

for behaviouralists. Klein (1969, 1973) has adequately covered much of Shimkin's material and archaeologists will hardly be surprised to read that they must consider humans in their environmental setting before they may understand the archaeological database (Luchterhand). This latter work takes on an ambitious aim (i.e.: to place humans in local environmental settings and discuss evolutionary and ecological relevance) but, given the wide area investigated, the paucity and unreliability of much of the data are fated to remain uninformatively general. There is too great a concentration on North China where Choukoutien still seems to dominate despite the inadequacies of that site's data. In both papers the presentation of more illustrations and of reliable archaeological data would have been useful. The appendix to Shimkin's paper being a case for this point.

Experimental archaeology is surprisingly absent from this volume, and much more could have been made of functional analysis. The volume is adventurous in attempting such a wide brief. It succeeds in gaining good areal coverage of the Old World, but is lacking in method and theory. Each of the papers is of interest to specialists, but the lack of coherent focus to the book, and the degree to which it has become dated would tend to relegate it to reference shelves, a victim of delayed publication, and the increased tempo of research into palaeobehaviour.

References

- Klein, R.G., 1969. Man and Culture in the Late Pleistocene. San Francisco, Chandler.
 Klein, R.G., 1973. Ice-age Hunters of the Ukraine. University of Chicago, Chicago Press.

COLIN RENFREW, MICHAEL ROWLANDS and BARBARA ABBOTT SEGRAVES (EDS), Theory and Explanation in Archaeology: The Southampton Conference. Academic Press, New York, 1982. 480pp. £42.00 (Hard) ISBN 0-12-586960-6.

Reviewed by Valerie Pinsky

This book is the product of three separate but conceptually related symposia held at the Southampton conference of the Theoretical Archaeology Group (TAG) in 1980. It is remarkable for its unity of focus on the problems of archaeological explanation and the study of sociocultural process and change -- two issues central to the theoretical concerns of the new archaeology which have been the subject of extensive and often heated debate since the early 1960s. What might appear to some readers as an inherent contradiction of the volume -- that to a large extent its individual thematic sections are theoretically out of step with each other -- is in fact its major strength, and reinforces the view that processual archaeology, far from being a monolithic epistemological edifice, is a much looser and more diverse association of ideas and approaches to the study of the human past.

The three separate symposia form the basis of the book's thematic section divisions. Section I, 'Explanation Revisited', contains ten papers and two commentary pieces, and addresses itself to the efforts of archaeologists to formulate specific explanatory models on the inspiration of the philosophy of science. Renfrew's introductory paper provides an overview of the development of 'theory' during the last hundred years, and associates the emergence of the new archaeology with what he calls 'The Great Awakening' (David Clarke's 'loss of innocence'), in which the demand for scientific explanation became a central concern. He reviews common

forms of explanation in archaeology, equally critical of both hypothetico-deductive and historical approaches, and emphasises the need for producing adequate general explanations. The next three papers reassert the value of the philosophy of science for archaeology; Plog's very general remarks about its utility for increasing archaeological credibility and explicitness are followed by M. Salmon's discussion of interaction patterns between philosophers and archaeologists, and her suggestion that dialogue collapses because their interests in explanation are considerably different. She nonetheless stresses the value of disciplinary interaction and discusses the potential of the statistical-relevance model (S-R). The latter is developed more fully in the next paper by W. Salmon in his discussion of the need for a probabilistic rather than a universal notion of causality. Mellor's contribution expands on the idea of causality, and argues for a deterministic model of causal explanation, stressing that this is in fact none other than the deductive-nomological model, and the following paper by Jim Bell advocates the Popperian method of falsification as the basis of scientific growth through criticism. Smith's piece is also critical of the use of the hypothetico-deductive method in archaeology and of causal explanation in general, and urges the adoption of Salmon's S-R model instead. The next two papers by Miller and Gellner shift the focus of discussion radically, to different explanatory perspectives; Miller rejects deductivism out of hand and suggests realism as a more viable alternative, and Gellner goes into a lengthy description of French 'structuralisme' and its limitations. These papers are followed by a strident conference address by Binford, in which he reasserts the need for a robust testing methodology and the development of 'middle range

research". In this he stresses the very different functions of ideas (as paradigms, or the culture of science) and testable hypotheses (as scientific knowledge). The two final commentary remarks, by Eggert and Hall, agree in seeing contemporary debate on explanation as a sign of disciplinary vitality.

Section II, 'The Dynamics of Change', is a more homogeneous grouping of five papers which focuses on approaches to the study of sociocultural process and transformation, and are united by varieties of an historical Marxist perspective. Rowlands' discussion of the rejection of history in contemporary archaeology reasserts the value of history as the basis of an archaeological social science, and Friedman reviews neo-evolutionary approaches and their limitations for the analysis of social transformation, providing an example of their failure to account for the devolution of Melanesian society from an hierarchical to an egalitarian structure. Gledhill and Larsen look at the implications of the Polanyi paradigm for Archaic Mesopotamian and Mesoamerican social formations, and are critical of its essentially static nature. The following paper by Nugent discusses disparities between anthropological and archaeological approaches to units of analysis such as the "tribe" through an example from Amazonia, and the resulting lack of historical explanation in anthropology in general. The final paper in this section by Kristiansen is a general survey of social formation in Northern Europe from the Neolithic through the Bronze Age according to a cyclical model of tribal transformation. Several of these papers develop from substantive bodies of ethnographic and archaeological material, and together they constitute a forceful critique of ecological and neo-evolutionist approaches to the study of sociocultural process.

Section III, 'Morphogenetic Change in Complex Societies', complements the previous section in its focus on complex social systems but departs significantly in its highly formalized and mathematical focus. The introductory remarks by Segraves stress the common desire to explain social change in scientific terms, and her opening paper expands on this view, arguing for a generalising approach to the study of the evolution and transformation of society. In addition, she provides a brief overview of bifurcation and organizational theory, theories which are discussed at greater length in the next three papers by Rosen, Zeeman and Allen. These contributors discuss the implications of particular mathematical models from the natural and physical sciences for archaeology and the human sciences, and are clearly provocative. The remaining four papers look at more diverse issues related to the dynamics of social morphogenesis: Doran discusses the need for computational in addition to mathematical models of transformation, and the functional importance of the sacred in that process, and Johnson looks at the highly elaborate mechanisms involved in hierarchy and status differentiation, arguing that organisational scale rather than population may be a critical factor. Randsborg offers some general comments on approaches to the study of change and Van der Leeuw focuses on subject-object interactions in archaeology and their implications for the notion of archaeological objectivity. The concluding summary remarks by Renfrew applaud the concentration on structural change in Sections II and III; he is particularly enthusiastic about the potential of new mathematical models though he injects a serious note of caution, with Binford, that to fail to distinguish between paradigms and explanations is an error.

The conceptual contrasts, or

disjunctions, between the empiricist emphasis in Sections I and III, and the historical Marxist directions in Section II, might usefully serve as a catalyst for further consideration of the connections between formal explanatory models inspired by the philosophy of science and the more substantive types of explanation of social transformation sought by archaeologists. In making these disjunctions explicit and accessible, this volume will certainly contribute positively to the synthesis of theory and explanation in archaeology.

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S. E. van der LEEUW and A. C. PRITCHARD (EDS) The Many Dimensions of Pottery: Ceramics in Archaeology and Anthropology. Institute for Pre- and Proto-history, Amsterdam, 1984. 797 pp. £19.95 + £2.00 postage (Hard). ISBN 90-70319-071.

Reviewed by R. Michael Czwarno

The Many Dimensions of Pottery has, in some respects, been gestating for 20 years, since the 1962 Burg Wartenstein conference on ceramics provided the impetus for the 1982 Lhee conference which gave birth to this volume. A lot has happened to ceramic studies in the intervening two decades, as Pritchard and van der Leeuw point out in their introduction. As a historical record of that change, The many Dimensions of Pottery makes a fine companion to the collected papers of the Burg Wartenstein conference (R.F. Matson, 1965, Ceramics and Man). This new volume also stands as a useful compendium of recent thought in ceramic studies in its own right.

The 17 papers in this volume are a potpourri of ideas -- ranging from thought provoking to irrelevant (depending on your particular area