

FOUNDATIONS OF ARCHAEOLOGY

D.L. Hardesty

Department of Anthropology, University of Nevada, Reno, USA

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Summary

The foundations of archaeology are both conceptual and methodological. Key concepts are associated with several “structures of inquiry” and with constructions used to define and organize archaeological data. The methodological foundations of archaeology are found in fieldwork and other ways of gathering archaeological data and in the approaches used to analyze and interpret archaeological data in the laboratory and elsewhere. Such methods include the use of analogy such as ethnoarchaeology and experimentation, classification, dating, materials analysis, bioarchaeology, and the analysis and interpretation of past environments.

1. Conceptual Foundations

The fundamental concepts of archaeology are linked to several structures of inquiry and ways of constructing archaeological data. Archaeological structures of inquiry include culture history, processual structures, hermeneutics, and Marxism. The key data concepts in archaeology are associated with the physical matrix and spatial arrangement of the remains of past human activities making up the archaeological record. They are then linked to a set of behavioral concepts including activity structures, household structures, settlement structures, sociotechnical structures, and world-systems.

1.1 Structures of Inquiry

Contemporary archaeological research takes place within the context of one or more structures of inquiry, which define the “questions that count” and underlying epistemological assumptions. (See Theory in Archaeology) The principal structures include culture history, processual archaeology, hermeneutics, and Marxism.

1.1.1 Culture History

Within the structure of cultural history, archaeologists use the archaeological record to build chronologies of particular sites or regions, to describe the social and cultural behavior of the people who lived there in the past, and to describe how the behavior changed in space and time. The goal is to construct historical narratives of the past from a normative point of view. Culture histories typically organize the archaeological record into correlated time and space units (e.g., components, phases, periods, stages, horizons, and traditions) to develop chronologies. Documenting and describing social and cultural change is another focus of most culture histories and involves the application of one or more models of how culture change takes place. They invoke either internal or external sources of change. Internal models sometimes account for change with demographic mechanisms such as population growth. The most common models, however, assume that individuals are constantly producing variation in behavior and ideas. Such models then account for change with the mechanisms of innovation, drift (e.g., the gradual divergence of behaviors and ideas in isolated human populations), selection (e.g., the adoption of a new artifact that is advantageous in an environmental setting or technology), and the revival of old variants. External models account for change with environmental change, the movement of populations from one place to another (e.g., migration or conquest), and diffusion (e.g., technology transfer or the spread of a new religion).

1.1.2 Processual Structures

The search for general processes of human behavior and functional interpretations play key roles in processual structures of inquiry. Within this framework, archaeologists search for general processes that explain variability and change in social and cultural behavior and that can be applied cross-culturally and across the boundaries of space and time. The epistemologies of processual structures are based upon the objectivity and observer-oriented interpretations of positivist philosophers such as Carl Hempel. The systematic application of rules of evidence plays a key role in interpretations of the archaeological record. Processual archaeology works toward a unified construction of the past by using two basic approaches. The nomothetic approach works to develop laws and principles of human behavior or even life forms in general that can be used to explain the human past. In the nomothetic approach, archaeologists search for general laws of human behavior by using research strategies that followed the rules of deduction, beginning with theories from which hypotheses could be derived and tested with observations of the archaeological record. Processual archaeologists also use systems models that focused upon the ecological, social, or cultural functions of past human behavior. The systems concept explains the human past by constructing functional models of the role of specific behaviors in a complex interactive system. Models of self-regulating or cybernetic systems explain social and cultural changes with deviation-counteracting mechanisms. Evolutionary systems, on the other hand, invoke deviation-amplifying mechanisms such as population growth to explain change. Whatever the approach, most scientific explanations of the human past focus upon the material conditions of existence (e.g., environment, subsistence, technology, and economics). Ecological and evolutionary theories played key roles in the explanation of

past behavioral variability and change. Three kinds of processual structures are common today: ecological archaeology, behavioral archaeology, and evolutionary archaeology.

1.1.2.1 Ecological Archaeology

Ecological archaeology focuses on the archaeological study of the interaction between humans and their environment. One historical variant of the approach is cultural ecology, which explores the interplay between environmental features and the "culture core," those social and cultural traits "most closely related to subsistence activities and economic arrangements. The culture core should reoccur in other places with the same environmental features. Cultural ecology explains the origin of social and cultural patterns by showing that they occur cross-culturally in the same environment and that the occurrences are not historically connected, an approach, however, that may not necessarily show that the relationship is causal. Another variant is evolutionary ecology, which uses the principles of Darwinian evolution, especially the mechanism of selection, to explain human-environmental interaction. The explanation assumes that human behavior is variable, that some of these variants are better than others at solving environmental problems, and that these adaptive variants are reproduced at the expense of those that are not. Optimal foraging models are a commonly used interpretative tool in evolutionary ecology. The models portray actors making choices according to a strategy that optimizes some currency (e.g., calories or money) within a set of environmental opportunities and constraints. Optimal foraging models attempt to identify general decision-making strategies that are applicable not only cross-culturally but also across species.

Landscape archaeology is a distinctive approach in ecological archaeology that stresses the interconnections of sites and places rather than their individuality. (See Landscape Archaeology) Landscapes are large scale or regional expressions of the interaction between humans and their environment that includes such things as geographical patterns of human settlement, meanings or ways of perceiving and experiencing environments, and historical transformations in landforms, biota, fauna, and climates. Alan Sullivan's (1996) study of western Anasazi subsistence in the Grand Canyon region of the American Southwest illustrates the importance of placing individual sites within this larger context. He found key information in small surface sites that site-focused models would consider "insignificant" or "unimportant." These small sites suggested a radical reinterpretation of ancient Puebloan subsistence patterns, namely that these people depended mostly upon the gathering and processing of wild plants rather than upon maize agriculture as widely believed. One variant of landscape archaeology is historical ecology. The approach uses historical analogs to interpret human-environmental interplay and reads landscapes as the cumulative material expression of historical trajectories. Historical ecology focuses upon the decisions and actions of individuals acting within a social and historical context. Cognitive concepts of landscape underlie another variant of landscape archaeology.

1.1.2.2 Behavioral Archaeology

Behavioral archaeology is an outgrowth of “middle range theory,” which strives to explain the connection between the archaeological record and past human behavior. It focuses on the relationship between material things and human behavior. Michael Schiffer, for example, has studied the behaviors and processes involved in the formation of the archaeological record. The behaviors involved include acquisition, manufacture, use, and deposition. Ethnographic and historical analogs are used to develop models of these formation behaviors. Natural processes (e.g., erosion) and cultural processes such as intentional collecting of artifacts then transform the archaeological record.

1.1.2.3 Evolutionary Archaeology

Evolutionary archaeology is a distinctive approach to the use of scientific principles and Neo-Darwinian evolutionary theory in archaeology. The approach explores the processes by which unique “cultural lineages” are created through the mechanisms of Darwinian selection. Archaeologists working within this framework study cultural lineages through the innovation, transmission, and reproduction of artifact attributes such as shape or color as material expressions of culture. They conceptualize how this takes place in a variety of ways. One approach, for example, views artifact attributes as a “virus” that reproduces itself in a human host and that creates evolutionary lineages or histories that are independent of the lineages of other artifact attributes.

1.1.3 Hermeneutic Structures

Hermeneutic structures are constructed from a humanistic approach to archaeological interpretation that fragments the past and moves away from the grand narratives of culture history and the unified constructions of processual archaeology. Social agents acting to achieve goals within a complex social field made up of gender, class, political faction, ethnicity, race, and ecological setting replace process as the key player. Archaeologies taking place within the structure of hermeneutics replaces the philosophy of positivism underlying scientific archaeology with the subjectivity of the Frankfurt school of critical theory. Hermeneutic interpretation in archaeology denies the assumption of objectivity and accumulated knowledge that underlies scientific explanation. It stresses social responsibility and critically evaluates how the social and cultural context within which archaeologists do research influences their interpretations of the past. Advocates apply critical theory to archaeological interpretation and consider the influence of social and cultural context on both research agendas and the archaeologists engaged in research. They attempt to counter social and political hegemony by dominant majorities by seeking viewpoints from minority and disenfranchised groups. Personal insight also plays a key role in interpretation. Instead of providing evidence for a single interpretation by an observer, the archaeological record becomes the source of many alternative stories about the past told through the eyes of the multiple social agents, classes, ethnic groups, genders, and others who left the archaeological remains behind. Feminist archaeologies, which focus on engendering the past, are one expression of this approach.

Hermeneutic structures of inquiry focus upon the meaning of past human behavior and take an approach that differs from that used in other structures of inquiry. Culture history and processual archaeology typically assume that some material things carry

meaning as arbitrary symbols that refer to something else, which could be an abstract idea or concept or part of the natural world. They do not, however, attempt to interpret the meaning of the symbols. A related concept is structuralism, which focuses not upon single symbols but upon the organizing principles that link together groups or complexes of symbols. In contrast, the hermeneutic approach explores the archaeological record as the product of the interplay between meaning and the social action of individuals. (See *The Archaeology of Meaning*) Culture is assumed to be the ever-changing product of human action rather than a normative set of beliefs and ideas that are symbolically transmitted. Rather than looking at the archaeological record for a few material things that can be interpreted as symbols of past belief systems, hermeneutic structures assumes that all material things carry meaning that reflect constantly changing individual experiences, goals, and social relations. Archaeologists identify these meanings from repeated arrangements of the material things making up the archaeological record.

1.1.4 Marxist Structures

In the nineteenth century, Karl Marx and F. Engels proposed an explicitly deterministic theory of social change based upon the material conditions of life that became the foundation of another distinctive structure of inquiry in archaeology. Marxist approaches focus on the role of conflict, especially economic and political conflict (e.g., class, gender), as the agent of social change. They often consider the role of social power and “strategies of domination and resistance” in analyzing and interpreting the nature of social conflict. In this view, social dominance and subordination structure power relations among individuals and groups. Charles Orser gives an example from antebellum plantations, which included the interplay between planters and slaves as social groups who worked out strategies of domination and resistance. The domination strategies of planters involved the use of force, withholding material goods and prestige jobs to discourage resistance, and the giving of valued goods and prestige jobs to reward good work. Slaves could resist such strategies, in turn, by "malingering, feigning ignorance, sabotaging machinery or tools, running away, or outright rebellion." In the industrial mining communities of the American West, the key social groups playing such power games are mine owners/managers and wageworkers. Mine owners typically devised domination strategy that attempted to control labor through mechanization to make workers produce more through specialization and repetition of tasks. Workers may resist such a strategy by forming labor unions such as the Western Federation of Miners and with labor strikes. The strategies of domination and resistance often evolve into cultures that have a distinctive material expression visible in the archaeological record.

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Biographical Sketch

Donald L. Hardesty is professor of anthropology at the University of Nevada, Reno. He received his Ph.D. in anthropology from the University of Oregon. Hardesty specializes in historical archaeology of the American West and is the author or editor of six books or monographs, including *Ecological Anthropology*, *The Archaeology of Mining and Miners*, *The Archaeology of the Donner Party*, and *Assessing Site Significance* (with Barbara Little), along with many articles in scholarly journals. He is a past president of the Society for Historical Archaeology, past president of the Mining History Association, and past president of the Register of Professional Archaeologists. He is a past member of the UNESCO Man and the Biosphere Program (MAB) Directorate for Arid Lands Ecosystems.