CHAPTER

2

Goals of Archaeological Investigation

Harry J. Shafer

What are the goals and objectives of archaeo-logical fieldwork? How do they relate to those of the discipline itself? An ultimate goal of archaeology—and an appropriate definition for the discipline—is the study of human behavior and cultural change in the past (Trigger 1989:371). Such a broad definition allows for the distinction of several kinds of archaeology, each with its own set of goals. Archaeology, not unlike the cultures and societies under its focus, has undergone many changes over the past century; with each change, new goals have replaced or amplified old ones (Trigger 1989:370–411).

KINDS OF ARCHAEOLOGY

As recently as two decades ago, archaeology taught in American universities could conveniently be divided into studies of the classical world, pre-historic archaeology, and historical archaeology. Today, however, these divisions hold less-distinc-tive meaning because the more eclectic goals of anthropological archaeology and studies of human ecology have greatly influenced the aims of classic and historical archaeology. We think it is appropri-ate to outline some of the differences in the goals of various subareas of archaeology.

In America, or in Americanist archaeology, pre-historic and historic archaeology are usually taught under the discipline of **anthropology**, which is the study of humankind in the broadest sense. Archae-ology, which concerns itself with the remains of the human past, is one of the subdisciplines of anthropology that studies the development of human culture through time. The advantage arch-aeologists have is in the depth and breadth of the material record, the large blocks of time within which they may examine culture change and development.

Archaeology of the Classical World

In the United States, archaeologists who specialize in the classical world, or **classical archaeologists,** are usually associated with classics or art history studies. They generally are art historians or classics scholars who use the methods and techniques of archaeology to recover the art and architectural remains of classical civilizations. Classics scholars take advantage of the ancient written records and texts in Greek, Latin, Sumerian, and Egyptian to help them document and understand these ancient civilizations. Working with these scholars are art historians who use art styles and architecture to understand the past (Figure 2.1).

The goals of classical archaeology are by its nature historical in orientation, focusing on details of architecture, recovery of art objects, the tracing of art and architectural themes, and the development of written language. Classical archaeologists in the past have dealt primarily with only portions of the civilizations they were studying by excavating palaces, temples, theaters, and royal cemeteries. The goals of classical archaeologists today, however, are more encompassing, including interdisciplinary approaches to study all facets of the ancient civilization in question (Bass and van Doorninck 1982; Gualtieri et al. 1983; Wiseman 1983).

The contributions of classical archaeology to the study of ancient history, art, and architecture are many. Archaeology today owes much to art historians and classics scholars for deciphering the ancient written records and thus opening new fields of awareness and understanding of the classical world. These archaeologists also lead advances in the study of art, architecture, and by necessity, the development of conservation and restoration techniques for architecture, frescoes, mosaics, metals, clay tablets, and other artifacts.

Figure 2.1   The Hellenistic theater at the classical archaeological site of Ephesus, Turkey.
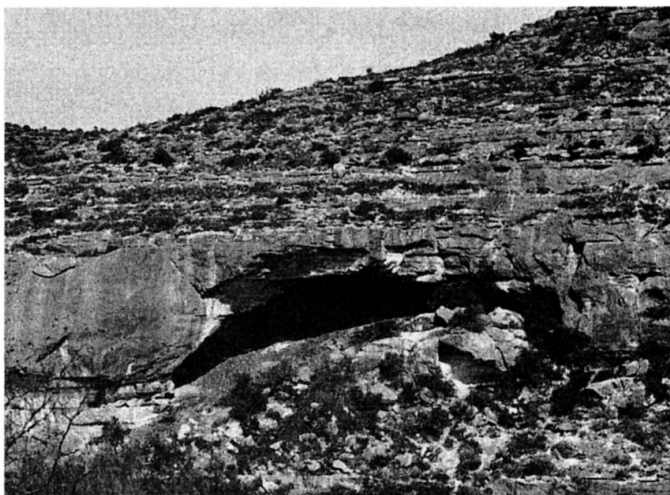
Prehistoric Archaeology

Prehistoric archaeology is an awkward term usually defined as the study of societies and remains without the benefit of the written record (Figure 2.2). *Prehistoric,* meaning quite literally "before recorded history," includes the entire depth (ca. 2–3 million years) and breadth of human culture before recorded history. Because recorded history began 6,000 or so years ago in some parts of the world but not until the twentieth century in other parts, the term *prehistory* is awkward.

Because the greatest block of human culture history occurred before the invention of writing, however, most archaeology is concerned with the study of the human past prior to historic witnesses. The basic methods and techniques applied to prehistoric archaeology are the same as those used in historical and nautical archaeology because all three share problems of establishing and maintaining contextual integrity.

Historical Archaeology

Historical archaeology is the study of colonial and postcolonial settlements, generally within historical or anthropological frameworks. In the United States, it is an area of scholarly research that has developed since the 1940s. Scholars realized, for

Figure 2.2 Hinds Cave, a large prehistoric rockshelter site in Val Verde County, Texas.

example, that the development of American culture had left a material record amenable to archaeological study much in the manner of prehistoric archaeology. Historical archaeology, however, is global and comparative with regard to colonial and postcolonial studies (Falk 1991); for example, there are parallel developments of historical archaeology in Australia (Allen 1978), South Africa (Falk 1991), and the West Indies (Armstrong 1990).

In the New World, historical archaeology is concerned with the time period from the sixteenth to the twentieth centuries (Figure 2.3). Its goals may be either anthropological or historical in nature—or both. Among the broad topics covered under historical archaeology in the United States, for example, are the remains of European colonial period (Noel-Hume 1982), Spanish mission period (Farnsworth and Williams 1992), and plantation period (Armstrong 1990; Orser 1988; Singleton 1985) settlements; historic shipwrecks (Bass 1988); sites of historical events such as battlefields (Bond 1979; Scott et al. 1989); and postcontact Native American sites (Shafer et al. 1994). Historic sites may be identified through material remains, historical sources, or oral histories (i.e., interviews with living informants).

Historical sites are investigated mostly using the methods and techniques of prehistoric archaeology but with some significant additions, such as the use of historical documents and oral histories. Historical documents, however, record only specific kinds of information about the past, and oral histories are sometimes affected by faded recollections over time. Archaeology can be used to round out the information known from historical documents and sources and can provide a more complete documentation and understanding of historical events (Deetz 1977; Noel-Hume 1982; Scott et al. 1989). Conversely, because specific details and dates can be verified through the historical records, historical archaeology has a great potential for testing anthropological and archaeological theories and documenting the processes of culture change (Deagan 1991; Deetz 1977, 1991; Deetz and Dethlefsen 1965; South 1977a, 1977b). Although the more immediate goals of historical

Figure 2.3 View of excavations at the eighteenth-century Spanish colonial mission site of San Bernardo, Guerrero, Coahuila, Mexico.

archaeology may appear to be purely historical in nature, more often than not they involve ecological, subsistence, functional, or sociocultural problems.

The journal of the Society for Historical Archaeology, *Historical Archaeology*, serves as a scholarly outlet for studies in this subarea. This journal is a recommended reference for students interested in exploring the depth and breadth of historical archaeology.

There are areas of specific interest within historical archaeology that appropriately have their own goals, methods, and techniques. These are industrial archaeology and nautical or underwater archaeology.

Industrial Archaeology. Unlike in other subfields of archaeology, digging is rarely necessary in **industrial archaeology.** The primary goal in field-work is precise recording—drawing, mapping, and photography—of standing structures and ruins. Although the techniques and skills of industrial archaeology generally require training in engineering, architecture, and architectural history (Starbuck 1994), any technically trained archaeologist with expertise and interest in American culture would feel at home in this subfield.

The Society for Industrial Archaeology was founded in 1971; membership is especially strong in the northeastern industrial areas of the country and in the western mining regions of California

and Nevada (Starbuck 1994). Recent books and monographs on the subject include Council et al. (1991), Gordon and Malone (1994), and Rolando (1992).

Nautical or Underwater Archaeology. The subfield of **underwater** or **nautical archaeology** is defined on the basis of the environment of deposition, not so much on the approaches or goals of its practitioners. Although often thought of as "shipwreck archaeology," nautical archaeology includes not only shipwrecks but submerged architecture, such as portions of the seventeenth-century English port city of Port Royal, Jamaica (Hamilton 1984; Figure 2.4) and many other cultural/historical features including prehistoric sites (Arnold 1989, 1992; Muckelroy 1980). The techniques of documentation and recovery are much the same as those used on land but adapted to the underwater environment (Bass and van Doorninck 1982; Dean et al. 1992). New developments in sonar and magnetometer technologies along with improved approaches in photography and computer graphics have greatly enhanced the tools of the nautical archaeologist.

Recovering data from under water is a delicate task requiring specific skills and equipment. The goals of underwater archaeology are often historical in orientation, in part because of the relationship of the site to historical documents or known events. Ancient shipwrecks, for example, represent time capsules that possess unique potential in studying the past civilizations of which they were once a part. The subject matter of underwater archaeology, however, extends to studies of ancient trade, commerce, colonial expansion and settlement, shipbuilding technology, navigation, and weaponry and warfare, as well as to the examination of submerged prehistoric archaeological sites for cultural resource management and salvage purposes.

Prehistoric archaeological sites are sometimes encountered in underwater contexts (Dunbar et al. 1989; Muckelroy 1980). These kinds of sites require standard approaches to working under water; the technology of recovery is basically the same as for any other underwater site, but the goals of the
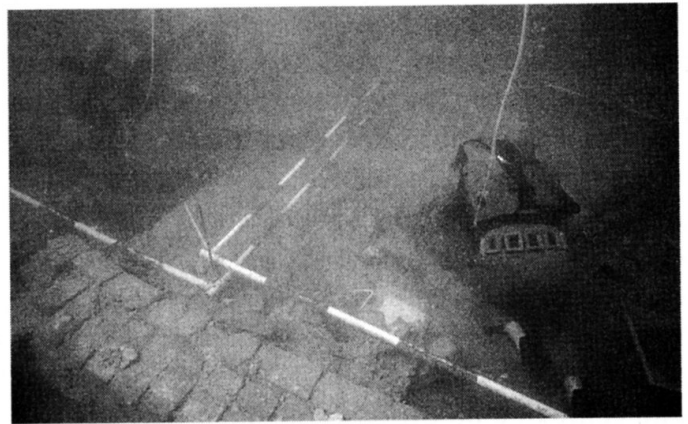
Figure 2.4   Two divers, breathing on hooka (a Turkish acronym used by divers to refer to surface-supplied air), recording finds on the brick floor of a building that sank in the 1692 earthquake at Port Royal, Jamaica.

research are structured in the paradigms of prehistoric archaeology.

Removing materials from waterlogged contexts has been problematic, but great advances in material conservation have been made in treating artifacts recovered from waterlogged environments. These advances benefit the field as a whole (Hamilton 1976) because waterlogged sites also occur in terrestrial situations (Daugherty 1988; Doran and Dickel 1988; Purdy 1988), but in these cases the archaeologists work above water.

ANTHROPOLOGICAL ARCHAEOLOGY: A CHRONOLOGY OF CHANGE

American archaeology, which is deeply rooted in anthropology, has undergone several major changes in philosophy, methods, and techniques over the past century. Each of these developments brought about shifts in goals for fieldwork and theoretical interpretations. For convenience, Willey and Sabloff (1993:8–10) label these periods of change cultural-historical era, processual era, and postprocessual era.

Cultural-historical Era

Much of American archaeology during the first half of the twentieth century was concerned with

developing culture histories by classifying thousands of artifacts and sites and ordering them in time and space. The goal of these activities was mainly the identification of **cultural norms,** the abstract rules that regulate human behavior; these so-called **normative archaeologists** devoted much energy to defining the typical example of an artifact or a site and compiled trait lists to define a culture; variability was often explained as outside "influence" or "ceremonial." Cultures were defined and compared on the basis of similarities and differences in material traits.

The cultural-historical approach produced an enormous body of material, which was ordered using a multitude of descriptive and classificatory schemes (the Classificatory-Descriptive period defined by Willey and Sabloff [1993:96–121]; Figure 2.5). Its proponents often claimed that the nonmaterial aspects of culture (such as social organization, religious beliefs, etc.) were beyond the means of archaeological inquiry.

Although the cultural-historical era of American archaeology was seen by some archaeologists of the 1960s as a kind of dark age, excellent building blocks were established in many areas of the New World in the form of chronologies and temporal and spatial frameworks. Regional patterning among archaeological assemblages and major prehistoric cultural systems (for example, Hopewell and Mississippian in the east and the Anasazi, Mogollon, and Hohokam in the Southwest) were initially defined during this period.

To build secure chronologies, it was also necessary to develop sound stratigraphic controls and reliable dating methods. The advent of **dendrochronology,** or tree-ring dating, enhanced the development of superbly dated sequences in the American Southwest; stratigraphic studies, ceramic seriation, and cross-dating provided excellent working chronologies in the Southeast, Mesoamerica, and South America.

The direction of prehistoric archaeology began to show a major shift in the 1950s. It moved beyond building culture histories to establishing environmental contexts and ecological contexts against which the culture change observed in the chronolo-gies could be compared. As Gibbon (1984:7) defines it, **cultural ecology** is "the view that sociocultural systems are adapted for exploiting particular portions of their environment through the use of certain technologies, and that the form of a sociocultural system is in large part determined by the ecological conditions to which it is adjusted." The archaeological studies of Starr Carr by Clark (1954), the Jarmo project directed by Robert Braidwood (Braidwood and Howe 1962), MacNeish's (1970) Tehuacan Valley project, and the work of Hole et al. (1967) in the Deh Luran Plain are classic examples of this trend toward ecological and multidisciplinary studies. The initial emphasis of cultural ecology is the relationship between human adaptations and the environment and a better understanding of the human-land relationship. This new goal, together with a plea to seek contextual and functional relationships in the archaeological record by W. W. Taylor (1948), amounted to a change in direction before the theoretical storm that hit American archaeology in the 1960s brought about the most dramatic switch in goals that the discipline has yet witnessed.

New or Processual Archaeology Era

The most punctuated change in the goals of American archaeology can be credited largely to Lewis Binford and his paper "Archaeology as Anthropology" (1962). In this study, Binford, influenced by the teaching of anthropologist Leslie White, employed both a cultural materialist and a systems approach in the analysis of Old Copper culture artifacts from the Midwest to show how intangible aspects of human culture could be inferred from the material remains of the past.

Binford, like many of his colleagues, found the traditional emphasis on typology and chronology building essentially dead ends and challenged his colleagues to go beyond these goals and bring archaeology more in line with cultural materialists' approaches in anthropology. **Cultural materialism** stresses the relationship between environment and technology and assumes that technology is the most determinant factor in cultural evolution
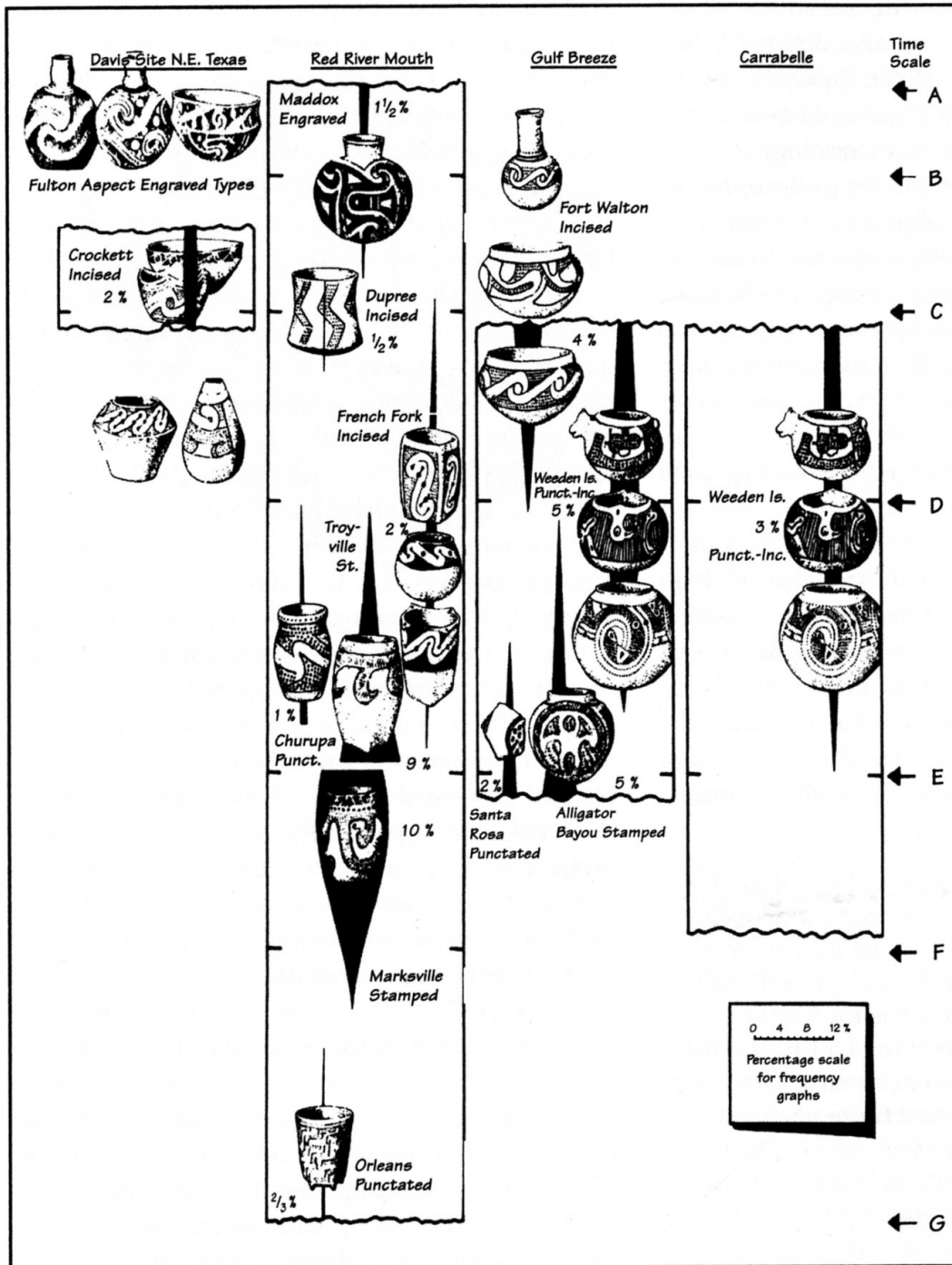
Figure 2.5 Pottery seriation chart compiled by James A. Ford during the Classificatory-Descriptive period in American archaeology.

(Gibbon 1984:7–8). In this view, it is through technology that a cultural system articulates with its environment. Gibbon (1984:8) states that "as cultural materialists, archaeologists attempt to trace the presumed causal connections running from ecological systems through technology and its organization in economic systems to the sociocul-

tural system and culture itself." Cultural materialists further assume that social organization and ideology are adaptive responses to technoeconomic conditions (Harris 1968:240).

Above all, Binford introduced the philosophical debate over whether archaeology could be a science and stressed the need for archaeologists to

become more scientific in deriving inferences about the past (Binford 1965; Binford and Binford 1968; see also Watson et al. 1971, 1984). Binford's influence on the field was dramatic and widespread; the result became known as "new" archaeology.

With new archaeology came the philosophy of **logical positivism,** which advocated a deductive reasoning process and hypothesis testing to define laws of human behavior. The philosophy of logical positivism could be used to formulate predictive statements about the past. This explanatory approach introduced a new paradigm, or theoretical framework, into American archaeology, with its own research methods and procedures (Willey and Sabloff 1993).

The popularity of a rigidly applied, cookbook version of logical positivism in archaeology has waned in the past decade, but the concern to establish a firm scientific foundation for archaeology whereby results are verifiable and models are tested with independent data sets has not (Gibbon 1984; Watson et al. 1984). Cultural histories, for example, are no longer rejected outright as unscientific and invalid.

> In this prehistoric archaeological paradigm [of processual studies], data are used inductively to generate temporal and spatial frameworks that define the past. In this way, cultural historical interpretations provide the foundation for deductive inquiry designed to identify specific causes of cultural change or stability. Variations within the cultural historical framework may be identified, and "normative" cultural concepts may be used to describe these changes, but only rigorously tested propositions can identify the causes of change and thereby begin to explain cultural process [*Sharer and Ashmore 1979:535*].

General systems theory is another borrowed and modified concept that became popular with the new archaeology. In this light, a culture was viewed as an open system conditioned by outside stimuli. Binford (1965:205) described a culture as "an extrasomatic system that is employed in the integration of a society with its environment and with other sociocultural systems." He also defined three subsystems of a culture (technology, social

organization, and ideology) and the material correlates of each (which he termed *technofacts, sociofacts,* and *ideofacts*). His aim was to show how the Old Copper artifacts could have functioned as sociofacts or technofacts within an otherwise Archaic cultural system.

That the field was ripe for change is indicated by the suddenness of the popularity of this new archaeology. Theory building took precedence over excavation and site reporting. What were formerly questions about the past became problems and hypotheses to be tested against independent data using a hypothetico-deductive reasoning process following philosopher Carl Hempel's (1965, 1966) model of scientific explanation. Inductive reasoning, whereby a conclusion is drawn on the basis of a set of observations, had typified the traditional approach to archaeology; this was now no longer in vogue. The historical reconstructions of the cultural-historical era were considered irrelevant and unscientific. The mere fact-finding typified by traditional archaeologists was rejected as a meaningful goal of research. Out of the new archaeology in the 1960s, a new goal emerged: to search for **nomothetic laws** (i.e., scientifically defined general laws) of human behavior (Flannery 1973; Watson et al. 1971), so that lawlike statements about past human behavior could be formulated (see Dunnell [1983]; Flannery [1973, 1982]; Hole [1978]; and Renfrew and Bahn [1991:432] for critical evaluations of this approach).

Another contribution of new archaeology was in assuming a systemic view of culture in the analysis of archaeological data (Hole and Heizer 1977:254–259, 358–361). Culture can be viewed in two conceptionally different ways. As Hole and Heizer (1977:255) note, the anthropological view assumes that a cultural system is composed of interrelated, interdependent parts (Figure 2.6). The ecological view of a culture system, on the other hand, sees a culture as analogous to an organismic system, possessing the same properties and affected by the same processes as all life systems (Clark 1968:43–130; Hole and Heizer 1977:356–361; Watson et al. 1984).

Binford (1965) saw the systemic approach, which stressed the interrelationships between com-
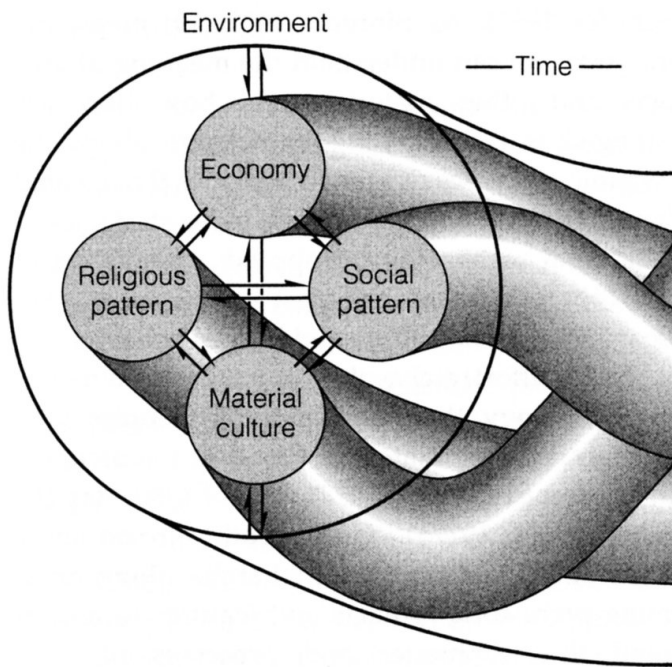
Figure 2.6 A schematic model: subsystems of a sociocultural system in dynamic equilibrium.

ponent parts, as an alternative to the normative approach, which viewed culture as a set of shared ideas or norms. In the systemic approach, the cultural system became the subject of study, and data from a site or sites were used to test hypotheses or models regarding change within the system. Consistent with the systems approach, **regional studies,** defining both cultural and environmental variability, and **settlement patterns** (Willey 1953), the study of spatial distribution of ancient settlements and activities, became popular in designing research in the era of the new archaeology.

Overall, new archaeologists were concerned with cultural process, that is, an evolving set of conditions that leads to change from one state to another. **Processual analysis** in archaeology examines the variables or factors that cause changes in the state of phenomena (e.g., from bands to chiefdoms, from chiefdoms to states, or from raw material to manufacture of finished product to discard (Hole and Heizer 1977:358–359; Schiffer 1987:13–46).

The gap between the material record and high-level theories or laws of human behavior was soon realized in the era of new archaeology and was the focus of attention by both Lewis Binford and Michael Schiffer. Binford (1983b:48, 49) moved to help fill this gap by gaining a body of knowledge, or **middle-range theory,** on how the archaeological record was formed. Binford saw that such a body of knowledge was needed to improve the reliability of inferences made about the past.

Schiffer's solution to the tension between data-oriented and theory-oriented archaeologists at the onset of the era of new archaeology was another perspective on middle-range theory. It involved application of the notion of process to the study of material culture, or what Schiffer termed **behavioral archaeology.** Behavioral archaeology bridged the gap between ideographic and lawlike components by emphasizing the context and behavioral transformation of material culture as it flows throughout a cultural system (Schiffer 1987).

Both Binford and Schiffer have made enormous contributions toward advancing knowledge about how the archaeological record was formed, which have led to more sophisticated approaches in deriving inferences about the archaeological past. Greater understanding about the formation of the archaeological record opened the door for new methodologies and levels of study. For example, Schiffer pointed out two kinds of transformation processes that affect archaeological data: cultural or behavioral (discussed earlier) and natural. Inquiries into the natural processes gave rise to the subdiscipline **geoarchaeology,** the study of geomorphic processes as they pertain to the archaeology and paleoenvironments of a region (Waters 1992). The relationship between geology and archaeology had been of concern for some time, especially in Paleoindian studies (Haynes 1990), but the new levels of inquiry brought about by the focus on natural processes stimulated broader applications of geologic and geographic principles to landscapes and deposits holding archaeological data.

Other changes in methodologies and technology were stimulated by the new archaeology. For instance, beginning in the 1960s, computers became an essential tool of archaeological data retrieval and analysis (see Chapter 5). Field recovery and documentation methods were altered to accommodate the use of computers as analytical

tools. The question of adequate and unbiased sampling came to the forefront, especially with the implementation of statistical procedures in data analysis. Many archaeologists became concerned with the effect of sampling strategies and sample size on the reliability of results (Ragir 1975; also see Chapter 3). Quantitative sampling for a broad body of data collected explicitly for computer-aided research changed field methods and strategies.

Before the 1970s, archaeologists focused on archaeological things (finished artifacts, features, architecture) and saved only "representative" samples of bone, debitage, and other bulk material. In the systemic approach, however, archaeologists emphasized quantitative sampling of each material class. Interdisciplinary expertise in archaeology increased as a result of ecological approaches in which past environments and their relevant material evidence (faunal, floral, geological) were encountered.

New sets of questions were being asked of archaeological data, necessitating changes in field methods and strategies; new methods and technologies—ones not available in previous decades of archaeology—were employed for soils analysis, faunal studies, analysis of human remains, recovery of pollen and plant macrofossil remains, dating, and artifact analysis. Interests in subsistence behavior, diet, and formation processes, and the ethical responsibilities of reporting on the whole material record recovered through fieldwork, have given rise to other subdisciplines—among them, **zooarchaeology,** the study of faunal remains from archaeological contexts (see Chapter 13); **bioarchaeology,** the study of human remains; and **paleobotany,** the study of plant remains from archaeological contexts (see Chapter 12).

Important goals of new archaeology were to develop a set of theories that linked the material past with human behavior and to understand the formation of the archaeological record. This approach sought to define the various cultural or behavioral and natural processes that together created the archaeological record that is present today (Binford 1983a:19–30; Schiffer 1983, 1987). The material remains that constitute the archaeological record are themselves in a dynamic environment

(Schiffer 1987). As Binford (1983a:19) notes, the only way we can understand the meaning of artifacts and other materials and how they are arranged is by obtaining knowledge about the dynamic processes or human activities that created them. Likewise, Schiffer (1976:4) in his strategies of behavioral archaeology proposed a similar relationship that linked the past and present with regard to material culture and human behavior.

In this effort, archaeologists have turned to **ethnoarchaeology,** the study of living peoples who make and utilize materials found in the archaeological record (Binford 1978b; Gould 1980; Hayden 1979; Yellen 1977a). Using both ethnographic observations and **experimental archaeology,** replicating prehistoric artifacts and features to understand the techniques and processes of their formation (Coles 1973; Ingersoll et al. 1977; Whittaker 1994), is at the heart of Binford's (1983b:48, 49) middle-range theory.

According to some archaeologists, the era of the new archaeology has passed (Dunnell 1983; Hodder 1986; Hole 1978; Trigger 1989). The two decades of debate left a positive legacy in several respects:

1. The debate resulted in a shift toward developing a science of archaeology (Gibbon 1984; Watson et al. 1984).

2. With a theoretical slant toward cultural ecology, the questions being asked in archaeology are more complex and encompassing than before the era of new archaeology.

3. Field methods of American archaeology now stress eclectic sampling strategies geared to maximizing data recovery for both problem generation (or cultural resource assessment) and problem solving.

4. Archaeologists are more explicit in their statements of research aims and methods.

5. Archaeologists are more conscious of sampling bias and sampling for complementary data for interdisciplinary studies.

6. Archaeologists are more aware of the relationship between archaeology and anthropology and the role archaeology plays in the study of culture change and process.

Postprocessual Era

The field of archaeology is once again going through a testing period of new theoretical approaches and paradigms. The cultural-historical approach was based on the comparative analysis of archaeological data to delineate temporal and spatial patterns. Broad cultures were defined based on a normative view; although the procedures of inquiry followed general scientific principles of hypothesis testing, the hypotheses were largely based on existing models of cultural norms. Processual archaeology focused on the relationships among the subsystems or variables of a cultural system, identifying feedback processes that stimulated culture change, and on the process of change itself, both behavioral and transformational. Both the cultural-historical and processual views examined ancient cultural systems from an outsider's perspective, irrespective of the belief systems and worldviews of the people being studied, and emphasized technology and material culture.

In this era of **postprocessual archaeology,** alternative views are currently being debated. The stimulus behind this paradigm shift is remarkably similar to that which brought about new archaeology: recognition of the inherent weaknesses in the existing paradigm (Cordell and Yannie 1991; Earle 1991). Preucel (1991a:1) sums up the postprocessual view quite succinctly: "the unbridled optimism and self-confidence of the 1960s processual archaeology are gone, and in their place is a more cautious, self-conscious archaeology that is struggling to find its place within the postmodern world."

Despite the plethora of approaches that have been introduced in the era of postprocessual archaeology, the mainstream of archaeology maintains the strengths of the cultural-historical and processual eras with some additions taken from postprocessual developments. Most significant, perhaps, is the addition of cognitive and symbolic aspects to interpretation and explanation (Flannery and Marcus 1983). Likewise, social and ideology factors are now recognized as active forces of change. These aspects of culture were not emphasized as forces of change in the processual era, although they were seen as integral parts of cultural systems.

Postprocessual archaeology was born out of a general dissatisfaction with the then-current state of archaeological method and theory (Preucel 1991:4). As defined by Ian Hodder (1986:181), one of its strongest European proponents, postprocessual archaeology "involves the breaking down of established, taken-for-granted, dichotomies, and opens up study of the relationships between norm and individual, processes and structure, material and ideal, object and subject." It stresses, among other things, the ideological aspects rather than the more technological, determinist or materialist interpretations, and it attempts to view cultural process from an insider's perspective. Postprocessual archaeology also assumes that mental structure, belief systems, and their respective institutionalized codes and symbols guide a culture's lifeways and adaptations. Symbolic/ideological factors can have causal significance, a point not addressed in processual archaeology, and the importance of an object includes both how it was used and how it was viewed. The main elements of postprocessual archaeology are perhaps best illustrated in the goals of contextual archaeology.

Contextual archaeology is an interpretive position that claims all understanding is historically and culturally situated (Johnsen and Olsen 1992). It holds that all aspects of an archaeological culture need to be studied to understand the significance of each part (Hodder 1982, 1986:121–155; Trigger 1989:349–350). The earliest notion of contextual archaeology, defined then as the "conjunctive approach," can be traced to Walter Taylor (1948:150–200). Taylor felt that the function of an artifact could best be determined on the basis of its context and association with other items. The more recent application of the concept according to Hodder (1986:143), states that "each object exists in several relevant dimensions at once," the totality of which defines its context. Contextual archaeology draws on a direct historical approach, using archaeological as well as nonarchaeological data such as oral traditions, linguistics, and comparative ethnography to formulate holistic models of prehistoric cultures. The outsider-insider dichotomy is

best illustrated in the distinction made by contextual archaeology of two main types of meaning: functional interrelations and the structural content of ideas and symbols (Johnsen and Olsen 1992).

Functional interrelations are derived from knowledge of the human and physical environments; **structural interrelations** assume that cultures are systems of symbols in a highly structured matrix. The goal of these approaches is to identify the structures of context, thought, and symbolism and to determine how they shaped the ideas in the minds of the people who created the archaeological record (Renfrew and Bahn 1991:426–430). Archaeologists assume there are recurrent patterns of thought in different cultures and that these mental patterns are expressed in the material culture (Arnold 1983).

Another alternative view of postprocessual archaeology is that of **critical theory.** Critical theorists would argue that all inquiry is politicized; the social and political contexts of doing archaeology influence the kinds of questions we ask and the kinds of answers we frame even in our attempts to do objective science (Renfrew and Bahn 1991:430). Consequently, some archaeologists have moved away from processualism to a more relativist position. This alternative gives credence to a variety of approaches for explaining culture change (Hodder 1986:156–181; Trigger 1989:379–382). One important contribution of critical theory is its exposure of yet another area of bias in our procedures that influences our results. Probably nowhere is this more evident in Americanist archaeology than with the subjects of gender and, in cultural resource management, the determination of archaeological site significance, as discussed later in this chapter.

The **archaeology of gender** is a relatively new development, first considered in processual archaeology with the delineation of work space in archaeological communities (Binford 1983:144–194). Feminist thinking over the past two decades has profoundly influenced sociocultural studies, including archaeology. The gender issue has become a goal of postprocessual archaeological theory and practice, ranging from the topics of class formation, political power, organization of produc-

tion and units of production, and uses of space to the development of technologies (Conkey and Gero 1991). The edited volume by Joan Gero and Margaret Conkey (1991) entitled *Engendering Archaeology: Women and Prehistory* provides a broad perspective on gender in archaeology (also see Wylie 1992).

Modern archaeologists use diverse approaches and employ a variety of perspectives that depend on their specific research interests (Preucel 1991:14). Some insight into the diversity of interests and approaches to postprocessual archaeology in the Americas can be found in the edited volume by Robert W. Preucel (ed. 1991) entitled *Processual and Postprocessual Archaeologies: Multiple Ways of Knowing the Past.* The healthy proliferation of goals has served to broaden the growth and relevance of the discipline.

Another important shift in archaeological goals evolved as the result of federal legislation. Following a long developmental period that came to fruition in the 1970s and 1980s, this refocusing changed the way Americanist archaeologists think about archaeological sites. Before the 1970s, archaeological sites were narrowly viewed as places to plan excavations to fill in gaps of knowledge. The emphasis was on the *kinds* of information the site might contain. The new focus, not entirely contradictory, shifted attention to assessing the *significance* of a site or district with regard to the region's and the nation's archaeological heritage. This shift brought about a new subfield in American archaeology, cultural resource management.

## Cultural Resource Management and Salvage Archaeology

Legislation passed in the 1960s and 1970s had a direct effect on the goals and directions of Americanist archaeology. The National Historic Preservation Act of 1966, and Section 106 as operationalized by Title 36 Code of Federal Regulations Part 800 enacted in 1974; the National Environmental Protection Act of 1969; Executive Order 11593 in 1971; and the Archaeological and Historical Preservation Act of 1974 resulted in a boom in contract or salvage archaeology (King et al. 1977).

Reservoir salvage archaeology, whereby selected cultural resources are excavated before they are lost during construction projects (Figure 2.7), was instituted in the 1930s as part of the Works Progress Administration (WPA). After World War II, the program of reservoir salvage continued, administered by the Smithsonian Institution River Basin Surveys Program. After the passage of the Reservoir Salvage Act in 1960, the National Park Service assumed the administration of the reservoir salvage program, providing block grants for participating institutions for the next decade.

The legislation of the 1960s and 1970s not only provided many millions of dollars for salvage and contract archaeology, but it also made contracts available to private firms as well as to museums and institutions of higher learning. The result was a new subarea of archaeology, **cultural resource management (CRM) archaeology** (popularly called **contract archaeology**). CRM archaeology includes among its goals: (1) managing the archaeological record by establishing and monitoring cultural inventories, (2) assessing site significance by determining the research potential and cultural value of each site and determining which sites should be saved or excavated through salvage archaeology and which ones will be sacrificed to impending construction projects, and (3) protecting and preserving cultural resources.

The second goal, assessing the significance of archaeological sites, introduces the potential for strong bias in the management process. Assessing the research value of a site or area requires a background in anthropological archaeology theory, regional archaeology, and archaeological priorities. Assessing the cultural value requires that the concerns of all people affected by the management decisions be intelligently and efficiently treated (King et al. 1977:103–104). Ultimately, what is recovered and what is not are determined on the basis of the cultural and research values plus budgetary constraints and construction deadlines if destruction is imminent. Rarely are all interests served in the process.

Firms responding to requests for proposals (RFPs) submit their project bids, and the awards
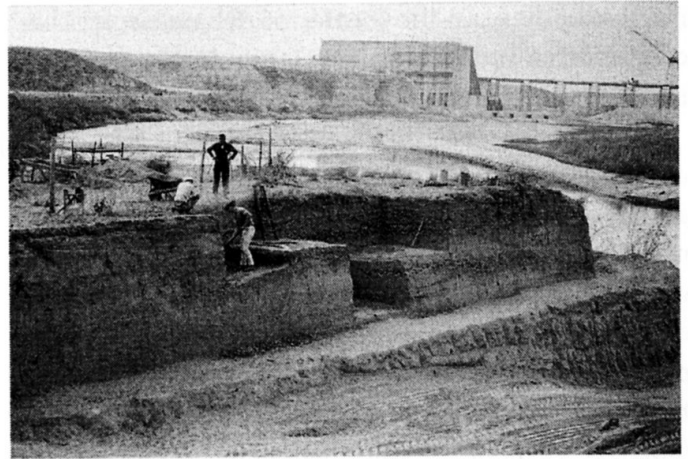
Figure 2.7 Reservoir salvage excavations at the Devil's Mouth site, Val Verde County, Texas, before construction of the Amistad Dam and Reservoir.

are often granted to the lowest bidder. This introduces a "profit motive" into project planning that can conflict with and threaten the basic ethics and priorities of the discipline. CRM firms are required to meet specific contractual obligations as well as to perform broader research-oriented functions within the scope of a finite budget. It is the inclusion of the contract goals, such as inventorying, assessing, and preserving archaeological sites, that separates CRM from its predecessor, salvage archaeology.

The archaeological profession found itself ill-equipped to handle the legalities of federal and industrial contracts. Definitions of what constituted a professionally qualified archaeologist and standards of professional ethics were unavailable to contracting agencies and to members of the profession. The Society of Professional Archaeology (SOPA) was formed to help provide public accountability for and to lend reputability to the profession (McGimsey 1985).

The bulk of archaeology done in the United States today is carried out by the personnel and planners of CRM archaeology, a group Watson (1991) labels as almost an archaeological proletariat. Data recovery is generally standardized following state and federal guidelines. Despite the fact that CRM archaeology is producing most of the archaeological data being collected today, however, its interpretive potential has yet to be realized. CRM archaeology lies at the farthest distance

intellectually from the theater of debates in archaeological theory (Watson 1991); one obvious reason is its project-specific goals.

Like its ancestor WPA archaeology, CRM archaeology is providing an enormous amount of new archaeological data that awaits synthesis. A major problem of contract archaeology, the result of budget constraints, is in the dissemination of results to colleagues (Hester 1981; Renfrew 1983). Another problem is that the scope of the investigations tends to be project specific; five projects in one area (such as segments of land designated for strip mining) may be contracted to five different firms from five distant headquarters. This piecemeal approach is a two-sided coin: On the one hand, it hinders communication, information flow, the benefit of experience, and ultimately, archaeology. On the other hand, multiple contract firms may in some instances provide variety in views and methodology that can benefit the field.

CRM archaeology has provided a wealth of new data on many previously unknown regions of the country, particularly large tracts of federal lands. CRM projects have made many highly significant contributions to American archaeology, especially in field methodology, where new methods and technology such as penetrating radar and electronic data management systems are being tested.

Native American Graves Protection and Repatriation Act of 1990

The Native American Graves Protection and Repatriation Act of 1990 (NAGPRA) was a carefully negotiated agreement between Native American organizations, archaeologists, museums, legislators, and other interested parties. The passage of this act prompted vigorous debates at the theoretical, legal, and ethical levels, resulting in yet another paradigm swing (see also Chapter 11). At issue are the rights to the study of Native American prehistory using the material remains. The extreme positions in the debate are clearly drawn: One side believes that the archaeological past belongs to Native Americans. Proponents argue that Native Americans should have control of what is studied,

how it is studied, and the final disposition of the material (Zimmerman 1994). At the other extreme are those who argue that repatriation is a threat to scholarly scientific study of American prehistory and the processes of cultural adaptation, development, and change—and to the discipline itself (Meighan 1994). The majority of Americanist archaeologists, however, find themselves somewhere between these extreme views. A healthy dialogue between archaeologists and Native American organizations is becoming more a practice than an exception (Allison 1996; Spector 1994).

NAGPRA compliance processes are currently underway and have resulted in the reburial of scores of archaeologically excavated human skeletal materials and associated cultural remains. Repatriation of Native American human remains is in process nationwide. Ethical debates continue, however, and focus on those remains that are clearly prehistoric and more often than not have no demonstrable tribal descendants (Lovis 1996). The peopling of North America was one of the more dramatic events in human history; this event and the processes that followed are certainly—and at the very least—worthy of scholarly scientific study inclusive of Native American interests.

GOALS OF ARCHAEOLOGY TODAY

The modern goals of most American anthropological archaeology retain aspects of cultural-historical, new, and postprocessual archaeology. These goals stress the need to establish temporal and spatial controls on the materials under study as well as to explain how the observed patterns and the archaeological record were formed (Binford 1971, 1983a:13–18; Fagan 1991a:43–45). These goals, as stated by Sharer and Ashmore (1993:35) are

1. To consider the *form* of archaeological evidence and its distribution in time and space.

2. To determine past *function* and thereby construct models of ancient behavior.

3. To delimit the *processes* of culture and determine how and why cultures change.

4. To understand cultural *meaning* through the context of symbols, values, and worldview.

Form

The first goal, form, is the description and classification of the material evidence that archaeologists uncover. It is an outgrowth of the cultural-historical approach and is **diachronic**—that is, focused on change over time—in perspective. Comparative studies of the material evidence allow archaeologists to develop models of artifact assemblage distribution through time and space.

It is through the study of form that site, regional, and areal **chronologies,** the ordering of cultural assemblages through time, are modeled. It is not possible to study function or period in time, process, or meaning without knowing the time and spatial limits of the culture under study. A sound culture chronology requires that collections be ordered and classified with regard to temporally and spatially sensitive artifact styles or other recognizable characteristics that serve to differentiate archaeological assemblages. The archaeologist constructs a framework tracing the historical development of cultural change by building local or regional sequences and even relating these to broader patterns and beyond.

Function

The second goal, determining function based on the study of form and association, focuses on knowing how things were used to understand the ancient behavior represented in the archaeological record. Function is both **synchronic**—that is, it focuses on a specific period of time—and **holistic**—it assumes that all aspects of a culture or cultures fit within the context of their environment (Braidwood and Howe 1962; Clark 1954; MacNeish 1970). A systemic approach, one that allows the archaeologist to order and divide the mass of data into meaningful units for analysis, is essential to achieving this goal.

It is through a combined study of form and function that models of lifeway reconstruction are made possible. Reconstruction of past lifeways involves modeling the cultural system or network of systems under study as far as the archaeological record and inferences about the past will permit. It usually involves reconstructing the past environment through ethnobotanical, faunal, and geoarchaeological studies; working from a well-defined cultural chronology; settlement pattern studies that examine the variation in settlement over the landscape through time and space; analysis of subsistence and dietary practices by incorporating zoological, ethnobotanical, skeletal, technological, ethnoarchaeological, and functional studies; and residential and mortuary studies to discern variability in social organization, complexities in the social system, and health. A past lifeway cannot be reconstructed from the excavation of a single site, although each site can provide both unique and comparative data. It is necessary to frame research at least on a regional scale to discern temporal and spatial variability, particularly in an environmentally diverse region.

Process

The third goal, understanding cultural process, is an attempt to explain how and why cultures change through time based on study of the material record. The whole record of human existence is used to explain the variations of the past. The study of culture process became a major goal of the new archaeology.

Meaning

The fourth goal, a postprocessual contribution, is perhaps the most difficult to achieve because it generally requires some basic knowledge of symbols and the worldview of the culture being studied. Sources of contextual data for symbols include inferences derived from a direct historical approach using ethnographies and oral histories. Applications of historical meaning to prehistoric examples are based on subjective judgments, but the strengths of these inferences, like any others in archaeology, are weighed on the appropriateness of the data and contexts from which they are derived.

GUIDE TO FURTHER READING

Goals (General)

Braidwood and Howe 1962; Clark 1954; Hole et al. 1967; MacNeish 1970; Taylor 1948; Trigger 1989; Willey and Sabloff 1993

New Archaeology

Binford 1962, 1965, 1983a; Binford and Binford 1968; Flannery 1973; Gibbon 1984; Renfrew and Bahn 1991; Schiffer 1987; Waters 1992; Watson et al. 1984

Postprocessual Archaeology

Gero and Conkey 1991; Hodder 1986; Preucel, ed. 1991; Trigger 1989

Historical Archaeology

Allen 1978; Armstrong 1990; Deagan 1991; Deetz 1977; Deetz and Dethlefsen 1965, Falk 1991; Farnsworth and Williams 1992; Noël-Hume 1982; Orser 1988; Scott et al. 1989; Shafer et al. 1994; Singleton 1985; South 1977a, 1977b

Industrial Archaeology

Council et al. 1991; Gordon and Malone 1994; Rolando 1992