CHAPTER 1

COMPARATIVE ARCHAEOLOGY

A COMMITMENT TO UNDERSTANDING VARIATION

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As archaeologists, we seek to understand variation and change in past human societies. This goal necessitates a comparative approach, and comparisons justify the broad cross-cultural and diachronic scope of our work. Without comparisons we sink into the culture-bound theorizing against which anthropology and archaeology have long sought to broaden social science research. By undertaking comparisons that incorporate long-term social variability, archaeologists not only improve our understanding of the past, but also open the door to meaningful transdisciplinary research. Archaeologists have unique and comprehensive data sets whose analysis can contribute to dialogues surrounding contemporary issues and the myriad challenges of our era.

In the past two decades, the pendulum seems to have swung away from comparative research in archaeology. Many archaeologists focus on detailed contextual descriptions of individual cases, and only a few have dedicated themselves to explicit comparative work. Yet in that same time span, fieldwork has expanded tremendously throughout the world, leading to an explosion of well-documented diachronic data on sites and regions. We now have substantial detail on the variation inherent in phenomena such as cultural assemblages, settlement patterns, and economic activity. New methods, from dating techniques to digital data processing, promote comparative analysis and greatly advance our understanding of human societies and change. The time is ripe for a renewed commitment to comparative research in archaeology.

Rigorous new methods are needed to achieve an explicit comparative understanding of the past. Particularly fruitful domains for comparative research in archaeology include households, settlement patterns, and

the built landscape. These are categories of data that are both widely available in the archaeological literature and important for understanding the dynamics of past societies. It is a healthy sign that a variety of approaches to comparative research are now being pursued, including the documentation and exploration of the range of variation over time, the evaluation of potential causes for variation and change, and the exploration of the impact of particular variations on long-term patterns of stability and change. Productive comparative research ranges from statistical analysis of large samples to rich contextual comparisons of a few cases; there is no single best method. A holistic perspective for studying the past requires a range of comparative approaches in concert.

Work presented at the seminar focused on explicit comparative analyses of archaeological (and other) data and the participants plan to continue an approach that encompasses multiple regions or contexts in a single study rather than merely juxtaposing case studies in an edited volume. Seminar papers compared, for example, the process of Spanish colonization in different continents, the development of chiefdom-level settlement patterns and monuments in multiple world regions, the artifact inventories of households in diverse settings, tropical low-density urban centers across the globe, and the variation in political dynamics across and within polities. Such comparative research not only illuminates the past, but also produces surprising findings and identifies commonly held notions that may be incorrect or misleading.

Some archaeologists may associate the comparative method with the neoevolutionism of Steward, Service, and Fried. In fact, the comparative method and neoevolutionism are separate arenas of thought and activity; one does not imply the other. A central problem with neoevolutionism was its focus on normative societal types such as bands and tribes that tended to compress or ignore variation and concentrated on generalized similarities. As archaeological data have expanded at the end of the twentieth century, the utility of such societal types has declined because they mask the variation that is one of the most obvious aspects of human societies, past and present. The most productive comparative approaches do not focus on general societal types; instead they involve the analysis of archaeological data at multiple spatial and social scales and they emphasize societal variability and change.

Comparative archaeology can lead to the reevaluation of conventional categories such as community, polity, or urbanism. Its varied approaches have the potential to provide powerful syntheses that focus on and analyze

the true complexity of past human life and society. Comparative methods are essential if archaeologists are to contribute to transdisciplinary research in the historical and social sciences and thereby broaden the scientific understanding of the past, the present, and the future of human society.

CHAPTER 2

APPROACHES TO COMPARATIVE ANALYSIS IN ARCHAEOLOGY

Michael E. Smith and Peter Peregrine

Archaeology is inherently comparative. Comparison is necessary to understand the material record, for one cannot identify or understand an object never before seen without comparing it to a known object. Comparison is also necessary to understand variation over time and space, for one cannot identify or investigate variation unless one has examples spanning a range of variation, nor can one examine change without examples spanning a range of time. Comparative analysis is the only way to identify regularities in human behavior, and it is also the only way to identify unique features of human societies. Indeed, to Bruce G. Trigger the comparative nature of archaeological data and analysis places archaeology at the heart of the most important issues in the social sciences:

> The most important issue confronting the social sciences is the extent to which human behavior is shaped by factors that operate cross-culturally as opposed to factors that are unique to particular cultures. (Trigger 2003:3)

In this chapter we outline the ways archaeologists have used comparison to understand the material record and to explore variation over time and space. After a brief history of comparative research on ancient societies, we review the variety of approaches used by the authors of this volume using seven dimensions of the comparative method in archaeology.

History of Comparative Research

The comparison of material traits to explore variation over space and time has a long history in archaeology. Indeed, one could argue that such comparisons were one of the major contributions made by nineteenth-century antiquarians in shaping what would become the discipline of archaeology (Trigger 2006). In one of the earliest examples of scientific archaeology in

the New World, Cyrus Thomas (1898) compared ancient earthen mounds in the eastern United States to one another and to historic accounts of mound building and mound use. Through this comparison, Thomas established that there were several distinct mound building traditions, and all appear to have been built by the ancestors of contemporary Native Americans. In Europe, Gustav Oscar Montelius (1888) traveled extensively to museums and archaeological sites comparing the artifacts found in sealed deposits such as burials and hoards. Montelius used the information about objects that were never found in association to define six major periods within the Bronze Age, each of which, he posited, represented a different cultural tradition that spread across all of Europe.

In contemporary archaeology, the comparison of material traits for culture-historical purposes has been largely supplanted by chronometric dating techniques, although comparison as a means to perform seriation and stratigraphy still has a place (O'Brien and Lyman 1999). More commonly, comparisons are performed to aid in the interpretation of the archaeological record or to better understand variation. One major form of this has been the comparison of societal types (e.g., bands, tribes, chiefdoms, and states).

Comparative studies of societal "types" that allegedly encompass a core package of nonmaterial traits became increasingly common in archaeology with the rebirth of evolutionism in the 1960s, and particularly following the publication of Elman Service's *Primitive Social Organization* (1966). However, the comparison of societal types was also fostered by research on the origins of states and the recognition that early states appeared to share numerous features, despite being located in different parts of the world and evolving over varying spans of time. Few works focused on the comparison of societal types can easily be divorced from questions of process and origin; indeed, it was the origin of these societal types that underlay most comparative efforts (e.g., Adams 1966; Childe 1950; Sanders and Price 1968). However, a better way to examine evolutionary processes, such as the origins of urban societies or states, is to examine them over time, that is, diachronically.

Diachronic comparison was a staple method among the founders of the discipline of anthropology. In *Principles of Sociology*, for example, Herbert Spencer (1898–99) attempted to construct a general law of cultural evolution in part by providing examples of various stages of cultural evolution that included pre-Columbian Mexico, Pharonic Egypt, and the Roman Empire, among others. Similarly, Edward Tylor in *Primitive Culture* (1871) used a crude form of diachronic comparison to trace cultural "survivals"

and build evolutionary sequences. Lewis Henry Morgan used diachronic comparison in *Ancient Society* (1878) to establish a universal sequence of cultural evolution. Unfortunately, these early attempts at diachronic comparison were doomed to fail because the available archaeological data were crude and lacked absolute dates, preventing the establishment of an empirical sequence of change. The lack of true diachronic data was a significant flaw in the work of the early evolutionists, a flaw that was rightly seized upon by Boas and his students, who launched a damning criticism of both comparative analyses and evolutionary theory (a critical perspective that continues to this day – see, e.g., Giddens 1984; Hodder 1986; Nisbet 1969; and Pauketat 2001).

Although the paucity of data and the Boasian reaction against these early evolutionists halted comparative research for a time, a second generation of evolutionists followed with comparisons based on better data and more rigorous theory (Hallpike 1986; Harris 1968; Sanderson 1999; Trigger 2006). Foremost among these scholars was Vere Gordon Childe, whose *Social Evolution* (1951) provided something of a blueprint for diachronic cross-cultural comparisons using archaeological data. His basic position was that "archaeology can establish sequences of cultures in various natural regions. And these cultures represent societies or phases in the development of societies. Potentially, therefore, archaeological sequences reveal the chronological order in which kinds of society did historically emerge" (Childe 1951:17). To unleash this potential, Childe (pp. 22–29) suggested that archaeologists needed to focus their efforts on clarifying archaeological sequences based on what can be most clearly observed in the archaeological record: technology and economy. Such changes in technology and economy, Childe argued, led to changes in other aspects of culture and, in turn, to cultural evolution.

What Childe and others (e.g., Fried 1967; Parsons 1966; White 1959) demonstrated is that diachronic comparison is an excellent way to study cultural evolution (for a recent discussion, see Yoffee 1993). Through diachronic comparison, presumed causes can be demonstrated to precede presumed effects, and evolutionary patterns and processes can be identified and studied over time. These conclusions are in no way groundbreaking – historians and evolutionary biologists had been working in a comparative framework for generations – but, as a consequence of the Boasian reaction against comparative research, it took anthropology much longer to realize the value of comparative methodology (for further discussion, see Harris 1968; Sanderson 1990; Yengoyan 2006). Recent books by Bruce Trigger (1998, 2003) explore the conceptual and empirical record of comparative research in anthropology and archaeology.

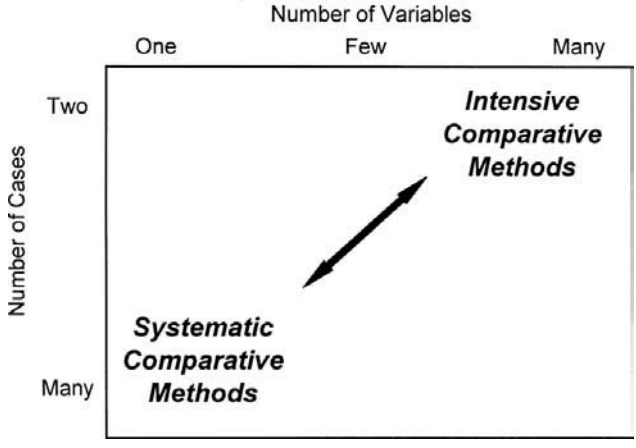

Figure 2.1. Intensive and systematic comparative strategies. After Caramani (2009:15); drawing by Miriam Cox.

Approaches to Comparison

There are many different approaches to comparative analysis in the social and historical sciences (e.g., C. R. Ember and Ember 2001; Gingrich and Fox 2002; Grew 1980; Hunt 2007; Mace and Pagel 1994; Mahoney 2004; Ragin 1987; Smelser 1976; Tilly 1984; Ward 2009; Westcoat 1994). Divergent approaches to comparison are sometimes discussed in terms of a contrast or continuum between what can be called systematic and intensive comparative methods (e.g., M. E. Smith 2006). Systematic studies, exemplified in anthropology by the cross-cultural research associated with the Human Relations Area Files, employ large sample sizes and typically use formal statistical methods of inference. In the social science literature on comparative analysis, systematic studies are often called "large-scale" or "variable-oriented" studies (Caramani 2009). Intensive comparative research, on the other hand, focuses on a small number of cases, each analyzed in more depth and with greater contextualization (i.e., consideration of many variables). This approach is often called "small-scale" or "case-oriented" (Caramani 2009). Figure 2.1 illustrates the relationship between the systematic and intensive approaches in terms of the numbers of cases and variables typically employed. Although each approach has its value and usefulness (as do studies intermediate between the polar extremes), most researchers tend to be comfortable working with a particular kind of comparative analysis, and statements of the advantages of one or the other approach are common in the literature.

Comparative historians tend to be much more comfortable using intensive comparisons. Within the discipline of history, comparative studies occupy only a small number of scholars. As noted by Jürgen Kocka, "Many cherished principles of the historical discipline – proximity to the sources, context, and continuity – are sometimes in tension with the comparative approach" (2003:39). Those historians who do pursue comparative research argue forcefully in favor of context-heavy comparisons of only a few cases (Grew 1980; Haupt 2001; Kocka 2003; Tilly 1984). Charles Tilly, for example, concludes his book on comparative historical research with this statement:

> It is tempting to look for finer and finer comparisons, with larger numbers of cases and more variables controlled. In the present state of our knowledge of big structures and large processes, that would be a serious error. It would be an error because with the multiplications of cases and the standardization of categories for comparison the theoretical return declines more rapidly than the empirical return rises. (Tilly 1984:144)

Some archaeologists agree with Tilly and other comparative historians and argue for the superiority of intensive comparisons over systematic approaches. Adam T. Smith, for example, explicitly positions his book toward the intensive end of the continuum:

> The book is intended to help resuscitate a genre of anthropological writing that explores material in a comparative spirit without yielding to the reductionist tendencies that tend to cripple many such works. Thus, it was critical that each case be allowed to develop in its own right without the compression that results from traditional comparison. (A. T. Smith 2003:28)

The intensive approach to comparison has long been popular among anthropologists (Eggan 1954; Gingrich and Fox 2002; Yengoyan 2006) and archaeologists (Adams 1966; Earle 1997; Trigger 2003). Recently, comparative analysis has become an important approach among some Classicists, whose research clearly lies at the intensive end of the continuum (e.g., Dal Lago and Katsari 2008; Morris and Scheidel 2009; Scheidel 2009; Webster 2008). Within archaeology and anthropology, however, intensive comparative analysis has received little explicit methodological attention. Systematic comparative research, on the other hand, is the target of a significant body of methodological work. It seems logical that systematic comparison would be of great interest to archaeologists, because this approach is particularly well suited to the study of cultural evolution. As discussed earlier, the founders

of the discipline (Spencer, Tylor, and Morgan) employed systematic comparison, but their work was flawed by poor data and rudimentary statistical methods. The stigma of those flaws still haunts systematic comparison (e.g., autocorrelation bias is often called "Galton's problem," a reference to a question Francis Galton raised during one of Tylor's presentations to the Royal Anthropological Institute in 1889!), but well-designed samples like the Standard Cross-Cultural Sample (Murdock and White 1969), access to good ethnographic data through archives such as the Human Relations Area Files, and the development of statistical methods that can identify and correct flawed samples and data have led to greater confidence in systematic comparison (Peregrine 2001, 2004).

During the 1970s, archaeologists began to use comparative ethnology to interpret the archaeological record. Comparative ethnology refers to the statistical evaluation of theories or hypotheses using data from large (often worldwide) and clearly defined samples of cultures (C. R. Ember and Ember 2001). The importance of this approach is that if one can find a strong association in a worldwide sample of cultures, then one can assume that the association fits human behavior in general, and not just the customs of a particular culture or historically related group of cultures (Sanderson 1990:211–32). And, particularly important for the archaeologist, there is no *a priori* reason for this generalization not to hold for prehistoric cultures as well (M. Ember and Ember 1995:95–96). Although a large number of material indicators of human behavior have been identified (Blanton and Fargher 2008; C. R. Ember 2003; M. Ember and Ember 1995; McNett 1979; Peregrine 2004), comparative ethnology has yet to develop into an important archaeological tool. As McNett (1979:40) succinctly puts it, "One is rather at a loss to explain why this method has not been used more for archaeological purposes."

Dimensions of Comparison

Although contrasting the systematic and intensive approaches to comparison highlights some of the important issues of comparative research, most comparative work in archaeology today transcends this dichotomy or continuum. As exemplified by later chapters, contemporary comparative research by archaeologists covers a wide range of approaches, methods, and styles. To describe this variety adequately, we break the intensive–systematic continuum into nine separate dimensions of comparison (see Table 2.1): sample size (how many cases are compared?); sample selection (how are the cases selected?); contextualization (how thoroughly are the

Table 2.1. Dimensions of comparison

Sample size
Sample selection
Contextualization
Scale
Primary vs. secondary data
Archaeological vs. historical data
Synchronic vs. diachronic
Stage in the research trajectory
Spatial and temporal domain

cases contextualized?); scale (do the comparisons focus on whole societies or a limited domain?); primary versus secondary data; archaeological versus historical data; synchronic versus diachronic comparisons; stage in the research trajectory at which comparison is invoked; and spatial and temporal domain.

1. Sample Size. The sizes of samples that archaeologists use in their comparative research vary widely. As a study in the holocultural tradition, Peregrine (Chapter 8) employs a larger sample than most of the case studies in this volume; at the other extreme is the chapter by Earle and Smith (Chapter 10), who compare just two examples: Aztec and Inka provincial societies. Their study shows that "sample size," however, is not always a simple construct. Although they are comparing two societies, each of those societies is represented by several archaeological sites, each of which contributes several individual excavated domestic contexts. Although quantitative measures are calculated for each of these domestic contexts, they are arrayed and combined in a form that illustrates the fundamental social comparison of interest (Aztec and Inka provincial societies). Most of the other studies in this volume employ sample sizes somewhere between two and ten cases. Stark and Chance (Chapter 9) draw on many more empirical cases than the other chapters, but their use of these examples differs from most of the others. As discussed later under "Stage in the Research Trajectory," their analysis is directed at documenting and understanding the range of variation in their topic (provincial imperial strategies) rather than at controlled comparisons of individual societies or empires.

2. Sample Selection. The ability of holocultural research to employ random sampling, coupled with the extensive discussions of methodological issues of sampling in this literature (C. R. Ember and Ember 2001;