The Evolution of Complex Societies

I should like to see, and this will be the last and most ardent of my desires, I should like to see the last king strangled with the guts of the last priest.

J. Messelier (clause in a will, Paris, 1733)

Messelier’s vengeful wish was prompted by his feelings of exploitation as a citizen of France during the last period of its monarchy, when France was dominated by oppressive elites and a venal clergy. Societies ruled and exploited by kings and priests have existed for thousands of years, and many of their citizens have echoed Messelier’s complaints. In today’s world, billions of people subsist on a tiny fraction of the goods and services that the most industrialized countries enjoy, and even within the richest states there are great inequalities.

Why have societies for thousands of years been organized in terms of social classes and economic inequalities? Are these inequities somehow the “natural” order of things? Will they ever be replaced by truly just and equitable societies? What has determined who was rich and powerful and who was poor and weak throughout history?

To answer such questions it is important to recognize that although exploitative political and religious elites have formed the very warp and woof of our concept of “civilization,” they are just one of many elements in our sense of “civilization,” or what anthropologists call “complex” societies. Scholars, predictably, disagree on exactly what social or cultural “complexity,” or a “civilization,” or a “state,” is, particularly when these terms are applied to the bones, stones, and bricks of the archaeological record. When archaeologists speak of the first “complex” societies, however, most have in mind the kinds of changes we think happened first long ago, for example, in Mesopotamia, on the broad Tigris-Euphrates alluvial plains of what is now Iraq, Syria, and Iran. The evidence suggests that if you were a member of an ordinary community here at about 6000 B.C., you would have lived in a village of a few hundred people, most of whom were your blood relatives. You and almost everyone else in your community would have worked in the fields to produce the grain held in common stores for large extended families and the community as a whole. And if you were an older adult male you would have made most of the decisions for you and your family about every aspect of your life. People much like you and communities very like yours would be found in all directions from your home,
but your only contacts with them would have been minor trade in obsidian, flint, semi-precious stone, and a few other commodities, as well as the exchange of young men and women in marriage, and—probably—the occasional fight. For all practical purposes, you and your fellow villagers were on your own in terms of religion, manufacturing tools, defense, and food production; probably you and every other adult in town would know most of the skills necessary for survival; and your extended family—and every other extended family—probably could muster all the technological and social skills necessary for survival.

But if you lived in this same area—perhaps the same town—3,000 years later, at about 3000 B.C., you would have led a very different life. You could have been a slave or a king, depending on accidents of birth. Unlike your ancestors, who were almost all full-time farmers, you may have been a fisherman, potter, weaver, priest, or some other specialist. Unless you were among the elite, however, many of the decisions you made about your job and your life would have been out of your hands—the prerogative of royal administrators. You would have been taxed and expected to fight with the army in any of the numerous wars and revolutions you would have seen in your lifetime. As a farmer or any other semi-skilled or skilled worker, you would have been dependent for your continued existence and way of life on people with skills you yourself did not possess, such as potters, warriors, herdsmen, scribes, doctors, metalsmiths, sailors, and priests. Instead of a village of a few hundred people, you might have lived in a city of thousands, perhaps tens of thousands; you would probably have been a fervent believer in the national religion, and you would probably have been acutely aware of your social class, whether high or low. In these and many other ways, your society would have been “complex,” at least in comparison to the simple, cooperative, communistic peasants of your ancient ancestry.

In summary then, when anthropologists speak of sociocultural complexity, they are generally ranking particular societies on a single scale but on the basis of several primary variables. For any given society these variables include (1) the degree of differential access to wealth, power, and prestige; (2) the extent to which differential access to wealth, power, and prestige are inherited, as opposed to earned; (3) the degree to which individuals in a community are specialized in their occupations, and the extent to which these different occupations are integrated and organized in the economy as a whole; and (4) the degree to which political power is centralized in a government.

The same kinds of changes in these variables that we have described here for Mesopotamia also happened—largely independently—in various other areas of the ancient world, in Egypt, the Indus Valley, China, Peru, Mesoamerica, and a few other places. Later they also occurred in many other times and places, especially in societies that were in contact with the earliest civilizations. By now the reader will not be at all surprised to learn that the question that has fascinated archaeologists for centuries is, why? Why did simple agriculturalists give way to socially more complex forms in these specific areas, and not in other areas? Why did our ancestors not remain simple farmers or revert to the ancient security of the hunting-foraging way of life? Why were these early civilizations so much alike in socioeconomic structures and political systems? Moreover, why was this transition so rapid and pervasive? Although complex societies have existed for only the last five or six millennia, they have almost completely replaced the simpler cultural forms in which our ancestors had lived for a million years or more. Today, in the Amazon Valley, the Kalahari Desert, and a few other places, hunting-and-gathering groups still follow some of their
ancient ways, but if current trends continue, soon there will be no groups left in the world that resemble our Pleistocene ancestors in society and economy.

To answer all these various questions about the evolution of complex societies, and to understand why today almost all people of the world live in them, we must appeal to a wide range of evidence. Since all largely independent cases of the evolution of cultural complexity happened before any written languages had been developed, much of this analysis must be based on archaeological data. But in many areas of the world written languages were used later in these developmental sequences and these provide fascinating information about the early civilizations.

The fact that complex societies, like agricultural economies, evolved independently in the Old and New Worlds gives us the opportunity for comparative analyses. As we shall see, ancient Egypt, for example, had a language completely incomprehensible to the Aztecs, worshipped Gods unknown to the Aztecs, and lived in a riverine ecological system unimaginable to the Aztecs. Egyptian and Aztec culture histories were unique, different, unconnected. But for a century, the idea of a science of history has been based on the idea that the ancient Egyptians and Aztecs were fundamentally alike—that they can both be considered members of the same class of political entities, and that they could be analyzed and understood in the same terms.

Perhaps the most influential general attempt to categorize all cultures and explain their similarities and differences was that by Karl Marx (see later). But there have been scores of other attempts to analyze cultural differences and similarities. Bruce Trigger, for example, compiled a comparative analysis of the ancient civilizations of Egypt, Mesopotamia, China, Mesoamerica, and South America, as well as the early Yoruba state—all chosen because they were class-based societies in which power was derived from control of agricultural production and because there is relatively good archaeological, ethnographic, and textual data for each. In this context, Trigger has come to an interesting conclusion about the results of his many years of study of early civilizations:

I expected to discover that, because of ecological constraints, the differences in economic systems [among early states] would be limited, and there would be more variation in sociopolitical organization, religious beliefs, and art styles. In fact, I have found that a wide variety of economic behavior was associated with early civilizations, the one constant being the production of surpluses that the upper classes appropriated through a tributary relationship. Yet I have been able to discover only one basic form of class hierarchy, two general forms of political organization, and a single basic religious paradigm. . . . I have documented significant variation from one early civilization to another only in terms of art styles and cultural values.¹

Trigger’s perceptive conclusion expresses clearly the fundamental issues in analyses of ancient civilizations. He sees, for example, extremely little variation among them except in art styles and cultural values. Thus we must ask, why were they so similar? It seems reasonable to assume, as Trigger does, that there is such little variation in some elements in these early civilizations because of these elements’ relative “efficiency,”² and great variations in other elements because they have little effect on the adaptiveness and competitive success of the social organism of which they are a part. If so, then one aspect of an archaeological analysis can be an examination of the specific factors that may have determined the adaptiveness and efficiency of these cultural elements, and changes in these variables over
time and space. This kind of investigation does not require that one ignore the great extent to which the unique and specific values, ideas, and concepts of these ancient civilizations formed the structure of these cultures and, in a sense, determined their history. Trigger suggests that we must examine both the similarities and differences in ancient cultures and try to understand and explain them using a variety of perspectives and methods (see later).

Today, however, the premise that a science of history can be developed on the basis of comparative analyses of cultures is under sustained attack. Some scholars argue that the only similarities between, for example, Egypt and Mexico and others of their supposed class, such as the Sumerians, the Shang Chinese, and the Harappan of the Indus Valley, are simply the products of gross similarities in environments and technologies. They suggest that the more important focus of archaeological analysis should be the ways in which the people in these different cultures constructed different worlds and realities through the use of incommensurable cultural categories. Also, many scholars today are wary of the term “evolution” as applied to cultures because it implies that some cultures are “better,” or more evolved, than others. For others, the difference in systems of trait-transmission between biological entities (sexual and asexual reproduction) and cultural systems (e.g., learning) makes any sense of evolution inapplicable to cultures. But other scholars have found Darwinian evolution to be applicable to cultural changes, if one divorces this sense of evolution from biological concepts and focuses on trait-transmission, not any particular method of trait-transmission.4

We shall examine this issue in detail later in this chapter, and in the remaining chapters, because it is fundamental to all that follows: Do the similarities and differences exhibited by various extinct cultures offer the raw material for some kind of “scientific” analysis of history, or do they simply represent gross analogies among societies that were intrinsically incommensurate and that can only be analyzed in terms of their unique histories and characteristics?

Another difficult issue here involves the obvious problems of trying to analyze the ideologies of extinct human groups on the basis of their material archaeological record. Karl Marx is just one of many scholars who over the millennia have tried to explain the rise of civilization in terms of environments, technologies, economies, and so forth. But can we understand the course of history from this perspective? The rise of Islam, for example, might seem to be a case where a powerful ideology spurred people, who previously had lived in simple tribal groups, to conquer huge areas of Asia and Europe. Is the spread of Islam to be understood as a result of the appearance of this unique inexplicable ideology, or is the ideology just a reflection of powerful underlying historical and economic forces? Similarly, the ancient Egyptian state seems to be something that we can only understand in terms of its national ideology: As we shall see in chapter 9, all the temples, tombs, and pyramids of Egypt are reflections of their principle of “divine kingship.” Ancient Egyptian civilization was to a certain extent a product of the rich Nile Valley environment, but it was also a sociopolitical construct, an idea. But how does one analyze the power of ideas from the archaeological record, especially since most of Egyptian civilization formed long before the written language began recording its development?

Based on inferences from the archaeological record, ancient texts, and ethnography, one of the fundamental things that apparently all early complex societies evolved was a coercive sociopolitical elite—that is, a class of people who took most of the society’s power, prestige, and wealth. And they apparently did so without regularly resorting to armed
robbery or direct confiscation by their personal militias. These societies evolved *ideologies* that sanctioned this confiscatory behavior and monopolization of power. In ancient Egypt, for example, the pharaoh was considered a manifestation of God, and therefore duly entitled to monopolize political power and much of the country’s wealth. Ancient Egyptians might have whined about taxes, but they rarely if ever managed a revolution to dispossess the elites (nor did the Victorian British or many other modern peoples, for that matter).

But how are we to study the origins and dynamics of the evolution of these all-important belief systems? We have some traces of this evolution in such things as differences in the wealth of individual burials, but these only indicate (possibly) that coercive sociopolitical elites existed, not how they came about or the ideological basis of their status.

Another issue in analyzing these early civilizations involves our assumptions about how similar they all were in terms of power relationships. It is important to recognize that not every society in history can be placed at some point on a continuum between a simple band of hunter-foragers and the dimensions of complexity described earlier and applied to, for example, ancient Mesopotamia. The term “heterarchy” has been applied by Carol Crumley to aspects of social relationships in early states, particularly those, like ancient Greece, for example, where economic control by elites and many other social interactions were not entirely set within the context of rigid, bureaucratic, hierarchical, administrative institutions. In such cases the activities and interests of the elites do not entirely correspond to the activities and interests of the state. She suggests that states can include social structures that are heterarchical in the sense that elements in these structures are either unranked relative to other elements or possess the potential for being ranked in a number of different ways. In such situations she suggests that power is not ranked, it is “counterpoised.”

The concept of heterarchy is linked to ideas about dialectical social relationships that are beyond the scope of this book, but we must assume that the social relationships of ancient societies cannot be fit exactly and simply into traditional notions about dominance and hierarchy.

Many scholars have explored these issues. The development of evolutionary theory as applied to archaeological data remains, however, at a relatively primitive level. Major questions remain about how one can use concepts such as “scale of selection” in cultural analyses. One interesting current trend in these forms of evolutionary analyses involves non-systems analyses and the “emergent” properties of complex systems. The recent book *Complexity* popularizes research done by physicists, biologists, anthropologists, and others on the processes whereby simple systems grow in complexity in an apparently Lamarckian way—able to direct the generation of variety that is then selected. Lansing and Kremer have published one of the first applications of these ideas to an anthropological problem, the evolution of Balinese economic systems.

In part because of the limitations of functionalist explanations, in part because of the great power of modern evolutionary theory, there has been a revival of interest in applying the principles of biological evolution to cultural phenomena. Many scholars argue that the modern theory of evolution has never really been applied to archaeological data. A key difficulty has always been that the objects of the archaeological record do not reproduce in the same way that people do, and thus the rules of genetics cannot be applied; also, whereas change in the biological world is through the relatively slow processes of genetic mutation, drift, selection, and so on, cultural changes can be conveyed quickly and pervasively from one group to another (as in the spread of agriculture).
So how might we apply evolutionary principles to archaeological problems? The answer is not at all clear, but there are a few interesting ideas. As Robert Dunnell has observed, what matters in evolutionary theory is not so much how a characteristic is transmitted—whether by genes or culture—as it is the mechanisms by which traits are perpetuated in an individual. Thus, whether a person gets the allele for sickle cell anemia through genetic inheritance or gets religious beliefs through parental instruction is irrelevant in the sense that both traits have been transmitted. In short, we do not have to concern ourselves overmuch with the fact that the behaviors at the base of cultural complexity are not transmitted genetically.

**SOCIAL COMPLEXITY AND HUMAN VALUES**

Before considering how societies evolved into different forms, it is worthwhile to muse on the fact that over the centuries people have had a very difficult time coming to terms with their perceptions of the relative virtues of types of societies. One of the oldest and commonest human errors has been to confuse cultural complexity and cultural worth. Already by the time of city-states, a haughty citizen of a city-state in Iraq disparagingly described his nomadic neighbors as “[barbarians], who know no house or town, the boor of the mountains . . . who does not bend his knees [to cultivate the land] . . . who is not buried after his death.” Even in our own age, it is difficult to avoid the notions that civilizations have emerged because of the special gifts and vitality of their populaces, that simpler societies are incompletely developed, and that all the world’s cultures are at various points along a gradient whose apex is the modern Western industrial community. This attitude was a great advantage in the age of European colonialism because it allowed the Europeans to treat other peoples as hardly human, and therefore undeserving of the full protection of laws and morality. Immanuel Kant said that the essence of immorality is to treat other people as objects, and in a way this is the Original Sin of cultural complexity. Europeans are routinely used as examples of colonialism, but it must be recognized that all cultures that have achieved dominance by virtue of time and circumstance have been equally colonialism.

To classify, as archaeologists do, history’s thousands of societies in terms of their inferred social stratification, size, and the complexity of information, matter, and energy exchanges is a research tactic that has as its goal the elucidation of the processes that produced these forms of complexity; but we should not consider these measures as ultimate criteria. If we categorized human societies in terms of piety, social cohesiveness, “justice,” or other abstract but important concepts, we would see an ordering of societies very different from the earlier discussion about Trigger’s analysis, concerned as it was with “cultural complexity.”

Because of the nature of archaeological data, we must limit ourselves primarily to the artifacts of these extinct civilizations, the bones and stones and debris that have survived them. But it is worth reflecting on the tremendous impact the evolution of cultural complexity has had on the way people view themselves and the world. If recent band societies resemble Pleistocene band societies, most Pleistocene individuals were deeply embedded in social and family relationships and had a clear role in society. Marshall Sahlins observed that our hunting-and-gathering ancestors took the “Zen road to affluence”: People living
in complex sedentary communities seem to live in the eternal economic dilemma of unlimited wants and limited means, but simpler societies have adjusted to their limited means by having few wants. Because they are frequently moving, hunters and gatherers cannot accumulate large quantities of material objects and therefore do not covet air conditioners and trash compactors, and they live in such small and scattered groups that social hierarchies are of little use or relevance. Ethnologist Richard Lee described how one Christmas he supplied a group of Kalahari Bushmen with a 1,200-pound ox for a great feast (Figure 7.1)—the ox represented far more meat than the group could eat. Everyone in the group complained, however, about how scrawny the animal was and how poor his gift was. Lee realized eventually that the cool reception to his generosity was the Bushmen’s way of maintaining an egalitarian spirit: Any particularly valuable or productive act or service met the same response because group dynamics worked best if no one could take great personal and public prestige from his accomplishments.

Hunter-gatherers of the recent and contemporary world are probably uncertain guides to what life was like during the millennia when all of our ancestors lived this way. But any romantic visions one might have of this ancient world may well be illusions. We might want to think of our ancestors as generous and sharing, and perhaps they were, but not necessarily. Nicolas Peterson reports, for example, that one aboriginal Australian in the group he was studying said to him, “I want to owe you five dollars.” Peterson labels this kind of behavior “demand sharing,” in which exchange of resources is stripped of all pretense that people do it because they want to or feel generous. Sharing is to everyone’s advantage in some social organizations, particularly band societies, but there is no necessary reason that it has to be cloaked in an aura of generosity and altruism. We will never know how our Pleistocene forebears organized their patterns of sharing and cooperation, but they were probably not the “noble savages” that we sometimes imagine.

All forms of social organization, of course, have their human costs, as well as benefits. In complex societies, from ancient times to the present, people often have felt themselves

FIGURE 7.1 Richard Lee at a Christmas ox roast for a group of Kalahari Bushmen, southern Africa (see text for discussion of egalitarian principles of band organization demonstrated at this event).
to be minor replaceable cogs in a machine that operates mainly for the benefit of others. From some of the earliest written documents, those from Mesopotamia in the third millennium B.C., we hear the age-old complaints about poverty, taxes, oppressive rulers, governmental harassment, and other ills of cultural complexity. Little wonder that from these early records we also see the beginnings of Utopian movements, made up of those who yearn for a return to a hypothetical simpler place and time, when political, religious, and economic hierarchies did not exist, when all people were considered of equal worth, where all had an equal share, and where no one had power over anyone else.

Many of the perceived pathologies in modern societies are attributed to greed, but one must at least consider the premise that human selfishness and greed are “engines” that have propelled humanity to ever-more-complex socioeconomic and political forms. The biblical sentiment that “the love of money is the root of all evil” is no doubt true, but the love of money also has had some beneficial side effects. Novelist John LeCarré explores this theme in one of his books in the form of an argument between two characters, one who is sickened by the excesses of greed, waste, and inequity in capitalistic “pigs in clover” societies, and another character who defends the West on the premise that capitalism uses human greed and acquisitiveness to produce goods and services that, ultimately, enhance human life, dignity, and liberty.

In the last couple of decades, eastern Europe has begun a painful transition, from centralized quasi-socialist systems to more capitalistic market-oriented economies—or at least that is the intention of the politicians and planners. The impetus for this change appears to be the simple fact that economies based on self-interest have been far more productive than other forms in terms of goods and services. The last great bastion of communism, China, too has found that it can sustain impressive growth rates by allowing individuals to profit from their own labor and initiative, with the result that barely 20 years after the Maoist Red Guards terrorized any individual not totally subservient to the idea of a pure theoretical communism, Chinese “millionaires” are emerging in ever-greater numbers.

Only the future will reveal if the great complexity and integration that seems to make societies highly productive and “efficient” can be achieved without the stimulus of individual and corporate competitiveness, and without socioeconomic inequalities.

TRADITIONAL SOCIOCULTURAL TYPOLOGIES

Analyzing different kinds of societies and comparing them implies that one can put them into categories that have some analytical significance and then use their similarities and differences to focus on the determinants of cultural variation. Such studies are, for obvious reasons, almost exclusively the products of highly complex societies.

The basic issues here are the concepts of “cross-cultural comparisons” and “ethnographic analogy.” To what extent can we extrapolate from recent and present societies to the past? Archaeologists have been heavily influenced in their conceptions of ancient cultural complexity by ethnographers who have studied not just hunter-foragers, but other people who live in social organizations and with economies that may resemble those of our extinct ancestors.

Although the ethnographic categories formulated by anthropologists such as Elman Service and Morton Fried were devised principally to classify the diversity of extant and recent
cultures, their ideas have been widely applied by archaeologists to prehistoric societies. The use of ethnographic data to categorize ancient societies that exist only as rubble and discarded artifacts can, of course, be misleading, particularly since “it . . . seems possible that every hunter-gatherer or tribal society in the world was influenced to some degree by contact with technologically more advanced societies prior to ethnographic study.”

In some ways social typologies and taxonomies are a hindrance to good archaeological analysis because they inexactly lump together societies on the basis of unstated and sometimes irrelevant criteria. But almost all archaeologists continue to think of the archaeological record in terms of three or four basic types of societies. These types are abstractions that may fit precisely no particular case, especially with regard to extinct societies, but they are convenient summaries of the kinds of social differences archaeologists think were involved in the evolution of complex societies.

**Egalitarian Societies: Bands and Tribes**

As we noted in chapters 3 and 4, the archaeological evidence is undeniable that for the first three million years of our history, we lived in what anthropologists generally—if inexactly—call band societies. There is great variation in these societies, and all have been influenced to some extent by industrial cultures. Eskimos who use snowmobiles to hunt bears and Kalahari Bushmen who steal their neighbors’ cows, for example, are often seen as distorted remnants of band societies because when first described by explorers and anthropologists, they exhibited far fewer signs of “contamination” by industrial societies.

Archaeologists have developed a sense of what a “band” society is mainly by distilling and combining ethnographic studies of societies in many different parts of the world. The Copper Eskimo, African Pygmies, Kalahari Bushmen, and Australian Aborigines are usually cited as examples of this social form. In contemporary and recent band societies, the most salient characteristic seems to be that there are only minor differences among members of the group in terms of prestige; in these societies no one has any greater claims to material resources than anyone else. In most of these societies, older males who are good providers gain the most respect, but they have little or no power to coerce other band members. This lack of social differentiation is tied to their economy: Band members spend most of their lives in groups of 15–40 people, moving often as they exploit wild plants and animals. Julian Steward concluded that most, perhaps all, bands were patrilineal and patrilocal—that is, people reckoned their descent primarily through their father and newlyweds lived with the husband’s band. Whether or not this is true is still a major issue in ethnography, and many ethnologists think that band societies can be extremely flexible in where newlyweds live, for example, based on available resources and other factors. In any case, this is the kind of thing archaeologists can never be sure about when applying the model of a band society to a scatter of stones and bones. The division of labor in bands is generally along basic age and sex lines, and the economic structure is a sort of practical communism: Money is not used, and exchange usually takes place between people who consider themselves friends or relatives. This gift-giving is usually done very casually, and relationships are frequently cemented by offers of reciprocal hospitality.

In the context of the topic of this chapter, the origins of cultural complexity, one of the most important things about bands is that they appear to be largely functionally redundant. That is, these individual bands are very much alike in their social organization.
and economy, and each individual is able to do almost everything needed for the group to survive and reproduce itself. Each band contains, in the form of its members’ skills, all of the expertise it needs to function and persist. As we shall see, it is the change from this kind of functional redundancy to functional interdependence that seems to be at the heart of the origins of complex societies.

And, in any case, the question remains: How similar are (or were) these ethnographically described groups to our hunter-forager ancestors—whose lives constitute 99 percent of our human past?

 Tribe is the rather ambiguous term that anthropologists have used to label social groupings that are larger than band societies but generally not particularly complex in terms of economy, social hierarchies, law, and so forth. People living in tribes are often subsistence farmers, such as the Pueblo Indian maize farmers of the American Southwest or New Guinea yam cultivators. Tribes often have a nominal leader—usually male—who acts to redistribute food and perform a few minor ceremonial activities, but, as in band societies, he has no privileged access to wealth or power. He leads only by example and serves at the pleasure of the tribe. Exchange in such societies is still usually accomplished through reciprocal trading within a kinship structure. Typically, tribal societies are larger and more territorial, have more elaborate ceremonialism and kinship systems, and make more distinctions in terms of prestige than band societies.

In many cases, tribes may have been transitional forms, appearing where farmers were in the transition to more complex forms of social organization, and in some cases tribal societies may have been direct outgrowths of the influences of or contacts with state societies.

Stratified Societies: Chiefdoms

Timothy Earle defines chiefdoms as “regionally organized societies with a centralized decision-making hierarchy coordinating activities among several village communities.” For many authorities, “chiefdoms” are different from bands and tribes both in degree and in kind. Chiefdoms are based on the concept of hereditary inequality: In a chiefdom, if you are the son of a chief, chances are you will become chief no matter how unsuitable you may be; and if you are able but born a “commoner,” your options in life will be narrowly circumscribed.

These differences in prestige usually correlate with preferential access to wealth; chiefs and their families can claim the best farmlands or fishing places as well as more food and more exotic and expensive items than “commoners.” They are often regarded as divine and typically marry within noble families. The economies of these societies often show a greater degree of specialization and diversification than those of tribes or bands. Craftsmen exist, but they are usually also farmers, and there is no permanent class of artisans as there is in states. Chiefdoms are much larger than tribes, often involving thousands of people. Examples of chiefdoms include the pre-contact Nootka of British Columbia and early Hawaiian societies.

Earle stresses the ideological bases of chiefdoms. He notes that chiefs typically create sacred places, such as ceremonial areas; they also use symbols of individual power and position in burial cults, and their mortuary symbolism often includes expressions of military might. To some extent, recent archaeological research on chiefdoms has focused on the political and ideological activities of chiefs, rather than just the simple deterministic factors of agriculture and economy that permit the evolution of chiefdoms. In fact, the literature on chiefdoms clearly mirrors a major conceptual trend in contemporary archaeology: Traditional analyses of chiefdoms have concentrated on the functionalist and adaptive
aspects of these societies, such as how chiefs may have been responsive to the problem of redistributing resources in rapidly growing societies; but contemporary approaches stress the varieties of ways in which chiefs gain and maintain control.

The archaeology of chiefdoms is a particularly valuable endeavor, as Dick Drennan points out, because in some cases they seem to have been a transitional phase leading to states, and elsewhere they were “terminal,” in the sense that the indigenous developmental factors seem to have produced chiefdoms but not states. Drennan defends the use of the concept of chiefdoms on various grounds. He notes that “Their story is, in one respect, the story of the emergence of substantial inequality, but it has a number of other aspects as well, such as spatial and demographic scale, centralization, economic specialization, exchange, supralocal political organization. . . . Very broadly speaking, these aspects are known to be correlated with each other.”

**Stratified Societies: States**

What a *state* is depends to some extent on what an analyst sees as the causal factors in producing cultural complexity. The term “stratified” refers to the division of the society into hierarchically arranged socioeconomic classes and political elites. Generally, states are assumed to have centralized governments composed of political and religious elites who exercise economic and political control. In addition to being larger in population and territory than other societal forms, states are characterized by having full-time craftsmen and other specialists, whose products are distributed in part through an integrated national economy. The state codifies and enforces laws, drafts soldiers, levies taxes, and exacts tribute. States have powerful economic structures, often centered on market systems, and they have a diversity of settlement sizes, such as villages, towns, and sometimes cities.

Wright and Johnson, for example, define the state in terms of a political polity that has at least three levels in the decision-making hierarchy, such as village headmen, provincial governor, and national leader. Early states formed essentially independently in at least six areas of the ancient world: Mesopotamia, Egypt, the Indus Valley, China, Mesoamerica, and Peru; ethnographic and historical accounts of state formation include cases in Africa, Madagascar, and various other places (Figure 7.2).

Scholars use the same term, “state,” to refer both to ancient Egypt and to the United States, for example, despite their gross differences in complexity. Yet in a sense the differences between ancient Egypt and the modern United States are matters of degree. The level of occupational specialization in the contemporary United States is much greater than in ancient Egypt, of course, but it is mainly an elaboration of the same basic economic principle. Some scholars, however, use the term “preindustrial state” to distinguish ancient states from those of the industrial era.

Many of the early states seem to have been involved in competitive relationships with other, adjacent states, and for long periods this apparently limited their size and power. Eventually, however, in all the early centers of state formation these competitive relationships broke down and one state was able to increase its size and influence drastically—usually so rapidly that it had few competitors. In fact, its ultimate size seems to have been limited only by the level of its communications technology and its administrative efficiency.

States of this type first appeared in Mesopotamia, Egypt, and the Indus Valley toward the end of the fourth millennium B.C. and within a thousand years thereafter in China. The
Inka state of Peru and the Aztec state of Mexico also seem to have achieved imperial dimensions just before the arrival of the Europeans, in the sixteenth century A.D.

**CONTEMPORARY APPROACHES TO SOCIOCULTURAL TYPOLOGY**

Rather than think of the archaeological record primarily in terms of bands, tribes, chiefdoms, and states, it is probably more accurate to see the record as a great continuum of variability, reflecting the unique flexibility that humans bring to any situation. We can be certain the australopiths had no academic conferences on mathematics or international labor federations, and no great ancient state was founded principally on caribou hunting. But most other generalizations about these social typologies are likely to be imprecise.

The important point here is that simple categories such as “bands,” “tribes,” “chiefdoms,” and “states” are static descriptive types that are not of much use in analyzing the origins and functions of the phenomena these labels loosely describe. Labeling ancient Egypt a “state,” for example, based on the inferred appearance of characteristics such as centralized government or a class-structured society, is more a description than an analysis. To many scholars such typologies are inexact, atheoretical categorizations of a continuous and multidimensional underlying variability. McGuire argues that such “an approach inevitably degenerates into taxonomic arguments: What is a simple society? What is a state?”

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**FIGURE 7.2** Locations of some of the world’s first highly complex civilizations and states.
How do we decide where to draw a boundary line that defines a “state” in such a pattern of continuous variability? The critical problem with these archaeological analyses of cultural variability is that there is no powerful theory that tells us what the proper units of analysis are and what principles explain their functions. Compare this situation to biology: Darwinian theory and modern genetics give biology a powerful explanatory theory that reveals much about the history and operations of the biological universe. Darwinian theory and modern genetics tell the researcher what units to use (genes, cells, populations, etc.) and explain change over time and space in the biological universe. Archaeology has no comparable theories and thus has no comparably effective units or principles of analysis. Some scholars argue that because archaeology deals with people (even if they are dead) and unique cultures (even if they are extinct), it will never be possible to have comparably powerful theories. Others argue that we already have the beginnings of powerful theories—a position discussed later in terms of Marxism and Cultural Evolutionary theory.

In the face of these ambiguities, many archaeologists have resorted to trying to break down typologies as exemplified by the “bands,” “tribes,” “chiefdoms,” and “states” paradigm and to examine the underlying variability in selected aspects of societies. Numerous archaeologists, for example, have focused on the concepts of specialization and exchange. Cathy Costin, for example, has developed a complex categorization of how societies produce and distribute goods and services. Similarly, Elizabeth Brumfiel and Timothy Earle break down the concept of occupational specialization into at least four dimensions: (1) specialists can be independent or attached, in the sense that a potter, for example, can supply pots for an unspecified, changing market, perhaps just for members of his or her own village, or for the larger region; or the potter can be attached to a particular patron and make ceramics only for a given noble family or governing institution; (2) specialists differ in the nature of their products, in that they can produce subsistence items, such as grain; wealth, such as ritual feather headdresses or gold bracelets; or services, such as military duty or religious ceremonies; (3) specialists differ in the intensity of production, in that they could be part-time hunters, who contribute an occasional deer to the village economy, or full-time weavers, who do little else but produce textiles for trade; (4) specialists also differ in the scale of production, in the sense that in some economies a large group of people, or a village, or even a region may specialize in something, such as salt production, while in other cases, one or two people may produce a particular good or service. Brumfiel and Earle also note that there are many different kinds of exchange: between an elite and its supporting citizenry, among different elites, and in the wide variety of political and social arrangements in which subsistence goods and nonsubsistence “wealth” can be circulated within and among communities, regions, and larger political entities.

Another aspect of contemporary rethinking of typologies of ancient societies has to do with the notion of the “collapse” of civilizations. Many scholars over the centuries have thought of civilizations almost as if these societies were organisms, with a birth, life span, and death, or collapse. And there certainly are some examples in the past of cultures that appear to have quickly and pervasively lost some of their unique, fundamental cultural expressions, such as the Maya civilization of Mesoamerica (see chapter 13). But in most cases the collapse of civilizations seems to involve not a collapse and mass extinction of people and their cultural ideas, but rather adaptation, sometimes in the form of a process—to use Mark Kenoyer’s terms—of decentralization and localization, in which political authorities lose their ability to control people and economies. These periods of decentralization can in fact involve periods of population growth, rather than decline, and
in many cases decentralization was followed by a larger, more politically potent polity in the same area. We will return to this point in later chapters.

Recently, archaeologists have also moved beyond the typology of “bands,” “tribes,” “chiefdoms,” and “states” by developing models that feature the actions of people—thereby offering interpretations that cross-cut the static categories of “bands,” “tribes,” “chiefdoms,” and “states.” One example is the work of Gary Feinman and his colleagues in the American Southwest. They use the concepts of corporate and network strategies of political action, which allow for the concurrent presence of equality and hierarchy in any society, regardless of whether it is classified as complex or simple in terms of social organization. A network strategy is characterized by a centralized leadership and access to wealth is held by only a few people in the society. These individuals use their networks to maintain and increase their authority and power and may hold ostentatious displays or adorn themselves ostentatiously with prestige items. A corporate strategy, on the other hand, is typified by much wider access to wealth among the people of that society and power and authority tends to be shared among many individuals. Societies with a corporate strategy have communal projects such as rituals—fertility, rainfall, successful hunts—focused on benefits to all members of society, as well as the construction of public works. Corporate societies are integrated through the use of ideology. But such societies are not necessarily egalitarian; hierarchies do exist, such as differences in influence and authority between various social groups.

Analyses such as that of Feinman and his colleagues demonstrate the potential for considering the highly variable nature of how human societies are organized. We will undoubtedly see additional examples of these cross-cutting sociocultural typologies as archaeologists continue to focus on the issues involved in the origins of and explanations for complex societies.

THE ARCHAEOLOGY OF COMPLEX SOCIETIES

Archaeologists regularly talk about the band societies of the Middle Pleistocene and the early chiefdoms of prehistoric Mesopotamia, but we do not have these societies trapped in amber; we have only their artifacts, and we use the words “bands,” “tribes,” “chiefdoms,” and “states” to describe them only with some license. To deal with this problem, archaeologists typically equate these terms with specific categories of physical evidence.

At the heart of many conceptions of cultural complexity is the idea of changing forms and levels of matter, energy, and information exchange. Each person and each society exists because it is able to divert energy from the natural world, through food sources and technology, and some of these changes are selective advantages. The greater the amount of energy a culture can capture and efficiently utilize, the better its competitive chances. And we can measure this in part by measuring such variables as population density and agricultural and commodity productivity.

Leslie White’s equation of cultural evolution, with the amount of energy captured per person per year, has been widely criticized, but it remains of interest. The fundamental data of archaeology are usually the stones and pots and other implements with which people converted energy to their purposes—the very appliances of energy use, in other
words, that White stressed. And every early state left a record of its economic basis in the form of such things as irrigation canals, stone tools, and agricultural fields. Yet in essence every ancient state was also an idea. The Egyptians viewed their state and culture metaphorically as a living organism, an organism of which they were all a part, from the pharaoh himself to the lowliest slave. As Egyptologist Barry Kemp has noted, for example, the ancient Egyptians’ vision of their state as an organism is vividly portrayed on the throne base of Pharaoh Senusret I (1971–1928 B.C.) (Figure 7.3). Here, two potent competing Egyptian deities, Seth and Horus, are shown tying together the plants symbolic of Upper (southern) and Lower (northern) Egypt, the lotus and the papyrus, respectively, reconciling their conflicting powers and thereby forming the Egyptian state. Note that the plants and the column supporting the name of the king (in the “cartouche,” or the oval inscribed around the letters in the king’s name) form a vivid representation of a human windpipe and lungs—a person, for all intents and purposes.

All other early states had a similar intellectual foundation—an ideology that embraced the people and elements of the state. For all early states, the process of analyzing them archaeologically requires that the material remains of these cultures be interpreted in the context of their ideologies.

Architecture

Perhaps the most obvious differences between the archaeological record of the Pleistocene and that of the last five or six millennia is the presence in the latter period of massive amounts of residential and public architecture. All early states built palaces and tombs (Figure 7.4); hunter-gatherers occasionally built permanent structures but rarely on the same scale as agriculturalists.

The appearance of substantial houses and other forms of residential architecture is mainly a reflection of economic productivity: If a group produces or gathers sufficient resources within a small enough area, it can become sedentary, and in most climates shelter
from rain, sun, heat, cold, and other elements is worth the cost and effort required to build it.

Soon after permanent communities appeared in both the Old and New Worlds, the architecture of these settlements began to reflect changing levels of cultural and social complexity. Whereas the first houses in all communities were probably built very much alike and had the same contents, later communities incorporated residences that varied considerably in expense of construction and furnishing. Ethnographic evidence leaves little doubt that this architectural variability reflects economic, social, and political differentiation within the community, but the essential point is that, relative to earlier societies, there was a change in patterns of investment of societal energy and resources.

Similarly, once residential architectural variability appeared in many of these early communities, “monumental” architecture also appeared. Pyramids, earthen or brick platforms, “temples,” “palaces,” and other constructions protrude from the ruins of ancient settlements from North China to the high mountain valleys of Peru. Here, too, the important thing is that the ability and incentive to make these investments are radically different from the capacities of Pleistocene bands, in that they imply the ability of some members of the society to control and organize others.

### Mortuary Evidence

For much of its early history archaeology was almost synonymous with grave-robbing. Its early practitioners were primarily concerned with finding ancient burials so that they could loot the beautiful goods that people so often have lavished on their departed.

Objects carefully enclosed in burials are often much better preserved than those found in houses or tool-making sites. Also, death for our ancestors, as for ourselves, was invested with more ritual than any other cultural aspect. In many burials we have, so to speak, the crystallization of complex religious and social forces, as well as reflections of social status. It is in their great variability that mortuary customs are so informative: Corpses can be buried, burned, ritually exposed, or entombed; they can be laid out flat, on their sides, or flexed; they can be oriented to the cardinal points of the compass or to a geographical feature; they can be placed in earth, in caves, in crypts, in trees, or on refuse heaps. Burial contents can range from nothing to enormous quantities of jewelry and furnishings and scores of sacrificed human attendants and animals (Figure 7.5).
It is a fundamental archaeological assumption that a correlation exists between the level of social complexity of a people and the way they treat their dead. Ethnographic studies show that the correlation between subsistence strategy, social organization, and mortuary practices is strong: Bands and tribes differed comparatively little in mortuary practices, while sedentary agriculturalists varied their practices according to a wide range of age, sex, and status distinctions. These correlations are strong but not perfect: In some cultures, including our own, some of the most important and wealthiest people are cremated and leave no material record of their passing, their status, or their wealth.

The presence of juveniles buried with rich grave goods has been given considerable importance in defining the cultural complexity of ancient societies because such burials are considered indications of ascribed status: We assume that young individuals could not have earned these goods on their own. Similarly, some ancient cemeteries have three or four distinct classes of burials. Some types are well constructed of stone, have rich grave goods, and are centrally located, while others are simple graves with little in them except the corpse. And it is a reasonable inference that these divisions correspond to different economic and social classes.

**Functional Differentiation and Integration**

In chapter 15 we will see that the aboriginal Americans of the Mississippian culture who built the huge mounds that dot the eastern North American river valleys had great trade systems, intensive maize agriculture, thousands of inhabitants, and a mortuary cult that involved human sacrifice and great expenditures of wealth on dead leaders—yet most archaeologists do not consider that these societies constituted “states” because these Native Americans were almost all full-time maize farmers, with only a few specialists: in religion, hunting, warfare, and other areas. In some definitions of cultural complexity, the essential component is the division of a community into functionally interdependent entities of such complexity that no small group of people can maintain all that community’s activities. This is important because it produces a situation in which societies survive or die out as societies, as groups; in contrast, among hunter-gatherers the focus of selection is usually the individual, or at most the 12 or 15 people with whom each individual spends most of the year. In other words, the unit of “selection” changes with cultural complexity. Contemporary North Americans, for example, are extremely interdependent, in the sense that we are all reliant for our continued existence as both physical individuals and social organizations on the 3 or 4 percent of the population that produces nearly all our food.

To translate this sense of functional interdependence into archaeological terms, we must look for concentrations and distributions of artifacts indicating a certain level of activity specialization. In early agricultural villages, each house and each group of houses had approximately the same contents in terms of numbers and types of ceramics, stone
tools, figurines, and garbage. But in later, more complex societies we find concentrations of artifacts that clearly represent such things as pottery or stone-tool manufacturing workshops, indicating that people specialized in these activities. Again, we infer that they were specialized, but the significant point archaeologically is that certain classes of artifacts are found in places, volumes, and diversities far different from what would be produced by, say, a hunting-and-gathering group. Certain differences will also be evident if we compare the contents of settlements. Some settlements might specialize in salt-making, or barley agriculture, or pottery manufacture. This variability in the artifacts found within discrete but contemporary sites is a key element in our identification of cultural complexity.

**Settlement Patterns**

In addition to measuring social complexity by looking at objects excavated at specific sites, we can also look at how settlements are distributed spatially. First, we can examine variability in settlement size and configuration. Early Southwest Asian agricultural villages were almost all approximately the same size, but settlements there several thousand years later were of many different sizes, ranging from a few hundred square meters to several square kilometers. Similarly, the basic shape of the settlements changed; some were apparently fortified rectangular compounds, while others were just five or six mudbrick houses. Thus, any archaeological analysis of cultural complexity will involve measuring the variability in site size and shape in a large sample of contemporary sites.

Second, we can look at the placement of settlements relative to the environment and to each other. A major part of the cost of exploiting any resource is the distance it must be transported. This applies equally to the deer hunted by Paleolithic bands and the irrigated rice of ancient China. It also applies to the cost of making decisions about resource production, movement, and storage. With primitive communications systems, for example, an official in one settlement cannot make many timely decisions about the agriculture or craft production of 30 or 40 other settlements many kilometers away because the cost of gathering the relevant information and accurately and rapidly acting on it is too high: He would need teams of observers and relay runners.

As a consequence, some arrangements of settlements are more common than others under certain conditions, and we can tell something about the relationships between settlements by analyzing their respective locations. On a relatively broad agricultural plain, towns and villages that exchange goods and services tend to be placed so as to form a pattern of interlocking hexagons (Figure 7.6) because this arrangement is especially efficient if there is a high level of movement of goods and people among the various settlements.\(^{38}\) In our discussion of archaeological evidence relevant to the origins of cultural complexity, we will see several instances where ancient settlements are arranged in a hexagonal pattern or some other form. Here too it is relatively unimportant whether or not the distribution of ancient settlements corresponds exactly to the patterns observed among present ones. What is important is that we know a major change in settlement patterning has occurred over time. Paleolithic hunters and gatherers and early agriculturalists lived in locations determined largely by the availability of material resources. But later, in some areas of the ancient world, settlements began to be located with less regard for natural resources and more concern for trade routes, political frontiers, and administrative networks. Again, these changes occurred in settlements that were also building monumental structures, achieving denser
population concentrations, and evolving some or all of the other elements of cultural complexity.

For these reasons, archaeological settlement pattern analyses have provided significant insights into the nature of ancient social, political, and economic changes.\footnote{One of the continuing debates in archaeology is the relationship of \textit{urbanism} and state societies. Some civilizations, such as those in Mesopotamia, seemed to have been formed out of cities, while others, such as Egypt, remained largely non-urban for much of their history. Trigger evaluates the attempts to place examples of the pre-industrial city on a single continuum and concludes that, while we can identify key variables that link these examples, the variables combine “to shape an indefinite number of trajectories or paths of pre-industrial urban development, any one of which may be associated with a particular civilization.”\footnote{He identifies three variables of particular importance: (1) The degree of economic complexity of the society in which the city is found, as measured in terms of the degree of division of labour in craft production, the increasing number of people divorced from food production . . . , and the increasingly large areas and numbers of people that are effectively linked by routine economic interaction . . . ; (2) the different strategies by which urban dwellers obtain food from their hinterland . . . ; (3) The political context within which cities occur.}}

It may seem as if the elements of cultural complexity we have sketched here are mainly found in the urban centers and ceremonial centers of early states, but this is not so. In Egypt, for example, the remains of tiny provincial villages appear to reflect a simple agrarian life, undisturbed by the events and forces emanating from the center of the Egyptian state; but a closer look at the remains of these provincial communities reveals many reflections of the state as a whole. Artifact styles are those of every other community in the state, inscribed clay commodity sealings bespeak a commercial connection to the royal court, and trade items reflect standardization and integration into the national and international economy. Similar patterns are observed in most early states.\footnote{To summarize archaeological approaches to determining cultural complexity, we have several specific lines of evidence: We can look for changes in architecture, technology, mortuary complexes, and settlement size and location; and we can attempt to link these changes to different levels and forms of energy and information usage and overall thermodynamic capture. Most of the rest of this book is a summary of how different cultures in various parts of the world made the transition to complexity, and this summary is based on these forms}
of evidence of evolving complexity. But before considering the specifics, let us look first at the general problem of explaining these evolutionary patterns. As in the case of the origins of cultural behavior itself, and the appearance of agricultural economies, we would like to have some kind of theoretical constructs that will help tie all these separate early states together as members of a class and then will account for the time and location of their appearance.

**EXPLAINING THE EVOLUTION OF CIVILIZATIONS: THE SEARCH FOR CAUSES**

The earliest scholars believed the rise of cities and states and other elements of evolving cultural complexity required no explanation because they assumed these developments to be mainly or entirely the work of the gods. The scholars of the Enlightenment and subsequent centuries usually explained the origins of cultural complexity in evolutionary terms. Drawing a parallel with the biological world, Europeans felt that competition between human societies was inevitable and that to a large extent they had already “won.”

Darwin thought that “civilized nations are everywhere supplanting barbarous nations, excepting where the climate opposes a deadly barrier; and they succeed mainly, though not exclusively, through their arts, which are the products of the intellect. It is, therefore, highly probable that with mankind the intellectual facilities have been gradually perfected through natural selection.”

John Locke saw the cultures of North America as exemplifying a moral and philosophical lesson:

> There cannot be a clearer demonstration of [European cultural superiority] than . . . [the] several nations of the Americans . . . , who are rich in land and poor in all the comforts of life; whom nature having furnished as liberally as any other people, with the materials of plenty, i.e. a fruitful soil, apt to produce in abundance, what might serve for food, raiment, and delight; yet for want of improving it by labor, have not one hundredth part of the conveniences we enjoy; and a king of a large and fruitful territory there, feeds, lodges, and is clad worse than a day-labourer in England.

Even in the early part of the twentieth century, many scholars believed that the process of cultural evolution of the whole world was to some extent a result of the rise of the West. The ancient states of China, India, and even the Americas were thought to have been prodded to higher achievements by contact with the European/Middle Eastern core areas. Thor Heyerdahl’s expeditions, for example, perpetuate this notion that all civilizations are derived from a Middle Eastern, or at least Old World, source.

The coincidence of the village farming way of life with the rise of cultural complexity represented to some scholars a sufficient explanation of the evolution of cultural complexity. People then finally had enough leisure time and sedentary habits, it was argued, to develop architecture, art, writing, cities, and the rest of “civilization.” The problems with this explanation are apparent even with a superficial examination. Many agricultural groups apparently never developed into “states,” while at least one early complex culture (in Peru) may have evolved without a primary agricultural economy. In any case, many hunters and gatherers have more leisure time than did primitive agriculturalists.
Techno-Ecological Hypotheses About the Origins of Civilizations

For many analysts of early civilizations, the search for an explanation of how these cultures evolved in highly similar yet distinctive ways logically should begin with a consideration of these similarities and differences. What, in other words, did these early civilizations share in the way of, for example, climate, ecology, demographics, or any other factors, that might explain why it was Mesopotamia, Egypt, the Indus Valley, China, Mesoamerica, and Andean South America that gave rise to the first great states and civilizations, and not Australia, Polynesia, Scandinavia, California, Japan, or Scotland?

If you knew nothing about the archaeology of early complex cultures and began to compare them, chances are you would be struck by the same facts that so forcefully impressed Julian Steward, V. G. Childe, and other early scholars who studied the problem of cultural complexity origins: Most of these cultures developed in similar physical environments and were based on similar economies. The earliest states and empires arose for the most part in arid or semi-arid environments where crops like wheat and barley could be grown without having to turn over thick grasslands or fight back lots of competing vegetation and where agricultural production could be easily intensified, either by canals, terracing, building up fields in lake beds, or some other method.

Thus, you might look for one or two key factors that had operated in each of these early societies to cause civilization in a rather mechanical fashion, in which these civilizations were the outcome of the proper mix of population growth, agricultural intensification, trade, and the peculiarities of the human mind.

In some ways it is easy to imagine societies becoming more complex once the first elements of complexity are in place. A powerful chief, for example, could become a national king if he were successful in battle and conquered a large, exploitable hinterland like the Mesopotamian Alluvium. And once a city had organized its production and distribution of pottery and grain, it seems an easy step to extend these administrative institutions to fish, beer, plows, and tax revenues; and once the first royal tombs filled with grave gifts are constructed, the building of great mortuary pyramids seems a fairly simple extension of the basic idea.

But what could produce the first irrevocable breaks with the strong traditions of practical communism and social equality of the first agricultural communities?

To begin with the most obvious factor, as noted earlier, even though intensive agriculture is the foundation of almost all early complex cultures, it is not a sufficient explanation in and of itself. Therefore most attempts to understand the origins of complexity try to link specific agricultural patterns with other factors. Anthropologist Stephen Athens notes that agriculture is an effort to maintain an artificial ecosystem, and in some climates, such as arid or temperate environments, the plowing, irrigating, and other efforts needed to maintain agricultural ecosystems are so great that it is doubtful that “the more intense forms of agricultural production would be developed or become adopted unless there was a compelling reason to do so.” Athens maintains (as does Ester Boserup) that the only reason sufficient to account for the enormous efforts required to maintain agricultural systems would be an imbalance between the population and available food supply.

In both arid and temperate environments, annual agricultural production can vary greatly because of crop disease, weather, and other factors, and there is some incentive to
try to stabilize production in these areas by intensive weeding, land leveling, augmenting the irrigation system, and other tasks that require a great deal of labor. In arid, semi-arid, and temperate regions, the growing season is often sharply restricted by the weather, and thus “cultivation . . . does not permit cycling of plantings in such a way as to equalize the labor requirement throughout the year.” Each spring, for example, many different activities might have to be performed to avoid poor harvests, and under these conditions, according to Athens, there is a strong selection for certain kinds of cultural complexity. Increasing the territorial size of the cultural system would help meet crises brought on by a flood or some other disaster striking a single village; individuals and villages might also become specialized in trades and crafts to make production more efficient; and, perhaps most important, it would be advantageous to have a hierarchical administrative organization, so that work and production could be closely and efficiently administered.

Many explanations of the evolution of complex societies combine certain forms of agricultural intensification with population growth. But what causes human population growth? The immediate cause of population growth is well-known, but the more important question is: What are the causes and effects of the gradual rise in population densities and total population that all early civilizations experienced? George Cowgill remarked that many analysts of cultural evolution have assumed that a pervasive and powerful factor in human history has been the strong tendency of human populations to increase up to the point where serious shortages of important resources are in the offing and that experience or anticipation of such shortages has been a major factor, or even the dominant factor, in stimulating intensification of agricultural production and other technical and social innovations. In extreme versions, the entire history of complex societies and civilizations is seen as hardly more than the outcome of measures that began as ways of coping with problems posed by relentless human fertility—what might be called the “strictly from hunger” point of view of developmental processes.

It is easy to see the attractiveness of these ideas, for if one examines history, a strong positive statistical correlation between population growth and cultural complexity is evident. The relationship between human population growth and cultural complexity may not be one of direct cause and effect, however, for correlation does not necessarily demonstrate causation. Moreover, even if the relationship is in some sense causal, it may be that the evolution of cultural complexity leads to rising population densities, rather than the reverse. Empirically, too, there seem to be some problems with the idea that human population growth somehow caused the evolution of cultural complexity. All societies have evolved mechanisms like migration, abortion, infanticide, marriage rules, and contraceptive techniques to control population growth, and thus we might expect people faced with stresses because of overpopulation to impose population controls rather than “invent” cultural complexity.

It is worth noting that the greatest recent falls in fertility rates come not as the result of food shortages or technical advances in contraception, but as correlates of increasing educational levels for women, greater social mobility, increasing urbanization, the expanding role of women in the work force—in sum, the lessening of women’s dependence on husbands and children for support.

The actual causal mechanisms by which these factors are translated into reduced fertility are not clear, however. In any case, there is no evidence human populations have ever increased at anything approaching the biologically feasible rate. If the world’s
population 5,570 years ago were only 1,000 people and their annual rate of increase since then were 4 per 1,000 people—a relatively moderate growth rate—the world’s present population would be between seven and eight trillion. Obviously, human populations in the past have been under fairly stringent natural and cultural controls, and if we are to link population growth to increasing cultural complexity, we must specify additional factors or principles in causal “models” of how these variables were related.

It should be stressed, however, that most of the following “models” of cultural evolution are relatively simple, and many current scholars consider them incomplete or flawed as explanations of early complexity.

IRRIGATION AGRICULTURE AND THE EVOLUTION OF CULTURAL COMPLEXITY

Perhaps the most obvious common denominator of ancient complex societies was extensive irrigation systems. Even today aerial photographs of Mesopotamia, Peru, and most other areas of early state formation clearly show the massive remnants of these ancient structures, and similar constructions were built by early “chiefdoms” in such places as Hawaii and southwestern North America (Figure 7.7). This led some scholars to conclude that the construction and operation of extensive irrigation systems were at the heart of the origins of complex societies. A particularly influential proponent of this view was Karl Wittfogel, whose *Oriental Despotism* is a detailed excursion into comparative history and sociological analysis.51

Wittfogel notes that the limiting factors on agriculture are soil conditions, temperature, and the availability of water. Of these, water is the most easily manipulated, but its weight and physical characteristics impose limitations on this manipulation. To divert water to agricultural fields requires canal systems, dams, and drainage constructions that can only be built efficiently with organized mass labor; and, once built, irrigation systems require continued enormous investments of labor and resources to operate, clean, and maintain them. In addition, these systems necessitate complex administration and communication because crucial decisions have to be made about construction and repairs, water allocation, and crop harvesting and storage. Thus, a complex irrigation system under ancient conditions required cooperation and centralized hierarchical decision-making institutions.

Irrigation systems also have the intrinsic capacity to

![Figure 7.7](image_url) The Hohokam of Arizona built an extensive canal system to carry water to their agricultural fields. Some of these can still be seen today as large “ditches,” only partially filled in after hundreds of years of abandonment.
create another element in the process of the evolution of complex societies: wealth and status differentials. Fields closer to main rivers are better drained and more easily irrigated and possess a higher natural fertility; thus control of such lands would create immediate wealth differentials. Correspondingly, wealth and status would most likely accrue to the elites of the decision-making hierarchies. Wittfogel concludes that irrigation-based agriculture has many other effects on a society. It encourages the development of writing and calendrical systems, so that records can be kept of periods of annual flooding, agricultural production statistics, the amounts of products in storage, and the allocation of water. Construction of roads, palaces, and temples would also be encouraged because the mobilization of labor for the canal works could be generalized to these other endeavors very easily, and roads would contribute to the movement of agricultural produce and to the communication required for efficient operation of the systems. The construction of temples and palaces would also serve to reinforce the position of the hierarchy. The creation of standing armies and defensive works would also likely follow because irrigation systems are extremely valuable but not very portable, and they are easily damaged by neglect or intentional destruction.

Wittfogel’s hydraulic hypothesis still has some currency, but there seem to be logical and empirical problems with his ideas as a general model of the origins of cultural complexity. Simple societies in several parts of the world have been observed operating extensive irrigation works with no perceptible despotic administrative systems or rapid increases in social complexity. More damaging to Wittfogel’s hypothesis is the scarcity of archaeological evidence of complex irrigation systems dating to before, or to the same time as, the appearance of monumental architecture, urbanism, and other reflections of increasing cultural complexity, in Southwest Asia and perhaps other areas where complex societies appeared independently and early.

Nonetheless, the difficulties of dating irrigation canals, inadequate archaeological samples, and other deficiencies of evidence are such that we cannot conclude that irrigation was unimportant in virtually any case of early cultural complexity.

WARFARE, POPULATION GROWTH, AND ENVIRONMENTAL CIRCUMSCRIPTION

“War is the father of all things,” said Heraclitus, and, given its frequency in human affairs, we should not be surprised that many scholars see warfare as a natural adjunct of population growth in driving cultural evolution. In the film The Third Man, Orson Welles—justifying his profiteering in postwar Vienna to Joseph Cotton—says, “in Italy for 30 years under the Borgias they had warfare, terror, murder, bloodshed, but they produced Michelangelo, Leonardo da Vinci, and the Renaissance. In Switzerland, they had brotherly love, they had 500 years of democracy and peace. And what did that produce? The cuckoo-clock.”

Welles’s character was stating what for many is an uncomfortable truth: Human competition seems to be a powerful engine of cultural evolution. No early state—not Mexico, or China, or Sumer, or Peru—was without a background level of organized violence that occasionally erupted into great wars spanning decades.

Why should this be so? Why doesn’t “natural selection” favor those cultures that develop institutions to resolve conflicts? Why doesn’t cultural selection seem to give the
edge to communities that pool their resources to build irrigation canals, establish universities, and work for world peace?

Most scholars consider warfare simply a cultural behavior that is elicited by environmental and cultural conditions. Anthropologist Robert Carneiro argues that warfare was the primary mechanism for the evolution of social complexity in ancient Peru, Mesopotamia, Egypt, Rome, northern Europe, central Africa, Polynesia, Mesoamerica, Colombia, and elsewhere. He believes, however, that “warfare cannot be the only factor. After all, wars have been fought in many parts of the world where the state never emerged. Thus while warfare may be a necessary condition for the rise of the state, it is not a sufficient one. Or, to put it another way, while we can identify war as the mechanism of state formation, we need also to specify the conditions under which it gave rise to the state.”

Carneiro sees two such conditions as essential to the formation of complex societies in concert with warfare: population growth and environmental circumscription. He notes that human population densities have been increasing in many areas for millennia, but that only in certain environmental zones can population growth join with warfare to produce highly complex early civilizations. These environmental zones are exceptionally fertile areas “circumscribed,” or surrounded, by areas of lesser productivity such as deserts, mountains, or oceans. As an example, Carneiro points to the coast of Peru, where approximately 78 rivers run from the Andes to the ocean through an 80-km stretch of some of the driest deserts on earth (Figure 7.8). Here, he says, are fertile, easily irrigated strips of land along the rivers, but in any direction one soon encounters desert, mountains, or the ocean. Similar conditions, he asserts, prevailed in Mesopotamia, Egypt, and the other centers of early civilizations.

Again using Peru as an example, Carneiro suggests that shortly after the appearance of the village farming way of life, these fertile riverine areas were sparsely occupied by small autonomous villages. He assumes that in such conditions populations grew, and, as these populations increased, villages tended to divide because of internal conflicts and pressure on agricultural lands. Some of the inhabitants would then establish a new community some distance away. Such movements were easily accomplished in this early period because there was no shortage of land and little investment in terracing or irrigation systems. As a consequence, the number of villages increased faster than village size, and all communities remained essentially the same in political and social organization.

Eventually, however, given this constant population growth and the proliferation of villages, all the land that could be irrigated and exploited easily became occupied, and the expanding population rapidly began to outrun the available food supplies. Since they could not move into the sea or deserts or easily colonize the mountains, early Peruvian farmers chose agricultural intensification. They built terraces and irrigation canals and tried to keep pace with their population growth rates, but they were caught in the classic Malthusian dilemma: Food supplies can be increased, but not nearly as quickly as population increases. At this point, Carneiro concludes, people turned to warfare as the only alternative. The village under the most stress would attack the weakest adjacent village, and the victor would expropriate the land and harvests of the loser. The conquered people not killed in the fighting could not simply move away and reestablish their villages, and they could not emigrate to the highlands because their whole culture was based on the village farming way of life. They were either taken back to the victors’ village, where they became slaves or artisans, or they were left as serfs who were taxed so heavily that they had to reduce their own consumption and intensify their production still further.
Numerous semi-permanent rivers run from the Peruvian highlands through the arid coastal zone to the sea. These rivers allowed people to establish agricultural centers in an otherwise inhospitable desert.
These developments encouraged the formation of an institutionalized bureaucracy to administer the taxes and slaves, and the establishment of the bureaucracy in turn intensified wealth and status differentials, as the most successful military leaders were given the administrative posts. In addition, the defeated peoples came to constitute a lower class, and thus the stratification of society increased as the level of warfare rose. Carneiro believes that warfare continued in Peru until all of each river valley was under the control of one integrated authority, a development he terms a “state.” Subsequently, again because of the never-ending pressure of population, these states contended with each other until a whole series of river valleys was controlled by a single dominant center. Carneiro’s ideas are diagrammed in Figure 7.9.

Since many primitive societies had remarkably precise control of their population-to-resources balance, population growth cannot be regarded as automatic. There is no demonstrated and inevitable reason why these populations could not have maintained their size below the stress level rather than resorting to agricultural intensification or warfare. Thus, to strengthen Carneiro’s hypotheses we must stipulate other factors that encouraged or allowed these presumed growth rates.

In a reconsideration of Carneiro’s model, David Webster maintains that warfare’s principal importance in the evolution of the first states was the role it played in breaking down the kinship ties that organized early chiefdoms. He notes that chiefdoms apparently are kept from evolving into states partially because the chief’s power and prestige are tied to his role as a redistributive head, and if the chief begins to hoard wealth or exploit people, he begins to lose the support of his kinsmen and deputy rulers. Webster proposes that warfare produces a potent environment for the evolutionary change to state-level societies by rendering ineffective many of the internal constraints that keep chiefdoms in a stable sociopolitical status. Continued warfare between chiefdoms would place great adaptive value on a stable military leadership, thereby dampening the constant petty squabbles between rival rulers. A chief who is successful in warfare can also claim more wealth in the form of booty than he could on the basis of his redistribution of his own society’s production.

Carneiro’s ideas have stimulated much research and seem to have broad applicability to various cultures. But in contemporary archaeology there is a widespread sense that the key points of analysis in understanding the origins of early states must be at a socioeconomic and political level, not just demographics, physical environments, and the assumption of warfare.

**EARLY MARXIST AND MATERIALIST EXPLANATIONS OF EARLY CULTURAL COMPLEXITY**

For much of the twentieth century, Marxist social scientists had few doubts about the proper explanation of the origins of civilization. Friedrich Engels’s remarks at Karl Marx’s grave expressed this certainty: “As Darwin discovered the law of evolution in organic nature so Marx discovered the law of evolution in human history.”

Despite the collapse of Marxist states all over the world, and despite the interweaving of Marx’s economic analysis with dubious political polemic, there is no denying the tremendous influence Marx’s contributions have had on the analysis of social systems.

Almost any attempt to sum up Marx’s theories about the origins of cultural complexity and the dynamics of history necessarily involves great oversimplification and arguable
FIGURE 7.9 Several models of the evolution of cultural complexity. In these diagrams Henry Wright (1977) has depicted the most important hypothetical cause-and-effect relationships in several models of the origins of states and urbanism.
interpretations. Marx’s famous statement of his basic ideas is worth quoting at length and studying carefully because it is still one of the most astute and revolutionary observations on the nature of cultural evolutionary history:

In the social production of their subsistence men enter into determined and necessary relations with each other which are independent of their wills—production-relations which correspond to a definite stage of development of their material productive forces. The sum total of these production-relations forms the economic structure of society, the real basis, upon which a juridical and political superstructure arises, and to which definite forms of social consciousness correspond. The mode of production of material subsistence conditions the social, political and spiritual life-process in general. It is not the consciousness of men which determines their existence but on the contrary it is their social existence that determines their consciousness. At a certain stage of their development, the material productive forces of society come in conflict with the existing production relations, or what is merely a juridical expression for the same thing, the property relations within which they operated before. From being forms of development of the productive forces, these relations turn into fetters upon their development. Then comes an epoch of social revolution. With the change in the economic foundation the whole immense superstructure is slowly or rapidly transformed. In studying such a transformation one must always distinguish between the material transformation in the economic conditions essential to production—which can be established with the precision of the natural science—and the juridical, political, religious, artistic, or philosophic, in short ideological forms, in which men become conscious of this conflict and fight it out. As little as one judges what an individual is by what he thinks of himself, so little can one judge such an epoch of transformation by its consciousness; one must rather explain this consciousness by the contradictions in the material life, the conflict at hand between the social forces of production and the relations in which production is carried on.  

What all this means in terms of the whole history of complex societies is the point of enough books to fill a large library, and Marx’s basic premises are being constantly reinterpreted. Still, many accept as valid the basic tenets of Marxian analyses of history, and there is certainly great power to some of his ideas.

Marx himself, however, had very little to say specifically about the origins of complex societies. Much more attention was paid to the problem by later followers of Marx, particularly Engels and Lenin, and, more recently, V. V. Streuve and I. M. Diakonoff.

Until the origins of agriculture, these scholars suggest, all societies were classless, all goods were shared, no one really owned anything, and all were treated equally. But gradually, after the achievement of domestication and the agricultural way of life, some people managed to control more than their fair share of the land, which is of course the basic source of wealth in an agricultural community. By controlling land, these elites were able to enslave others and force these people to work the land for them. In time the ruling classes developed the state, the laws, and the church to justify, protect, and perpetuate their economic and political privileges. The state is then seen as an exploitative mechanism created by the elites to control and oppress the workers. Marx promulgated a “labor theory of value,” according to which capitalists steal much of the value that a worker produces by paying the worker only a fraction of the value his labor confers on goods and produce and appropriating the rest.

According to Marxian theory, every economic system based on the division of society into socioeconomic classes and on exploitation carries within itself the seeds of its own
destruction because generally the means of producing wealth constantly improve, technologically and otherwise, and at a certain stage outgrow the social system constructed on them. Thus, slave societies would eventually give way to feudal societies and, eventually, Communist societies will replace capitalist societies.

I. M. Diakonoff has been the most prominent but traditional Marxist. His model of early Mesopotamian state formation rests on the assumption that if wealth differentials can arise, they will, and that once these differentials exist, antagonism between socioeconomic classes will follow and eventually the state will form to promote and protect the vested interests of the ruling class.

Economists and others have challenged many of Marx’s ideas, but evidence from early Mesopotamian and Egyptian societies does support some aspects of the Marxian reconstruction: Wealth differentials developed early and were impressive, and slavery existed, as did communal labor pools, warfare, irrigation systems, trade networks, and other elements integral to the Marxian scheme. But that is not to say that this scheme is correct or complete. Much of it was constructed on the basis of evidence from early documents, and some forms of the Mesopotamian state evolved several hundred years prior to writing; thus the textual evidence is most likely of only limited relevance to the origins of social complexity. More important, it is very difficult to test the Marxian reconstruction with archaeological data. Without written records, we cannot conclusively demonstrate class conflict or slavery, and many of the crucial elements of the Marxian paradigm, such as the labor theory of value and the contradictions between economies and their social correlates, seem utterly beyond the reach of archaeological research per se. Zagarell uses documents from Mesopotamia, however, to show that by the time the first extensive texts were written, some correspondences do exist between Marxian ideas and what we know from these texts about property, the rights of women, and so on.

Other scholars have focused on the importance of trade in a Marxian context. Kipp and Schortman, for example, argue that an important factor in some cases of early state formation was the destabilizing effects markets in luxury goods had on early chiefdoms. In chiefdoms personal relationships between elites and the populace are important, but, as market economies evolved, chiefs and other elites had an increasingly difficult time trying to control these markets: “When leadership is undermined by a market blind to everything except profits, policies of systematic impoverishment are as essential to leaders as armies. Economic exploitation joins tyranny, and so states are born.”

Marvin Harris has tried to combine some of Marx’s ideas with those of Wittfogel, Carneiro, and others to formulate a model that, although many reject it, at least has the advantages of being stipulated and partially testable with the archaeological data.

The big step in Harris’s view is the rise of chiefdoms, which he ties to the appearance of “big men,” particularly influential older men whose advice and guidance the community seeks. Village big men act as the “nodes” of three important institutional complexes: They intensify production, carry out redistribution of harvest surpluses and trade goods, and use their prestige and position to lead the way in fighting or trading with neighboring villages. Harris says that simple chiefdoms come into being with the first intensifier-redistributor-warrior complexes. The more production is intensified, the more there is to redistribute and to trade, the larger the population, the more intense the warfare, the more complex and powerful the chiefly sector. Other things being equal, all such systems tend to move from symmetric forms of
redistribution (in which the primary producers get back everything they produce) to asymmetric forms (in which the redistributor gets more of what is produced for longer and longer periods). Eventually the retained portion of the harvest surplus provides the chief with the material means for coercing his followers into further intensification. If all this is a standard developmental trajectory, why did chiefdoms never appear among the Eskimo, while they appeared in Melanesia but stabilized at that level of development, and while they quickly became interregional states in Mesopotamia and many other areas?

Harris turns to basic factors of demography, economy, environment, and technology to answer this question. He suggests that for chiefdoms to appear and then to become states and empires, the appropriate “energy gates” had to be available: Yams and tubers are poor energy gates because they do not store well and have no clearly defined harvest period, so a big man or chief cannot easily shut off the flow of proteins and calories produced by the farmers; but grains store well and have defined periods of harvest, so a chief with command of community grain stores absolutely controls the lives of his associates.

Harris expects the first “pristine” states to arise in areas of sharp ecotones, where there is good potential for intensifying agriculture, but where away from the agricultural lands the environment is such that a family would suffer a sharp drop in standard of living if they moved away. Drawing on the work of Robert Carneiro (see earlier), Harris identifies the sharply circumscribed farmlands of Egypt, Mesopotamia, northern India, the Yellow River Basin, central highland Mexico, the Peruvian coast, and the Andes highlands as areas where pristine states could be expected. And once pristine states form in an area, their expansionist tendencies and economic impact act as a “single gigantic amplifier,” as the whole region is caught in cycles of agricultural intensification, population growth, warfare, and so on.

Harris’s version of Marxist analysis is rejected by many as being too “vulgar” and “mechanical,” in that it focuses on demographic and ecological variables and appeals to these as the primary explanations of differences and similarities in early states.

**Contemporary Approaches to the Explanation of the Evolution of Civilizations**

*It is better to know some of the questions than all of the answers.*

James Thurber (1894–1961)

Attempts by Childe, Wittfogel, Harris, and others to formulate general models of cultural evolution, on the basis of correlations between techno-environmental and demographic variables and social and political patterns and processes, stimulated a great deal of creative research, and there is still much of value about these ideas. But many contemporary scholars argue that identifying correlations between these variables, patterns, and processes does not and cannot “explain” all the important aspects of the evolution of ancient civilizations. With the growing appreciation of the limits of techno-ecological analyses and traditional Marxist approaches, contemporary archaeologists have gone in many different directions in their approaches to the problem of the origins of civilizations.
CONTEMPORARY MARXIST PERSPECTIVES

Many contemporary archaeologists continue to draw inspiration from Marx and his theoretical successors. Friedman and Rowlands, for example, have interpreted Marx in such a way that the focus of the analysis is the social relations of production that economies embody, rather than just the blunt forces of technology, environment, and agriculture. Their study defies easy translation and summary, but contains at least the following elements. Friedman and Rowlands assert that we must “reconstruct the structures of reproduction of particular social forms,” which they define as the “social structures that dominate the process of production and circulation and which therefore constitute the socially determined form by which populations reproduce themselves as economic entities.”

Although Friedman and Rowlands’s complex approach includes much of interest, it involves various problems. The primary one is that so much of it seems untestable with the archaeological record. Testability with archaeological data cannot, of course, be taken as the ultimate criterion of social theory, but archaeologists must try to measure the “fit” of their ideas against the reality of the bones and stones they excavate. In Friedman and Rowlands’s approach, as in so many Marxist and Structuralist endeavors, causation is expressed in terms of dominances and constraints. Friedman and Rowlands say that the physical environment, technology, and general economic forces impose a system of constraints that make certain kinds of things unlikely to evolve (like a drive-through bank set up and frequented by hunter-gatherers); but, working in the opposite direction, the relations of production dominate the entire functioning of the system, determining its characteristics and developmental pattern. To find “relations of production” archaeologically, however, and then to demonstrate how they were the causes of other cultural phenomena is difficult.

In Friedman and Rowlands’s approach, something like an organized system of ancestor worship can—in a given society and instance—be the result of a complex of economic factors, and in another society and time organized ancestor worship can be a cause of economic behavior.

In general, many contemporary Marxist archaeologists are bound together by several basic ideas. One of these involves the rejection of “functionalist” ideas about adaptation. We might conclude, for example, that all early civilizations were rigidly stratified by socioeconomic classes because, in the absence of modern communications technology, an industrial base, and other means of economic production and social integration like those of contemporary societies, ancient civilizations could only organize themselves and function efficiently if their citizens were born into classes that automatically determined what occupational specialty they would perform and what access to wealth, power, and prestige they would have. Many Marxists reject this kind of functionalism and adaptationism on various grounds but particularly because such interpretations are descriptions, not explanations, and because they tend to emphasize the stability of these adaptations—and in so doing, justify them to some extent. Most forms of Marxism are about the necessity and social desirability of radical social change arising out of social conflict and inequities. It is not surprising, thus, that they see any attempt to interpret the appearance of such phenomena as social classes, legal systems, administrative bureaucracies, and so on as adaptive responses to problems societies faced as interpretations that obscure the conflicts and contradictions that are the true forces behind social changes. But contemporary Marxist critiques of traditional archaeology go much deeper than this. Marxists reject the
notion that people in any society are just passive players whose actions and ideas are entirely the result of external forces. They focus on the social relationships that are the nexus of interactions among individuals and groups.

Marxism continues to have a strong influence on contemporary archaeology, although Marx himself might not recognize, or might reject, many contemporary applications of his ideas to the archaeological record. A continuing issue for Marxist archaeologists is the testability of their ideas in terms of the material remains of the archaeological record. In the absence of a written language, how are we to know if, for example, overt or institutionalized class conflict, or the subordination of women, or other social behaviors and concepts were part of the origins of the first states in the northern Andes—or anywhere else? If one rejects the notion that the archaeological record offers the possibility of a scientific and empirical test of the validity of any theory of history, however, as some archaeologists do, then the apparent difficulties of relating Marxian ideas to the material record of the past disappear.

The details of contemporary Marxist approaches are beyond the scope of this book, but the interested reader is referred to the bibliography of this chapter for additional sources on this topic.

THE THEORY OF CULTURAL EVOLUTION

The term theory of cultural evolution is heavily encrusted with past misuse and inappropriate applications, and for many scholars it immediately suggests that the analysis will be based on a false analogy with biology, will invoke sterile social typologies, will rearrange all human history in a sequence leading to the apex of Western civilization, and will apply capitalist and colonialist misperceptions to the analysis of history.

S. Gould summed up this view as follows: “Cultural evolution is not even a good analogue for biological evolution because it proceeds so much more rapidly and, especially, because it works by amalgamation and coalescence across lineages—the very topology precluded on the Darwinian tree of continuous divergence.”

The kind of evolutionary theory that some archaeologists now are applying to cultures, however, is different from the Spencerian forms of traditional neo-evolutionism that was, in fact, guilty of many of these sins. Evolutionary theory basically concerns the transmission of traits through time and space, and there is no necessary linkage with biology. As Robert Dunnell (see earlier) has observed, what matters in evolutionary theory is the mechanisms by which traits are perpetuated in an individual. Nonetheless, the objects that comprise the archaeological record do not reproduce in the same way that people do, and thus the rules of genetics cannot be applied; also, whereas change in the biological world is through the relatively slow processes of genetic mutation, drift, selection, and so on (see chapter 3), cultural changes can be conveyed quickly and pervasively from one group to another (as in the spread of agriculture).

One issue in evolutionary models of cultural complexity involves the scale of selection. In the biological universe, the transmission of traits takes place at the level of the individual. The individual genes of the plant or animal do or do not get perpetuated, not the species as a whole. Therefore, the most productive point at which to analyze a given evolutionary problem is the transmission of traits from individual to individual. But in cultural situations, many individual traits, specifically behavioral ones, are the products of instruction by the
complete community of parents, teachers, and friends. And people act in corporate groups in ways that make these the functional units of the society. For example, in the next chapter we will see that religions appeared early in all great civilizations and that these formed effective ways to get people to act in concert for the corporate good—such as in fighting wars, clearing irrigation canals, and building pyramids. To summarize, in the production and transmission of cultural characteristics, cultural selection can act on groups as well as individuals.

So, to apply evolutionary theory to archaeological data will require analyzing a great diversity of concepts of trait transmission.

It is also important to note that the cases of cultural evolution detailed in the following chapters repeatedly show that cultural evolution is not a continuous, cumulative, gradual change, in most places. “Fits and starts” better describes it. In Mesopotamia, the Indus Valley, and elsewhere, there is clear evidence of communities that seem on the verge of cultural complexity—either to die out without further development or to be overtaken by developments in some core area to which they became the periphery.

The supposed “unification” of the Nile Delta and Valley cultures at about 3200 B.C. provides a useful example here. This pivotal event in Egyptian history apparently involved a process in which the cultural repertoire of the Valley cultures—in terms of artifact styles, political ideology, and so forth—was imposed upon, or was integrated into, or largely replaced those of the Delta cultures.

How are we to understand such a process of trait-transmission? And, at a higher level, how are we to understand similar processes in other early civilizations? Consider again Trigger’s conclusion, quoted earlier, concerning the extremely limited variations in what he observed in early states in their most important elements. In trying to account for this lack of variation, Trigger appeals to the apparent “efficiency” that these basic social and political forms must have conferred on their individual cultures. If we accept that supposition, the analytical problem then becomes one of understanding and measuring the relative efficiency of various mechanisms of social forms and phenomena—and the kinds of selection that operate on variability, and how that variability is generated in the first place. If evolutionary theory has any application to the analysis of ancient and modern cultures, it would seem to be precisely with regard to these questions of cultural change.

Most early complex societies, for example, underwent a transition in which labor-intensive, highly decorated pottery was replaced by mass-produced forms of much less aesthetic appeal. Various scholars have seen cultural collapse and dissolution in such changes, but as Trigger notes, this replacement does “not indicate a decline in cultural or aesthetic standards. Instead it suggests that pottery no longer served as a medium of artistic expression.” In fact, the appearance of these mass-produced forms of pottery seems to be a prime indicator of increasing complexity in the institutions administering and controlling craft production. G. Johnson, R. McC. Adams, and others have concluded that the rapid development of Southwest Asian states occurred during the period when the beautiful painted wares of the early fourth millennium were largely replaced by the unimpressive, mass-produced unpainted pottery. Egyptian pottery seems to have made a parallel transition in the Early Dynastic and Old Kingdom periods, when various low-fired wares including “bread molds” were the dominant ceramic types.

Several factors may explain these dramatic changes in pottery manufacture. The individual and corporate social groups identified by regional pottery styles, for example,
are, in a sense, dangerous expressions of individualism and group distinctiveness that
detract from the unity of the larger state, and it is possible that these states suppressed some
expressions of group identity not derived from the state structures. The greater efficiency,
too, of producing massive quantities of cheap and nearly identical pottery vessels would be
best realized in a state organization.

The formulation of a powerful evolutionary theory will require that we avoid the naive
“functionalism” of early versions of cultural evolutionism: that is, that evolutionary theory
must supply some explanation for cultural change other than that a given cultural
characteristic made a positive contribution to a culture’s efficiency of adaptation.

CRITIQUES OF COMPARATIVE APPROACHES

Shanks and Tilley, for example, suggest that cross-cultural generalizations are not only
misguided but also result from conscious or unconscious attempts to further the cause of
Western imperialism. In contrast to materialist deterministic models, Giddens and
many others have emphasized the power of sociopolitical factors over economic factors as
determinants of the character and histories of pre-industrial class-based societies. “Post-
processualists” and “post-modernists,” in general, argue that “positivist” scientific
epistemologies are fundamentally inappropriate for understanding the past.

Critiques of the methodology of comparative studies have come from a wide variety
of sources. Philip Kohl, for example, himself an advocate of a form of materialist theory,
suggests that “[l]inear models of class and state formation, which decontextualize social
and historical processes, make meaningful comparative studies impossible.”
Even some traditional Marxists now emphasize how different cultures construct unique and—at
some levels—incommensurable social forms and histories.

And it is not just the post-processualists and post-modernists who have challenged the
validity of traditional anthropological comparative studies. Contemporary thought in
evolutionary theory, as applied to both cultural and biological systems, emphasizes the
uniqueness and essential unpredictability of evolutionary trajectories.

If even evolutionists conclude that evolutionary sequences are unpredictable and
unique, what is the importance of comparative analyses as applied to, for example, Old
Kingdom Egypt and the Inka state?

HOLISTIC AND SYNTHETIC APPROACHES

A holistic perspective, to use Bruce Trigger’s term, is a multifaceted one in which any and
every form of inquiry that seems to expand one’s knowledge of the past is used. Trigger
argues that the future of analyses of the origins of civilizations must include combining
all our ideas, perspectives, and methods in order to examine all the factors that “constrain”
human behavior, in the present and the past. He notes that these constraints can be
ecological, such as the great river valleys that were the homes of many of the first great civi-
lizations and which directly determined the kinds of agriculture and settlement patterns
that could be effective in this kind of environment, but he notes that these constraining and
shaping factors can also be ideologies and cultural traditions.

Trigger dismisses the simplistic materialist determinism of, for example, Wittfogel, and
acknowledges the research importance of the unique aspects of early states. But in his
concluding essay, he writes:
My findings indicate that practical reason plays a greater role in shaping cultural change than many postprocessual archaeologists and postmodernist anthropologists are prepared to admit. This encourages me to accord greater importance to an evolutionist analysis and less importance to a cultural particularist one than I would have done when I began my study. A particularist approach is necessary to understand many aspects of early civilizations. But it is clearly a mistake to ignore, or even to underestimate, the importance of evolutionism, as those who would privilege cultural reason would have us do.

Trigger acknowledges the power and primacy of cultures to construct their own realities, but he also sees extremely limited worldwide variation in some of the core structures and processes of early civilizations. One can, therefore, usefully study what factors contribute to the “efficiency” of these rather invariant elements of early civilizations, perhaps from the “evolutionist” perspective Trigger suggests. But the baroque variability of “art styles and cultural values” provides ample material for particularistic studies that need not appeal to cross-cultural and comparative analyses for intellectual justification.

Trigger thus provides a justification and rationale for a wide variety of theoretical perspectives in archaeology, embracing both particularist studies and cross-cultural comparative analyses aimed at understanding the selective forces that so greatly constrained variation in some elements of these early civilizations.

Moreover, even in those elements that seem relatively invariant in early civilizations, there is considerable interesting variety in specific expression. Trigger suggests that many archaeologists have assumed “that aspects of civilizations that were shaped most directly by the constraints of environment and technology would display the greatest degree of cross-cultural uniformity.” He notes, however, that this is not the case. Metalworking, for example, was a core industry in Mesopotamia, where it was used to produce tools as well as ornaments, whereas in Egypt it was used to make weapons but not often to make agricultural tools, and in the New World it was used extensively to produce ornaments.

There may well be good functional reasons for these patterns (e.g., the scarcity of stone for implements such as hoes in Mesopotamia), but cultural constructs may be equally determinative even in such basic technologies as metallurgy.

In his chapter on religion, Trigger states he initially assumed that, given the flexibility of the human intellect, religious behavior would vary much more greatly in early civilizations than economic behavior, but he concluded that this was not the case. He identifies strong recurrent patterns in many religious systems. Kings, for example, tend to trace their descent to strangers, probably in order to minimize their kinship obligations to the people they dominate. He suggests that all early civilizations had religious systems based on establishing social relationships with unseen forces in the natural world in order to manipulate it. The early civilizations Trigger surveys are all ones, he notes, that existed prior to the appearance of “transcendent religions”—those that make strict distinctions between the social, the natural, and the supernatural.

Some of the commonalities in ideology that Trigger finds in early civilizations seem obviously understandable in functional terms. Most placed their own civilization in the center of a world that had four quarters corresponding to the cardinal directions, political competition was cast in terms of religious struggles, and the universe was once or regularly threatened with extinction and could only be saved by the intercession of gods, who had to be placated by human activities and earthly wealth.
In summary, Trigger’s basic goal and strategy is to use many different ideas and techniques to analyze early civilizations—not in a simplistic positivist sense but, still, in a sense that does not admit the possibility that any “reading” of the record of the past is equally valid, equally “true.” He stresses that cultural differences are as important in this context as are cultural similarities, and he admits particularistic studies as useful adjuncts in a synthetic approach to the past. But his basic goal is to understand why these similarities and differences appeared, and he invokes materialist and evolutionist ideas in this regard.

All explanations of cultural complexity focus on the similarities and differences that the various forms of cultural evolution exhibit. But what is the significance of these similarities and differences?

Stephen Jay Gould, in his book *Wonderful Life,* emphasizes how every evolutionary sequence is unique; and the state of uniqueness, like that of pregnancy, permits no qualifications or degrees. But if every sequence is unique, what is the significance of the similarities of cultural systems unconnected by genetics or history? The Aztecs and the Egyptians—who knew nothing of each other and lived thousands of years separated in time—did many of the same things, from building pyramids to establishing state religions; but what is the significance of these similarities? Scholarly opinion, of course, remains divided on this point.

Brumfiel and Earle have categorized some of the variability they see in early economic exchange in terms of three “models”: (1) *commercial development models,* in which increasing occupational specialization and exchange are seen as the “natural” outgrowth of economic growth; (2) *adaptationist models,* in which political leaders are assumed to have intervened directly in the economy, to redistribute goods, for example, or to manage irrigation systems; and (3) *political models,* in which local rulers intervene in economies but, unlike their role in adaptationist models, these leaders are assumed to be the primary beneficiaries of their efforts.

Brumfiel and Earle propose that “political elites consciously and strategically employ specialization and exchange to create and maintain social inequity, strengthen political coalitions, and fund new institutions of control, often in the face of substantial opposition from those whose well-being is reduced by such actions.”

It is worth noting here that most of these many kinds of explanations of cultural complexity are *functional arguments.* The basic idea of a functionalist explanation was introduced earlier in the context of contemporary Marxist perspectives on archaeology. Functional arguments attempt to explain the origins of something (e.g., the human heart) in terms of the functions it performs (e.g., blood circulation). To the question, “Why do people have hearts?” the answer that some device is needed to circulate blood is an explanation of sorts, but it does not explain why some other kind of life-support system did not evolve, nor does it explain the evolutionary history of the heart or the selective pressures that shaped this history.

Similarly, to assert that complex societies developed because a leader was needed to coordinate irrigation and redistribute agricultural production is a functional explanation and does not explain why the society did not remain egalitarian, or develop a capitalist economic system, or go off in some other developmental direction.

Yet functional explanations seem to work so well for certain phenomena. The national religious cults that all early states developed, for example, seem so transparently a device for social control. Montaigne said, “Man is certainly stark mad. He cannot make a worm, and yet he will be making gods by the dozen.” But for an early state few things are as useful
as gods in whom everyone believes. Then one can despise and kill (and take possession of the property of) all nonbelievers, foreign and domestic, without qualms; one is willing to sacrifice oneself in battles, or participate in pyramid building, or accept a social hierarchy, simply because the gods have so decreed. And the best part is that one does all these things without much cost to the state—people fight in wars, work for the common good, or accept life as a disenfranchised slave often on the premise that in the afterlife things will be greatly improved.

Thus, functionalist arguments have the strong heuristic value of suggesting hypotheses about a specific development and indicating crucial variable relationships. Marxist and other scholars see such functionalist interpretations as adequate descriptions, perhaps, but not explanations, which must involve, in their opinion, an analysis of the social relations out of which arise social changes.

SUMMARY AND CONCLUSIONS

In the rest of this book we will review numerous cases of the evolution of complex societies, but in all these analyses of cultural and social complexity, archaeologists must come to terms with a fundamental problem: Most of the origins and development of ancient societies cannot be fully explained on the basis of the archaeologically retrievable facts of climate, technology, economy, and demography. Cultural evolution instead must be analyzed at some level above these basic conditions—at the higher level of the social, economic, and political relationships of peoples and social entities. But how do we get at these higher-level interactions through the data and methods of archaeology? Some archaeologists have concluded that we cannot do so in any scientific way, and thus archaeology cannot be a science; others argue that only the principles of evolutionary theory will help us understand these patterns of cultural change, but that we can never get at the specifics of the changes in social relations at the heart of the origins of civilizations; still other archaeologists believe that we can make inferences about these kinds of social changes and in various ways incorporate them in a holistic discipline of archaeological analysis.

The following chapters of this book, thus, should be seen as more of a description of the problems of analyzing the evolution of civilizations than an explanation of these evolutionary processes, for we are still very far from any powerful comprehensive explanation of them—and there is little agreement about how we might analyze these processes or even about the usefulness of trying to analyze them. If that summary sounds somewhat nihilistic, it is well to recall that there is much about the pyramids of Egypt, the first written texts of Mesopotamian civilization, the glory that was Greece and the grandeur that was Rome, and so on, that is interesting and rewarding to consider, even if we can’t ultimately and utterly explain their origins.

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NOTES

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33. Kenoyer, “The Indus Valley Tradition of Pakistan and Western India.”
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