Human beings today are unique in the animal kingdom because they have undergone two fundamentally different types of evolution. As the result of natural selection operating on their genes, they have descended biologically from apelike ancestors who are now extinct. As the result of social evolution, which has nothing to do with genes, they now live in societies more complex than anything their Stone Age ancestors could have imagined.

We know more about biological evolution than we do about social evolution. By studying living species intensively, zoologists and geneticists have constructed theories about the ways that earlier animals gave rise to later ones. By excavating the fossils of earlier animals, paleontologists have tested these theories and constructed their own. Because biological evolution is better understood, it has inevitably been used as an analogy for social evolution. Ethnologists have studied living peoples intensively, and constructed theories about the ways that earlier societies gave rise to later ones. Archaeologists, by excavating the remains of earlier societies, have tested those theories and constructed their own.

Unfortunately, as we shall see, biological evolution is an imperfect analogy for social evolution. In this paper we look at the contexts in which the analogy is useful, as well as contexts in which it can mislead.

### Cultural versus Social Evolution

In this chapter I distinguish between social evolution and cultural evolution. By “culture” I mean that set of shared beliefs, values, cosmologies, ideologies, customs, and traditions that distinguishes one group of people from other groups, giving it its ethnic identity. Cultural evolution would thus be analogous to what biologists call divergent evolution—the rise of two or more new forms from a common ancestor. For example, the ancient Mixtec and Zapotec Indian cultures of southern Mexico are believed to have diverged from a common prehistoric ancestral culture, referred to as Proto-Otomanguean. While they shared many cosmological principles as a result of their common ancestry, the ancient Mixtec and Zapotec spoke different languages, worshiped different deities, had different styles of art and architecture, used different kinship terms, and displayed many different customs.
I use the term social evolution, on the other hand, to refer to the reorganization of society at a different level of complexity—as, for example, when a small society based on egalitarian relationships becomes a larger society based on hierarchical relationships. Such a change can take place within a human group without thoroughly transforming its culture or ethnic identity. For example, during the early part of this century the Kachin people of highland Burma sometimes reorganized their normally egalitarian, or gumlao, society as a hierarchical, or gumsa, society, while still retaining their identity as Kachin. Thus, while acknowledging that culture and society are linked, we will use the term social evolution for organizational changes that do not produce a whole new ethnic group.

**ANALOGIES BETWEEN BIOLOGICAL AND SOCIAL EVOLUTION**

Biologists believe that evolution is a continuous process. Many paleontologists, however, argue that there have been periods of (1) rapid change, which produced significant new forms, and (2) slower change, which produced what appear to be long periods of stability. The archaeological record also seems to show long periods of stability, separated by moments of rapid social change. In both fields of study, it is the periods of stability about which we know the most. We also suspect that in both fields the moments of rapid change hold many of the keys to understanding evolution.

In both fields, scholars have defined stages of evolution, mutually agreed-upon units which allow researchers to discuss common problems. Among the higher vertebrates, for example, zoologists recognize the living classes bony fishes, amphibians, reptiles, birds, and mammals. Paleontologists have provided data to suggest that amphibians evolved from bony fish, reptiles evolved from amphibians, and both birds and mammals evolved from reptiles. They also point out that the fossil record has evidence for many more species of higher vertebrates than those which have survived to be studied by zoologists. The fossil record contains extinct animals which appear to be intermediate between two of the living classes, providing clues to the process of change. An example would be the cynodonts, a group of mammal-like reptiles who lived 250–150 million years ago. While the cynodonts’ individual limb bones...
were still reptilian, their teeth already had the characteristic division into incisors, canines, and molars seen in mammals.  

Are there also classes of living human societies that might represent stages of social evolution? Many anthropologists believe so. Scholars such as Julian Steward, Elman Service, Marshall Sahlins, Morton Fried, and Robert Carneiro have all made contributions to the definition of such classes. During the years 1955–1995 there was considerable debate over the number, nature, and appropriate names for these classes. The following list gives my current preferences.

**Hunting-and-gathering bands** constitute the simplest societies known for our species. While few remain today, our world still contained many bands as recently as the nineteenth century. Such societies subsisted entirely on wild plants and animals, often living a nomadic or semi-nomadic existence. The modal size of most bands was twenty-five to thirty-five persons, although larger groups occupied more permanent encampments when wild resources permitted.

Hunting-and-gathering bands had no hereditary differences in rank or authority, and their leadership was ephemeral, based on differences in age, experience, skill, and charisma. Divisions of labor were largely along the lines of age and gender, and most hunting-gathering bands had an egalitarian ethic that downplayed any differences in prestige that arose. This class of society is important as a kind of baseline for future evolution: Fifteen thousand years ago virtually all of our ancestors lived in such bands. The Eskimo, the Australian aborigines, the Bushmen of Africa’s Kalahari Desert, and the Alacaluf of Patagonia are well-studied examples.

The whole world would still be living as hunters and gatherers were it not for the adoption of agriculture and animal domestication. Our best estimates are that cereal agriculture began in the Near East by 7000 B.C. and spread quickly to the Nile Valley and the Indus River. In the New World, cereal agriculture began in Mexico and Peru between 5000 and 3000 B.C., then spread gradually north and south. With agriculture came larger and more sedentary settlements, and our first examples of what are now called **autonomous village societies**.

There is great worldwide variation in autonomous village societies. Communities may be large or small, their houses circular, rectangular, or oval. At the start of this century they included people as diverse as the Pueblo Indians of the American Southwest,
the villagers of highland New Guinea, and many native peoples of the Amazon Basin. While they may live in larger communities than most hunter-gatherers, such societies still display no hereditary differences in rank, nor do large villages have authority over smaller villages nearby. One mechanism integrating large numbers of families is the belief that they all descended from a common ancestor.

While everyone is equal at birth in such villages, significant differences in prestige can be acquired during one’s lifetime. Most autonomous village societies provide individuals of talent and ambition with ways to rise within a ritual system, creating what Raymond Kelly has called a “hierarchy of virtue.” Often each group maintains a ceremonial structure such as a Men’s House, which one can enter only after he has proven that he deserves to be initiated. While men’s ritual may thus be exclusionary (dividing the village into initiates and noninitiates), women’s ritual often remains nonexclusionary, carried out by every woman in the context of her household.

In some Pueblo societies, those who have risen in the ritual hierarchy through years of community service may be called “Made People,” while the uninitiated are called “Dry Food People.” A similar hierarchy of achievement in highland New Guinea has produced terms like “Prominent Men,” “Ordinary Men,” and “Rubbish Men.” Highest among the Prominent Men are “Big Men”—self-selected, ambitious individuals who sponsor feasts, brag, threaten, engage in long-distance trade, accumulate valuables, and lead raids against other villages. Significantly, however, these Big Men cannot bequeath their achieved prestige to their offspring. When they die, they and their valuables may even be burned. This is done to rid their community of the powerful magic to which their fellow villagers attribute their success.

It appears that under certain conditions a third class of society, called rank society, can evolve from such village cultures. In rank societies the egalitarian ethic has been overcome, replaced by an ideology in which individuals are unequal at birth. Large groups of families are still integrated by the belief that they share a common ancestor, but community leaders now tend to come exclusively from the descendants of prestigious ancestors, individuals who possessed magic even greater than that of Big Men. The more closely related one is to such ancestors, the higher his or her rank; the more distantly related, the lower the rank. There is thus a continuum of inherited status from the highest to the lowest individu-
als, and whom one marries can greatly affect the rank of one’s future children.

Our world had many such societies during the nineteenth century, but Robert Carneiro points out that they could be divided into two categories. Some rank societies, like the Northwest Coast Indians of Canada and the United States, had hereditary differences in rank, but each village was independent of every other. In other rank societies, such as the Natchez of the southeastern U.S. or the Cauca and Chibcha of Colombia, small villages had lost their autonomy and were under the command of paramount leaders at large villages. Large rank societies with loss of village autonomy are usually called chiefdoms.

Once large villages begin to break down the autonomy of the small villages around them, ambitious chiefs can bring very large territories and thousands of people under their control. Because of the superior size and manpower of chiefdoms, they can usually overwhelm the autonomous village societies in their region. This is often done by raiding—a simple version of warfare—and may result in the conversion of defeated villagers into slaves. Warfare among chiefdoms can be particularly nasty, involving terror tactics such as torture, mutilation, ritual cannibalism, human sacrifice, and the taking of trophy heads.

Chiefs and their close relatives are generally allowed to distinguish themselves from lesser individuals through the use of sumptuary goods—prestigious valuables such as gold, silver, jade, imported shells, exotic feathers and animal hides, stools on which they alone can sit, litters in which they alone are carried by servants. In Mexico and Peru, where the earliest chiefdoms were flamboyant in their use of sumptuary goods, we can identify societies of this type in archaeological sites of the first millennium B.C. In Egypt they were surely present by 3500 B.C. In Mesopotamia, where the earliest chiefdoms were noticeably less flamboyant, it is correspondingly harder to identify them in the archaeological record. By the fifth millennium B.C., however, Mesopotamia shows us (1) residences appropriate for chiefly individuals; (2) prominent villages whose temples probably served a network of smaller, subject communities; and (3) the kinds of defensive works usually associated with chiefdom-level warfare.

Under the right conditions still another kind of society, called an archaic state, can arise in the context of competing chiefdoms. Archaic states differed from most modern states, which are run by presidents, prime ministers, and other elected officials. Most
archaic states were kingdoms. These societies were divided into at least two social strata who did not intermarry. At the top was a stratum of hereditary nobles from whom the ruler would likely come, either by inheriting his or her title from the previous ruler, or as the result of having been chosen by other nobles, or both. At the bottom was a stratum of citizens not of noble birth and therefore not eligible to rule. This stratum of “commoners” had many routes for advancement through achievement; they could become wealthy merchants or craftsmen, rise through military service, or be appointed to bureaucratic positions by the ruler. On the other hand, through misfortune they could become landless serfs who worked the fields of more fortunate families. Through misdeeds, or by being taken captive in war, they could even become slaves.

The first archaic states arose on the alluvial plains of southern Iraq and southwestern Iran around 3000 B.C. They were large societies with populations in the tens or hundreds of thousands, depending on where archaeologists choose to draw the boundaries around them. The capital of each state was a city, sometimes defended with a wall, often with large public buildings in prominent places. In the hinterland beyond the city were smaller communities of at least three sizes: towns, large villages, and small villages. At both towns and large villages there seem to have been administrators who interacted on a regular basis with the city. By 2000 B.C., early written texts reveal a society with complex divisions of labor: ruler, priest, scribe, mason, carpenter, soldier, smith, servant, and many others.

The valleys of the Nile and Indus Rivers had major states by this time as well. Archaic states did not arise as early in the New World, but by the first century A.D. they were present in several parts of Mexico. These early states had large palaces in which their rulers lived; standardized two-room temples in which a state religion was conducted; ballcourts in which an official state game was played; densely packed cities, some with defensive works; hieroglyphic writing; and a hierarchy of towns, large villages, and small villages analogous to that of Mesopotamia. While less is known about the origins of the state in the Andes, all along the river valleys of the northern Peruvian coast one can still see immense pyramids left behind by precocious early states. A recent survey of Peru’s Casma Valley by David Wilson suggests that a statelike hierarchy of city, town, large village, and small village was present there by at least the first century B.C.

Eventually, by expansion and conquest, some archaic states
grew large enough to incorporate within their boundaries people speaking different languages and belonging to different cultures or ethnic groups. We refer to these multicultural conquest states as *empires*. Of all the classes of society we have examined, empires were the largest and the least stable. Most broke down within two hundred years or less, perhaps telling us something about the upper size limits of human social organization.\(^{20}\)

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**How Archaeologists Study Social Evolution**

Zoologists study living animals in their entirety: the skeleton, the soft tissues, and the behavior. Their analyses include the ways that behavior is reflected in both the soft tissues and the skeleton. Paleontologists usually find only skeletons, but they can use the analyses of zoologists to reconstruct the soft tissues and behavior of extinct creatures.

For an example of how this can be done, let us examine the evolution of mammals from reptiles. Zoologists tell us that modern mammals require approximately ten times more food and oxygen than do reptiles of comparable size. According to paleontologist Robert R. Carroll, their higher rate of metabolism “allows mammals to be active more continuously and to maintain a high, constant body temperature that is independent of the environment. Such a radical difference in metabolic rate affects nearly all the systems of the body and is responsible, directly or indirectly, for nearly all the differences we observe between reptiles (be they modern or Paleozoic) and mammals.”\(^{21}\)

In general terms, it was the early mammals’ high rate of activity—including their ability to be active at night because of their high body temperature—that gave them an evolutionary advantage over the more sluggish reptiles, who depend on the sun to raise their temperature.

How are such differences in behavior reflected in the skeletons? Let us look again at the cynodonts, the extinct mammal-like reptiles we mentioned earlier. We see that their feeding apparatus was adapted for longer chewing, reducing their food to smaller particles and ultimately deriving from it the increased calories required for a higher level of activity. Most lizards seize their food
with uniformly dagger-like teeth, gulping it down whole or in large chunks. The cynodonts had canines for seizing food, but also molar-like cheek teeth for grinding it into smaller particles. Clues to their prolonged chewing can also be found in their secondary palate and their larger adductor (jaw) muscles, both mammal-like traits. Their hip and shoulder girdles also show that their limbs, rather than being splayed to the side like those of lizards, were drawn in below the torso in the manner of mammals. This would have allowed them to run faster, another trait associated with the higher metabolism. Thus a paleontologist, although he might only have the skeleton of a cynodont, would know that its behavior had been mammal-like because of the relationships between skeleton, soft tissue, and behavior.

Here is one area where zoology and paleontology do provide an analogy for ethnology and archaeology. Ethnologists study living societies in their entirety: cosmology, ideology, social and political organization, religion, economics, settlement, and subsistence. Archaeologists recover only the imperishable physical remains of ancient societies. They can, however, use the analyses of ethnologists to reconstruct some of the missing “soft parts” and the behavior of past societies. In so doing, they rely on the fact that there are relationships between a society’s behavior and its residences, shrines, temples, artifacts, activity areas, storage facilities, burials, settlement and subsistence patterns, at least some of which will be preserved.

As an example of how this can be done, let us examine three of the major transitions from one class of society to another, and consider what an archaeologist might look for.

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From Hunting and Gathering to Autonomous Village Society

In some parts of the world, such as the Near East and the coast of Peru, sedentary life in villages seems to have preceded agriculture. In other regions, such as highland Mexico, agriculture seems to have preceded village life. Whether the economic basis for sedentary life was a reliable source of wild food or a newly domesticated species, many of the same principles applied: Societies began to live together in larger and more permanent groupings than before, and sought to establish long-term rights to an economically important patch of resources.
In a world without written deeds, one of the ways to establish one’s long-term right to land is by showing that one’s ancestors have lived and died there since time immemorial. Cemeteries—which were relatively rare among ancient hunting-gathering bands—became common among autonomous village societies. In Upper Egypt and Nubia, small cemeteries were present near resource-rich embayments of the Nile as early as 10,000 B.C., long before agriculture had taken hold. In Mexico, cemeteries were common among the village farmers of 1500–1000 B.C. Such permanent resting places for one’s ancestors helped to establish a group’s territorial priority.

Members of hunting-gathering bands live and work mostly with their blood relatives and in-laws. This becomes difficult in large villages, where the population may be far greater than anyone’s kinsmen. Autonomous village societies integrate larger groups of people by several means. First, they create larger groups of “blood relatives” by asserting that many seemingly unrelated persons were all descended from the same mythological ancestor. Second, they create a series of community-wide fraternal orders, or sodalities, to which deserving individuals from several descent groups can be initiated. These fraternal orders may maintain their own ritual features or buildings, such as a kiva in a New Mexico pueblo or a Men’s House in a New Guinea village.

Like hunting and gathering bands, autonomous village societies are “egalitarian” in the sense that everyone is equal at birth. Unlike most hunting-gathering bands, however, autonomous village societies allow significant differences in prestige to develop during the course of one’s lifetime. Individuals of greater intelligence, charisma, talent, or social skills rise rapidly by initiation through a series of increasingly exclusive fraternal orders until they have become village leaders, while other people are left behind. Such differences in prestige are tolerated because they are seen as being based on community service. We still describe such societies as egalitarian, however, because parents cannot pass on such acquired prestige to their children.

Archaeologists excavating autonomous village societies, like paleontologists working with fossils, attempt to reconstruct their behavior from physical remains. Usually such societies have relatively permanent architecture—thatched huts whose post holes survive, pit houses whose subterranean parts survive, mud brick houses whose wall stubs survive. Sometimes such societies leave behind small shrines, temples, or Men’s Houses (it should be noted
that in societies that reckon descent through the female line, there are sometimes Women’s Houses). Since prestige is acquired, not inherited, it is unlikely that the houses of village leaders will be readily distinguishable from anyone else’s. However, families claiming descent from the same mythical ancestor may share symbols (whether on pottery, figurines, carved bone, shell, or some other material) referring to that ancestor; they may also be buried in the same manner in the same cemetery.

In some autonomous village societies, like those of the Solomon Islands fifty years ago, ambitious leaders might work hard to increase their prestige further. They might organize labor for the building of Men’s Houses, attract a coterie of followers, accumulate trade goods, and lead raids against enemy villages. Archaeologists should take care not to interpret the remains of these activities as evidence for rank society. Big Men in autonomous village societies might accumulate (or even be buried with) masses of shell ornaments, and they might be responsible for impressive public buildings. What they could not do was extend their power to neighboring villages, or bequeath to their offspring the prestige they had achieved during a lifetime of self-aggrandizement.

From Autonomous Village Society to Chiefly Society

For many areas of the ancient world, autonomous village societies persisted well into this century. For other regions—including Mexico, Guatemala, Peru, Egypt, Mesopotamia, and Southeast Asia—rank societies evolved from autonomous village societies not long after the latter first appeared.

Key to the appearance of rank society is an ideological change: The belief that all humans are equal at birth is replaced by a system in which everyone is ranked from top to bottom, depending on how closely he or she is related to the society’s highest-ranked individual.

Ethnologists working in Southeast Asia have made major contributions to our view of the way such an ideological shift might be accomplished. They have shown us that inherited differences in rank will not be accepted by lower-ranking members of society unless they are seen as having a supernatural basis—that is, unless
society’s most important families are seen as having descended from very powerful ancestral spirits or deities. Only then is it considered appropriate for society to be directed permanently by hereditary leaders drawn from the highest-ranking lineages. These leaders are seen as having supernaturally-sanctioned authority, although most also work hard to keep their followers satisfied.

Chiefdoms arise when the leaders of larger communities are able to break down the independence of the smaller communities around them—something the Big Men in autonomous village societies are unable to do. One way this can be accomplished is through hypogamy, the practice of sending a high-ranked woman from a large village to marry the lower-ranked headman of a small village. The headman of the smaller village thereby has his prestige raised, and his children are guaranteed higher rank; on the other hand, his village also comes under the control of his chiefly father-in-law.

Archaeologists have detected such processes at work in Mexico between 1200 and 500 B.C. One can see large villages building up networks of smaller villages that contributed construction materials for public buildings, shared in the fruits of long-distance trade, and imitated the pottery styles of their local chiefly center. And at those smaller villages, some of the richest burials are those of women—likely hypogamous brides from a larger village.

Entitled by their elite status to accumulate sumptuary goods, highly-ranked men and women in such societies were often buried with prestige goods. Gold and silver were favored in early Egypt and Peru; jade was favored in Mexico and Southeast Asia. The question for the archaeologist has always been: Was the buried individual entitled to these goods through inherited high status, or through a lifetime of achievement? The answer may be complicated, since achievement continues to be important in chiefdoms; not everyone born to an elite family actually becomes a chief.

Archaeologists often take it as a sign of inherited status when impressive sumptuary goods are buried with infants or children—individuals too young to have acquired their high status through a lifetime of community service. Infants buried with alabaster statues at 5300 B.C. in Mesopotamia are frequently-cited examples (assuming that they are burials, rather than examples of infant sacrifice).

In many chiefdoms, the competition for positions of authority is intense. There may be a whole group of brothers, sisters, and cousins of almost equally high rank, resulting in competition that can lead to political assassination or even warfare. In addition, the
ambitious subchiefs who command the smaller settlements below the paramount chief’s village are a constant threat to the latter’s authority. Warfare in chiefdoms may be so intense that some villages have palisades, ditches, moats, or defensive walls, or may be relocated to defensible hilltops.

In Mesopotamia, settlements of the fifth and sixth millennium B.C. sometimes have watchtowers, defensive ditches, and heaps of sling missiles for repelling attackers; in spite of this, some villages were overrun and their leaders’ residences burned. On the coast of Peru, at least one public building of the second millennium B.C. displays carvings of enemies who appear to have been hacked to pieces. And some chiefly centers in the lowland Maya region of Mexico and Guatemala, dating to A.D. 1–400, had ditches, parapets, and palisades encircling them.

Many ancient chiefdoms seem to have a hierarchical settlement pattern in which a paramount chief’s large village is surrounded by smaller villages, administered by his subchiefs. In turn, these smaller villages may be surrounded by even smaller subject hamlets. It may therefore be necessary for archaeologists to survey relatively large regions in order to determine whether or not they are dealing with a rank society in which the autonomy of smaller settlements has been lost.

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From Chiefdom to Archaic State

In many parts of the ancient world, the chiefdom was the most complex class of society ever to appear. When European explorers first reached North America, they found impressive chiefdoms operating in what are now the states of Georgia, Alabama, and Mississippi; others were found to the south in Panama, Hispaniola, Colombia, and Venezuela. On the Pacific Islands of Tonga, Tahiti, and Hawaii there were elaborate chiefdoms as well.

In places like Egypt, Mesopotamia, and southwest Iran, on the other hand, archaic states had already formed by 3000 B.C. In both Mexico and Peru, such states had emerged by the end of the first millennium B.C.

How do states evolve from chiefdoms? That question is hard to answer in the case of the world’s first states, since no social scientists were present to record the process. We can get insights, how-
ever, by looking at more recently formed states in Hawaii and southern Africa. These more recent cases suggest that individual chiefdoms do not simply turn into states. States arise in the context of a group of competing chiefdoms, when one of the latter succeeds in taking over its neighbors and turning them into the provinces of a larger political unit.

In the late 1770s, each of the larger islands of the Hawaiian archipelago—Hawai‘i, Maui, O‘ahu, and Kaua‘i—was the scene of a native chiefdom. Rival chiefs from O‘ahu and Maui competed for control of the smaller islands of Lana‘i and Moloka‘i. By 1782, the paramount chief of Maui had seized those two smaller islands and administered a significant defeat to his rival, the chief of Hawai‘i. We have a record of what happened next, because British sailors had begun visiting the islands by 1778.

When the defeated chief of Hawai‘i died, his title was usurped by his ambitious nephew Kamehameha, who mustered enough support to assassinate the real heir and seize control. By trading with European ships who docked at his port, he acquired cannons and muskets, and hired two British officers as military advisors. Between 1792 and 1810, Kamehameha succeeded in conquering all the other Hawaiian Islands, turning them into subject provinces of a single state of which he was now the king.28

The origins of South Africa’s Zulu state were equally grounded in chiefly competition. That story also begins in the 1770s, among a group of Bantu-speaking pastoralists and shifting cultivators who were organized into competing chiefdoms. Each chief ruled a large group of people divided into local units, each of which was usually commanded by one of his brothers.

After 1775, a chief named Shaka hit upon the strategy of organizing regiments of warriors, each made up of young men who were about the same age. So successful were these regiments that in the space of ten years, “by his personal character and military strategy,” Shaka was able to reduce many rival chiefdoms to provinces of a single Zulu state of which he was now king. This archaic state covered eighty thousand square miles and had at least one hundred thousand subjects. From this point on, Shaka’s relatives became a kind of “royal family” from which future rulers would come.29

This brings us to the difference in social inequality between chiefdoms and states. We have seen that rank societies have a continuum of status from highest to lowest. Archaic states, on the other hand, had actual stratification—the separation of citizens into
at least two classes, the rulers and the ruled, which remained apart by not intermarrying. Often this stratification was supported by a political ideology in which nobles were seen as having a completely different genealogical origin from commoners. The Mixtec Indians of Mexico, for example, believed that their nobles had descended from a divine couple who had emerged from a sacred tree; commoners, on the other hand, were seen as descending from "stone people" who had crawled out of a crack in the earth's surface. This difference in genealogical origin gave nobles the right to live in palaces, wear gold and jade, deform their skulls as a sign of beauty, and receive tribute. The Mixtec believed that although commoners died, nobles only "fainted"; while commoner women gave milk to their nursing infants, noble women's breasts provided "honey." The parts of a noble's body were described using a different set of words from those used for commoners, almost as if the latter were a separate species.

Again, data from eighteenth-century Hawai'i provide insight into the evolution of stratification from ranking. In the traditional chiefly system, every Hawaiian occupied a position in the continuum from highly ranked to lowly. At the bottom of the social system were people whom no highly-ranked person wanted to marry, since the children of such a marriage would have no chance of rising in the hierarchy. With the rise of the state, these lowest-ranking families were simply "divorced" from the continuum, which severed their ties to the ancestors and converted them into a permanent underclass.

There are many archaeological clues to the existence of an archaic state. The rulers of states were kings and queens who lived in palaces, and the ground plans of those palaces can be recovered archaeologically. In some archaic states, such as those of highland Mexico, the palace was an elegant residence with an interior patio, built by commoners under the direction of architects. In other states, like the Minoan civilization of ancient Crete or the Chimú civilization of Peru, the ruler's residence might be only one small part of a larger complex of storage rooms, artisans' quarters, audience halls, and royal burial areas.

The rulers of archaic states were often given spectacular burials, usually in tombs. One of the most famous was the tomb of Tutankhamun in Egypt's Valley of the Kings. In addition to his gilded coffin, Tutankhamun's tomb was so filled with royal furniture, chariots, and elegant offerings that it took archaeologists a decade to excavate it. Another famous burial was that of Queen
Shub-ad of Ur in ancient Mesopotamia. Female attendants, male soldiers, musicians with their harps and lyres, even teams of oxen hitched to wagons had been sacrificed on the ramp leading to her tomb. In a chamber deep inside a pyramid at Palenque, Mexico, the Maya ruler Pacal—adorned with a jade mosaic mask—lay inside a stone sarcophagus whose hieroglyphic inscriptions described his royal ancestors.

Archaeologists excavating the burials of stratified societies, however, must be careful to distinguish between the perquisites of status and office. In an archaic state numbering one hundred thousand persons, as many as ten thousand to fifteen thousand might belong to the stratum of nobles. At any point in time, however, only one noble would occupy the office of king. While every noble’s status as a member of the hereditary elite entitled him or her to a fine burial, only an individual holding the office of king or queen received a spectacular burial of the kind described above. Sometimes archaeologists, finding a tomb intermediate in elegance between that of a king and a commoner, believe that they have found evidence for an ancient “middle class.” More often than not, it is either the tomb of a minor noble or of a wealthy commoner such as an artisan or merchant. Most archaic states did not have a middle class in the sense of a third social stratum. What they did have were individuals intermediate in wealth between the royal family and the average commoner. Such individuals were middle class only in the economic sense.

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deal of archaeological survey is necessary to recover this settlement hierarchy.

Wright and Johnson found that artifacts related to administration occurred from top to bottom of the hierarchy. Cylindrical seals—used by Mesopotamian administrators to seal up bales, bundles, or jars for shipment by pressing the seal into wet clay—occurred most often in the debris of cities and towns. On the other hand, broken blobs of clay with seal impressions were often found in the debris of towns and villages to which the shipments had been sent. There were also public buildings that occurred only at the upper levels of the settlement hierarchy.

In Mexico, the Zapotec state also showed a hierarchy of four (or more) levels of settlement during its early stage of development. Palaces were found at the upper two levels of the hierarchy (cities and towns); temples, on the other hand, were found at the upper three levels. In the lowland Maya region, where the use of hieroglyphic place names was well developed, Joyce Marcus has discovered that many carved inscriptions reflected the administrative hierarchy: Second-level centers mentioned the local capital, while third-level centers mentioned the second-level centers.

While archaic states were powerful political entities, with a high degree of occupational specialization and an elaborate military apparatus, they seem to have been less stable than the smaller-scale societies discussed earlier. Marcus has suggested that many Mesoamerican states had an early burst of growth (perhaps analogous to Shaka’s takeover of the Zulus’ neighbors), after which they began to lose many of their outer provinces and shrink in size. Nicholas Postgate has demonstrated a similar pattern for Mesopotamia. There the Uruk state of 3500–3000 B.C. may have been not only the earliest, but also the largest in terms of territorial extent. This archaic Uruk state, however, broke down during the Early Dynastic period into a series of smaller (but densely populated) polities. Later, Mesopotamia was reunified under the ruler Sargon of Akkad at 2350 B.C. With the collapse of Sargon’s dynasty, Mesopotamia again fragmented into a series of smaller polities. This cyclic “rise and fall” seems to have been typical of archaic states in the Andes as well; there the collapse of the early Moche state was followed by the Wari state and later by the Chimu.

Perhaps we should not be surprised that it proved hard to maintain huge states and empires for long periods of time. After all, humans’ biological evolution only prepared them for life in
hunting-and-gathering bands; everything larger is the result of social evolution.

WHERE THE ANALOGY BREAKS DOWN

We have now looked briefly at hunting-gathering bands, autonomous village societies, rank societies, and archaic states. We have seen that, just as the study of living animals provides a level of detail that paleontology cannot, so the study of living societies provides a level of detail that archaeology cannot. We will not let this discourage us, however, since paleontology and archaeology provide long-term perspectives on evolutionary change that the study of living animals and societies cannot.

Now, however, we must bring up a problem with the analogy we have been using: the bony fishes-amphibian-reptile-mammal evolutionary sequence is not really analogous to what happens in social evolution.

One of the major differences between biological and social evolution can be seen by comparing Figures 1 and 2. Figure 1 shows the way many paleontologists believe that the classes of higher vertebrates evolved. At some point in time, conditions being right, the first reptiles branched off from amphibians. All reptiles, living and extinct, are the descendants of those first reptiles. At a later time, conditions being right, the first mammals branched off from reptiles. All mammals, living and extinct, are the descendants of those first mammals.

That is not at all how various classes of societies evolved. For example, we believe that in ancient Egypt, rank societies evolved from autonomous village societies some time between 4000 and 3000 B.C. In Mexico, on the other hand, rank societies evolved some time between 1200 and 800 B.C., in ways unrelated to the earlier events in Egypt. In no sense are all rank societies, living or extinct, the descendants of the first rank society to appear; nor are all archaic states the descendants of the first state to appear. In addition, some early states collapsed in such a way that their citizens went back to living in rank societies. There are many mammals that have become extinct, but none which returned to being reptiles.
Figure 1
The biological evolution of bony fishes, amphibians, reptiles, and mammals. This diagram does not provide a suitable analogy for social evolution.

Figure 2
The evolution of eyes, which has happened repeatedly in very different branches of the animal kingdom. This diagram provides a better analogy for social evolution.
Are there better analogies for our classes of societies? Perhaps there are. A better analogy is provided by certain types of organs—such as eyes—that have evolved independently in many classes of animals. Biologist Ernst Mayr has pointed out that the eye has evolved at least forty times, independently, in very different groups of animals.\textsuperscript{41} Eyes have evolved in flatworms, in molluscs like the octopus, in insects, in vertebrates, and in many other creatures great and small. In no sense are all eyes descended from the first eye that ever evolved. They are simply structures that have evolved over and over again, whenever conditions were right, because they work efficiently. Rank societies show a similar pattern. They have evolved independently many times, when conditions were right, in many parts of the world, perhaps because they represent one of the five or six most effective ways of organizing human beings.

What we see in social evolution is not the kind of process that gave rise to amphibians, reptiles, and birds. Instead, we see that out of the hundreds of possible ways that human societies could be organized, certain types of organization work so well that they show up over and over again throughout the world. Anthropologist Marvin Harris has called this “the principle of limited possibilities.”\textsuperscript{42} No one would suggest that hunting-gathering bands, autonomous villages, chiefdoms, and archaic states represent the only ways that human societies can be organized. However, those particular types of organization have repeatedly survived to be studied, while others have broken down and disappeared. Almost certainly, the long stable periods we see in the archaeological record were periods when one of the former types of society was in existence. Thus archaeologists need to study the ethnographic descriptions of such kinds of societies.

\textbf{Are Evolutionary Stages Even Necessary?}

Since our stages of social organization are more analogous to recurring organs than to biological classes like \textit{reptile} and \textit{mammal}, do we need them at all? Some archaeologists have argued that they can be dispensed with entirely. I disagree.

In a recent article, archaeologist Charles Spencer argues that
we need to engage in two different types of evolutionary studies. One, basically *historic* in nature, documents the changes through time within a specific culture. Joyce Marcus and I recently traced the evolution of Mexico’s Zapotec Indian civilization this way, and found that it was in fact possible to present a kind of “evolution without stages.” In such a study it is the changing social and political institutions that provide the temporal landmarks along the way—the first evidence for descent groups, the first Men’s House, the first burials that reflect hereditary inequality, the first evidence of raiding, the first recognizable royal palace.

Spencer’s second type of evolutionary study is *comparative* in nature. It seeks not to trace the history of one specific culture, but to compare the evolution of unrelated cultures in different regions of the world. Such a comparative study needs terms like “autonomous village,” “chiefdom,” and “archaic state,” for the same reasons that paleontology needs terms like “reptile,” “bird,” and “mammal.” In spite of the fact that such labels do not necessarily describe every “fossil” society in the archaeological record, they provide us with shorthand references to some very common types.

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**Are Societies “Transformed” or “Selected For”?**

Some archaeologists, desiring the analogy between biological and social evolution to be even stronger than it is, maintain that societies are subject to a process analogous to natural selection. They contrast their approach with that of the majority of evolutionary archaeologists, whom they have labeled “transformationists.”

The emergence of the Hawaiian and Zulu states, to which we have already referred, provides us with a chance to compare these two views of evolution. Selectionists (with some justification) could argue that Kamehameha’s acquisition of European cannons and Shaka’s development of military regiments gave those leaders a “selective advantage” over their rivals. Transformationists, on the other hand, would argue that neither leader did what an animal with a selective advantage does—that is, produce so many more offspring than his rivals that he eventually displaces them. (Shaka, in fact, left no offspring at all.) They would maintain that in both
cases an archaic state was created by “transforming” several formerly independent chiefdoms into a single larger unit. This is not even vaguely similar to the way that new classes of animals arise in biological evolution.

I would argue, therefore, that neither the “transformationist” nor the “selectionist” position is more than an imperfect analogy for biological evolution. These alternatives are simply two ways of looking at the same phenomenon—moments of change in social institutions, set in motion by real human actors, succeeding only when conditions are right, and proceeding rapidly by the standards of prehistory.

What fascinates both ethnologists and archaeologists is how similar the results of social evolutionary changes look, at different times and different places, all over the world. Because the prehistoric record, like the paleontological record, contains a huge sample of evolutionary change, archaeologists have a particularly strong obligation to study it. At the same time, one of the most compelling aspects of the study of social evolution is that it gives archaeologists and ethnologists the chance to work together on a common problem.

NOTES


27. David L. Webster, *Defensive Earthworks at Becán, Campeche, Mexico: Implications for Maya Warfare* (New Orleans: Tulane University, Middle American Research Institute, Publication 41, 1976).


35. Wright and Johnson, “Population, Exchange, and Early State Formation in Southwestern Iran.”


39. Postgate, *Early Mesopotamia*, p. 45 and Figure 2.11.


41. Ernst Mayr, a professor emeritus at Harvard University, made
these remarks during an interview with a newspaper reporter in November, 1994.


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**Suggested Readings**


