

The Evolution of Complex Societies in Andean South America

In the lands assigned to Religion and to the Crown, the Inka kept overseers and administrators who took care in supervising their cultivation, harvesting the products and putting them in storehouses. The labor of sowing and cultivating these lands and harvesting their products formed a large part of the tribute which the taxpayer paid to the king. . . . The people assembled to cultivate them in the following way. If the Inka himself . . . or some other high official happened to be present he started the work with a golden [spade] . . . and following his example, all did the same. However the Inka soon stopped working, and after him the other officials and nobles stopped also and sat down with the king to their banquets and festivals which were especially notable on such days.

The common people remained at work . . . each man put into his section his children and wives and all the people of his house to help him. In this way, the man who had the most workers finished his suyu first, and he was considered a rich man; the poor man was he who had no one to help him in his work and had to work that much longer.

Father Bernabe Cobo (c. A.D. 1653)¹

Father Cobo's observations remind us of a point reviewed in detail in chapter 7 and other previous chapters: Ancient civilizations varied greatly in many respects, but one of the fundamental ways in which they were all profoundly similar is that each and every one evolved social institutions that not only permitted the pervasive exploitation of



FIGURE 14.1 An Inka mummy of a seven-year-old boy, Mount Aconcagua, Argentina.

the many by the few, but also made that exploitation into a religious and civil virtue. Few “artifacts” demonstrate this “exploitation” more vividly than the well-preserved corpse (Figure 14.1) of a seven-year-old Inka boy whose body was found in the high Andes.² He was dressed in beautifully woven cotton clothes—embroidered with geometric and other designs—and was wearing a plume headdress, a turquoise and *Spondylus* shell necklace, and woven sandals. Ritual offerings found nearby include six small statues of gold and carved *Spondylus* shells. The statues of humans were clothed and adorned with ornaments, while the others have camelid features—likely representing animals such as the llama and alpaca. Perhaps this was a ritual sacrifice to some deity associated with the mountains. We simply shall never know—but this boy and many similar finds in ancient civilizations around the world exemplify behavior that we think of as exploitation, but which the boy and his culture probably saw as necessary and virtuous acts of faith that kept the cosmos in order.

When European explorers reached Peru and the other countries of Andean South America, they found a civilization that was very strange to them in many ways, including ritual human sacrifice, but they recognized immediately that the Inka were organized in a rigidly stratified class society under a supreme monarch—just as the Europeans themselves of that era were.

As with other New World political systems, one has to wonder how it would all have turned out had the Spanish not beheaded this civilization in the sixteenth century through murder, warfare, and the spread of European diseases. The Spanish themselves did not know about the origins of smallpox and other diseases that so terribly afflicted aboriginal Americans, but their imposition of slavery and intentional destruction of South American civilizations (see later) seem particularly barbaric in retrospect, even in the context of the bloody sixteenth and seventeenth centuries.

Andean South American civilizations paralleled other early complex cultures in their intensive farming systems, massive pyramids and temples, large cities, powerful armies, and hierarchies of wealth, power, and prestige. But they were different from other early civilizations in interesting ways. The Inka Empire, for example, was the only one of the six “primary” (see chapter 7) ancient civilizations that did not develop a written language, despite the fact that it was the largest political system ever to evolve in the pre-Columbian New World. The Inka and some of their predecessors compensated to some extent for the lack of a written language by using the knot-system for transmitting information (see later) and by building a massive system of roads that linked people to the central government and to each other (Figure 14.2). Neither the Inka nor any other New World people, however, ever developed the wheeled chariots, wagons, and other vehicles that were a major reason why Old World civilizations were able to dominate the world for centuries.

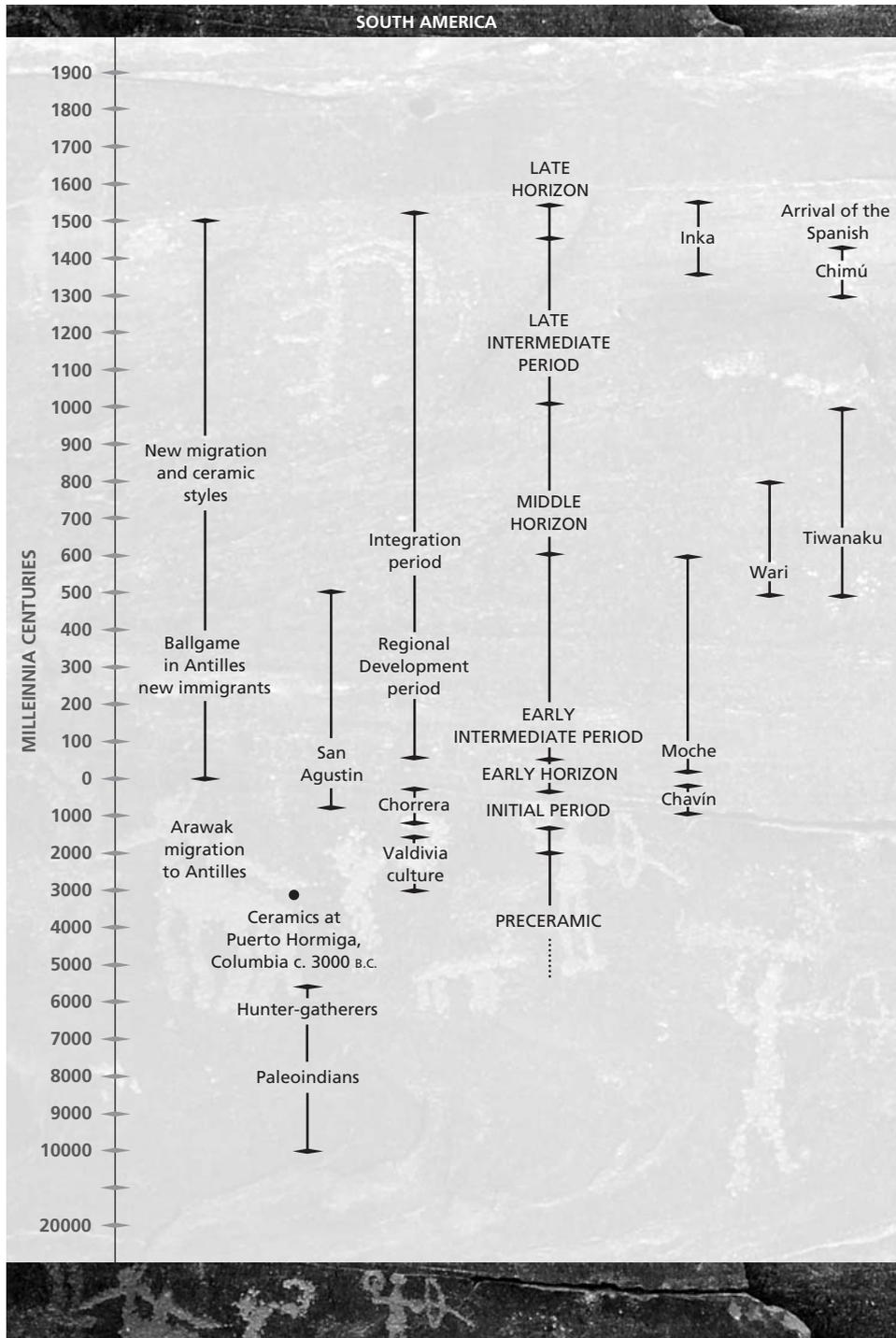




FIGURE 14.2 A stone-lined trail that served as part of the Inka road system.

THE ECOLOGICAL SETTING

Ecological complementarity was a major human achievement, forged by Andean civilizations to handle a multiple environment, vast populations, and hence high productivity. It helps us understand the unique place of the Andean achievement in the repertory of human histories; it may even point to future possibilities.

*John Murra*³

Like most other complex societies that developed independently, Andean South American civilization was possible because of—indeed, to an extent it can be defined as—the economic integration of the resources from highly varied physical environments.⁴ Ancient Egypt (chapter 9) is something of an exception to this pattern, in that its resources were quite similar over the length of the Nile Valley and Delta, but in Andean South America there were great economic advantages to integrating the different natural resources of highlands and lowlands, ocean and farm. The Andes rise so sharply from the Pacific that only a thin strip of land, less than about 60 km at its widest point, separates the mountains from the sea. And because the Andes shield the coast from the rain-

bearing air currents crossing the continent from the Atlantic, most of this coastal strip is one of the world's driest deserts, a region where rain falls only once or twice every five years. In a few places winter fogs along the coast keep skies overcast and in most years this phenomenon provides enough moisture through condensation to support vegetation zones (called *lomas*). But most of the coastal strip is utterly dry, and when the wind blows, dunes can quickly cover houses and choke irrigation canals.

This desert is habitable only because of the 50 or so small rivers that flow down from the mountains, across the plain, and into the sea. Many contain water during only part of the year, but the larger, permanent ones support forests and shrubs and their attendant wildlife, and in some areas the rivers keep the water table sufficiently high so that cultivation is possible without irrigation. Near the mouths of the rivers are fish, freshwater shrimp, and other resources, and in some valleys rivers have created broad alluvial plains of potentially rich farmlands. The coast has extraordinarily rich concentrations of fish, birds, birds' eggs, sea mammals, mollusks, crustaceans, kelp, and other plant foods. Human life along the coast is tied directly to these rivers and streams because they provide the only drinking water.

These rich marine resources are produced by a fascinating interplay of wind and ocean currents in which winds drive water north along the coast while the earth's rotation from east to west pushes the water westward, creating an upwelling of water from the ocean floor. Carried with these deep waters are tremendous concentrations of phosphates and other nutrients that support countless billions of microscopic plants, and these form the basis of a complex food chain comprising anchovies and other small fish that eat the plants; larger fish, birds, and sea mammals that eat the anchovies; and, ultimately, people, who exploit many links in the chain.

Occasionally, shifts in wind and water change the water temperatures and the plants die, cutting off the base of the food chain. When this happens, rotting plant and animal life fill the air with clouds of hydrogen sulfide that can blacken ships and houses.⁵ Several years may pass before the fertility of the sea is restored. The frequency in prehistory of *el Niño* (a reference to the Christ child), as this disturbance is called, is unknown, but it has occurred somewhat regularly in historical times, and recently it has been recurring about once every two to seven years and usually lasts about a year. By late 1995 this area had been experiencing *el Niño* continuously for nearly four years, which seems exceptionally long. Recent research using sedimentary cores from land and lake deposits, however, indicates that major *el Niño* events in prehistory were not that common. The work of Fontugne and his colleagues, for example, documents a major *el Niño* at 8980 B.C. and another one sometime after 3380 B.C.⁶ In the interval between these events were 10 humid episodes separated by dry phases. During the humid periods, the upwelling was stronger and there was increased moisture condensation in the form of fogs—these correlate with increased evidence for human occupation.

In the mountains are lush valleys, large basins, and high grassy plateaus (called *punas*). Hunters and gatherers here were succeeded after 4000 B.C. by farmers of potatoes, maize, quinoa, and other crops and by herders of llama and alpaca (domesticated New World camels).

The eastern slopes of the Andes, the *montaña*, are wet and heavily forested, and the combination of steep slopes and intense rain apparently limited exploitation by prehistoric peoples. East of the Andes is the Amazon Basin, a tropical rain forest from which feathers and other products were harvested and brought into early Andean South American economic systems, but which was never directly controlled by Andean peoples. The earliest known pottery in the New World dates to between 6000 B.C. and 5000 B.C. and comes from the lower Amazon Basin, in Brazil, where it was apparently made by hunter-foragers who specialized in shellfishing.⁷ But ceramics were independently invented many times in the New World, and the extent to which these tropical cultures may have influenced those of the Andean regions remains unclear.

EARLY HUNTERS AND GATHERERS

A few South American sites have been dated (controversially) to 20,000–15,000 years ago, but not until about 10,000 years ago is there substantial evidence of people in the mountains and coasts of Andean South America. John Rick has surveyed large areas of these uplands, and in caves and rock shelters he has found projectile points, scrapers, knife blades, and

other traces of these early Peruvians: They ate a lot of deer, guanaco, and vicuña (an animal related to the llama, both of which are New World forms of camels), and in some cases were perhaps even able to live year-round in small areas.⁸ In the beginning they also hunted giant ground sloths and a few other animals that became extinct about 10,000 years ago.

Some of these people were probably “transhumant,” meaning that they moved up and down the mountains to exploit various resources as they came in season. Many people made these seasonal moves once alpacas and llamas were domesticated because these animals require constant tending and frequent moves to new pasturages, thus making it possible for people to exploit the different environments at different times of year. The “thin” air, intense cold, blizzards, and thick fogs of the highlands make movement difficult, and over millennia of adapting to these conditions, natural selection has produced Andean peoples with extraordinary cardiovascular systems. Genetics and life-long exposure to the strains of life at high altitudes have produced people who can work hard in air extremely low in oxygen, while others unadapted to this environment can hardly function.

We may never know if coastal Andean South America was occupied before or at the same early date as the mountains because long stretches of what were beaches and inland areas before 3000 B.C. have been flooded by rising sea levels.⁹ In areas that escaped flooding there is evidence of communities as early as 10,000 years ago, so some scholars suspect that coastal populations may have been substantial at an early date.¹⁰

THE AGRICULTURAL BASIS OF ANDEAN CIVILIZATION

As was discussed in chapter 6, maize phytoliths (the microscopic hard remains of some plant cells) and pollen have been found at a few South American sites that date earlier than 1500 B.C. In reviewing the evidence, though, Deborah Pearsall concluded that maize probably did not become an important crop until after 1500 B.C.¹¹

Maize was just one of the important food crops in Andean South America, and in some areas potatoes, beans, and quinoa were the staffs of life. Quinoa seeds has one of the highest protein contents of any plant, and this plant was grown in many Andean regions. Domesticated potatoes were found in sites in Peru’s Casma Valley mountains in occupations dating around 2250 B.C. to 1775 B.C.,¹² and there are traces of cultivation that may go back as early as about 4400 B.C.¹³ This prolific plant is well suited to wet, cold soils where cereals do not do well, and the ancient South Americans partially solved a major problem of any agricultural system based on tubers—specifically, that tubers do not store well for long periods—by developing a method of storing potatoes by freeze-drying them.

The domestication of cotton between about 4000 B.C. and 1200 B.C. provided a relatively cheap source of textiles, and cotton textiles were complemented by a highly developed weaving craft in which reeds and other grasses were woven into sandals, clothes, and many other products. Ancient Andean cotton textiles are a lovely fusion of form and function. Many Andean textiles of various periods have survived because human corpses were frequently wrapped in them and buried in the coastal deserts, which desiccated and preserved both the textiles and the bodies. Using mineral and plant-derived dyes, ancient Andeans decorated many of their textiles with a wide variety of motifs, including geometric figures and stylized people and animals.

The role of animal domestication in early Peru is unclear, but llamas and guinea pigs were certainly domesticated in central Peru by 3500 B.C. As in Mexico, however, hunting continued to play an important role in many areas until quite late.¹⁴ Evidence from several highland sites suggests that by about 4000 B.C. guinea pigs had been domesticated—if they were not domesticated by this time, then these Andean peoples were formidable hunters of these rodents, for guinea pig bones are thickly spread through many layers of occupational refuse. Guinea pigs do so well in captivity, are so prolific and easy to feed, and are so suitable in terms of size for the modern diet that one wonders why international food conglomerates have not yet renamed and successfully marketed them.

THE FIRST COMPLEX SOCIETIES IN ANDEAN SOUTH AMERICA

The formative period of Andean South American civilization can be thought of in terms of two periods, the Late Preceramic period (c. 3200 B.C.–1800 B.C.) and the Initial period (c. 1800 B.C.–900/600 B.C.).¹⁵

Like their archaeological colleagues working on early civilizations in other parts of the world, archaeologists in Peru have tried to identify when ancient Peruvian societies first made those fateful transitions in the direction of cultural complexity—complexity in the sense of the evolution of the kind of society represented by the Inka, with its bureaucratic hierarchies, class divisions, monumental architecture, economic differentiation and integration, expansionistic militarism, and elaboration of arts, crafts, and ideology.

As we have seen in other chapters, every early civilization around the world solved similar problems of nutrition and adaptation. Each found a reliable and productive plant to provide carbohydrates (rice, wheat, potatoes, maize, etc.), a legume to provide high-quality vegetable proteins (beans, peas, vetch, etc.), an animal protein source (usually a blend of hunting, fishing, and herding), and a textile to provide clothing (wool, linen, cotton, etc.). Not every society that evolved these adaptations became a great civilization (e.g., Polynesian societies based on tubers, pigs, and bark cloth), but all that did converged in their solutions to essentially the same problems of adaptation.

Peru offers an interesting possible variation on this theme because its sea coasts offer such a prolific source of food, in the form of many species of birds, shellfish, and fish—particularly schooling fish, such as anchovies. Even without farming, or with some minimal gardening, these coasts may have proffered enough reliable food to support many people—people who could live for all or much of the year in the same communities.

In the 1970s archaeologist Michael Moseley suggested that the initial stage of the rise of Andean societies was based on people who lived in villages and began to evolve some simple social stratifications on the basis of a fishing and foraging economy along the marine coasts rather than agriculture—at least at first. At one level this suggestion might not seem particularly radical. We know that all that is required for sedentary communities and the first appearances of complex societies is a highly productive and reliable blend of animal and plant foods, and it is not important whether these foods are agricultural (chapter 6) or not. Native Americans on the northwest coast of North America managed to live in non-agricultural sedentary communities that were stratified by wealth and an elementary sense

of class, for example, as did many others, including the hunter-foragers of Southwest Asia, whose descendants became the denizens of the great Sumerian and Babylonian empires (chapter 8).

Also, the Inka Empire managed to tie together a great diversity of upland and lowland environments in an economy that was fundamentally agricultural when the Spanish encountered it, so it is interesting to see what role maritime resources played in the overall cultural evolution of this area, both before agriculture became the dominant source of food and afterward.

We know that by at least 6000 B.C. quite a few people lived on the Pacific coast, probably moving between the river valleys, the *lomas* (fog-oases), and the coast.¹⁶ For several millennia thereafter, these societies seemed to change little as they adapted to this rich complex of environments. Anyone who has had the good fortune to live at the interface between sea, plains, and mountains, where oysters, clams, and fish can be combined with the wealth of terrestrial foods, can appreciate the stability and diversity of such economies, and the Andean coast is among the richest such zones in the world.

The Late Preceramic Period in Andean South America (c. 3200 B.C.–2000 B.C.)

Just prior to the beginning of the third millennium B.C., the appearance of sedentary, complex societies becomes a feature of both the coastal and highland areas. As we have seen in other areas of the world, one feature of such cultures is monumental construction—plazas, pyramids, and courts (discussed later). These sites also appear to be politically organized at a level above egalitarian villages.¹⁷

Excavations at Paloma,¹⁸ on the coast of the Chilca Valley, 65 km south of Lima, illustrate some aspects of life in such regions (Figure 14.3). Paloma was located about 3.5 km from the ocean and 7.5 km from the Chilca River, on the edge of the *lomas* zone, where fogs supported some vegetation. Beginning about 8,000 years ago, people were living there in reed huts, probably already putting together a varied economy of plant collecting, hunting, and foraging. But shortly before 3000 B.C., some people apparently moved from the *lomas* in order to concentrate on the interface of coast and river valley, and small, dispersed settlements began to appear in these zones.¹⁹ By about 2500 B.C., many small sedentary communities had appeared along the Andean coast. In some cases, the diet of these communities seems to have been based mainly on marine resources, with wild or domestic plants of only secondary importance,²⁰ but there was great variability from site to site.

At Alto Salaverry,²¹ which was occupied from about 2500 B.C. to 1800 B.C., people cultivated and subsisted mainly on plants, but a lot of the calories in their diet came from sharks, bonito, mussels, and many other types of marine foods. In several communities of this period, skeletons show a pattern of bone growth in the inner ear that is common among people who spend a lot of time diving in cold water.²²

At Chilca, the primary meat source appears to have been sea lions, but mussels, other invertebrates, and a variety of collected plants were also important. At other sites the remains of sharks, rays, cormorants, gulls, pelicans, and other animals attest to the importance of the resources of the coastal shallows, as does the presence of fish hooks, nets, and lines. No boats have been found at any of these sites, but the kinds of fish and invertebrates usually eaten along the coast are easily taken with simple nets.



FIGURE 14.3 Some sites of the Preceramic and Initial periods.

By about 2000 B.C., numerous communities dotted the Andean coastline, many of them on river deltas and bays. Most of these seem to have been quite simple foraging-based communities, and few had more than several hundred inhabitants. At Chilca, examination of the burials of 30 adults and 22 children and adolescents indicated only minor differences in grave goods or positioning of the corpses. Some people were interred with spindles and spindlewhorls, others with fish hooks and lines, still others with cotton and weaving tools or a pointed stick and spatula kit that may have been used in shellfish gathering.

Once the Andean coast was fairly thickly settled, people here, like those in Egypt, Mesopotamia, China, and other early developmental centers, began building monumental architecture. It is absurd to think that people generally have some innate desire to build big stone buildings, but in Andean South America, too, no sooner had people devised economies of some reasonable reliability and richness than they began “wasting” massive amounts of their wealth in temples, tombs, and pyramids.

As was discussed in chapter 7 and other earlier chapters, the appearance of monumental architecture was one of the earliest signs of social transformations of cultures around the world. Andean South American civilization also followed this pattern. In the third millennium B.C., people in dozens of communities along the coast began to build impressive stone buildings and complexes of plazas, sunken pits, courts, truncated pyramids, and other large and formally arranged architecture.



FIGURE 14.4 A structure at el Paraiso, Peru.

Many sites are known from the coastal area at this time—they are distributed in several ecological zones in the coastal valleys, and inland sites continue to have maritime resources as an important component of their subsistence. In the Pativilca and Fortaleza River Valleys in the Norte Chico region, for example, Haas and his colleagues have documented a minimum of 16 sites with late Preceramic occupations.²³ Each of these is characterized by monumental architecture, large plazas, and large ceremonial structures. The rectangular, terraced

pyramids (mounds) range in size from 3,000 to 100,000 m², and there are between one and seven mounds present at each of the 16 sites.

Of the other early monumental buildings along the coast in the Preceramic period, most seem to have had a clear ritual purpose. Their alignment with mountain peaks, small inner rooms, internal burials, and other characteristics suggests ritual purposes, although like other early ceremonial structures around the world, they probably were centers for economic exchange and administration. Religion and economy, as we have noted, are inextricably intertwined throughout human history.

At the end of the late Preceramic period, a new form of construction appears in the coastal regions, the U-shaped mound complexes.²⁴ An example of this development is El Paraíso, on the banks of the Rio Chillón, about 2 km inland from the sea (Figure 14.4). This site is dominated by seven mounds that form a U-shape covering some 58 hectares, with a large plaza situated between the mounds. The structures were built over a period of several centuries and contain some 100,000 tons of stone masonry; the two largest structures rise to a height of over 5 m.²⁵ One structure is reported to have been painted a bright red and has evidence of burning on the floor, perhaps as a result of rituals.

There is much variability in early Andean South American monumental architecture, but there are also regularities that suggest that the builders of these structures shared a complex ideology and aesthetic. In previous chapters we have noted that early civilizations seem to have been built around a core of fundamental beliefs that integrated peoples over large areas and motivated them to work in concert within and between communities. Traces of this ideology seem to be expressed at El Paraíso. As Jeffrey Quilter noted,²⁶ the principal mounds at both El Paraíso and another coastal site, Piedra Parada,²⁷ are oriented to north 25 degrees east. This orients the sites

toward the NE and SW maxima of the Milky Way, and the axis perpendicular to this orientation is directed to the rising of the sun at the Summer Solstice (December) in the

east and the setting of the sun [at] the Winter Solstice (June), as calculated for the years ca. [1450 B.C.].²⁸ . . . This suggests that the astrocosmological concepts known to have been important for the Inka were established in Preceramic times.²⁹

Other complexes of this period have different orientations, but most of them have a formal, almost stylized use of specific architectural elements and arrangements. Ancient Peruvians used the interplay of rectilinear arrangements with circular or rounded elements, as well as the placement of sunken courts, terraces, and other constructions at different levels of elevation. These arrangements may have been intended, like those of Egyptian temples, to take the individual who enters the complex through a progression of “sacred” spaces.³⁰ At El Paraíso, Huaca Florida, and other sites, people built complexes in a U pattern, in which people presumably entered the open part of the U-shaped complex of platforms and buildings and then proceeded through interior forecourts, sunken courts, and other structures.

People in the Andean highlands also built monumental structures. At Kotosh, at about the 1,800-m level on the eastern slopes of the Andes, a large complex may have been begun before 1800 B.C. The earliest structure—a temple—was built on a stone-faced platform some 8 m high. At least 10 superimposed building levels were found. A good example of one of these structures is the Temple of the Crossed Hands, which is approximately square in shape—just over 9 m on a side—and about 2 m high. A stylized white serpent is painted on the staircase leading to this temple, and its entrance is plastered and painted red. A circular firepit, built into the floor, has subfloor flues to facilitate complete burning of materials placed into the firepit. Other features include five wall niches, and just below the two niches that flank a large central niche are clay-sculpted pairs of crossed hands—the feature used to name this temple.³¹ Richard Burger estimates that perhaps as many as 100 such chambers are present at the site, and interestingly these chambers appear to have been deliberately buried—for example, the Temple of the Crossed Hands was filled in with river cobbles.³²

Richard Burger and Lucy Salazar-Burger have suggested³³ that much of the architecture of Andean South America between about 1900 B.C. and 1000 B.C. expresses a common religious ideology, the *Kotosh Religious Tradition* (named after the site of Kotosh). We will never know precisely what this religion comprised, but an important element appears to have been ritual fires, placed in the firepits of the temple chambers. Quilter notes³⁴ that El Paraíso’s sunken pit, a rectangle about 4.5-by-4.25 m, shows evidence of considerable burning. Benches around these pits are common in constructions of this period, and Quilter suggests that in ritual use 10–12 adults sat around these ritual fires and offered marine shells, meat, quartz, or other goods in sacrifices—perhaps while under the influence of coca or alcohol. As Charles Stanish³⁵ points out, however, the architectural constructions of the highlands and the coastal areas are considerably different. This makes it somewhat unlikely that the Kotosh Religious Tradition was widely shared across this entire region, especially in the context of little overall site planning or formal designs for sites in the highlands as compared to those in the coastal areas.

Contacts between highlands and lowlands, however, were important and included marine fish and shellfish. Another aspect appears to have been trade in salt. At the site of La Galgada in the highlands, for example, one burial yielded a salt crystal that had been placed under a woman’s head, while two other burials were underlain by a bed of salt crystals.³⁶

The Maritime Foundations of Andean South American Civilization?

As noted earlier, Michael Moseley has argued that early Andean South American complex societies, as represented by El Paraíso and similar sites, were initially based on an essentially non-agricultural economy.³⁷ If so, this would be interesting but would not alter our basic understanding of cultural complexity, for what is important in cultural evolution at this stage is the overall productivity of an environment rather than the specific ways in which it is productive.

As Quilter and Stocker³⁸ point out, fish can be dried or converted to a paste that has at least some shelf life. People who know anchovies only from the oversalted horrors on pizzas may underestimate the appeal and nutritive potential of this staple of Andean South American life. This fish was served fresh, dried, or as a kind of paste that, as every cook knows, is a marvelous addition to many tomato-based sauces. And anchovies are only one of many species of fish available in great numbers on the Peruvian coast. Sea mammals, too, can be rendered into storable oil, and they provided a reliable source of meat in ancient times.

Although inhabitants in coastal sites relied heavily on marine resources, they also used wild and domesticated plant crops. These include gourds, legumes, squash, *achira*, beans, sweet and white potatoes, peanuts, and cotton.³⁹ Sites that were a bit farther inland obtained marine resources through exchange, while cultivating agricultural crops and collecting wild plant foods. Trade with the highland sites allowed coastal groups to obtain potatoes, *oca*, and *ullucu*.⁴⁰

Moseley's hypothesis for the maritime origins of Andean complex societies, however, is not applicable to developments in the highlands, where, as we saw earlier, sites with monumental architecture are of similar age to sites in the coastal region. While highlands inhabitants received some marine resources through trade, their subsistence economies were based on rainfall and small-scale irrigation agriculture—potatoes, *oca*, *ullucu*, quinoa, and some maize—as well as hunting of wild animals such as deer, guanaco, and vicuña.⁴¹

As these various sites indicate, cultural evolution rests not on any particular form of economy—all that is required is sufficient and reliable production.

The Initial Period in Andean South America (c. 1800 B.C. – 900/600 B.C.)

During the Initial period, settlements in the coastal and highlands regions increased in size and complexity of architectural construction. U-shaped construction becomes a common feature along both the coast and in the central part of the highlands. In the south-central highlands—the Titicaca Basin—public architecture makes its first appearance.⁴² Construction of centers, changes in settlement patterning, and population growth appear to have resulted from the construction of irrigation systems in the upper coastal valleys.

A particularly important Initial period area is the Casma Valley, located on the north-central coast. Eight important centers were present here during the Initial period, including Sechin Alto, Cerro Sechin, and Pampa de las Llamas-Moxeke. At about 1400 B.C. or earlier, Sechin Alto had the largest monumental architecture to be found anywhere in the New World.⁴³ Its U-shaped construction is anchored by an adobe-block pyramid mound that

measures 250-by-300 m and stands 44 m high.⁴⁴ Several large plazas, some of which have sunken circular courts, are associated with the pyramid.

Some 2 km away is the site of Cerro Sechin, with a three-tiered stepped platform with two smaller buildings on each side.⁴⁵ A possible sunken circular court is present in front of the platform. As noted by several researchers, one of the most striking aspects at Cerro Sechin are the 302 small and large basalt sculptures that were originally placed in alternating sizes—large and small—along the outer wall of the platform-pyramid. These sculptures depict military scenes of war, victims of captivity, and victors. Some of the defeated are shown decapitated or cut so that their intestines are spilling out, while other sculptures simply show severed heads, legs, arms, and so forth.⁴⁶ There would seem to be little doubt that some level of violence was a part of life during the Initial period, although Initial period sites do not appear to have defensive constructions such as walls. Perhaps such gruesome scenes were not the fabric of everyday life, but rather—as suggested by some archaeologists—a record of a mythological event that helps establish and sustain the ceremonial or ritual nature of these monumental constructions.⁴⁷

Farther inland in the Casma Valley lies the site of Pampa de las Llamas-Moxeke (Figure 14.5). This site has two massive platform-pyramid mounds that are separated by an enormous terraced plaza, as well as more than 70 smaller aligned platforms and buildings that were likely residences. The two platform-pyramids are aligned along the site's central axis, and the larger of the two—the Moxeke mound—has painted clay sculptures and geometric designs along the sides of the third platform terrace, about 10 m above ground surface.⁴⁸ The clay sculptures show humans wearing tunics, short skirts, and loose mantles—some hold two-headed snakes with forked tongues in upraised hands—or massive heads.⁴⁹ This frieze would have been quite visible to people in the plaza below the platform-pyramid, likely reinforcing the ideology common to Initial period culture in the Casma Valley.

These developments in the Casma Valley have been variously interpreted. Jonathan Haas and Sheila and Thomas Pozorski favor a relatively complex sociopolitical organization—perhaps even a theocratic state—that features distinct, highly stratified social classes.⁵⁰ Richard Burger,⁵¹ on the other hand, believes that the evidence best supports a variety of small societies that have social divisions that are weakly developed. He points to a lack of economic specialization, as well as variability in the layout of the ceremonial centers, as indicative of independent local groups rather than a single political entity. Their religious traditions are, however, well developed, and may have served to loosely connect the various centers through shared symbols.

Another example of Initial period U-shaped constructions



FIGURE 14.5 Overview of Pampas de las Llamas-Moxeke, Peru.

comes from the coastal area site of Caral in the Lurín Valley. This ceremonial center was built and occupied in the late Initial period, from about 1300 to 900 B.C.⁵² It contains a ceremonial road that travels between two enormous enclosures and two sunken circular courts, leading to the raised central plaza. From the plaza level is a 34-step staircase leading to the top of the central pyramid. One of the most impressive decorations is arranged so that one would pass through it when reaching the top of the staircase and is described as a “massive mouth band with interlocking teeth and large upper fangs on either side of the entryway into the central atrium. This awesome motif is clearly visible from the central plaza.”⁵³

Caral also contains evidence for habitation, with most house structures located to the south of the ceremonial central area. The population is estimated to be no more than 300 people.⁵⁴ As Burger and Salazar-Burger observe, this is a relatively small number of people considering the size of the ceremonial complex and the labor required to build and maintain that complex. They hypothesize that most of the population served by this ceremonial center lived in scattered farmsteads around Cardal. A small number of residences and burials were also found on top of the platform-pyramid—these may have been the homes for people of elite status, but few burial goods are present, suggesting that inequities in access to resources were not significant during the Initial period.

In summary of the Initial period, we see clear evidences of important social changes in these monumental complexes in the highlands and along the coast, but it seems likely that these communities remained relatively simply organized compared to the cultures that followed them. When we look at mortuary practices, for example, the small amount of very sketchy evidence we have shows a certain formalization of burial practices and some elaboration of them, but there is no clear evidence of massive disparities in wealth, power, or prestige. At the site of Asia, for example, 49 funeral bundles were recovered in which bodies and a few utilitarian goods were wrapped in reed mats and placed below the floor of a rectangular compound.⁵⁵ Differences in these burials may indicate some status differences, and there are a few “trophy heads” and headless bodies in this group that may indicate raiding or warfare, but overall the burial practices until about 900 B.C. suggest a society that is somewhat non-egalitarian, perhaps, but one that is not organized on the basis of class.

More important, insofar as the scanty evidence indicates, while these people traded products and evolved common ideologies, these communities were not functionally integrated to any great extent. There is little evidence of functional specialization within and among communities.

THE EARLY HORIZON (C. 900/600 B.C.—A.D. 1)

It is a fallacy of historical analysis to assume that increasing complexity is a natural, inherent quality in human societies. The idea of “progress” is so much a part of Western culture that it sometimes blinds people to the fits and starts of cultural evolution. Such is the case with the apparent collapse of many of the coastal complex societies just before the beginning of the Early Horizon.⁵⁶ Yet at the same time, sites in the central highland areas show considerable new investment in monumental construction, shared artistic and religious motifs, and perhaps power and influence.

The monumental constructions at El Paraíso, Cerro Sechin, Cardal, Kotosh, and other sites anticipate the cultural changes underway in this period, and there are many other signs that the Andean world was changing after about 1000 B.C. As we saw in the cases of Egypt, Mesoamerica, and elsewhere, “art” was not just a minor peripheral part of the rise of ancient civilizations: Art was an integral part of this process. In all early states, the cities, rank-wealth hierarchies, and functionally interdependent economies that arose were presaged by the spread of an art style that was usually expressed mostly directly in pottery. In the case of Andean South America, novel religious elements also appear to have been quite pervasive in this process.

Peru was no exception to this pattern. After about 900 B.C., people living at Chavín de Huántar (Figure 14.6) and other sites in the highlands of northern Andean South America began to use the same styles of decoration in their pottery, architecture, and other artifacts. Over succeeding centuries, tens of thousands of people over a great area participated in the Chavín Horizon, as this complex of stylistic elements is called.

The main motifs of Chavín art include fantastic depictions of hybrid combinations of people and jaguars, as well as snakes, bats, fish, crabs, and crocodile-like figures (Figure 14.7). In its fusion of tropical forest elements, such as snakes, jaguars, and caiman, Chavín art may reflect earlier cultural influences from the forests east of the Andes, but the “story” of Andean South American civilizations is that of integrating different zones—coasts, mountains, and lowland forests. The spread of Chavín styles is probably a harbinger of the functional integration of these areas in later periods. In some areas these motifs spread at about the same time as apparent increases in product exchange, activity specialization, population densities, and investments in monumental buildings, but the general tenor of the Chavín diffusion is reminiscent of the initial spread of Olmec art in Mesoamerica—a relatively simple extension of aesthetic and perhaps religious traditions in the absence of elaborate political hierarchies or economic elites.

Chavín de Huántar, the site after which the art style is named (though it is probably not the earliest or even most important Chavín settlement), was occupied for all or most of the period between about 900 B.C. and 200 B.C.⁵⁷ It boasts a ceremonial complex composed of two low platform mounds, a massive terraced platform, and a sunken circular plaza, 21 m in diameter and paved with stone. This complex is arranged in the U-form (discussed earlier) that was established some centuries earlier at El Paraíso. The most prominent feature of this complex is the Old Temple (remodelled during the Early Horizon into the New Temple), which was built of alternating thick and thin slabs of granite, sandstone, and limestone. These large stone blocks form the exterior of the temple, while the interior was filled with earth and rock fill into which were built numerous narrow passageways, canals, ducts for ventilation, and underground rooms.⁵⁸ The best known of these galleries is the Lanzón Gallery—named after the granite sculpture with a lance-like shape, carved as a fanged deity. Aspects of the sculpture’s position in the chamber and its associated features—such as a vertical channel from the gallery above and a depression located at the top of the Lanzón sculpture—have led to interpretations such as pouring the blood of human sacrifices into the vertical channel and letting it drip into the depression and run down the Lanzón sculpture, as well as the use of the Lanzón sculpture as an oracle.⁵⁹

By the fourth century B.C. as many as 2,000–3,000 people may have lived in and around the monumental complex at Chavín de Huántar—a large number of people—and there was probably some significant craft-specialization. Gold was the medium of the finest art

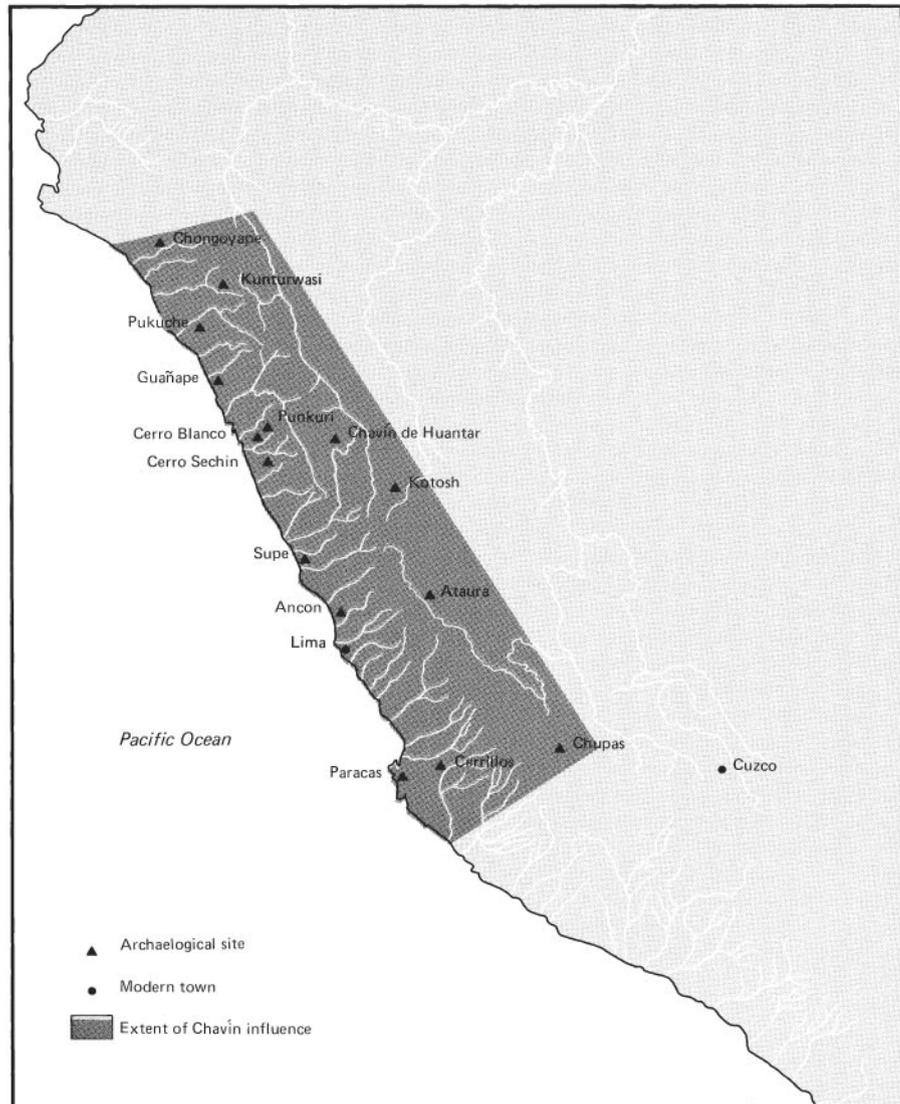


FIGURE 14.6 As in other early civilizations, initial cultural complexity in Andean South America was prefaced by the rapid spread of particular styles of pottery and other artifacts. Chavín-style artifacts have been found throughout the area indicated here.

in the Chavín era, as craftsmen cut, embossed, annealed, cast, and welded it into ear spoons, nose ornaments, plaques, crowns, and face coverings for corpses. Copper and silver were also extensively used for making ornaments, and weaving became a fine art as well.

The central religious symbols of Chavín were widely distributed over the northern and central coasts, and Chavín-style ceramics and architecture are found even in small villages.

The Chavín cult, like other early religions, may have been an effective means of stimulating people to act in coordinated ways. After all, the expenses of large buildings and the “furs and feathers” of office are cheap compared to their power in directing the population toward specific economic and political goals. The Amazonian animals typical of Chavín designs and the distribution of these designs suggest that the center at Chavín de Huántar may have been an intermediate point on routes connecting the coasts with the exotic, rich world of the interior Amazon.

But were Chavín and its contemporaries a state-level form of political organization? Archaeologists have disagreed in their interpretations on this point. Some see the large Early Horizon sites as well-organized pilgrimage centers, regional cult complexes, or oracle centers. Others believe that these Early Horizon polities represent complex chiefdoms. Still others would attribute the classification of “secondary state” to Chavín, in part, because these scholars think that earlier sites, such as Pampa de las Llamas-Moxeke, represent primary states.⁶⁰

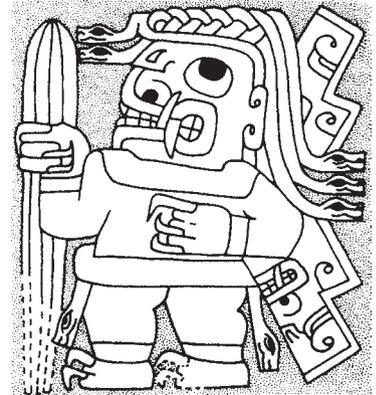


FIGURE 14.7 An example of an artistic motif from the Chavín art style.

THE EARLY INTERMEDIATE PERIOD (A.D. 1–A.D. 600): EARLY STATES

In the first millennium A.D., Andean South American societies were transformed from relatively simple, small political units that we might call chiefdoms into much larger and more populous militaristic cultures that we can legitimately term states.⁶¹ Within this period the population of Andean South America rose from a few hundred thousand to approximately four or five million, large cities appeared in scores of places, armies conquered thousands of square kilometers, irrigation systems brought rich harvests to the desert and mountains, and the ceramic, architectural, metallurgical, and textile arts reached great heights.⁶²

This transformation seems to have arisen out of the disintegration of the Chavín cult at about 200 B.C., which was followed by the emergence of as many as 15 different centers of regional development. Ceremonial centers can be found in many places in the southern Andean South American highlands at this time, as well as in the Nazca Valley and other coastal regions. Some of these were sizable towns, such as Tambo Viejo in the Acari Valley (Nazca area), which contains hundreds of rectangular rooms, most of which seem to have been residences. But the Nazca polity probably remained a mix of villages and towns.⁶³ Also numerous along the northern coast were great fortresses of terraced adobe platforms with room complexes and defensive peripheral walls.

One of the best known examples of Early Intermediate period cultures are the Moche whose area appears to have contained two political units—one to the north and one to the south. The Moche culture was concentrated in about a 400-km coastal strip that extended about 50 km inland and used an elaborate irrigation system. The population of the Moche Valley itself was likely more than 50,000 people (Figure 14.8). By 200 B.C. the community at Cerro Arena, for example, contained hundreds of houses and public buildings that extended over an area of about a square mile. The economic basis of this and other



FIGURE 14.8 The Moche area of influence and several Moche sites.

communities was an irrigation system in which mud canals were built high in the hills, diverting water through kilometers of canals that snaked along the mountainside and down to the valleys. Because the Moche worked only with mud, the construction of these canal systems had to be done with great precision; if the water flowed too slowly, silt would accumulate so rapidly as to make the canal a vast waste of effort, while if it flowed too quickly, the whole system could be eroded. Cleaning the wind-blown sand from these systems probably required the annual orchestration of thousands of laborers.

In chapter 7 the premise that irrigation systems like these are primary *determinants* of cultural evolution was discussed and, for the most part, rejected. Often in prehistory, great irrigation systems seem more the products of states than their immediate cause. But in the case of the Moche Valley and many other examples, irrigation agriculture and cultural evolution are perhaps better viewed as closely interrelated, with an increase in the complexity of administrative and economic systems going step by step with increases in the complexity of irrigation systems.⁶⁴

We know much about life in Andean South America during this period because the people recorded their activities in great detail in ceramics, sculpture, paintings, and tapestries. Pottery vessels depict people hunting deer with spears and clubs, fishermen putting to sea in small canoes, blowgun hunters taking aim at birds, weavers working under the direction

of a foreman, and many people engaging in war, human sacrifice, and violence. People are also shown being carried on sedan chairs, seated on thrones, receiving tribute, and presiding at executions.

One of the most spectacular archaeological discoveries of the last decade of the twentieth century was the Moche royal burial complex at Sipán, about 420 miles northwest of Lima. These burials are particularly important because, unlike most known Moche sites, they had not been completely looted (the tomb was rescued and protected from local thieves by Walter Alva) and also because they express many elements of Moche culture. By now the reader, having surveyed Egypt, Mesopotamia, Mesoamerica, and other early civilizations in previous chapters, will not be surprised to learn that ancient Moche culture was based on massive inequalities in wealth, power, and prestige; that warfare was glorified and celebrated with the ritual executions of captives; that loving skill and precious materials were lavished on making beautiful objects—many of which were buried with dead elites—and that the entire society comprised an expansionistic and militaristic state.

The Sipán burials that reflect these aspects of Moche culture were found in the interior of a large mudbrick pyramid. In one burial a man identified by archaeologist Christopher Donnan⁶⁵ as a “warrior-priest” was found lying on his back in a wooden coffin. He was wearing gold nose and ear ornaments, turquoise bead bracelets, and copper sandals and was surrounded by other exotic goods, including spears, war clubs, shields, atlatl darts, seashells, feather ornaments, lovely cotton fabrics, hundreds of pots, a dog, two llamas, and other goods (Figure 14.9). This man was also buried with what one might consider the most valuable of all commodities, three young women and two men. As we have seen in other ancient cultures, many of these societies were based on ideologies that sanctioned these sacrifices and probably promised the participants an eternal and joyful afterlife. Although we will never know for certain what was going on in the minds of these nonliterate peoples, it seems a reasonable speculation that the Moche believed that by supplying this man with a few female and male attendants, food, tools, and some personal ornaments, they were assuring him of a reasonably comfortable eternity.

Depictions on Moche pots provide a “text,” of sorts, for hundreds of them show similar scenes, apparently recording rituals in which warrior-priests slit the throats of war-captives, distributed the blood to be drunk, and then dismembered the bodies.

Among the other ideological expressions in ceramics of this period are the frank depictions of sexual practices. While every conceivable sexual variation is amply illustrated, oral sex and heterosexual coitus are common themes. Pots representing sexual themes in the most explicit terms may have been used in ordinary daily life, and to drink from them is to perform, symbolically at least, acts still considered illegal in some states in the United States. If the sexual practices depicted in pottery are in any way a reflection of the proclivities of the people—and reports of the Spanish and the Inka suggest this was the case—then the Moche may have devised a very efficient system of birth control.⁶⁶

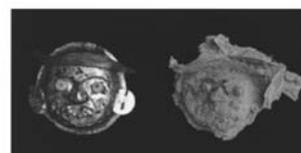


FIGURE 14.9 Some of the burial objects from Sipán, Peru.

If Moche pottery is an accurate reflection of daily life, men hunted, farmed, fished, and fought in wars, while women cooked food and performed other basic domestic services. Based on pottery representations and later ethnographic accounts, women also produced all or most of a primary kind of wealth in the form of textiles. Ethnographic evidence from the time of European contact to the present suggests that nearly all women wove textiles, and even the most elaborate fabrics may have been produced by peasant women working individually in villages.

The overall archaeological record of the Moche reveals the central patterns of all early complex societies. The evidence of warfare, for example, in ceramic depictions is supported by settlement patterns: Every well-surveyed coastal valley has been found to have fortresses and fortified settlements dating to this period, and weapons are common in these sites, particularly along the southern coast. Trophy heads and mummified corpses showing signs of violence are frequently found in cemeteries.

Occupational specialization was still at a rather simple level, but skilled craftsmen must have been full-time specialists to be able to produce the intricate objects in gold, silver, copper, and many other commodities found here.

The economic productivity of the Moche, their class-based society, and their ideology were also expressed in monumental architecture. At various places in the Moche Valley they built large clay platforms, ramps, temples, pyramids, and other constructions. One Moche pyramid, Huaca del Sol, was 340-by-160 m at the base, stood 40 m high, and comprised an estimated 140 million mudbricks.

In general, the Moche and other small states of this period appear to have been caught up in spirals of warfare, but they were also linked by trade mechanisms. Like other early states around the world, they seem to have expanded and contracted as the fortunes of war changed and as differences in the agricultural potential of various regions took effect.

THE MIDDLE HORIZON (C. A.D. 600–A.D. 1000): COMPETING STATES

At about A.D. 600, the many rival “states” and other competing polities of Andean South America began to give way to several larger competing political systems, one centered at Wari in the Manteco Basin; another at Tiwanaku, at the southern end of Lake Titicaca; and a third in the Moche-Chimú area. In these and perhaps other areas, wars of conquest may have brought large territories under the control of centralized, hierarchically-organized governments and lessened regional isolation.⁶⁷

Tiwanaku is one of the first and largest “states” to be based in large part on potatoes, which were intensively cultivated with other crops on raised fields reclaimed from the lake marshes. The people of Tiwanaku also herded vast numbers of llamas—invaluable beasts of burden in this high country of thin air, and where in the classic Andean tradition the resources of highlands and lowlands could best be exploited via voluminous trade.

The people of Tiwanaku included master stonemasons, who produced monumental gates, statues, and other buildings that are some of the most impressive in all Andean South America. Tiwanaku itself—from A.D. 100 to 700 or later—is an enormous and planned

urban capital with state buildings, palaces, pyramids, temples, and streets (Figure 14.10). At its height, the population of the Tiwanaku state may have been approximately 100,000.⁶⁸

Unlike the wars of conquest model (see earlier), the work of Juan Albarracín-Jordan⁶⁹ examines the rise of the Tiwanaku state from the perspective of how local hierarchies became integrated into a larger political entity. He uses ethnohistoric information to suggest that local hierarchies were developed to manage the exploitation of the resources from multiple ecological zones. Through reciprocity relationships, shared ideologies, and aggregation of population in

larger centers, leaders of these local hierarchies—which may have represented distinct ethnic groups—began to participate in larger political organizations as intensification in management of the resources of the multiple ecological zones occurred. There is some evidence that some of these groups concentrated on certain specializations, such as particular crafts or the production of specific staples.

Wari existed as a political system for only a century or two, but at its high point it carried out political and economic activities over most of the coast and highlands between Cajamarca in the north and Sicuani in the south. The evidence for the Wari “empire” comes mainly from the distribution of specific art styles and religious symbols over a wide area of the central highlands and from its roads and provincial centers. Significantly, the art motifs show up most frequently in the burials of individuals whose associated mortuary goods appeared to reflect particularly high status. The city of Wari expanded to an impressive 15 km²—making it one of the largest residential sites in the ancient New World—and the proportion of its domestic and nondomestic architecture along with its overall size are similar to Tiwanaku.

It is probably significant that some of ancient Peru’s major roadways may have been constructed during this period, for such roads would have been very important in facilitating the exchange of goods and services over an area as large as the one apparently administered from Wari.

The worldwide pattern of early states is one in which ever-larger polities compete with each other, with many expansions and contractions, but with a long-term increase in the size of the polities and the scale of the conflict. Wari, Tiwanaku, and other early states probably reflect this evolutionary paradigm, although Tiwanaku and Wari seem to have had little interaction except for their shared ideology.



FIGURE 14.10 Stone pillars at the North and East Sides of Agapana, Tiwanaku, Bolivia.

THE LATE INTERMEDIATE PERIOD (C. A.D. 1000–A.D. 1476): EARLY EMPIRES

With the collapse of the Wari and Tiwanaku political systems between A.D. 800 and A.D. 1000, at least seven different areas in Andean South America became power centers, the best known and most developed of which was the Chimú state centered in the Moche Valley on the northern coast. A major center of the Chimú political system was the beautiful city of Chan-Chan, a partially planned settlement covering nearly 11 km²—one of the largest pre-Columbian cities in the New World. It contained 10 major compounds, each with houses, terraces, reservoirs, parks, roads, and public buildings. By the time Chan-Chan was built, Andean societies were rigidly stratified: Fiedel notes that in one area of Chan-Chan the skeletons of between 200 and 300 young women were found, “probably members of the royal harem, [who] were sacrificed either at the time of the deceased ruler’s funeral or at later commemorative ceremonies.”⁷⁰

Gold-working, silver-working, ceramics, weaving, and sculpture were all highly developed crafts. Chimú society seems to have been rigidly stratified according to wealth and prestige, and the extension of political and economic control appears to have been based on a highly efficient army.⁷¹

Perhaps the most significant development in Andean South America during this period was the multiplication of urban centers. Much of southern Peru remained largely rural, but in the northern half of the country some of the greatest cities of the pre-conquest period were built.⁷²

THE LATE HORIZON (C. A.D. 1476–A.D. 1532): THE IMPERIAL TRANSFORMATION

The largest and most highly integrated ancient political system ever to appear in the New World evolved in Andean South America within the space of only 87 years. Centered in the Cuzco Valley, the Inka Empire (more properly known as the Empire of Tawantinsuyu [“the four parts together”]) eventually stretched from Colombia to central Chile and from the Pacific to the eastern jungles, tying together under the administration of a single royal lineage many diverse regional economic and political systems. At its height, as many as 10–12 million people may have been living under Inka rule in one of the most intricately ordered societies of all time.⁷³ Like Egypt, the Inka polity was a “hegemonic-territorial” state⁷⁴—one that dominated other polities—with its population spread rather thinly over a large area but with effective government control over most aspects of life.

Native and Spanish accounts say that the Inka began their rise to power out of the dissolution of the many small competing Andean South American states of the thirteenth and fourteenth centuries A.D. The people of Cuzco were attacked by a rival ethnic group—the Chankas—at about A.D. 1438 and managed to prevail. Succeeding monarchs at Cuzco added new provinces to the empire by conquest, treaty, and simple annexation. The Inkas’ oral histories—recorded by the Spanish—speak of military campaigns in which Inka kings smashed the rival power of Chan-Chan in the 1460s, put down large-scale revolts in the 1470s, and greatly expanded the empire in the 1480s.⁷⁵

The backdrop to this story of the development of the Inka as a state, however, is more complex than these accounts, and likely took place over a greater period of time. Alan Covey,⁷⁶ for example, has recently proposed that the Inka began their rise to regional domination in the period just after the fall of the Wari state—about A.D. 1000–1200. During this time, the Inka strengthened their control of the Cuzco Basin and some of the areas to the south of Cuzco. Using marriage alliances, they also established close relationships to the north and west of the Cuzco Basin. Two benefits were immediately available: Alliances and warfare created a labor supply for tending agricultural fields and construction work, and consolidation of the region opened opportunities for agricultural intensification. Another major factor was a dramatic population increase in the Cuzco Basin as people migrated in from surrounding areas.

As Covey⁷⁷ points out, Cuzco Basin elites capitalized on the need for administration of this growing polity, and these rulers began to practice nepotism—appointing their relatives to various positions of power in the military, religious, and administrative hierarchy. The Inka rulers also legitimized their rulership through control of commodities such as coca, cloth, and precious metals; through feasting (see later); and through the redistribution of some of these precious commodities to their allies and subjects. During the fourteenth century A.D., the Inka continued to expand their territories and establish long-distance diplomatic relationships. Eventually, the Inka began military campaigns against groups outside their region as they sought to enlarge their empire.

The economic basis of the Inka Empire was a highly integrated system of fishing, herding, farming, taxation, textile production, metallurgy, and so on. Rivers were channeled through stone-lined canals, while lowland irrigation systems, which had existed for thousands of years, were extended and brought under a centralized authority. Llamas and alpacas were raised for wool, while dogs, muscovy ducks, and guinea pigs provided most of the meat. But the staple foods were maize, beans, potatoes, quinoa, oca, and peppers.

The food-storage methods used by the Inka were very important in establishing imperial food reserves. Potatoes were alternately dried and frozen to produce a black, pulpy product called *chuño*; meat was turned into jerky; and grain was brewed into *chicha*, a nutritious beer. Archaeologists familiar with this combination say it is not as bad as it sounds.

Christine Hastorf and Sissel Johannessen have studied changes in the use of maize as the political system of Andean South America changed between A.D. 500 and 1500, particularly among the Inka. The Inka and their immediate predecessors converted maize into beer and then defined this beer as a prestige item and associated it with imperial power and the theology of the Inka state. People were brought together in communal feasts in which beer was consumed, and at these feasts the elites could reinforce their position: By providing beer in this context they could underscore the indebtedness of the peasantry to them and put the labor that the peasantry did for the elites in the context of the national religion and the highly stratified class system.⁷⁸

The people of the empire were organized in a complex way according to a decimal system in which there were administrators for every unit of taxpayer from 10 to 10,000. Most people were members of large kin groups, called *ayllu*; marriages were between members of the same *ayllu*. The *ayllu* were usually economically self-sufficient units that held land in common, and their members were bound together by complex patterns of reciprocal obligations, such as requiring members to work in each other's place when one was absent

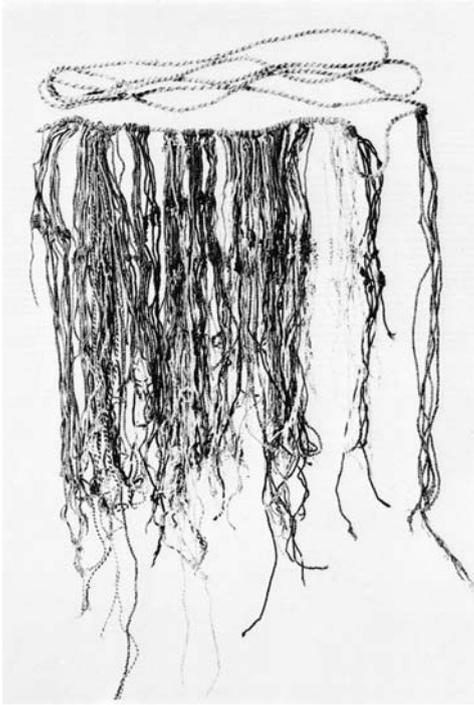


FIGURE 14.11 The Inka never developed a written language, but administrators used the *kipu*, a set of knotted strings, to keep records.

and to support widows and the infirm. Farmers worked a certain amount of time on state-owned plots, while craftsmen and specialists such as runners, weavers, and goldsmiths contributed according to their particular talents.

Records of taxes, transactions, and census figures were kept with the aid of the *kipu*, a set of strings tied into knots at different levels (Figure 14.11) and used by a special hereditary class of accountants to memorize the information.⁷⁹ A writing system of the type used in early Mesopotamia would no doubt have conveyed more religious and philosophical information, but for simple information storage and retrieval, the *kipu* appears to have been an adequate substitute for writing, when complemented by the enormous Inka bureaucracy.⁸⁰

Gold, fabrics, and other luxury goods were collected from around the empire for distribution among the elites. Women, too, were treated as commodities. Government agents visited each village periodically and took selected girls of about age 10 back to provincial capitals where they were taught spinning, weaving, and cooking. They were then apportioned out as wives for the emperor and the nobles.

The Inka Empire both created and was created by its system of roads (Figure 14.12).⁸¹ Most villages were largely self-sufficient, but the flow of goods and information and, most important, armies required to create the empire were dependent on the road system, comprising an overall network of about 40,000 km of paved roads. Road beds were excavated through hillsides, swamps were crossed by drained causeways,

walls were built along roadways to protect the traveler from the fierce gales of the uplands, and wide rivers and ravines were crossed by suspension bridges made of woven vines hung from stone towers. All along the roads were storehouses and administrative outposts, and runners stationed about a kilometer apart were reputed to carry messages over distances as great as 2,400 km in just five days.⁸²

Although they were master builders, most Inka lived in rural villages, not great metropolises. Typical Inka residential units were rectangular walled houses of stone or adobe, subdivided into smaller units. Most public constructions were in the form of palaces, temples, granaries, fortresses, barracks, and highway stations. The skill used in these constructions is amazing, considering the simple tools employed. The Inka cut stones into huge blocks simply by chipping and abrading them with harder stones, and they then fitted them together (without the use of mortar) so precisely that, as the cliché goes, a knifeblade could not be inserted between them.

The cultural order and social structure of the Inka were expressed not only in its public monuments, but even in its domestic architecture. Susan Niles has catalogued how, in one particular case, the buildings constituting the fifteenth-century estate of a noble family were arranged to reflect the rigid class hierarchy of the Inka polity.⁸³

The capital city of Cuzco was an orderly arrangement of houses, monumental buildings, and streets, well-provided with a municipal water and drainage system. The great

temple of Qori Kancha here had exterior walls measuring 68-by-59 m and a semi-circular annex that rose to a height of more than 34 m. A gold frieze about a meter wide ran along the exterior wall, and the entranceway was heavily sheathed in gold plate. Many other structures at the capital were lavishly decorated with gold and silver.

The comparatively great internal security of the empire made it unnecessary to defend most settlements, except with occasional hilltop forts. The heart of the Inka army was the common foot-soldier, who was armed with club, mace, battle axe, or lance. Slings, bolas, and spear throwers were used prior to the main attack, but brutal hand-to-hand combat usually decided the issue. One successful tactical innovation of the Inka was the practice of holding back a large body of troops who were thrown in at a critical juncture—a simple tactic similar in a way to Napoleon's successful use of reserves.

THE EUROPEAN CONQUEST

Archaeological research in some areas of Andean South America was interrupted in the 1980s and early 1990s by peasant revolutions and armed conflict between the government and rebels. The colonial history of Andean South America explains a lot about the origins of these conflicts.

After sporadic, occasionally hostile contacts with the Inka people in the A.D. 1520s, the Spanish under Francisco Pizarro set out toward the provincial capital at Cajamarca, the residence of Atawallpa, the Inka king. The Inka sent a reception force of 20,000 to meet the Spanish, but did not seem to have appreciated the threat that the Spanish represented. In any case, the Andean South Americans soon had cause to regret their diffidence. Pizarro and his men entered the city on November 15, 1532, and found it to be surprisingly nearly deserted. After establishing himself with a couple of cannons and his few score of soldiers, Pizarro and de Soto—accompanied by a troop—visited the Inka king at Konoj. The next day the emperor came to Cajamarca, borne on a litter and preceded by thousands of soldiers, attendants, and subjects. The first Spaniard to approach the king was the chaplain who, as part of Pizarro's contract with the king of Spain and the Pope, was charged with spreading the Christian faith. The chaplain immediately began to harangue the king, through an interpreter, about the creation of the world, the fall of Adam and Eve, the Virgin Birth, the establishment of the papacy, and other dogma, culminating his

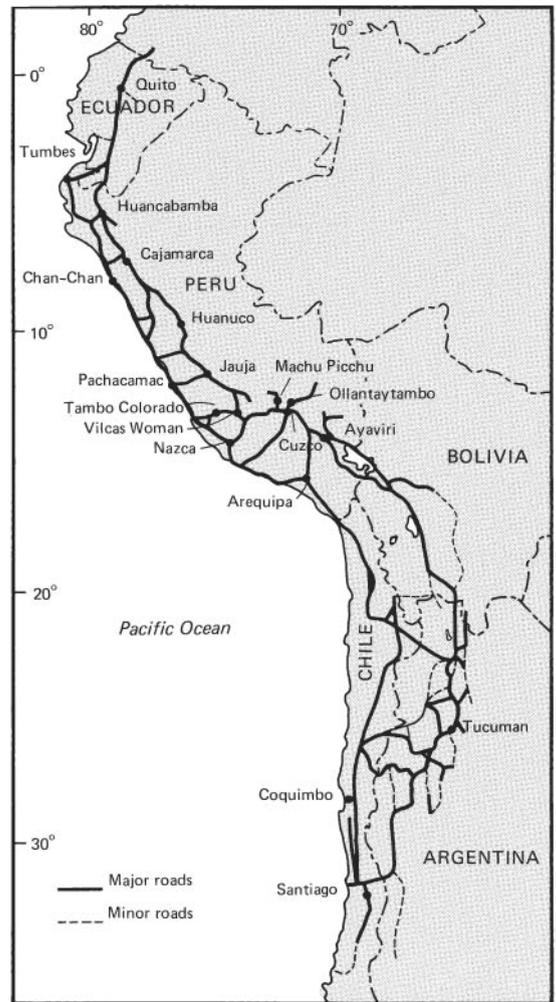


FIGURE 14.12 The Inka road system connected almost every settlement to two main north-south routes and facilitated voluminous transports of goods and effective administration.

speech with the announcement that the Pope had given the Inka Empire to King Charles of Spain.

Not surprisingly, the Inka king took exception to parts of the chaplain's speech. He wanted to know how the Pope could give away something that was not his, and how it had happened that the god of the Christians had died, since the Inka deity, the Sun, was immortal.⁸⁴ When Atawallpa asked how the chaplain knew all these things, he was handed a breviary. The king looked briefly and no doubt uncomprehendingly inside, and then threw it away. At this point the Spanish attacked, and then the inexplicable happened: Instead of killing the Spanish, the Inka fled, dropping their weapons and killing themselves in their panicked flight, and the Spanish were able to dispatch thousands and capture the king with little trouble. They remained in Cajamarca for some months, detaining the king, who tried to win his release by offering to fill a room (supposed to have been 6.5-by-4.5 m in size) once with gold and twice with silver. The Spanish, meanwhile, took masses of gold and silver in ransom payments for the king, as well as from the sack of Cuzco, most of it in the form of exquisitely wrought figures, which they melted into ingots.

Rumors of insurrections in the countryside convinced the Spanish to execute the Inka king. They did so, but considered themselves enlightened for giving him the option of being garroted rather than burned at the stake—a reward to the king for allowing himself to be baptized. Atawallpa's death and the ensuing factionalism among rival claimants to the throne, as well as the devastation brought on by introduced diseases and the horror wrought on the populace through warfare and the destruction of the irrigation system, proved crippling. The population of Andean South America is thought to have dropped from 10–12 million to about six million within a 50 years of the conquest.

SUMMARY AND CONCLUSIONS

The reader by now will not be surprised to learn that most scholars interpret the rise of civilization in Andean South America to be the result of a multiplicity of factors.

Robert Carneiro's hypotheses linking warfare, population growth, and environmental circumscription (chapter 7) to the rise of states seems particularly applicable to Andean South America. There are some suggestions that warfare was in fact an important "stress" that stimulated some kinds of complexity (though perhaps not in the manner suggested by Carneiro).⁸⁵ But sustained warfare seems to have been more of an important factor well *after* the appearance of such things as monumental buildings, the coordination of regional economies, craft specialization, and the rise of great religious traditions.

How, then, are we to account for Andean South American complex societies? Obviously, the rich maritime and agricultural resources were essential ingredients in this development. In only a few areas of the world is it possible to produce and gather enough food to run complex cultures on the basis of primitive technologies, and Andean South America is one of these regions.

An important "negative" element in the evolution of Andean South America appears to have been the fact that, unlike ancient China, Egypt, Mesopotamia, or the Indus Valley, Andean South America was geographically isolated from other highly complex political systems. Evolving Old World civilizations soon came into contact with one another, and

their political, economic, and social interchanges appear to have transformed each of them to some degree. But, except for Mesoamerica—which was very distant and cut off by ocean and jungle—Andean South America evolved alone.

The absence of a domesticable draft animal also was a limit on Andean South American development. Llamas compensated for this to a degree, but they cannot compare with the transport or plowing abilities of horses, mules, or oxen. It is difficult to judge the effects the presence of a domesticable draft animal in Andean South America would have had, but it may be significant that almost all agricultural areas of Andean South America today are plowed.

Thus, in summary of Andean South American prehistory, we see that cultural developments there paralleled those in other centers of independent complex society formation in most important details, including the initial spread of a religious cult, the presence of a highly productive economy, the widespread occurrence of monumental architecture, and the gradual emergence of highly stratified, economically integrated state and imperial political systems.

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NOTES

1. Father Cobo's description here is from various sections of his *Inca Religion and Customs*.
2. Fernández et al., "The Inca Mummy from Mount Aconcagua: Decoding the Geographic Origin of the 'Messenger to the Deities' by Means of Stable Carbon, Nitrogen, and Sulfur isotope Analysis," pp. 30–32.
3. Murra, "Andean Ecology and Civilization," p. 11, in Masuda et al., eds., *Andean Ecology and Civilization*.
4. Masuda et al., eds., *Andean Ecology and Civilization*.
5. Idyll, "The Anchovy Crisis."
6. Fontugne et al., "El Niño Variability in the Coastal Desert of Southern Peru During the Mid-Holocene."
7. Hoopes, "Ford Revisited: A Critical Review of the Chronology and Relationships of the Earliest Ceramic Complexes in the New World, 6000–1500 B.C.," p. 41.
8. Rick, *Prehistoric Hunters of the High Andes*.
9. Richardson, "Maritime Adaptations on the Peruvian Coast: A Critique and Future Directions," pp. 140–45.
10. Quilter and Stocker, "Subsistence Economies and the Origins of Andean Complex Societies," p. 547.
11. Pearsall, "The Origins of Plant Cultivation in South America," p. 192.
12. Ugent et al., "New Evidence for Ancient Cultivation of *Canna edulis* in Peru."
13. Reviewed in Pearsall, "The Origins of Plant Cultivation in South America," p. 190.
14. Rick, *Prehistoric Hunters of the High Andes*.
15. See Quilter, "Late Preceramic Peru," p. 387, for a discussion of these dates; see also Stanish, "The Origins of State Societies in South America," and Haas et al., "Dating the Late Archaic Occupation of the Norte Chico Region in Peru."

16. Patterson, "Central Peru: Its Population and Economy."
17. Stanish, "The Origins of State Societies in South America," p. 45.
18. Benfer, "The Challenges and Rewards of Sedentism: The Preceramic Village of Paloma, Peru"; Reitz, "Faunal Remains from Paloma, an Archaic Site in Peru."
19. Quilter and Stocker, "Subsistence Economies and the Origins of Andean Complex Societies," p. 545.
20. Parsons, "Preceramic Subsistence on the Peruvian Coast," p. 297.
21. Pozorski and Pozorski, "Alto Salaverry: A Peruvian Coastal Preceramic Site."
22. Benfer, "The Challenges and Rewards of Sedentism."
23. Haas et al., "Dating the Late Archaic Occupation of the Norte Chico Region in Peru," p. 1021.
24. *Ibid.*, p. 1022.
25. Quilter, "Architecture and Chronology at El Paraíso, Peru."
26. Quilter, "Late Preceramic Peru," p. 417.
27. Quilter, "Late Preceramic Peru," citing Feldman, *Aspero, Peru: Architecture, Subsistence Economy, and Other Artifacts of a Preceramic Maritime Chiefdom*, p. 89.
28. Quilter, "Late Preceramic Peru," citing Urton, personal communication, 1991.
29. Quilter, "Late Preceramic Peru."
30. Moseley, "The Exploration and Explanation of Early Monumental Architecture in the Andes."
31. Burger, *Chavin and the Origins of Andean Civilization*, pp. 46–48.
32. *Ibid.*, p. 48.
33. Burger and Salazar-Burger, "Ritual and Religion at Huaricoto," and "The Early Ceremonial Center of Huaricoto."
34. Quilter, "Late Preceramic Peru," pp. 420–421.
35. Stanish, "The Origins of State Societies in South America," p. 47.
36. Burger, *Chavin and the Origins of Andean Civilization*, p. 32.
37. Moseley, *The Maritime Foundations of Andean Civilization*.
38. Quilter and Stocker, "Subsistence Economies and the Origins of Andean Complex Societies."
39. Moseley, *The Maritime Foundations of Andean Civilization*, p. 105.
40. Burger, *Chavin and the Origins of Andean Civilization*, pp. 28–33.
41. *Ibid.*, pp. 42–43.
42. Stanish, "The Origins of State Societies in South America," pp. 48–50.
43. *Ibid.*, p. 49.
44. Burger, *Chavin and the Origins of Andean Civilization*, p. 80.
45. *Ibid.*, p. 77.
46. *Ibid.*, p. 78.
47. *Ibid.*, p. 79.
48. Stanish, "The Origins of State Societies in South America," p. 49; Burger, *Chavin and the Origins of Andean Civilization*, p. 82.
49. Burger, *Chavin and the Origins of Andean Civilization*, p. 83.
50. Haas, "The Exercise of Power in Early Andean State Development"; Pozorski and Pozorski, "Early Andean Cities."
51. Burger, *Chavin and the Origins of Andean Civilization*, pp. 75, 87–88.
52. *Ibid.*, pp. 66–68; Burger and Salazar-Burger, "The Second Season of Investigations at the Initial Period Center of Cardal, Peru."
53. Burger, *Chavin and the Origins of Andean Civilization*, p. 68.
54. Burger and Salazar-Burger, "The Second Season of Investigations at the Initial Period Center of Cardal, Peru," p. 278.
55. Quilter, "Late Preceramic Peru," p. 414.
56. Stanish, "The Origins of State Societies in South America," p. 51.
57. Burger, *Chavin and the Origins of the Andean Civilization*.
58. *Ibid.*, pp. 130–135.
59. *Ibid.*, pp. 135–137.
60. Stanish, "The Origins of State Societies in South America," p. 52.
61. Reviewed in Keatinge, *Peruvian Prehistory*; also see Haas, Pozorski, and Pozorski, *The Origins and Development of The Andean State*; Donnan, ed., *Early Ceremonial Architecture in the Andes*. But see Quilter, "Moche Politics, Religion, and Warfare," for a viewpoint that questions whether or not the Moche can be considered a state-level society.
62. Lanning, *Peru Before the Inkas*, pp. 114–115.
63. Silverman, "Cahuachi: Non-Urban Cultural Complexity on the South Coast of Peru."
64. Although see Billman, "Irrigation and the Origins of the Southern Moche State on the North Coast of Peru," who argues that canals and their construction early in the Moche would not have required organization above the level of the village or community. Billman instead contends that it was the production of subsistence

- surplus brought about by the use of irrigation that gave certain individuals the opportunity to accumulate wealth and power.
65. Donnan, "Master Works Reveal a Pre-Inca World." Additional unlooted tombs were located at Dos Cabezas, about 40 miles south of Sipán. A description of these can be found in Donnan, "Moche Burials Uncovered."
 66. Donnan, *Moche Art and Iconography*.
 67. Lanning, *Peru Before the Inkas*, p. 127.
 68. Stanish, "The Origins of State Societies in South America," pp. 53–54.
 69. "Tiwanaku Settlement System: The Integration of Nested Hierarchies in the Lower Tiwanaku Valley."
 70. Fiedel, *Prehistory of the Americas*, p. 333.
 71. Keatinge, "Chimú Rural Administration Centers in the Moche Valley, Peru," p. 79.
 72. Moseley and Day, *Chan Chan: Andean Desert City*.
 73. Collier et al., *The Inka and Aztec States, 1400–1800*.
 74. D'Altroy, *Provincial Power in the Inka Empire*.
 75. Lanning, *Peru Before the Inkas*, pp. 159–160.
 76. Covey, "A Processual Study of Inka State Formation."
 77. *Ibid.*
 78. Hastorf and Johannessen, "Maize and Politics in the Pre-Hispanic Andes."
 79. Lanning, *Peru Before the Inkas*, pp. 166–167.
 80. Ascher and Ascher, *Code of the Quipu: A Study in Media, Mathematics, and Culture*.
 81. Hyslop, *The Inka Road System*.
 82. Von Hagen, "America's Oldest Roads."
 83. Niles, *Callachaca*.
 84. Engl and Engl, *Twilight of Ancient Peru*, p. 119.
 85. Carneiro, "A Theory of the Origin of the State"; see also Wilson, "The Origins and Development of Complex Prehispanic Society in the Lower Santa Valley, Peru."