

Preface

Andean Archaeology III represents a continuation in our effort to highlight the finest of current archaeological scholarship conducted in the Central Andean culture area. Each paper contributes in a significant way to understanding prehistoric processes in the Central Andean culture tradition, adding importantly to the rich base provided by *Andean Archaeology I* and *II*. As in those former volumes we do not seek a balanced presentation of the entirety of the Andean past, but instead showcase what is new, what is innovative, and what is controversial in thinking about and investigating the great sweep of Andean cultural development.

We wholeheartedly agree with Pauketat (2001:xiii) that it is “more satisfying to compare how cultural phenomena happened,” than for researchers to hasten to answer “why questions” that tend more to “reify their initial assumptions” than to inform us about prehistoric people and their embodied, cultural practices. We support the revitalized study of sociocultural evolution, especially that championed by Bruce Trigger (e.g., 1998, 2003), which has benefited by several decades of valuable critique.

On the other hand, explanations of the past not based on comparisons of historical processes carefully argued from well-studied archaeological records sacrifice the rigor that was such an important part of the first processual archaeology advocated by Lewis Binford (1962, 1964, 1972; Sabloff 1998; see also Yoffee 2005 *inter alia*). In some recent and current Andean archaeology we find explanatory conclusions, especially processual evolutionary transformations, and climate change-based rise or collapse accounts, to have been reached too hastily, constituting more of a reading of material remains in terms of theoretical expectations than a rigorous interrogation of the archaeological record.

Elucidation of historical process in Central Andean archaeology has been the primary criterion for selecting contributions for this volume. But we also have found that as we move toward a 21st-century approach and paradigm for the Andean past, there is significant need to re-examine the spatial and temporal range of the “Central Andean” cultural tradition. To be clear, this book is not a collection of papers commissioned to resolve that question. Rather, as we sought out the most exciting contributions for our volume we were struck by the fact that current authors are not questioning the “Central Andes” as the cultural unit they are investigating.

At the same time, much research appears to have surprising implications for the way we define, organize, and investigate that cultural unit. Consequently, we highlight this issue, providing something of the history of how the “Central Andes” has been defined. In our Introduction and Conclusion we also tease out some of our authors’ assumptions about, and implications for, the cultural tradition. An idea that emerges from our work is the suspicion that a northern Central Andean tradition can be defined as reasonably distinct from a southern Central Andean tradition. While we are not ready to redefine the Central Andes, or propose an alternative cultural/temporal unit, let us suggest from the beginning of the volume that it is time to confer a symposium to discuss these issues. We must at least make explicit the implications of contradictory trends in current thinking and practice, from alternative chronologies to independent evolutionary trajectories.

Our selection of papers draws from investigators of diverse nationalities and approaches. In deference to these authors, we are permitting certain inconsistencies in the volume. For instance, Peter Kaulicke, who lives and works in Peru, follows Peruvian canon by writing Mochica whereas Edward Swenson, a North American Peruvianist, writes Moche. In an attempt to standardize usages, we do not italicize Spanish and Quechua words as these are ubiquitous in the archaeological literature. We also do not italicize Spondylus.

REFERENCES

- Binford, Lewis R., 1962, Archaeology as anthropology. *American Antiquity* 28: 217–225.
- _____, 1964, A consideration of archaeological research design. *American Antiquity* 29: 425–441.
- _____, 1972, *An Archaeological Perspective*. Seminar Press, New York.
- Pauketat, Timothy R., 2001, Preface. In *The Archaeology of Traditions. Agency and History Before and After Columbus*, edited by Timothy R. Pauketat, pp. xiii–xiv. University Press of Florida, Gainesville.
- Sabloff, Paula, 1998, *Conversations with Lewis Binford: Drafting the New Archaeology*. University of Oklahoma Press, Norman.
- Trigger, Bruce, 1998, *Sociocultural Evolution. Calculation and Contingency*. Blackwell, Oxford.
- _____, 2003, *Understanding Early Civilizations: A Comparative Study*. Cambridge University Press, Cambridge.
- Yoffee, Norman, 2005, *Myths of the Archaic State: Evolution of the Earliest Cities, States and Civilizations*. Cambridge University Press, Cambridge.

Chapter 2

America's First City? The Case of Late Archaic Caral

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(translated by Catherine M. Bencic)

THE ORIGIN OF CIVILIZATION IN PERU

Civilization was achieved in north-central Peru during the 3rd millennium BC, between the Santa and Chillón valleys, including the interconnecting valleys toward the east and extending up to the Marañón and Huallaga Rivers (i.e., the region where civilization first emerged in the Central Andes consisted of coast, highlands and Andean forest). Here settlements with both public and domestic architecture have been identified.

Prior to my own project, published archaeological research about the north-central area of the Central Andes strongly suggested its precocious development. These previous investigations included coastal settlements such as Río Seco (Wendt 1964), Bandurria (Fung 1988), and Aspero (Feldman 1980) as well as investigations in highlands sites such as La Galgada (Grieder et al. 1988) and Huaricoto (Burger and Salazar-Burger 1980) and in Andean forest communities such as Kotosh in the Huallaga Basin (Izumi and Sono 1963; Izumi and Terada 1972) and Piruro in the Marañón Basin (Bonnier and Rozenberg 1988). These studies supported inferences that inhabitants lived in organized settlements with public buildings sharing architectural features as well as specific religious rites and ceremonies resulting from periodic interaction. The recurring presence of a group of cultural features in these societies has already been suggested to have been an integrated cultural complex, the Kotosh Religious Tradition (Burger and Salazar-Burger 1980, 1985).

The Supe Valley stands out among the valleys in this region for the quantity, size and complexity of monumental architecture within its settlements. The urban centers of Aspero, Piedra Parada, Era de Pando, Caral, Miraya, Lurihuasi, Pueblo Nuevo, Allpacoto, Peñico and Huacache, among others in the Supe Valley, were inhabited nearly contemporaneously with the Sumerian cities of Mesopotamia and the construction of the Pyramid of Sakara or the later pyramids of Giza in Egypt. But unlike Old World societies such as Mesopotamia, Egypt and India that had exchange networks of goods and knowledge allowing them to benefit from each other's experiences, the Peruvian process took place in total isolation from other societies on the continent. Indeed, the rise of civilization in Peru preceded

Mesoamerica, the other center of pristine civilization in America, by at least 1500 years.

Caral, in the Supe Valley, was the center of the greatest economic, social, political and religious dynamism of the epoch. Its geographic centrality within the area and its capacity for accumulating surplus from a complementary agricultural-fishing economy were strategic for interregional connections with societies situated in ecological zones with different resources and diverse adaptive experiences as well as distinctive goods. In this paper I review information on the geographic and social conditions of north-central Peru, as well as the settlements in the Supe Valley dating to the Late Archaic Period, as a framework for interpreting the natural and cultural characteristics of the settlement of Caral, its architecture and its excavated cultural contexts. Based on these interpretations and evidence, inferences are made about the economic, social, political and religious organization of Caral's inhabitants and the population of the Supe Valley and north-central Peru.

ARCHAEOLOGICAL RESEARCH IN SUPE AND THE IDENTIFICATION OF CARAL

The Supe Valley is short in length and cultivated lands along its margins are narrow. For this reason it is surprising that it contains so many settlements with monumental architecture. Despite this, and the proximity to Peru's capital of Lima, Supe's archaeological monuments have not been adequately investigated, perhaps because it has been assumed on very sketchy evidence that the spectacular monumental constructions were culturally affiliated with the Formative Period. Various studies, however, had already been published in the archaeological literature about the site of Aspero in Puerto Supe, demonstrating a pre-Formative date. Aspero was first registered by Uhle in 1905 (Uhle 1925), later identified by Willey and Corbett in 1941 (Willey and Corbett 1954), revisited in 1970 by Willey and Moseley (Moseley and Willey 1973) who recognized the existence of mounds with stepped platforms and the site's correct dating to the Late Preceramic rather than Formative period, and excavated by Feldman in the same year (Feldman 1980). Only through these last excavations, which yielded corrected dates of 2500 to 3055 BC and characterized the cultural remains, was Aspero assigned to the Late Archaic Period (commonly called Preceramic VI or Late Preceramic by North American archaeologists) of Peruvian cultural development.

Scholarly research, however, did not associate Aspero with other settlements in the valley, despite their greater size and architectural complexity. Since the results from Aspero were published by Moseley and Willey and by Feldman, a controversy has raged regarding the role that marine resources and fishing played relative to agriculture in the development of Andean civilization (Moseley 1975; Raymond 1981; Wilson 1981). Other work in the valley informs us about diverse archaeological aspects, including Kosok's (1965) visit and photography of Caral, that prompted suggestions about the importance of social developments on the Peruvian coast, Engel's (1987) surveys and excavated trenches at Caral, and the identification

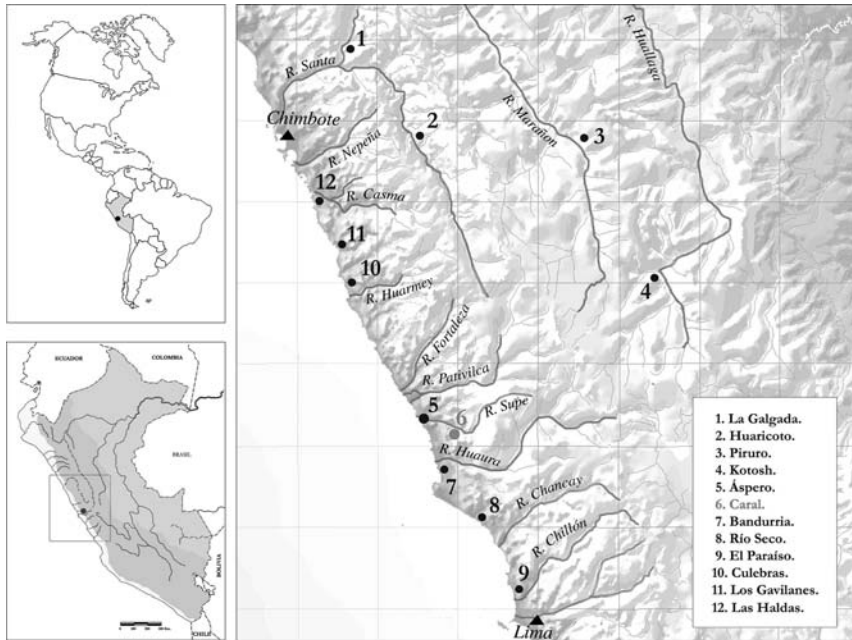
and registration of more than one hundred archaeological sites in the Supe Valley by Williams and Merino (1979). Zechenter's (1988) interesting investigations at various archaeological sites in Supe identified marked differences in natural resources and seasonality among the ecozones of the valley and suggested a complex subsistence pattern based on the exploitation of a diverse group of resources.

Our archaeological survey along the lower and central Supe Valley in 1994–1995 (Shady et al. 2000: 13–48; Figure 2.1) revealed that among the societies in the north-central area, Supe was able to combine the gains of different adaptive experiences, and profit from production surpluses of diverse area populations. As a result of the 1994–1995 fieldwork we identified a recurrent architectural pattern in at least 18 settlements located along the valley edges (Shady et al. 2000: 13–48; see also Shady 1997a, 2000a, 2000b; Shady and Leyva 2003), but did not yet have evidence for their temporal and cultural affiliation. The real importance and significance of early Supe society and the Late Archaic Period for the origins of civilization were not fully demonstrated until we began excavations at Caral in 1996 (Shady 1997a, b). Caral [Endnote 1] was selected based on four criteria: the *size* of the site, its *architectural diversity*, the *layout* of its structures suggesting that an existing concept of spatial organization had been followed, and the *monumentality* of at least seven elevated structures of the 32 located on the site. After two months of excavations in six different sectors of the settlement we had revealed the first material and contextual evidence that allowed us to affiliate this site with the Late Archaic Period (Shady 1997a, b). Our work at the site has continued since 1994 to the present. Other work in neighboring valleys includes that done by Rafael Vega Centeno in 1998 in Fortaleza, and the survey of Jonathan Haas and Winifred Creamer in Fortaleza and Pativilca between 2002 and 2004.

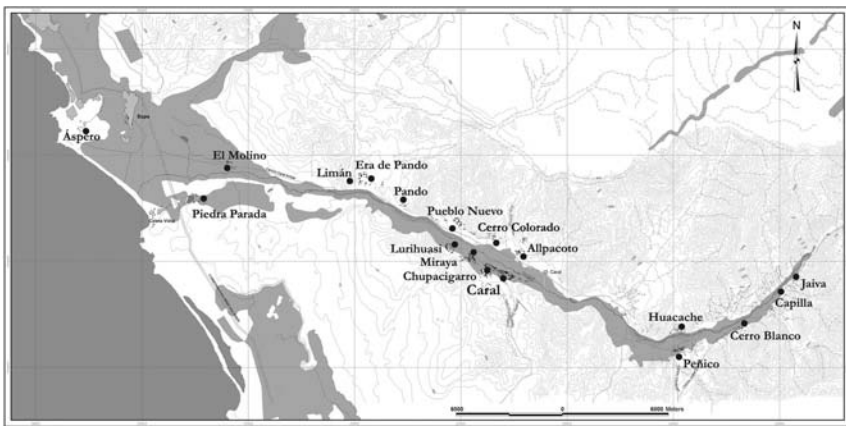
SUPE VALLEY SITES DURING THE LATE ARCHAIC

Despite the Supe Valley's geographic conditions consisting of little tillable land and a river that is dry for most of the year, a minimum of 18 urban centers were erected within 45 kms of the coast (Shady et al. 2000: 13–48). All have groups of housing units and their respective public buildings, but the majority also exhibit monumental architecture (Figure 2.1b). Compared among themselves, the following observations may be made.

Distribution. The recorded sites are found in four zones: a) Aspero on the coast (1859.75 ha); b) Molino on the right border and Piedra Parada on the left border of the lower valley (9214.5 ha); c) Limán, Era de Pando, Pando, Pueblo Nuevo, Cerro Colorado and Allpacoto on the right border and Lurihuasi, Miraya, Chupacigarro and Caral on the left border of the lower central valley (8472 ha); and d) Huacache on the right border and Peñico, Cerro Blanco, Capilla and Jaiva on the left border of the upper central valley (7334.5 ha). It is worth noting that, although it is not the largest area, the majority of sites are concentrated in the lower central valley zone (10 of 18 sites in total). Furthermore, there appears to be an order in site locations, with a total of 9 settlements on each side of the river.



A



B

Figure 2.1. a. Caral in the Supe Valley, as well as other Late Archaic centers of northcentral Peru, the region where Central Andean civilization originated; b. The 18 Late Archaic sites identified in the Supe Valley.

Size. The sites vary in size (Table 2.1). The 55–80 ha range includes Era de Pando (79.74 ha), Caral (66 ha) and Pueblo Nuevo (55.01 ha). The 30–45 ha range includes Miraya (36 ha), Lurihuasi (37.8 ha), Piedra Parada (33.5 ha), and Chupacigarro (31.3 ha). The 15–25 ha range includes Allpacoto (23.10 ha), Peñico

Table 2.1. List of Late Archaic Period archaeological sites in the Supe Valley, by size in hectares.

Archaeological Sites	Hectares
Era de Pando	79.74
Caral	66.00
Pueblo Nuevo	55.01
Lurihuasi	37.80
Miraya	36.00
Piedra Parada	33.50
Chupacigarro	31.30
Allpacoto	23.10
Peñico	22.05
Áspero	18.80
Huacache	7.59
El Molino	6.96
Jaiva	4.20
Pando	1.95
Cerro Colorado	0.98
Cerro Blanco	0.80
Limán	0.48
Capilla	0.16

(22.05 ha) and Áspero (18.80 ha). The 5–10 ha range includes Huacache (7.59 ha), El Molino (6.96 ha) and Jaiva (4.20 ha). There are several sites smaller than 5 ha in size: Pando (1.95 ha), Cerro Colorado (0.98 ha), Cerro Blanco (0.80 ha), Limán (0.48 ha) and Capilla (0.16 ha). Of all, Era de Pando, Caral and Pueblo Nuevo are noteworthy for their large size, containing 47.08 % of the construction area in the valley. These sites are followed by a second group of four settlements: Miraya, Lurihuasi, Piedra Parada, and Chupacigarro, constituting 32.50 % of the total valley construction. These two groups together represent 79.58% of the valley's constructed surface area. The other three groups of sites occupy 15%, 4.39% and 1.01% of the surface area, respectively. Thus, eight of the 18 settlements represent only 5.42% of the constructed area. These results reveal a marked distinction that must reflect significant socioeconomic and functional differences among the urban centers' five size classes.

Investment of labor force in public construction. Calculations based on quantity and bulk of the structures from each site (Table 2.2) allow us to group them in the following manner: a) Pueblo Nuevo (28.99%) and Caral (27.31%); b) Miraya (12.85%), Era de Pando (8.54%) and Lurihuasi (7.04%); c) Allpacoto (3.76%), Peñico (3.12%) and El Molino (2.99%); d) Piedra Parada (1.67%) and Áspero (1.64%); e) Chupacigarro (0.87%) and Huacache (0.57%); f) Cerro Blanco (0.30%), Cerro Colorado (0.12%), Jaiva (0.10%), Pando (0.07%), Limán (0.05%) and Capilla (0.001%). This information indicates that 56.3% of the total labor investment was concentrated at Caral and Pueblo Nuevo. The group represented by Miraya, Era de Pando and Lurihuasi follows, with a total investment of 28.43%,

Table 2.2. Labor investment in the constructions at each site, in terms of percent of total.

Archaeological Sites	Percentage
Pueblo Nuevo	28.99
Caral	27.306
Miraya	12.853
Era de Pando	8.538
Lurihuasi	7.038
Allpacoto	3.761
Peñico	3.123
El Molino	2.987
Piedra Parada	1.67
Áspero	1.654
Chupacigarro	0.873
Huacache	0.565
Cerro Blanco	0.303
Cerro Colorado	0.123
Jaiva	0.103
Pando	0.066
Limán	0.046
Capilla	0.001

which represents only half that of the previous group. The third and fourth groups, comprised of five settlements, contain 13.18% of the total. In other words, one-fourth of the labor investment is represented by the first group of sites. Finally, the difference is notable between these and the fifth and sixth groups which, despite being comprised of eight settlements, barely exhibit 2.08% of the total labor force investment. It is important to emphasize that more than half of the labor investment is concentrated at only two sites: Pueblo Nuevo and Caral. The second group of settlements represents slightly more than another quarter of the labor, and together these five sites, Caral, Pueblo Nuevo, Miraya, Lurihuasi and Era de Pando constitute the principal centers of the Supe Valley, with Caral and Pueblo Nuevo standing out for their size and complexity as well as for the labor invested in their construction. They are both located in the lower central valley, on the left and right border, respectively.

Location. The largest and most complex urban centers are found in the lower central valley. Seven settlements with monumental architecture are distributed across an area of seven kilometers, three on the right border (Pueblo Nuevo, Cerro Colorado and Allpacoto) and another four on the left border (Lurihuasi, Miraya, Chupacigarro and Caral). At its height this would have been the “capital zone,” strategically located for communication with neighboring lateral valleys and with the Andean altiplano from which contact with the inhabitants of other valleys was facilitated over a vast area. Of the seven settlements in this capital zone, four belong to size groups A and B, the first and second largest, one to C, one to D y one to E. The two other urban centers of size class A and B, Era de Pando and

Piedra Parada, are displaced toward the lower valley, but perhaps they attained their prestige during a later period.

Communication routes. The largest urban centers are located near access routes to the neighboring valleys, along ravines that run perpendicular to the valley. The centers of the capital zone, located on the right border, are connected across the Allpacoto ravine to the Pativilca and Fortaleza valleys; those on the left border are connected by various ravines which run to the valleys of Huaura, Chancay and upper Supe. Likewise, in the upper central valley, the urban centers of Peñico and Huacache have strategic locations, the first for access to the highlands of Supe and the adjacent expanse drained by the rivers of Huaura and Chancay; the second located between the central and upper Supe Valley approaches the heights of Pativilca and Fortaleza. Toward the coastal region, Era de Pando connects with the coast and the lower valleys of Supe, Pativilca and Fortaleza while Piedra Parada connects with the coast and the lower parts of the valleys of Supe and Huaura. Furthermore, a group of vegetable and marine products circulated throughout the interconnected routes of the area, along with ideology, knowledge, and technological advances.

Architectural features in the valleys of Pativilca and Fortaleza, similar to those found in Supe, indicate that the populations of the three valleys were closely connected, as much in the highlands as in the coastal area. While the Supe Valley contains the largest and most complex urban centers and was surely the principal seat of power and prestige, these three valleys may have participated in the direct development of Supe's social and political system. In turn, this civilization's influence extended to all of the north-central region discussed above.

CULTURAL SPACE IN THE SACRED CITY OF CARAL

Caral, located 182 kms north of Lima and 23 kms from the coast, is situated on an alluvial desert terrace at the beginning of Supe's central valley, 350 m above sea level. Its inhabitants resided in an arid environment encircled by hills and covered by dunes with red Bromeliads, (achupallas) isolated from the commotion of animals and people in the valley below. From the city, only the sky was visible, and the movement of heavenly bodies, in concert with the hills that framed the horizon. Twenty-five meters lower, the daily life of agriculturalists went on, also separated from the city by dense huarango forests (wild huisache). A leafy, diverse and almost impenetrable forest covered the river banks, channeling swelling, torrential river floods that from January to May resulted from heavy rains in the highlands. Communities on the two sides of the river were suddenly cut off from one another, as marshes expanded and the land filled with gnats and mosquitoes. During the summer months in the highlands, river water was replaced by irrigation canals distributing abundant spring water into cultivated fields. Deer, viscachas, doves and birds with colorful plumage populated this verdant land (see Shady 2001).

Caral extends over some 66 ha. The nuclear zone contains 32 public structures as well as various residential architectural groups, and a peripheral zone borders the valley where several groups of houses predominate (Figures 2.2, 2.3). The



Figure 2.2. Panoramic view of the Sacred City of Caral. The Temple of the Amphitheater is in the foreground and the division between halves follows the dark, shadowed embankment. The large plaza of the Upper Half is located beyond the bank, and bordered (from left to right) by the Quarry Pyramid, the Central Pyramid, the Great Pyramid and the Lesser Pyramid. The cultivated Supe Valley bottom, and hills of the opposite side constitute the background (Photo: George Steinmetz).

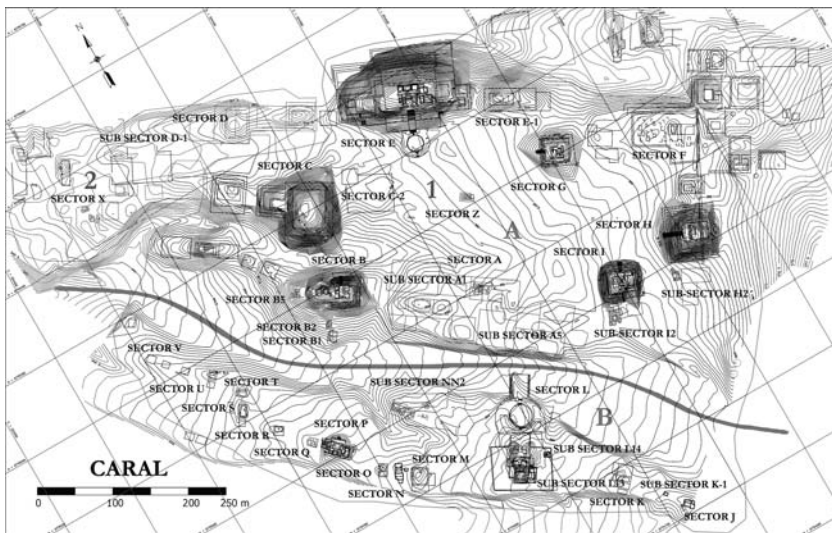


Figure 2.3. General map of the Sacred City of Caral showing the upper half (A) and lower half (B) of the nuclear area (1), sectors designated by letters, and the residential periphery (2).

arrangement of the architectural structures implies a spatial ordering that preceded construction and the elaboration of a planned design of the city, that recognized important social organizational criteria, such as hierarchical social strata and symbolic divisions into halves—upper and lower, right and left. These were combined with astronomical criteria related to specific religious deities.

In the nuclear space, structures are grouped into two great halves: an upper half, where the most impressive pyramidal structures (one of these with a circular sunken court) are located, and a lower half with smaller public structures, except for one large complex that also has a circular sunken court attached (see Figure 2.3). This spatial organization likely expresses the later known traditional Andean dual division into *hanan* and *hurin* (upper and lower, respectively). The pyramidal structures vary in size and exhibit distinct components but all share a model for the facade that is similar in style and design. All exhibit a similar construction pattern with superimposed terraces placed at intervals, contained by stone walls; each facade has a fixed stellar orientation and an axis that internally divides the space. This axis is usually marked by a staircase traversing the center of the terraces from the base to the summit, also dividing the building into a central body with two extensions, one to the right and to the other to the left, each with rooms and passageways. The central body of each structure consists of segments differentiated by their sequential location at distinct elevations.

Public buildings were constructed of different materials, preferably stone for the most notable ones; in the late period cut stone blocks became popular, interspersed with small stones and held together with mortar of clay that contained little rocks as well. Many structures have rooms of sticks and reeds distributed about terraces constructed and walled with stone. These walls are plastered with clay and colored white, yellow or red, colors that changed during specific reconstruction periods. Due to the architectural pattern and the context of the components, it is likely that these public buildings had religious as well as economic and administrative functions.

Below I present a brief description of the buildings excavated, with an emphasis on the most representative structures of the two halves, those associated with circular courts.

The Upper Half of Caral

In the upper half of the city six large pyramidal structures, one circular court, an extensive residential group and various groupings of residences, each located in relation to a specific pyramid (see Figure 2.3), are noteworthy. All the structures encircle a large multifunctional open space or plaza. In this area we may differentiate two subgroups, one to the west, comprised of the Great Pyramid, the Central Pyramid, the Quarry Pyramid and the Lesser Pyramid. The subgroup to the east included the Pyramid of the Gallery and the Pyramid of the Huanca (*huanca*: a tall, upright stone, usually not carved), for a monolith was set in the space between the two.

The Great Pyramid (Sector E)

This is the largest and most extensive architectural complex of the city (Figures 2.3, 2.4). It measures 170.8 m from east to west and 149.7 m north to south; the facade which faces south is 19.3 m in height while on the north side, toward the valley,

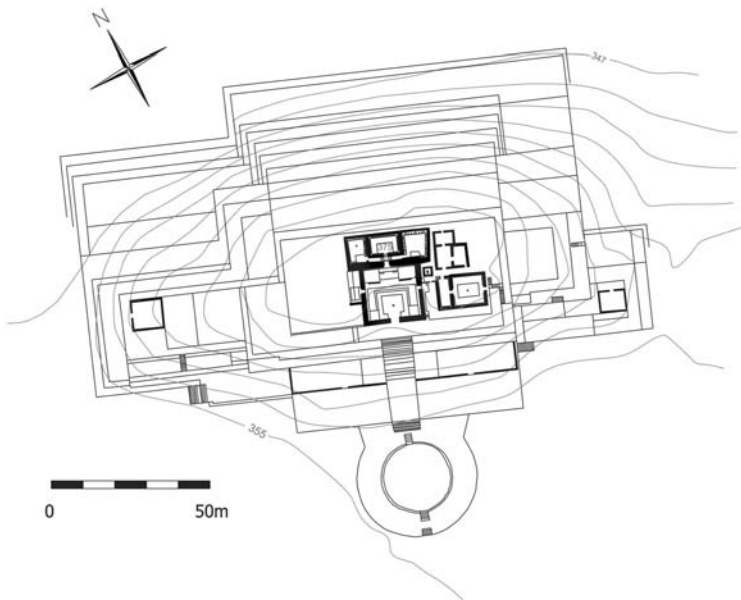


Figure 2.4. Photograph of the facade and plan drawing of the Great Temple and its circular plaza (Sector E) in the upper half of Caral.

the mound reaches 29.9 m. It is comprised of a dominant circular sunken court and an imposing stepped pyramidal structure constituted by a central body, containing the bulk of the construction, and two side components (one to the east and the other to the west) of smaller size (Figure 2.4, plan).

The circular court consists of a sunken space, delimited by two parallel circular walls. The court's interior wall reaches 3.0 m in height and the other on the exterior is between 1.0 and 1.6 m high. The space between the two forms an elevated circular platform 7 m wide. The court's external diameter measures 35.5 m and the sunken interior is 21.5 m across. An entrance stairway leads up from the exterior, up the south side, in line with axial staircase of the pyramid. On the north-south axis, two other staircases descend the depression, each framed by two large upright monoliths. Another monolith, now fallen must have been located at the center of the court, although its precise position has now been lost. The internal wall of stone blocks is displaced back 40 cms at an elevation of 1.4 m, giving it a stepped appearance. The walls, stairs and floors of the plaza were plastered and painted.

The plaza is attached to a pyramidal structure by means of a trapezoidal platform. The northern staircase of the plaza continues until joining with a central staircase 9 m wide which leads to the pyramid's peak (Shady, Machacuay and Aramburú 2000: 2–25).

Due to its size, location and its association with the circular court, this was probably the city's principal public building. At the front, on both sides of the central staircase, a series of superimposed platforms give the facade a stepped effect. The peak of the pyramid affords a panoramic view of the entire city and valley. Experiencing this view usually impresses observers, underscoring the pyramid's imposing height of almost 30 m, as well as its area and architectural volume.

The pyramidal structure contains evidence of a prolonged occupation with successive periods of construction and remodeling. Three main periods of change may be distinguished: the construction of the Late period rooms suggests the covering or burying of others from the Middle period by means of a voluminous rock fill contained in bags or shicras, over which new floors and walls were created. Likewise, Middle period dwellings were erected over the previous burial of the Early period structure. Furthermore, between each of these periods successive phases of architectural remodeling or other minor changes took place.

In the central body of the pyramid, which is the highest, various components may be identified arranged at different levels yet following the central axis and connected by means of stairs and doorways. On the platforms of the facade is a series of rooms. The main doorway at the summit leads to three spaces that continue one beyond the other: 1) the ceremonial atrium or enclosure, which is entered through a doorway of stepped shape and composed of a series of walls from successive periods that abut one another. It has a hearth in the center and a series of tiered platforms placed at intervals like steps; 2) an elevated platform through which the atrium is accessed, with two rooms, one on each side; 3) the halls of the highest section are presided over by elevated platforms. One space is noteworthy for the large platform that nearly fills it, with decorated walls consisting of rows of

faces modeled with the small niches and reliefs. The atrium is also connected with other side components by means of openings and corridors, which lead to rooms located on the east and west sides.

The Small Quadrangular Altar is found to the east of the atrium and contains a central hearth, a fireplace and a subterranean ventilation duct, similar in function to the various altars that we have identified in association with other buildings of the city. The altar is associated with a group of halls decorated with friezes and niches which are accessed by means of stairs, passageways and openings.

This architectural complex functioned for nearly a millenium; it contains well-preserved evidence for various construction periods and the successive phases of remodeling. The wall of the oldest circular plaza has recently been found, located underneath the terraces of the facade, to the north of where the plaza previously described is located.

The Quarry Pyramid (Sector B)

This structure is located to the southwest of the Great Pyramid, toward which its front faces, in the middle of the central space. It measures 44 m from north to south, 65.6 m from east to west and is 13.8 m in height. A rocky outcropping of coarse-grained diorite was partially utilized in its construction. On the east side of the natural promontory a series of terraces was constructed to achieve the desired mass with various enclosures constructed over the terraces; the base of the west side was utilized as a quarry in earlier periods.

The front of the building contains a central staircase 4.2 m wide, flanked by nine terraces of various dimensions, which lead to the peak of the pyramidal structure. Notable here is a large enclosure with niches in the walls and a circular altar, 8 m in external diameter, with a circular platform 30 cms high encircling a lower space 3.7 m in diameter, in the center of which a large hearth 82 cms in diameter with a subterranean ventilation duct is located. The walls are built of cut stones, held together with mortar and painted white.

Like the other pyramidal structures of the city, this one contains evidence for successive periods of occupation. In the earliest occupations the rooms were constructed of organic material but later stone blocks were used. In both cases the walls were plastered with fine clay and painted white, yellow or red.

Various figurines of fine unfired clay were recovered, deposited in the ritual interments of some rooms.

On the south and west sides of the Quarry Pyramid are residential units that were inhabited by households associated with its functions.

Residential Unit B1

This unit is one of the dwellings located on the south side of the Quarry Pyramid. It has an area of 16.0 × 12.9 m in area and contains nine rooms with small platforms, benches and hearths. It exhibits evidence for various remodelings during its occupation. The building is constructed with cut stones of coarse-grained diorite,

held together with mud mortar. The faces of the walls are plastered and painted red, white and yellow.

Domestic waste was found in the rear exterior of the dwelling. The refuse yielded mollusk shells, fish vertebrae, plant remains, burnt rocks and distinct foods which suggested elite consumption: sea lion and deer bones. In order to reduce the volume of trash and keep the area around the residence clean, refuse was periodically burned and the resulting ash was utilized in construction fill for platforms, benches or new floors.

Based on location and size, as well as its contents and the construction material utilized, this dwelling has been interpreted as belonging to a high status social group within Caral's social hierarchy, that was attached to the Quarry Pyramid.

Residential Unit B2

This unit consists of a dwelling measuring 10.6×7.9 m in area. It contains seven enclosures among which one, dominated by a platform and small areas used as storage chambers, is noteworthy. In the earliest times the dwelling had a greater area than during the final occupation. Although more excavations are necessary we may point out that, as occurred with the other buildings of Caral, this unit exhibits numerous constructions through time with variations in the architectural design. The area contains a large quantity of domestic waste which was burned and the ash utilized in the fill of some rooms when floors were built. Construction materials consist of cut stones of coarse-grained diorite held together with mud mortar. The wall faces were plastered with clay and painted red, white or yellow, according to the corresponding period. As in Residential Unit B1, this residence was inhabited by high status individuals, related to the functions of the Quarry Pyramid.

Residential Unit B5

This large dwelling is located on the west side of the Quarry Pyramid, on an outcrop of coarse-grained diorite. It measures 12.6×11 m and exhibits successive occupations through time. In the older periods the walls had wooden supports interwoven with fine reeds (*Gynerium sagittatum*), covered with mud and clay mortar and painted. In the domestic refuse, deposited in the exterior of the dwelling, mollusk shells, fish vertebrae, plant remains and burnt rocks were found. The location of this residence adjacent to the Quarry Pyramid, the painstaking construction finish and the leveling of the ground suggest that this residential unit belonged to individuals of high social status, associated with functions in the public building.

The Lesser Pyramid (Sector G)

This structure is located on the northeast side of the open central space of the upper half of the city and to the east of the Great Pyramid, toward which its facade is oriented. It measures 49.9 m on the east-west axis, 43.3 m from north to south and reaches a height of 10 m. It is formed by stepped terraces contained by walls of large stone blocks held together by gray-colored mortar, plastered and painted

yellow. To the west the facade exhibits a central stairway 4.65 m wide that leads to the peak. Behind the pyramid, on the east side, a low mound may be observed that contains structures of residential character associated with this public building. In the area surrounding the pyramid evidence of domestic activities, organic material, ash and fragments of lithic artifacts were recovered.

The Pyramid of the Gallery (Sector H)

This pyramidal structure is located to the east of the central space of the upper half of the city. It measures 71.9 m on the north-south axis, 68.5 m from east to west and is 18.6 m high. It is formed by superimposed terraces, contained by walls of large cut stone blocks held together by mud mortar and painted white. On the west facade there is a central stairway 6.8 m wide. As in other structures, this one also shows the combination of stone-wall sustaining platforms that support enclosures constructed with organic wood and reed poles, plastered and painted white. Also, like the other structures it was elevated by means of rock fill contained in bags or shicras. Worth noting is a subterranean gallery that is accessed by a long passageway. This gallery is 4.5 m long, 2.5 m wide and has seven niches on the internal walls, three on each side and one on the wall facing the entrance. The wall faces and the niches were plastered and painted white. It is associated with a monolith resembling a lance.

This pyramidal structure contains evidence of successive reconstructions during its occupation. Two mats, a well-preserved fragment of cotton clothing and 25 whale vertebrae, polished and in good condition, were recovered. Based on the particular architectural characteristics, the size and bulk, and its third rank status among all of Caral's building complexes, it may be suggested that the managers of this complex exercised a very important role in the city.

The remains of a group of dwellings associated with this public building are located in the lower part of its southwest side.

The Pyramid of the Huanca (Sector I)

This building has a quadrangular plan and is located in the extreme southeast in the upper half of the city, in the east subgroup. The facade is oriented toward the urban space shared with the Pyramid of the Gallery, dominated by a large monolith or huanca, 2.15 m high, that seems to have been the axis joining the two buildings. This pyramidal structure has the typical stepped profile, consisting of five superimposed terraces and four sides. It measures 54 m on the east-west axis, 52 m from north to south and reaches 12.8 m in height. A central stairway 5.5 m wide leads to the peak. Notable among the finds is a headdress of vegetable fiber.

Residential Group I2

In the rear and to the southwest of the Pyramid of the Huanca are two large and contiguous residences, one measuring 286 sq m and the other 158.2 sq m (Figure 2.6). Both exhibit plans of complex design. Their entrances are oriented

toward the west and the two have a principal room in the style of an atrium, as well as annex rooms, storage chambers and a patio where domestic as well as social and ritual activities took place. Like all of the buildings at Caral, these dwellings reveal distinct construction periods with each having its own characteristics. The residential group is attached to the pyramid and was inhabited by high status families that held important social positions in the city.

The Large Residential Group (Sector A)

This residential group is located on the south side of the central space of the upper half of the city, on the edge and along the terrace that borders the other half of the city. It is comprised of a series of residential subgroups, arranged spatially in a particular order, and measures 20,235.8 sq m. The facades of the dwellings are oriented toward the public buildings of the upper half. One of the subgroups contains dwellings constructed with rush wattle surrounded by stone walls. It was possible to identify successive phases of remodeling and interments of rooms associated with offerings of willow bundles, burnt textiles, fragments of figurines, plant remains, etc. The location of this group of residences, its architectural pattern, the size of the structures, the construction material, and the context of the finds suggest that the occupants of these dwellings had a third rank status among the inhabitants of Caral.

Lower Half of Caral

In this section of the city, the distribution of the buildings differs from the other half as they are found to be aligned in an east-west axis, on a low terrace, although the facade faces in the direction of the upper half (see Figure 2.3). In general, the buildings are smaller than those of the upper half and there are no large to medium-sized pyramidal structures, only small ones. This section, however, contains a unique structure with a sequence of platforms called the Temple of the Amphitheater for its position attached to the largest circular subterranean court of the city. Individual complexes are discussed below.

Temple of the Amphitheater (Sector L)

This structure consists of a walled complex integrated by various architectural components: a platform with a series of aligned cubicles; a circular sunken plaza and a building with platforms that ascend sequentially (Figure 2.5). Likewise, inside its perimeter on the east side it has a circular altar and an elite dwelling; and on the west side a group of rooms. It measures 157.4 m × 81.6 m and is 7.9 m high.

Projecting north from the complex is a rectangular platform 26 m wide and 3.2 m high that has been cut on the north side by erosion. The east and west sides of this platform contain a series of aligned cubicles alternating with solid spaces. This component was added during a period of significant reconstruction, which changed the original design of the complex's facade.

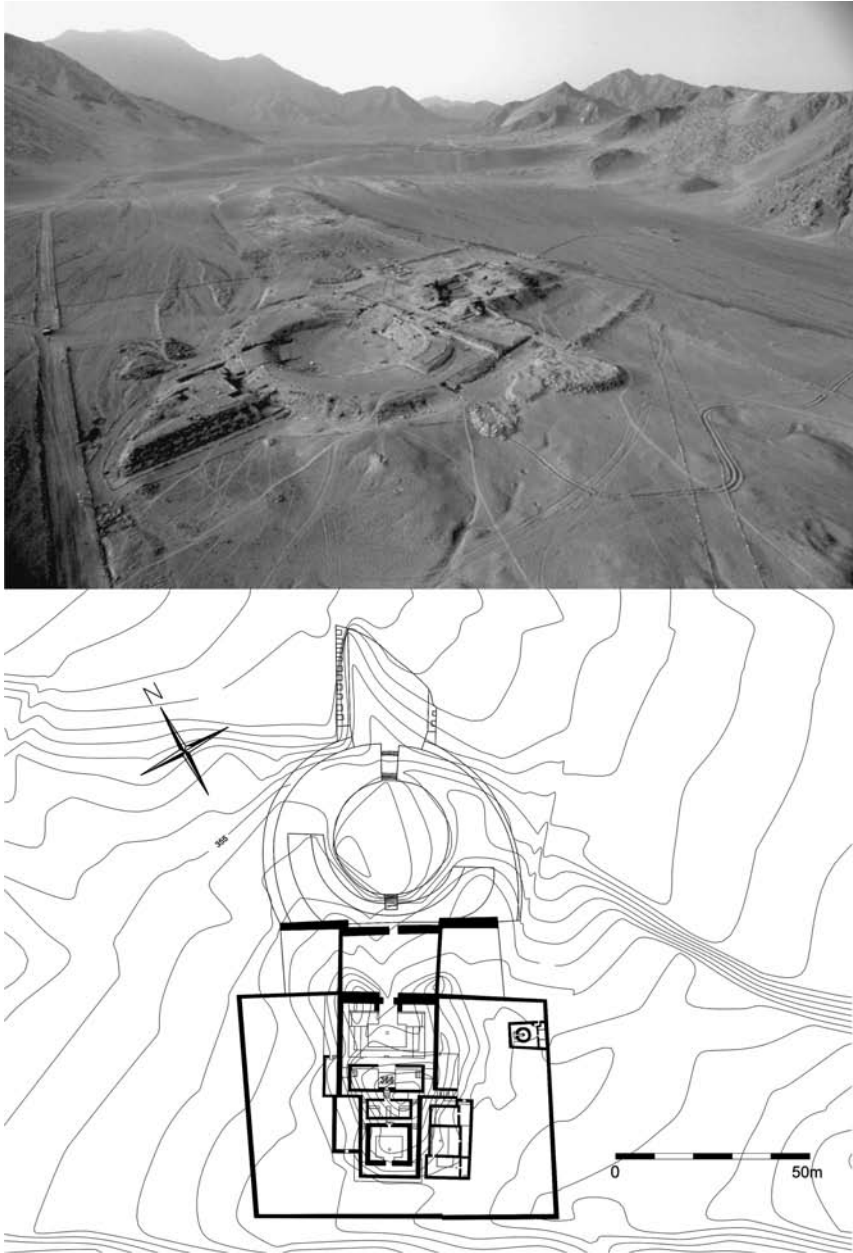


Figure 2.5. Oblique aerial view and plan drawing of the Temple of the Amphitheater (Sector L) in the lower half of Caral (Photo: Walter Wust).



Figure 2.6. Photograph and plan drawing of residential group, Sector I, Subsector I2.

The circular subterranean court resembles an amphitheater with tiered seats in the upper half and two main access stairways, located on the central axis, to which an entrance opening to the pyramidal building was also aligned. The internal wall of the court was decorated with small niches before the construction of the tiered seats. The exterior of the court is surrounded by two walls which form a concentric platform. The oldest version of this platform and court exhibits an impressive stairway in the front, by which one ascended, crossed the raised surface, and then descended into the court, that was in use before the north projecting platform was constructed. On the upper southwest side of the court a group of 32 flutes, manufactured from condor and pelican bones, was recovered (Figure 2.9, lower half). Nearby, on the east side of the architectural complex, a group of 38 bugles, manufactured from camelid and deer bones, was found.

In the building with platforms four large components may be differentiated, organized along the same axis: the antechamber, the atrium, the large rooms to the rear of the hall and the upper rooms. The south front steps of the circular plaza provide access to the antechamber of the temple, which consists of three large rooms. From the antechamber the hall may be reached by means of an entrance passage that has a plan design like a cross or *chacana*. This room has three stepped platforms in the style of tiered seats surrounding a quadrangular space, around whose center a large ceremonial hearth is located. In this setting, the most prominent and exclusive rituals of the city were probably carried out. The floor of the atrium is painted black.

From the atrium one ascends to the rear component by means of a central stairway, which was constructed over a raised terrace. It consists of two rectangular rooms separated by a central platform; each of these rooms has its own lateral staircase. The wall is decorated in relief. The staircase rises through the center of the platform up to the peak where a group of rooms is found.

To the east of the temple within its walled perimeter a small architectural complex is located, dominated by a circular altar, likewise walled, which indicates a private space. It is evident that due to its location, formal characteristics, size and controlled access, the use of this complex was highly restricted and the functionary official in charge had a special status within the complex and the city. The plan has a trapezoidal form integrated by three components: 1) a small space surrounding the central structure with a silo in the southwest corner, connected to the exterior by means of a small opening through the wall. The floor shows sections of a reddish coloration due to fire; 2) two small rooms separated by a central platform, located on the east side, near the entrance, of probable administrative function, and 3) the central room, of circular shape with a hearth located in its center, as well as subterranean ventilation ducts, of strictly ritual function. The access opening is at the extreme east of the north wall. The walls are of stone, plastered and painted; the roof was constructed of reeds tied with cordage. The walls and floors were periodically painted (Shady, Machacuay and López 2000: 2–19).

The hearth built in the center of this circular room is oval in shape and has two levels. Its diameter was reduced in the successive remodelings. Two subterranean ventilation ducts enter near the floor of the hearth. As a result of incineration a

large quantity of ash was recovered from the hearth. In addition, the openings of the ducts contained carbon remains, shell, bone, seeds, gourds, and fragments of artifacts. Only the individual in charge of burning the offerings would have had access to the hearth.

The Elite Building (Subsector L13)

This building was constructed on the southeast side of the Temple of the Amphitheater, within the perimeter of this complex and is directly connected to the building of the temple (Figure 2.5). It occupies an area of 200 sq m divided into three large rooms and a passageway. The walls were constructed with large stone blocks and plastered with yellow clay. The rooms are connected by means of openings and alleys; the interior contains platforms and benches. A corridor, running from north to south, separates this dwelling from the temple. On the north side, exterior of the dwelling, a stairway is present which connected to the temple in the Late period. On the east side of the temple and within the walled perimeter there are, likewise, two large spaces arranged at different levels; on one of these a group of 38 bugles was recovered (see above). On the west side of the temple (subsector L17) and within the perimeter there is a series of small rooms, with walls of organic material, platforms, hearths and remains of lithic tools and domestic activities.

The Small Temple with Bench (Sector N)

This is a smaller building, located approximately 140 m to the west of the Temple of the Amphitheater. It measures 25.9×10.91 m and is 3.5 m high. It presents the following components: an antechamber, the atrium, and rooms to the rear of the atrium and a patio.

The Small Residential Group (Sector NN2)

This group of dwellings is located in the lower half of the city, north of the row of public buildings. The hill on which it was placed was leveled and raised by constructing several low terraces. The complex occupies 4,987.0 sq m of area, which is small by comparison with the residential complexes of the upper half of the city. Furthermore, each house within is smaller than most counterparts from the city's upper half.

The dwellings are quadrangular in shape and vary in dimensions; some are scarcely 49 sq m while others are 80 sq m. Each is subdivided into smaller rooms with floors at different levels. In some cases the rooms include platforms and benches. The main entrances are oriented toward the north, and just inside are hearths that replicate the ceremonial space of the temples. Each habitation unit has a rear doorway that connects to patios and annex rooms in which domestic and production activities were carried out.

The walls of each residential unit are constructed of a framework of wooden posts that united panels composed of canes fastened together with braided ropes of cattail (*Typha domingensis*) and bulrushes (*Schoenoplectus sp.*). This structural

framework was coated with clay and ultimately plastered and painted. During excavation of the residences, a large quantity of bone, stone and wood work, textile fragments and abundant organic plant and animal materials were recovered.

Pyramid of the Circular Altar (Sector P)

This structure is located in the central part of the lower half and is the second-largest in size in this area of the city. It measures 44 m from east to west by 27 m from north to south and is 5.9 m high.

The pyramidal structure consists of three components: the principal component or nucleus, which is the largest, located in the center, where it houses the atrium, as well as the rear and two side rooms or annexes to the east and to the west, which are smaller. Three access openings may be distinguished: the most notable one is located in the facade and two additional ones are located on the west side.

The facade exhibits walls constructed of large stone blocks, with a central stairway 4 m wide which, by way of an opening, leads to a room or atrium at the top that is dominated by a hearth and encircled by platforms. Behind the atrium a platform and seven rooms are found, two of which repeat the design of the atrium in smaller scale.

The east component contains six quadrangular rooms which likely had a function complementary to the atrium. Notable in this component is a doorway with a lintel, 1.7 m high, providing access to a setting utilized during the oldest occupation periods.

The west component contains two entrance stairways: one, located to the southwest which connects with the exterior of the rooms in the rear of the atrium; and the northwest stairway which, before being closed off, led to a circular altar 2.7 m in diameter that has an access opening on the south side. In the interior, a circular platform encloses a lower space whose center contains a hearth with a ventilation duct.

Specialized Craft Workshop (Sector J)

This workshop is located in the extreme east of the lower half of the city. It is formed by three quadrangular rooms. It measures 10.20×14.97 m and 2 m high. On the floors small cavities sealed with a layer of clay are present, which contained beads of crisacola, milky quartz, rock crystal, Spondylus and opercles. Together with these, debitage as well as stone and bone tools were found. The archaeological evidence suggests that these rooms were utilized as craft production workshops, supplying sumptuary goods.

Residential Sector of the City Periphery (Sector X)

This sector consists of an extensive group of dwellings constructed on the terrace adjacent to the valley, between the nuclear zone of the city and the cultivation fields. The dwellings are arranged into various subgroups or hamlets along the terrace.

One subgroup of 300 sq m was excavated that contains various domestic units with a series of small interior rooms with benches, platforms and hearths arranged in an ordered manner, accommodated to the topographic configuration of the area. Organic materials as well as wood and reed posts were used in construction; techniques varied through time. The shape and contents of the habitations that form this subgroup suggest domestic, social and ritual activities. Food refuse was found outside the dwellings.

As in other parts of the city it was possible to determine architectural changes throughout the occupation, consisting of the enlargement and division of rooms, renovation of floors and hearths, addition of fills, interment of previous buildings and the use of many classes of materials and construction techniques. The inhabitants of this sector, together with residents of similar status from other settlements of the area constituted the most important labor force of the city.

ECONOMIC ACTIVITIES OF THE PEOPLE OF SUPE

Although Caral is located 25 kms from the ocean, its occupants consumed huge quantities of fish and mollusks including Peruvian anchovies (*Engraulis ringens*), sardines (*Sardinops sagax*), sea mollusks (*Mesodesma donacium*) and mussels (*Choromytilus chorus*), products that were selected among others, by the consumers or distributors (see Table 2.3; Figure 2.9 top and first row). The absence of nets or other fishing implements at Caral suggests the acquisition of these products

Table 2.3. Principal fish species identified at Caral.

Species	Common Name	NISP	Percentage (%)
<i>Engraulis ringens</i>	Peruvian anchoveta	137.45	86.854
<i>Sardinops sagax</i>	Sardine	19.809	12.517
<i>Sciaena deliciosa</i>	Lorna	469	0.296
<i>Ethmidum maculatum</i>	Machete	360	0.227
<i>Cilus gilberti</i>	Corvina	38	0.024
<i>Cynoscion analis</i>	Cachema	33	0.021
<i>Isacia conceptionis</i>	Cabinza	8	0.005
<i>Seriotelella violacea</i>	Cojinova	2	0.001
<i>Mugil cephalus</i>	Lisa	2	0.001
<i>Trachurus murphyi</i>	Jurel	24	0.015
<i>Paralichthys peruanus</i>	Coconut	34	0.021
<i>Sarda chiliensis</i>	Bonito	3	0.002
<i>Odontesthes regia</i>	Pejerrey	2	0.001
<i>Anisotremus scapularis</i>	Chita	2	0.001
<i>Galeichthys peruvianus</i>	Catfish	10	0.006
<i>Anchoa nasus</i>	Anchovy	1	0.001
<i>Mustelus sp.</i>	Tollo	3	0.002
<i>Sciaena staryi</i>	Róbalo (Sea Bass)	4	0.003
Total	—	158.254	99.99

Table 2.4. Food plants identified at Caral.

Family	Species	Common Name	No. of Remains	Percentage (%)
Cucurbitaceae	<i>Cucurbita moschata</i>	Lacayote	29	0.008
Fabaceae	<i>Inga feuillei</i>	Pacay	1,946	0.558
Fabaceae	<i>Phaseolus lunatus</i>	Lima bean	37	0.01
Fabaceae	<i>Phaseolus vulgaris</i>	Bean	22	0.006
Malpighiaceae	<i>Bunchosia armeniaca</i>	Plum	1	0.001
Poaceae	<i>Zea mays</i>	Maize	3	0.001
Cucurbitaceae	<i>Cucurbita moschata</i>	Chayote	1	0.001
Cucurbitaceae	<i>Cucurbita sp.</i>	Squash	115	0.032
Convolvulaceae	<i>Ipomoea batatas</i>	Sweet potato	24	0.007
Cannaceae	<i>Canna edulis</i>	Achira	76	0.022
Myrtaceae	<i>Psidium guajava</i>	Guava	346,387	99.327
Myrtaceae	<i>Campomanesia lineatifolia</i>	Palillo	41	0.012
Bixaceae	<i>Bixa orellana</i>	Achiote	16	0.004
Solanaceae	<i>Capsicum frutescens</i>	Chili pepper	12	0.003
Lauraceae	<i>Persea americana</i>	Avocado	2	0.001
Sapotaceae	<i>Pouteria lucuma</i>	Lúcuma	21	0.006
Annonaceae	<i>Annona muricata</i>	Guanabana	1	0.001
Total	—	—	348.734	100

was through exchange with coastal populations, such as their contemporaries at Bandurria and Aspero (Figure 2.1 a, b), where fishhooks and nets have been recovered, and with whom they share cultural traits. Consistent with this, the abundant presence of cotton seeds (*Gossypium barbadense*) at Caral may be due to a special emphasis that the inhabitants of the valley placed on this cultigen, whose fibers would have been required by the coastal settlers for the manufacture of fishing nets and clothing. In the valley gourds (*Lagenaria siceraria*) were also cultivated, with which floats for fishing nets, bowls and cups were manufactured and, fundamentally, plants destined for food, such as squashes (*Cucurbita sp.*), beans (*Phaseolus vulgaris*), achira (*Canna edulis*), sweet potato (*Ipomoea batatas*), avocado (*Persea americana*), guava (*Psidium guajava*), pacay (*Inga feuillei*), lúcuma (*Pouteria lucuma*) and chili peppers (*Capsicum frutescens*). Likewise, in Caral plants were recovered that probably came from other zones, such as *palillo* (*Campomanesia lineatifolia*), achiote (*Bixa orellana*), huairuro (*Ormosia sp.*) (a type of red bean used as an ornament), tutumo (*Crescentia cujete*) and lloque (*Kageneckia lanceolata*). Bulrushes (*Schoenoplectus sp.*) and other species were gathered from marshy zones within the valley (Shady 1999b: 2–4; 2000b: 49–66). Maize (*Zea mays*) appears only at the end of the occupation, and in small quantities (see Tables 2.4, 2.5, 2.6; Figure 2.7).

The farmers did not need a developed hydraulic technology or a complex social organization to construct irrigation canals. Rather, cultivated fields could have been irrigated by means of a simple system of canals conducting water from the river or the abundant springs, which are still in use today. In areas where the high water table caused flooding, drainage canals or ditches had to be excavated.

Table 2.5. Industrial-use plants identified at Caral.

Family	Species	Common Name	No. of Remains	Percentage (%)
Cucurbitaceae	<i>Lagenaria siceraria</i>	Gourd	1.23	5.631
Fabaceae	<i>Inga feuillei</i>	<i>Pacay</i>	383	1.753
Malvaceae	<i>Gossypium barbadense</i>	Cotton	18.519	84.774
Salicaceae	<i>Salix humboldtiana</i>	Willow	695	3.182
Typhaceae	<i>Typha domingensis</i>	Cattail	67	0.307
Poaceae	<i>Gynerium sagittatum</i>	Cane	255	1.167
Poaceae	<i>Phragmites australis</i>	<i>Carricillo</i>	252	1.153
Agavaceae	<i>Furcraea sp.</i>	Century plant	6	0.027
Rosaceae	<i>Kageneckia lanceolata</i>	<i>Lloque</i>	3	0.014
Bignoniaceae	<i>Crescentia cujete</i>	<i>Títumo</i>	8	0.037
Juncaceae	<i>Schoenoplectus americanus</i>	Bulrush	324	1.483
Juncaceae	<i>Schoenoplectus sp.</i>	Bulrush	100	0.458
Bignoniaceae	<i>Tecoma sp.</i>	<i>Huarumo</i> or <i>macahuito</i>	2	0.009
Fabaceae	<i>Inga feuillei</i>	<i>Pacay</i>	383	1.753
Sapindaceae	<i>Sapindus saponaria</i>	<i>Choloque tree</i>	1	0.005
Total	—	—	21.845	100

The evidence indicates that the population of Supe resided in nuclear settlements, located on the coast as well as in the valley. This lifeway was favored by easy access to the resources of one of the world's most productive oceans, to lomas or fog vegetation that continues to be extensive today, to the plants and animals indigenous to the valley and its riverine biota, and to lands easily irrigated by river and spring waters. In these conditions a productive, internally complementary, agricultural-fishing economy developed. The agriculturalists of the valley produced subsistence crops and industrial plants such as cotton, gourds and timber; in turn, coastal fishing settlements harvested Peruvian anchovies and sardines which were dried in large quantities, mollusks, seaweed, and other resources (Béarez and Miranda 2000: 67–77). The productivity of both economic sectors, the allocation of surpluses, and economic interdependence between the two occupational groups (the fishing settlements received cotton, gourds and timber for the manufacture of their fishing nets, floats and paddles while farmers acquired protein from marine resources)

Table 2.6. Plants that are evidence of exchange that have been identified at Caral.

Family	Species	Common Name	No. of Remains	Percentage (%)
Malpighiaceae	<i>Bunchosia armeniaca</i>	Plum	1	1.639
Bixaceae	<i>Bixa orellana</i>	<i>Achiote</i>	16	26.23
Myrtaceae	<i>Campomanesia lineatifolia</i>	<i>Palillo</i>	41	66.563
Rosaceae	<i>Kageneckia lanceolata</i>	<i>Lloque</i>	2	3.279
Fabaceae	<i>Ormosia sp.</i>	<i>Huairuro</i>	1	0.65
Bignoniaceae	<i>Crescentia cujete</i>	<i>Títumo</i>	1	1.639
Total	—	—	61	100

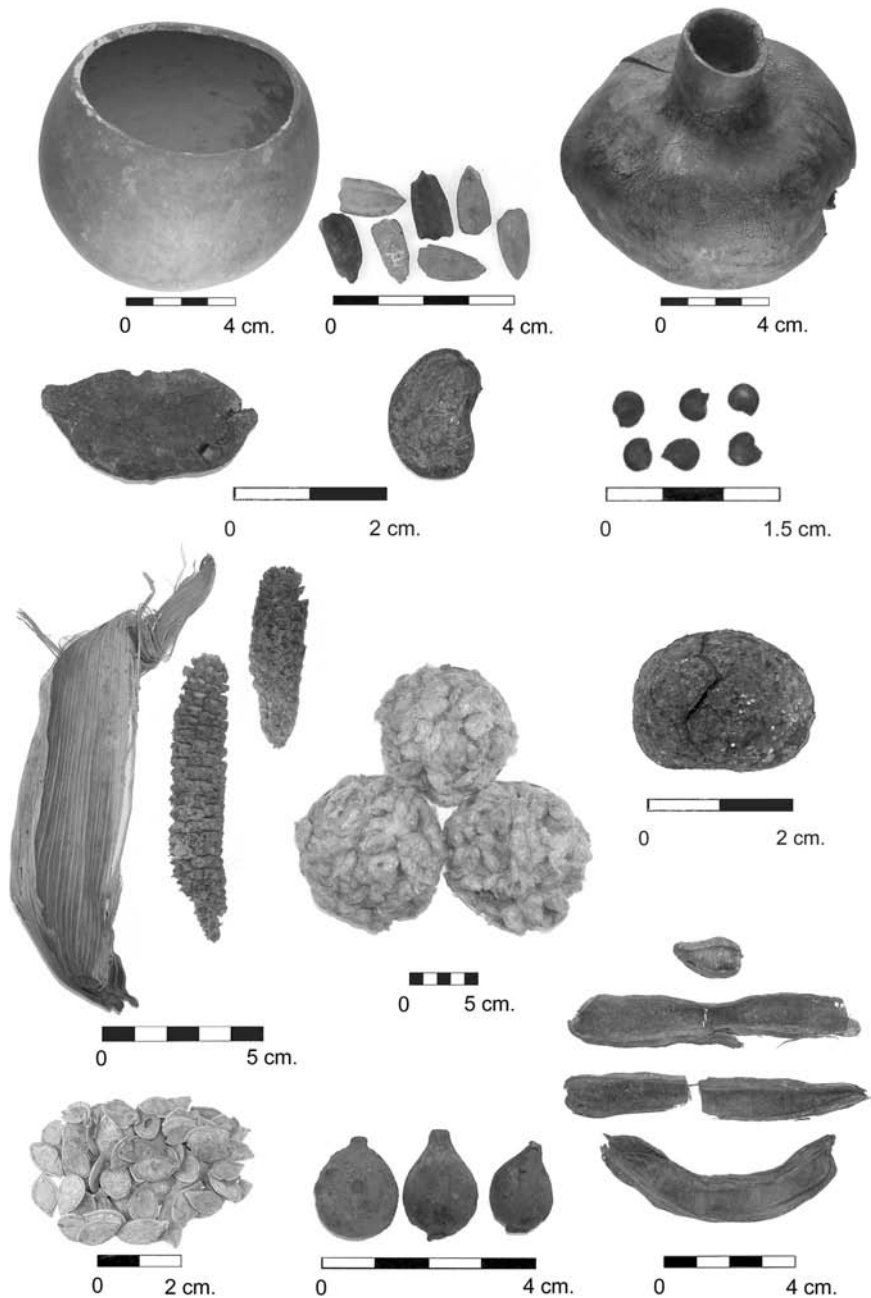


Figure 2.7. Agricultural remains from Caral. Top row; gourd containers and seeds (*Lagenaria siceraria*). Second row; sweet potato (*Ipomoea batatas*); lima bean (*Phaseolus lunatus*); and chili pepper seeds (*Capsicum sp.* Third row; maize (*Zea mays*); cotton (*Gossypium barbadense*); and avocado (*Persea americana*). Fourth row, squash seeds (*Cucurbita sp.*); guava fruit (*Psidium guajava*); pacay fruit (*Inga feuillei*).

fostered intense internal exchange while generating an inter-communal economic sphere. Managed by authorities of the settlements, these activities were of great economic benefit. Internal exchange was supplemented by an external exchange, which extended to other coastal areas as well as highlands and tropical forests of the north-central region, from which the inhabitants of Caral acquired goods such as *Spondylus*, wood, snails, medicinal plants, semiprecious stones, pigments, etc. The connections extended to groups in distant locations, such as the extreme north coast of Peru, and even Ecuador, for the acquisition of highly valued *Spondylus*, from which objects of symbolic value were manufactured.

All these activities favored the accumulation of wealth, promoting differences in prestige and the formation of social classes. They allowed Caral-Supe society to channel the benefits of surpluses production throughout the area into strengthening the power of local authorities who had initiated a process of political integration under a centralized government.

Utilitarian Tools

The occupants of Caral manufactured tools from diverse materials. For agricultural activities they utilized digging sticks fashioned mainly from the wood of the lloque, a tree that grows in the highlands above an altitude of 2,000 m (Figure 2.8, second row). They also manufactured stone artifacts perforated in the center for breaking up clods of dirt, large axes for the felling of trees, projectile points and bolas for hunting (Figure 2.8, top row), etc. Likewise, many cores and retouched flakes, cobbles and river rocks shaped by use wear from crushing and grinding, as well as metates, manos, hammerstones, perforators, etc. were recovered. Fine-grained stones with polished or smooth longitudinal grooves next to quartz blocks and debitage, etc. were also found. Baskets and bags were manufactured from plant fiber and used mainly for the transport and storage of construction and room fill stones or for the burial of the dead.

Personal Ornaments

The residents of Caral worked beads of bone, wood, shell, quartz and semiprecious stones as indicators of status for the living and the dead. A workshop with objects, debitage and tools has been excavated. Raw material such as *Spondylus* was imported from tropical Ecuadorian waters; other materials came from the adjacent coast, highlands and the Andean forests. Objects which indicated differences in access to manufactured goods were found in burials, many of which were items obtained by means of trade (Figure 2.8e–h).

The Importance of Cotton and Textiles

In some rooms of the city abundant tufts of fiber as well as seeds of cotton were found (Figure 2.7, third row center). Employing twining and looping techniques structural designs were created in natural colors of the cotton. These textiles were manufactured for domestic use, for display of social difference, and for rituals

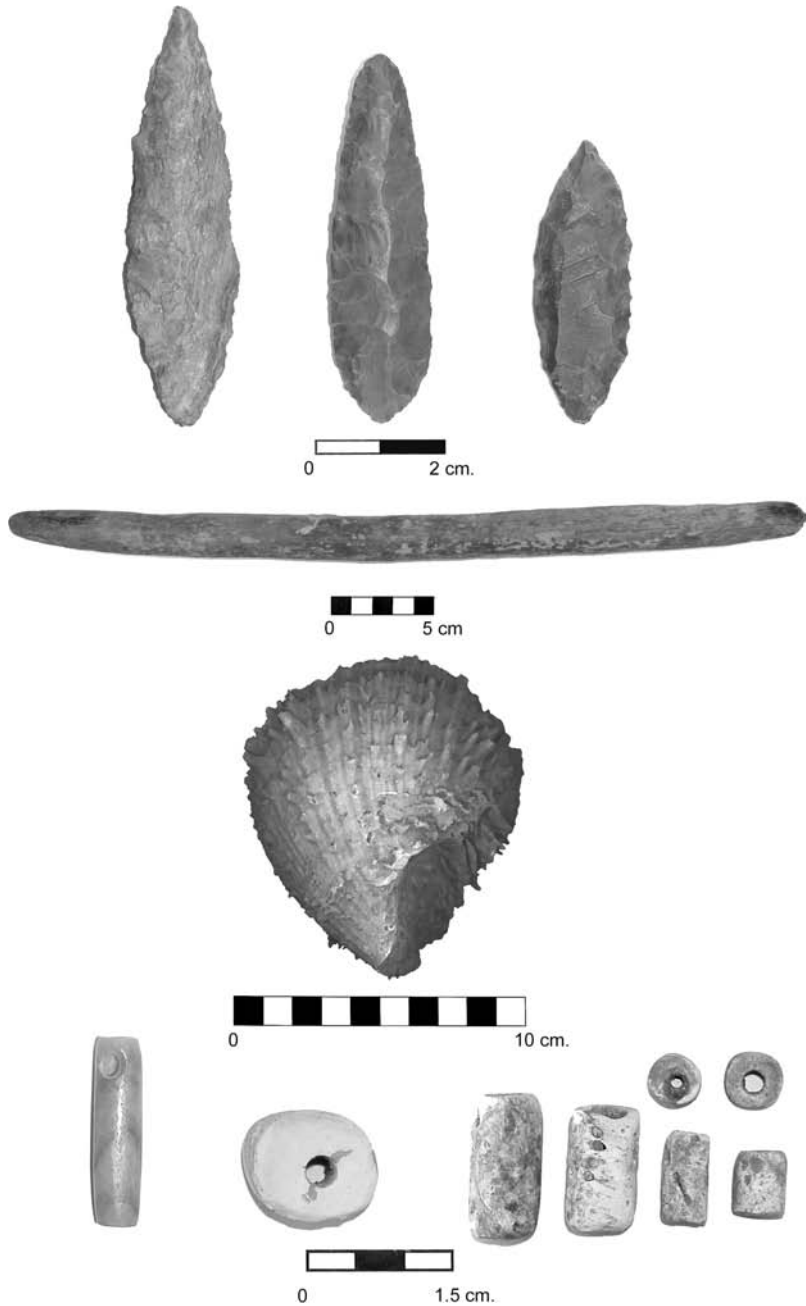


Figure 2.8. Top row; lithic projectile point manufactured from silicified sedimentary rock (*Chert*); projectile point of silicified volcanic rock (*Andesita*); projectile point of metamorphic rock (*Hornfels*); Second row; digging stick of *lloque* (*Kageneckia lanceolata*). Third row; *Spondylus* shell (*Spondylus princeps*). Fourth row; shell beads (*Spondylus spp* and *Spondylus princeps*).

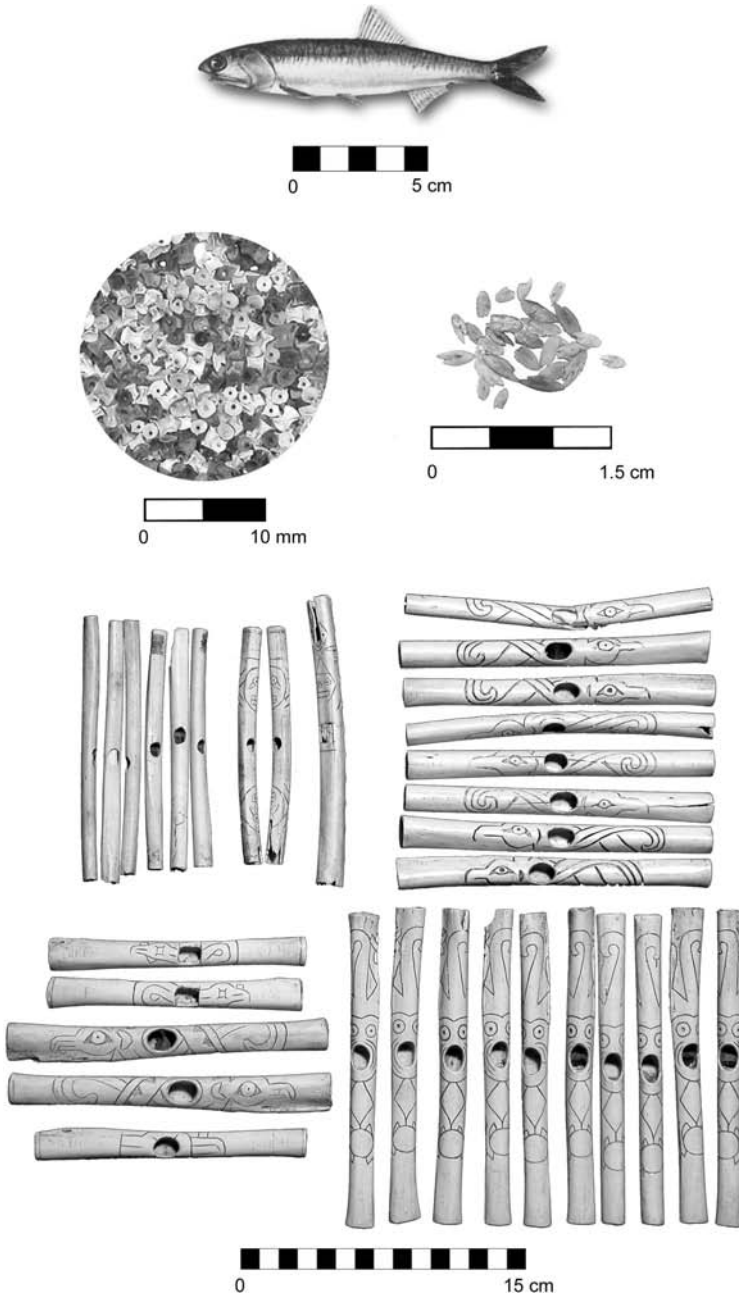


Figure 2.9. Top, example of Peruvian anchoveta (*Engraulis ringens*) for comparison. Second row; vertebrae and otoliths from Peruvian anchoveta (*Engraulis ringens*); Lower half; flutes manufactured from pelican (*Pelecanus thagus*) and condor (*Vultur griphus*) bones.

and commerce. Some burials contained textiles with carefully structured designs as indicators of hierarchy. Finds of offerings with burnt textiles are frequent, a custom which would persist throughout Peru's prehispanic history. Also recovered were bone and wood needles that may have been used in textile manufacture, and a well-preserved woman's dress (Figure 2.10, below).

The Kotosh Religious Tradition

Numerous architectural features found among the settlements of Supe, including subterranean circular courts, stepped pyramids and sequential platforms, as well as material remains and their cultural implications, excavated at Aspero and the valley sites we are digging (Caral, Chupacigarro, Lurihuasi, Miraya), are shared with other settlements of the area that participated in what is known as the Kotosh Religious Tradition (Burger and Salazar-Burger 1980, 1985). Most specific among these features are rooms with benches and hearths with subterranean ventilation ducts, wall niches, biconvex beads, musical flutes, etc.

POLITICAL ORGANIZATION

The 18 settlements or urban centers identified in the Supe Valley contain public buildings of various types next to groups of domestic units and, as occurs in Caral, associated with contexts containing evidence of diverse functions and activities. If we contrast the information on settlement pattern from colonial documents about the area with the archaeological data (Shady 2000a), it may be proposed that the people of Supe were organized into urban centers or pachacas of diverse size and complexity, maintained by a self-sufficient economy, run by their own authorities, each with its chief and its gods and religious practices through which they sustained their identity.

The large bulk of the constructed works imply considerable diversity of activities on the part of laborers such as the cutting and transport of stones; selection and relocation of clay; grinding of pigments; management of water; the cultivation, harvesting and drying of fibers for the manufacture of bags or shicras, food tribute and preparation; and furthermore, the participation of specialists. These individuals possessed astronomical knowledge for the proper orientation of religious buildings, knowledge of mathematics, geometry and art for the elaboration of architectural and artistic design, and technological knowledge concerning the strength of materials for construction stability. All of this indicates an organized society with authorities to control and manage labor forces involved in construction, an ideology capable of justifying activities of elites, as well as the requisite distribution of goods.

The accumulation of wealth resulting from high productivity and exchange, unequally distributed, and the formation of hierarchical social strata in a context of permanent socioeconomic articulation, would have fostered the formation and centralization of an extensive state government. This would explain the formation

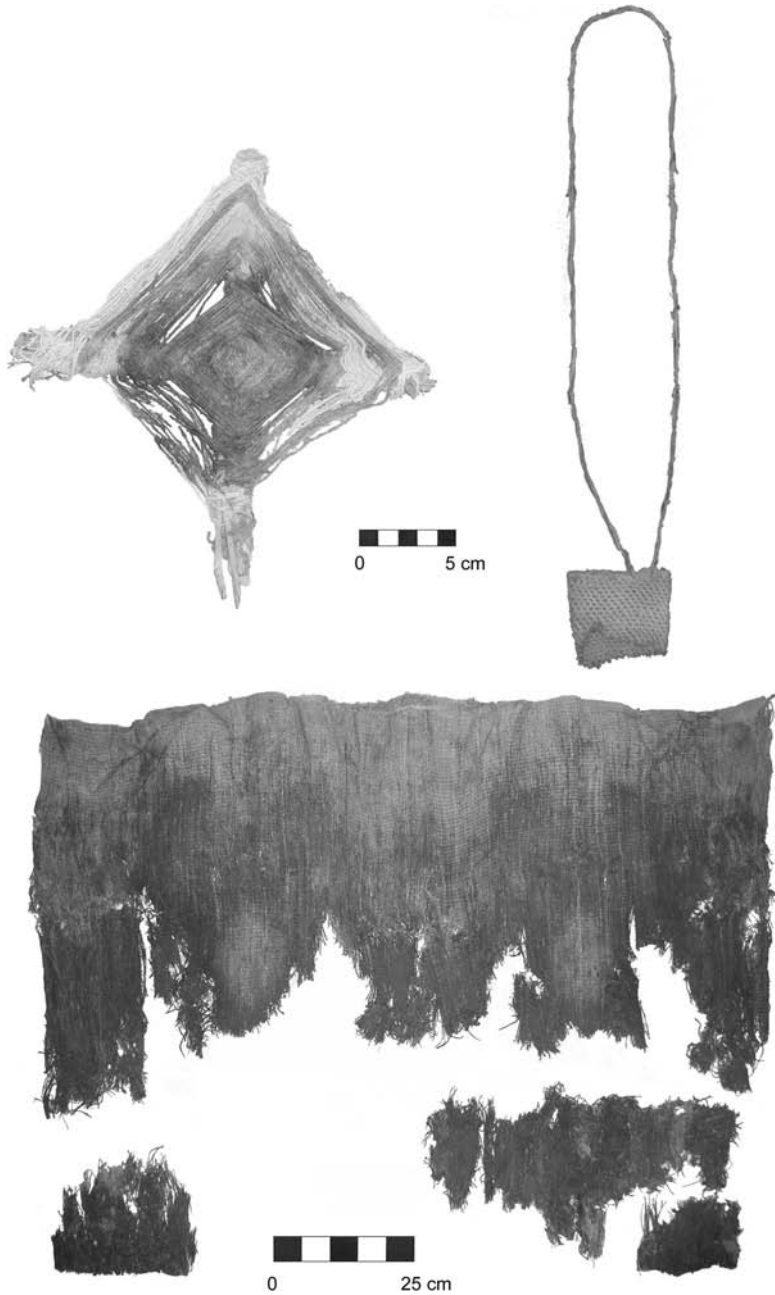


Figure 2.10. Top row; "Eye of God" textile; small bag of cotton fiber manufactured by simple looping. Below; beige female dress of twined cotton fiber.

of a system of differentiated urban centers, including the most prominent that were located in Caral's capital zone. Circular courts with public functions were constructed in nearly all urban centers, and a huge amount of labor was invested in monumental construction.

The authority of leaders acting as priests, managers of agrarian activities, chiefs of trade, astronomers, master builders, etc. would have been possible only because of the services they provided to society—in exchange for which they received a portion of the goods produced, and above all, a gift of labor from the population. Authority and exercise of power by this elite sector of the population increased over time, as evidenced by the monumental public architecture found in the various Supe Valley settlements. Architectural and stylistic relations with settlements of neighboring valleys reveal strong influence and perhaps control over communities in Pativilca and Fortaleza. Farther from home, La Galgada in the Tablachaca Valley of the Santa Basin might have been an important stronghold of this pristine Supe state, for exchange with populations of the northern highlands. This can be inferred from a series of shared components and architectural features. Furthermore, La Galgada is located in a natural environment ill-suited for human habitation, with limited arable land; its construction and maintenance are best understood if provided by another society.

In Supe, a centralized government exercised power over the communities resident in its urban centers. With prestige and influence felt throughout Peru's north-central region during the Late Archaic, this was the first state government to be achieved in the Central Andes, and as a model for social organization and ideology it transcended its space and time (Shady et al. 2000: 13–48).

THE ROLE OF RELIGION

Some researchers consider an army or military force a prerequisite for the identification of a state level of political organization. However, in the initial stage of state formation such control of the population was unnecessary. Religion functioned as the instrument of cohesion and coercion, and it was very effective (Shady 1999a, e). The ideology promoted by the Supe state would have acted as the nexus of cohesion for the social groups under the domination of its centralized government. As some colonial documents concerning the area indicate, gods such as Huari had instructed the inhabitants how to prepare their farms, lay out their canals, sow plants and establish community boundaries. The sun, the moon, water and earth, that were identified with particular stars and symbolized by certain idols, must be worshipped, conducting propitiatory rites. The ceremonial had to be observed, while labor on public buildings and tribute was also required. The city is full of buildings with atriums and hearths containing offerings, possibly related to these gods and to a calendar of celebrations. In this way religion was converted into the principal force of domination exercised by the state. All the activities carried out in Caral were, in one form or another, related to ceremonies, rituals and sacrifices.

The population lived working in the service of the gods and the authorities who represented them.

Human Sacrifice

Deviation from social norms could be punished by death. In various buildings of the city human burials, mainly of children, were found in different contexts but all associated with specific rituals. Discovery of the body of a young man, deposited among stones that were used to inter an atrium in preparation for the construction of a new one, demonstrates this concept. The body was deposited above a layer of soil and stones, covered with other stones and the floor of the new atrium. The body was nude and had no offerings with it except for the careful arrangement of the hair. Studies indicate that it was a male approximately twenty years of age, who was subjected to hard labor for most of his life. He had received two forceful blows, one to the face and the other to the head (which was the cause of death); some fingers were placed in one of the niches of the buried temple [Endnote 2].

Other human burials, particularly of children, were found underneath walls or the floor of a dwelling, related to the belief that this class of offering would contribute to the long life of the building. This custom is still rooted in the cultural tradition of Andean communities, although human beings have been replaced by animals or special objects.

It is worth mentioning that the objects associated with these burials indicate differences in status, obviously ascribed in the case of children less than one year of age. Differential access to consumer goods and prestige objects confirms the unequal distribution of wealth in Caral-Supe society.

Human Figurines

Approximately one hundred human figurines, manufactured of unfired clay, have been recovered from various structures and in ceremonial contexts. The majority are broken with some fragments missing. They must have symbolized humans in rituals of building renovation, propitiation or fertility. Through their study, information is being obtained concerning the clothing and headdresses of the personages represented (Figure 2.11).

MUSIC AND ITS IMPORTANCE IN CARAL-SUPE SOCIETY

A group of 32 flutes was recovered from a corner of the Temple of the Amphitheater (see above). The flutes are decorated with incised designs and painted with figures of monkeys, serpents, condors, eagles and human images (Shady 1999b, d). Another group of 38 instruments, probable bugles (see above), was recently recovered from another sector of the Temple of the Amphitheater. These instruments provide evidence for elaborate musical performance and the role of this musical



Figure 2.11. Figurines of unfired clay.

expression in the public aspects of Caral-Supe society. The instruments help confirm the emphasis on collective musical performance in Caral-Supe society, and the early role of participatory artistic performance in Andean cultural heritage (Figure 2.9, lower half).

CHRONOLOGY

In addition to cultural remains diagnostic of the Late Archaic period, since 2001 we have acquired a set of dates that confirmed the dating of Caral (Table 2.7;

Table 2.7. Radiocarbon dates.

Laboratory Number	¹² C/ ¹³ C Corrected Age (yr B.P.)	Weighted Average Midpoints (Cal B.C.)	Provenience
Beta-132593	3640 ± 50	2020	Construction fill of atrium on top of Great Pyramid, Caral
ISGS-4724	3730 ± 70	2187	Construction fill of atrium on top of Great Pyramid, Caral
Beta-134427	3740 ± 90	2170	Offering inside room on top of Great Pyramid, Caral
ISGS-4738	3740 ± 80	2170	Floor construction center of stratified trash, rear of Sector N, Caral
ISGS-4740	3810 ± 70	2215	Upper level stratified trash, rear of Sector N, Caral
Beta-132589	3820 ± 60	2280	Upper level stratified trash, Sector A, Caral
Beta-132590	3830 ± 60	2395	Structure 1, Unit VII-2-I, Level 7, Chupacigarro
ISGS-4710	3840 ± 70	2237	Wall construction around sunken circular plaza in front of Great Pyramid, Caral
ISGS-4726	3900 ± 70	2407	Platform construction in front of Sector C, Caral
ISGS-4727	3960 ± 110	2470	Stratum under the platform in front of Sector C, Caral
ISGS-4733	3960 ± 80	2470	Lower level stratified trash, Sector A, Caral
ISGS-4734	3970 ± 90	2450	Lower floor on top of wall around sunken circular platform, Sector L, Caral
Beta-134429	3970 ± 40	2450	Lowest level (7) stratified trash, in rear of Sector N, Caral
ISGS-4729	3990 ± 70	2490	Floor contact residential architecture, Sector A, Caral
ISGS-4732	3990 ± 70	2490	Upper level stratified trash, Sector A, Caral
Beta-134428	4020 ± 40	2560	Upper level (3) stratified trash, rear of Sector N, Caral
ISGS-4736	4060 ± 70	2580	Lowest level stratified trash, in rear of Sector N, Caral
ISGS-4711	4090 ± 90	2627	Stratum under sunken circular plaza in front of Great Pyramid, Caral
Beta-184980	3630 ± 70	1970	Platform fill, Pyramid of the Gallery, Sector H, Caral
Beta-184987	3630 ± 70	1970	Platform fill, Late period, Lurihuasi

(cont.)

Table 2.7. (Continued)

Laboratory Number	12C/13C Corrected Age (yr B.P.)	Weighted Average Midpoints (Cal B.C.)	Provenience
Beta-184982	3690 ± 110	2120	Platform fill, Pyramid of the Amphitheater, Sector L, Caral
Beta-184984	3700 ± 60	2120	Platform fill, Sector E, Caral
Beta-184979	3800 ± 70	2210	Platform fill, Pyramid of the Circular Altar, Sector P, Caral
Beta-184981	3830 ± 70	2290	Domestic unit of Sector NN2, Caral
Beta-184986	3910 ± 70	2450	Platform fill, Middle period, Lurihuasi
Beta-184977	3990 ± 70	2480	Wall of the Quarry Pyramid, Sector B, Caral
Beta-184983	4040 ± 80	2570	Room of the Central Plaza, Sector Z, Caral
Beta-184985	4060 ± 70	2580	Domestic unit of Sector I, Caral
Beta-184973	4160 ± 70	2860	Domestic unit of Sector I, Caral

Endnote 3). Some investigators have argued that the architectural monumentality of Caral could only belong to a ceremonial center of the Formative period, that perhaps remained aceramic in spite of the presence of pottery technology at contemporary centers. However, from the beginning, the evidence supported Caral's relationship with sites of the Kotosh Religious Tradition, of the Late Archaic times, as well as the early origin and prolonged occupation of this urban center, throughout most of the millenium between 3000–2000 BC. This has been corroborated by the chronometric dating (Shady et al. 2001: 723–726). Eight dates provided by Dr. Bernd Kromer of the Institut für Umweltp Physik of the University of Heidelberg were not included due to the lack of comparable calibration. However, these confirm the chronology since presented: 3927 ± 79; 3883 ± 47; 3950 ± 47; 3977 ± 39; 4197 ± 77; 3824 ± 51; 3986 ± 37; 4014 ± 33.

CONCLUSION

In the face of diverse geography and natural resources within the Andes, distinct cultural adaptations developed within relatively close distances (Shady 1995: 49–61). Groups that inhabited various geographic regions followed their own trajectories and, hence, forged unique cultures and ways of life. Likewise, they demonstrated different rhythms and degrees of development in their social and political organization. The influential tradition of vertical complementarity, however, manifested itself, promoting interaction between social groups sharing water from the same river, beginning in the high mountain ranges and descending through five ecological zones with contrasting natural resources. Furthermore, this internal vertical interaction regime articulated with another regional system, that utilized the Andean altiplano, an extensive plain where the rivers begin that flow to the Pacific Ocean to the west and the Amazon Basin to the east. Ocean and tropical

river routes, likewise, were used for contact between societies in some epochs. Isolation encouraged by rough, uneven terrain throughout the Andean mountain range was surmounted by human groups that implemented networks of interaction. Significantly, among the various regions and ecological zones present, the Andean plateau was an area traversed not only by residents from valleys whose rivers flow to the Pacific Basin, but also by inhabitants of river valleys that flow to the Amazon Basin. The vastness of the altiplano facilitated the integrated convergence of societies that occupied diverse territories and had distinct cultures and ways of life; goods, beliefs and ideas circulated through social interaction that spanned a millennium. The inhabitants of the north-central area exhibited great dynamism in their economic, social and cultural activities; they achieved sufficient economic surplus and social organization to permit a degree of specialization of labor and political organization, constructing huge public buildings and participating in the vast networks of interaction stretching across the regions.

The results of the Caral Archaeological Project indicate that between 3000–2000 BC the people of Supe lived in nuclear settlements sustained by agriculture and fishing with occupational specialization, articulated in a complementary economic system that fostered a dynamic sphere of interaction and interregional contacts over a large distance. Supe society produced advanced scientific and technological knowledge; it constructed the first planned cities in the New World and laid down the foundation of what would become the Central Andean social system.

It would have been difficult to construct the 18 settlements with public architecture identified in Supe (Shady et al. 2000: 13–48), a small valley with limited tillable land and a river with an irregular course that is dry most of the year, employing only the labor of their inhabitants. The immense investment of labor in monumental buildings, and their permanent remodeling, was underwritten by production in other valleys from the area that Supe's political authorities somehow learned to appropriate. The size of Supe's principal settlements, between 40 and 80 ha in contrast with 11 to 13 ha for sites in other valleys, demonstrates marked difference in economic management and investment among the occupants.

The 18 settlements of the valley, as well as others with similar features in the neighboring valleys of Pativilca and Fortaleza, share architectural characteristics in one or more pyramidal constructions, particularly the mound structure combined with a sunken circular court. Sites in the neighboring valleys, are, however, differentiated from those of Supe by their smaller size, complexity and mass. Based on the contents of the sites, it is evident that each urban center had its own government and authority, a pattern that would continue throughout prehispanic history. Nevertheless, all participated in an organized and possibly hierarchical system of which Caral would have been the center of the most remarkable social and cultural radiation of the epoch, its prestige enduring through the entire third millennium BC.

Supe's growing social complexity in the Late Archaic Period may be understood in terms of the framework of the environment of the north-central area and the situation of the societies that lived in its various regions at this time. These regions include the coast between the Chillón and Santa valleys (Chillón, Chancay, Huaura, Supe, Pativilca, Fortaleza, Huarmey and Casma), the Callejón de Huaylas and the

Callejón de Conchucos in the adjacent highlands, and the Marañón and Huallaga Basins on the eastern slopes (Figure 2.1a).

The evidence from Caral indicates that Caral-Supe society was organized into socially stratified ranks with local authorities connected to a state government, sustained by a productive agro-fishing economy with dynamic internal and external exchange that had acquired significant and complex scientific, technological and artistic knowledge. Its sphere of domination and direct control included the populations of the Supe, Pativilca and Fortaleza valleys but its connections and prestige extended across the entire northcentral Peruvian region. Twenty-nine radiocarbon dates [Endnote 3] have confirmed its antiquity as the oldest civilization of Peru and America. Furthermore, the evidence shows that Caral was the model of sociopolitical organization that other societies achieved only in later times throughout the Peruvian territory.

Considering that archaeological patrimony is among the most important resources that the present population of Supe has, and that a condition of extreme poverty exists despite Supe's proximity to the capital, the Caral Archaeological Project has assembled a group of professionals from various disciplines to propose a Master Plan promoting broad ranging social development in the region. Archeological research must be accompanied by conservation and evaluation of the non-renewable cultural resources. In turn, these activities should be coordinated with others directed at agriculture, animal breeding, craft manufacture and tourist services. In this manner the archaeological sites will be presented in appropriate natural and social surroundings, and in concordance with their significance. The inhabitants of Supe, therefore, will identify with their cultural patrimony and contribute to its preservation and conservation. Today, the local population of the Supe Valley regards Caral with pride and is appropriating the site as a key tool for constructing identity and promoting self esteem.

ENDNOTES

1. The name Caral was chosen on the basis of local toponomy. At the beginning of the project we also assigned the names of Chupacigarro Grande, Chupacigarro Chico, Chupacigarro Central and Chupacigarro Oeste to each of the four different sites located on the land of the old hacienda named Chupacigarro, but to avoid confusion later opted to distinguish them with names derived from the local toponomy.
2. Biological anthropological studies on this body were carried out by Dr. Guido Lombardi.
3. Betty Meggers and Henning Bischof collaborated in obtaining radiocarbon dates for Caral. Jonathan Haas and Winifred Creamer arranged for the payment of other samples provided by my team.

REFERENCES

- Béarez, Philippe and Luis Miranda, 2003, Análisis arqueo-ictiológico del sector residencial del sitio arqueológico de Caral-Supe, costa central del Perú. In *La Ciudad Sagrada de Caral-Supe. Los Orígenes de la Civilización Andina y la Formación del Estado Prístino*

- en el Antiguo Perú*, edited by Ruth Shady and Carlos Leyva, pp. 123–132. PEACS/INC, Lima.
- Bird, Junius B., John Hyslop and Milica D. Skinner, 1985, The preceramic excavations at the Huaca Prieta, Chicama Valley, Peru. In *Anthropological Papers of the American Museum of Natural History*, Volume 62, Number 1, pp. 1–249.
- Bonavía, Duccio, 1982, *Los Gavilanes. Mar, Desierto y Oasis en la Historia del Hombre*. COFIDE-IAA, Lima.
- Bonnier, Elizabeth, 1988, Arquitectura precerámica en la cordillera de los Andes, Piruru frente a la diversidad de los datos. *Anthropologica* 6 (6): 336–361.
- _____, 1997, Preceramic architecture in the Andes: the Mito Tradition. In *Archaeologica Peruana 2. Prehispanic Architecture and Civilization in the Andes*, edited by E. Bonnier and H. Bischof, pp. 120–144. SAPA, Reiss-Museum, Mannheim.
- _____ and Catherine Rozenberg, 1988, Del santuario al caserío: acerca de la neolitización en la cordillera de los Andes Centrales. *Boletín del Instituto Francés de Estudios Andinos* 16 (2): 23–40.
- Burger, Richard and Lucy Salazar-Burger, 1980, Ritual and religion at Huaricoto. *Archaeology* 33 (6): 26–32.
- _____ and Lucy Salazar-Burger, 1985, The early ceremonial center of Huaricoto. In *Early Ceremonial Architecture in the Andes*, edited by Christopher B. Donnan, pp. 111–138. Dumbarton Oaks Research Library and Collection, Washington, D.C.
- Engel, Frederic, 1963, A preceramic settlement on the central coast of Peru: Asia, Unit 1. *Transactions of the American Philosophical Society*, Volume 51, Number 3. American Philosophical Society, Philadelphia.
- Feldman, Robert, 1980, *Aspero, Peru: Architecture, Subsistence Economy and other Artifacts of a Preceramic Maritime Chiefdom*. Ph.D. dissertation. Department of Anthropology, Harvard University.
- _____, 1985, Preceramic corporate architecture. Evidences for the development of non-egalitarian social systems in Peru. In *Early Ceremonial Architecture in the Andes*, edited by Christopher B. Donnan, pp. 71–92. Dumbarton Oaks Research Library and Collection, Washington, D.C.
- Fung, Rosa, 1988, The Late Preceramic and Initial Period. In *Peruvian Prehistory*, edited by Richard W. Keatinge, pp. 67–96. Cambridge University Press, Cambridge.
- _____, 1999, El proceso de neolitización en los Andes Tropicales. In *Historia de América Latina, Volume 1*, edited by Luis G. Lumbreras, pp. 141–196. UASB-LIGRESA, Quito.
- Griender, Terence, Alberto Bueno, C. Earl Smith and Robert M. Malina, 1988, *La Galgada, Peru. A Preceramic Culture in Transition*. University of Texas Press, Austin.
- Izumi, Seiichi and Kazuo Terada, 1972, *Andes 4. Excavations at Kotosh, Peru, 1963 and 1966*. University of Tokyo Press, Tokyo.
- _____, Pedro J. Cuculiza and Chiaki Kano, 1972, Excavations at Shillacoto, Huanuco, Peru. In *The University of Tokyo Museum Bulletin* 3. University of Tokyo Press, Tokyo.
- _____ and Toshihiko Sono, 1963, *Andes 2. Excavations at Kotosh, Peru. University of Tokyo Expedition, 1960*. Tokyo.
- Kosok, Paul, 1965, *Life, Land and Water in Ancient Peru*. Long Island University Press, New York.
- Moseley, Michael E., 1975, *The Maritime Foundations of Andean Civilization*. Cummings Publishing, Menlo Park, California.
- _____ and Gordon R. Willey, 1973, Aspero, Peru: a re-examination of the site and its implications. *American Antiquity* 38 (4): 452–468.

- Pozorski, Shelia and Thomas Pozorski, 1977, Alto Salaverry: sitio precerámico de la costa peruana. *Revista del Museo Nacional* 43: 27–60.
- _____, and Thomas Pozorski, 1990, Huaynuna, a Late Cotton Preceramic site on the north coast of Peru. *Journal of Field Archaeology* 17: 17–26.
- _____, and Thomas Pozorski, 1996, Ventilated hearth structures in the Casma Valley, Peru. *Latin American Antiquity* 7 (4): 341–353.
- Quilter, Jeffrey, 1985, Architecture and chronology at El Paraiso, Peru. *Journal of Field Archaeology* 12: 279–297.
- _____, 1991, Late Preceramic Peru. *Journal of World Prehistory* 5 (4): 387–438.
- _____, Bernardino Ojeda, Deborah Pearsall, Daniel H. Sandweiss, John Jones and Elizabeth S. Wing, 1991, The subsistence economy of El Paraiso, an early Peruvian site. *Science* 251: 277–283.
- Raymond, J. Scott, 1981, The maritime foundations of Andean civilization: a reconsideration of the evidence. *American Antiquity* 46 (4): 806–821.
- Shady, Ruth, 1993, Del arcaico al formativo en los Andes Centrales. *Revista Andina* 1: 103–132. Cusco.
- _____, 1995, La neolitización en los Andes Centrales y los orígenes del sedentarismo, la domesticación y la distinción social. *Saguntum* 28: 49–61. Universidad de Valencia, España.
- _____, 1997a, *La Ciudad Sagrada de Caral-Supe en los Albores de la Civilización en el Perú*. Museo de Arqueología y Antropología, Universidad Nacional Mayor de San Marcos, Lima.
- _____, 1997b, Caral. La cité ensevelie. *Archéologie* 340: 58–65. France.
- _____, 1999a, La religión como forma de cohesión social y manejo político en los albores de la civilización en el Perú. *Boletín del Museo de Arqueología y Antropología* 9: 13–15. Universidad Nacional Mayor de San Marcos, Lima.
- _____, 1999b, *La Ciudad Sagrada de Caral-Supe*. Museo de Arqueología y Antropología, Universidad Nacional Mayor de San Marcos, Lima.
- _____, 1999c, El sustento económico del surgimiento de la civilización en el Perú. *Boletín del Museo de Arqueología y Antropología* 11: 2–4. Universidad Nacional Mayor de San Marcos, Lima.
- _____, 1999d, Flautas de Caral: el conjunto musical más antiguo de América. *Boletín del Museo de Arqueología y Antropología* 10: 4–5. Universidad Nacional Mayor de San Marcos, Lima.
- _____, 1999e, Los orígenes de la civilización y la formación del estado en el Perú: las evidencias arqueológicas de Caral-Supe. (Primera Parte). *Boletín del Museo de Arqueología y Antropología* 12: 2–4. Universidad Nacional Mayor de San Marcos, Lima.
- _____, 2000a, Los orígenes de la civilización y la formación del estado en el Perú: las evidencias arqueológicas de Caral-Supe. (Segunda Parte). *Boletín del Museo de Arqueología y Antropología* 2: 2–7. Universidad Nacional Mayor de San Marcos, Lima.
- _____, 2000b, Sustento socioeconómico del estado prístino de Supe-Perú: las evidencias de Caral-Supe. *Arqueología y Sociedad* 13: 49–66. Museo de Arqueología y Antropología, Universidad Nacional Mayor de San Marcos, Lima.
- _____, 2001, Caral-Supe y la costa norcentral del Perú: la cuna de la civilización y la formación del estado prístino. In *Historia de la Cultura Peruana*, Volume I, pp. 45–87. Fondo Editorial del Congreso del Perú, Lima.
- _____, C. Dolorier, F. Montesinos and L. Casas, 2000, Los orígenes de la civilización en el Perú: el area norcentral y el valle de Supe durante el arcaico tardío. *Arqueología*

- y *Sociedad* 13: 13–48. Museo de Arqueología y Antropología, Universidad Nacional Mayor de San Marcos, Lima.
- _____, Jonathan Haas and Winifred Creamer, 2001, Dating Caral, a preceramic site in the Supe Valley on the central coast of Peru. *Science* 292: 723–726.
- _____, and Carlos Leyva, editors, 2003, *La Ciudad Sagrada de Caral-Supe. Los Orígenes de la Civilización Andina y la Formación del Estado Prístino en el Antiguo Perú*. PEACS/INC, Lima.
- _____, and Sonia López, 1999, Ritual de enterramiento de un recinto en el sector residencial A en Caral-Supe. *Boletín de Arqueología PUCP* 3: 187–212. Fondo Editorial, Pontificia Universidad Católica del Perú, Lima.
- _____, M. Machacuay and R. Aramburu, 2000, La Plaza Circular del Templo Mayor de Caral: su presencia en Supe y en el area norcentral del Perú. *Boletín del Museo de Arqueología y Antropología* 8: 2–25. Universidad Nacional Mayor de San Marcos, Lima.
- _____, M. Machacuay and S. López, 2000, Recuperando la historia del Altar del Fuego Sagrado. *Boletín del Museo de Arqueología y Antropología* 4: 2–19. Universidad Nacional Mayor de San Marcos, Lima.
- Uhle, Max, 1925, Report on explorations at Supe. Appendix. In *The Uhle Pottery Collections from Supe*, by Alfred L. Kroeber. In *University of California Publications in American Archaeology and Ethnology* 21: 257–264.
- Wendt, W. E., 1964, Die Prakeramische Seidlung am Rio Seco, Peru. *Baessler Archiv* 11 (2): 225–275.
- Willey, Gordon R. and John M. Corbett, 1954, *Early Ancon and Early Supe Culture. Chavin Horizon Sites of the Central Peruvian Coast*. Columbia University Press, New York.
- Williams, Carlos and Francisco Merino, 1979, *Inventario, Catastro y Delimitación del Patrimonio Arqueológico del Valle de Supe*. Instituto Nacional de Cultura, Lima.
- Wilson, David J., 1981, Of maize and men: a critique of the Maritime Hypothesis of state origins on the coast of Peru. *American Anthropologist* 83: 93–120.
- Zechenter, Elzbieta, 1988, *Subsistence Strategies in the Supe Valley of the Peruvian Central Coast During the Complex Preceramic and Initial Periods*. Ph.D. dissertation. Department of Anthropology, University of California, Los Angeles.