ARCHITECTURE AND POWER IN THE EXPANSION OF A SMALL POLITY:
A STUDY OF CHANCAY RURAL ELITE RESIDENCES
AN ABSTRACT
SUBMITTED ON THE FIRST DAY OF OCTOBER 2015
TO THE DEPARTMENT OF ANTHROPOLOGY
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
OF THE SCHOOL OF LIBERAL ARTS
OF TULANE UNIVERSITY
FOR THE DEGREE
OF
DOCTOR OF PHILOSOPHY
BY
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APPROVED:
John Verano, Ph.D.
Director
Christopher Rodning, Ph.D.
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ABSTRACT

This dissertation addresses community-level political and economic organization during the Late Intermediate Period (A.D. 1100-1435) at Quipico, Huaura Valley, north-central coast of Peru. During the Late Intermediate Period the Huara Valley was under the influence of the Chancay, a little-known polity that offers an opportunity to examine the reconfiguration and coalescence of regional powers in the space created after the collapse of Huari and prior to Inca expansion. What form did Chancay organization take, and in particular, how was it manifested in the Huaura Valley? This question is simply a regionally-based version of Wilson's (2008:1): “What role did small-scale social groups play in the emergence of regionally organized political hierarchies?”

Once I began investigations at Quipico, it became clear that the basic culture history description for the Chancay was lacking. An important part of this research, then, was to construct a detailed profile of the geographical, environmental, chronological, and material remains of the Chancay archaeological culture. Rather than excavating several sites in the region—an impractical prospect considering the size and scope of this project—I decided to examine Quipico, a small site of tapial (poured adobe) buildings suspected to have served as elite residences which also served as storage and redistribution centers. I have focused on elites as the source of local control in the Huaura Valley and the most impacted during valley-wide changes in political affiliation. I chose architecture as a major medium by which to view these changes because it is well-
preserved in the region and argued to be less subject to outside stylistic influences. It is unrealistic, however, to think that these complex questions of socio-political organization of the Chancay can be answered by excavation at one small site. Instead, I had the goal of using excavations at Quipico, combined with previous studies to help build a better understanding of the more general social, economic, and political processes of the Chancay occupation in the Huaura Valley.
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INTRODUCTION

This dissertation addresses community-level political and economic organization during the Late Intermediate Period (A.D. 1100-1435) at Quipico, Huaura Valley, north-central coast of Peru. During the Late Intermediate Period the Huara Valley was under the influence of the Chancay, a little-known polity that offers an opportunity to examine the reconfiguration and coalescence of regional powers in the space created after the collapse of Huari and prior to Inca expansion. What form did Chancay organization take, and in particular, how was it manifested in the Huaura Valley? This question is simply a regionally-based version of Wilson's (2008:1): “What role did small-scale social groups play in the emergence of regionally organized political hierarchies?”

Once I began investigations at Quipico, it became clear that the basic culture history description for the Chancay was lacking. An important part of this research, then, became to construct a detailed profile of the geographical, environmental, chronological, and material remains of the Chancay archaeological culture. Rather than excavating several sites in the region—an impractical prospect considering the size and scope of this project—I decided to examine Quipico, a small site of tapial (poured adobe) buildings suspected to have served as elite residences which also served as storage and redistribution centers. I have focused on elites as the source of local control in the Huaura Valley and the most impacted during valley-wide changes in political affiliation. I chose architecture as a major medium by which to view these changes because it is well-
preserved in the region and argued to be less subject to outside stylistic influences. It is unrealistic, however, to think that these complex questions of socio-political organization of the Chancay can be answered by excavation at one small site. Instead, this project had the goal of using excavations at Quipico, combined with previous studies to help build a basic understanding of Chancay occupation in the Huaura Valley. I needed to resolve some problems of chronology, improve established ceramic sequences, refine our definition of what is considered 'Chancay' vs 'Huaura' vs other influences, and examine intravalley cohesion, as these are factors essential to correctly interpret the more general social, economic, and political processes that are at play in the archaeological history of sites like Quipico.

_The Built Environment_

It was the premise of this project that the best way to understand the Chancay at the local level in the Huaura Valley is by focusing upon the built environment. The built environment is defined here as any physical alteration of the natural environment through construction by humans, which includes buildings, bounded spaces, landmarks, and the specific elements of those forms (Lawrence and Low 1990). In contrast to more physically and socially mobile objects like ceramics, lithics, or textiles, the built environment has a unique position in society in that structures are a significant investment of time and resources and their usefulness often spans across more than one generation (Sanders 1990). Especially applicable to Andean studies, Yi-Fu Tuan (1977:104) has argued that non-literate societies have a greater awareness of the built environment than those that are literate. Tuan suggests that in some societies without
writing, people will rely more on material form for communication, especially using buildings to convey rituals and traditions (see also Crick 1982). Through active participation in construction, the frequency of maintenance for structures, and the ceremonies that accompany these acts of building, repair, and abandonment, Tuan (1977) suggests that non-literate groups create a consensus-based ideology that is sustained over long periods of time. Buildings are likely to be less subject to rapid changes in style due to random variation or considerations of fashion (Blanton 1994; Czwarno 1989), yet they can cover the same ranges of social, political, and economic information as other artifact types. Shaped by particular societies at specific times, the built environment is inherently contextual; it contains information on the cultural concepts and environmental conditions surrounding the original construction and each successive reuse or renovation (Ching 2007; Pearson and Richards 1994; Lawrence and Low 1990).

The built environment does not, however, have only a passive role in society; it should not be viewed as merely a carrier of cultural traits or aesthetics, as in traditional approaches from art history and critique (cf. Moore 1996a). From an anthropological perspective, the built environment is a culturally constructed landscape that both affects and is affected by human action (Knapp and Ashmore 1999; Moore 1996a). As a type of landscape, the built environment is a tangible expression of the interaction between humans and their surroundings (Cosgrove 1984; Preziosi 1979), a connection of the material and the social aspects of a community where space both forms human activity and serves as a backdrop for it (Bourdieu 1977; Ching 2007; Fletcher 2007; Tilley 1996). In studying the built environment, research is most productive when the true goal is not
descriptive (Bawden 1982a), but when it seeks to understand society by how it creates, interacts with, comprehends, and is influenced by the cultural modifications of space.

With these multiple dimensions of the built environment come even more numerous interpretations used in understanding architecture, from materialist to psychological explanations (e.g. Broadbent, Bunt, and Jenks 1980; Broadbent, Bunt, and Llorens 1980; Gilman 1987; Tschumi 1990; Watson 1970; Zevi 1974 [1957]). Archaeologists accept a relationship between structures, social organization, and power, seen in studies of both domestic (Allison 1999c; Bermann 1994; Blanton 1994; Hastorf 1990; Kent 1990a; McGuire and Schiffer 1983; Rapoport 1969; Wilk and Ashmore 1988) and public architecture (Abrams 1989; Adams 1975; Blanton 1989; Childe 1974 [1936]), but disagree on precisely how those factors influence on another. Anthropological approaches to the built environment center around four main theoretical sets of questions, as outlined in Lawrence and Low’s (1990) review of the literature: 1) social organization, 2) symbolic, 3) psychological, and 4) social production. It is the first and fourth approaches—regarding the connections between patterning of the built environment and past social order (Czwarno 1989)—that I intend to address. I am concerned with incorporating Lawrence and Low’s (1990:455) questions:

“In what ways do built forms accommodate human behavior and adapt to human needs? How does the social group “fit” the form it occupies? How does society produce forms and forms reproduce society? What roles do history and social institutions play in generating the built environment? What is the relationship between space and power?”

**Intermediate Elites**

To understand how a society is ordered, I must look first towards those who are in charge of organizing it. According to some (cf. Haas 1982; Swartz et al 1968; Webster
and Inomata 2004), power involves a dissymmetry in social relations created by use of legitimacy and force – either coercive or persuasive. Elites are distinguished from the rest of society by their control of resources and exploitation of ideology (Hobsbawm and Ranger 1983; Nelson 2004). A role that is particularly interesting is the concept of “intermediate elites” (Elson and Covey 2006; Jennings and Álvarez 2001; Netherly 1977). These are the individuals in a society who are not the ruling or power elites, those at the top levels of the decision and policy-making hierarchy. Intermediate elites, who can also be referred to as rural or local elites, are lower order elites who manage resources at the provincial level (Elson and Covey 2006).

In particular, residential architecture is the key variable with which to evaluate differences in wealth and power (Jamieson 2000; Licon 2004; McGuire and Schiffer 1983). Elites identify themselves as such by improving their domiciles in comparison to others (Chase and Chase 1992; Webster and Inomata 2004). Factors such as location, size, complexity, permanence, quality of materials and overall cost are used as part of these “strategies of architectural self-aggrandizement” (Nelson 2004). Elites use their residences to make a durable and visible statement about power and the placement of members within economic, social, and political order (Knapp and Ashmore 1999), a practice we can refer to as “conspicuous construction”. Architecture can make distinctions in status visible and public; it is “social energy in fossil form” (Moore 1996a: 14).

Residences can serve as both a form of display as well as a vantage point from which they can observe others, allowing them to visibly monitor others while still maintaining their own privacy (Jamieson 2000). As people—both elite and non-elite—are
aware of being observed by each other, they will reflexively monitor their own behaviors in a way that reproduces these social relationships, as in Giddens’ process of structuration (Giddens 1984). Non-elites may model their structures after elite residences (Swenson 2007) and vice versa (Kus and Raharijaona 2000); as these styles become common, elites may repeatedly modify their residences to compete with each other or demonstrate their ever-present position at the top of the status quo (Christie 2006a; Czwarno 1989; Webster and Inomata 2004). This imitation can occur at a larger scale as well, when one society changes its architectural approach to resemble another, more politically powerful culture’s style. McEwan (1990) suggests that this is what occurred with Andean north coast groups; the shift from Moche pyramid-dominated ceremonial centers to Chimu ciudadelas could be explained by north coast groups imitating Wari imperial style. As part of multidimensional struggles within relationships of power, residences both reflect and affect social complexity (Hobsbawm and Ranger 1983; Jamieson 2000).

**Residential Housing**

Taking into consideration current debates on the ethnographic and archaeological definitions of a household (cf. Blanton 1994; Hirth 1992; Wilk 1991), for this study, a household is used to refer to a group of people defined as the basic unit of production, consumption, distribution, transmission, and social reproduction (Santley and Hirth 1992a) where interpersonal relationships link individuals (Netting et al. 1984). Households are also considered an essential component in the reconstruction of ancient societies, forming the bulk of the population in the past (Smith 1992; Wilk and Rathje 1982). A household can be identified archaeologically through the members’ place of
residence, referred to as residential housing, household dwellings, or domestic structures. The residence encapsulates aspects of basic survival – shelter for sleeping, food preparation and consumption – and the presence of activities can be identified by related features and artifacts. These structures serve as the spatial dimension of daily practice, the level at which social groups directly interact with economic and ecological processes (Blanton 1994; Bourdieu 1977; Kolb 1985; Morgan 1965; Wilk and Rathje 1982). This interaction is both constrained and controlled by the form of the structure; it is through their dwelling that a household is able to conform to or confront the outside world (Allison 1999a). It provides sanctuary from external pressures (Ardener 1993), allows a household to simultaneously display and hide what it chooses (Carsten and Hugh-Jones 1995; Jamieson 2000), and can serve as a symbolic map of social and cosmological principles of the society (Kus and Raharijaona 2000).

Numerous studies have attempted to identify archaeologically the size and role of a household and its dwelling space in different societies: New World (e.g. Alexander 1999; Jamieson 2000; Jorgensen 1975; McKee 1999; Santley and Hirth 1992b; Téllez and Moure 1982; Wilk and Rathje 1982), Old World (e.g. Allison 1999b; Ault and Nevett 1999; Wallace-Hadrill 1994), and globally (e.g. Allison 1999c; Blanton 1994; Kent 1990b, 1990c). I will rely on works of other coastal Andean areas in the MH and LIP as the closest household correlates in space and time (Bawden 1982a, 1990; Brewster-Wray 1989; Czwarno 1989; Moore 1981, 1985, 1989).

_Non-elite housing_
Features of residential housing vary according to the relative social status of its inhabitants (McGuire and Schiffer 1983). Since the distinction between dwellings (and the roles) of laborers, artisans, military, and lesser bureaucrats is not yet clear for much of the Andean area, I have grouped lower and middle-class groups together. In general for populations in coastal Peru, non-elite housing is identified by clusters of cane-walled structures with stone wall bases, roofing of plastered cane, and packed dirt floors with few internal partitions, referred to as *quincha* style architecture (for the Moche see Bawden 1982a; for the Chimu see Moore 1989 and Swenson 2007). Quincha architecture is usually associated with lower social status, since it is impermanent, has fewer features, is quick to assemble yet not durable, and does not protect one from the elements as well as adobe or tapial architecture. These characteristics can still be seen in use today in many of the small settlements along the coast. Despite different construction techniques, non-elite dwellings may emulate elite architectural styles and forms, such as at several sites in the Jequetepeque Valley (Swenson 2007).

For the Chimu, common people and artisans serving the upper classes were housed in small irregularly agglutinated rooms, or SIAR (Bawden 1990; Day 1982; Topic J. 1982). Non-elite dwellings show a wide range of productive activities: shellfish collecting, fishing, food preparation, stone tool making, spinning, weaving, woodworking, agriculture, and copper metallurgy (Moore 1981, 1985). For the Wari, residential clusters of non-elites were located in large, non-defensive areas containing numerous small houses and no nearby monumental architecture (McEwan 1989; Isbell 1991). Craft production at some residences is evidenced by the presence of turquoise-colored stone and obsidian debitage and broken marine shells (McEwan 1989). Areas at
both Wari and Chimú sites have been suggested as habitations for military troops or *mit’a* or *ayni* laborers. *Mit’a* is a Quechua word that refers to taking turns of labor as an equal exchange of work, and *ayni* is an Aymara word that refers to performing a service with an expectation of a future, equal, and obligatory payment performed by the recipient. Although both of these concepts come from the Late Horizon/Contact period cultures, it is possible that similar redistribution processes may have been present earlier across the Andean region for interactions at both the individual household as well as a larger community level by the governing group. One way this can manifest itself archaeologically is by the presence of large clusters of plain, uniform dwellings built in sporadic episodes with large hearths and numerous storage jars; these may have been meant to support a sizeable number of people for work temporarily (Mackey and Klymyshyn 1981; McEwan 1987).

**Elite residences**

An elite residence is defined as the structure in which high-ranking members of society live (Christie 2006a). Elite residences distinguish themselves from those of commoners with differences in size, location, quality, contents, and decoration (Barber and Joyce 2006; Chase and Chase 1992; Evans 2004; Smith 1987); coastal Andean cultures are no exception to this pattern (Bawden 1990; Brewster-Wray 1989; Christie 2006b; Day 1982; Feldman 1989; Klymyshyn 1982; Moore 1981, 1985, 1989). Elite coastal residences consist of formally-planned adobe-walled sectors, occasionally found near monumental architecture (Mackey 2006; Mackey and Klymyshyn 1981; Moore 1989). This style of large poured adobe blocks, called *tapial*, requires a large quantity of
materials but is quick to construct, and it can produce long, tall walls. Despite the high initial cost, the tapial is very durable; its compressive strength ranges from 462-850 psi, versus adobe bricks, which average only 260-439 psi (McHenry 1984). The thicker the wall is, the easier it is to construct because it has more space to be easily compacted, which will also make it stronger; thus exterior walls tend to be thicker than interior ones. Tapial continues to dry after construction, taking many months to cure and achieve full strength; however, tapial walls are not fragile prior to drying, so no wait is needed before roofs and other features are built (McHenry 1984). It is referred to as “corporate architecture” because constructing these walls would have required activating a lot of manpower in a short amount of time, which is thought to signify elite control and mass production (Moseley 1975a, 1975b). Another feature considered elite for coastal Andean sites is the use of plastered or adobe-sealed floors. Plastered floors require extra initial labor to properly mix, compact, and finish, but result in a concrete-like look and are relatively waterproof (McHenry 1984). Unsealed floors have a fragile surface and are a continual source of dust, requiring frequent reactivation of the surface with water to smooth out.

These compounds include the same types of rooms as the basic residential unit, but additionally have more complex internal groupings of rooms, indirect entryways, niches, courts, walkways, and multistoried galleries (Feldman 1989; Spickard 1983; Swenson 2007). They may contain elaborate ceramics and luxury items stored or placed as offerings in small pits under patio floors; luxury items include *Spondylus sp.* shells and semi-precious stones like chrysocolla, lapis, and obsidian (Brewster-Wray 1989). As consumers of finished products, fewer tools, debris, or features associated with
agricultural production or full-time manufacturing should be found, though some evidence of elite craftwork may be present (Brewster-Wray 1989; Smith 1987). The construction of elite compounds is not carried out by the elites themselves, but by labor obtained from subordinates, in part as a demonstration of their power (Abrams 1989; Arnold and Ford 1980; Feldman 1985, 1987). Just as elites are differentiated from commoners, elites can themselves be internally stratified. Differences among elite residences can reflect the expression of individual social status and internal competition for power (Christie 2006a).

Elites served a multitude of roles in Andean society (Czwarno 1989), so their residences may have been settings for a variety of domestic and political activities, such as serving as an administrative space for ritually-charged events like chichi distribution (Licon 2004; Moore 1992; contra Christie 2006a; Barber and Joyce 2006). Thus, to identify an elite residence, we must be open to the possibility of structures with not only a primarily domestic function, but with the potential to serve as economic, political, and religious places too. By examining the structures at Quipico suspected to be elite residences, I hope to begin to puzzle out how the individuals and groups at this site were organized, how they behaved, and how they related to the larger Chancay society.

Chapter Divisions

Chapter 1 begins with a discussion of the basic chronology and environment of the Andean central coast, as well as a description of the major polities active on the coast during the Late Intermediate Period, in order to situate the Chancay within a social and geographical landscape. Chapter 2 is an in-depth description of what is known about the
Chancay culture, combining data from former studies with recent reports and an abundance of 'grey literature'. Chapter 3 provides the basic information about the site of Quipico, and Chapter 4 is the detailed description, organized by architectural structure and excavation unit, of the excavations undertaken by this project (PICA) in 2009. Chapter 5 presents an overview of the artifact analysis from the excavations. With Chapter 6, I investigate in detail some of the architectural analyses that I did for Quipico to better understand the construction and function of the site. Finally, Chapter 8 is a discussion on the overall interpretation of the site, and what this project has been able to contribute to understanding the Chancay, elite roles in the Huaura Valley, and architecture.
CHAPTER 1: AN OVERVIEW OF ANDEAN CENTRAL COAST

ENVIRONMENT & PREHISTORY

The Andean Central Coast Environment

The central coast region encompasses the Fortaleza, Pativilca, Supe, Huaura, Chancay, Chillón, Rimac, and Lurín river valleys [Figure 1.1]. This section of the central coast is an arid environment and is part of the Andean Pacific watershed, which extends from approximately 5° and 38° south latitude (Ponce de León Bardalez 2004). The climate of this region—one of the world’s driest deserts—is shaped largely by the Humboldt Current and the Andes Mountains. The Humboldt Current brings cold water from the Antarctic to the equator and then turns west. This cool water provides rich ocean resources, supporting shellfish, sea mammals, sea birds, and a variety of densely populated small fish such as sardines, anchovies, and Spanish mackerel. Winds along the coast blow onshore, cooling the air over the land; this creates relatively mild temperatures along the coast that inhibit moisture from rising, condensing, and falling as rain. On the other side, high altitudes of the Andes Mountains act as a barrier to keep rain from reaching the coast from the east [Figure 1.2].

The result is that most rain falls in the Andes, collects, and runs down in many small rivers, approximately 40 km apart, which break up the solidly dry coastline. During the austral summer, the moist air heats and rises up to the western edge of the slopes, resulting in hot and dry conditions along the coast. In the winter, the coast stays cool, so moisture condenses near the sea level, forming a thick fog. During the day, this fog
breaks and rises, reforming again in the night. Only a few areas (known as *lomas*) collect enough fog to support plant communities, so the current overall arable land along the coastline is limited mainly to the river valleys. Vegetation consists of mostly shrub-like plants, with some trees along the rivers and a large variety of plants in agricultural fields. The coast of Peru is dominated by south to southeast winds for the whole year, with wind speeds tending to be higher in the latter half of the year (Gorin 1988). The narrow valleys have hot upslope winds in the daytime and cooler downslope winds at night, with winds being stronger at dusk (Gorin 1988). The different contours and protuberances of the valley sides channel the wind into multiple directions, often resulting in pocket areas of little/no wind or wind coming from an opposite direction than expected (Gorin 1988).

This region is occasionally subject to the effects of the El Niño/La Niña-Southern Oscillation (ENSO) events (Haas and Dillon 2003; Sandweiss and Quilter 2008). An El Niño warm phase is associated with warm and very wet weather months in April–October along the coast, which cause torrential rains high in the mountains leading to major flashfloods down-valley known as *huaicos*, from the Quechua word *wayqu*, meaning “depth, valley”. El Niño also reduces the upwelling of cold, nutrient-rich water that sustains large fish populations, which in turn affects the bird populations, fertilizer and fishing industries. During a time of La Niña cool phase, drought is common along the coast. Several studies have focused on major El Niño events occurring in the North coast, especially regarding one around AD 1100 (Craig and Shimada 1986; Gorin 1988; Kolata 1990). For the Central coast, researchers have examined the impact of such events during the Preceramic (Quilter and Stocker 1983) and the late 1800s AD (Cuadros 1992), when a series of large *huaicos* resulted in the destruction of several towns (Cuadros 1992).
The valleys in the Andean Central coast form a cluster [Figure 1.3]; the nearest neighbor north is a minor valley, Huarmey, which at its closest point is 80 kilometers away, and the nearest neighbor to the south is Chilca, 45 kilometers away. The cluster of valleys is composed of two sections: the Norte Chico, or Little North, including the Fortaleza, Pativilca, Supe, and Huaura; and the Lima area, including the Chillón, Rimac, and Lurín. The Chancay Valley fits in between these two clusters, being slightly closer to Huaura via intervalley mid-routes (approx. 45 kilometers apart), although about 70 kilometers distance along the coastline, and separated from the Chillón by about 50 kilometers of sand dunes (Cuadros 1992). To provide a starting placement for reference, the Chancay Valley is located between 11°00” and 11°40” Lat. S and the meridians 76°28” and 77°20” Long W. These valleys extend from the line of summits of the Western Cordillera of the Andes that constitutes the continental divide (highest points around 5000-5500 m asl) down to the Pacific Ocean sea level (Mijichich 1998). Due to the environmental conditions described above, four major ecological zones have been identified with four corresponding paleoclimates (Mijichich 1998) [see Table 1.1]. There is also a microecological zone, called Maleza Desertica Sub-tropical (1300-2000 meters).

These zones also are named by local terms, used to reference both the climate and the people who live there. Between 0-1200 meters asl, the zone is called yunga and the people known as yungas; this is used as a general term for most coastal people (Rostworowski 2004). Those dwelling slightly higher in the piedmont area (1200-2500 meters asl), are known as chaupi yungas; this region is slightly warmer and receives light seasonal rainfall, and so can sustain ‘tropical’ crops similar to the eastern slopes of the
Andes (Szremski 2015). Highland people (over 2500 meters asl) are considered *yanas* or *serranos*.

Approximately 90% of the valleys are a mountainous zone of steep topography and the remaining 10% corresponds to the lower sector of the river basins (Mijichich 1998). The river basin geology was formed by alluvial, fluvial, fluvio-alluvial, and aolic deposits all pertaining to the Quaternary (FAO 1970; ONERN 1969). In the most elevated sector are the natural pastures for animal grazing; the lower basin in the Subtropical Desert zone has the best conditions for agriculture. That is also because the agricultural areas are in the middle and low zones of the margins of the rivers, which are mainly alluvial deposits (Cuadros 1992).

*Central Coast Chronology & Culture History*

Two chronological systems are in use for Peru: Rowe’s (1962) chronology, based originally on the ceramic sequence in the Ica Valley; and Lumbreras’s (1974), which is more popular among Peruvian archaeologists and is linked to evolutionary cultural epochs (Quilter 1991:391). Rowe’s chronological system was modified by Lanning (1967) using then available radiocarbon dates. I use a slightly altered version of the Rowe-Lanning chronology for the Central Andes [see Table 1.2], with adjustments that reflect other scholars’ research in refining our knowledge of the central coast (see Pozorski and Pozorski 1987a for further discussion of this chronological issue). To provide a general context for the development of the Chancay, I discuss the cultural history on the central coast of each of these periods, and when available I have provided more specific information for the Chancay and Huaura Valleys in particular. I then provide a detailed description for the Late Intermediate Period, including basic
discussions of the other polities that were contemporaries of the Chancay.

*The Preceramic*

With a long history of human habitation, the Central Andes was occupied by foragers since approximately 12000 B.C. (Dillehay 2011). Research on the Preceramic period on the central coast has recently proliferated (Benfer 2011, 2015; Burger and Salazar 2015; Engel 1957, 1987; Fung Pineda 1988, 2004; Feldman 1980, 1983, 1987, 1992; Haas et al 2002, 2003, 2004; Haas and Creamer 2004, 2015; Moseley and Willey 1973; Pozorski and Pozorski 2015; Sandweiss and Moseley 2001; Shady 2004; Shady and Kleihege 2009; Shady et al 2001; Shady and Leyva 2003; Shady and Ruiz Estrada 1979; Williams 1985; Vega Centeno et al 1998; and many more). The Norte Chico region in particular has been identified as a significant location for the rise of complex societies in the Andes, noted by the presence of monumental architecture, including large stone platform mounds and sunken circular plazas. Recent studies at sites such as Caballete (Haas and Creamer 2004, 2006), Caral (Shady 2004; Shady and Kleihege 2009), and Aspero (Sandweiss and Moseley 2001) reveal a level of complexity that possibly included centralized authority, textile production, and trade relationships dependent upon the exchange of marine resources and agricultural products (cf. Shady 2009).

*The Initial Period*

Extensive research has been done on Initial Period monumental centers throughout the central coast (see Benfer 2011; Burger 1992; Burger and Makowski 2002; Burger and Salazar-Burger 1991; Moseley 1985; Palacios 1987; Patterson 1985; Pozorski and Pozorski 1987b, 2015; Quilter 1985; Ravines and Isbell 1975; Williams Leon 1978;
and many others). Monumental architecture from the Initial Period features large U-shaped ceremonial centers and sunken plazas, and sites from this period also demonstrate evidence of domesticated plants and animals and the uneven distribution of ceramic production (Andrews 1974; Fung Pineda 1988; Pozorski and Pozorski 2008). A large concentration of U-shaped centers is located between the Chancay and Lurín valleys, and is referred to as the Manchay culture (cf. Burger and Salazar 2008). For the Chancay Valley, a recent dissertation (Carrion Sotelo 1998) studied the U-shaped center of San Jacinto, and more recent excavations at Huaricanga (Authier and Perales 2011) promise to enhance our understanding of this time period on construction and trade networks in particular. For the transition between the Initial Period and the Early Horizon, it has been suggested that there was a collapse and abandonment of Initial Period centers due to either environmental catastrophe (Onuki 2001; Sandweiss and Quilter 2008; contra Burger 2003; Nesbitt 2016) or conflict (c.f. Pozorski and Pozorski 1987b; Brown Vega 2010 for a thorough discussion of this topic).

The Early Horizon

The Early Horizon is termed a horizon because of the widespread adoption of distinctive iconography in ceramics, textiles, and megalithic art that reflect shared traditions and ideology (Burger 1988, 2003; Burger and Makowski 2002; Rick 2004; Strong et al. 1943; Tello 1943). After the fall of the IP centers, two different spheres of influence emerged. The southern sphere featured Pukara (southern highland) and Paracas (southern coast) styles; the northern sphere is the best-known and was the most widespread, seated in the central highlands, and featured a religious cult or culture called Chavín. The characteristics, spread, and decline of Chavín culture—with its main center
of Chavín de Huantar and characterized by an elaborate religious system, megalithic construction, and distinctive textiles and ceramics—is an enormous topic of its own (cf. Burger 1992; Conklin and Quilter 2008). Chavin influence on the central coast, however, may have been actively resisted by groups in some areas (cf. Chicoine 2006; Brown Vega 2010).

The Early Intermediate Period

By the Early Intermediate Period, population growth and agricultural expansion had sparked a time of regional development, where different polities with their own distinct styles emerged and residential communities became more common than ceremonial centers. Most archaeological attention has been devoted to studies of the Moche (Mochicas) on the north coast (see Bourget and Jones 2008; Butters and Castillo 2008; Quilter and Koons 2012; Shimada 1994 for some excellent overviews) and the Nasca on the south coast (Proulx 2008; Silverman 1993, 2002; Silverman and Proulx 2002). On the central coast, however, a smaller but significant polity known as the Lima culture developed which was centered in the Rimac Valley and thought to extend into the Lurin Valley (Earle 1972; Patterson et al. 1982; Makowski 2002) and the Norte Chico area (Billet 1998; DeLeonardis and Lau 2004:93-97; Shady and Estrada 1979; Shimada 1999; Stumer 1954). Many of the Lima sites have been destroyed over the years due to urban expansion, but recent research (Dulanto 2001) is beginning to uncover more about this culture. The site of Maranga in the Rimac Valley was a major center (Canziani 1987; Mac Kay and Santa Cruz 2000; Mauricio et al. 2015), with 14 pyramids surrounded by at least 50 smaller buildings with large irrigation works for fields and habitation. Both Pachacamac and Cajamarquilla (important sites later in the Middle Horizon and Late
Intermediate Period) were founded in the Early Intermediate Period by the Lima culture (Eeckhout 1999a, 2004; Shimada 1991). Ceramics for the Lima culture are characterized by large black areas and some use of negative painting, with fish and triangle-headed serpent motifs (Lumreras 1974; Ostolaza 2007). They developed out of a local white-on-red style, also known in the Chancay Valley for this time and named ‘Banos de Boza’ (Willey 1943; Córdova Conza 2003). It is unclear yet whether Lima-style ceramics were present as well in the Chancay Valley, and recent survey of the Huaura Valley was unsuccessful in clearly identifying many Early Intermediate Period sites (Nelson and Ruiz 2004), likely due to later occupations obscuring the Early Intermediate Period remains. More recent information comes from burial structures excavated at the Port of Chancay, whose grave goods (particularly the ceramics) show that these burials spanned from the Early Intermediate Period to the Late Intermediate Period, indicating at least some form of cultural continuity in the region beginning at this time (Murro et al 1997).

The Middle Horizon

The transition from the Early Intermediate Period into the Middle Horizon is marked by major cultural changes and significant political reorganization. Many Lima culture sites were abandoned and new population centers developed, like Los Teatino and Los Huaura (Billet 1998), and the Moche ‘collapse’ is exceptionally complicated (cf. Chapdelaine 2011; Shimada 2010:247-254). Furthermore, the central coast was affected by the development of two major expansionist empires: the Wari (Huari) from the central highlands, and Tiwanaku (Tiahuanaco) also from the highlands, but further south in the Titicaca Basin. Most research on the Middle Horizon is dominated by a discussion of the interaction between these two polities (Isbell and Vranich 2004; Isbell 1991, 2008).
Tiwanaku seems to have had no influence on the central coast region (Kolata 1993), instead remaining further south possibly due to the presence of the Wari, who are thought to have expanded to control the entire Peruvian coast including the Central Coast area. The degree of Wari control along the coast—and whether this was direct invasion or simply political influence—is presently unclear (Conlee 2010; Jennings and Alvarez 2001; Isbell 2008; Schreiber 1992; Vogel 2015; and many others). Some recent studies (Chapdelaine 2002; Buzon et al. 2012; Shimada 1994) show continuity in local styles and populations, indicating that Middle Horizon polities of the north coast may have resisted Wari influence. In other places, such as Huarmey (Giersz and Pardo 2011), local elite connections to the Wari may have been very significant. For the Huaura Valley, our understanding of Middle Horizon architectural and ceramic styles is currently undergoing significant reassessment. Initial valley-wide survey (Ruiz Estrada and Nelson 2007; Nelson et al. 2010) seemed to indicate that the Huaura Valley operated independently and was not under direct control by the Wari as had been previously proposed (Isbell and McEwan 1991; Schreiber 1992). A recent study by Brown Vega et al. (2008) of hilltop structures in the Huaura Valley, however, reevaluated some of the areas discussed by Nelson et al. (2010), challenging their portrayal of Middle Horizon settlement patterns (see Heaton 2015:18-19 for an analysis of these differing interpretations). Even more significantly, Heaton (2015) discovered through new excavations and radiocarbon dates that several sites and a pottery style (Huaura Style – see Chapter 5 for further information) previously considered Middle Horizon were revealed to date to the Late Intermediate Period instead. Additional research in the valley and comparison to data
from the Supe Valley (such as Hudtewalcker 1996) is greatly needed to better characterize the Middle Horizon occupation of the Huaura Valley.

The Late Intermediate Period

The Late Intermediate Period on the central coast is usually characterized as a time between empires, from the collapse of the large Middle Horizon empires of Wari and Tiwanaku and prior to the expansion of the Inca Empire during the Late Horizon (Isbell 2008). In general, the start of the Late Intermediate Period is generally placed at A.D. 1000, but in some areas they were ‘throwing off the Wari yoke’ as early as A.D. 900 (Minelli 2000). For the central coast, some researchers have suggested that the catalyst for this social and political reformation was a catastrophic El Nino event in A.D. 1100 (Gorin 1988:29; Kolata 1990), but further research is needed to determine what impact, if any, this may have had. Shedding Wari control resulted in an uneven mosaic of political power and control (Covey 2008; Dulanto 2008; Earle 2001; Paulsen 1981; Parsons and Hastings 1988; and others). Numerous regional polities arose and interacted: Sican and Chimú on the north coast; Chancay, Collique, and Ichma on the central coast; Huarco, Lunahuana, Chincha, Ica, and Nazca on the south coast; and numerous groups like the Wanka II chiefdoms in the highlands (see the following section for the relevant discussion of these polities and citations). Not all these interactions were peaceful; the Late Intermediate Period corresponds to the period defined by Guaman Poma de Ayala (1936) as *awqa runa*, or “wartime”. Analysis of cranial trauma and settlement patterns (Arkush and Tung 2013:33) identifies a peak in widespread, intensive conflict during the Late Intermediate Period, although moreso in the highlands—coastal political regimes may have suppressed conflict. This is supported for the Huaura Valley in work done by
Janke (2009), who found that skeletal materials from looted cemeteries had relatively low amounts of injuries that could have been caused by conflict. Coastal confederations within each valley had ties to less centralized groups further up-river (see Szremski 2015), with these relationships often involving alternating periods of open warfare and peaceful trade (Arkush 2011; Covey 2008; Krzanowski 1986, 1991; Marcus 2008; Brown Vega 2008; Brown Vega et al. 2013). Out of these groups, two major state-level societies rose to dominate the Peruvian coast’s political scene: the Chimú and the Ichma. To the north, the Chimú (or Chimor) controlled the north coast from their capital of Chan Chan in the Moche Valley (Donnan and Mackey 1978; Keatinge and Conrad 1983; Mackey 1982; Moseley and Deeds 1982; Wilson 1988). To the south, centered in the Rimac Valley, was the territory of the Ychma (Rowe 1963; Agorto Calvo 1984, 1987; Silva Sifuentes 1992; Silva Sifuentes and Tello 2005; Silverman 2004; Lopez-Hurtado 2010; Lopez-Hurtado and Nesbitt 2010). The Chancay, the culture of interest for this study, were located in between these two groups. The Late Intermediate Period and the coastal polities are discussed in further detail in the following section.

The Late Horizon and Beyond

Inca expansion marks the Late Horizon (Minelli 2000); although little mention is made of the region in colonial documents about the Inca (Rostworowski 1977, 1978, 1989, 1993, 1998), they state that the various chiefdoms in the area were recruited by the Inca to serve them in their campaign against the Chimú (Garcilaso de la Vega 1967 [1609], 2006[1539-1616]). By the time the Spanish arrived, for Huaura at least, the population had been divided into dispersed ayllus (an extended family unit with political and social control), with each native community under the control of minor leaders, who
were themselves obedient to a principal lord (Cuadros 1992; Ipinze Jordan 2005; J. and J. Villamarin 1999). These lords were sometimes required, upon the Inca conquest of their lands, to visit Cuzco and meet (possibly even swear allegiance to) the Inca ruler, such as occurred to the central coast leader Cuismancu [see discussion in the following chapter 2] (Garcilaso de la Vega 1967 [1609]). Small groups of Quecha mitimaes (forced laborers) from the highlands may have been brought into the coastal region by the mandate of Pachacutec when he conquered the region (Cuadros 1992); conversely, groups of specialists from these areas may have been taken back to the highlands. An Incan presence in the Chancay and Huaura valleys has been noted archaeologically by the existence of a few quipus (an Incan recording device using knotted cords) and several possible tambos (Inca waystations for transportation and communication) (personal observation; Arturo Ruiz Estrada personal communication, 2009). However, these are few and there are not many Inca-style ceramics, suggesting that, archaeologically at least, there was only a minimal Inca influence in the area (Horkheimer 1965). The Inca are known to have employed a variety of strategies as they expanded their empire (Arkush and Tung 2013; Covey 2006), and the current evidence seems to imply a flexible rule rather than direct, closely monitored control of the Chancay region.

Due to their successful conquests, by the end of the Late Horizon the Inca Empire spanned an enormous realm from southern Colombia to northern Chile and eastward to the edge of the Amazon and NW Argentina, governing over a diverse body of cultures and geography (D’Altroy 1992). Between 1526 and 1529, Francisco Pizarro, Diego de Almagro, and several mercenaries made first contact with the Inca Empire in the north, at Tumbes. After initial contact, Pizarro returned to Spain, where he was granted permission
to conquer Peru. He returned with a small force, and encountering civil war and disease (transmitted from the Europeans due to initial European contact with the Inca), killed the leader of the Incas and captured their capital at Cuzco. A succession of infighting amongst the Spanish, Inca revolts, colonization and religious conversion efforts, and general turmoil then ensued. The central coast was a major stage for this conflict, with the Spanish establishing their capital of Lima there in A.D. 1535. During the colonization of the Huaura Valley in the years A.D.1535-1555, the town of Sayán, located at the transition of the lower and middle valley, surged as the main center for the reduction of the local ayllus (Ipinze Jordan 2005). It is from this period as well as the early and mid-1600s that the majority of historical documents were written by conquistadors, clergymen, and their attendants.

Late Intermediate Period Polities on the Andean Coast

The Late Intermediate Period is a period which offers the opportunity to examine the reconfiguration and coalescence of regional powers. In the space created after the Middle Horizon collapse of Wari and Tiwanaku, the lapse of an overarching political influence resulted in a florescence of independent chiefdoms (Mendieta 2000). Confederations of smaller ethnic groups coalesced under the control of central lords, called curacas (Conlee et al 2004). Several of these señorios (chiefdoms), through conquest or incorporation of less powerful neighbors, were able to secure larger sections of the coast, leading to the development of more complex sociopolitical organization and geographically expansive regional states.

Researchers have been attempting to map the sociopolitical groups known from the post-conquest documents on to the archaeologically documented cultures, some with
more success than others (Minelli 2000). Many new ceramic styles were created or
changed during the Late Intermediate Period, often appearing significantly different from
preceding styles “as if in mutiny against the established canons of the Huari Empire”
(Mendieta 2000:37). Styles are often linked to a specific valley or region with a spread of
influence after initial development. Changes in textile production were more gradual,
with certain features of weaving traditions—such as the highland style of warp-
patterning—decreasing in importance as new techniques—such as knotted weft
wrapping—were invented (Young-Sanchez 1985). Thus, a diversity of textile styles
resulted as each Late Intermediate Period polity cultivated its own cultural identity and
expressed its identity through visual elements of material culture (Evans 1995).

Discussed below are the highlights from this body of research, compiled and summarized
in order to detail some of the major players in this scene of political fragmentation on the
coast in order to provide a cultural context for this study of the Chancay. From north to
south along the coast, the cultures described are: Chimú; Casma; Collique; Ichma;
Huarco and Lunahuana; and Chincha, Ica, and Nazca [Figure 1.4].

Chimú

The Chimú are known to have dominated the entire north coast, conquering the
nearby Sican in the Lambayeque and Motupe Valleys around A.D. 1375 (Shimada 2000).
They controlled their domain from their capital of Chan Chan (Donnan and Mackey
1978; Mackey 1982; Moseley and Deeds 1982; Wilson 1988). The Chimú are considered
by most Andean archaeologists to have been more than just a señorío; they are thought to
have expanded in size and complexity enough to be considered a ‘kingdom’ or state-level
society. Chimú society operated with a four-level hierarchical system, centered at the
ciudadelas (walled palace compounds) at Chan Chan, and the second-ranked site within the system was Farfan in the Jequetepeque Valley. This hierarchy served to coordinate the distribution of resources and to manage land, water, and labor, the latter which was mobilized to construct massive state-controlled projects such as a canal network for irrigated fields. Artisans were a key feature in Chimú economic organization, processing imported raw materials into prestige goods under the auspices of the elite class. They were grouped according to their area of specialization, such as metallurgy, ceramic and textile production. Artisans dwelled alongside and within the ciudadelas, which served as administrative centers and palaces for the current ruler as well as their mausoleums upon death. Each ruler was required to have his own palace built, because his predecessor’s wealth would be distributed instead to his more distant relatives under the practice of split inheritance. The majority of the population itself lived in barrios on the outer edges of the city.

Although centered in Moche Valley in the north coast, outside of the Central Coast region, I have included the Chimú in this discussion for several important reasons. The first is that the Chimú were said to have not only conquered neighboring valleys, but to have expanded their boundaries all the way south to Lima (see Heaton 2015; Mackey 2009; Mackey and Klymyshyn 1990; Moore and Mackey 2008 for recent discussions regarding Chimú expansion). Whether or not this claim of sweeping conquest was precisely true--or whether they were at points stymied by the presence of the Chancay and Ichma in the central coast--is debated (see Chapter 2 for a discussion on the extent of the Chancay). Regardless, the Chimú played a significant role in coastal interactions and thus need to be considered in discussions of the Chancay.
Second, there is a large body of both archaeological and ethnohistorical data available on the Chimú (Rowe 1948; Mackey 1982, 2009; Mackey and Klymyshyn 1990; Moseley 1990; Keatinge and Conrad 1983; Moseley and Cordy-Collins 1990; Moseley and Day 1982; J. Topic 2003; Moore 1996; and more). This information can be used for comparative purposes when interpreting data on the Chancay. Finally, this relationship can be reflexive; just as understanding the Chimú can aid in our study of the Chancay, the Chancay can serve as a model for interpreting how the Chimú originally operated in their early stages of political expansion.

**Casma**

Located from the Chao to the Huarmey Valleys, the Casma polity started in the late Middle Horizon but extended into the Late Intermediate Period (Mackey and Klynyshyn 1990; Vogel 2011, 2012). The Chimú later incorporated this region and polity into its control (Vogel 2012). Both Casma architecture and pottery is distinct from the Chimú; it relies on stone for thick walls and foundations for adobe tapial walls (Fung and Williams 1977; Vogel 2012), and terraces, platforms, patios, and multi-room compounds were typical forms. It is useful to include in this section due to their proximity to the Chancay. The Casma polity certainly had connections to neighboring cultures (Vogel 2011), and may have spread to the Pativilca (Bria 2006) and Huaura Valley (Brown Vega 2008).

**Collique**

During the first part of the Late Intermediate Period, the Chillón Valley seems to have been affiliated culturally with the Chancay, as evident from shared ceramic styles
(Patterson and Lanning 1964). In the latter half of the Late Intermediate Period, the Chillón Valley splits, with Ancon and the northern half of the valley retaining Chancay style, whereas the southern half of the valley resembles Rimac Valley ceramics (Silva 1996). These ceramic style zones correspond to apparent differences between distinct groups known from ethnohistory (Rostworowski 1999, 2004), including an important señorío said to have been present in the Chillón Valley during the last phase of the Late Intermediate Period, whose name is castellanized as Collique (aka Culli, Colli, or Collec). Collique was a señorío in control of multiple smaller chiefdoms. Several documents that describe the internal interactions of these chiefs (Rostworoski 2004), including one which mentions that the cacique of Quivi paid tribute of cotton, coca, maize, and ‘other things’ to that of Colli. Further discussion of Collique’s dealings with the Quivi focused on the exchange of control of coca fields is found in Keatinge (1988:265-267). The Collique not only held the majority of the Chillón Valley, but may have occupied part of the valley of Rimac and extended from the sea to Chuquicoto (Rostworoski 2004:30-31). This is supported by linguistic descriptions made by Bernabe Cobo (Cobo 1956 [1653]), who observed two nations with different languages in the lower Chillón valley: one spoken from the northern part of the valley to Chancay, the other language encompassing the southern half of the valley continuing south to Pachacamac. Collique was known to have had many conflicts with highlands groups such as the Canta, who would come down from the upper part of the valley to raid and conquer; thus, they built a fort and high walls to protect themselves. During times of truce, there was a great deal of trade and exchange between the yungas and the serranos. Collique also fought (unsuccessfully) against the Inca when they arrived to conquer the valley (Rostworowski 1999). Archaeologically, the
main evidence for the señorío is the Fortaleza de Collique (Squier 1973; Middendorf 1973[1894]; Córdova 1935), along with settlement pattern studies for the valley (Dillehay 1977; Silva 1996) and is the subject of more recent investigations (Vera Roca 2008).

Ichma

To the south in the Rimac and Lurín valleys lay the territory of the Ichma culture, also known as Ischma, Yschma, Ichimay (Agorto Calvo 1984, 1987; Burger and Makowski 2002; Conlee et al 2004; Dulanto 2008; Eeckhout 2000; Felthan 1984; Ravines 1999; Rowe 1963; Vallejo 2004; and others). Earlier researchers (Stumer 1954) had identified a distinct ceramic style which they called Huancho (or Guancho), known for its white-painted and appliqué designs on pottery (Lanning 1967; Mendieta 2000). Thanks to ethnohistorical research (Rostworowski 2004), the Huancho pottery style has now been associated with the Ichma señorío described by Spanish chroniclers. As with the Chimú, the Ichma are characterized as having a dominant centralized government that spanned multiple valleys. The seat of power of the Ichma may have been the site of Armatambo, located on the left bank of the Rimac and also occupied in the Late Horizon by the Inca; its name derives from the tambos, or waystations, established by the Inca state to function as supply stations for official travellers. Little is known about this site except for notations by nineteenth century travelers, as it is disappearing due to urban expansion (Mendieta 2000). The sites of Pachacamac and Cajamarqilla, established by the Middle Horizon, were both large Ichma urban settlements by the Late Intermediate Period (Rowe 1963; Burger and Makowski 2002; Makowski et al. 2008; Mogrovejo and Makowski 1999). Pachacamac was originally thought to be a religious embassy of regional polities, where priests and idols from surrounding regions would be hosted and
incorporated under the main deity of Pachacamac. The name Pachacamac is thought to be an Inca (Quechua) translation of the original deity, Irma (also known as Illma or Ichma), and the Lurín Valley itself may have held that name (Ravines 1999). Rostworowski (2004) argues that Pachacamac was both the religious and administrative center of the señorío. Recent excavations by Eeckhout (1995, 1997, 1998a, 1998b, 1999a, 1999b, 2000) have called for a reassessment of this idea, envisioning Pachacamac as a sequentially erected royal palace, whereas Makowski (2015) discusses the transformation of the site by Inca appropriation. Regardless, the expression of Pachacamac reached its maximum in the Late Intermediate Period from A.D. 1200-1470, and the Ichma may have extended its boundaries to include the southern Chillón Valley around that time (Lanning 1967). Cajamarquilla was one of the most important centers of Ichma, with approximately 90% of surface structure dating to that time (AD 1100-1470) (Segura Llanos 2001; Sestieri 1971; Mogrovejo and Makowski 1999; Narvaez Luna 2006. It was not a planned city, but one that spread more organically through urban growth and sprawl. Much of its earlier constructions were concentrated on large, adobe brick artificial pyramids, but during Ichma times focus switched to commercial areas, administrative edifices, and palaces. Under the direction of Dr. Hector Waldez (personal communication, 2006), the Proyecto Arqueologico Cajamarquilla is currently investigating Cajamarquilla and studying its sequence of occupation. During the Inca conquest of the region, Cajamarquilla became a provincial Inca center (Mogrovejo 1999) and Pachacamac was appropriated as part of economic management for the Lurin Valley; a new urban military settlement with mitmaes from Huarochiri was established by the
Inca (Makowski 2015) along with several other sites (Alvarez Calderon 2998; Marcone and Lopez-Hurtado 2002).

**Huarco and Lunahuana**

The lower and mid Canete Valley, approximately 130 km south of Lima, was home to two complementary señorios: Huarco (Guarco, Warku), which controlled the coast; and Lunahuana (Runahuanac, Runawanak), which controlled the piedmont. These two señorios had a well-developed trading relationship, with Huarco trading their fish in exchange for orchard crops and llamas from Lunahuana (Rostworowski 1978). They also had a strong relationship with the polities further south, in particular Chincha, as evidenced by the similarity in Huarco and Chincha ceramics (Marcus 2008). Huarco had many fewer ties to those in the north such as Pachacamac. Although technically part of the south coast, not the central, Huarco and Lunahuana are important for this discussion because they are señorios of similar size to the Chancay that are useful for comparative purposes.

The primary center in the Huarco province was Cerro Azul, which has been studied extensively by Joyce Marcus (2008). Cerro Azul has large, multipurpose adobe walled compounds, serving as elite residences with storage facilities, a chicha brewery, guinea pig pens, and open areas for weaving (Marcus 2008). Huarco was a large, hierarchical señorío with specialized sites, including Canchari (a hilltop palace), Ungara (a fortress guarding control of irrigation canals), and Los Huacones (a large center with pyramids and a possible metal workshop). Interestingly, Bernabe Cobo (1956[1653]) said that Huarco was administered by a cacica (female ruler), who was in power when the Inca conquered them in A.D. 1470 (Marcus 2008). The Inca conquered Lunahuana first,
then Huarco after several years struggle (Marcus 2008). Garcilaso de la Vega (1967[1609]) refers to Runahuanac in his *Commentarios Reales*, and states that it was led by a senor named Chuqimancu, a curaca at the same status as the leader of the Chancay, Cuismancu (who is discussed further in chapter 2).

*Chincha, Ica, and Nazca*

Like the Huarco, the Chincha, Ica, and Nazca are not actually part of the central coast; instead, they are approximately 200 km south of present-day Lima and are considered part of the south coast. The valleys of Chincha, Ica, Pisco, and Nasca serve as the last area of fertile and irrigated coast before the more arid southernmost region. The Chincha and Ica valleys are thought to have been the seats of small, valley-specific centralized polities, similar but smaller than the central coast señorios. Occupation in the Pisco Valley was sparse, and because it lies in between the locations of Chincha and Ica settlements, the political affiliations of Pisco communities is uncertain and may have alternated throughout time (Menzel and Rowe 1966; Wallace 1970; Menzel 1977; Conlee et al 2004). The Nasca Valley, like the Pisco Valley, is also thought to have been politically fragmented (but see Conlee 2003; Conlee et al 2004). I have grouped these under one heading for this discussion because researchers are uncertain as to the degree of distinction between these groups, although the consensus seems to be moving towards viewing these groups as independent (albeit small) chiefdoms (Conlee et al 2004; Dulanto 2008). Much more archaeological work and publication is needed in this region before issues of political complexity can be made clear.

Out of these three groups, the Chincha are the most likely to be identified as a señorío, at least by the time of Inca occupation. Their capital was at the site of Tambo de
Mora, located in the lower basin of the valley and approximately 1.5 km from the sea. Tambo de Mora was linked by roads to many secondary sites in the valley, including La Centinela, Cumbe, and San Pedro (Menzel 1959; Uhle 1924; Wallace 1971; Morris and Santillana 2007). Approximately 30 to 40 settlements containing monumental adobe architecture for the Late Intermediate Period Chincha, many connected via straight roads, have been identified in the valley (Uhle 1924; Wallace 1970, 1971, 1998). Chincha may have had as entire settlements that specialized in the production of a specific resource (Rostworowski 1999; Sandweiss 1992; contra Morris and Santillana 2007). The Chincha are known to have submitted to Inca rule willingly, making a deal rather than resisting conquest (Marcus 2008; Morris and Van Hagen 1993; Morris and Santillana 2007).

The Ica are considered to have been a less centralized chiefdom, because the only site with monumental architecture is the main center of Ica la Vieja (Conlee et al. 2004; Dulanto 2008). Evidence from burials, however, shows marked differences between elites and commoners (Menzel 1976, 1977; Uhle 1924). Other sites are Maracona, Guadalupe, and Barrio Cordoba; frequently, sites were built over older Nazca Early Intermediate Period ruins. Ica are known for their geometric, multi-colored ceramics, which resemble other pottery styles from the central coast or south coast areas, including the Chincha area, or which were imported from these areas (Menzel and Rowe 1966).

During the Late Intermediate Period, the Nasca Valley was home to two major groups, each with numerous smaller valleys. This region was originally considered decentralized and sparsely populated in the Late Intermediate Period (Menzel 1959, 1976), but recent work by Conlee (2003; Conlee et al. 2004) has made a convincing case for the complexity of the Nazca polity during this period. This Nazca polity was
distinctive from the classic Early Intermediate Period Nazca, likely having been greatly influenced by the influx of Wari ideas during the Middle Horizon (Owen 2007).

Settlements consisted of large villages, frequently located in defensible positions. Several large sites exist that have a mix of domestic and non-domestic architecture, including Huayuri, La Tiza, and Pajonal Alto (Conlee 2003, 2014, 2015; Conlee et al 2004), whereas Cahuachi was still in use as a sacred burial ground (Silverman 1993).

These groups, though further south, are referenced in this study because the Chincha (and perhaps their associates) were known to have been merchants, specializing in the transport of goods such as dried fish and metals along the coast on balsa rafts and wooden boats, and into the highlands via camelid transport. According to historical documents, their trade may have extended to Cuzco in the highlands as well as to the north coast and Ecuador (Rostworowski 1977, 1989), and as part of their opposition to the Chimú, the Inca might have granted control of spondylus trade to the Chincha in exchange for their compliance (Sandweiss 1992). Spondylus is a spiky bivalve mollusk found in several areas of the world, but notably off the coast of Ecuador. It has a distinctive shell, ranging in color from pink to purple to orange, and has been important to people in the Andean region throughout prehistory (Cordy-Collins 2013). It was highly prized by the elite since it had to be imported, and it was religiously important because it represented the sea. Spondylus is carved and used for jewelry and inlays which were both ritually important and decorative, so it became deeply embedded in the region’s economy. However, this “Spondylus hypothesis” (Morris and Santillana 2007) is lacking solid archaeological evidence, and the extent of Chincha trade networks is still in question. They may well have come in contact with the Chancay as part of their trade
system. However, this expansive network may have been installed by the Inca after their conquest, rather than having already been that widespread (see Burger 2013 for a discussion of trade in the Inca Empire). Ica and Nazca are significant to this study due not only the spread of their ceramics, but also for comparison in terms of architecture and settlement patterns, such as the information provided by Conlee (2003) in which she identifies local elites through variations in architecture and material culture at Pajonal Alto. In addition, just as the Chancay can inform us about how polities like the Chimú started out as they expanded and developed into state-level societies, groups like the Late Intermediate Period Nazca can provide a view of how smaller polities form into señorios like the Chancay [see Chapters 6 & 7 on architecture and discussion].

**A Local Perspective Approach**

Considering the array of different political forces in action on the Andean coast during the Late Intermediate Period, I have emphasized a local perspective approach for studying the Chancay, similar to that espoused by Bermann (1994) for Lukurmata, Bolivia. When describing the past, local Aymara inhabitants stated according to Bermann (1994:xv): “Tiwanaku was here, then the señorios were here, then the Inca were here, then the Spaniards were here, now maybe gringos will be here.” Like the Lukurmateños, the Huaura Valley appears to have had a history of being subjugated. Bermann’s point is that this version of cultural history for these borderland zones does not acknowledge that “Lukurmateños, in a sense, had always been there [author’s emphasis]” (Bermann 1994:xv). A common focus throughout archaeological research for the Andes has been upon the rise and fall of larger polities such as Tiwanaku or the Inca Empire. The difficulty with this capital-centric viewpoint is that it views social change and political
formation mainly through processes occurring at a supracommunity level, which limits the potential to view and understand local innovation and persistence of smaller polities like the Chancay. In contrast, the local perspective approach provides an alternative for examining the interaction occurring between these larger and smaller systems (Bermann 1994). This approach emphasizes excavation of the smaller, community level within the hierarchy of complex societies, particularly those sites that have been incorporated into an external chiefdom or state-level society. The local perspective approach stresses that in order to make valid interpretations of artifact assemblages that may show a variety of outside influences, details of preexisting local traditions must be known. Only then can the manner and significance of the introduction of imported materials or styles into an area truly be understood with regards to the larger political formation. Involvement and interaction with the broader state level is not discounted, but viewed as one of the factors shaping local patterns rather than the main determinant of change; it emphasizes that local populations are not simply passive consumers of state ideology (Hobsbawm and Ranger 1983). With this perspective in mind, it was necessary to have a thorough understanding of what constituted ‘typical’ Chancay culture, which is the topic of the following chapter.
CHAPTER 2: AN OVERVIEW OF THE CHANCAY
ARCHAEOLOGICAL CULTURE

Previous researchers have noted common traits that appear to cross-cut the Chancay region (Bruhns 1994; Conlee et al. 2004; Garcia 1989/90; Lanning 1967; Lavalle and Lang 1982; Lumberras 1974; Moseley 2001; Parsons and Hastings 1988; Patterson and Lanning 1964). Most commonly, these traits are identified as the presence of black-on-white ceramics, ceramic figurines called *cuchimilcos*, cloth figurines called dolls, and carefully woven gauze textiles. Referred to as ‘Chancay Proper’, these characteristics are used to define the extent and intensity of the Late Intermediate Period Chancay cultural sphere, although with considerable debate over which valleys this should include. Further complicating the issue has been the centuries of looting of Chancay site, resulting in a significant loss of information.

Below, I present my argument for why I define the Chancay region as the Supe, Huaura, Chancay, and northern half of the Chillón valleys, along with some initial interpretations as to the borderland role the Huaura Valley might have served as during the Late Intermediate Period. Previous research on the Chancay, which I describe below, is much more extensive than what is readily available of Chancay Proper’s simple ceramic and textile markers. The following section is a detailed description of the Chancay archaeological culture that I have compiled from a wealth of data hidden in hard-to-find sources such as small site reports, early explorers’ surveys, museum pamphlets, and master’s theses. I also address the association between the archaeological
Chancay and the historically documented “Cuismancu empire” (and whether the term empire is appropriate at all).

Extent of the Chancay cultural sphere

The Chancay archaeological culture (see Appendix E regarding etymology) is traditionally defined to minimally span three valleys, north-to-south: the Huaura, Chancay, and part of the Chillón (Strong et al. 1943; Stumer 1952; J. Topic 1990; Pillsbury and Leonard 2004). The Supe Valley is frequently included as likely to have been held by the Chancay (Strong et al. 1943; Stumer 1952), and my personal observations of architecture and artifacts at several sites in the Supe Valley concur with this idea. Some authors (Stone-Miller 2002; Lavalle and Lang 1982; Lehman 2005) include the Fortaleza and Pativilca to the north, though my personal observations do not bear this out, and there is little reported evidence supporting a Chancay presence found there (Strong and Willey 1943; Manuel Perales, personal communication 2006). Towards the highlands, it did not go further than the chaupiyunga lowlands (Mendieta 2000) held by the local Huanangue peoples (see Szremski 2015 for a recent assessment of the interaction between coastal groups and the middle Huaura Valley).

To the south, the Chancay are suspected to have extended somewhat further (Cuadros 1992). Sites in the area between the Chancay and the Chillón Valley, such as Ancon (Kaulike 1997), clearly show Chancay presence. Chancay-style ceramics reported in the Rimac Valley at the site of Maranga show that the Chancay did indeed at least extend that far in the Late Intermediate Period (Evans 1995; Jijon y Caamano 1949). Even the Lurín Valley is occasionally included as under the domain of the Chancay at
some point (Mendieta 2000). However, are these signs of Chancay political control, or simply cultural exchange and influence between the señorios? The answer might lie somewhere in between those extremes. It would be erroneous to assume that there was no substantial movement and renegotiation of borders. The Late Intermediate Period is a period of approximately 400 years and the Chancay are likely to have experienced some form of territorial change during that time. However, the small amount of Chancay-style ceramics, textiles, or architecture, a prominence of alternate material culture styles in those valleys, and the historic data that correlates named señorios with that archaeological data, seem to indicate a less-than-overarching control. The Chancay were certainly in contact with these other señorios, they traded with them, and they engaged in conflict with them at various points during the Late Intermediate Period. For the reasons discussed above, when I refer to the ‘Chancay region’, I mean the Supe, Huaura, Chancay, and northern half of the Chillón valleys.

The presence of possibly Chimú or Ichma-like pottery and architecture discussed in observation notes, surface materials, and small-scale excavations (for example, see Strong and Willey 1943; Horkheimer 1970; or Krzanowski 1991) have been used to suggest that the Chancay were themselves subjugated by the alternating reigns of Chimú and Ichma. Several researchers suggest that Chancay fell under Chimú influence, which is estimated to reach the border city at the site of Carabayllo in the Chillón Valley (Lehman 2005; Mijichich 1998; Moseley 2001; Pillsbury and Leonard 2004; Rowe 1984; J. Topic 1990). Chimú historical accounts recorded by Spanish chroniclers, such as an anonymous history of Trujillo written in 1604 (Rowe 1984), assert that the Chancay area was conquered by the Chimú ruler Michan Caman and incorporated within the Kingdom
of Chimor by A.D. 1460 (Lehman 2005; Rowe 1984; Young-Sanchez 1985). Conversely, others (Billet 1998; Garcia 1989/90; Spaulding 2006) disagree, arguing instead that the Chimú had limited influence beyond the fort or temple of Paramonga (aka Parmunca) in the Fortaleza Valley. Paramonga is often cited as a border outpost of the Chimú (Lanning 1967) based on a section from the Royal Commentaries written by Garcilaso de la Vega (1967 [1609], Capitulo XXXII, pp 182-184, 2006[1539-1616]:56-57). Other Spanish chroniclers (cited by Rostworowski 1977) are less certain whether the Chimú boundary ended in the Huarmey, Fortaleza, Chancay, or Chillón Valley.

Young-Sanchez (1985) suggests that the presence of Chimú blackware pottery and Chimú-style textiles in Late Intermediate Period tombs at Ancon and Lauri indicate either: 1) some powerful central coast inhabitants chose to wear North Coast-style fabrics as symbols of wealth and influence; or 2) a powerful northerner dwelt on the Central Coast. Several historic accounts state that the Chimú had indeed conquered further south into the regions previously controlled by the Ichma, stating that the curacas of Pachacamac and Runahuanac agreed to side with the Inca against the Chimú because they had conflicts with the Chimú over boundaries, grazing rights, and subjugating some of their people (Garcilaso de la Vega 1967[1609], 2006[1539-1616]). Interactions between the Chimú and the Chancay could have involved alliances via marriage, as suggested by the story in a 1604 document that tells how one of the sons of the Chimú ruler Michan Caman, named Chumum Caur, lived in Huaura with his mother Chanquir Guaman (Chanquirguanguan) (Lavalle and Lang 1982; Rowe 1948). She was said to be a ‘lady of this valley’, and the two of them were to be kept secure there while the Chimú were fighting wars with the Inca. Without further elaboration to this story, it remains
unclear as to what this arrangement really conveys about political interactions between the Chimú and the Chancay.

If the Chimú did conquer groups any further south, those areas were held for only a very short time, since more culturally conservative elements—such as architectural style or weaving technology—were not supplanted by North Coast styles, and Chimú styles are not widely present in the Central Coast, including the Huaura Valley (Lanning 1967; Young-Sanchez 1985). My personal observations in the Huaura Valley concur with the idea that there was very little Chimú influence there, or at least not influences visible archaeologically. In addition, it is very clear from Garcilaso de la Vega’s commentary (1967 [1609]) that the Central Coast señor Cuismancu (or whatever his name actually was—see section on Cuismancu later in this chapter) was able and willing to help the Inca against the Chimú. This was clear active resistance to Chimú expansion in to the region—whether or not it was real or a threat. Indeed, if the Chimú had influence as far south as the Fortaleza and Pativilca valleys, and Ichma had influence as far north as the Lurín Valley, then the Chancay were essentially ‘sandwiched’ in between; that would help explain why the Chancay expansion was limited past Supe and Chillón (Billet 1998). Also, I strongly disagree with the suggestions that the Supe and Huaura Valleys may have served as an empty buffer zone or no-man’s-land between the different cultural territories of the Chimú and Ichma (Menzel 1977), or for the Chimú versus the main Chancay area (Keatinge and Conrad 1983; Mackey and Klymshyn 1990; Quilter 1985; Ravines 1985). Evidence from an extensive survey done in the lower Huaura Valley (Nelson and Ruiz 2004) and personal observation in the Supe Valley indicates that these two valleys, while not home to dense urban centers as large as in the Chancay valley
itself, did have sizeable occupations with multiple site sizes [see discussion in Chapter 7 regarding Late Intermediate Period occupations in the Huaura Valley]. Thus, the Huaura Valley (and perhaps the entire Norte Chico region) seems to have existed as a borderland (cf. Adelman and Aron 1999; Kopytoff 1999), where locals held their territory against encroaching empires [see Chapter 7 for further discussion].

Previous Research on the Chancay Region

Early academic descriptions of Chancay archaeological culture frequently included only general comments on ruins by explorers or surface studies of large sites, starting in the late 1700s. Hipolitio Ruiz Lopez and Jose Antonio Pavon y Jimenez were Spanish botanists, and along with French botanist and physician Joseph Dombey, traveled to Peru and Chile to collect plants. They began their work in Lima in 1778, and by July were working in the Chancay Valley. In September they shifted to the sugarcane fields of Huaura, and in December, to the Lurín Valley. During these travels they commented on not only the local flora, but also on some of the haciendas and ruins, including Pachacamac and the huacas of the hacienda Torre Blanca in Chancay (Jaramillo-Arango 1998). Wilhelm Reiss and Moritz Alfons Stubel were explorers who excavated a number of tombs at the necropolis at Ancon, some of which dated to the Late Intermediate Period (Reiss and Stubel 1880-6). From 1892 to late 1893/1894, Adolf Bandelier led a collecting expedition to Peru (Hodge 1897). Bandelier sent 90 cases of objects to the American Museum of Natural History (AMNH) in New York, as well as photographs, scale maps, and charts descriptive of the localities explored by him (Jesup 1896). This included explorations of Lince, Surco, Magdalena in the Rimac Valley, and
Pachacamac in the Lurín Valley (Hodge 1897). In addition, based on the artifacts from Bandelier's expedition stored at the AMNH, it is clear that he also worked at Ancon in the Chillón Valley, as well as in the the Huaura and Chancay Valleys. Unfortunately, Bandelier was forced to abandon work on the coast due to a complicated political climate, and instead moved his research to Bolivia. Perhaps as a result, the information from this early expedition has never been published. In contrast, Max Uhle did publish his observations on archaeological sites and collected ceramics from the Supe (Uhle 1925; Kroeber 1925) and Chancay Valleys (Kroeber 1926). Uhle’s collections include some of the earliest archaeologically excavated Chancay ceramics.

In 1936, Wendell C. Bennett and Junius Bird (Bennett and Bird 1964) carried out an extensive exploration of coastal Peru that included a general survey of the Pativilca Valley, and they made collections of materials from the central coast. Other early studies include those by archaeologist Julio Tello; in the Huaura Valley, Tello identified the sites of Centinela, Visquira, Rontoy, Mazo, and Vilcahuaura during surface explorations in 1937 (Mejía Xesspe 1972). Tello’s observations guided William Strong and Gordon Willey in their survey and excavation on the Central Coast during the late 1930’s and 40’s. Willey (1943) wrote his doctoral thesis on his excavations in the Chancay Valley. Based on surface collections and limited excavation, Strong and Willey (1943) proposed a ceramic sequence for the central coast and examined possible relationships between Supe, Chancay, Ancon, Lima, and Pachacamac. Strong and Willey’s (1943; Strong 1941-42) investigations in the Huaura Valley were less extensive, with their main observation being that there were numerous unstudied sites, including several with Late Chancay
Black-on-white pottery. Together with Uhle’s descriptions, Strong and Willey’s observations remain the basis for current ceramic chronologies.

During the 1940s and 1950s, archaeological work in the region was limited to basic exploratory surveys (Mejía Xesspe 1953; Stumer 1952). A notable example of this activity is the effort by Paul Kosok, an architect and amateur explorer who visited the region in 1940 and later compiled a book (Kosok 1965) of aerial photos and general discussions of sites in the region. Another project from 1950-53 included the Inspección de Monumentos Arqueológicos, under the direction of M. Gonzales and L. Cossi, which explored 879 funerary contexts at the site of Lauri (aka Pampa de los Huacos) in the Chancay Valley. Some of these data have more recently been examined by Manuel Hernán Carrillo Bustamante (1997).

In the 1960s and 1970s, several projects undertook more extensive excavations at Chancay and other Central Coast sites. An important synthesis of Chancay culture is the work of Hans Horkheimer, an archaeologist with the Misión Arqueología Chancay (Horkheimer 1963, 1965, 1970). Undertaking exploration, excavations and surveys among 88 sites in the lower Chancay Valley, Horkheimer (1963, 1970) provided descriptions of ceramic style changes through time as well as a basic characterization for Late Intermediate Period Chancay that has changed little in the past 30 years. Horkheimer (1965) also contributed a small volume that catalogued sites in several valleys along the coast.

Salvage archaeology at sites of various time periods in the Huaura Valley has been carried out since the 1950s and 60s by several archaeologists (Fung Pineda 1960, 1974; Vidal Vidal 1969). One of the most notable of these archaeologists is Dr. Arturo

Other significant studies for the Huaura Valley in recent decades include a series of reports by archaeologist Mercedes Cárdenas (Cárdenas 1977, 1977/78, 1978, 1988) that include cursory site descriptions, chronology, and data on small-scale excavations. Cárdenas (1977) identified approximately 235 sites in the Huaura Valley between Sayán and the sea, including 94 labeled as belonging to the Late Intermediate Period. Many of these were located only by using air photos, and many are lacking descriptions or exact locations. Under the direction of archaeologist Andrzej Krzanowski, the Expedicion Cientifica Polaca a los Andes published the results of investigations in the upper part of the Chancay Valley (Krzanowski 1986). This was followed by a second study with particular focus upon ceramic style identifications (Cornejo 1991; Krzanowski 1991) and included excavation of one Chancay site, Casa Blanca, in the upper Huaura Valley. In 1984, the Instituto Nacional de Cultura of Peru (now known as the Ministerio de Cultura)
sponsored an archaeological inventory by Santiago Agurto Calvo and Alfredo Sandoval (1984) in the Chancay valley. In 1986, the Ministerio de Cultura of Peru and the Seminario de Historia Rural Andina collaborated to make a catalogue of archaeological sites in the Huaura Valley. The survey, done by Jaime Miasta and Francisco Merino (Miasta and Merino 1986), provides a general overview of the distribution of large sites in the valley. A similar study was also done in the neighboring Supe Valley (Williams and Merino 1979). Another survey of the Huaura Valley from Huaura to Sayán recorded 131 sites, though identification was done from aerial photos and not confirmed by site visits (Miasta and Merino 1986). Frederic Engel, though focusing mostly on Preceramic sites in the region, recorded a Chancay site and cemetery near the Lomas de Lachay and published a map and description of Lumbra in Chancay valley (Engel 1987).

Supplementing these archaeological studies, historian Maria Rostworowski (1977, 1978, 1989, 1993, 1998, 2004) has summarized documents from the conquest and colonial periods that refer to the central coast region during the Late Intermediate Period and Late Horizon times. Another source of document analysis is a compilation of minor publications from local magazines and periodicals of Huacho, Peru written by Jesus Elias Ipinze Jordan (2005). Ipinze was a lawyer born in the district of Sayán (middle Huaura Valley) and worked as a judge (Juez de Primera Instancia). Having access to many institutional archives, his interest in regional history led him to study local sixteenth and seventeenth century documents about the Huaura Valley (Ipinze Jordan 2005). His publications, though brief, contain many interesting details about politics and society for the Late Intermediate Period, Late Horizon, and contact period for the area.
A detailed valley-wide survey in Huaura (Nelson and Ruiz 2004, 2005) documented all sites in the Huaura Valley, including Quipico. The site descriptions, locations and photographs were used to document general occupation and use of the valley through time. A more detailed study (Ruiz Estrada 2007; Ruiz Estrada and Nelson 2007; Nelson and Bellido Cerda 2010) of several Late Intermediate Period sites in the Huaura Valley was done, including Quipico, although beyond initial site reports no further interpretation of data has been completed. Another major study was just completed by Ashley Heaton (2015) on two sites in the lower Huaura Valley, Caldera and El Carmen, and the results from this has greatly improved our understanding of the Late Intermediate Period in the valley. Other recent studies include revisions of Huaura Valley ceramics by Vallejo (2008), excavations by Luna in the Chancay Valley (2014a, 2014b), an analysis on part of Horkheimer’s 1961 collection by Cornejo (1985), a study of museum-collected Chancay ceramics at Universidad Nacional de Trujillo (Mijichich 1998), and work on Chancay architecture at the urban site of Pisquillo Chico (Azami 2008). Research in the middle valley area at the sites of Salitre and Campo Libre, and their comparisons to the lower valley has been recently completed (Szremski 2015). Currently, the most thoroughly studied site in the Huaura Valley is the fortress of Acaray, which is an Early Horizon hilltop site which also had a Late Intermediate Period occupation (Ruiz Estrada and Domingo Torero 1978; Brown Vega 2008, 2009); Brown Vega (2013) has also completed survey and radiocarbon dates for a number of hilltop settlements and fortifications spanning several time periods in the Huaura Valley.
**Chancay Archaeological Characteristics**

From these reports, I have compiled the first thorough archaeological profile of the Chancay, describing what is known about settlement patterns and architecture; burial practices; iconography, cosmology, and religion; pottery; textiles; artistic conventions; metalwork; stone tools; other craftwork; subsistence practices; economic organization; social organization; and political organization. Rather than reproducing images from the sources described above, I have used this opportunity to provide new photographs of diagnostic Chancay-style materials taken from sites throughout the Huaura Valley during personal surveys. It is my hope that this comprehensive description with references and new images will benefit other scholars interested in the central coast of Peru, Late Intermediate Period señorios, or Chancay in particular.

**Burial Practices**—

Most current information about Chancay material culture comes from burials, with some descriptions dating from as early as the late 1800s. Reiss and Stibel (1880-6:Plate 1) provided a general description of tombs from Ancon, north of the Chillón Valley, which contained “thousands of graves”, some of which were identified as Chancay (Kaulike 1997). Horkheimer (1965, 1963:376) has published numerous descriptions of Chancay tombs. In the Chancay Valley alone, Horkheimer (1970) found 1,200 ceramic fragments, 300 textile fragments, and other goods accompanying over 70 individuals. In 1957, Rosa Fung Pineda (1960, 1974) excavated a disturbed tomb where looters had left approximately 60 items, which she described in detail. Twenty-two tombs were excavated in 1968 at Pasamayo (km 56 on Panamericana Norte) by Hilda Vidal...
Vidal as a salvage project. The site was discovered and partially destroyed by the
construction of the highway and the very few details of this excavation were published in
a small bulletin (Vidal Vidal 1969). A salvage archaeology project in the Port of Chancay
(Murro et al 1997) excavated 35 burial structures, although these were suspected to have
spanned the range from the Early Intermediate Period to the Late Intermediate Period.

Chancay burials typically contain unclothed bodies with fingers and toes bound
together with thread (Reiss and Stuel 1880-6), placed in seated and flexed position, with
crossed arms and painted red faces (Garcia 1989/90; Nelson and Ruiz Estrada 2010).
Bodies were wrapped in alternating layers of textiles, plain cloth, hide, leaves or a netted
rope bag, creating a mummy bundle. Small items such as dolls, maize, loom parts, or
jewelry often were included in the wrappings (Lehman 2005; Reiss and Stuel 1880-6).
Occasionally, a false head was mounted on top, although this practice lost favor by the
end of the Late Intermediate Period (Reiss and Stuel 1880-6). Burials often include
other artifacts, like ceramics, textiles, food items, and metalwork as grave goods (Lothrop
and Mahler 1957; Murro et al 1997; Nelson and Ruiz Estrada 2010).

Bodies naturally mummified due to the dry environment [Figure 2.1]. There is no
evidence of anthropogenic mummification, although textiles wrapped around the body
absorbed fluids and contributed to this process. Soft tissue is so well-preserved in some
burials that tattoos are sometimes still visible (Ruiz Estrada 1984; 1990a; 1991b; 1995,
1999). Few formal osteological analyses have been done of Chancay burials, with the
exceptions of Jahnke’s (2005, 2006, 2009) and Newman’s (1947) analyses of
morphology and pathology in crania from the Central Coast. Copper was often placed in
the mouth and caused characteristic green staining left on the teeth and jaws, even when the copper itself lost due to corrosion or looters [Figure 2.2].

It has been suggested that this practice is similar to the Greek practice of placing a coin under the tongue of the deceased to provide payment in order to pass to the land of the dead (Horkheimer 1963); other possibilities include the need of the deceased to pay a tribute to the ancestors, the use of the metal as sustenance to feed the dead, or as a seal to protect or contain the soul. Until new information to explain this practice is found, such as from historic accounts, the motivation and significance of this act for the Chancay will remain unknown.

Mortuary patterns at Chancay sites clearly reflect economically-based social stratification (Lumbreras 1974) through relative volumes of better-quality grave goods. Poorer burials were wrapped in plain cloth with few objects and are typically found in circular or rectangular shallow graves. Elite burials were often placed in round or rectangular chambers, two to three meters below the ground surface, with well-finished clay walls and cane roofs supported by vertical poles and horizontal beams, sometimes with stairway entrances. Wealthier burials usually included a much higher volume of fine ceramics, textiles, and metalwork. Several bundles were often placed in the same tomb, perhaps as a ‘family chamber’. Many child burials have been found, suggestive of high infant mortality rates (Garcia 1989/90). A child burial from Ancon was excavated by VanStan (1971), with the most detailed attention given to the textiles. More recently, tombs from the Huaral area in the Chancay Valley were found to contain several bundles seated in a chamber, with niches in the walls containing children’s’ bodies (Hodnett
Animals, especially dogs and llamas, were sometimes included with human burials as sacrifices or buried separately, indicating affection or reverence for the animal.

The recent excavation of a Late Intermediate Period Chancay tomb by Nelson and Ruiz Estrada (2010) from the site of Rontoy, in the Huaura Valley, is informative for several reasons. First, this burial did not come from a cemetery area, but from an adobe tapial compound likely used for administration activities. It was a rectangular tomb constructed on top of the bedrock, underneath the main floor of the structure in a room with niches. The grave goods were placed in the tomb in distinct horizontal and vertical levels, indicating a sequence of burial activities. Food offerings were a significant part of the burial, with food remains found in all the ceramics in the tomb. Most interestingly, this burial is the only known example for the entire Central Coast of a body with intestines removed and replaced by loose cotton bundles (Nelson and Ruiz Estrada 2010), so it is uncertain the extent to which this was an accepted practice.

The best published example of an intact Chancay burial is Lothrop and Mahler’s (1957) excavation of a tomb at Zapallan. The tomb was square and its floor partially covered by a straw mat. Wooden beams supported a cane roof. The bundle was formed of wrapped textiles, which showed evidence of having been worn and mended prior to burial. It was a single burial of an adult female with tattoos on her arms and seated upon a basket. Surrounding the bundle were 2 sacrificed dogs, many textiles, several clay figurines, a few silver items, two cloth figurines, and hundreds of canes wrapped with colored thread. Despite the abundance of grave contents, Lothrop and Mahler (1957) felt that the quality of grave goods was overall poor. Although there were ornate ceramics,
the textiles were of low quality, which they suggested indicates that the burial was someone of importance, but within a poor community.

Ceramics—

A distinct black-on-cream ceramic style is almost synonymous with the Chancay (Uhle 1925; Willey 1943). A matte black design was painted over a white/cream/yellowish slipped background on a yellow to reddish brown paste tempered with sand [Figure 2.3]. Most of these ceramics were mold-made and fired in oxidizing atmosphere kilns at low temperatures, making them fragile (Hodnett 1978; Macedo 2005a; Ostolaza 2007; Schmidt 1919).

Press-mold pottery is present all along the central coast from the Chancay to the Lambayeque Valley (Mackey and Klymyshyn 1990; Bria 2006) [Figure 2.4]. This style is characterized by raised lines, small teardrop shapes, and stylized birds and other animals; the raised effect is created by pressing the clay into a mold with the designated design (Shady and Ruiz Estrada 1979; Perales Munguía 2006). Other decorative styles include Huaura/Epigonal, Tricolor Geometric, and plain red or grey/black wares [see Chapter 5 for further discussion of ceramics]. Globular and oval shaped vessels are most common, with pitchers and human figurines (*cuchimilcos*) [Figure 2.5] as the two most emblematic forms (Angeles 1978; Evans and Sicre 1964; Grossman 1969/70; Macedo 2005a; Miranda 1943; Ostolaza 2007; Weiss and Ponce 1967/8).

A general ceramic chronology was established in early works (Kroeber 1925, 1926; Uhle 1925), and has changed little due to the lack of radiocarbon dates (see Chapter 5 for more details) and stratigraphic excavations (Angeles 1978; Billet 1998;
Córdova 1935; Cornejo 1991; Cruzado Carranza 2008; Heaton 2015; Horkheimer 1970; Jijon y Caamaño 1949; Krzanowski 1986, 1991; Lavalle and Lang 1982; Lumbreras 1974; Macedo 2005a; Muelle and Blas 1938; Ravines 2011; Strong 1925; Willey 1943; and others).

Textiles—

Chancay textiles demonstrate considerable diversity; no two pieces are exactly alike (Young-Sanchez 1985). Textiles exhibit many different styles, with several forms of knotting, plaiting, and weaving (D’Harcourt 1962; Emery 1994; Macedo 2005b; Reid 1982). Chancay technical expertise in textiles included the use of paired warp and paired weft threads; supplemental threads; juxtaposed use of z-spun and s-spun yarns; false seams; doubleweave; tapestry; gauzes and square mesh openweave; knotted weft wrapping; and embroidery. Formal composition was complex, often combining multiple techniques into the same textile, and including the use of alternating empty and filled square meshes to create a rhythm of dynamic visual movement (Young-Sanchez 1985). The weaver would have had to envision the final product before making it, as well as imagine how the two-dimensional weaving would appear as a three-dimensional garment due to the complexity of weaving employed (Evans 1995). Although a variety of materials was used—from coarse plant fibers to camelid fibers—the majority of Chancay textiles were cotton, similar to Chimú fabrics. Camelid fiber was used sparingly and for maximum visual effect, suggesting it was costly or scarce compared to cotton (Young-Sanchez 1985). Cotton was spun using hand-spindles made of wood or baked clay. Tools
for weaving include sewing needles and the backstrap loom (d'Harcourt 1962), and many burials contain baskets with weaving tools and materials in them [Figure 2.6].

Items made were bags, slings, baskets, nets for fishing, mats, blankets, mantles for daily life, headdresses, hats, and string-wrapped sticks (Doig and Castro 2005; Lothrop and Mahler 1957). Most textiles incorporated several colors, though some were mono- or bichromatic (Young-Sanchez 1985). Fibers were dyed using natural materials, such as metal oxides, plant leaves, and cochineal insects (Lehman 2005). Llama and alpaca fiber absorbs dye exceedingly well, resulting in vibrant colors. Cotton textiles often used the natural color of the cotton, most often white but also ranging from tan to brown; dyed cotton was either some shade of brown or blue, since the fibers do not take other colors well (Young-Sanchez 1985). Patterns for more utilitarian items tended to be in stripes and plaids [Figure 2.7].

Several fabrics were accentuated with featherwork or had colors applied after weaving by painting (Lavalle and Lang 1982; Lehmann 2005). Painting designs on cloth is an uncommon method among Andean textile traditions, and the Chancay may have been the only culture to have employed this technique. Painted textiles included animal and human figures done in colors such as blue, red, brown, yellow, and black (Cachot 2005[1948]). Unfortunately, many textiles found today—whether dyed or painted—appear as shades of brown, since the vibrant colors have been altered due to fading and aging [Figure 2.8].

Late Intermediate Period textiles as a whole shared certain designs and methods with other coastal societies--diagonal bands, frontal feline and serpent motifs, profile bird motifs--but there were regional differences between northern, central, and southern styles
Chancay textiles are best known for their multicolored geometric and stylized designs, gauze headdresses, samplers, burial cloths, and “dolls” (cloth figurines) (Cachot 2005[1948]; Hodnett 1999; Lavalle and Lang 1982; Lehmann 2005; Macedo 2005b; Roosevelt 1972; Rowe and Bird 1980). Gauzes incorporate a reticular lacing weave structure that appears open and delicate. Gauze weaving likely derived from techniques used in net making (Hodnett 1999; Lehman 2005) and may have been done on looms (Rowe and Bird 1980). Gauze headcloths are found only on women in mummy bundles and on figurines; it is uncertain whether they were worn daily or restricted for use in ritual dress (Evans 1995; Lehman 2005). Similar in appearance to gauze is another method, knotted weft-wrapping, which was a technique unique to the Chancay (Young-Sanchez 1985). Samplers are small swaths of woven cloth, sometimes with unfinished ends, that may have served as practice pieces or examples of weaving methods.

Overall, the Chancay are best-known for their burial cloths because very few collections of utilitarian textiles exist. The majority of textiles available for study are those that have been salvaged or looted from burials; Young-Sanchez (1985) was able to study a collection from the Museo Amano of 103 textiles from the site of Lauri in the Chancay Valley. The innermost wrappings of mummy bundles were often the plainest and made of cotton, since it was relatively inexpensive to produce compared to animal fiber. Successive outer layers were more colorful, with many having elaborately woven borders made from camelid fiber. Occasionally, belts or slings were wrapped around to help secure the bundle. Burial cloths are particularly noted for the use of double cloth, which has two sets of warp and weft with contrasting colors (d’Harcourt 1962). The
Zapallan burial with poor textiles (Lothrop and Mahler 1957) and a child burial from Ancon (VanStan 1954, 1971) which had mostly poor textiles (except for one section of patchwork on a woman’s tunic that was very high-quality) suggest that decorative textiles were not monopolized by an elite class (Young-Sanchez 1985).

Also found within burials are single sticks or small groups of thin reeds and sticks that are completely covered with tightly wrapped thread (Lothrop and Mahler 1957). They may be anywhere from 15 centimeters to 76 centimeters long and may or may not have neatly finished ends. Patterns vary from a simple single-colored wrap to a complex multi-colored diamond-shaped pattern likened to a ‘god’s-eye’ [Figure 2.10]. These sticks are observable all over the central coast at Late Intermediate Period sites, but are rarely mentioned in the formal literature and their function is currently unknown.

A thorough study of 100 cloth figurines from the Amano Museum in Lima was done by Hodnett (1999); there have been several studies on other dolls (Roosevelt 1972; Evans 1995) although not with such a sample size. Figurine bodies were made of reeds wrapped in thread; woven faces were attached and the figures dressed in miniature clothes. The clothing was made specifically for the purpose of dressing the figures (i.e. they were not cut out of larger fabrics) (Young-Sanchez 1985). Similar clothing was made for the ceramic cuchimilcos, although they are rarely found with their clothing intact. Since in many burials the individual is naked before being wrapped in a bundle, one can look at both ceramic and textile figurines for an idea of the clothing people wore (Young-Sanchez 1985; Evans 1995). Men wore sleeveless shirts with neck slits, loincloths, headbands, and shawls/carrying cloths. Women wore long rectangular shirts with neck and arm openings in upper seam and openwork headcloths worn as veils or
shawls. However, these open lace-like textiles would have been intended for only special use, because they are too fragile for daily wear (Evans 1995). Ceremonial garb included headcloths for women and effigy headdresses for men (Evans 1995); cuchimilcos often have a row of holes at the top of their heads for the attachment of human hair, fabric strips, and feathers. The figures frequently have some sort of musical instrument associated with them, such as a flute or drum (Billet 1998). They may be found alone or in groups, which may include mixed genders.

These figurines are often found in burial wrappings, at the very bottom of tombs, or at the bottom level of a house (Billet 1998). Apparently, most figurines originally stood on cushion-like bases. Through time and deterioration, most of these bases—and the feet attached to them—have been lost. The presence of bases, their fragile character, and an association with primarily adult burials suggest that these should be considered cloth figurines, not dolls, since they likely did not serve as toys. Hodnett (1999) proposed that the figurines were representations of actual individuals, the former living person in the bundle. In her examination of a particular grouping from a tomb at Pisquillo Chico in the Chancay Valley, two of the figurines were identified as representations of elites or rulers in a house or palace with their retinue. When compared with the other figurines based on position, complex facial features, elaborate clothing, and special necklaces, these two stood out as distinctively higher status individuals (Hodnett 1999).

Figurines may have been placed in funerary bundles or used in the household as a good luck symbol. Comparing them to figurines in other cultures, Hodnett (1999) also suggested they were receptacles for otherworldly or ancestral spirits. Multiple figurines in
a scene together (such as dancers around a tree with many fruits on it, or groups of women weaving together) are interpreted as depictions of ritual events (Billet 1998).

*Artistic Conventions*—

An overall decorative style of stylized animals and geometric patterns has been used to identify Chancay artifacts (Jimenez Borja 1982) [Figures 2.11, 2.12, and 2.13]. With a persistent use of the same colors and forms, the Chancay demonstrate a distinctive style with a “highly individual and boldly vigorous mode of artistic manifestation” (Evans and Sicre 1964:9). Artistic conventions often feature scenes inhabited by birds, animals, fish and plants, sometimes interacting with people engaged in different tasks, like hunting, farming, or fishing (Ostolaza 2007; Benozzi 2005). The animals can often be identified to the species level by distinctive characteristics, such as a straight beak indicating a seabird like a pelican (Evans 1995). Abstract designs were frequently intermixed in these scenes, with geometric zigzag patterns as the most common motif (Doig and Castro 2005). Most frequently in textiles were simplified versions of three common pre-Columbian faunal images: feline, serpent, avian (Evans 1995).

These designs were also used in body art (Ruiz Estrada 1984; 1990a; 1991b; 1995). Tattooing with a possibly vegetal blue-black pigment was a common practice during the Late Intermediate Period as well as earlier (Ruiz Estrada 1999), with designs including tiny marks around joints, small figures of animals, and large bands or geometric patterns around wrists, ankles, and chests. These designs can be observed on the actual preserved human remains. In addition, I suggest that some body art seen on textiles and ceramics may refer to painting, not tattooing. The facial designs seen on
almost all cloth figurines and cuchimilcos are not seen on preserved remains, which suggest that the designs were only temporary in life.

Other body modification included cranial alteration. Crania regularly exhibit fronto-occipital intentional deformation [Figure 2.14], both on skeletal remains (Jahnke 2006; Kato et al 1995; Newman 1947) as well as in cuchimilcos (Weiss and Ponce 1967/8), although its purpose--aesthetic, signal of cultural affiliation or status, or a combination--is unknown.

An organized collection of Chancay design motifs from both ceramics and textiles curated in the Museo Amano, Peru that is useful for identification and comparison was assembled by Yoshitaro Amano (1981). Earlier styles have elements reminiscent of Tiahuanaco designs (Evans and Sicre 1964). Later developments were less stylized and more naturalistic, with possible Chimú influence. Lehman (2005) suggests that the similarity between Chimú and Chancay icons in textiles was not due to any significant degree of interaction, but from a shared environment; marine animal figures and geometrics resembling sea waves may have been used simply because of their importance in subsistence. Nonetheless, there are key differences in technique and construction that can be used to distinguish Chancay from Chimú textiles (Evans 1995).

Metalwork—

Central Coast metallurgy has been largely neglected in favor of studies of traditions located further north, such as the detailed work on Late Intermediate Period metallurgical practices from the north coast (Lechtman 1976, 1991). New information on North Coast metallurgy was recently published based on data from Chotuna and
Chornancap (Owen 2011). Descriptions of metal objects found at central coast sites are only tangentially mentioned in survey reports. A few analyses include those by Baesseler (1906), Schmidt (1919), and Rios and Retamozo (1978). Heather Lechtman (1976; 1991), an expert in north coast metallurgy, discussed the possibility for large-scale production and smelting for Ancon. Parodi and Ostolaza (2001) did x-ray fluorescence, spectroscopy, and other geochemical analyses of Late Intermediate Period and Late Horizon artifacts from sites located in the vicinity of Lima, particularly near the Rímac River, that are currently housed in the Arturo Jimenez Borja-Puruchuco site museum in Lima, Peru. Their results determined that many of the artifacts in the collection were composed of lead-heavy alloys, the use of which was previously unknown for pre-contact Peru.

Central Coast metalwork was dominated by silversmithing, including blends of silver and copper, and some bronze alloys of copper-arsenic and copper-tin (Lechtman 1976, 1991; Parodi and Ostolaza 2001; Rios and Retamozo 1978) [Figure 2.15]. However, recent research (Brooks and Parodi 2012) using spectroscopy indicates that the furnaces used at some sites may have only achieved temperatures high enough to melt lead-zinc or pre-existing copper-gold or copper-silver alloys (~850°C maximum, which is insufficient to smelt pure silver, gold, or copper ores). Future analysis may significantly change our understanding of Andean metalwork composition and fabrication, especially with the identification of frequent lead use.

The preferred technique for shaping metal objects was by cold-hammering using polished stone hammers (Lothrop 1937, 1950; Easby 1965); other objects were made by pouring metal into ceramic or wooden molds. Cincels, thin pointed metal rods, and tumi-
like (crescent-shaped) blades were used to perforate the metal to make incised decorations and holes for attached pieces. Tools and molds have been found in funerary contexts at a Late Intermediate Period/Inca cemetery at Rinconada de la Molina in the Rimac Valley (Parodi and Ostolaza 2001). The acquisition of raw materials for metalworking was an extensive industry (Lechtman 1991), but the location of these ore sources is presently unknown; even the whereabouts of mines referenced in the more recent literature (Raimondi 1939) have since been lost. During his travels in the region during the late 1800s, the botanist Hipolito Ruiz learned of a silver mine on the hill at Jeguan, near the town of Arnedo (Chancay), which he was told was “worked not long ago” (Jaramillo-Arango 1998), although when that was is unclear and the existence of this mine has not been confirmed since then. Lechtman (1991:41) also suggests that ore smelting “was a much less centralized activity, probably carried out on a part-time basis in many communities, and the build-up of large quantities of slag at any one location is not typical,” indicating that the archaeological evidence of metallurgical production might be difficult to identify.

Metal artifacts at Chancay sites include jewelry, weapons, and small balls used as either bola stones or balance weights (Baesseler 1906; Schmidt 1919; Soriano 1987). It has been argued (Lechtman 1991; Parodi and Ostolaza 2001; and others) that copper, silver, and other metals were exclusively elite items, given the effort required to obtain and work the metals, and that fabrication of these items was the task of metal specialists (Rostworowski 1989). Parodi and Ostolaza (2001) have discussed the social implications of several stages of metal manufacturing—extraction, production, function, circulation,
— during the Late Intermediate Period, arguing that the central coast was a particularly important region regarding metallurgic production.

**Stone Tools**—

On the central coast, lithic technology since the Preceramic focused on a simple, expedient tool technology using locally available materials (Dunn and Heaton 2005). The raw materials available in the region are plutonic igneous rocks with a high percent of plagioclase; they are all various forms within the granite family, primarily diorites, with some exhibiting porphyritic structures (Authier 2005). This stone is abundantly available in the tabular layers of the surrounding hillsides and in rounded cobbles that line the riverbeds [Figures 2.16 & 2.17]. Although the grain size and color may vary, Authier (2005) has discovered that the different varieties actually have a similar microstructure and chemical composition. Geological weathering and slight differences in mineral content have caused the fairly strong visual and textural differences that can be seen. The most common lithic material used is of a black, medium-grained granitic stone [Figure 2.18].

Lothrop (1950) also described lithic materials of a green color, possibly rhyolite, and other researchers (Benzoni 1857) have suggested that some of the stone used may have been black basalt. Quartz, both milky and translucent varieties, is also available locally [Figure 2.19]. What this means in terms of lithic assemblages is that the materials locally available were very dense, hard, and heterogeneous, all of which are undesirable attributes for flaking. Even the finest-grained material in the region does not come close in quality to chert or obsidian. The grainy nature of the material also obscures use wear.
Lithic assemblages were not elaborate, but consist of many general-use tools as well as mace heads and knives (Garcia 1989/90). Many flakes were used as expedient tools. They were flaked using simple percussion methods, used for their sharp edges without much additional shaping, and then discarded without retouch. Ground stone tools were typically made from pre-shaped river cobbles, and the most common form were hammerstones [Figure 2.20] for food processing and metalwork (Benzoni 1857:150; Carcedo de Mufarech 1998; Lothrop 1950). Use of these hammerstones is comparable to the metalworkers of Cuzco described by Garcilaso de la Vega, who are said to have used:

“certain very hard stones, of a color between green and yellow, instead of anvils. They flattened and smothered one against the other, and held them in great estimation because they were very rare. Nor could they make hammers with wooden handles. … These tools were the shape of dice with the corners rounded off. Some are large, so that the hand can just clasp them, others middling size, others small, and others lengthened out to hammer on a concave. They hold these hammers in their hands to strike with, as if they were pebbles” (Garcilaso de la Vega 1967[1609], Book 2, chapter 28).

Other groundstone tools include large boulders with grinding troughs worn into them (Lothrop and Mahler 1957), dimpled stones possibly used as door pivots [Figure 2.21], and small, lead-rich stone balls used as weights for balances (Soriano 1987) and as bola stones (Brown Vega 2008).

Other crafts—

It is less frequent to find much in the way of other craftworks, such as wood, plant materials, or bone. Many of these, upon being exposed by looting but not collected due to their perceived lack of value, either are too battered and destroyed from the looter’s carelessness with these fragile items; deteriorate rapidly due to the elements; or are later gathered and burned as a fuel source by locals. What still remains, however, indicates
that wood carving was common, as exhibited by the wide variety of items made. These include small painted statues/religious idols, boxes, carved panels, hair sticks, weaving tools, needles, farming implements, and oars [Figures 2.22 & 2.23]. Musical instruments of wood, reed, bone, or hide have been found, usually in association with ritual structures, although there are many items whose provenience is unknown (Ruiz Estrada 1991c). Reeds and other plant fibers were woven into box-shaped baskets, mats, and roofing. Bottle gourds were used for storing food as well as for eating and drinking (Jaramillo-Arango 1998). Loofahs (*Momordica operculata*) were likely used to clean ceramics and gourds (Jaramillo-Arango 1998).

**Subsistence Practices**—

Subsistence practices during the Late Intermediate Period focused on a mix of agricultural products and marine resources. Since the Central Coast is extremely arid, much of the area has no natural plant cover. Plants are usually located close to three sources: 1) ocean/beach side, such as reeds, 2) river valleys with a naturally irrigated treeline, and 3) low altitude winter fog areas (*lomas*) outside the river valleys on the upper slopes of hills facing the sea, with various shrub-like plants (Pulgar Vidal 1987). Lomas and areas irrigated with river-water brought by man-made canals were the main areas for plant cultivation. Irrigation systems during the Late Intermediate Period, like those at Chan Chan, were well-developed and widespread (Lanning 1967; Moseley 2001).

Early botanical analyses by Towle (1961) and Cohen (1978) provide listings of plant taxa found in the Chillón Valley and Ancon area, and are useful for the central coast
in general. Joseph Dombey, Hipolito Ruiz Lopez, and Jose Antonio Pavon y Jimenez, botanist explorers in the late 1800s, also provide good descriptions of local flora and fauna that they encountered during their travels (Jaramillo-Arango 1998). Most plants cultivated on the Central Coast were domesticated elsewhere; major crops introduced to the region included maize, several varieties of beans, squash, and lúcuma (Cohen 1978; Nelson and Bella Cerda 2010). Along the coast, maize (*Zea mays*) and several varieties of beans (*common bean Phaseolus vulgaris*, *Lima bean Phaseolus lunatus*, jackbeans (*Canavalia sp.*) were grown as food staples [Figures 2.24 & 2.25]. Cohen (1978) suggests that squash, though used earlier in the central coast, was not a significant part of the diet during the Late Intermediate Period. This assessment is under reconsideration because squash has been noted in moderate quantities at Late Intermediate Period sites (Carmela C. Alarcón Ledesma, personal communication 2005) [Figure 2.26].

Lúcuma (*Lucuma bifera*) was found to be abundant during the Late Intermediate Period, surprising considering its minor role in the diet at present (Cohen 1978; Nelson and Bellido Cerda 2010). Tubers, such as potatoes (*Solanum sp.*), oca, and ulluco, were present during the Late Intermediate Period, but are infrequent in the archaeological record; without detailed analyses of microbotanical remains, it is not currently possible to determine whether this reflects unpopularity as a food source, scarcity in transport from the highlands, or simply a lack of macrobotanical representation since the tubers are themselves consumed. Cotton (*Gossypium barbadense*), first cultivated during the Late Archaic period, was still a major crop during the Late Intermediate Period. Plants brought to the region, possibly as trade items, included: ciruela (*Bunchosia armenica*), avocado (*Persea americana*), chili peppers (*Capsicum baccatum*), coca (*Erythroxylon sp.*), sweet
potatoes (*Ipomoea batatas*), and manioc (*Manihot esculenta*). The use of hallucinogenic plants such as San Pedro (*Trichocereus pachanoi*), Floripondio (*Brugmansia sanguinea*), and Chamico (*Datura stramonium*) has been noted at Pachacamac in the Rimac Valley (Vallejo 2004).

Utilized plants local to the region included: pacay (*Inga feuillei*) which provides good shade, edible pulp from seed pods, and whose leaves serve as animal fodder; fruit for chicha-making (*Schinus molle*); cattail (*Typha sp.*) stems and reeds used for construction, and also has edible rhizomes; grasses (family *Gramineae*); guava (*Psidium guajava*) for food and medicine; achira (*Canna sp.*) whose rhizomes and shoots are starch-rich, and the leaves and stems are used as animal fodder or processed for utilitarian fibers; milkweed (*Asclepias sp.*); seeds/fruit for soap-making (*Sapindus sp.*); sedges/reeds/rushes (family *Cyperaceae*) possibly for bedding, animal food, or tinder; horsetails (*Equisetum sp.*), which are inedible, but likely collected for industrial purposes; tillandsia (*Tillandsia latifolia*) possibly used for fuel; and bottle gourd (*Lagenaria siceraria*) (Cohen 1978). Mijichich (1998) suggests a native plant called tara (*Caesalpinia spinosa*), used in modern times as medicine, a thickener, and black/blue-black dye, may have also been utilized in pre-hispanic times. Several types of cacti from the genus Cereus (gigantones or candelabros) (*Cereus peruvianus, Cereus repandus*; fruits known as pitaya/Peruvian apple) and Opuntia (paddle cactus, aka prickly pear) may also have been used (Mijichich 1998). Cohen (1978) has also discussed several plants that were not present at Central Coast sites until the Late Intermediate Period, including: *Cucurbita maxima*, a type of squash; *Caesalpina sp.*, a type of bean used for dyes with possible medicinal use; *Erythrina sp.*, a tree whose inedible seeds are used for
ornamentation, medicine, divination, and amulets; and *Prosopis sp.*, a flowering spiny shrub, used for charcoal, gum arabic, and sweet, edible pods.

A wide variety of animals were utilized at Chancay sites during the Late Intermediate Period (Garcia 1989/90). Wild animals were neither very large nor very plentiful, and most locally available game species were small rodents and birds. Native animals present in iconography on ceramics and textiles, though not all necessarily exploited by humans, include: desert fox (*Dusicyon sechura, or Lycalopex sechurae*); different species of small lizards (*Tropidurus*); rodents (*Rodentia* order); lancehead snakes (*Bothrops* genus); felines like the tigrillo [oncilla] (*Leopardus tigrinus*), grey puma (*Felis concolor*) and the ocelot (*Leopardus pardalis*); marine birds like the piquero [booby] (*Sula* genus); Andean common moorhen (*Gallinula chloropus garmani*); pelicans (*Pelecanus* genus); various birds of prey, seabirds, and songbirds (Mijichi 1998) [Figure 2.27].

Several of these animals are now rarely seen due to human disturbance of natural habitats. An example is the grey puma, which is occasionally found today near the North Coast but whose range in Peru was likely much more extensive in the Late Intermediate Period (Evans 1995). Lanning (1967) suggested that hunting larger animals was likely only a sport of the nobility, as documented during Inca times. Animal husbandry was widely practiced; llamas (*Lama glama*) and guinea pigs (*Cavia porcellus*) were first in the region starting 200 BC, with widespread grazing of herds in the lomas during the Late Intermediate Period (Cohen 1978). Hairless dogs, a distinct breed originating on the coast, were kept as pets as were other dogs. As a sign of their importance, they are often found placed at the mouths of tombs with human burials or even given their own burial
(Cachot 2005[1948]). Other wild animals may have been kept in captivity, such as parrots, monkeys, and felines; one textile design shows an image of a cat with a rope around its neck tied to a stake (Young-Sanchez 1985). Fish and shellfish were, as they had been throughout the past, a fundamental component in subsistence regimes (Moseley 2001). Fish varieties tended to be smaller species best caught using nets deployed from small boats, such as anchovies (Engraulidae family) and sardines (Sardinops genus).

Economic organization—

Ideas concerning economic organization stem from the consistency in form and design in both ceramics and textiles, which are argued to imply specialized production (Moseley 2001) and an industrial-level status (Lumbreras 1999; Macedo 2005a, 2005b) [Figures 2.28 & 2.29]. Craft specialization in pottery and textiles has been identified as a major cause of urbanization in the Chancay region (Hodnett 1978). Entire villages may have specialized in processing specific resources, and villages may have been located to maximize access to necessary raw materials for textile and ceramic production (Garcia 1989/90). In Inca times, for example, Huacho was well-known as a village of fishermen (Cuadros 1992).

Some sixteenth century documentary sources refer to local communities in the Chancay region that were well known for specific crafts, and whose main craftsmen were relocated en masse by the Inca to mitmakuna settlements closer to Cuzco (Rostworowski 1989, 1998). Late Intermediate Period Chancay workshops may have been associated with administrative centers where craft production was highly supervised, associated with elite residences and focused on the production of elite goods, or situated within regular
households for generalized domestic production. The form of this economic organization is uncertain, though Lanning (1967) suggests that there was little difference between Late Intermediate Period and Early Intermediate Period (200 BC – AD 600) cultures in this respect.

The Chancay region clearly participated in a trade network (Conlee et al 2004), but the paucity of Chimú or Ichma-style ceramics at Chancay sites indicates that the north to south trade, if present, was not in decorated pottery. Connections between sites in the lower Huaura Valley and those further inland in particular are not well understood. Paulsen (1981) claims that no Central Coast polity embraced any highland territory and that they were exclusively confined to their coastal valleys. Also, the restriction of camelid fiber to decorative textiles in the Late Intermediate Period at sites like Lauri (compared to its extensive use in Middle Horizon textiles at Pachacamac) indicates a reduction in interregional exchange after the Wari collapse (Young-Sanchez 1985). However, other data indicates that east-west trade networks remained extensive, as evident from eastern tropical bird feathers in textiles, a mummified monkey, as well as monkey imagery in ceramics at Chancay sites (Garcia 1989/90; Lavalle and Lang 1982; Kit Nelson, personal communication 2009) and the presence of Lauri Impressed pottery, which Krzanowski (1991) argues was produced in the upper segments of the valley. Research at sites in the chaupiyunga portion of the Huaura Valley (Szremski 2015) also indicates that there was significant exchange of goods from the coast (and vice versa) to this region. Additionally, a double-walled adobe tapial raised causeway, called the Muralla de Mazo, has been identified (Nelson and Ruiz 2004, 2005; Ruiz Estrada and Nelson 2007; Brown Vega 2010). It stretches from the coast to approximately 10 km
inland, ending near the fortress of Acaray. This ancient road is the only one known in the region and likely spanned a long range of time for use (Brown Vega 2010; Ruiz Estrada and Nelson 2007; see Chapter 5 for radiocarbon dates regarding this site) [Figure 2.29].

Settlement Patterns and Architecture—

Krzanowski (1991) has described a ‘typical’ Chancay pattern for sites based on his research in the Chancay and upper Huaura Valleys. Sites are characterized by having both adobe brick and thick tapial walls that form small rectangular structures with multiple rooms and corridors. These architectural compounds are often situated low on rocky slopes in order that they do not take up much-needed farmland. There is very little evidence of terracing in the lower and middle valleys, because the angle of the river is not steep enough and the valley is not narrow enough to be able to divert canals at a sufficient height to reach the slopes without modern pumps and machinery. Chancay settlement patterns and community organization appear to be hierarchical. Sites in the main Huaura Valley (Nelson and Ruiz 2004) tend to be located on the initial terraces above the floodplain, along both sides of the river valley. On these terraces, sites tend to be in flat areas at the junction of quebradas (washes) that originate in the foothills of the Andes. Sites at the river mouth and along the coast are found on promontories and eroded ridges; some of these sites have been obliterated by modern development and agricultural fields (Dunn 2008). Major sites (or clusters of smaller ones) are separated by distances ranging from one to six kilometers (Nelson and Ruiz 2004).

Chancay structures were built with tapial-style construction, as opposed to earlier period preference of conical adobes or rectangular adobe bricks (Moseley 2001) [Figure
Tapial-style construction is created by pouring adobe into wooden frames, allowing it to dry and form a large block, and then removing the frame and repeating the process to extend the wall (McHenry 1984). Most walls were then plastered smooth [Figure 2.31], but on occasion, the joints between these large blocks were not plastered over with adobe, so it is possible to easily distinguish the courses of wall construction.

Rocks and gravel were used to level areas and provide bases for the walls (Hodge 1897; Hodnett 1999). Networks of adobe walls were used to create chambers to fill with earth in order to build up mounds, which were then plastered with more adobe to provide a smooth finish (Hodge 1897). In the center of large platforms and pyramids, Hodge (1897) claims that interior niches or caches were placed, including niches for vessels filled with ground maize or figurines of metal, clay, or wood. ‘Embellished’ doorways (doorways with an extension of the wall into the entrance and restricted openings, not a description of any surface decoration; see Figure 2.32 below), originally thought to be a marker of Middle Horizon sites in this region, instead have been clearly demonstrated as Late Intermediate period features (see Heaton 2015 for an extended discussion of this feature). Niches [Figure 2.33] and benches have been observed at Chancay sites (Krzanowski 1986, 1991; Kit Nelson personal communication 2009).

Architectural decorations have rarely been noted, probably due to the effects of erosion and high salt content from fog and water used in the construction; moisture will migrate to the surface as the adobe dries, where the salts recrystallize and do physical damage to the surface of walls and bricks, often resulting in plasters and paints flaking off (McHenry 1984). Typical decorations from other Late Intermediate Period coastal
sites (Hodge 1897) suggest that walls may have been clay-plastered with carved or appliqué adobe designs and painted white, yellow, and red [Figures 2.34 & 2.35].

Besides adobe, also in use was quincha architecture [Figure 2.36], in which cane and other plant materials placed vertically into bases of rocks and/or adobe and then left ventilated or mudded over by adobe; this is similar to wattle-and-daub used elsewhere in the world and is considered to be of lower quality than adobe. The quincha, despite excellent preservation in coastal Peru, does not last as long and so is less frequently found at sites. The adobe bases—which frequently retain the impressions or even bottom portions of the canes—are more easily noted, although they are often just below the surface and so may initially be difficult to spot [Figure 2.37]. Personal observations in the Huaura Valley indicate that the canes and bases that are recovered are frequently burnt, which is not surprising as these structures would have been very susceptible to fire as they are made out of highly flammable materials in a very arid environment.

A textile figurine scene from the Amano Museum (Hodnett 1999) provides an excellent representation of a Chancay tapial building. It is a rectangular building with six pillars/posts around the perimeter to hold up the roof and reinforce the side walls. The roof itself is flat and suggestive of a mat covering, and there is a dais in the back of the building. The exterior of the building is covered with a geometric pattern in tan, rose, gold, black, and white. [see Chapters 6 and 7 for more detailed discussion of architecture and settlement patterns]
Social Organization—

To understand social organization for the Chancay, especially factors such as kinship, gender roles, or family life, it is tempting to draw a comparison from post-conquest accounts of the Chimú. The chronicler Bernabe Cobo (1956[1653]) discussed for the Andes how individuals were distinguished in societies by their family size. A man with a large family who could help him fulfill his tribute and service obligations faster was considered a rich man, whereas a man with a small family was of lesser status since he was unable to provide as many services as quickly. Cobo was referring to commoners, but Ramirez (1996) suggests that this likely applied to elites as well. Clusters of mummy bundles in the same chambers suggest an emphasis on kinship in mortuary treatment (Horkheimer 1970). Textiles also may inform us about family groupings. Young-Sanchez (1985) suggests that animal motifs may have been used as family or clan insignia. Young-Sanchez further postulates that those who wore the designs might have identified themselves with the represented animal, which might explain why there are not many fish featured as main motifs on textiles, at least in her examination of those collected from the site of Lauri. People may not have wanted to associate themselves with the hunted (e.g. fish), instead preferring motifs that feature the hunters (birds, felines, etc.). This corresponds very well to commentary from Garcilaso de la Vega (1967[1609]) who, speaking of the pre-Inca period, stated that an individual was not considered honorable unless he was descended from a fountain, river, lake, or sea, or from a wild animal, as a bear, lion, tiger, eagle, condor, or some other bird of prey.

Some initial evidence of different specialized roles within Chancay society has come from ceramic pitchers (also known as chinos) that are a combination of a vase and a
human figure. Billet (1998) has examined numerous pitchers in museum collections and identified a pattern of distinctive characteristics by which he divided the human figures into occupational categories. Based on their position, clothing, and accessories, Billet (1998:40-50) proposed seven different types that he has associated with what their roles in life may have been: celebrants, musicians, carriers of offerings, ritual assistants, woman porters, standing figures, warriors, and prisoners. These roles may have been temporary—just for rituals associated with the burials—or part of class specialization.

Gender roles are strongly marked in Chancay material culture, particularly in burials, textiles, and ceramics. Men, women, and babies can be identified by distinctive hairstyles, clothing types, facial designs, and colors. Depicted in the iconography are the sexual features of individuals—men are identified by small nipples and large genitalia, and women are marked by breasts and a pubic triangle. It is possible that some of the facial designs on cuchimilcos, either representing tattoos or face paint for special occasions, may have been gender-specific, although a specific study still needs to be done to verify this. There is clearly a ‘dress code’ of sorts, with specific forms of clothing deemed appropriate for men and women (as described in the earlier textile section). If the Central Coast señorios can be assumed to have operated similarly, then perhaps women could have higher-status roles as well as men; Cobo (1956[1653]) says that the señorio of Huarco was administered by a cacica (female ruler). Lothrop and Mahler’s (1957) excavation of the Zapallan tomb discussed earlier also demonstrates how women had their own status; the burial clearly indicates that she was someone important in the community. Evans (1995) suggests based on iconography in textile designs and material goods placed with female burials that some women may have held important positions as
shamans in society (see the end of the following section for consideration of the appropriateness of using the term shaman).

*Iconography, Cosmology, and Religion—*

Most information on Chancay religion comes from two sources: written accounts of Spanish exploration and settlement during the 1500s and 1600s, and iconography from textiles and ceramics. The interpretation of the latter is usually informed by the former. The most thorough treatment of this information is by Peter Eeckhout (2004), who has discussed ritual practices in light of colonial accounts and archaeological finds and specifically describes the prehispanic religious customs of the Lurín-Rimac area. The next most comprehensive discussion of Central Coast religion comes from Rebeca Carrion Cachot (2005[1948]), who analyzed and interpreted the iconography of 130 examples of stamped ceramics from the Museo Nacional de Antropología y Arqueología de Magdalena Vieja (in the district of Pueblo Libre) that are attributed to the Chimú, Huaura, Casma, or Ancon cultures. However, many of Cachot’s interpretations of coastal belief are clearly influenced by what is known of highland Andean religion. In addition, various Spanish accounts not only record cultural practices that were significantly influenced by Inca conquest and colonialism during the Late Horizon, but they tend to add their own colonial commentary as well. Therefore it is difficult, though not impossible, to parse out what practices may have dated from the Late Intermediate Period or earlier from later developments during the periods of Inca and Spanish imperialism (Eeckhout 2004; Urton 1999). Recent ethnological studies into the myths and rituals of contemporary Andean people from the Chancay Valley can also provide interesting
insights into Late Intermediate Period religious practices in the region (Ortiz Rescaniere et. al. 2001; Rivera Andia 2002; Vivanco Guerra 2001). Although they cannot be considered direct representations of prehispanic practices, they still demonstrate continuity in the emphasis of religion on agriculture and animal fertility.

One of the most widespread concepts in Andean thought and religion is that of dualism, and this concept is thought to have been prevalent for the central coast Late Intermediate Period as well (Moseley 2001). “The fertility of the sea juxtaposed with the infertility of the land, and the resultant interdependence of the two, may have contributed to the dualism that characterizes Andean thought” (Evans 1995:2). In one study, Evans (1995) identifies representations of dualism at multiple levels in a Chancay headcloth, from the techniques used in its construction to the iconography used in the designs (see below). Although this perspective may attribute more symbolic meaning than is warranted to basic elements in the design and craftsmanship of the headcloth, I have listed these points below because they may be useful for other researchers in their interpretations of Chancay imagery and technology:

- paired weft and warp (two threads being used when one would suffice)
- two techniques of construction, knotted weft wrapping and embroidery
- two different spun yarns used for wrapping versus embroidery (one s-twist, the other z-twist)
- the juxtaposition of empty versus filled openwork meshes
- alternating perspectives for the piece (weaver versus wearer’s point of view)
- a vertical fake seam that forms the illusion of a square piece split into two rectangles
• alternating diagonal bands of two design motifs (that are themselves opposites, 
bird images representing the sea/air versus a motif with land animals)

• the land animal motif being composed of two different animals that depend on 
which direction the cloth is viewed (feline image in one direction, when turned 
upside-down appears as a snake)

The last point, the use of a feline motif that changes into a serpent, is also interpreted 
by Evans (1995) as a representation of the concepts of transcendence and transformation. 
In addition, even the headcloth’s use as a burial garment is significant in its presence at a 
state of transition from life to death.

In keeping with this concept of duality, the theme of the divine pair recurs throughout 
Central Coast iconography and stories (Cachot 2005[1948]; Eeckhout 2004). This divine 
pair is often involved in scenes that illustrate the symbolic act of fertilization of the earth, 
which Cachot (2005[1948]) classifies into three groups: 1) the pair, located under the 
sacred tree, in the act of conversing; 2) the pair engaged in sexual intercourse, surrounded 
by symbols (that she interprets as calendrical symbols, though this has not been verified), 
fierce animals, and monkeys; 3) the pair surrounded by monkeys. For example, on a 
stamped ceramic of Pativilca from the Middle Horizon, there is a scene of copulation 
between a male and a female surrounded by trees with monkeys eating lúcuma fruits, 
suggesting a myth of fertility or creation (Cachot 2005[1948]). Cachot (2005[1948]:25) 
interprets this common presentation of a divine pair to be a sun god and a moon goddess. 
However, I question this interpretation based on several lines of evidence. According to 
Garcilaso de la Vega’s account (1967[1609] Libro Sexto, Capitulo XXX, pp 176-178), 
when the Inca and the general Capac Yupanqui arrived in the Central Coast region, a
messenger was sent to the Rey Cuismanco to demand, among other things, that the locals should discard the local god images in their temples and houses, and should recognize the sun as their principal god instead. In the discussion that follows, Cuismanco responds that the sun does not listen or talk like local gods, and that they did not need any gods other than those they already had. They did not need other gods, least of all the sun, because their territory was already hot and dry. This seems to indicate that a sun god was not particularly important within the Cuismanco pantheon, and therefore, it would be unlikely that such a significant representation in their iconography would be a sun god.

Furthermore, Cachot (2005[1948]:91, 128) herself frequently points out that the visual cues in the iconography often are not always clearly diagnostic of a particular deity, such as her statement that the sun god is often confused or combined with the maize god, or when she identifies an image as either a moon goddess or as an earth goddess. In fact, her identification of individuals in the iconography as the sun or moon often hinges on their gender and the interpretation of the hair as rays/beams of light. However, the hair could just as easily upon its appearance be interpreted as waves, snakes, or ripe corn stalks instead, any of which would be more appropriate than a sun god to the coastal cultures considering Garcilaso de la Vega’s story.

From the iconography and documents, we can identify several important deity-like figures for Central Coast religion. Garcilaso de la Vega (1967[1609]) discusses ‘Mamacocha’, the sea, being significant because she sustained people with fish; though Mamacocha is clearly a Quechua name, devotion to the sea is congruous with what is observed in ceramic and textile designs featuring fish, seabirds such as pelicans (identified by their distinct beaks), and wave motifs (Evans 1995). Cachot (2005[1948])
identifies another female deity, with loose hair, a serpent belt, a beaded two-strand collar, and a short skirt with a step pattern on it, accompanied by dogs with their heads pointed to the sky, or less frequently, felines. The bicephalic serpent or dragon is a common motif, particularly as a belt on deities. Male deities (or important individuals) are also prevalent on ceramic and textile designs. The most common figure is that of a god, viewed frontally, holding a staff in each hand. Sometimes these staffs have cords or rays coming out of one end, or they may be topped by an animal head. The figure often is wearing a crown or headdress and has discoidal earrings. Maize is frequently seen in the images, especially being held or worn by a male figure, who Cachot (2005[1948]) interprets as the god of maize. The male gods often have sharp canines/fangs, perhaps indicative of an association with felines. The male gods, beyond being divided by Cachot into representations of a sun god versus a maize god/protector god of agriculture, have not been systematically identified (and it is beyond the scope of this project to do so).

Pachacamac (also called Irma, Illma, or Yschma) was said to have been the main creator god, who was the maker and sustainer of the universe, and thus he received sacrifices of men, women, children, and goods (Garcilaso de la Vega 1967[1609]; Eeckhout 2004; Urton 1999). The temple of Pachacamac had figurines to that god, to the sea (represented by images of fish), and a golden statue of a fox (Garcilaso de la Vega 1967[1609]; Eeckhout 2004). In the Rimac Valley, there was also a temple with an icon that served as an oracle (Garcilaso de la Vega 1967[1609]); divination was an extremely important component of Central Coast religious practices (Eeckhout 2004). A short distance south of the modern-day city of Huacho (at the mouth of the Huaura Valley) is the archaeological site of Choqueispana. This site is reputed to be a Late Intermediate
Period/Late Horizon temple (Cuadros 1992; Lavalle and Lang 1982), described by Felipe de Medina (1920[1650]) as a pilgrimage place with a large huaca and adoratorio where people came to worship; Medina also describes similar idols at nearby Corquin (Carquin) and Luriama, also in the Huaura Valley. Medina stated that the adoratorio had different sections dedicated to different Andean groups; i.e. there were specific sections for people of the sierra to worship their gods and sections for the gods of the coast. Numerous idols were noted including stone idols and a figure called “mama llama” that the serranos revered for the fertility of their llama herds (Lavalle and Lang 1982). My personal observation at the site itself has revealed the presence of fine ceramic sherds, fragments of worked Spondylus shells, and a burial area behind the temple that contains many remains of juvenile human and llama bones. Unfortunately, its reputation as a huaca, and the possibility of treasures (Choqueispana is Quechua for ‘to urinate gold’) has led to major destruction from looting, including the use of a bulldozer over parts in the mid-1900s (Arturo Ruiz Estrada, personal communication 2008).

The story of Vichama is perhaps the best-known myth from the Central Coast. Related in several Spanish accounts (De la Calancha 2007[1638]; Teruel (2010[1617])), the story of Vichama has been embraced by modern communities in the Norte Chico region as emblematic of pre-hispanic local beliefs. It serves as the focus for yearly celebrations with parades and performances by schoolchildren at the fortress of Paramonga in the Pativilca Valley. It is a frequent theme in publications from the museum of Huacho, Huaura Valley, and is now being incorporated into the tourist circuit (Ruiz Estrada 2007b; Museo Arqueologico Regional Huaura 2007). As the simplest version of the tale goes (Teruel 2010[1617]), in ancient times there was a great drought
and lack of food in the land. Starving, an old woman went to look for roots to eat. While she was searching and crying, the sun asked the cause of her weeping. When she told him, he promised he would solve the problem and asked her to raise herself up to his rays. Then he impregnated her and in four days she gave birth to a boy. Pachacamac arrived later and dismembered the boy in front of his mother. He gave her the boy’s teeth as maize seeds, his bones as seeds for herbs and sweet potatoes, and his meat for the seeds of cucumbers and other fruits, saying that there was now no need to lack these things. Pachacamac left and the sun returned. Finding her inconsolable about the death of her son, he gave her another handsome boy named Vichama (or Villama). Vichama grew quickly and then left to wander for many years to see the world. In the interim, Pachacamac killed his mother, dividing her into pieces and giving her to the condors and vultures for them to eat. When Vichama returned from his wanderings, he discovered what had happened, so he searched for her bones, gathered them, and resurrected her. Vichama also wanted vengeance for her death, but could not get it because Pachacamac had fled to the sea at the mouth of the Lurín River where his temple was later placed. So, Vichama turned his anger on the curacas and the rest of the people. He turned the principal curacas into stone huacas, which were worshipped as gods, and he turned the commoners into ordinary stones. But because the earth could not be without people, three eggs fell from the sky: one of gold, from which came the curacas and principales; one of silver from which came the women; and another from which came the average population. Peter Eeckhout (2004), in his research on Pachacamac, discusses this myth in greater detail as well as some of the variations by chroniclers other than Teruel. He
argues that this myth is primarily a coastal story (and Pachacamac a coastal deity) modified by the Inca.

Several other myths that are specifically attributed by chroniclers to the Central Coast societies. According to the Spanish documents from the seventeenth century (Duviols 1976), there was a belief among the farmers of the Chancay Valley that the souls of the dead went to a mythical valley called Coaica (Loaica). This valley was said to be extremely fertile, where all types of plants produced fruits of high quality and quantity. It is likely that the over-sized fruits and animals depicted in ceramic forms are representations of the produce of Coaica, which is why they were used as burial goods. Another story of an afterlife is by Fr. Pablo Jose Arriaga (1968[1621]) from the town of Huacho, where the locals believed that the souls of the dead were guided by sea lions (called tumi) to the islands where they gathered guano. People had to give offerings to a special temple before going to the islands, escorted by a priest in order to obtain guano (Duviols 1976). Souls of the dead are also said to have been guided to the ‘new world’ (afterlife) by hairless dogs, so these dogs were raised and sacrificed to accompany human burials (Cachot 2005[1948]).

Scenes of sacrifice are frequently seen on Chancay ceramics and are verified by findings of sacrificed humans and animals at Pachacamac (Eeckhout 2004). Sacrifices were often performed by figures that likely represent gods; they sometimes have animalistic features. The deities are seen cutting the arms or hands off other, simpler figures. Llamas are also often subjects of sacrifice, either with their throats cut by a tumi knife, or completely decapitated. Sometimes these human or llama sacrifices occur in marine settings, surrounded by fish, birds, and mollusks. Another interesting scene on a
vessel from Huaura shows an act of the immolation of llamas with the intervention of a bicephalic dragon and the protector gods of agriculture (Cachot 2005[1948]).

Animals are often interpreted as symbolically powerful. Evans (1995) discusses the symbolism of three common animal motifs in design: birds, snakes, and felines. All three are noted as predators and as symbols of fertility and transition. Birds transition between the sky and either sea or land, depending on the type of bird. Birds and snakes are associated because they both come from eggs, and because both shed feathers and skins, respectively. Snakes represent cycles of regeneration. Felines can be symbols for the supernatural, the underworld, thunder, lightning, and rainbows. Though it is debatable as to how much of this interpretation was actually meant by the makers of these designs, it is an interesting attempt at deciphering the religious significance of the iconography. For the Inca, the puma in particular held royal significance as well as shamanistic meaning (Cachot 2005[1948]); puma skins were used in ritual drums and as clothing for the Inca (Evans 1995).

I am reluctant at this point to assign a specific term to the religious specialists in Chancay society; they are sometimes referred to sacerdotes (priests) by chroniclers, whereas others interpret them as shamans (Evans 1995; Vallejo 2004). Perhaps this is more than just a confusion of the terminology used in post-contact accounts. The presence of numerous platforms with ramps and large enclosed plaza areas are suggestive of some sort of public ceremonial proceedings (Makowski 2015; see Chapters 6, 8 for further discussion of ramps). References to temples, with multiple idols tended by religious specialists, were said to have been visited by pilgrims coming from the region as well as from further away in the highlands. The emphasis on animal symbolism and
anthropomorphic transformations, however, is a more common practice for shamans. Thus, I suggest that it is likely that the Chancay had multiple kinds of religious specialists who performed different roles in their society, although we cannot yet distinguish these different specialists clearly in the archaeological record.

Political organization—

Different authors have given distinctly different interpretations of the Chancay political structure. These interpretations include: a loose confederation of elite-controlled, specialized production groups (Szremski 2015) possibly dependent upon a central provincial lord (Conlee et al. 2004); a local population subjugated under alternating Chimú, Ichma, or Inca control (Menzel 1977; Ravines 1985); and an independent small empire (Lumbreras 1974; Paulsen 1981). With this wide range of possible social and economic models suggested, understanding the role of elites is central to figuring out Chancay levels of integration. Again, we have to draw mostly upon historic accounts about other groups, such as the Chimú, Huarco, and the Inca.

Juan and Judith Villamarin (1999) consider that when the Spanish chroniclers referred to señoríos, they were referring to chiefdoms, individual societies with their own centralized hierarchy led by an institutionalized chief. The position of chief was hereditary and restricted to elite lineages only. Throughout the Inca Empire, a leader’s rank, status, and reputation were directly related to the number of people he controlled (Guaman Poma de Ayala 1936; Ramirez 1996). Ramirez (1996) has deciphered the different titles that corresponded to different ranks, and how many subjects were typically associated with individuals with these different titles. In coastal communities during the
1560s, the curaca (kuraka in Quechua) or cacique (Arawak) was the principal lord of the señorío, often referred to in Spanish documents as a curacazgo or cacicazgo. The second in command was the conozeque, who was ‘lord of 1000 indians’. A principale controlled around 100 households, whereas a mandoncillo would control as few as five. With Inca administration, the Huaura Valley was divided up into three major groupings--Guarua, Vegueta, and Sallan--each with their own dependent ayllus (Ipinze Jordan 2005). It is likely that the major groups were at the level of a conozeque, and the ayllus would have each had their own principale.

According to archival research by Ramirez (1996) and Rostworowski (1977, 1975), land ownership was determined primarily by productive activity. No one actually owned the land itself; they owned the product of their labor on the land. Thus, individuals owned house sites and fields because they were built and worked with their own labor. Lords owned huacas and controlled goods because they were produced through labor that they owned. Boundary markers, however, were used to delineate lords’ domains, because the lords were delegated control of specific resources (Ramirez 1996). Ethnohistory for the Chimú also emphasizes this relationship between status and control of production. The Chimú are described as having a complex hierarchy based on lineages with elites in control of both land and the labor of commoners, including farmers, fishermen, and craftsmen (Netherly 1977).

However, from a study of Chancay textiles from the site of Lauri, Young-Sanchez (1985) suggests that it is possible that the differences seen between Chimú and Chancay burial practice and textile design are due to distinct social systems. In Chimú textiles, a ‘hierarchy’ of design can be observed: birds supported on litters by other birds; bird
holding trophy heads; border motifs as visually subordinate to the motifs of the main body of the textile; and varying size and placement of the motifs, such as large, frontal humanoids with smaller figures flanking it. In contrast, Chancay textiles rarely have hierarchy in their design, lacking such designs with figures usually similar sizes and the main body of the textiles solid colored, giving prominence to the borders visually.

Young-Sanchez (1985) points to this as possible proof that for the Chancay, hierarchy was less prominent in the mindset of society and that Chancay textiles may be an example of a folk art representative of a folk culture (Kubler 1980). However, Young-Sanchez (1985) seemingly contradicts her own hypothesis, since she also identifies several symbols that I would interpret as indicating hierarchy and variation of social status in textile designs. Young-Sanchez describes designs that include: bird motifs wearing crowns; monkeys adorned with crowns and staffs; and also figures identified as warriors or rulers (usually males, as indicated by the presence of genitalia or lack of female attributes) by their decorated clothes, crowns, and position in the design, occasionally holding a mace/staff and even holding a small captive by the hair in their left hands. Hierarchy is also seen in several scenes of textile figurines examined by Hodnett (1999), most particularly one scene in which two ‘elite’ figurines are seated upon a dais in a building, with another six figures in the main area. Besides their elevated and isolated placement in the scene, these figurines are identified as elite because in comparison to the other figures, they have more elaborate face decorations, elaborate textile clothes, and necklaces made of little balls of yellow yarn representing gold jewelry.
Unfortunately for the region in general, one of the most distinctive sources of archaeological information about political organization—burials—is also one of the most incomplete. Very few intact burials have been excavated, since the regions’ cemeteries have been subject to many centuries of formal and informal looting. Since elite burials tend to be the largest, most elaborate tombs with the greatest quantities of desirable artifacts for the black market, much of our information about that level of society can only come from indirect evidence from objects in private collections and museums.

Comparing Chancay Archaeological Culture with the Historically-Known Cuismancu

One important issue for understanding the political and economic organization of this region is determining whether or not the archaeologically recognized Chancay culture correlates with the Cuismancu polity discussed by chroniclers. In his Commentarios Reales de los Incas, Garcilaso de la Vega (1967 [1609]: Libro Sexto, Capitulo XXX, pp 176-178) states that several valleys were owned by a powerful señor named Cuismancu, also known in the document as Hatun Apu (meaning "gran señor") and el Rey. Garcilaso then goes on to relate a story about the interaction between Cuismancu and the Inca General Capac Yupanqui, during the latter’s coastal military campaign. Unfortunately, this account has led to much confusion about the extent of the Chancay and whether or not it was the Cuismancu señorío that Garcilaso spoke of. The reasons for this are: 1) the use of the name Cuismancu; 2) confusion about the valleys listed; and 3) conflicting archaeological data that shows the presence of other señoríos in some of the Cuismancu-claimed valleys.
The use of the name Cuismancu has caused difficulties due to translation problems and to a possible error by Garcilaso, unsurprising since the accounts of Inca history in the “Royal Commentaries” are known by researchers to be less reliable in cases where Garcilaso did not observe the incidents himself (Rowe 1946: 196). Several authors have conflated Cuismancu with the person known as Chuquismancu (another name in Garcilaso’s account, actually the curaca of Huarco), thinking it was the same name with different pronunciations. For example, Cuadros (1992) said that the curaca Cuismancu was the chief Chuquismancu. Although they were both leaders of señorios, they were not the same person, as there are completely separate sections in which first, Chuquismancu is discussed in the valleys under his control, and then Cuismancu was discussed with his valleys. They are also clearly listed as separate individuals in the same sentence, such as when Garcilaso de la Vega (1967 [1609]) relates a tale how the Inca recruited the curacas of Pachacamac, Cuismancu, and Chuquimancu to help against the Chimú. Garcilaso may have mistaken the name. Several other Spanish accounts (Sarmiento de Gamboa 1943 [1572]:108; Cabello de Valboa 1951 [1586]:316-317) discuss a Guzmango Capac who was a military chief in the region of Cajamarca. Santisteban (1982) details the linguistic reasons why Cuismancu and Guzmango Capac are the same and then argues from the multiple historic sources that the name properly should only be applied to the highland ruler. Also, Mendieta (2000) suggests that there may have been a temple called Cuismancu in the central coast region that Garcilaso got the name from. Based on this, both Santisteban (1982) and Mendieta (2000) attest that Garcilaso’s account was mistaken, but neither of them indicate why the name could not have been used for both individuals. Supporting the latter idea is a document from the first few days of June,
1540, discussing a general visit by Francisco Pizarro and fray Vincente Valverde to the curacazgos, who included Cuismancu (Soriano 1967). Even if use of Cuismancu was a mistake, it does not invalidate the overall story.

A more clearly evident error in Garcilaso’s text is the listing of the valleys that the señorío of Cuismancu controlled. Garcilaso de la Vega (1967 [1609]) lists these valleys as Pachacamac, Rimac, Chancay, and Huaman, also known as Barranca, and then says that it was in these six valleys that the señorío was seated. However, note that he lists only four valleys, rather than six. Perhaps he forgot to include some intervening valleys, causing considerable confusion by researchers (e.g. Ravines 1970). I argue that it is more likely the latter reason, that Garcilaso simply did not list all six valleys, perhaps not knowing all the names or the topography well enough. If one goes to a map, the proper identification of the valleys and those that Garcilaso skipped becomes clear. Pachacamac can be interpreted as referring to the Lurín Valley, where the main temple dedicated to that god was located. Huaman, or Barranca, refers to the Pativilca Valley, where the modern-day town of Barranca still exists; Fortaleza is not included because it is yet further north, because it was not actually part of Barranca, and it might have been under Chimú control as indicated by the site of Paramonga. In between Chancay and Pativilca lie the Huaura and Supe valleys, and these are likely the missing two valleys that Garcilaso refers to but does not name. Interestingly, he also did not mention the Chillón Valley. The omission of the Chillón Valley as part of that señorío might indicate that it was instead controlled by the smaller señorío of Collique (Rostworowski 2004). It is for these reasons that I disagree with Jimenez Borja’s (1982) identification of the valleys as Lurín, Rimac, Chillón, Chancay, Pativilca, and Fortaleza; it is too broad and can
inadvertently conflate groups that may have had distinctive political identities. From the text, however, it is certain that Garcilaso is not confused about the region he is talking about, because he makes repeated comments that convey he is talking about an event on the coast in that area: the locals worship the sea, the temple of Pachacamac, the god Rimac, etc. In addition, the story comes immediately after a discussion about the coastal valleys immediately south of this region and right before a discussion about interaction with the Chimú and valleys further north. So, he is certainly speaking about this section of the central coast, although he may not have been particularly precise about the valleys.

Indeed, some researchers have stated that a Cuismancu Empire as described by Garcilaso could not have existed due to differences in development and ceramics within the valleys thought to be part of the Cuismancu. This been argued as proof that there was no such multi-valley organization (Lanning 1967; Parson and Hastings 1988; Rowe 1946, 1948; Stumer 1954). The presence of the Ichma señorío in the Rimac Valley (Garcilaso mentions a curaca named Pachacamac) and the Collique in the Chillón Valley contradicts the Cuismancu Empire’s extent as described by Garcilaso. Other documents from 1549 (Rostworoski 1978) mention a señorío named Huaura with the Huaura Valley as the seat of the curaca, who also governed over the Supe and Chancay valleys.

What are we to make of these discrepancies? Although the Chancay are unlikely to have merited being called a kingdom or empire, the archaeological evidence overwhelmingly shows a cohesive culture with political complexity reaching the level of a señorío or chiefdom (Conlee et al 2004; Krzanowski 1991; Mendieta 2000; Minelli 2000). Garcilaso may simply not have understood the intricate and changing dynamics of
these coastal polities, especially since he had not observed these interactions first-hand (Rowe 1946: 196).

**Impact of the Chancay Archaeological Profile**

My goal was to provide a basic cultural description for the Chancay, something that to my knowledge has not been done before. I intend for this to serve as a resource for other researchers interested in the Andean Central Coast and comparative studies of these señorios.

More importantly, this setting is the foundation from which to interpret the material remains from the Huaura Valley. As I compiled this information, it became clear that detailed excavations, with good context and radiocarbon dates, are necessary in order to address the many gaps in our understanding of the Chancay. For this purpose, I settled on the site of Quipico, in the lower Huaura Valley, as a good choice for investigation. As observed in a valley-wide survey by Nelson and Ruiz (2004, 2005), there are multiple sites in the Huaura Valley that have adobe tapial compounds, black-on-cream ceramics, and other standard Chancay traits. Out of these sites, Quipico had two major factors that made it suitable for study: 1) it had many of what can be considered the ‘standard’ Late Intermediate Period features for this area (when compared to the Chancay description above), and 2) both architecture and artifacts are well-preserved.
CHAPTER 3: QUIPICO IN THE HUAURA VALLEY

Now that I have provided an environmental, chronological, and archaeological baseline, in this section I would like to discuss the particular context for the site of Quipico, on which this project was based. I begin with the specific environmental features of the Chancay and Huaura valleys, such as the amount of arable land, the natural resources available, and the effect of El Niño floods, three factors that greatly impacted the populations in these valleys. Then, I describe the archaeological site of Quipico itself, its location as well as its neighboring sites (both modern and archaeological) up-valley and down-valley, and the considerations made for excavation at the site. This information serves as an appropriate grounding for consideration of the archaeological data obtained from excavation [Chapters 4 & 5].

The Huaura Valley Environment

The Huaura River begins in the snows of Raura, an area about 5000 meters above sea level (Cuadros 1992; FAO 1970). It is formed by the union of the Checras and Oyón rivers, approximately five kilometers from Churín (FAO 1970). Another tributary, the Quebrada Cochamarca, joins the Huaura River on its southern bank. The Huaura Valley basin is approximately 4300-4450 kilometers$^2$ in size, which is larger than many of the other valleys used for modern agriculture further north, such as the Santa, Lacramarca, Nepeña, Culebras, Huarmey, and Casma (Cuadros 1992; FAO 1970). It is also significantly larger than the Chancay Valley, which has around 3279 km$^2$ basin area.
(Mijichich 1998); the Chancay Valley also is smaller than valleys further south, such as the Chillón, Rimac, or Lurín Valleys (Cuadros 1992). As for arable lands, the Huaura Valley [Figure 3.1] exceeds all these valleys, with 279-315 km$^2$ available for cultivation without problems of drainage or salinization (FAO 1970). Indeed, in the journals of Hipolito Ruiz, a Spanish botanist traveling in Peru in 1778, he comments that:

“The valley that stretches from Huaura to Sayán is indeed pleasant, fertile, and agreeable because of the many plantations of sugar cane encountered, the diversity of fruits and seeds sown and harvested, and the variety of trees, shrubs, and herbaceous plants growing wild there” (Jaramillo-Arango 1998:189).

In modern times, this agricultural land is mostly devoted to cotton and sugar cane, with some area for citrus and other produce (FAO 1970). For additional information detailing soil quality, salinity, and an inventory and use of water, earth, and other natural resources, the best sources are reports commissioned by the Peruvian government, such as for the Huaura (FAO 1970) and Chancay (ONERN 1969) valleys.

Another notable natural resource particularly for the Huaura and Chancay valleys was bird guano. Guano came from the islands off the coast, principally near the port at Chancay (Duviols 1976; Jaramillo-Arango 1998). Salt mining was also a significant industry, and particularly rich deposits were said to have been located four leagues south of Huaura (Jaramillo-Arango 1998). Also near the port of Chancay on the hill at Jeguan there was a silver mine; although it was not an active mine in the mid-1700s, it was have said to been in operation only a short time before (Jaramillo-Arango 1998).

The Huaura Valley is cut by numerous quebradas, particularly along its northern side, which are subject to frequent flashfloods during El Niño events. We do not yet know the frequency or dates for the El Niño events that most affected the Huaura Valley except for in recent times. Records mention catastrophic floods in 1578 (although this
may have only affected areas further north—Bruning 1922:14, 28 is unclear about this), in 1891 (Cuadros 1992:122), and in 1925 (Kroeber 1930). I have observed remnants of flash floods—large dried silt/mud flats and eroded adobe buildings—at several sites in the Huaura Valley including Quipico [Figure 3.2], and locals have affirmed that there was a major flooding event in living memory, although the precise decade is unknown. These flood events significantly impacted the archaeological preservation of sites in the Huaura Valley, and likely the inhabitants of the region as well.

*Quipico and Its Immediate Environs*

Extensive looting and lack of large temple complexes had led in part to archaeological oversight and disinterest in the region. The common view is that “there are no sites left intact in which to carry out proper archaeological research” (Mendieta 2000:46). Admittedly, like many other areas of the coast, archaeological sites in the Huaura Valley have been subjected to severe destruction by looters [Figure 3.3]. However, there are still ample suitable locations for archaeological excavation and analysis.

*The Huaura Valley Site of Quipico*

The site of Quipico (PV41-494) (see Appendix E re: etymology) is located in the Huaura Valley in the Sayán district 0.8 km northeast from the modern-day town of Quipico, approximately 40 kilometers inland from the coast [Figure 3.4]. The site is clustered at the base of a small quebrada and encircled by ridges on three sides; these ridges are the flanks of Cerro La Viña, which forms the northern side of the main river
valley [Figure 3.5]. The ridge system is heavily eroded and consists of exposed granitic bedrock. To the south are large expanses of low, flat modern agricultural fields all the way to the Huaura River, which lies approximately 1.25 kilometers away [Figure 3.6].

Directly across from the site is a quebrada that is the main inter-valley modern route from the Huaura Valley to the Chancay Valley [Figure 3.7]; Szremski (2015:92-93) has done a least-cost path analysis of this region, and one of these paths runs precisely along this route. At that juncture on the other side of the valley are a few structures, including a large building composed of several platforms and a surrounding perimeter located on the top of one of the promontories of Cerro San Julian (site PV41-537). This site is due south from Quipico on other side of the Huaura River (total 2.5 kilometers from Quipico itself), although the surface artifacts are heavily eroded and disturbed, so its span of occupation is unclear. This route is convenient for direct travel and transport of goods between these two valleys even today.

The site is bordered on its southern edge by a large canal that supplies water for the fields to the south. Since the canals and these fields are currently in operation, it is difficult to determine the presence or extent of any prehistoric agriculture. Intruding in recent years is an agricultural plot of evenly-spaced lúcuma trees [Figure 3.8] that covers the central open area of the site and extends up to the base of Structure A in the west, Structures B and E in the east, and Structure C up to its western wall around the southern front. There is a very low density artifact scatter in this disturbed area, and from the 1940s SAN aerial photos (which predate the lúcuma field) [Figures 3.9 & 3.10] it is clear that the agricultural plot did not destroy any architecture. Instead, the area appears to have been wiped out by a vast flooding event, likely from flash floods that regularly
occur in the region due to the influence of El Niño [Figure 3.11]. A large quantity of ceramics is present on top of the bordering ridge, along its slope and at its base on the eastern side of the site, which likely washed or fell down the slope during the flash-flood events from a no longer extant structure at the top of the ridge. No artifacts have been discovered on other parts of the ridge or in other fields, making it possible to confidently identify the site’s margins.

Initial surface survey of Quipico was carried out in 2004 under the direction of Kit Nelson and Alvaro Ruiz as part of a valley-wide survey to determine site extent, estimate its associated periods of occupation, and assign an official INC site number (Nelson and Ruiz 2004, 2005). The archaeological site is approximately 9 hectares and consists of ten tapial compounds [Figure 3.12]. In 2007, further examination was done to document the architecture evident on the surface, record site topography, observe surface distribution of artifacts and to excavate three test pits (Ruiz Estrada 2007a; Ruiz Estrada and Nelson 2007). These compounds do not do not appear to be clearly aligned and are situated close together with the exception of Structure A, which is located apart from the other structures on the west side of the quebrada. The middle of the site appears wide, open, and roughly square, with no structures present in the most central portion of the site [Figure 3.13]. It is uncertain whether or not this was the case in the past, since the central area would have been subjected to heavy erosion from flooding, so any structures that may have once been there would have been obliterated by natural forces. Most of the structures are located on natural high points in the topography of the quebrada and some incorporate the rise of the bedrock into the building structure to create elevation, which placed these buildings out of the effects of El Niño flashfloods.
Compound enclosures are thick walled (estimated 1-2 meters in thickness) with thinner internal walls delineating groups of connected rooms and interior hallways with orthogonal construction. Most compounds contain at least four internal divisions with doorways between some rooms. Doorways within and into the structure are difficult to identify at times due to the presence of adobe bricks and fallen tapial blocks that have blocked some of them. In some instances, this blockage is clearly intentional because the doorway blockage is composed of bricks where none of the surrounding walls had any brick in them; thus, the block could not have been due to wall collapse. No additional features—niches, benches, or pillars—are present. The majority of walls are constructed of large sections of tapial. Numerous adobe bricks exist beneath, adjoining, and incorporated with adobe tapial walls. Stone construction is absent at Quipico. The properties and significance of these different construction methods is further explored in the later chapter regarding architecture [Chapter 6].

Surface artifact density is moderate in all compounds with the greatest concentrations observed in compounds with the heaviest erosion and looting. It is likely that this patterning is caused by upturning and scattering of cultural layers by looters in search of burials, intact ceramic vessels and textiles. Accordingly, there is an absence of any whole textiles or vessels on the surface or in open pits. It is likely, however, that the lack of whole or mostly partial vessels at Quipico is also due to the lack of burials there. Construction fill inside the compounds is varied, from an estimated 0.25 m to as much as 2 m of trash, with an average of 1 m in the majority of the compounds. The structures were filled with trash and rubble to provide a foundation for new architecture on top in a
“tell-style” form of construction; this has been observed at other Late Intermediate Period sites in the Huaura Valley (Nelson and Ruiz 2004, 2005).

Overall structural preservation at Quipico is good, with numerous walls still standing two meters tall in some places [Figure 3.14]. Insect and animal damage is moderate. Unfortunately, the site is at significant risk for destruction by looting and by the expansion and encroachment of nearby agricultural fields (Dunn 2008). I chose to investigate Quipico in order to obtain essential information before it disappeared as well as provide attention that might discourage looters.

Other Huaura Valley Sites

Quipico must be considered in the context of other sites in the immediate area as well as throughout the valley [see Figure 3.15]. Much of the following information was obtained from previous valley-wide surveys (Cardenas 1977; Miasta and Merino 1986), with specific descriptions provided by the most recent detailed survey by Nelson and Ruiz (2004; data used with authors' permission, Kit Nelson personal communication 2009). Additional descriptions of key Huaura Valley sites—Vegueta, Cerro Colorado, the Muralla de Mazo, Pampa de las Animas, Luriama—have been done in a recent dissertation by Heaton (2015), and so will not be repeated here. Instead, I will describe sites closest to Quipico: 1) from Quipico going up-valley (East) until Sayan, which marks the point where the valley steepens and becomes part of the chaupiyungas both geographically and culturally (Szremski 2015); and then 2) from Quipico going down-valley (West) 5 kilometers until the site of Chambara. I chose Chambara as an end-point since it is the next site down-valley of significant size (likely close in size to Quipico) and
initial surface ceramics and architecture appear similar to those of Quipico, tentatively suggesting that these may have been contemporaneous. My descriptions of the regions below are supplemented by personal observations and informal survey at these sites from 2005-2007 and 2009.

**Up-valley (East) from Quipico**

The next adjacent quebrada 1.6 kilometers up-valley (east) does not have any visible structures, but it too shows evidence of a major flooding event. There are a few severely damaged tapial and stone wall bases (site PV-41-499) and there is a large field of artifacts in front of it (site PV41-498). On the eastern portion of the quebrada protected by a small promontory from the ridge leading to Cerro Piedra Agacha is a heavily looted cemetery (site PV41-502) that contains both Huaura Style and Chancay Black-on-White ceramics. From the little architectural and ceramic information just described, I would suggest that this was an occupation from the second half of the Late Intermediate Period.

Moving further up-valley another 2.9-3.9 kilometers (4.5-5.5 kilometers total from Quipico) are two very large (500-600 meters wide and over 1 kilometer long) quebradas. The first, Quebrada Calambacu, is completely devoid of archaeological evidence except for a small scatter of very eroded artifacts in the agricultural fields at the mouth of the quebrada (site PV41-503), but there is a strong visual indication that Quebrada Calambacu was subjected to very heavy flooding in the past. The other quebrada, approximately 1 kilometer from Quebrada Calambacu, is named Quebrada San Juan de las Cañas and has an abundance of architecture and artifacts, albeit mostly destroyed by flooding as well. There are several mounds near the mouth of the quebrada
that are believed to be Late Preceramic and Initial Period sites (sites PV41-504 and PV41-505). The main area of Cañas (approximately 0.2 kilometers$^2$) is covered with stone and adobe tapial architecture (site PV41-506) and artifacts that Krzanowski (1991:49-50) described as being very similar to those in the Chancay Valley. He made a preliminary map of this site (Krzanowski 1991:51) despite the heavy damage and estimated that its extent placed it in the same size category as the largest settlements in the Chancay Valley. My own personal observations are in agreement with Krzanowski’s interpretations, and from the surface ceramics I argue that the site appears contemporaneous with Quipico; the 2005 Huaura Valley survey assessment of Cañas also classified its principal occupation as likely Late Intermediate Period and Late Horizon. Placement of Cañas may have been intended to facilitate travel to the highlands, as it lies at a point in the valley where it curves and then begins to steepen. Cañas is directly across the valley from the modern-day town of Andahuasi, which like Quipico was originally founded as a hacienda during the Colonial Period (Ipinze Jordan 2005).

The last quebrada before reaching the modern-day town of Sayán is Quebrada Mani, which is approximately the same size as the quebrada of Quipico. The archaeological remains in this quebrada have been almost entirely destroyed due to both ancient flooding as well as modern-day agriculture. Several sites around the periphery of Quebrada Mani were assessed by the 2005 survey (Nelson and Ruiz 2005) as Early Intermediate Period or Middle Horizon. In the center of the quebrada, however, one small tapial compound survives (site PV41-512) that in style of construction, structure layout, and surface ceramics closely resembles Quipico.
The town of Sayán is the largest population close to Quipico, beyond the small pueblo of Quipico at the old hacienda. Sayán is approximately 675 meters above sea level and 52 kilometers from Huacho. It is at the point where two smaller branches (‘Grande’ Huaura River, and the Huanangui River) meet to form the main Huaura River and is where the valley drastically steepens and narrows, marking the beginning of what is considered the middle Huaura Valley.

**Down-valley (West) from Quipico**

If one travels down-valley (west) from Quipico, there is a multitude of archaeological sites along the entire route to Huacho and the coast (Nelson and Ruiz 2005). Quipico’s closest neighbor, only 1 kilometer to the west, is the site of San Geronimo (site PV42-493) located in at the mouth of the Pampa Desamparado and its associated quebrada. Although one might expect substantial architecture in the rest of this broad quebrada, there is little evidence of any archaeological sites, but like the other quebradas in the Huaura Valley, such evidence may have been obliterated by severe floods. San Geronmio is an extensive site of adobe brick, tapial, and stone walls that were likely preserved from flooding by its location along the eastern edge of the quebrada mouth, but in recent years it has been heavily damaged by the expansion of agricultural fields. Both Huaura Style and Chancay Black-on-cream sherds are visible on the surface, suggesting that this site may be a middle Late Intermediate Period site, contemporaneous with other sites in the valley such as Caldera or El Carmen (Ashley Heaton 2015).

Continuing west to the other side of Cerro Desamparado, there is a wide-open area of agricultural fields formed by Quebrada Tumaray and Pampa Santa Elvira. This
area is ringed along its edges by small sites from a variety of time periods. At the western base of Cerro Desamparado is a cemetery (site PV41-490) with Late Intermediate Period Chancay-style burials, although it is extremely damaged from looting. At the edge of Pampa Santa Elvira is located the site of Santa Elvira (site PV41-489), which looks very similar to San Geronimo with clusters of adobe structures and both Huaura Style and Chancay ceramics, placing this site as likely middle Late Intermediate Period. It was mostly destroyed by flooding and looters, making it difficult to see compound layout or define the original extent of the site. The main portion of Quebrada Tumaray is completely devoid of archaeological remains. It is possible that there may never have been many archaeological sites there, since this quebrada is very broad and is reputed to have been the most commonly flooded one in the area (Arturo Ruiz Estrada, pers. communication 2009). At the far western corner of this open area in front of Cerro San Luis is the site of Chambara (site PV41-182). There is very little visible architecture here and most of the area is dotted with rounded mounds formed of adobe melted by floodwaters. The parts of the site still visible despite the vast flooding in this area show evidence of rectangular-shaped detached tapial structures similar to Quipico in size and style, although little more than wall bases have remained and has been heavily looted. Attached to one visible edge of a structure is a small, low ramp, a feature which further corroborates the likelihood that this site dates to the end of the Late Intermediate Period and the Chancay presence in the valley.

Directly across the valley from Chambara is a site with no modern name (site PV41-462) that is late Late Intermediate Period in appearance. It is located on the top portion of a small ridge, known as Cerro Enemiga, which is on the north flanks of the
much larger Cerro Santa Maria. Cerro Enemiga also gives its name to the adjacent quebrada to its west. This site is composed of an extensive area of terraces and rectangular stone and tapial structures, with several small platforms. The compounds are not clustered and appear similar to Quipico and Chambara. Only plainwares and Chancay ceramics were visible on the surface; no Huaura Style sherds were present, which supports the designation of this site as at the end of the Late Intermediate Period.

Additional cemeteries and sites that may correspond to the Late Intermediate Period are located around the mouth of Quebrada Enemiga (site PV41-468, and sites PV41-470 through PV41-473) but they are heavily looted and eroded and have not yet been investigated sufficiently to more than tentatively associate with this time period.

*Considerations for Excavation*

At Quipico, structures and topography were mapped initially using GPS Trimble backpacks with handheld PDAs (Ruiz Estrada and Nelson 2007) [see Figure 3.16]. The details of this map, though useful for planning excavations, was not sufficiently detailed to examine the architecture, so the buildings were mapped again for this project using a Leica total station, assisted by Allen Rutherford and Ashley Heaton (see Heaton 2015:48-52 for a thorough description of technique). For excavation, each of the ten compounds and their immediate vicinities was designated as a sector/structure and assigned a letter (A-J).
Site Extent

The delineation of the extent of Quipico was fairly clear, due to the boundaries of the agricultural fields and the enclosure of the quebrada. However, there was an additional area just to the east of the main site [see Figure 3.17], which was not included as part of Quipico in the earlier Huaura Valley survey done by another project (Nelson and Ruiz 2004, 2005). Thus, it was unavailable for excavation for this project because the Ministerio de Cultura considered excavations at both to be a multi-site project for this area, which was not granted approval. Furthermore, this area was covered by the lúcuma tree orchard and the owner of these trees also did not want to grant us permission to excavate in the area, as he was afraid that it would damage the trees and his cement canal network. I was permitted to do surface examination of the area, including mapping and photography of the looters’ pits and canal cuts in the area. This area did not have any above-surface architecture and had very little surface scatter of artifacts. In one portion [see Figure 3.18], looters’ pits had exposed several thin brick walls, with large grinding stones and plainware sherds. Other sherds included roughly-smoothed orange or reddish-paste pottery with a cream-colored slip, which is suggested to be from the Early Intermediate Period (Arturo Ruiz Estrada personal communication 2009). In addition, from the 1940 SAN aerial photos (before the lúcuma trees had been planted) it is clear that no remains had been visible from the surface and the area had been completely undisturbed at that time. From these observations, it appears that these may have been burial chambers from an older occupation, covered over either intentionally or by time and floods. Thus, this area was not contemporaneous with the occupation of Quipico and these remains were likely subsurface during the Late Intermediate Period as well.
Issues Restricting Excavations

It cannot be emphasized enough that the preservation of cultural material at coastal Peruvian sites is exceptionally good due to the desert climate. All types of material are preserved, including usually fragile and perishable items such as botanical remains. It was clear from the looters pits in many of the structures, especially Structures B, D, and the upper areas of E, that many of the rooms had been filled with refuse in layers 0.5-1.5 meters thick. This refuse was very artifact-dense; when trash is used as construction fill for multiple layers of occupation over long periods of time, it makes the amount of material to be collected, analyzed, and curated very daunting. To serve as an example, the PICA 2007 Test Pit #1 (a 1x1x1 meter unit) recovered approximately 9.5 kilograms of botanical material alone, including entire corncobs, cane, and leaves. Excavation and analysis of the materials from one entire building—as done at the south coast site of Cerro Azul, an undertaking that required four field seasons of excavation (Marcus 2008)—would have been impractical due to constraints of time and funding.

Also, there were other indications that full-room excavations would have not been fruitful. From the examination of looters pits in these structures as well as corroborating information from both the PICA 2007 excavation (Ruiz Estrada 2007a) and the excavations at Chancay sites by Krzanowski (1991), it was evident that rooms were often cleaned out before their entrances were blocked up and they were filled with trash or abandoned completely; thus, it was incredibly unlikely that exposing an entire floor surface would have provided occupational-floor in-situ assemblages. In the structures most likely to contain complex information, such as Structures A, B, C, D, and E, holes
dug by looters had disturbed much of the original deposition—despite the relatively low amount of looting at Quipico compared to other Huaura Valley sites—which would have made complete structure excavation extremely difficult. Many of the floors had been severely damaged, both in the centers of the rooms and along the walls, which would have destroyed many key room features such as hearths or storage pits. It was originally considered that perhaps the one to two room structures of F, G, and I, as well as portions of Structure E, could be excavated in their entirety, since these areas were small and had not been filled with refuse. However, after completing a looters’ pit profile in one of these areas of Structure E (LP3) and examining structures F, G, and I in further detail, it was discovered that these areas did not have much of an adobe floor remaining. Unprotected by the trash, the exposed floors in these areas had been heavily eroded by wind and foot-traffic almost down to sterile or bedrock. This both destroyed any features that may have once been visible and deflated the area, which mixed the artifacts above and below the floors, making these areas unsuitable for excavation entirely.

Finally, the last justification for not excavating a structure in its entirety or even one complete room, rather than placing multiple units in various structures across the site, is the difference between the level of detail desired for this project. The intent of this project was to examine overall site function and general activities that occurred at Quipico, to understand the role the inhabitants of this site had in the larger Huaura Valley and Chancay network. The differing size and layout of the structures at Quipico was very suggestive that these individual buildings had likely served different functions. Considering the limitations that I have described above, the excavation of only one structure or room would have provided a very incomplete picture of the range of
activities that occurred at Quipico. I also had wanted to know the sequence of overall site occupation and growth—was this site constructed in one major building episode? Were the buildings simultaneously occupied? This information impacts our interpretation of the site’s placement and function (see Chapter 7 for further discussion). Instead, I decided that it would be most useful to spread the excavation units out across the site. This would provide data on the range of time a building was used, from its initial construction to its last occupation. I was also able to obtain an idea of the range of materials used across the site; since I could not identify refuse deposits as having originated from a particular building, by sampling the deposits across the site I could better control for the vagaries of deposition and preservation. I describe below the previous excavations that this project was based on, followed by the rationale for the specific placement of excavation units that I selected to obtain my information.

Information from Local Residents

One aspect of Quipico that first drew me to work at the site was its overall condition: the tapial walls are tall and in relatively good condition, very little flood damage is evident, the nearby agricultural fields do not seem to be expanding or have destroyed much of the site, and there is very little evidence of looting activity compared with the rest of the sites in the Huaura Valley. I was particularly surprised at the latter, since the Huaura Valley (and the Chancay Valley as well) has been a popular place for Limeños (residents of the capital, Lima) to dig for artifacts as part of a weekend or holiday vacation. Looters for profit are also common in the valley and are frequently drawn to Late Intermediate Period sites for the attractive burial goods. I spoke to one
huaquero that I encountered at the site of La Centinela near the mouth of the Huaura River, who said he had not been any further up-valley, instead remaining along the coastline for ease of access to the city of Huacho. Another looter that I met in Huacho, who claimed to only be taking broken sherds from looted surface remains to use as temper for making replicas, also said that he had not gone up-valley beyond the site of Rontoy. So, I had assumed that Quipico was simply too inconvenient for most looters or vacationers.

The main reason for the lack of looting, however, was revealed to me (along with other useful information in general about the archaeological site in modern times) after I spoke with three different groups of people who frequented the site: 1) the transient herders from the chauipyungas who brought their goats to graze on the nearby maize fields after harvest, often temporarily camping on the edge of the site; 2) the local residents from the small modern village of Quipico, located at the old hacienda a few kilometers away; and 3) the local farmer who had planted lucuma trees in the center of the site and served as a self-appointed guardian of it. All three groups visited my excavations throughout the season, and all made the same comments about the site—“why was I digging there?” They claimed that there was nothing ‘interesting’ to find there, only broken, burnt pottery and trash, and that if I wanted to find the ‘good stuff’ I should go to the adjacent quebrada to the west where the burials were. This corresponded with my initial surface survey and the excavations themselves. There are very few burials at Quipico and the majority of surface remains come from the thick layers of refuse that were used as construction fill, so the site has not appealed to looters. The local farmer-turned-guardian (who wished to remain anonymous) was also adamant about keeping
everyone (except archaeologists) off the site which also has likely kept looters away; he is uninterested in archaeological remains and merely wishes to keep his orchard protected.

The members of the modern village who came to visit several times claimed that one of their relatives had encountered many decorated ceramics in the adjacent quebrada while digging holes to plant his fruit trees, and brought be a sack full of whole vessels that they kept in their house. The majority of these ceramics were Chancay Black-on-White, and although I wished to photograph them or bring them to the local museum in Huacho, the owners would not permit me. They did, however, give me two vessels that were different from the rest—burnished red wares, likely from the Initial Period, which I discuss in Chapter 5 (see Figure 5.38)—which I have submitted to the Ministero de Cultura along with the rest of the PICA 2009 materials. Although there may not be much of the cemetery left, this information also opens up an avenue for future research in the other quebrada, with the possibility that the cemetery might be related to the former inhabitants of Quipico.

In addition, all three groups affirmed that, other than the center area where the lucuma trees were and the wandering of the goats, the site was not used by anyone in modern times. They also mentioned that the center area of the site occasionally has flooding during ‘very bad years’, but that it had not happened in their living memory; they had only heard about it from their older relatives. These comments were corroborated by the general condition of the site—very little modern trash, no recent evidence of flooding although some indication of it in the past, and a great deal of goat coprolites.
Previous Excavation at Quipico

In 2007, three test pits were excavated at Quipico by the Proyecto Investigaciones de Culturas Antiguas [PICA] (Ruiz Estrada 2007a; information here used with permission). The data from this excavation was useful in forming an initial understanding of the site. The following images [Figures 3.19-3.21] of the profiles were accompanied by level descriptions, although there was no key/legend for the drawings. The test pits (designated by the term Pozo/Pit rather than this project’s use of Unidad/Unit) excavated by PICA 2007 were:

- PICA 2007 Pozo 1: a 1.5 x 1 meter unit in the western-most structure of the site (Structure A); it is mid-sized in comparison to the rest of the compounds and has moderate deposition (approx. 1.5 meters) [Figure 3.19].

- PICA 2007 Pozo 2: a 1 x 1 meter unit in the center of a room in the most centrally located compound at the site (Structure B); it is very similar to Structure A in size and layout (as evident from current mapping) but has slightly shallower deposition (approximately 1 meter). This room is very similar in size and shape to the room in Structure A that PICA 2007 Pozo 1 is located in. [Figure 3.20]

- PICA 2007 Pozo 3: a 1 x 1 meter unit located in a large compound in the south-central part of the site (Structure C); it was in a small corridor with subdivided sections possibly used as a food storage area. Deposits are some of the deepest at the site here and due to the instability of the profiles, this unit was not excavated to culturally sterile levels. [Figure 3.21]
In each of these test pits, at least 3 distinct floors were found; the uppermost levels were AMS dated from three samples to a range of 1365-1405 A.D., confirming Quipico’s occupation during the latter half of the Late Intermediate Period (Ruiz Estrada 2007a; Nelson and Bellido Cerda 2010). Ceramic sherds in the levels for the most part correspond to Late Intermediate Period Chancay styles, but ceramics in lowest level were thought to correspond with the Initial Period or Early Horizon (Kit Nelson personal communication 2009).

However, the information from these units had to be considered carefully because the data was incomplete. The 2007 excavations had been plagued by the constant problem of units collapsing due to the loose and dry nature of the sediments, which obliterated some profiles before they could be drawn and mixed up artifact context (Kit Nelson personal communication 2010). In addition, the artifacts recovered from the PICA 2007 excavation were not analyzed beyond basic material type, except for ceramics. So, very little of the data obtained from these excavations was useable for more detailed analysis and interpretation. However, these units were extremely useful as a starting point for this project’s excavations. Since the number and depth of floors were already known in these units (Ruiz Estrada 2007a), they were used to guide excavation of larger areas.

For the PICA 2009 excavations for this dissertation, the backfill from the previous excavations was removed to relocate the profiles and the floors. The original intent was the expansion of areas from the PICA 2007 units by in the direction of the compound walls to expose a greater area of that particular room. The exposed profile of the original Pozo was to be used as a guideline for the larger excavation area; as the cultural layers were already known, they could be used when excavating the adjacent unit to speed
excavation. Any data from the new unit excavation could be combined with the previous 2007 data to aid in interpretation. This was especially important since none of the 2007 pits were excavated adjacent to any walls. Thus, the association between the adobe floors encountered during the 2007 excavation and the walls of the structure was completely unknown. It was the intent of this project’s unit expansions to expose the floors against the walls so that their relationship (whether or not the floor passed below the wall or abutted it, for example) could be determined, which would provide a better understanding of the sequence of construction of the compounds. It would allow expose a greater area of the floor in order to identify any features or deposits of the room that might give an indication of what activities occurred in the room.

This original plan had to adjusted slightly in the case of both Pozo 1 and Pozo 2. After removal of the backfill and profile collapse, Pozo 1 was discovered to be entirely surrounded by interior walls except for the extremely looter-disturbed southern edge, making expansion following the profiles impossible. The new unit was then placed on the other side of the west wall exposed by the collapsed profile of Pozo 1, to see if the floor levels on the adjacent room were the same as those found originally in Pozo 1. It was also impossible to use the profiles of Pozo 2 in Structure B as a direct guide for excavation because looters had dug out Pozo 2 and expanded it themselves into a roughly 7 meter$^2$ area. This did, however, have the benefit of exposing a previously unknown wall, so the new excavation was placed in the small corner of the area that had not been destroyed by the looters to see what floors corresponded to this wall.
The information from these units was used to inform the excavation of the expanded areas as well as new units at the site for the 2009 PICA excavations done for this dissertation; the following chapter describes the excavation plans and results.
CHAPTER 4: EXCAVATIONS AT QUIPICO

Overview of PICA 2009 Excavations at Quipico

For this project, four new excavation units were placed at key locations within three of the seven structures to expose specific architectural features, trace wall connections, confirm doorways, and recover artifact assemblages. The overall intent of these units was to focus upon known architectural elements that could enhance understanding of structure layout and use for those particular structures. In addition, eight looters’ pits [LP] were cleaned and profiled; this allowed for the collection of more information with less invasive methods. Excavations at Quipico were focused particularly in those adobe compounds suspected to be elite residences (Structures A, B, and C) or administrative centers (Structures C and E).

Looters’ Pit Profiles

Looting is quite frequent in this region of the coast, having been practiced as a pastime for centuries, and although Quipico has not been as heavily looted as most other sites in the Huaura Valley due to its apparent lack of burials, there are still many looters’ pits present. Looters will rapidly dig large, deep holes in an area in an attempt to find burials, in particular looking for metal, intact ceramics, and colorful textiles that can be sold on the black market to tourists as well as serious art collectors. Broken or unwanted items, body parts, and soil from this digging is tossed into large piles next to the hole,
which is left exposed to the elements. Looters will often cover an area with adjacent holes, tossing the soil out of one and over in to another. Over a short amount of time after looting, the wind and weight of the sediments will cause the edges of the hole to deteriorate and collapse in, partially refilling the hole. From aerial photographs, these repeated pits give the surface of an area a pock-marked appearance, much like the surface of a golf ball. As tragic as these looters pits are, they can be a valuable source of information and have been utilized by archaeologists to maximize an understanding of a site’s stratigraphy (Flannery 1976:68-71; Heaton 2015: 53-54; Nesbitt et al. 2010). In an area where looting is so ubiquitous as to hardly leave a square meter undisturbed for excavation, examining the already-exposed profiles can allow us to obtain information in areas of the site that otherwise would not be suitable for excavation. Also, as previously mentioned, preservation in the region is so good that it is difficult to open up large units without obtaining an enormous amount of artifacts that must be analyzed and curated, which limits the size of profiles that we can obtain from excavation alone. Finally, the Ministerio de Cultura, which is the government agency that grants archaeological permits in Peru, prefers to minimize the scale of excavations by small projects so that excavations are completed in a timely fashion; they also have a restricted amount of official space for storing these artifacts after the completion of a project, so they prefer that the amount of materials they will need to house is small. So, in the case of Quipico (and for other central coast sites as well, see Heaton 2015 for a detailed discussion of her use of this method elsewhere in the Huaura Valley), excavating looters’ pits was a well-suited method.
Based on this rationale, for this project’s excavations eight looters’ pits were examined located in Structures A, B, C, D, and E, following a method similar to that described initially by Flannery (1976). First, the pit itself was cleaned—all of the loose soil and discarded materials from the looting activity was removed and screened. Although the artifacts from this disturbed fill lack specific level context, they are still valuable for analysis because they provide general information regarding activities in that area of the structure. The pit was only cleaned to the maximum extent of what the looters had dug out; no additional excavation was done, no new undisturbed areas were removed. This did limit our ability to see the full extent of site occupation and construction in some areas, since if the looters themselves had not reached sterile layers, neither could we.

After the pit was empty, the best side of the pit was chosen for a profile, and sometimes more than one side was profiled if possible. This was determined by the length, depth, and stability of that side, as well as the location of the pit in the room.

Since the edges of the pit were uneven, we had to create a straight wall that could be drawn as a clear profile. First, we set up a straight guideline on the surface, slightly set back from the edge of the pit on the side we intended to profile. Then, the edges and side of the pit were scraped with a trowel, cutting back into the side of the pit to create a flat, vertical profile suitable for drawing. This was done in the manner of straightening a unit profile, familiar to most archaeologists. Any materials from this were also collected and combined with the general pit fill, since they also became without context during this procedure. The profile was then drawn and the different levels examined to see the construction and depositional sequence in that area. The looters’ pits chosen for profile were ones from pits that were large, deep, and in locations that had the most likelihood of
encountering features that may indicate the function of these rooms. For example, LP1
was composed of two connected looters pits, creating an over 2 meter long profile, which
was centrally located in a large room in Structure C; visible in the profile of this pit was a
hearth. The data from these looters’ pits was used to supplement the information obtained
from the excavation units.

*Excavation Units*

A total of seven excavation units were placed across the site in Structures A, B, C,
and E. Structures F, G, H, I, and J were not excavated; see their descriptions below.

The intent of these units was to: 1) examine the association between wall
construction with different occupation levels, in particular the adobe floors; 2) confirm or
reject the presence of several entryways; 3) obtain samples for radiocarbon to date the
initial construction of each building. Most units were limited to 1x1.5 meter size due to
the considerations of permits and preservation described above. All units were excavated
to bedrock or sterile, non-cultural layers. In the latter cases, an additional 0.5 meter was
excavated to ensure that these layers—usually thick deposits of water-deposited
sediments likely from flash-floods—were not simply obscuring older occupations even
further below the surface. This was corroborated by Unit 6 and LP1, both of which were
2.5 meters or more below the surface and did not have any evidence of cultural remains
at that depth. Additionally, the canal cuts at the southernmost edge of the site also were
over 2.5 meters deep (3 meters in some places), and in their profiles, the thick layers of
water-deposited sediments lay directly on top of bedrock. Thus, although it is quite likely
that this quebrada once contained evidence of pre-Late Intermediate Period occupations
(as suggested by the buried possible Early Intermediate Period remains to the west and the various early-Late Intermediate Period yellow-painted adobe bricks found at the site), these were likely completely wiped away by flash-floods caused by El Niño events. Hopefully, future projects will be able to more precisely identify when these events occurred.

**Methodology**

All excavations were a combination of natural/cultural layers or artificial layers, depending on the context. When natural and cultural layers could clearly be determined in the excavation, they were used as the principal horizontal control for the unit excavation. When the natural and cultural strata could not be determined or if they exceptionally thick, the layers were then divided into artificial levels of up to 10 centimeters each in order to maintain an adequate control of the vertical data collection. For example, some of the stratigraphic layers in Unit 6 were composed of very thick trash fill to build up volume as part of construction; these layers were excavated in 10 centimeter increments so as to maximize recorded information.

As per standard excavation procedures, each level and feature received its own number for recording purposes, and all were drawn and photographed (see original Ministerio de Cultura excavation report, PICA 2009). All of the material was passed through a 6.35 millimeter mesh screen for artifact recovery. For each level and feature, two liters of the excavated material that passed through the screen was retained. One of those liters was fine-screened through a 3.175 millimeter mesh screen to examine for microartifacts and seeds, while the other liter was kept and turned in to the Ministerio de
Cultura in case of future analyses. For every adobe floor encountered during excavation, a piece of adobe was kept (~ 100 grams, approximately 10x10 centimeters) for the compositional analyses [as described in Chapter 7 on architecture]. Artifacts recovered were washed (except for botanics and bones), dried, counted, and weighed, then stored in cloth drawstring bags (plastic for botanics, carbon, textiles, and bones) for further analysis.

**Details of Excavations at Quipico**

A total of seven excavation units and eight looters profiles were excavated, covering a total of five of the ten sectors at Quipico [see Figure 4.1 for new structure map, made in 2009]. These five were the best-preserved structures at the site. The units and looters pits profiles were distributed throughout each structure in rooms of similar size, shape, or location in order to best compare them; for the specific rationale behind unit or looter profile location, see the following individual descriptions.

For the following unit and looters’ pit descriptions, I have summarized the results of the excavations, starting from the lowest layers up to the surface. I have not detailed the individual levels nor all of the data collected (for example, Munsell colors, exact depths, soil consistency, etc) in the interests of brevity and the utility of this information for understanding the site overall. This data is provided for detailed examination in the site report (Informe) provided to the Ministerio de Cultura de Peru, which I will provide an electronic copy to anyone upon request.

Also for purposes of interest and summary, I have not listed the individual artifacts found in each level or unit. There was overall consistency in deposits across the
site—surface levels were similar in appearance and contents, and the artifacts present in trash fills covered the same range of types (ceramics, lithics, osteological materials, botanics, shells, carbon). For the individual level information, see the Informe (PICA 2009), which contains the raw data for the excavations, and Appendices A-C for the individual artifact types. Instead, I have pointed out when unusual, meaningful patterns were noticed for a unit, and what this information means regarding activities in that area.

*Structure A* [Figures 4.2 & 4.3]

Only one unit (U7) was excavated in Structure A. Much of the structure was heavily eroded, especially around the perimeter of the building. Thus, this unit was placed in the central area of the structure, which had the least amount of damage. The main intentions of this unit were to provide a basic understanding of the construction sequence of the central core of the structure and obtain a radiocarbon date for the initial building.

*Unit 7* [Figures 4.4 & 4.5]

Unit 7 was a 1.4x2.9 meter unit that was located across the northern end of a room in the middle portion of Structure A. This unit was extended out from the west side of PICA 2007 Pozo 1 in order to provide a profile across the entire width of the room. Although the original Pozo 1 excavated in 2007 had encountered several floors, the unit had collapsed before sterile was reached and it had not been placed adjacent to any walls of the room. This meant that no correlation between floor and wall construction could be made, so that is why U7 was opened. The excavation for this unit was originally intended
to use the stratigraphy from PICA 2007 Pozo 1 to guide identification of cultural layers. After removing the surface wall collapse and removing the Pozo 1 backfill, however, it was discovered that the west edge of Pozo 1 was only several centimeters away from an adobe wall that bisected the room perpendicularly. This wall had not been visible from the surface, unlike the larger walls creating the main room periphery. Even though Pozo 1 had not reached the depth corresponding to the base of this dividing wall due to the unit collapse in 2007, the lowest floor of the U7 did pass below this dividing wall, indicating that the floor going across the main room was constructed first and then the dividing wall was built. Also, the excavation levels from U7 were roughly consistent with the layers in Pozo 1, despite being located in what were actually two separate rooms. Considered together, this indicates that this area of the structure was remodeled approximately at the same time.

The lowest levels of the unit likely correspond with the original construction of Structure A. A thick (~6 centimeters), very pitted and cracked adobe floor was built on top of a natural, hard surface composed of layers of wind and water-deposited sediments. Although no bedrock was reached, these culturally sterile layers were over 0.5 meter deep and the overall unit depth (approximately 2.75 meters) correlated with the level of the ground surrounding outside of the structure. Both the North wall and the East wall were built directly on top of this floor. Radiocarbon sample UGa-11325 was obtained from between the floor and the East wall and dated to AD 1410-1448, indicating that the initial construction of the building occurred at the very end of the Late Intermediate Period/beginning of the Late Horizon. A second adobe floor (also very thick) was placed on top of the first, and this floor abutted both the North and East walls, indicating that it
had been built after wall construction, perhaps to replace the damaged initial floor [Figure 4.6]. A third and fourth floor lay immediately on top of these floors, with the uppermost floor being the most damaged of all four.

The room had then been filled with several layers of trash and construction material for 60-80 centimeters; this fill consisted mostly of pieces of adobe, broken wall fragments, different sizes of gravel and loose rock, as well as lithics, sherds, and botanic remains distributed evenly throughout the level. The top layer of this fill was much more compacted and composed of mostly adobe compared to the earlier layers of the fill and can be interpreted as a poorly preserved floor. It abuts both the North and East wall and served as the foundation for the West wall [Figure 4.7]. This resulted in a more open room structure for this occupation, and the North wall could have acted as a threshold for room entry. On top of this compacted floor (yet not formally plastered) was a thin layer of wall collapse, some artifacts, especially red-brown burnished plainware and orange-pasted yellow-slipped sherds, and a small informal firepit that had very few identifiable remains. This can be interpreted as when the structure was last occupied, it was much more open in layout. The presence of olive pits in the uppermost levels indicate that this likely dates to the Colonial Period, since olives are a crop which was introduced to the region only after the Spanish arrival. Also, level 3 contained lenses of sugar cane ash (another post-contact introduced crop), and it was during that time that the hacienda at Quipico operated as a sugar mill. It is doubtful that these layers are much more recent than that because the production of sugar cane in the immediate vicinity of the site during later periods was abandoned in favor of growing corn. The initial surface had been
covered by wall collapse and wind-deposited sands, accumulated after the final site abandonment near the end of the Colonial Period.

*Structure B* [Figures 4.8 & 4.9]

Three units and two looter pit profiles were excavated in Structure B. The large room on the west half of the structure was not filled with trash and the surface of the floor was heavily eroded, so that portion of the structure was unsuitable for excavation. Thus, the units were concentrated in the eastern and southern half of the structure where there was the most deposition and the most room divisions. The units were spread out to examine multiple rooms and along with LP8 were associated with Feature 13, a long sub-surface interior tapial wall that was initially observed in the looted area of Unit 4. The top of this wall was then traced along the surface by brushing away the thin layer of coprolites and wind-blown sands to see how long it was; the wall ran just under the surface all the way from the northernmost external wall to the southernmost external wall of Structure B. As the wall approached the southern wall of Structure B, it was visible above surface and served as the western wall of the southeastern room of the building; it had not originally been realized that this wall corresponded to the wall seen in Unit 4. This was due to the overall slope of Structure B. This wall served as the anchor by which to compare the different levels across the structure, providing a clearer picture of structure occupation than otherwise would have been obtained.
Unit 4 [Figure 4.10, 4.11, and 4.12]

Unit 4 was excavated in the center of a large room in the northeast portion of Structure B. Originally, this unit was to be an expansion of a previous PICA 2007 test pit (Pozo 2) towards the east to see the relation of the floors with the east and south walls of the room, which would cover most of the southeast corner of that room. Upon arrival to the site to begin excavations, it was discovered that the original 1x1 meter backfilled Pozo 2 had been dug out and expanded by looters to an area of 3.5x3 meters. Most of the southeast corner of the room had been disturbed. In the process, the looters had exposed a tapial wall (Feature 13, described above) not visible on the surface.

Since there was no longer an intact profile from Pozo 2 to guide the excavation, the wall was used as the west edge of Unit 4 and the small, irregularly shaped area that had not been disturbed by the looters was excavated. Thus, the original intent of this unit was changed instead to identify the relationship between this new internal wall and the different floor constructions over time. It was also still possible to excavate the unit down to non-cultural layers to identify the initial construction of Structure B, which the original Pozo 2 had not done. The area of Unit 4 that was excavated was an irregular shape, so to create a useable profile, the northeast corner of the unit was made a right angle; thus, there is only an East profile (2 meters long) that runs along the exposed interior wall, and a North profile (1.5 meters long). The total area actually excavated was approximately 1.25 meters$^2$.

The original construction of the building does not correspond with the first cultural layers in Unit 4. The base sterile levels were composed of alternating thin, uneven, and loosely compacted lenses of fine gravel and sand without artifacts, which
appeared to have been deposited naturally by the actions of wind and water. This was visible from the start of the excavation of this unit, because the looters had dug down to this depth in their search; it was almost 2 meters deep and was at nearly the same elevation as the surrounding terrain. Upon this initial surface were several layers of semi-compact sand and fine gravel that also contained artifacts; these ceramics are mainly undecorated utilitarian wares. On top of this was a smooth sandy surface which contained a firepit. Only part of the firepit was visible, since it extended both into the area that the looters had destroyed as well as into the profile [Figure 4.13], which could not be expanded otherwise it would have undercut the wall that formed part of the west profile. Closer to the surface the west profile of the unit was a wall. The firepit was oriented N-S and was not a formal lined or edged hearth and was very shallow. There were three loosely laid adobe bricks that ringed a portion of the firepit, which all had the characteristic pinkish yet sooty color of burnt adobe. Associated with this firepit was a large quantity of ash and burnt materials: plant fibers (most identified as building cane), animal bones, a few ceramic fragments, seeds, and coprolites (identified tentatively as guinea pig).

Above the firepit, numerous layers (approximately 6-7 centimeters each) were stacked in order to build a lever surface for a floor. From lowest to highest, the gravel gets finer, with more sand and fewer, smaller artifacts. An entire range of archaeological materials was recovered from these layers. The level was capped off by a layer of almost pure sand; this construction technique allows one to make a smooth, flat surface on top of which an even adobe floor could be poured. The floor was durable and well-preserved
Figure 4. It passed just under the interior exposed wall (Feature 13), so they were likely built in the same construction episode.

The joint between the wall and the floor was not a sharp corner, but was instead a slope of poured adobe. It is unclear whether this was from erosion and wall slump, or if this adobe had been added intentionally as a repair or reinforcement. Directly on top of the adobe floor was a very thin, compact layer of plant materials, mostly consisting of fiber, wood, and thin flattened pieces of building cane. This mesh-like layer was likely either matting for the floor or collapsed roofing from above. On top of the fibrous mat was a loose gravelly layer with an abundance of artifacts, including ceramics, animal bones, and lithics. Surprisingly, covering this was a thick, loose, and uneven (1-9 centimeter range) layer of almost entirely plant materials, which have been identified as various parts of the pacay tree (leaves, stems, flowers, and partial pods). This appears to have been the last intentionally deposited level in this area; on top of the pacay were several additional layers of windblown sand and a small number of sherds and lithics. At the upper part of this stratum, the sediments were more compact and created a fairly even layer that likely served as a walking surface. Further compacting this was a layer that had a large amount of animal coprolites and hair, tentatively identified as llama. The upper levels of this unit, like Unit 7 in Structure A, were composed primarily slumped adobe from erosion and wind-blown sand, with a large amount of sugar cane ash.

Unit 8 [Figure 4.15 & 4.16]

This was a 1x1.5 meters unit located in the southeastern-most room of Structure B; the east and south walls of the room formed part of the exterior of the structure. The
west wall of this room is the one mentioned previously in regards to Unit 4 (Feature 13); this room, unlike most of the rest of the building, had not been filled with layers of construction fill or refuse. This room was almost entirely intact, without looters’ pits in the room and with only a small amount of erosion in the southeast corner and along the south wall. Due to this, the unit was placed in the northwest corner of the room—it was adjacent to the north and west walls of the room. This unit was excavated to identify the relationship between the floor in this room compared to the wall as well as to the level of the area outside surrounding Structure B, and to identify the original construction of this room. Since the east and south walls of this room were part of the long, thick, and tall exterior walls of Structure B, it was clear that the floor corresponding with these walls would be from the initial phase of construction.

The unit was excavated down to sterile, which was composed of alternating compact layers of different gravel sizes and sand that were deposited by wind or water movement; especially suggestive of some flooding event is the high amount of salts in the uppermost layers of sterile. Salt deposits would have formed from the drying of pools of water, as the floods would have pulled the salts out of the overall area (originally from the salt-heavy air from the proximity to the ocean) and redeposited them. For initial construction in this area, layers of coarse gravel and artifacts had been built up in varying grades to gradually level the area out to provide an even surface on which the adobe floor could be poured. Adhering to the bottom of the floor were many artifacts, of which the majority were plant materials (especially the stalks and leaves of maize), perhaps to provide a matrix for the adobe to adhere to. The level immediately under the floor was of finer sand and gravel, and as the layers go deeper the gravel becomes coarser and more
artifacts and small rocks are present, to a total of approximately 15 centimeters thickness above the non-cultural level.

This method of floor preparation resulted in a compact, smooth, even, and well-conserved adobe floor [Figure 4.17]. The thickness of the floor was uniform across the level and was approximately 7 centimeters thick. The bases of the north and west wall of the room correspond with this floor. Again, the seam between the west wall and the floor was not an even crease; it was sloped with adobe. The north and the west wall do not overlap or vary by level at all and the north wall abuts the west wall, indicating that the walls were both built as part of the same construction episode (likely also when the floor was built) and that the western wall that runs the entire N-S length of the structure was built first. Unlike most of the other rooms in this structure and across the site, this room was not filled with layers of trash. Despite this, the floor was intact across the unit and the room except for the SE corner and against the middle of the west wall, attesting to the strength and durability of this floor’s construction. Immediately covering the surface of this floor was a layer of compacted sediments composed of coprolites and animal hair. Interestingly, many of the coprolites were from guinea pigs as well as llamas (see following chapter re: coprolite identification), unlike what was seen in Unit 4. The surface layer was mostly wind-blown sand and loose material from looter action in the adjacent rooms.

**Unit 9** [Figure 4.18 & 4.19]

Unit 9 was placed in the corner where Feature 13 (the long wall previously mentioned for Units 4 and 8) abutted the north wall of Structure B; it was on the west
face of the wall, rather than the east face (like U4 and U8), to provide information regarding construction sequence on that side of the wall. Unit 9 was also intended to test a possible entrance on the northernmost outer wall of Structure B. The unit was initially 1x1.5 meters to uncover the top of the wall (Feature 13) so as to determine its thickness in this area of the structure. After the top of the wall was exposed, the dimensions of Unit 9 were reduced to 1x1 meter.

The initial construction of this area was placed on top of the natural layers of flood-deposited sand and gravel as described for the previously mentioned units. A thick layer of loose gravel and sand mixed with trash was used to provide a level surface. The east wall of this unit (Feature 13) was built directly on top of this level. Then, an additional layer of loose sand and trash containing a large quantity of plant materials (in particular cane and maize stalks) was placed on top of this surface, and a low adobe brick wall (2 adobe bricks tall, with little mortar) was part of this level; this coincidentally formed the west wall of the profile. The low quality of construction indicates that it may have served as a retaining wall for construction fill. Numerous chunks of broken and burnt adobe with cane impressions and holes in it were also part of this fill. These were likely once the foundations of quincha architecture, but it is clear from their deposition (they were found inverted as well as sideways) that they were not in-situ. This indicates that they came from elsewhere at the site or nearby, perhaps a structure that had burnt down, and the rubble was deposited here to serve as the foundation for the new building. It is likely that the bricks for the retaining wall had also been reused from elsewhere, as they were considerably damaged.
On top of this fill was an adobe floor which would have served as the main occupational level for the structure; the floor passed above the adobe brick retaining wall, abutted the east wall of the Unit (Feature 13), and corresponded with the base of the main north exterior wall of Structure B. At the seam of the floor and the north wall was a thick patch of adobe that had been used as a cover or repair for a large hole. It had been pressed into place, evidenced from a hand and several footprints still visible on the surface of the patch [Figure 4.20]. This hole intruded into the north wall and passed below the adobe floor of the unit and had been made by a rat; this was revealed during excavation, when we found the rat’s nest in the construction fill under the floor and the desiccated corpse of the rat itself, who had been trapped in the hole by the adobe patch. It is an amusing case of ancient pest control techniques. On top of the floor was the same layer of coprolites and animal hair (again, tentatively identified as llama) as observed in Units 4 and 8. The surface layer was composed mostly of large sections of wall collapse and fine sediment from eroded adobe. After removal of the wall collapse covering the surface, it was clear that the opening in the north wall was not an original entrance, but where it had been damaged by natural forces instead.

**Ramp** [Figure 4.21]

Located along the northeast corner of Structure B, where two of the major exterior walls intersect—or more precisely where the northernmost wall of the structure should intersect the easternmost wall—is an entrance and a heavily eroded ramp. The north wall of Structure B extends 2m further than where the eastern wall begins, and the ramp abuts this extension and is along the side of the east wall. The east margin of the ramp was not
intact—it was heavily eroded and appeared to have been cut into by the action of floodwater; this allowed an examination of the construction of the ramp without the need for excavation. The surface of the ramp is thick adobe that was placed on top of a level of fine gravel and sand (14 centimeters thick), which was itself on top of a second layer of thick adobe on another layer of gravel and sand. The top layer of thick adobe corresponded with the adobe floor of the entrance to the structure.

Mid-way along the ramp was a posthole with a pointed, shaped stump of a wooden post still present, which may have been used to support some sort of roof or mat shade for the entryway [Figure 4.22]. Similar to the rest of the structure, there was a layer of llama coprolites and hair on top of the ramp. The top of the ramp and entrance to the structure had been filled with adobe bricks; they had been deposited *en masse*, rather than having carefully bricked up the entrance [Figure 4.23]. It is clear that these bricks were intentionally placed in the entrance, rather than having been from wall collapse, because all of the nearby walls were tapial, not brick.

**Looter Profile #7** [Figures 4.24 & 4.25]

This looter pit (approximately 2.5x1.5 meters) was located in a rectangular room in the southern portion of Structure B; this is the same room as LP#8 was located in. The finished west profile was approximately 1.6 meters long and connected to a wall, so that the relation between the wall and any floors present in the room could be observed. The looter pit did not reach sterile (only 1.1 meters deep), so we could not identify the initial construction of the building in this area. The lowest level of the profile contained loose gravel and a high quantity of artifacts, many of which had been partially burnt. Above this was a very thick layer (10 centimeters) of fine grey ash that extended across the
entire length of the profile and appeared to have been continuous under the floor; this ash was mostly homogenous with very small artifact remnants in it and no sand or sediments. The excavated portion of this ash was fine-screened and the ash itself was analyzed microscopically.

This analysis determined that the ash was organic in nature (not volcanic, which was a possibility considering the close proximity of a volcano in the northern ridge of the Huaura Valley) and likely formed from the burning of trash; it must have been a high-temperature event, since the remains were broken down to very small sizes. The fine-screening recovered a high number of plant remnants in the ash and almost no other artifact types, which suggests that although the layers below the ash had a mix of gravel and many artifacts, that this uppermost layer that was burnt was mostly plant material. This burning must have occurred before the construction of the structure, since the adjacent wall did not show any of the characteristic signs of heated or burnt adobe. It is possible that this trash pile was intentionally burned for sanitation purposes. What is surprising is that this degree of burning is not evident anywhere else in the area. When combined with the information from the architecture composition analyses [Chapter 7], this suggests that perhaps a portion of the trash was burnt to produce a large quantity of ash, which was then used for mixing with adobe for the floors; when enough ash had been used, the rest was left where it was and then covered over by the floor.

The adobe floor on top of the ash corresponds with the base of the wall. Four layers of loose gravel and trash alternating with three layers of almost pure botanics were placed on top of the floor. Above this were sand and varying sizes of gravel that formed the foundation for another adobe floor. Eroded adobe from the wall with a few artifacts
was in a layer above this, with a semi-compact surface of adobe and coarse sand on top. This surface had likely been an occupational surface of some sort during the time that llama were using this area, since there was a layer of animal coprolites, hair, and small plant fragments on this semi-compact surface similar to the level described in the other areas of Structure B. A thin lens of wind-blown sand was on top of this level, forming the modern-day surface.

Looter Profile #8 [Figures 4.26, 4.27, & 4.28]

This looter pit was located in the same rectangular room as LP7, against the north wall of the room and extending to the east wall (the wall is Feature 13, discussed in previous units). This profile was directly across and parallel to the north wall; it was cleaned to see if the levels seen in LP7 extended across the entire room (in particular the layer of ash), to uncover the north wall for closer examination, and to determine how the north wall connected to the east wall (west face of Feature 13).

Upon removal of the debris from looter activity, it was discovered that the looters had dug about 10 centimeters below where the floor would have been, but had not reached sterile. No ash or direct burning was evident in LP8 such as seen in LP7, although there were many burnt ceramic fragments and pieces of charcoal fragments in the gravel and trash of the lowest level exposed. The adobe floor visible in the profile had been on top of this layer and corresponded to the construction of Feature 13 and to the north wall of the room. When the north wall was exposed, it directly abutted the east wall (Feature 13). The irregularly shaped area turned out to be a corner; about midway along the north wall, an additional wall course had been built parallel and butressed against the
north wall, creating a ‘zig-zag’ or small corner for the room. This buttressing wall then continued to the west, although the connection between it and the west wall of the room was not exposed by the looters and so could not be excavated.

In this north corner, a layer of trash and gravel was on top of the floor, and then another floor was placed on top and the parallel extension of the north wall was on that. Although the central section of this area had been destroyed by the looters, it appears that the north wall and east wall (Feature 13) had been built first on top of the adobe floor. Since the area has an overall downward slope, an additional layer of fill had been placed over the north part of the area and capped by another layer of adobe floor with the wall extension on top of that. Thus, the upper part of the floor sloped downward very slightly, while the lower main floor sloped slightly upward, and the two joined to create one level floor as evidenced in LP8. This slope would have been hardly noticeable when intact and would have made movement in this area much easier.

The rest of the layers are levels of loose gravel and artifacts alternating with levels of almost pure botanics, as described for LP7. Above these was a layer of compact and semi-compact adobe, which is likely the heavily eroded remnants of the adobe floor noted in the upper levels of LP7. The upper layers exhibited in the rest of the structure, such as the compacted surface with llama coprolites on top, was not present in this profile, nor was there much wind-blown surface sand either. It appears that this area is heavily eroded due to recent foot traffic, since it is an easy pathway point for walking through the structure.
Structure C [Figures 4.29, 4.30, 4.31, & 4.32]

This structure is divided into multiple rooms with two major concentrations of rooms; one is the northwest area of the structure, and the other is the southeast area of the structure. Excavations in this structure were originally focused upon areas thought to be storage-like based on their narrow shape, lack of access/exit, and some internal brick dividing walls (Andrews 1974); although upon excavation these were determined to not have been storerooms during the Late Intermediate Period occupation of the site.

Unit 5 [Figures 4.33 & 4.34]

This 1x1 meter unit was placed in the far northwest corner of Structure C, in a corridor suspected to have been used as a storage area, although it did not contain the adobe brick dividing walls that were visible upon the surface near Unit 6. Upon excavation, it was clear that the area had not been used as a storeroom during the time as the storeroom in Unit 6, which dated to the Colonial Period.

The lowest levels of this area, like those examined in Structure B, lay on top of culturally sterile layers of water-deposited sand and small gravel; these layers were composed of gravel, indistinctly formed chunks of adobe, and a large quantity of evenly-distributed artifacts. A thin layer of plant materials (mainly pacay) lay on top, and was itself covered by more layers of gravel mixed with artifacts. Above this were three successive layers of semi-compact soil (with very thin lenses of fine gravel separating them) that were likely informally constructed occupational-floor surfaces. The middle floor was associated with a small, thin area of ash containing carbon, burnt seeds, and charred fishbones.
Another thick layer of gravel, small rocks, and artifacts was used to cover these floors and level the area for the construction of a compact adobe floor similar in appearance to the rest of the floors at the site. Some point after the use of this floor, it was covered with layers of domestic trash containing large pieces of adobe with cane impressions in them. Like the ones observed in Structure B Unit 9, these pieces exhibited signs of being burnt and tossed in to this area (i.e. they were not in-situ wall bases, since many were inverted or on their sides) [Figure 4.35]. This fill was capped off by another adobe floor, which was eventually covered by surface layers of wind-blown deposits, pieces of collapsed wall, and sediment eroded from the surrounding adobe walls. Also in these upper layers was the same cane ash visible near the surface of Structure A (Unit 7) and Structure B (Unit 4).

**Unit 6** [Figures 4.36, 4.37, & 4.38]

This 1x1.5 meters unit was excavated to 2.7 meters, which was very deep considering the loose, sandy nature of the layers and the danger of unit collapse. It was not possible to expand the unit out horizontally to account for the depth, because it was restricted on both sides by the hallway. The bottom of the unit did reach the same culturally-sterile layers of sand and gravel observed for other structures. Above sterile was a layer of loose, very fine gravel and sand containing artifacts, used to create an even surface for a thick, compact adobe floor that corresponded with the north wall of the hallway. The adobe floor that was associated with the south wall of the hallway was 0.6 meter higher, which indicated that this area was initially part of a larger room, and the south wall was added in a later occupation to create this hallway.
Above the lowest floor associated with the north wall were successive episodes of renovation; a layer of gravel, sand, and artifacts was spread out, and then a new adobe floor was made. This occurred four different times; although the floors themselves were not preserved across the unit, they were still witnessed by the slope of adobe attached to the north wall at the level of the floor. After the fourth renovation, the south wall was built. Several interesting construction features of note were that: 1) below each floor surface was a thin layer of fine gravel and sand, which would have been easier than gravel to smooth and level off to create a flat surface; and 2) that a large crack in the south wall had been repaired by pouring thick liquid adobe down the gap, as evidenced by a small pool of adobe that had settled at the base of the crack.

Three layers of large gravel, sherds, lithics, and shells were placed on top of this floor. These levels were extremely loose, often eroding the profile of the unit. There were very few plants, charcoal, bones, or general sediment present in these layers. Most of the ceramics were heavily eroded and upon analysis were identified tentatively as Initial Period or Early Horizon. However, the presence of Chancay Black-on-white sherds in these layers confirms that they date to the main occupation of the site. These characteristics of the deposit suggest that this material was obtained from another area, perhaps even off-site, and brought in to use as a rapid, easily obtainable, stable construction fill (see further discussion in the following sections). Another adobe floor was placed on top of this fill above a finer level of sand and small gravel, which had been used to create a flat surface first.

The dating of this final construction episode is likely post-contact. The hallway was divided into small square rooms by adobe brick and mortar walls that cut
perpendicularly across the space. One brick in this wall had yellow plaster on one side, which did not correspond with the face of the wall. Thus, this indicated that the brick had once been in place elsewhere at the site, where it originally been part of a painted plaster wall, and then had been removed and used to construct the storeroom.

Two small pits were dug in the corners of the storeroom [see Figure 4.39], an offering was placed inside; they were sealed over with adobe and then the storeroom was used. In one of the pits was a small cache of feathers, identified as Anatidae (duck). The other pit contained maize kernels and wheat grains [Figure 4.40], and wheat was not present in the Americas until after Spanish contact. A sample of the wheat grains (UGa-11096) was radiocarbon dated to determine how late post-contact this area was reused, and the results were from between AD 1460-1626; interestingly, this traditional Andean ritual was done despite the fact that most inhabitants of Quipico were likely formally confirmed by the church by that time, and that there was a priest in-residence at the hacienda with the chapel built there sometime during the mid-1600s (Dunn 2012; see Appendix F for further discussion). After at least one remodeling and repair of the adobe brick wall, this storeroom had eventually been abandoned (although not by the rats, of which we discovered several nests made of textile fragments and camelid fiber) and then filled in naturally by the erosion of the surrounding walls and wind-blown sands.

**Looter Profile #1** [Figures 4.41, 4.42, & 4.43]

This looter profile encompassed two adjacent pits, which provided one long west profile approximately 5 meters long and 2.7 meters deep. It was located in the largest room in the eastern portion of Structure C, in a large patio-like enclosure. Although there
were 12 levels in the profile, none of them were like the sturdy adobe floors seen in the other structures. The lowest level, approximately 0.75 meter thick, was culturally sterile and consisted of the alternating layers of medium to fine gravel and sand deposited from flooding. Intruding into the lowest sterile level from several levels above (Levels 9 or 10) was an oval-shaped pit (0.6 meter x 0.53 meter), visible in the profile near the lower-right corner. The pit contained loose gravel and small chunks of rock with very little sand or soil. Only a small quantity of lithics and shells were in the pit; no ceramics were present. It is possible that this pit was the remnant of a much earlier occupation, but this could not be radiocarbon dated due to exposure and wall collapse.

One of the levels (Level 7) was a likely occupational level—it was semi-compact, sandy clay of varying thickness containing a large quantity of artifacts. A large hearth (approximately 0.9 meter long, 0.23 meter maximum thickness) was visible in the profile associated with this occupational level [Figure 4.44]. It was informally constructed (i.e. was not a built-in or lined firepit), formed by several small rocks and large chunks of adobe, possibly broken adobe bricks. The hearth contained carbon, ash, and burnt artifacts, including a llama bone (although without cutmarks), shells, and plainware sherds. From this level to the surface were wind-blown and water-deposited gravel and sand with some eroded ceramics and lithics.

*Structure D* [Figures 4.45, 4.46, 4.47, & 4.48]

This structure is formed of an elevated central room that has a pair of ground-level rectangular rooms on each side to the west and east, creating an overall rectangular shape to the building. Although the exact method of construction is not clear at this point,
the central room was raised using a series of stacked walls, which makes this structure have some of the deepest deposition at the site. This layout and construction is very different than the other structures at the site. Due to a high amount of disturbance from looting in this structure, only looters’ pits were excavated to provide information regarding occupation and construction sequences.

Looter Profile #5 (East and West) [Figures 4.49 & 4.50]

This profile consisted of two looters pits, one on each side of a N-S oriented tapial wall that divided the large west area of Structure D into two rooms of roughly equal size. These two pits are directly adjacent to each other, one on either side of the main dividing wall between the two rooms, and they each extend half-way into their respective rooms. This area was at the ground level, unlike most of the rest of the structure. The pit on the west side of the wall was cut in the form of a U, with a west, north, and east profile, each approximately 1-1.5 meters long and 2 meters deep. The pit on the east side of the wall was cut in the shape of an L, with a west (1.25 meters long) and south (2 meters long) profile approximately 2 meters deep.

Note that the two halves of this profile were offset, so that the north profile from the west side and the south profile of the east side align [Figure 4.51]. These profiles were excavated: 1) to examine the depth and possible initial construction of the building; 2) to identify any floors and their relation to the central dividing wall; and 3) to determine the relationship between these two apparently identical rooms. The pits were also conveniently situated where there was the best chance of encountering any centrally-
located room features. Considering the high degree of looter activity in this structure, these profiles provided the best opportunity to obtain a clear profile from this area.

Neither of the pits had reached non-cultural layers, so the looters had not reached the depth of the initial occupation in this sector. However, considering the depth of the pits compared to the ground level exterior to the structure as well as the maximum depth in the other structures, it is likely that sterile was fairly close. Surprisingly, the base of the dividing wall was not very deep, only 0.25 meter below the surface. There was no evidence of any previous walls in that location in earlier times.

On the west side [Figure 4.52], one of the lowest levels contained a dark grayish very sandy sediment with a large quantity of plant materials and small fish bones (similar to sardines). Although it is unclear as to what this surface may have been, it was similar in appearance to that described as a fish drying area at Cerro Azul on the south coast (Marcus 2008). Several layers above this consist of alternating deposits of semi-compact and loose gravel, sand, and eroded artifacts likely deposited by flooding. This suggests that this level was earlier than the original construction of the building, since the walls would have kept out sediments carried by water. On top of these layers were two thin layers of gravel and trash that served as a leveling base for a compact adobe floor that was not associated with the central wall. Instead, there was another sequence of thin-layered gravel and trash leveling a second adobe floor near the surface that corresponded with the base of the wall. This area did not exhibit the trash deposition or the construction fill evident in other structures at the site. The stratigraphy to the east side of the wall [Figure 4.53] was very similar to that just described for the west portion. Most of the ceramics in this area from the upper artifact-laden levels above and immediately below
the floors were decorated, including Chancay black-on-white. Also, a fragment of a ceramic flute and a bead were found in these layers.

**Looter Profile #6 [Figures 4.54 & 4.55]**

This looter pit was located in the central and highest area of Structure D against the south wall of the room. The central room had several smaller internal divisions that were only partially visible by their tops due to the high deposition in the room. All four profiles of this pit were able to be cleaned, providing a clear understanding of this area. The looters had only dug down to 1.2 meters deep, which considering the height of the structure at this point (approximately 8-10 meters tall compared to the ground surface outside the structure), was not near the non-cultural level.

What was originally believed to have been the south wall of the room was exposed by this pit, but upon removal of the loose looters’ disturbed deposits, a wall base was found that extended across the bottom of the pit parallel to the wall. The wall was intact in the east profile of the pit, but ended just beyond the west profile. The south wall went further below the unexposed soil than the wall base, whose corresponding floor can be seen in the north profile. Thus, it seems as if at some point, the south wall of the room had been covered up by the addition of a newer wall on its interior side, likely done because the south wall as heavily cracked and eroded. The gaps between them were filled with sand and gravel. This inner wall had then been removed by the looters during their digging [Figure 4.56].

After the room had served its function, it was filled with approximately 0.6 meter of nine layers of trash and loose gravel alternating with layers of pure botanics. Above the
final layer of trash were several layers of gravel and sand containing a much smaller percentage of artifacts, mostly ceramics and lithics. On top of this was a layer of semi-compact adobe that was a heavily eroded floor, with a thin layer of yellow pigment in one area suggesting that the floor had once been plastered yellow. This was covered by wind-blown sand and eroded adobe. Many of the surface ceramics and those from the upper levels were decorated, primarily Chancay Black-on-cream and Chancay plain cream colored.

**Structure E [Figures 4.57, 4.58, & 4.59]**

This structure is the largest compound at the site and is located encompassing a natural promontory of bedrock that is part of the eastern ridge of the quebrada. Thus, its rooms have differing elevations and overall the structure can be divided into three major tiers. There is also a large patio-like enclosure at ground-level in the eastern portion of the building. Several walls were built directly on top of the bedrock and overall this compound had some of the shallowest deposits. Excavations were distributed to look at the rooms in each tier of the structure: Unit 10 was in the uppermost tier; LP2 was slightly below and adjacent to this section in the second tier; LP3 was in one of the rooms of the first tier; and LP4 was located in the ground-level patio-like room. Most of the investigations in this structure had to be looters’ pit profiles, due to the heavy disturbance in the upper tiers leaving little room for even a 1x1 meter excavation unit and the lower tiers being so eroded as to have few areas with deposits to excavate.
Unit 10 [Figures 4.60 & 4.61]

This unit was located in the southeastern corner of the highest room in the uppermost tier of Structure E. The south wall of this room is a thin, small, internal wall made of adobe bricks covered with thick adobe to give it the appearance of tapial. The east wall of the room was similarly constructed along its upper course, but this had been built directly on top of a thick, actual tapial wall that formed the border of this tier; on the other side of this wall, there was a hallway that was part of the first tier, which was approximately 2 meters lower in altitude. With excavation of this unit, it became clear that the tapial wall had been built against the bedrock in this area as sort of a retaining wall to support the upper tier.

With the excavation of this unit, we were able to clearly identify the presence of a doorway in this corner that had been blocked up with chunks of unshaped adobe [Figure 4.62]. This had preserved a well-made floor in the entry that corresponded with the floor of the room. The entry allowed passage from this room to the adjacent room in this tier (N-S orientation). Also, the entryway was slightly elevated compared to the floor of the room (approximately 8 centimeters high, or the height of one course of adobe bricks), creating a low threshold [Figure 4.63]. The doorway was slightly trapezoidal in shape, with the base slightly narrower than the upper portion. The walls are at present approximately 0.5 meter and there was evidence of significant wall collapse in most portions; however, it does not appear that there is enough collapsed bricks to account for a much higher wall, so it is also possible that the upper courses of the walls were once made from perishable materials.
Bedrock in this portion of the structure was no more than 0.5 meter below the surface. In this unit, the bedrock had signs of being cut and shaped by tools into a flat surface, although an L-shaped channel was cut into the bedrock and extended beyond the limits of the unit. Along the edge of the unit against the east wall, the bedrock was cut so as to neatly abut the interior side of the thick tapial wall. Filling in the L-shaped groove and additional uneven spots was a layer of small gravel and artifact fragments. All categories of artifacts were represented, but the most abundant items in the fill were seeds and maize kernels. On top of this evened-out surface were three adobe floors, each directly on top of one another. The middle floor was the most eroded and present primarily in the west portion of the unit. The first and second floor passed under the threshold of the entryway, whereas the uppermost third floor corresponded with the surface of the entry; this indicates that the raised threshold was built as part of the last construction for this room. The upper floor and the doorway had been kept intact by the thick layer of eroded adobe, wind-blown sand, and fallen tapial blocks that formed the modern-day surface.

The ceramic fragments recovered in this area were mostly decorated, including several sherds that were successfully refitted to form part of a small, vase-like vessel with orange paste, a burnished surface, with cream-colored slip on some parts and cream and black painted lines on others; analysis of this sherd indicates that it was likely locally made, but its stylistic designation and cultural association are unknown.
Looter Profile #2 [Figures 4.64, 4.65, & 4.66]

This looter pit was actually a series of pits that had almost entirely excavated half of the largest room on the second tier of the structure. From this, it was possible to clean a 6 meters long profile that extended (E-W) across the entire width of the room and cross-sectioned the middle of the room. The pit had also been dug by the looters all the way to and partially into the bedrock. This profile therefore served as an excellent view of the complete stratigraphy of this tier. It was the original intent that this profile would uncover the association between any floors and the east and west walls of this room.

Upon removal of the loose looter-disturbed material, however, it was revealed that the sections of the profile along both walls were almost entirely disturbed layers. It appeared that the action of looters in the past had dug pits along the interior of the walls of this room, and that later looter activity and erosion had filled these pits so as to be indiscernible from the surface. Only the central portion of the room (approximately 3/5ths of the profile) had remained almost completely intact; this was surprising since the reverse had been expected, since usually looters dig their holes in the centers of mounds and leave the areas along the walls undisturbed. Although the south side of this pit did not quite reach the south wall of the room, that side was not profiled because the edge was unstable and uneven. In order to form a flat profile, the edge would have had to been cut back so close to the south wall that it would have left only a very thin area of deposits between the wall and the face of the profile. This would have likely resulted in profile collapse due to the loose nature of the deposits, and so it was judged best to only profile the north side of the pit.
Both the west and the east walls had been built almost directly on top of the bedrock in this section, with only a thin layer of gravel under the wall bases. The bedrock that formed the foundation for this room was sloped on both sides, forming a high point in the center of the room; this may also have contributed to the disturbance of the deposits along the wall. Thus, this room was directly centered over the top of the natural ridge at one of its highest points. The edge of this bedrock ridge had been deliberately cut into at parts to form a level surface. A layer of artifact-laden gravel had then been used to fill in the uneven areas, especially along the edges near the walls. An adobe floor was built upon this layer, and three more successive floors were built on top of that, separated by thin (3-5 centimeters) layers of sand and fine gravel containing small artifact fragments. The uppermost floor (Floor 4) had a thin layer of yellow pigment visible on its surface in one portion, similar to that observed in LP6 in Structure D, which might have been from a colored plaster coating on the floor. Near the lower-right corner of the intact floors was a burnt adobe brick surrounded by charcoal; slight probing indicated that this did not extend very far into the profile. It was unclear if this was the edge of a hearth (now gone due to the actions of the looters) or if this was from an overall burning event in this room, since there was a notable amount of carbon pieces and burnt artifacts in the layers between the floors. Another possibility is that there may have been some sort of signal fire, due to its location at the highest point of Structure E. The uppermost floor was buried beneath the same heavily disturbed layers seen along the sides near the walls. These layers were formed from the deposits left by looters and the erosion of the surrounding walls. Many of the sherds recovered from this area were highly decorated, and several textile fragments and a bead were collected.
Although not visible in this profile, with the removal of the loose looter-disturbed soil, several layers of trash (gravel with artifacts) alternating with layers of almost pure botanics (primarily pacay leaves and branches) could be seen along the unprofiled south side of the pit. It would have been impossible for such a large quantity of leaves to have been carried by the wind to this room, especially considering the height and completeness of this room’s walls. Even during the windiest days of excavation, this room was relatively sheltered. Thus, this provided solid proof that the layers of pacay leaves in this area (and thus by implication those seen throughout the trash deposits at Quipico) could not have been from naturally wind-blown leaves from the nearby agricultural areas.

**Looter Profile #3 [Figures 4.67, 4.68, & 4.69]**

This looter pit was located in the northwest corner of a room in the first tier of Structure E. The room is one of three that compose the first tier, all of which are the same size and shape. This was the best conserved area of the room in this tier, as the rest of this section had been completely destroyed by erosion and wall collapse. The north and west sides of this pit corresponded with the North and West walls of the room respectively. It was not possible to draw a profile for those two sides, because the walls of the room had been built upon a 1-3 centimeters layer of gravel directly on top of the bedrock. Thus, only the south (1.45 meters) and east (1.4 meters) sides of the pit were cleaned and profiled. These profiles were examined: 1) to see if there was any additional deposition in the area, or if it was indeed more-or-less directly on top of bedrock; 2) identify any floors and note their relation to the walls for the room; and 3) obtain any information possible for this area, considering the severe disturbance of the rest of this tier.
Bedrock was only 0.5 meter below the surface of this area, and the uppermost part of the bedrock was heavily eroded. A layer of loose gravel, plant materials, and a few artifacts lay on top of the bedrock, leveling out the area. Part of the north wall was built on top of a thin layer of this fill, whereas the west wall was directly on top of the eroded bedrock. This information, along with the way the walls abutted each other, made it clear that the west wall had been constructed before the north wall. The north wall, which served as a border for this tier, had been built first, and then the internal dividing walls that separated the area into the three roughly equal rooms had been built.

No adobe floor was present in this pit, even in the profiles. It is likely that although there had once been a floor corresponding with the base of the walls, it had eroded away; this is also indicated by a ridge of adobe along the bottom of the north wall, which appears to have been where the poured wall adobe encountered a flat horizontal surface. Instead, above the gravel and artifact layer was a level with a large quantity of llama coprolites. This was covered by a layer of sand and silt deposited by the wind from the erosion of the surrounding adobe walls.

**Looter Profile #4** [Figures 4.70, 4.71, & 4.72]

This LP was located in the center of the largest room in Sector E, which was on the east side of the sector. The room was not elevated compared to the rest of the structure or its surroundings; one could walk directly out of the room and would remain at ground level. The looters’ pits in this room exhibited very little cultural material in comparison to the rest of the sector. Also evident was a layer near the surface that contained animal coprolites. This profile was chosen in order to: 1) observe the maximum
depth and sequence of this part of the sector; 2) identify any floors or features (such as a hearth) that may have been located in the middle of the room, since the looters’ pit was very centrally located; and 3) to investigate the coprolite deposits and how they related to room function, since this room appeared so distinctively different in size and arrangement in comparison to the rest of the sector.

A total of nine levels were identified in the profile. Only one possible floor was identified (Layer 7), composed of semi-compact grayish adobe (Munsell 2.5 Y 4/1). This floor was above a level of fine sand and gravel (Layer 8), which itself was on top of a level of small gravel (Layer 9), below which was sterile sediment, a pattern consistent with the construction of floors in other areas of the site. The floor was only evident for 50 centimeter length of the profile, possibly due to erosion by flooding. This suggestion is strengthened by evidence from the two layers above the floor (Layers 5 and 6), which were composed of sand, gravel, and eroded artifacts deposited in compact layers through wind or water action. It is the next uppermost layers that contained the majority of the animal coprolites; it was estimated that these layers were approximately 75-90% coprolites. For that reason, we decided to collect samples of these coprolites rather than attempt 100% recovery. Two distinctly different layers of coprolites were visible. The bottom layer of coprolites was a light to medium brown and some intact pellets are tentatively identified as llama. The top layer of coprolites was much darker and compressed so much that the original size and shape of the coprolites was almost indeterminable, although some clumps that resemble bovine feces were distinguished. Also noted in LP2 was the presence of a thick white crust visible directly on top of the coprolite layers. It is likely that this was the accumulation of minerals from the coprolites.
themselves as they were exposed to the air for a long time; it is common for animal feces to develop a white crust if left in the open due to the high concentrations of phosphorous and nitrogen (Chame 2003). The white crust was covered by only a thin layer of surface deposits, formed by wind-blown sand and the erosion of the surrounding large adobe walls.

Structures F, G, H, I, and J [Figures 4.73, 4.74, 4.75, 4.76, 4.77, 4.78, & 4.79].

With the exception of Structure H, all of these structures were small and along the periphery of the site. Several of the structures (Structures H and J) had been so heavily eroded by flooding that most walls had been destroyed and the cultural deposits had been heavily disturbed, making this area unsuitable for excavation. It seems, however, that these areas did not have the size of walls that the other structures had – wall remnants were all small and narrow tapial. It is unlikely that these structures had ever been the size or complexity of the others. Structures F, G, and I did not have any depth in deposits, having been eroded down almost to sterile or bedrock. The surface scatter in these structures was all relatively light, due to the erosion, slope, and lack of many walls to act as protective barriers. Thus, it was not possible to determine what function these buildings may have had, save for the fact that they must have had a much different purpose than the other, much larger, structures.

Structure G also had incorporated large, natural boulders from the surrounding terrain as part of its build. These boulders did not have any signs of shaping, having been moved into place, or any other modification. Instead, much like the use of the natural
bedrock for the height of Structure E, this Structure G shows a conscious use of the local features as part of its construction.

Structure F used the natural slope of the bedrock as well, and was positioned almost on the side of the quebrada. The preservation of its walls was the best out of these periphery structures, and the tallest. It seemed to have consisted of only two rooms and had an excellent view of the valley.
CHAPTER 5: ARTIFACT ANALYSIS FOR QUIPICO

Artifact patterning is essential for determining building or room function (Allison 1999b; Jorgensen 1975; Ciolek-Torello 1984). The materials analyzed here came from three different contexts: 1) excavation units; 2) looter pit profiles; and, 3) surface collection. Stratigraphy for Quipico was easily distinguishable (Nelson and Ruiz Estrada 2007, see also Chapter 4), which helped mitigate some factors regarding floor assemblage formation processes (Smith 1992; Allison 1999b; LaMotta and Schiffer 1999; McKee 1999; and others). Unfortunately, the cleaning of areas between construction episodes and prior to abandonment, as well as the use of trash as construction fill, meant that very few artifacts were actually found in a primary use context.

In this section, I summarize the methods used for artifact analysis of the materials recovered during the 2009 excavations at Quipico and the overall results obtained, noting specific information pertinent to interpretations of activities that occurred at the site. I omit the artifact information for the materials recovered from the Colonial Period reutilization of the site (surface levels of Structure A and uppermost levels in Structure C Unit 6). These data are not directly relevant to our understanding of Quipico during its Chancay occupation, and are included in a separate paper on the Colonial Period occupation of the site (Dunn 2012, although see Appendix F for some initial comments on Quipico post-contact). The following is a comprehensive discussion of the results of the individual analyses and how they contribute to a better understanding of Quipico and its possible role in Chancay economy.
**Ceramic Analysis**

Although there is a general agreement on the stylistic attributes of coastal Late Intermediate Period pottery – most researchers in the Andes can identify with these pieces in general with relative accuracy – the actual type designations more difficult to find in the literature. Still in use is Uhle’s 1925 rough typology that was developed based on surface collections in several valleys. The most recent survey of the Huaura Valley (Nelson and Ruiz 2004, 2005) used these criteria in their preliminary designations of site-period association. Most assessment of regional ceramics are based on collections of whole vessels from looted burials that lack archaeological context. These ceramics are not representative of everyday use, and coarse utilitarian ware is significantly underrepresented.

**Methodology**

For the ceramic analysis, I had to thus approach the data collection and interpretation from a basic level. The intent of the ceramic study was to craft a new typology based on the older, colloquial types combined with measurable attributes so that future studies in the region would have a pottery type system to start with. Initial study involved adapting a classification system developed in Egypt (Kit Nelson personal communication 2008), and terminology from Rice (1987), tailored to specifically fit the region. This system was tested and modified through its application to sherds collected at the sites of Rontoy, Chambara, and Quipico from test pits excavated in 2007 (Nelson 2007). It was further refined during analysis of the ceramics from both this project and the project by Ashley Heaton (2015) at the sites of Caldera and El Carmen.
The coding system divided the ceramic sherds into three major categories: 1) diagnostic pieces, which included any piece with decoration or an identifiable form part (handle, rim, base, etc); 2) general body sherds; and 3) all body sherds smaller than a 1 sol coin (the unit of currency in Peru, approximately the size of a quarter). This size was chosen because during preliminary analysis it was realized that pieces smaller than this typically lacked diagnostic features and tended to be heavily eroded, which would distort the data analysis and provide very little data while requiring a great deal of time to record [Figure 5.1].

All general body sherds were examined and 44 attributes were recorded in terms of construction, color, form, and more other attributes [see Appendix A for coding system and data]. Much of the coding system required clarification of terminology, as many ceramic studies for the region were unclear and inconsistent, especially for terms like 'collar', which is discussed frequently for Cayash style (see below for description) The following characteristics were redefined and illustrated for the coding system [Figures 5.2, 5.3, & 5.4]:

- **Neck**: Raised extension of orifice, beginning above the maximum diameter (on shoulder, typically joins at an angle or curve).
- **Throat**: Base of neck or collar, or its point of maximum restriction.
- **Collar**: Raised extension of orifice, beginning at point of maximum diameter (or a slight restriction close to maximum diameter). It does not significantly reduce orifice relative to diameter. Typically joins at an angle.
- **Lip**: Edge or margin of orifice; edge of rim.

All diagnostic pieces were subjected to the same analysis as general body sherds,
but additional information was recorded regarding the decoration or vessel features present. All small body sherds were grouped per unit and level and recorded in bulk; they were divided up based on paste color and surface color, then counted and weighed with additional notes recorded regarding the presence of soot/burning.

It was decided upon initial inspection that no petrographic thin-section analyses would be done. According to local informants, sources of clay suitable for pottery making and temper are abundant in the region owing to the site’s proximity to the Huaura River and the location of appropriate bedrock close to the surface. The local sediments are heavily micaceous, which serves as a useful marker for a general Huaura Valley designation during initial macroscopic inspection. Much of the geology, however, is very similar throughout most of the lower valley, making it exceptionally difficult to identify individual sources. Temper was almost universally of sand or gravel and could be seen with a basic hand loupe. Several sherds were spot-checked to 20x and 50x magnification with a microcam (combination low-magnification microscope camera) [Figure 5.5], but did not reveal any additional information.

An important consideration when examining the sherd collection was the depositional context. It was clear from the lack of very large, complete sherds and the inability to refit hardly any pieces that none of the sherds examined could be identified as coming from a primary context (one in which the vessels were in-situ or almost in original location of use). The majority of sherds seem to have come from a secondary context -- one in which the sherds appear to have been moved only once (Marcus 2008) -- so that although the sherds are no longer in-situ, they come from nearby areas and time periods. There was also a large proportion of sherds that were clearly from a tertiary
context (one in which the sherds have been moved one or several times, resulting in a reduction of fragment size and a mix of different areas and times). It can be inferred from this analysis and the stratigraphic context that almost all sherds at the site came from either construction fill or trash deposition; this is not the case at all sites in the lower Huaura Valley (Heaton 2015), but can be expected from sites like Luriyama or LA Centinela, in which similarly thick layers of trash can be seen filling the rooms.

Vessel Form

In published descriptions of Chancay ceramics, vessel form has usually been a secondary consideration, far behind decorative method. As Hodnett (1978:21) writes: “note the simplicity and repetition of shapes and yet the variety and complexity in the decoration” (Hodnett 1978:21). I instead followed Mijichich's (1998) lead. His study of Chancay ceramic morphology examined whether or not some of the vessel forms were typical of one style or another. There has previously been inconsistency in describing vessel forms for these central coast ceramics (e.g. Evans and Sicre 1964 describing a bottle with spout, versus Lavalle and Lang 1982 calling a similar vessel a short-neck jar) and there are several forms (kero, canteen, etc) that are distinctive to Andean archaeology versus other regions. So, I began by adapting Rice's (1987) descriptions with the addition of Mijichich’s vessel form criteria (1998), creating the following list of vessel forms with distinct attributes common to the central coast [see Figures 5.6 – 5.14 for relevant images] (see Heaton 2015:122-128 for a similar breakdown of vessel form, and Cruzado Carranza 2008):

- **Flatware:** Vessels that do not enclose their contents (unrestricted orifice avg.).
Includes plates, dishes, bowls, saucers, etc.

- **Hollowware**: Vessels that enclose their contents (restricted orifice avg.). Includes jars, ollas, keros, etc.

- **Plate**: Unrestricted orifice, height is less than ($<$) $1/5$ the vessel’s maximum diameter. Usually no other features, such as handles. The base may be flat or ring-shaped.

- **Dish**: Unrestricted orifice, height is between $1/5$ and $1/3$ the vessel’s maximum diameter. Usually no other features, such as handles. The base may be flat or ring-shaped.

- **Bowl**: Unrestricted orifice, height is greater than ($>$) $1/3$ the vessel’s maximum diameter. These may have collars, but no necks. Usually no other features, such as handles. The base may be flat, slightly pointed/curved, or ring-shaped.

- **Olla**: Restricted orifice, height is between $1/3$ and $1 1/5$ the vessel’s maximum diameter. The maximum diameter is near or at the midpoint of the body, and can be shaped either spherical, or ellipsoidal (which can be oriented either vertically or horizontally). They do not have a neck, although some may have collars. Handles may be present, but not required.

- **Jar**: Restricted orifice, height is greater than ($>$) or equal to ($=$) the vessel’s maximum diameter. May be globular (spherical), oblong (ellipsoid), or ovaloid in shape. No collars, but must have a neck, although it can be a short neck. Shortnecked is distinguished by its overall size, less than ($<$) or equal to ($=$) 4 cm, and proportion to the rest of the vessel. Handles may be present, but not required. The base may be flat, slightly curved, or pointed.
o **Bubble-necked Jar**: A sub-type of jar, also known as double-bodied or double-restricted jar [Figure 5.7]. The neck and orifice are both separately restricted so that it forms a second body with its own maximum diameter (which is equal (=) or less than (<) the maximum diameter of the main body). It can also be triple-necked, with a third sub-body.

o **Canteen**: A subtype of jar. It has a cylindrical body whose ends are oriented parallel with the long axis of the vessel. The ends (side walls of the vessel) can be flat, or bubbled (convex).

o **Pitchers**: Also known as ‘chinos’. These are large vessels with the representation of a person (Ostolaza 2007a), with distinct clothing and features that may be indicative of their role in society (Billet 1998).

- **Vase**: Can be restricted or unrestricted orifice, main feature is that the height is greater than (>) the vessel’s maximum diameter with an ovaloid body shape. No neck, but it may have a collar. Handles may be present, but not required. The base may be flat, slightly curved, or pointed.

- **Kero**: [Figure 5.8] Unrestricted orifice, height is greater than (>) the vessel’s maximum diameter. The maximum diameter is at the orifice, and the rim diameter is greater than (>) the base diameter. Shape is hyperboloid (resulting in flared sides, restricted body) or cone (straight-sided). The base is flat or ring-shaped. No neck, but may have collar. No handles.

- **Goblet**: Unrestricted orifice, height is greater than (>) or equal to (=) the vessel’s maximum diameter. Body is usually spherical, ellipsoid, or ovaloid, with a total volume less than (<) 500 mL. No neck, but usually has a collar. Base is stemmed
Handles may be present, but not required.

- **Gigantes:** Similar in form to a bowl or vase, but distinguished by its overall size and wall thickness [Figures 5.9 & 5.10]. Unrestricted orifice, height is greater than (> or equal to (≥) the vessel’s maximum diameter. Body shape may be spherical, ellipsoid, or ovaloid. Total volume is very high (50 Liters or more avg.). No neck, but may have collar. No handles present. Walls are very thick throughout entire vessel (20-45 mm avg.).

- **Figurines:** Other shapes, highly variable. Animals (local and exotic), plants (usually the edible portions), inanimate objects (such as houses), or people are common. Small versions of these were also be applied to the sides of other vessels and formed into handles, necks, or decorative features.
  
  - **Cuchimilcos:** These are a subtype of figurine. They are painted clay statues of a naked person with arms outstretched and the palms of their hands open. Representation of sexual organs is explicit and the figures wear face paint, earrings, or have tattoos on different parts of their bodies, particularly the torso and knees (Ostolaza 2007a). There is some suggestion (de los Angeles 1978; Lehman 2005) that these figurines were dressed in miniature clothes with headdresses or hats, perhaps symbolizing their rank within society (Ostolaza 2007a). Although posture and shape of various cuchimilcos are similar, no two personages are exactly the same due to the variations in face paint or adornments they wear (Ostolaza 2007).

- **Miniatures:** Includes any of the vessel forms described above, but made
extremely small, usually less than (<) 4 cm in size.

**Basic Ceramic Typology**

Over 2500 sherds were analyzed individually, with another 11,600 sherds analyzed in bulk according to basic attributes. According to Uhle and Kroeber, there are five types of Chancay ceramics: Black and white, Tricolor geometric, Epigonal, White on red, and Interlocking. Further discussion of ceramics from the Huaura and Chancay valleys vary in their typological categories (Heaton 2015; Szremski 2015; Vallejo 2010; Usera Mata 1972; Cruzado Carranza 2008; Cornejo 1992; Brown Vega 2008). The sum of this analysis will be used both for further analysis in the Huaura Valley as well as a resource for researchers in neighboring valleys. It will also serve as a baseline for a planned collaborative ceramic monograph for the Huaura Valley pottery that will incorporate studies soon to be completed by other current projects (Allen Rutherford, Kasia Szremski, and Ashley Heaton personal communications 2010).

**Chancay Black-on-White (Classic Chancay)**

This style is associated with what is believed to be the height of the Chancay culture, between AD 1200-1475. As the name implies, this style is a matte black design on a white, cream, or yellowish slipped background. Paste can be a range of colors (yellow to red-brown) and temper is usually sand or crushed rock. Chancay black-on-white is mold-made, with the molds either ceramic or wooden and some needing three or more parts. Molds were used to make the whole vessel as well as make decorations, such as stamp molds (Schmidt 1919) and small molds to form appliqués. Molded figures, such
as human faces, animals such as frogs, and oval 'lumps' (perhaps representing fruits or some sort of bean), were occasionally applied to the sides of vessels (Nelson et al. 2010; Heaton 2015; Cruzado Carranza 2008), perhaps to hold straps or cords in place for transport or reinforce handles (Hodnett 1999). Some of the earliest descriptions of molds discovered came from purchases and excavations in 1904 by Max Uhle at the site of La Mina in the Chancay Valley (Grossman 1969/1970).

Although many descriptions list only a few vessel forms for Chancay Classic, when various sources were combined together with the many examples from museums and seen in person in looted cemeteries, it became clear that this style includes all the forms described previously and is not restricted to only certain forms. Certain forms, however, were very popular for Chancay Classic, such as bowls, jars (both oblong and spherical), bubble-necked jars, canteens, and cuchimilcos. Although cuchimilcos and pitchers are usually depicted as exclusively part of Chancay Proper, there are many examples of human-shaped figurines as popular on the coast throughout Andean prehistory, and some cuchimilcos incorporate decorative techniques associated with other cultures (such as a Chimu-style black burnished cuchimilco shown by Billet 1998).

Designs were painted on the vessels pre-firing. The black pigment is organic in nature and most times there was a reddish-brown binder applied first to help the black adhere; in worn sherds, sometimes the black has flaked off and only the binder remains [Figure 5.15]. Designs tend to focus on geometrics, such as lines, dots, cross-hatching, waves, zig-zags, and other linear, repetitive patterns. In some cases, stylized animals are added in borders. Some simple lines not incorporated into overall patterns have been suggested to be name-symbols of makers or owners (Horkheimer 1970).
At Quipico, although the hallmark Chancay Black-on-cream painted ceramics are present [Figures 5.16, 5.17, & 5.18], their manufacture (re: temper and paste) is indicative of local production. The designs appear ‘sloppy’; by this, I mean that there are several features that show a lack of detail, similar to what has been described for Late Intermediate Period ceramics from the Apurimac region (Bauer et al. 2010; Grossman 2013:284-288). There is a careless application of slip, in some places overlapping and thick, while in other sections missing entirely, and lines for designs are irregular in thickness, opacity, and pattern; this is more noticeable when compared to ceramics from the Chancay Valley and is a trait suggested to indicate their dating to the latter part of the Late Intermediate Period (Horkheimer 1963:373); the radiocarbon dates from Quipico seem to support this. This style was found throughout the site in all structures, but tended to be more common in upper levels of units. It is likely that the majority of Chancay Black-on-cream ceramics would not have been used and discarded as domestic wares, but were instead made almost exclusively for burials. The slip for Quipico tended to be more yellow rather than white or cream. The paste was usually orange or a yellowish-tan. Most of the sherds were heavily damaged and much of the paint was faint, appearing gray or brown, or missing entirely with just the binder remaining. Since these sherds were not found in a looted context, but were instead recovered during excavation, a plausible explanation for these sherds’ condition is that they were discarded before use due to some factor (an error in manufacture, accidentally broken, etc), and became further damaged due to natural factors in the trash fill.

**Chancay Polychrome (also known as Tricolor Geometric)**

This style is described as similar to Chancay Classic in form and construction. The main distinction is that Chancay Polychrome has an additional red color used in the
designs, and the paint style is considered very ‘sloppy’ (Ravines 2011). Additionally, designs are often more ornamental (Horkheimer 1970), with fewer stylized figures. Globular vase forms tend to be favored, and there are very few bowls. Chancay Polychrome is usually suggested as both visually and (tentatively) chronologically transitional between the Huaura Style and the classic Chancay Black-on-white (Cornejo 1985; Horkheimer 1970; and others), and thought to be from the transition to the early half of the Late Intermediate Period (900-1200 AD). However, considering the new dates from Heaton (2015) for Huaura Style (see below for further explanation), it is likely that this chronology will need to be adjusted as well. Based on the color and quality of decoration, there has been some suggestion (Dolorier and Salazar 2009) that this style may be associated with Ichsma. At Quipico, less than 0.25% of decorated sherds were Chancay Polychrome [Figure 5.19], which is surprising considering the large quantity of this style visible elsewhere in the Huaura Valley [Figures 5.20 & 5.21].

**Huaura Style (also known as *Estilo Huaura*, or Epigonal Style)**

Huaura Style is distinguishable by its dense polychrome designs (black, white, and sometimes orange-red) painted on a reddish clay background (often burnished) [Figures 5.22 & 5.23], very similar in appearance to typical Middle Horizon iconography, with common designs of serpents, human figures with attendants, felines, and marine scenes (Billet 1998). Huaura style is usually considered to correspond with the last part of the Middle Horizon (700-900 AD), mixed with stylistic elements from Lima-area cultures (Billet 1998); it has been interpreted as local variants of Wari style pottery, such as Owens (2007) describes for Huamanga in the Majes Valley. Recent excavations and radiocarbon dates (Heaton 2015), however, have challenged this identification. Huaura
style ceramics at the sites of Caldera and El Carmen in the Huaura Valley instead clearly date to the middle of the Late Intermediate Period (AD late 1200s-early 1400s) (Heaton 2015:102-132). This new placement of the Huaura Style in coastal ceramic chronology helps to explain some of the significant stylistic differences of the Huaura Style—the designs are painted with less precision and feature a restricted subset of detailed design motifs. Huaura style does mark the introduction of the *kero* into the region—a tall drinking vessel with slightly concave or sloped sides—although it includes other vessel shapes that are considered a primarily central coast forms, such as globular jars and canteens (Cruzado Carranza 2008; see Heaton 2015:110-114 for a translation and summary of her work). The lack of Huaura Style ceramics at Quipico suggests that there were significant cultural changes occurring at the end of the Late Intermediate Period (see Chapter 7 for further discussion).

**Press-mold Coastal Wares (with regional variants)**

Numerous fragments were present of the local press-mold pottery typical of the central coast from the Chancay to the Casma Valley (Mackey and Klymyshyn 1990; Bria 2006; Padur and Krzanowski 1991; Ravines 2011; Vallejo 2010; Vogel 2015), with the local variant known as Huaura Impressed, and is estimated to date from the Middle Horizon through the Late Horizon. This style is characterized by raised lines, small teardrop shapes [Figure 5.24], and stylized birds and other animals; the raised effect is created by pressing the clay into a mold with the designated design (Shady and Ruiz 1979; Perales Munguía 2006). Many fragments of Huaura Impressed at Quipico were covered with cream-colored slip [Figure 5.25] and look distinct from other regional
pressed wares (Ravines 2011), such as Casma (Bria 2006; Vogel 2012). These are associated with the Late Intermediate Period dates and I suggest that they appear to be a combination of Chancay style with the previous styles of local wares. Despite the wide geographic and temporal distribution of this style, only 15 sherds of Huaura Impressed were found at Quipico.

**Cayash and Lauri Impressed**

Cayash is a style marked by a thickened lip and shelf-like collar of jars and open-necked vessels of a reddish-brown to dark brown clay. This collar is very distinct and comes in a variety of forms [Figure 5.26]. It is often decorated with circular cane impressions with an incised dot in the center [Figure 5.27]. Lauri Impressed ware is distinguished from Cayash (Krzanowski 1986) defined as reddish-colored vases with impressed cane circles on the borders or rims (Horkheimer 1965; Padur and Krzanowski 1991). More elaborate vessels may also have reliefs of human faces on the neck of the vase. It has been suggested that Lauri Impressed ware may have locally developed out of an earlier Middle Horizon style (Garcia 1989/90), and serves as a transitional step to Cayash, although other researchers (Brown Vega 2008) argue that the two styles are actually the same. Both are associated with sites and cultural groups in the upper Huaura and Chancay valleys (Krzanowski 1991). A moderate number (~25) of Cayash style sherds were present across the site [Figure 5.28], indicating that there was some influence from the upper valley at Quipico.
Chancay-Inca

Chancay-Inca is named such because it retains many Chancay traits (a cream slip, jar forms, and clay appliqué decorations) but incorporates Inca styles (including classic aryballos shapes and thin-walled vessels). It differs from both Chancay and Inca styles in that it no longer has distinctive black painted designs and still upholds some of the coastal press-mold features and construction. This style is easy to recognize, even when fragmentary, because compared to Classic Chancay or Polychrome: 1) the slipped background is usually a much more greenish-yellow; 2) the vessel walls are much thinner; and 3) the vessel forms tend to be oddly shaped, without sharp edges. Goblets and jar forms with rounded necks are most common forms. This style is, as expected, associated with the Late Horizon and the impact of Inca influence on the region. Only 2 Chancay-Inca sherds could be positively identified from Quipico; clearly, this style was not widely adopted at Quipico (see Chapter 7 for further discussion).

Chancay Orange-and-Yellow

One category that I noticed during analysis is an orange-paste, orange slipped (although sometimes a yellowish-tan) burnished ware with a partial cream-colored slip unevenly painted on top, sometimes in linear designs [Figures 5.29 & 5.30]. Although these are not explicitly described in the literature, it is doubtful that these sherds were not encountered before, considering their ubiquity at Quipico and elsewhere in the Huaura Valley [Figures 5.31 & 5.32]. I think it is likely that in previous ceramic chronologies, these sherds were combined with the typical Chancay Black-on-cream category or included as part of either Chancay-Inca or Huaura Red and White on Orange (Ravines
2011; Usera Mata 1972). In some cases, the sherd may have been from a Chancay Black-on-white vessel, but from a portion that does not have the design. In other cases, however, some of the sherds were complete enough and were of portions that would have had the black decoration, had there been any, making it unlikely that they were painted at all. I have grouped them separately because they differ significantly from Chancay Black-on-cream, since there is no black paint, they are not fully cream-slipped, and they are restricted to specific forms. The forms most associated with this style are hand-sized bowls and plates (Figure 5.33) often with ring bases (Figure 5.34), which has been suggested as a form used for serving; although jars are common as well; these sherds comprise the most abundant ceramic type at the site.

**Burnished Wares**

The majority of ceramics at Quipico are plain utilitarian wares; they are very burnt and sooty, indicating extensive repeated use, with little to no surface treatment beyond being slipped and burnished. One initially confusing issue was that burnished wares are often associated with earlier periods (Initial Period, Early Horizon, and even including the Early Intermediate Period) for this area, but have been recognized as popular throughout periods even to the Late Horizon. So, how are we to distinguish earlier burnished wares from later ones? Is it possible at all? From the available literature and as identified at Quipico, it seems that there can be a distinction, albeit difficult to make, between burnished wares from earlier periods and those that I suspect identify with the Late Intermediate Period. The earlier burnished wares tend to be a deep reddish-brown paste (and on occasion for those from the Initial Period, a bright red paste) with
very small sand and/or shell temper, rather than the medium brown or orange pastes with larger sand and/or gravel temper found at Quipico. The earlier sherds have a very thick clay slip (same color as the paste, often with hairline cracks as a result), deep fire-clouds from the lack of controlled heat during firing, and heavily multidirectional burnishing (often pressed hard enough to create small ridges). The Late Intermediate Period plainwares are rough, thin slipped (same color as paste or lighter), fired in a heavy reducing atmosphere (often creating a grayish surface color), and lighter surface smoothing and/or linear patterned burnishing. The primary form for these early wares is a neckless olla, whereas the Late Intermediate Period wares are more frequently wide-mouthed spherical jars.

There were a significant amount of the earlier burnished wares, in particular the neckless ollas [Figures 3.35 & 3.36], found at Quipico, which at first was a major concern because the site did not exhibit any other signs of Early Horizon occupation. However, these sherds were found in a distinctive context—they were part of massive layers of construction fill used to build up the height for the construction of parts of Structure C, which implies that a previous site in the vicinity was damaged when it was ‘mined’ for use as building material. Structure C Unit 6 in particular had the highest amount of tertiary fragments, indicated by the presence of a gravel matrix with little fine sediment and a large number of highly eroded Early Horizon sherds. The sherds were mixed with loose gravel, shells, and lithics (although no sand or other soil) and were heavily eroded.

Also found in the construction fill layers in Structure C Unit 6 were three White-on-Red sherds [Figure 5.37], a style which myself and others (Kit Nelson personal
communication 2009; Heaton 2015) originally thought was related to earlier periods such as the Banos de Boza style. Upon further examination, however, I no longer think that these look similar and instead suggest resembles Cajamarca Costeño, a north coast style from the Middle Horizon (Ravines 2011).

It was deduced that this material must have been taken from a nearby early site and brought to Quipico to use in the fill. Why this material was used for fill rather than the abundant gravel from the previous floods in the quebrada, is still an unanswered question; it seems likely, however, that these materials come from the area to the east just outside of the main site’s official margins (as discussed in Chapter 3). Two bright red burnished wares were given to the project by neighboring locals, who stated that they had gotten these vessels “only one quebrada over” (to the west) while planting fruit trees [Figure 5.38]. These wares are very similar in style to Late Formative ceramics seen at Caylan in the lower Nepena Valley (Chicoine and Ikehara 2004:362 Figure 5.14 C).

The remaining Late Intermediate Period-style burnished wares were present in all structures at the site, with many as part of trash construction fill layers, especially those with the pacay leaves and other botanics. These too were heavily fragmented, although not very eroded, and many of them had very sooty exteriors [Figure 5.39], indicating that these may have served as cooking vessels. Surprisingly, only a few sherds from a thick-walled, large (>0.25 meter) storage vessel were found, indicating that although there was food preparation at Quipico, it was not a location where significant chicha (maize beer) production occurred.
“Bowling Ball” decoration

The association of this style is still unknown, but several sherds were discovered at Quipico. This style has a tan colored paste, very small sand temper, thin walls, and tends towards small-diameter (<20cm) jar shapes. Its most distinctive feature is a slipped and burnished surface with an impressed design (usually unevenly around the diameter of the vessel at the shoulder) of a circle with three dots inside, much like a modern-day bowling ball [Figure 5.40]. It has been suggested (Kit Nelson and Arturo Ruiz Estrada, personal communication 2010) that this style is an earlier one, possibly Early Horizon or Early Intermediate Period, but there has yet to be any formal confirmation of this. Since these sherds were all found in Structure C, which had other sherds from earlier periods used as fill in its construction, this hypothesis seems likely.

Ceramic Production at Quipico

Hodnett (1978) suggests that ceramic workshops likely existed in the region:

“Without mass production it would be virtually impossible to account for the tremendous number of “Negro sobre Blanco” pieces still existing after hundreds of years. ... Of further consideration is that the volume of material consumed in mass production of this kind is hardly the result of an individual effort. Rather, this evidence supports the idea that groups of people in ceramic factories or centers must have engaged in producing these ceramics.” (Hodnett 1978:23)

There was evidence of small-scale ceramic production at Quipico. Several sherds that were warped and sinterized (when the paste is partially vitrified, resulting in discoloration, a wrinkled texture, and increased density) were found within domestic trash deposits across the site [Figure 5.41]. This occurs when the firing of the ceramics is not fully controlled, and so the fire burns too hot in some portions and cools down too quickly in others (Rice 1987). However, this was an exceptionally small number (~0.5%)
and there were very few mold fragments that indicate large-scale ceramic production at Quipico.

**Lithics**

Lithics were analyzed using a coding system made and used previously (Dunn and Heaton 2005) by the Proyecto Arqueologico Norte Chico (PANC) for Norte Chico Preceramic sites. Debitage was size-sorted and classified into typological categories (Sullivan and Rozen 1985) according to 11 major attributes, plus additional traits for modified flakes and tools (as per Andrefsky 1998; Bradbury and Carr 1999, 2001; Odell 2004). Many more lithics were found here than expected from excavations elsewhere in the valley [see Appendix B]. Approximately 750 lithics (flakes, debitage, etc) were analyzed individually, with another 1700 analyzed in bulk by basic attributes. Most flakes were made using an expedient method with little modification or tool variation. Edges were retouched for reuse or thinning a piece to make a crude biface or perforator, which were the most common finished tools [Figure 5.42]. A few groundstone tools were present, formed from river cobbles likely sourced from the nearby Huaura River itself [Figure 5.43]. Most of the lithics were made from a fine-grained black material of unknown source [see right side of Figure 5.42]

**Faunal and Floral Remains**

Materials at Quipico demonstrate that subsistence practices during the Late Intermediate Period were a varied mix of agricultural products and animal resources.
Marine Sources

Marine foods included numerous shellfish, with the majority identified as varieties of saltwater bivalves, particularly different species of mollusks [Figures 5.44 & 5.45]. Univalves were found, but it was uncertain if these were sea or land varieties of gastropods [Figure 5.46]. A small, but significant proportion of crab shells were present in several units across the site [Figure 5.47]. These marine foods had to have been transported to Quipico, since it is approximately 40 kilometers from the coastline, and a significant amount of transport must have occurred, since large quantities of shell were found throughout the site [Figure 5.48] and shellfish are usually kept alive until cooking or else they spoil. Overall, the layers in Unit 5 had a large quantity of fishbones, more so than anywhere else at the site. Although all of these likely served as food sources, some of the bivalve shells were worked into tools with narrowed edges that would have been useful for scraping [Figure 5.49].

Faunal remains

Osteological remains (totaling 1150 fragments) were analyzed down to the general categorical level, as a combined effort by the author and Erin Patterson, a Tulane University Ph.D. student trained by Dr. John Verano and with experience in analyzing Pre-Columbian remains in Peru. Only a few small fragments of bone were identified as possibly human, and they came from trash and disturbed looters’ fill. Animal bones included numerous rats (likely from the large amount of trash fill deposits), as well as small birds, guinea pig, and llama [Figure 5.50]. Many of the bones were far too burnt and charred for reasonable identification [Figure 5.51]. Several worked bones were found, mostly made into tools for weaving [Figure 5.52]. Several feathers found in
excavation were sent to Carla Dova at the Feather Identification Lab at the Smithsonian National Museum of Natural History [Figure 5.53]. Feathers identified as duck were from Unit 6 (discussed previously), and clearly come from a Colonial Period context. In one of the lowest levels of Unit 5, there were two feathers that based on identification and context seem to be ecofacts; one was a *Passeriforme* (order level that includes over 5000 species, usually known as perching or songbirds) and the other was an unidentified shorebird.

Botanical remains

All botanics were analyzed individually, with identification down to the species recorded [analyzed by Enrique Bellido-Cerda, see Appendix C, which includes analyses from both PICA 2009 excavations and the remains from the initial 2007 test pits at Quipico]. All of the plant remains at Quipico pertain to the middle and lower valley ecosystem; this suggests that those at the site produced and consumed their own products. Botanics show heavy reliance on maize, but still with a wide range of other plants utilized too (several varieties of beans, lúcuma, pacay, guayaba, and squash were dominant, with other plants such as chili pepper, peanuts, ciruela, and achira) [Figures 5.54-5.60]. Many of the edible plant remains did have evidence of processing, either intended for consumption and/or storage. Lúcuma remains included many portions of mesiocarp, which signifies that the fruits were likely dried for storage at the site. Although the current site is surrounded by lucuma trees [Figure 5.61], the location and depth of these remains indicates that the botanical materials are not intrusive. Maize in particular had parts of the plant indicative of initial post-harvest processing, which means that it is likely that maize was produced
in the surrounding fields. This was corroborated by three pollen samples from floor surfaces analyzed by licensed specialist Luis R. Huamán Mesía, Coordinador of the Laboratorio de Palinología y Paleobotánica, Herbario HUPCH "Magdalena Pavlich." (PICA 2009).

Cotton, tillandsia, and other vegetable fibers were utilized for mats, baskets, and textiles. Cactus needles were found, which were likely used for textile production. Several types of cane (carrizo and caña brava) were identified, and were likely used for roofing, posts, and mats. Numerous splinters and shavings indicate that there was significant woodworking done at the site, and many of the tree species represented—pacay, lúcuma, guayaba, and avocado—are also known for their usable wood [Figure 5.61].

The large quantity and density of food remains came from units and LPs in Structures B and C, suggesting that the most food processing at the site occurred in this area. The uppermost layers of the storeroom feature in Structure C Unit 6 and the upper layer of Structure A contained several olive pits and wheat grains, indicating that these layers dated to a post-contact reoccupation of the site; this correlates well with the radiocarbon samples. The frequent layers of plant materials discovered in the excavation (as described in Chapter 4) were identified as pacay; these deposits included not only leaves, but stems, flowers, branches, and pod fragments [Figures 5.62 & 5.63]. Although pacay trees also grow near the site [Figure 5.64], like the lucuma it is unlikely that these modern plants are responsible for the large amount of pacay leaves encountered in excavation. The location, depth, and layering found in units such as the highest point in Structure E, where layers of trash were capped with pacay leaves and then immediately
covered with sand, makes it unlikely that natural forces were at work for this deposition; it is not possible for such a large quantity of leaves had to blow against the wind and up approximately 15 meters over a series of walls to deposit in such a fashion. It is possible that these layers were used to cover the domestic refuse as odor and insect control, since pacay is reputed to have natural insecticidal properties (Enrique Bellido-Cerda personal communication 2010).

**Coprolites**

Many coprolites were found across the site and at multiple levels, as discussed in the previous sections [Figure 5.65]. Morphological features were used to identify the coprolites since shape and size is usually distinctive at the Order and Family levels; categories were identified using Chame (2003).

For guinea pigs (*Cavia porcellus*) and other cavies, single pellets are cylindrical, inflected, and have rounded ends, and are usually between 0.5-1.7 cm long with a 0.1-0.6 diameter, depending on the size of the cavy. The key characteristic is a furrow that runs along the length, giving it a ‘coffee bean’ appearance. This is clearly distinguishable from other rodent feces, such as for rats, which are longer, narrower, with more pointed ends and no furrow. Most *Artiodactyles* (Order level, also known as even-toed ungulates) except for those in the Bovine group have cylindrical or rounded pellets pointed at one end and concave on the other end. These have the appearance of a small bean or seed. The feces from animals of the Bovine group (Family *Bovinae*, which includes cattle, sheep, and goats) are distinct from those of other *Artiodactyles*. Even for sheep and goats, these coprolites are much larger, more rounded, and lack the characteristic tapered-end,
dimpled-end. They also are extruded in clusters or clumps, which results in the feces being flattened and accumulated in circular piles.

Using these criteria for identification, the various coprolites encountered in excavation could be categorized as either rodent (likely rat), guinea pig, llama (or close relative such as alpaca), sheep, or goat. Several other coprolites were excavated that did not fit any of these categories; they were much larger and appeared to resemble dog or human feces in overall shape and size. However, the few examples were extremely fragile and crumbled upon removal, which eliminated the possibility of a more specific identification. Rodent coprolites were primarily discovered in highly disturbed contexts in association with rats’ nests (or the rat itself, as in the case of Unit 8). Guinea pig coprolites were found in trash deposits and in the initial layers of Unit 8. Llama coprolites were found all across Structure B as well as in the suspected corral in Structure E (described in LP4), though not on the other structures. This suggests that Structure B may have been re-used after it was no longer a residence as temporary housing for llamas.

Although this portion of the valley is not conducive for year-round llama keeping, herds of llamas may have been brought down from the middle Huaura Valley to graze on post-harvest remnants in the lower valley fields for parts of the year, such as is currently done with goat herds in modern times. As mentioned earlier, the many of the coprolites in the upper levels of LP4 were tentatively identified as belong to either sheep, goats, cows, or horses; some pellet clusters that resemble sheep or goats were found, but the remaining coprolites were so compacted as to be unidentifiable beyond corresponding to the flat patties characteristic of Bovinae. Sheep and goat coprolites, though not encountered elsewhere in excavations, were seen along the western portion of the quebrada on the
surface; modern-day herders use this area when they bring their herds from elsewhere in the valley to feed on the remnants after the maize harvest in the fields in front of Quipico.

**Textiles and Related Items**

Interestingly, despite the excellent condition of all other material remains and the large quantity of trash that was excavated, textiles did not seem to preserve very well. This may have been due to the quality of the cotton used, the environmental conditions, and/or the action of pests such as rats. Only a few (<10) scraps of undyed, cream-colored, single weave cotton were found in the trash fill; this type of textile is associated with utilitarian garments due to its coarseness and plainness [Figure 5.66].

Numerous threads were found, including several threads of bright magenta dyed camelid fiber, as part of the rat’s nest in Unit 8 [Figure 5.67]. Camelid fiber was usually reserved for borders and extra decorative elements on higher-quality fabrics (Young-Sanchez 1995), due to the necessity and expense of transporting the llama fiber in some form, although whether it was already spun and dyed or not is uncertain. Some small tufts of unspun cotton of varying colors were found, along with cotton seeds still stuck in them [Figure 5.68]; this unprocessed material demonstrates that some raw processing occurred here for textile production. One thin spindle stick and two small possible spindle whorls or beads were found; these are the size and weight for spinning very fine threads [Figure 5.69]. One batten sword (a flat piece of wood that is tapered at both ends, used in weaving) was discovered in the trash in LP8 [Figure 5.70], and there were a couple of other smaller weaving bars found in LP7. Considering the few tools for fabrication along
with the lack of materials, this suggests that although there was some textile production at Quipico, it was small-scale.

Miscellanea

No metal items were found during excavation, either due to preservation bias or a relative paucity of metal at the site, which is surprising considering the reputation of coastal metalworkers. However, metal items—adornments, copper piece on mouths and hands—are frequently found only in burials; at Quipico, there were no intact burials and very little evidence of any burials at the site at all, which also explains the lack of metal at the site. Several pieces of colored minerals were found—both yellow and red—which would have likely been ground up and the pigment used for wall and floor decoration [Figures 71 & 72]. Red is also frequently used to coat the faces of the deceased (or their substitute wooden mask) for burials, and initial XRF data of the paint on looted remains from Huaura Valley sites and the Huacho Museum in Peru tentatively defines the red mineral as iron, not cinnabar as was expected (Kit Nelson, personal communication 2010) [Figure 5.73].

Radiocarbon Dates

Samples for radiocarbon dating were taken from excavated pits at each compound in order to achieve several goals regarding occupational sequence, timing of construction episodes, and providing absolute dates associated with in-context ceramics. Knowing which compounds were in use at what time—simultaneously versus sequentially—can clarify ideas about extent and duration of control for these sites. Dates for tapial
structures can be compared to those of adobe brick to determine the construction difference has a chronological component. Finally, radiocarbon dates from Quipico can be incorporated into current efforts to securely establish a ceramic chronology for the region (Nelson and Ruiz Estrada 2007; Heaton 2015; Szremski 2015; Brown Vega 2008), as well as connect this chronology more closely to architectural trends.

The radiocarbon samples were sent to the Center Applied Isotope Studies (CAIS) at the University of Georgia, Athens. Out of the eleven samples sent, two had indeterminate results and three were returned as insufficient for testing. Results from the six successful samples were calibrated by OxCal (Bronk Ramsey 2009, using SHCal13 by Hogg et al. 2013). The results of the radiocarbon tests and the associated units are listed in Table 5.1. When the four dates taken from the structures (UGa-11327, UGa-11095, UGa-11325, and UGa-11326) are considered along with the three radiocarbon dates from Quipico (see Table 5.3: UGa-03317, UGa-03318, and UGa-3767) taken by Ruiz Estrada and Nelson (2007), the main occupations at Quipico clearly correspond from the end of the Late Intermediate Period to the beginning of the Late Horizon. The two samples (UGa-11096 and UGa-11328), although clearly post-contact period remains (especially since one was wheat, a crop introduced to Peru by the Spanish), they were dated to determine how late into the Colonial Period the site was in use; the results place this occupation of Quipico sometime during the 17th century.

These dates can be considered in context with the radiocarbon dates from elsewhere in the Huaura and Chancay Valleys. Ashley Heaton (2015:152-153) has gathered one of the first comprehensive compilations of radiocarbon dates for the Late Intermediate Period and Late Horizon in the Huaura and Chancay valleys from the
following sources: Brown Vega (2008:247-248), Cardenas (1978), Nelson and Ruiz (2010), Pazdur and Krzanowski (1991), and the Andean Radiocarbon Database. I have also considered the dates provided by Szremski (2015:230) for the middle Huaura Valley, and previously unpublished information resulting from the project by Ruiz Estrada and Nelson (2007) at several sites in the Huaura Valley (see Table 5.2, data used with permission by Nelson).

Placing Quipico in context with these sites shows contemporaneity of its main occupation with the sites of: Salitre and parts of Campo Libre in the middle Huaura Valley (Szremski 2015:230); portions of Acaray (Brown Vega 2008) and Cerro Colorado (Brown et al. 2013), Casa Blanca C (Pazdur and Krzanowski 1991), Rontoy (Nelson and Ruiz 2010; Table 5.2 in this dissertation), and Chambara (Table 5.2 in this dissertation) in the lower Huaura Valley; and parts of Lauri (Pazdur and Krzanowski 1991) and Pasamayo (from the Andean Radiocarbon Database, reported in Heaton 2015) in the Chancay Valley. The earliest dates at Quipico do overlap with those reported by Heaton (2015) for Caldera (range of AD 1319-1417) and El Carmen (range of AD 1219-1397), but just barely; the considerable differences in material remains suggest that the Huaura Valley experienced significant cultural change during this time, and it is possible that these sites were chronologically distinct, if only by a few decades (see Chapter 7 for further discussion of this issue). The Colonial Period occupation of Quipico corresponds to dates from the sites of: Lumbra and Viso D in the Chancay Valley (Pazdur and Krzanowski 1991); portions of the Muralla de Mazo (Table 5.2 in this dissertation), and a small portion of El Carmen (Heaton 2015) in the lower Huaura Valley; and portions of Casa Blanca C in the middle Huaura Valley (Pazdur and Krzanowski 1991). With this
growing body of radiocarbon dates—counting this dissertation, a total of 63 samples from the lower and middle Huaura Valley and the lower Chancay Valley spanning the Late Intermediate Period through the early Colonial Period—researchers will be better able to interpret the changes in material culture for this region.

Additional Notes on the Analysis of Quipico Materials

No influences from Chimu or Ichma were evident in the ceramics or textiles at Quipico, which has been noted for the rest of the lower Huaura Valley (Kit Nelson personal communication 2009; author’s personal observations), and materials remain consistent with the general Chancay characteristics described in Chapter 2. Neither Middle Horizon (Wari) nor Late Horizon (Inca) characteristics are clearly apparent in the materials.

The data from the excavation [Chapter 4] and artifact analyses are combined with the detailed architectural analyses described in the following chapter [Chapter 6] in order to provide a clearer picture of site function and the role of Quipico in the Huaura Valley as part of the Chancay [Chapters 7 & 8].
CHAPTER 6: ARCHITECTURAL ANALYSIS

A Society’s Architectural Approach

Each society tends to envision the built environment according to its own style, termed its “architectural approach” (Christie 2006a). An architectural approach of a society is the characteristic patterning of that society’s style of construction and how that relates to their concept of space (Bawden 1982a). Think of it as social norms for how to build and use areas. The creation of an architectural approach is a social process, not the use of a preexisting immutable mental structure (Giddens 1984; Lefebvre 1991; McGuire and Schiffer 1983). It is a ‘blueprint’ for how space is consistently arranged by the individual or their community for purposes that may be consciously or unconsciously decided upon. The functional, aesthetic, ideological, innovative and/or conservative elements of the built environment – and which of these factors are emphasized in a society’s architectural approach – can reflect the varying adaptations and goals of the society and the individual members within it (Moore 1996a). A similar perspective was described by Ankerl (1981:43) and is called a “spatial sociology”. This is the idea that societies plan space using the same rules that govern their social arrangements. So, the architectural approach of a society can demonstrate how that particular society uses the built form as a means of organizing, using, and living in the environment, and can be compared to other cultures’ architectural approaches (Giddens 1984; Knapp and Ashmore 1999); societies with different values should have different architectural patterns.
Modern textbooks of architectural design arrange these numerous interrelated elements into systems and orders (Ching 2007). This includes a wide range of considerations, such as the sensory qualities of space and construction, movement to and within a structure, technological factors such as climate and durability, proportion and scale, historical traditions, and the needs of its users, to name a few. A single structure may serve multiple needs at the same time; it can either assist (Rapoport 1988) or block communication (Sanders 1990), or it may do both simultaneously. For example, entry corridors at a workmen’s village in Harrappa during the 2nd millennium BC were used to provide privacy, but without obstructing physical access (Fletcher 2007). Though only some factors are studied at one time, these different aspects may have easily coexisted in the minds of builders and users alike (Moore 1996a).

**Space Syntax Analysis**

One way in which societies can communicate social information is through spatial manipulation. Just as a particular ceramic or textile style is associated with an archaeological culture, so is an architectural style. Buildings, however, play a larger role in daily life—the area and structures in which people move and act both shapes and is shaped by that population. Space syntax analysis is a method that encompasses a set of theories and techniques for interpreting spatial configurations and their social effects, developed in the late 1970s and early 1980s as a tool for urban planning and architecture by Bill Hillier, Julienne Hanson, and others (see Hillier et al 1976; Hillier and Hanson 1984; Steadman 1983; *contra* Ratti 2004). This method focuses on the argument that unwritten social rules control the appropriateness of spatial configurations, and these
control the ways in which small architectural elements are joined together to form larger units, much in the same way that a language's grammar guides the way words are joined to express ideas. So, just as many languages sound and are structured differently from each other, so too can each culture create its own unique architectural arrangement according to an underlying and unstated spatial grammar. This is not to be confused with a direct correlation between a language and an architectural style, as the rate of change and influences upon these two distinct features of human behavior are very different. It does, however, provide an interesting approach to understanding the built environment on a deeper level than a simple visual assessment. Any observer can see and describe architecture, but this syntactic structure is not immediately apparent. By distilling the floorplans into compact, clear spatial arrangements using space syntax formulae and graphs, we are able to study certain formal properties of buildings. Thus, it is through space syntax analysis that we can separate the architectural layouts from the distractions of decoration and deterioration, and simplify it down to patterns that can be compared between sites of varying size and confusing configurations. These methods have been used by many archaeologists (see Bagwell 2004; Brewster-Wray 1983; Czwarno 1989; Ford and Arnold 1982; Foster 1989; Moore 1996a; Sanders 1990; and others, discussed below). For this dissertation, I used the methods described in this chapter (and explained in further detail in Appendix D) to analyze the architecture of Quipico and to compare it to other sites in both the Huaura Valley and the main Chancay Valley.
Bawden’s Basic Andean Residential Unit

A basic Andean residential unit is defined by Bawden (1982a) as containing three ‘spatial constituents’: a food preparation area \((cocina)\), one or two small rectangular storage areas \((depositos)\), and a large rectangular benched enclosure \((sala)\), with each area containing a distinctive assemblage of features and domestic artifacts, albeit with some overlap (Brewster-Wray 1989). Although it is a useful schema, to clarify I will use the terms ‘kitchen’, ‘storeroom’, and ‘living room’ instead. This tripartite scheme is derived from his studies of the residential architecture at the urban Moche V/Middle Horizon site of Galindo in the Moche Valley; one of the issues that I was interested in testing through space syntax analysis was whether or not this residential unit is truly a pan-Andean trait.

In the kitchen, the focus is on domestic activities involving food preparation (Brewster-Wray 1989). Artifacts and features associated with food preparation are cooking vessels or flat pans (usually large with soot or other evidence of heating upon a fire), chipped stone and ground stone tools (for processing foodstuffs), and hearths. A typical kitchen usually contains a single hearth surrounded by a thick deposit of ash and refuse (Bawden 1982a). Ethnographic evidence suggests that it is extremely rare for two Andean households to share a kitchen or a hearth (Brush 1977; Mishkin 1946; Tschopik 1946). The kitchen may also have evidence of food consumption activities: bowls and cups for serving or eating, and remains of meals such as camelid or cuy bones (Brewster-Wray 1989). Artifacts may also include small-scale food storage jars, jars for the transportation and storage of liquids, and refuse from domestic scavengers like cuy and other rodents (Bawden 1982a). At Galindo, the kitchen also contained the only entrance
to the residence, which excluding the other rooms from direct exterior access (Bawden 1982a).

Living rooms are considered the ‘social centers of the domestic household’ (Bawden 1982a), and, therefore, living rooms are settings for a variety of domestic activities. Some food consumption items, like those in the kitchen, may be present, with a higher proportion of finer ceramic wares (Bawden 1982a; Czwarno 1989). Activities and their associated artifacts found here are: spinning and weaving (needles, spindle whorls, fiber fragments, loom components), metalwork (metal fragments and stone tools), woodworking (tools and products in various stages of completion), decorative or personal adornment items (jewelry, clothing pins), and possible religious icons (small plainware figurines) (Moore 1985, 1989). Despite the wide range of activities that can occur here, the living room usually contains the fewest deposits out of all rooms (Bawden 1982a). At Galindo, other features included benches along the living room walls that could have been used for either storage or seating, and the central area may have been left unroofed (Bawden 1982a). In storerooms, large coarseware storage vessels and jars for liquids are common to the virtual exclusion of other artifacts (Bawden 1982a). Floors and walls were plastered with clay and lime; entrances had a high threshold to prevent rodent or insect infestations (Anders 1981).

Increased differentiation beyond this basic unit occurs when there is a need to accommodate more people or provide space for more activities. In some studies, room and structure size is used to approximate the number of people at a site (e.g. Bernardini 1999; Casselberry 1974; LeBlanc 1971; Naroll 1962; Sumner 1979; for the Andes in particular, see Lau 2010). Although the accuracy of population estimates derived from
this association is questionable (Eighmy 1981; Kolb 1985), there is a rough correlation between the size of a dwelling and the number of inhabitants it must contain based on concepts of culturally specific personal space requirements (Dohm 1990; Hall 1966; Watson 1970). Groupings of basic units based on kinship or economic ties create multi-dwelling clusters of attached units with some form of shared access or space between them (Bawden 1982b). Room and structure size may increase or change as there is a need for multiple activities that take place for a longer period each day (Kent 1990c). Every activity has a particular spatial requirement; if that activity overlaps at the same time as another one, a different area is needed to effectively coordinate space (Brewster-Wray 1989). This may also result in activities moving from outside to inside, or from underground to above ground (Gilman 1987).

_Critiques of Space Syntax Analysis_

Space syntax analysis is a tool to be applied in certain situations and corroborated with additional evidence, resulting in better information on how people arrange their spaces and societies. Critiques of space syntax analysis have been extremely useful in helping to reveal particular issues that those who wish to use this method must address (Ferguson 1996).

One of the earliest challenges to space syntax was the criticism that it reduces and oversimplifies space by detaching the building and room structure from valuable descriptive characteristics, such as decoration, function, height, location, and even in some instances, size. This is actually a major intention of space syntax and should be viewed as a strength when done correctly. By eliminating these extraneous attributes,
space syntax is able to also eliminate the cultural biases archaeologists use to assign value to various rooms and structures. When a room is designated as a ‘common activity area’ or a ‘guest room’, there is a great deal of assumed activity and traffic patterns that are attached which may be erroneous. This can particularly be problematic when, as frequently occurs, structure plans are incomplete or building functions are obscure. As an example, for this project, an area of Structure C was excavated under the assumption that it ‘looked like a storeroom’ due to its long narrow shape (Unit 7). Upon excavation, however, we did not find any indications that it was a storeroom, either archaeologically or through the comparisons of spatial features with known storerooms at other coastal sites. This is a good example of how a combination of space syntax analysis with targeted excavations can provide much better information than general assumptions of room function based on overall shape, at least until a clear quantifiable pattern has been discerned.

A major limitation of space syntax analysis, however, is that it requires detailed structure blueprints. This level of detail is not often available in excavations in parts of the world where preservation is less complete than in coastal Peru. An example from this project is regarding access graphs—most site plans are lacking clear information regarding doorways, complicated further by the common practice of blocking up doorways upon site abandonment, which makes this the most difficult type of analysis. Even if the researcher is able to create a detailed enough map of their own site, comparative analyses may be extremely limited because most other sites have not been mapped in detail sufficient enough for in-depth full comparison.
Architectural Caveats

Another major factor to consider is the architecture itself. Architecture is not completely static; it is subject to change and cultural adaptation (Licon 2004). Individual structures are frequently remodeled for an entirely new set of uses; doors may be blocked, walls added, and spaces divided. Entire societies may shift their architectural pattern due to changes in subsistence activities (Gilman 1987), external coercive pressure (Czwaro 1989), or demographic changes (Fletcher 1977). What happens after the construction and original use of a building is a phenomenon that Bradley (1993:13) calls the “afterlife of monuments”. Sites and structures may be transformed and reused as people of all time periods encounter and interact with them. For example, even after burning and abandonment, Teotihuacan remained a pilgrimage and ritual site during Aztec times (Knapp and Ashmore 1999). Even today, thousands of tourists visit the site annually and its image serves as a reminder of Mexico’s Precolumbian past. This transformation has also been discussed by Pillsbury and Leonard (2004) for Chan Chan, where cuidadelas changed from active administrative, ritual, and residential centers into mausoleums and places of periodic veneration. Architecture, especially for the Andes, will likely demonstrate evidence for temporal changes in the function and meaning of particular spaces and places.

A second consideration is that when structures have multiple functions, it may limit our ability to make accurate interpretations of architecture. Is it even valid to propose a spatial separation of ritual from ordinary life, especially for Andean societies (or others) for whom household rituals are important and ancestors are ever present? There may be forms that cross-cut these divisions, such as has been suggested for Huaca
de la Luna at the Moche typesite, which has been interpreted by Claude Chapdelaine (2006) as a multifunctional building that included aspects of both a palace and a temple. From his work on the Late Formative and Early Classic Period West Mexico, Nelson (2004) suggests that particularly for the Americas, monumental public architecture serves as a setting for processing and displaying human remains, and that these rituals are organized by the elite as a power-construction strategy. Functional distinctions between palace, temple, and mausoleum may be blurred at times, such as when a structure originally built as a palace then served as the burial place for its resident (Isbell 2004). Depending upon the importance of the individual buried, the structure could become a temple-like monument over time (Ramirez 1990, 1996). Elites in Andean societies may have served in political, economic, and religious roles simultaneously, resulting in a blending of the architectural patterns discussed above (Czwarno 1989).

It is also important to keep in mind the issue that the designers, the builders, and the users of a structure may not be the same (Rapoport 1990). Architecture is often assumed to be a direct response to the needs of those who build it (Gilman 1987) and that members will dwell in a house in which they have built or designed themselves (cf. Rippengal 1993). Many members of a society, however, may live in or use buildings in which they have had little to no input regarding construction or decisions about form (Blanton 1994), particularly as groups within a society become more differentiated (McGuire and Schiffer 1983). They may use structures built by distant ancestors, unrelated individuals, or dictated by more dominant social or cultural groups (Allison 1999a; Smith 1992). These factors may especially come into play in Andean society,
where ancestor worship is pervasive, mit’a labor is brought in from distant communities, and several militaristic groups repeatedly spread across the lands.

Architectural Analysis Methods Overview

Using methods from space syntax analysis, I employed a suite of techniques for studying architecture: graphing, visibility studies, and construction and compositional analyses (for details, see Appendix D).

Adjacency at Quipico and Other Sites

Adjacency graphs proved to be the most useful out of all the types of architectural analyses employed for this project. Despite issues of doorway identification, lack of topographic data, or inability to obtain adobe samples, the structures at different sites could be compared according to adjacency and the accompanying indices. During analysis, I realized that although the access and route graph methods had been unsuccessful, some aspects of the adjacency graphs could be used as a proxy to assess flow patterns at a basic level. Since the adjacent walls indicate where access could have been, the connections between different areas clearly showed what areas had fewer opportunities for access; this has implications regarding what parts of a structure are more isolated than others.

Internally to the site, Structures A, B, and C were the most similar to each other in terms of layout and access. Structure C has the most complex layout of the three, with the adjacency graph and access graphs showing a pattern of two distinct sections of the
structure. Degree of access to all compounds was quite limited, with only one or two entrances into each building.

When compared to other sites in the Huaura and Chancay valleys, the structure layouts from Quipico fall nicely within the middle of the range of variation. The structures in the Huaura Valley are characterized by open layouts, no center-located ramped platforms, and space between buildings. The sites in the Chancay Valley, however, have a much denser, compact, and labyrinth-like plan; calculations of compactness, access depth, and gamma index were distinctly different than the average site in the Huaura Valley. In terms of graphic analyses, Quipico has much more in common with the other similarly-sized sites in the Huaura Valley, although its Structure E more closely resembles (especially in gamma index) several structures at urbanized large sites such as San Juan de las Cañas or other large sites in the Chancay Valley.

Visibility at Quipico

For Quipico, visibility analysis was used to reveal subtleties about site and compound placement upon the landscape. The structures at Quipico have an excellent view across the valley as well as upriver and downriver for several kilometers, and the structures themselves are easily seen from elsewhere. Additionally, even if the structures had roofs, they would not have greatly obstructed visibility from other structures. The overall slope of the site and the somewhat staggered placement of the structures allowed for unblocked lines of view towards the south. Almost the entirety of the site itself could be seen just from the vantage point on the ridge just outside the uppermost room in Structure E (near the location of Unit 10), even at an 18º obstructed view. Without roofed
areas, privacy at the site was extremely limited to the tree-lined canal bordering the agricultural fields to the south or behind several large boulders on the east edge of the site. Mapping with the total station was exceptionally easy, with only a few datum points necessary to encompass the entire site. Thus, the visibility analyses have provided an analytical confirmation for general impressions and 'feelings' regarding the site layout.

*Adobe Construction at Quipico*

Composition analyses were very useful in supporting excavation data regarding the different construction episodes; it was not possible to get samples from other Huaura or Chancay Valley sites for comparison due to permit limitations. Thorough compositional analysis was done on adobe samples from tapial and brick walls as well as all of the floors encountered in excavations at five of the seven architectural compounds at Quipico; the remaining two compounds were too eroded and ill-preserved to take samples from. For Quipico, despite the consistent visual appearance of the tapial structures, there was a clear division in adobe construction over time. Several bricks were found in fill and isolated parts of the structures as repairs; owing to their shape, random dispersal at the site, and faint traces of yellow paint on unexposed surfaces, it was suspected that these bricks were actually re-utilized Middle Horizon bricks from an adjacent site. This was confirmed from the compositional profiles of the bricks, which did resemble a sample taken from the adjacent site but did not match the main tapial walls. Also, there was a distinct difference in the compositional profiles of the tapial and floors from the majority of the construction episodes and the tapial, bricks, and floors from the colonial occupation of the site; even though they look the same, the colonial
period material, though from the same raw sources, is significantly denser with a greater degree of fine particles, making it much stronger. So, when the site was occupied in the early 1600s, the new inhabitants either were accustomed to a different method of making adobe or had been influenced by Spanish construction methods.

Compositional profiles were also compared between the different structures’ tapial walls and some fragments of quincha (mud-and-cane) wall that were discovered as construction fill. The tapial walls and the quincha bases were extremely different in composition, with the quincha showing much more gravel and a smaller range of sediment sizes; it was also had the lowest plasticity and the greatest amount of organic debris. This supports the argument that quincha architecture was likely a non-elite form of architecture; the clay used for quincha was not processed much to remove impurities and was able to dry very quickly, but was less durable. Thus, quincha architecture was much less labor-intensive than tapial, the material being easily gathered and put up, and needing frequent repairs. Unfortunately, there was no difference in the sourcing of the material across different buildings, and there was no overall distinction amongst the Late Intermediate Period components of different buildings, so the building sequence of the structures at the site was indeterminable from this method.

The tapial walls from the main Late Intermediate Period occupation have a distinctly separate compositional profile from the floors; the floors are denser, with greater plasticity and a greater degree of fine particles (plant fibers and seashells) and carbon. The carbon is not just surface carbon from occupation use, but actually incorporated uniformly into the floor. It appears that ash may have been mixed in with the floor adobe; this would have resulted in the floor being harder and more compact, with a
smoother surface that would be easier to dampen down to keep dust away. It would have also been more resistant to cracking over time. The mixture of fine sand, ash, and crushed rock would have created a concrete-like surface, both physically and chemically; the regional geology includes significant amounts of granites and gypsum, and calcium carbonate is easily obtained from crushing seashells, all of which are essential components in the construction of concretes and plasters (Courland 2011; Institutio de Geologia y Mineralogia 1975; LeMaitre 2002). Microscopic inspection also detected small amounts of salt crystals in some samples, particularly those from the walls; this is likely due the absorption of evaporated coastal fog, and would have contributed to their deterioration (McHenry 1984).

Architectural Summary

The various forms of architectural analysis used for this project had a varying degree of success, with the most useful methods being dual plan graphs and adobe composition analysis. For Quipico, these methods helped to enrich our understanding of construction methods and offer a way to compare this site to others in the region in a more quantifiable way. Quipico shares some architectural elements with the typical Chancay pattern as described by Krzanowski (1986; 1991) from his research in the Chancay and upper Huaura Valleys. Like most typical Chancay sites, Quipico has thick tapial walls that form small rectangular structures with multiple rooms and corridors and uses ramped entrances. Quipico does not have a few features characteristic of typical Chancay sites: there is no use of any stone construction or decorative elements and the ramps are not center-located leading into platforms, instead placing them parallel against
the side of an exterior wall. Quipico and many other Huaura Valley sites dating to the latter half of the Late Intermediate Period are characterized by open layouts and ample space between buildings. It is possible that these features represent an earlier, local style of architecture being incorporated into the Chancay plans.

Quipico and other Huaura Valley and Chancay sites have very different structure layouts when compared to typical Wari, Chimu, or Inca sites (Andrews 1974, Conklin 1990, 1991; Day 1982; Malpass 2001). There are very few characteristics shared between Chancay and Chimu architecture beyond the shared practice of using adobe tapial for construction. The most similarities exist between Ichma and Chancay sites, especially in their use of street-compound layouts at major urban sites, lending further support to the possibility of a close relation between these two polities in terms of either ideology or control. Quipico and Huaura Valley architecture does, however, have a distinctive feature that sets their style apart not only from other Chancay sites but also the general coastal tradition of architecture. Huaura Valley sites have a relative lack of platforms, instead using the natural ridges and topography to create height for room clusters.

Addressing Bawden’s (1982a) basic Andean residential unit of kitchen, storeroom, and living room was difficult both with the information from Quipico as well as when comparing it to other Andean coastal sites. One of the most notable aspects was that several hearths identified at Quipico with an abundance of food remains (LdP2/Unit 4 in Structure B, Unit 7 in Structure A) were not restricted to a small kitchen-like area. Compounds had several entrances, none of which took precedence over another and were more frequently found entering into large patio-like areas, rather than a kitchen like Bawden's description. Although the storeroom excavated (Unit 6) does fit Bawden's
description—it has a raised threshold to thwart rodents and is clay-plastered—it belongs to a post-contact date, and other rooms very unlikely to be storerooms (such as Unit 10 in Structure E) also exhibit these same features. Living room areas were not discernable at Quipico—no benches were present, main areas had very few occupational deposits, and much of Structures A, B, and C were likely unroofed. Although the functions that Bawden describes are basic residential features, it is less certain that his architectural descriptions have much utility for understanding coastal sites.

Quipico’s placement upon the landscape may have been a significant statement regarding resource control. It is possible, given the location and distribution of the site that Quipico was meant as an observation outpost for local elites or perhaps as a symbolic form of protection. Residents of the site would have had a commanding view, providing it with a noticeable claim upon its immediate area. From the vantage point of Quipico, any travel through the Huaura valley would have been visible for a long distance. Since the Huaura River is a mere 1.2 kilometers away and fully within view, Quipico could have been part of a network that exerted control over water access rights and the timber that grew along the river banks. With this direct access to fertile agricultural fields, water, and wood, Quipico may have controlled valuable resources which could have been traded to inland sites or along the coast for goods and materials not accessible nearby. Quipico has an advantage over other sites further down-valley because even during the foggiest days during the winter, it is located in a spot right where the coastal fog tends to disperse so the visibility is almost always clear at the site; if you proceed less than half a kilometer downvalley, the fog can obstruct vision.
The utility of these methods of graphing, visibility, and compositional analyses, though not to be overestimated, can provide excellent support for the interpretation of excavation and radiocarbon evidence. All of these methods are inexpensive and require very little additional equipment. With the exception of the compositional analysis, all of these methods are non-invasive and non-destructive. It is hopeful that the experiences of this project can help guide other archaeologists to consider some of these methods for analysis. This can perhaps lead towards a greater understanding of the construction of social spaces (Paliou et al 2014) and a more well-developed archaeology of architecture (Moore 1996a).
CHAPTER 7: UNDERSTANDING LOCAL ELITES AT QUIPICO –

INTERPRETATIONS AND CONCLUSION

Summary of Investigations at Quipico

Quipico was initially constructed during the latter half of the Late Intermediate Period, during which Structure C was first built. All the structures were built on top of either bedrock or natural rises of sterile soil. This may perhaps be to take advantage of the natural topography within the quebrada to avoid occasional flooding. In several of the units as well as noted in general surface survey, there is evidence of alluvial deposits and eroded ceramics that correspond to significant flooding, like those experienced at El Carmen (Heaton 2015). The placement of the structures on these elevated areas is an indication of some degree of pre-planning the site.

Excavations revealed evidence of at least three major construction episodes. The majority of the occupation seems to correspond with the latter half of the Late Intermediate Period and the start of the Late Horizon. A distinctive construction style is evident, and the architectural analysis and radiocarbon dating at Quipico seem to support Heaton’s (2015) assessment that the thick tapial walls, like the one she observed at Caldera, are later in time. The walls—in particular the largest walls forming the exteriors of the structures—throughout the site were very slightly trapezoidal in shape (narrower at the top than at the base, with a gradual slope of the faces). Although this is known to be a common practice for coastal sites as a technique to improve seismic stability, the degree
of wall deterioration due to wind erosion makes it unclear if the all of the walls are slanted that way, or only some of the major exterior walls of structures. One clearly trapezoidal form was that of the doorway in Unit 10, but this would not necessarily have provided extra stability for the wall and so might have simply been decorative in design.

In some structures (Sectors B, D, and E), there are several rooms in which layers of loose gravel containing artifacts/trash were alternated with layers of almost pure botanics—in particular leaves and branches from pacay trees—and can best be seen in LP6; this may have been done to either consolidate the fill or had symbolic meaning. Although it was expected that this would be excellent material to date, these layers were only seen in the thick construction/trash fills in rooms with Looter Pit Profiles and so, due to long-term exposure, were unfortunately unsuitable for radiocarbon dating. The limitation of these layers, however, to only the areas with the thickest layers of construction fill mixed with trash, lends credence to the idea that they served to stabilize the fill. The rest of the rooms and other structures had construction fill formed of coarse gravel alternating with medium or fine gravel. Immediately under most floors was a thin layer of sand or ash, sometimes also including large pieces of botanics (whole maize stalks); this was perhaps to help stabilize the floors.

Much of the individual compound internal layout is unknown due to the filled-in nature of many of the rooms and the use of short dividing walls (which perhaps were once topped with perishable materials). For future work at similar sites, I would recommend that to best recover architectural information without committing to extensive horizontal excavations (see Chapter 3 for my argument on why that would be impractical), projects should focus on wall-base clearing. I should also note, however,
that this task will still be somewhat difficult due to construction methods of the tapial—blocks are set on top of bedrock and gravel, so if they are removed or too heavily eroded, there is very little trace.

Structures A, B, and C were the most similar to each other in terms of layout. Structure C has the most complex layout of the compounds, with the architectural analysis demonstrating a pattern of two distinct sections of the structure (almost as if it were two separate buildings). This suggested that it may have originally been two buildings that were then joined together; this interpretation was reinforced by the differences in stratigraphy in the opposite corners of the structure. The northwest corner and the southwest corner originally had different depth and number of floors, until a major construction episode, when a new wall was put in and a large amount of outside gravel was brought in (from somewhere near the eroded remains of an Initial Period/Early Horizon site, possibly immediately to the east of the site center) to level the structure out, after which the floor sequence and depth in the two areas correspond. Structure D was the most distinctive in layout, which via space syntax analysis resembles that for ritual structures at other coastal sites. Access into the buildings was limited, and 'hubs' of activity areas are clearly visible in the adjacency portion of the dual plan graphs. During the site’s main occupation, several quincha structures (their location currently unknown) burnt down, either intentionally or accidentally, and the large pieces of adobe bases from these walls were used as construction fill for floor construction in parts of Structure B (Unit 9) and Structure C (Unit 5). Along with new construction, older areas of the site were repaired using adobe bricks and tapial patches, such as outer walls in Structure E and in areas damaged by pests such as the patch visible in Structure B Unit.
9. Overall, the variability in construction is similar to what has been observed at sites elsewhere in the Huaura Valley (Heaton 2015) and Chancay Valley (Negro 1991).

In the Colonial Period, likely with the establishment of the hacienda Quipico (Appendix F), the site declined in population and was used primarily for food storerooms (as seen in Structure C, Unit 6) and animal corrals (Structure E). The storerooms were constructed by building a new adobe floor and placing several low adobe brick walls across a hallway to divide the area into small square rooms; the room adjacent to this hallway also had several adobe brick low walls that divided it into small squares. Prior to abandonment sometime during the late 1600s AD, most doorways at the site were sealed with adobe bricks and the structures were thoroughly cleaned.

Quipico and the Huaura Valley from the Late Intermediate Period and the Late Horizon

Argument for Elite Residences

Structures A, B, and C, with the presence of several hearths, small room arrangements suitable for indoor activities around unroofed patios, and an abundance of refuse, suggest that these structures were most likely residential. The material remains indicate an array of household activities taking place at the site—cooking, weaving, and tool manufacture. There was evidence of the production of ceramics, textiles, and lithics, but not beyond the level of simple repairs or infrequent small-scale production; thus, it is unlikely that Quipico was a community of specialized craftsmen.

Few items that would be termed ‘elite’ were found – no copper or other metals, no spondylus, few textiles (and those present, undecorated). However, the abundance and quality of the orange cream-slipped wares, several luxury items like beads and figurine
fragments, and the presence of several high-quality Chancay Black-on-White wares, along with the possible nearby elite cemetery, attest to the likely higher-status nature of the inhabitants.

Although maize was most common, there was a wide array of foods from throughout the valley present at the site. The faunal and botanical remains are evident of a highly varied diet that included transported marine resources, supporting the argument that Quipico had significant economic power and connection with trade networks both to the coast as well as the chaupiyunga.

Significant effort was put forth to construct and maintain buildings at Quipico: the labor-intensive tapial walls, the carefully constructed plastered floor, and signs of regular repair. Architectural features regularly associated with elites for coastal Peru—niches, plaster ornamentation, and benches—were not uncovered during the excavations at Quipico, but several buildings (Structures B & D) do have ramps. Makowski (2015) argues that platforms with ramps signifies the importance of the both the individuals and the activities at coastal sites: “From atop the raised platform, the kuraka and his subordinates, or mandones, could preside over ceremonial acts after the pilgrims had deposited their gifts and tribute in the form of foodstuffs in the warehouses at the rear of the building complex.” Large platform ramps at Pachacamac and ramps in miniature at smaller sites like Panquilma (Lopez-Hurtado 2011) are interpreted by Makowski (2015) as demonstrating the special status of local elites, and their later service as intermediaries for the Inca. Similar arguments have been made by Krzanowski (1991, and personal communication 2010) regarding ramps at sites in the Chancay Valley.
Although it lacks large chicha brewing vessels, a high quantity of foreign goods, or remains of surpluses or raw materials—all features of administrative centers—there is evidence for possible collection of agricultural products. The pollen analysis presence of all components of several significant crop plants, particularly maize, confirm that some agricultural production did take place in the immediate vicinity, and the products were brought to Quipico. When considered along with the large patio areas and small rows of rooms that would have been suitable for storage, this is suggestive that Quipico served as a location for the accumulation of surplus goods, similar to that described by Makowski above.

**Understanding the Placement of Quipico**

Placement of Quipico may have been intended to facilitate travel to the highlands; it is located at the juncture of the lower and middle Huaura Valley where the valley splits into two routes, makes a sharp turn, and begins to dramatically steepen and narrow. This convenient point was likely taken advantage of throughout centuries; Sayán was said by chroniclers and missionaries to have been a waypoint for people traveling from the highlands to the coast and vice versa, transporting salt, fish, and other goods (Cuadros 1992; Ipinze Jordan 2005). The Huaura Valley is distinguished by its easy access to various ecozones with a short and direct route to the highlands, even compared to the other three valleys of the Norte Chico (Usera Mata 1972; Heaton 2015:41).

This idea of Quipico’s value for transporting goods is also supported by the suspected animal corral in Structure E—as evidenced by its size and location, the lack of many artifacts or a well-constructed floor, and the overwhelming abundance of llama hair.
and coprolites. The corral, the convenient location, and the name of the site—Quipico, referring to the transport of goods, possibly by animals (see Appendix E)—provides a strong argument that during the Late Intermediate Period this site may have served as a waystation for the transport of goods throughout the Huaura Valley. The presence of horse bones and bovine hairs in the upper level of coprolites, along with a post-contact radiocarbon date of AD 1632-1793, indicates that this room was still in use during the colonial period, contemporaneously with the hacienda Quipico, attesting to the site’s strength in location. This corresponds to models of verticality that suggest that people interacted with others in diverse ecological niches, networks that were relatively easy to maintain because of the dramatic variation in topography across relatively short distances (Murra 1976; Szremski 2015).

**Quipico Within Chancay Site Hierarchy**

Recent survey of the Huaura Valley (Nelson and Ruiz 2004) has identified multiple site sizes, as did Krzanowski (1991). Krzanowski’s site typology (1991) outlined three major site size categories for the Chancay Valley: 1) large administrative-ceremonial centers; 2) palace-residential complexes; and 3) village sites. The assumption is that the larger sites are located in centrally available areas and contain the bulk of the population, while small sites are located in resource-rich areas to specialize and take advantage of the specific source; these smaller sites were relatively self-sufficient and sent surplus back in tribute form to the urban cities. Individual site layouts are best known from the largest sites in the Chancay Valley (Krzanowski 1986, 1991), such as Pisquillo Chico, Lumbra, and Zapallan. Population estimates for these larger sites are
around 2000-3000 people at the site center (Hodnett 1999). They have streets demarcating ceremonial sectors of plazas and ramped pyramids distinct from habitation zones and rectangular walled complexes including administrative architecture and the residences of administrative elites. Cemeteries are frequently located in discrete sectors at these sites, or at the edges of these sites. Pisquillo Chico can be regarded as the most typical urban center in the Chancay Valley (Lumbreras 1974). It has a ceremonial sector, various pyramidal mounds connected by ramps with a rectangular plaza, a housing area, and a very large cemetery. On the side of a nearby hill is a rectangular building believed to have been the principal administrative center. Sites like Caqui and Pancha La Huaca also have examples of pyramids with ramps, palaces, houses, and corrals (Lavalle and Lang 1982).

Chancay sites exhibit a relatively high density of construction. Although not to the scale of some sites in neighboring valleys, such as Cajamarquilla and Pachacamac (Rowe 1984), they have the appearance of settlements undergoing urbanization (Hodnett 1999; contra Szremski 2015). Smaller sites are not described in great detail in the archaeological literature (Ruiz Estrada 1978a, 1978b, 1978c, 1978d, 1981a, 1981b, 1982b, 1991e), and there are no discernible sector divisions or planned layouts like those at the larger sites.

I argue that these divisions oversimplify the site hierarchy actually present in the Huaura and Chancay valleys, and impose functional interpretations that may not be completely accurate; for example, Szremski (2015) suggests that the second category should be instead considered mid-level administrative sites, and there is no mention of specialized production communities as suggested by the historical documents. Also,
Quipico does not comfortably fit into any of these categories. It is a small site, but not as small as some of the more rural sites. It seems to have some of the economic and administrative activities only relegated to Krzanowski’s second category. In addition, Krzanowski (1991) neglects hillside settlements and resettled fortresses (Brown Vega 2010). So, I think a more accurate typology would be to start with a hierarchical division based on site size and arrangement, and then, as detailed excavations in the region continue, sort out the heterarchical functional roles with these categories. My tentative site hierarchy is: 1) very large, sprawling, visually connected, urban sites; 2) small, segmented sites with only a few disconnected buildings; or 3) reoccupied fortress areas such as Acaray and Cerro Colorado (Brown Vega 2009, 2010). This was supported by the ground floor area analyses done as part of the architectural analysis and comparisons (Appendix D).

I would place Quipico in the second category of this system. Construction style at Quipico—using a variety of methods such as tapial, adobe bricks, roughly shaped field stones—closely resembles those seen at the sites of Pancha la Huaca, Tronconal, and Pisquillo Chico in the Chancay Valley (Negro 1991), as well as Rontoy, Quipico, Chambara, and Casa Blanca (Dunn 2011; Dunn and Heaton 2013; Szremski 2007). I argue that this demonstrates a strong commonality in architectural patterns across the Chancay area, rather than as Szremski (2015) interprets as signs of a lack of cohesion, although further research in the region will be required to confidently determine this. The architectural style of Quipico shares some elements with the typical Chancay pattern as described by Krzanowski (1986; 1991) from his research in the Chancay and upper Huaura Valleys. However, it differs in significant ways: for example, the ramp at Quipico
does not look like other Chancay-style ramps (Krzanowski 1991), which usually connect perpendicularly at a central point of one side of a platform; this ramp runs parallel to the adjacent wall and to the entrance. However, it is also unlike Ichsma-style ramps (Eeckhout 1995, 199b, 2000), which are much larger in proportion to the rest of the structure, are faced inward towards large open plazas, and may have several courses.

Quipico and the other late Late Intermediate Period sites in the Huaura Valley also tie to the Chancay through ceramic styles. The hallmark of Chancay are Black-on-cream ceramics; those found in the Huaura Valley look similar, but the paste, temper, and vessel forms are indicative of local production. As tentatively suggested by the radiocarbon dates for Quipico, this style is also later in the Huaura Valley than in the Chancay Valley. Coastal press-mold pottery was still made, but many were painted in the Chancay Yellow-on-Orange style.

**Relationship with neighboring polities**

There is very little evidence of any Chimu or Ichma influences in either architectural style or artifacts – no signature Chimu agglutinated architecture, no glossy black Chimu vessels, no Ichma street-compound layouts or plaza-pyramid complexes. From the architectural analysis (Chapter 6 and Appendix D), it clear that the Chancay architectural pattern differs greatly in a quantifiable manner from that of the Chimu or the Ichma, particularly regarding site size and layout. Both of those groups, although they had a variety of site sizes, also had enormous buildings (such as at Chan Chan and Cajamarquilla respectively) far exceeding any of those built by the Chancay. Chimu, Casma, Ichma, and even upper-valley Cayash ceramic styles all reach their limit at the
Norte Chico area and the Huaura Valley, highlighting the importance of this region in understanding the shifting borders of these polities and their relation to the Chancay. It also illuminates the nature of these connections. Economically, we have clear signs of active participation of sites like Quipico in trade networks (Szremski 2015). There seems to be little to no direct control from those external forces, otherwise we would have likely observed a larger quantity of directly imported ceramics and the more rampant adoption of state iconography and style. More importantly, these interactions do not seem to involve significant military conflict. Sites like Caldera, El Carmen, and Quipico are clearly not defensively oriented (Heaton 2015). Despite the reoccurrence of earlier fortresses like Acaray, the modifications made to these fortresses during the Late Intermediate Period do not seem to indicate that they were engaged in actual conflict (Nelson et al. 2011; Rutherford 2014; Brown Vega et al. 2013; for an in-depth discussion, see Brown Vega 2010). Chancay iconography on ceramics and textiles do not have a military theme (Cornejo 1991; Ravines 2011), and weapons such as mace heads and sling stones, albeit present, are limited (Brown Vega 2008) (see Chapter 2), but clearly further research is needed to fully understand Chancay interaction with the other coastal polities.

Role of Quipico within the Late Intermediate Period

Out of the sites in the Huaura Valley tentatively dated to the Late Intermediate Period (approximately 35% of those recorded, Nelson and Ruiz 2004, 2005), a time of dense settlement (Brown Vega 2009, 2010), what are we to make of Quipico? We have a site that looks elite architecturally, but the overall site is on a very small scale. It is Chancay in style, and yet not Chancay in some important elements. The inhabitants of the
site were not owners of typical ‘elite’ goods, yet they had access to a wide variety of food resources including many resources from the ocean and resources from the highlands. Their location in the valley was situated in a spot to best take advantage of movement up and down river, as well as to the next valley south, but this easy access does not seem to have been challenged via any conflict. Elites yet not- elites, Chancay yet not-Chancay, and an exceptionally strategic position, though not oriented for defense. Who was in control of these resources and how might the site have participated in a larger-scale network?

I argue that the elites at Quipico fit the description of intermediate elites (Elson and Covey 2006; Jennings and Álvarez 2001; Netherly 1977; Vogel 2012). They are not the ruling or power elites, who are at the top levels of the decision and policy-making hierarchy: those elites are in the large urban centers in the Chancay Valley or in larger Huaura Valley sites like Luriyama, Acaray, or San Juan de las Canas. The elites at Quipico are the rural elites, lower order elites who manage resources at the provincial level. Quipico may have served as a storage and redistribution center for crops produced around the site or traded from the coast or up valley, to be transported, perhaps via llamas, through the inter-valley quebrada in order to supply the main Chancay heartland. This is similar to what has recently been suggested (Szremski 2015) for the site of Salitre, a contemporary of Quipico located slightly further east in the middle Huaura Valley, although I argue that Quipico was the location for local elites, rather than a migratory settlement for the Chancay like Salitre (Szremski 2015).

This corresponds with the dating of the site to the latter half of the Late Intermediate Period, when the Chancay señorío expanded into the Huaura Valley and
established new sites, such as Quipico, and expanded occupations at other sites such as Luriyama. The late date of entry by the Chancay into the Huaura Valley has been corroborated by radiocarbon dates obtained at several other sites in the Huaura (Nelson and Bellido-Cerda 2010; Allen Rutherford personal communication 2012). Locations for the new sites were strategically situated for transport, defense, and control of local resources (both human and environmental). The reason for this expansion may have been both practical and opportunistic: the growing urban centers of the Chancay señorío would have required a growing resource base and the Huaura Valley is a particularly fertile zone (FAO 1970; Mijichich 1998). So as sites and populations in the Chancay Valley grew and outpaced their farmlands, the Chancay would have found it necessary to expand outward to neighboring valleys like the Huaura, which could serve as a rural sustaining zone for the main urban settlements (Keatinge 1975; Murra 1975, 1985; Szremski 2015).

There was also need for the Chancay to claim the land before other señoríos—most notably the Chimu—took control instead. The evidence from Quipico and the Huaura Valley that I have discussed, both archaeologically and ethnographically, challenges previous claims had been made that the Chimu controlled this region in a form of “incomplete consolidation” (Mackey and Klymyshyn 1990:207). If the Chimu had incorporated the Huaura Valley directly or indirectly co-opted local lords, this should have been reflected in some way: via settlement pattern shifts or the blending of Chimu and local style architecture, ceramics, and textiles (Shimada 2000; Swenson 2007). This is not the case for the Huaura Valley with regards to the Chimu, but is instead exactly what is seen with Chancay cultural elements.
Instead, I suggest that the locations of sites like Cerro Colorado directly along the coast and Quipico slightly further inland at key travel points may mean that the Chancay reinforced their presence in the Huaura Valley to create a clear, physically visible buffer against Chimu or Ichma. This was not a military conflict zone, however, as new site construction does not include fortifications, as one might expect if they were experiencing frequent intrusion by their expansionist neighboring states. The location of sites in easily accessible locations suggests that neither the Chancay from their initial co-opting of the valley, nor the Chimu had an aggressive military presence in the region. Indirect administrative strategies, like co-opting local lords and settling new groups in the area, were frequently used by various Andean societies (Morris and Santillana 2007:136), and this may have been the case for the Chancay. I argue that the discrepancy that is seen between sites like Caldera and El Carmen from the middle of the Late Intermediate Period (Heaton 2015), and sites like Quipico (this dissertation) and Salitre (Szremski 2015) can be explained as a shift in political affiliation as the Huaura Valley local elites strengthened their intermediate position to the Chancay Valley.

**Role of Quipico within the Late Horizon**

Most of the information available on the Huaura Valley under Inca control and during the Colonial Period is from the research by Jesus Elias Ipinze Jordan, a lawyer native to the Huaura Valley with a penchant for studying archives on local history (Ipinze Jordan 2005). Ipinze states that there were three social groupings each with their own multiple ayllus, or extended family groups with an associated level of political power, in the Huaura Valley during Inca administration, from the coast to the end of the lower
valley portion (West to East): Guaura (Huaura), Vegueta, and Sallan (Sayán). Quipico is listed as one of the ayllus under Sallan. Ipinze also identifies which ayllus formed in the Colonial Period and names some of the smaller villages subordinate to the ayllu; this has additionally been corroborated by the documentary research by Cuadros (1992).

It is possible that the Muralla de Mazo (described in Chapter 3, initially shown in Figure 2.29) is the same as the series of strong walls described by Hipolito Ruiz as being 3 yards wide at the base, gradually narrower towards the top, and about 3 leagues long (Jaramillo-Arango 1998:75); according to local lore, the walls had served to separate the territories of certain native chieftains in the past. According to the post-contact documents that recount what times were said to have been like pre-contact, Huacho during the Late Horizon was a town of fishermen inhabited by local yungas (those native to the coast) (Rostworowski 2004:29) and possibly by Quechua mitimaes (groups of craft or labor specialists removed from a community en masse and placed in a new location to mitigate social tension and potential for revolt) during incorporation into the empire (Cuadros 1992). The Huaura Valley was also said to have been a rich area for natural resources, which were then given as tribute to the Inca regime. For example, the collection of guano for use as agricultural fertilizer was extremely important in the Late Horizon and post-conquest, and was stated by the locals to have been an industry during even earlier times (Jaramillo-Arango 1998).

Arqueologically, Quipico shows very little evidence of Inca control—there are few Chancay-Inca style ceramics, no Inca-style architecture, and characteristic Chancay hallmarks continue into this period usually considered part of the Late Horizon Inca occupation of the coast. There are, however, indications of Inca presence in the Huaura
Valley, at sites like Incatambo (Nelson and Ruiz 2004) and several Inca-style ceramics and qhiphus that I have seen during survey and in the local museum storage. Further research is clearly needed to determine when the Inca presence actually occurred in the valley, and what forms it took.

**Final Conclusions, Contributions, and Future Research**

Reorganization is considered a key factor during the Late Intermediate Period. The Late Intermediate Period coast was a mosaic of distinct señorios of varying sizes that formed after the collapse of the Middle Horizon Wari that had formerly ‘unified’ the Andes (though not perhaps to the degree of direct control for the central coast) (Marcone 2010). These polities made alliances, formed trade networks, and entered into conflict with one another. Although requiring further study, the development of the Chancay may be a good model for how señorios develop in their initial stages; i.e. the Chancay growth and expansion may very well be a parallel for how other polities like the Chimú once acted as they began their process of expansion.

As these groups consolidated their power, encompassing their neighboring valleys, they had to increasingly negotiate the borders between them. The Chancay polity in particular was hemmed in on either side by two larger groups (Chimú and Ichsma), and would have experienced increasing pressure (direct or indirectly) from these growing states. So, how did the Chancay manage not to succumb to one or the other? It might be useful to consider the Chancay as a “borderland” or “frontier” polity (Adelman and Aron 1999; Green and Perlman 1985; Kopytoff 1999; Parker 2006). As such, the Chancay may have acted as a socially constructed, geopolitical borderzone against its powerful
neighbors, similar to what Vogel (2012) observed in the Chao Valley. This may have 'stunted' its growth in comparison to the other polities that formed during the Late Intermediate Period, and in part explain why despite their abundant resources, the Chancay never reached the size of the Ichsma, Nasca, or Chimu. For the Casma, Vogel (2012) describes a process of transformation from initial stages as a frontier polity, then as a border zone, and finally to a full province of the Chimu. In particular, Vogel notes changes in ceramic styles and construction remodeling as the Casma became incorporated into the Chimu. Despite the external influences noted in Casma material culture, Vogel (2012) points out the maintenance of local cultural identity. It seems that the Huaura Valley also maintained its internal control and style to some degree. Even when their relation to Chancay influenced was strengthened near the end of the Late Intermediate Period, the Huaura Valley sites retained features of their local architectural and aesthetic style. From these latest projects with their focus on the Late Intermediate Period and Late Horizon in the area, a picture of the local Huaura elite as employing methods of ‘incorporative resistance’—accepting some traits of influential polities but not becoming dominated by them—is beginning to emerge. Local elite resilience persists regardless of whatever the larger power is; to put it in a modern-day analogy, ‘Middle management is local, while CEOs come and go.’ As Bria (2006) points out, this region is a useful one for examining Late Intermediate Period shifting political boundaries. The case of the Huaura Valley is especially revealing of these cross-scale interactions, when considering how smaller, non-expansionist groups can survive collapse using non-violent strategies and get rolled into growing polities during phases of political reorganization. For future work, researchers in this region will need to consider much more mobility than
previously thought, considering the growing body of evidence suggestive of resettlement between the coast, the middle valley (Szremski 2015), and possibly even the highlands (Janke 2009), perhaps similar to what occurred in the Jequetepeque Valley (Tsai 2012).

At the very foundation, gathering the disparate information about the Chancay to create a basic profile will hopefully assist future research in the region and result in more than a by-line for the Chancay archaeological culture in Andean texts. Excavations from Quipico have added a significant amount of new materials for analysis and interpretation of the Chancay, something that has not happened much since Krzanowski’s work in the 1960s. This research has specifically added new details about Chancay practices such as construction methods, reuse and site abandonment practices, ceramic styles, and resource control. In particular, the thick tapial walls, architectural layout style, and Chancay Black-on-White pottery, all considered a major hallmarks of the height of the Chancay culture sometime between 1200-1400AD, in the Huaura Valley was definitely closer to the end of that range and continuing into the Late Horizon by a half-century.

Methodologically, this project was able to test out some older architectural study techniques (some of which were more successful than others). With the advent of better computer-based capabilities (for example, the level of architectural detail from Quipico would not have been possible without the technology I used), these older space syntax analysis methods are experiencing a resurgence in popularity (Moore 1996a; Pouliot et al 2014). Hopefully, the results of my attempts (see Appendix D) can help steer others towards better methods.

Finally, this project has contributed (albeit unexpectedly) to larger-picture archaeological discussions regarding those in-between roles usually lost—intermediate
elites, early stages of political development and expansion, and how borderland polities hold their place. Improving our understanding of local elites in these societies—what resources they controlled and how they administered these resources—is crucial for discussing the local and regional integration of a señorío. Understanding how one señorío developed and expanded their control can aid in our studies of how the other ones functioned. It is this dynamic process of individualization and reconfiguration occurring in the Late Intermediate Period that will be of interest not only to Andean scholars, but to those working in other world regions that may have experienced similar processes of change.
<table>
<thead>
<tr>
<th>Ecological Zone (meters above sea level)</th>
<th>Local Terminology</th>
<th>Climate (precipitation and temperature)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subtropical Desert (0-2000m)</td>
<td>Yunga (0-1200m)</td>
<td>very dry and semi-hot (36 mm, 19.2°C)</td>
</tr>
<tr>
<td></td>
<td>Chaupi Yunga (1200-2500m)</td>
<td>semi-arid with seasonal rainfall</td>
</tr>
<tr>
<td>Maleza Deserti ca Montano Bajo (2000-3000 m)</td>
<td>Yana or Serrano</td>
<td>very dry and temperate (300 mm, 12°C)</td>
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<tr>
<td>Estepa Montano (3000-4000 m)</td>
<td></td>
<td>humid and cold (500 mm, 6°C)</td>
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<tr>
<td>Paramo Sub-alpino (4000-4800 m)</td>
<td></td>
<td>very humid and frigid (700 mm, 0°C)</td>
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Table 1.1: Ecological Zones, Local Terminology, and Climate, as modified from Mijichich 1998.

<table>
<thead>
<tr>
<th>Approximate Dates</th>
<th>Name of Period</th>
<th>Culture</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.D. 1435 - 1574</td>
<td>Late Horizon</td>
<td>Inca</td>
</tr>
<tr>
<td>A.D. 1100-1435</td>
<td>Late Intermediate Period</td>
<td>Sican</td>
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<td></td>
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<td>Chimú</td>
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<td>Casma</td>
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<td>Chancay</td>
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<td>Ichma</td>
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<td>Huarco</td>
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<td>Ica</td>
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<tr>
<td></td>
<td></td>
<td>Nazca</td>
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<tr>
<td>A.D. 600-1100</td>
<td>Middle Horizon</td>
<td>Wari</td>
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<td></td>
<td></td>
<td>Tiwanaku</td>
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<tr>
<td>A.D. 200-600</td>
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<td>Moche</td>
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<td>Lima</td>
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<td>2600-1800 B.C.</td>
<td>Preceramic</td>
<td>Norte Chico/Caral</td>
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</table>

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Figure 3.17: Looters' cut into area along eastern side of Quipico, revealing sherds and cobble tools. Huaura Valley.
Figure 3.18: Pozo 1 North profile, from Ruiz Estrada and Nelson (2007), with permission. Quipico, Huaura Valley.

Figure 3.19: Pozo 2 East profile, from Ruiz Estrada and Nelson (2007), with permission. Quipico, Huaura Valley.
Figure 3.20: Pozo 3 West profile, from Ruiz Estrada and Nelson (2007), with permission. Quipico, Huaura Valley.
Figure 3.9: 1940 SAN photo of Quipico, with the archaeological site in the upper right, Hacienda Quipico on the left, and the river along the bottom, Huaura Valley.
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Figure 4.9: Detailed map of Structure B, Quipico, Huaura Valley.
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Figure 4.13: Drawing of West profile, Unit 4, showing firepit in profile (R15), Structure B, Quipico, Huaura Valley.
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Figure 4.25: Drawing of Looter Profile 7, Structure B, Quipico, Huaura Valley.
Figure 4.26: Looter Profile 8, viewed from east of it, Structure B, Quipico, Huaura Valley.

Figure 4.27: Drawing of Looter Profile 8 (south side), Structure B, Quipico, Huaura Valley.
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Figure 4.29: Front of Structure C, looking north. Quipico, Huaura Valley.
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Figure 4.31: View of west portion of Structure C, seen from the north (standing on Structure D), Quipico, Huaura Valley.
Figure 4.32: Detailed map of Structure C, Quipico, Huaura Valley.

Key:
- Excavated Area
- Side of adobe wall
Figure 4.33: Unit 5 after excavation, Structure C, Quipico, Huaura Valley.

Figure 4.34: Drawing of North profile, Unit 5, Structure C, Quipico, Huaura Valley.
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Figure 4.40: Wheat grains sent for C14 analysis, from pits in upper levels of Unit 6, Structure C, Quipico, Huaura Valley.
Figure 4.41: Looter Profile 1, prior to excavation, showing the two pits that were joined together. Looking towards the west, Structure C, Quipico, Huaura Valley.

Figure 4.42: Looter Profile 1, after excavation. Looking towards the west, Structure C, Quipico, Huaura Valley.
Figure 4.43: Drawing of West profile of LP 1, Structure C, Quipico, Huaura Valley.

The looters’ pit continued ~50cm deeper in this area, but C12 was sterile and was too unstable to proceed further.

Figure 4.44: Hearth in profile of LP1, Structure C, Quipico, Huaura Valley.
Figure 4.45: Structure D, center section, viewed from the south, Quipico, Huaura Valley.

Figure 4.46: Structure D, center section, viewed from the north, Quipico, Huaura Valley.

Figure 4.47: Structure D, west section, viewed from the north, Quipico, Huaura Valley.
Figure 4.48: Detailed map of Structure D, Quipico, Huaura Valley.

Key:
- Excavated Area
- Side of adobe wall
Figure 4.49: Looter Profile 5 (West side, north profile), Structure D, Quipico, Huaura Valley.

Figure 4.50: Looter Profile 5 (East side, south profile), Structure D, Quipico, Huaura Valley.
Figure 4.51: Drawing illustrating alignment of profiles excavated between the west and east half of LP5, Structure D, Quipico, Huaura Valley.

Figure 4.52: Drawing of north profile, Looter Pit 5 (West side), Structure D, Quipico, Huaura Valley.
Figure 4.53: Drawing of south profile, Looter Pit 5 (East side), Structure D, Quipico, Huaura Valley.
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Figure 4.55: Drawing of Looter Profile 6 (north side), Structure D, Quipico, Huaura Valley.
Figure 4.56: Looter Profile 6 (east side) after excavation. Note the series of walls. Structure D, Quipico, Huaura Valley.

Figure 4.57: Structure E, viewed from the west, Quipico, Huaura Valley.
Figure 4.58: Structure E, viewed from the south, Quipico, Huaura Valley.

Figure 4.59: Detailed map of Structure E, Quipico, Huaura Valley.

Key:
- Excavated Area
- Side of adobe wall
Figure 4.60: Unit 10 before excavation, Structure E, Quipico, Huaura Valley.

Figure 4.61: Drawing of east profile of Unit 10, Structure E, Quipico, Huaura Valley.
Figure 4.62: Unit 10 with blocked doorway, Structure E, Quipico, Huaura Valley.
Figure 4.63: Cleared doorway with raised threshold and plastered floor, Unit 10, Structure E, Quipico, Huaura Valley.
Figure 4.64: Looter Profile 2 (west half), Structure E, Quipico, Huaura Valley.

Figure 4.65: Looter Profile 2 (east half), Structure E, Quipico, Huaura Valley.

Figure 4.66: Drawing of Looter Profile 2, Structure E, Quipico, Huaura Valley.
Figure 4.67: Looter Profile 3 before excavation, Structure E, Quipico, Huaura Valley.

Figure 4.68: Looter Profile 3 (south side). Note the bedrock at the bottom. Structure E, Quipico, Huaura Valley.
Figure 4.69: Drawing of Looter Profile 3 (east side), Structure E, Quipico, Huaura Valley.

Figure 4.70: Looter Profile 4 before excavation, Structure E, Quipico, Huaura Valley.
Figure 4.71: Looter Profile 4 after excavation. Note the distinct, dark brown layers. Structure E, Quipico, Huaura Valley.

Figure 4.72: Drawing of Looter Profile 4, Structure E, Quipico, Huaura Valley.
Figure 4.73: Structure F, viewed from the south, Quipico, Huaura Valley.

Figure 4.74: Structure G, viewed from south, Quipico, Huaura Valley.

Figure 4.75: Structure H, viewed from east. Note the large modern cement water reservoir next to the wall remnant. Quipico, Huaura Valley.
Figure 4.76: Structure I, viewed from the southwest, Quipico, Huaura Valley.

Figure 4.77: Structure J, viewed from the west, Quipico, Huaura Valley.
Figure 4.78: Detailed map of Structures G, H, and I, Quipico, Huaura Valley.
Figure 4.79: Detailed map of Structures F & J, Quipico, Huaura Valley.
Figure 5.1: Fragmentary nature of some of the sherds (these particular ones from Unit 5, Structure C) at Quipico, Huaura Valley.
Lip Shapes:

- Rounded
- Squared
- Angular Towards Inside
- Angular Towards Outside
- Lipped

Figure 5.2: Lip shapes, top portion of image adapted from Rice (1987).

Neck Shapes:

- Rounded
- Straight / Flat
- Angled In
- Angled Out

Figure 5.3: Neck shapes for ceramic analysis.
Figure 5.4: Base shapes for ceramic analysis.
Figure 5.5: Sherd cross-section magnified to 20x; sample #217 from Unit 7, Structure B, Quipico, Huaura Valley.
Figure 5.6: Shapes for vessels, modified from Rice (1987).
Figure 5.5: Vessel parts, modified from Rice (1987).
Figure 5.6: Vessel forms, modified from Rice (1987).
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Figure 5.9: Kero form, note that it is Chancay Black-on-white style of decoration. From the Late Intermediate Period site of Luriyama, Huaura Valley.
Figure 5.10: Sherd from a gigante, interior view. Note the curve of the sherd – the original vessel had a very large diameter. From Late Intermediate Period area of Acaray, Huaura Valley.

Figure 5.11: Sherd from a gigante, cross-section demonstrating thickness, from Late Intermediate Period area of Acaray, Huaura Valley.
Figure 5.12: Gigante vessel still in ground, although disturbed by looters, from the Late Intermediate Period area of Acaray, Huaura Valley.
Figure 5.13: Sherd with binder for black paint visible. From level 5, Unit 7, Structure A, Quipico, Huaura Valley.
Figure 5.14: Chancay Black-on-white sherd, from level 9, Unit 6, Structure C, Quipico, Huaura Valley.

Figure 5.15: Chancay Black-on-white sherd, neck of a jar, from LP2, bag 1073, Structure E, Quipico, Huaura Valley.

Figure 5.16: Chancay Black-on-white sherds, from LP2, bag 1155, Structure E, Quipico, Huaura Valley.
Figure 5.19: Chancay Polychrome sherd from a hollowware vessel, from level 14, Unit 6, Structure C, Quipico, Huaura Valley.

Figure 5.18: Chancay Polychrome vessels from looted context at Late Intermediate Period area at Acaray, Huaura Valley.

Figure 5.17: Chancay Polychrome vessels from looted context at Late Intermediate Period area of Acaray, Huaura Valley.
Figure 5.21: Huaura Style sherd from LP6, Structure D, Quipico, Huaura Valley.

Figure 5.20: Huaura Style sherd from looted context at Late Intermediate Period area at Acaray, Huaura Valley.
Figure 5.22: Drawing of Huaura Impressed sherd, LP2, Structure E, Quipico, Huaura Valley.

Figure 5.23: Huaura Impressed sherd with cream slip, from looted context at Luriyama, Huaura Valley.
Figure 5.24: Cayash collar forms.

Figure 5.25: Sherd with Cayash collar, from Level 3, Unit 4, Structure B, Quipico, Huaura Valley.
Figure 5.26: Rim drawing of Cayash collar, from LP2, Structure E, Quipico, Huaura Valley.

Figure 5.27: Chancay Orange-and-cream sherds, from LP2, Structure E, Quipico, Huaura Valley.
Figure 5.28: Chancay Orange-and-cream sherds, from Unit 8, Structure B, Quipico, Huaura Valley.

Figure 5.29: Chancay Orange-and-cream vessel, from looted context at Late Intermediate Period cemetery near La Centinela, Huaura Valley.
Figure 5.30: Chancay Orange-and-cream vessel, from looted context at Luriyama, Huaura Valley.

Figure 5.31: Rim drawing of Chancay Orange-and-cream plate sherd, from LP8, Structure B, Quipico.
Figure 5.32: Chancay Orange-and-cream plate ring base, from LP2, Structure E, Quipico, Huaura Valley.
Figure 5.33: Highly eroded Early Horizon-style neckless olla rims, from Level 9, Unit 6, Structure C, Quipico, Huaura Valley.
Figure 5.34: Rim drawing of neckless olla sherd, from Unit 6, Structure C, Quipico, Huaura Valley.

Figure 5.35: Red-on-white sherd from LP2, Structure D, Quipico, Huaura Valley.
Figure 5.36: Late Formative bright red burnished bowl, from looted context near Quipico, Huaura Valley.

Figure 5.37: Burnt and sooty utilitarian wares from LP7, Structure B, Quipico, Huaura Valley.
Figure 5.39: Bowling Ball style sherd, from LP1, Structure C, Quipico, Huaura Valley.

Figure 5.38: Sinterized sherd, from LP2, Structure E, Quipico, Huaura Valley.
Figure 5.40: Expedient tools, from Level 3, Unit 7, Structure A, Quipico, Huaura Valley.

Figure 5.41: End of a groundstone tool, from Level 10, Unit 4, Structure B, Huaura Valley.
Figure 5.42: Shells from Unit 6, Structure C, Quipico, Huaura Valley.
Figure 5.44: Bivalve shell from Level 4, Unit 7, Structure A, Quipico, Huaura Valley.

Figure 5.43: Univalve shells on right side of photo, from Level 10, Unit 4, Structure B, Quipico, Huaura Valley.
Figure 5.46: Crab shell and pinchers from Level 4, Unit 7, Structure A, Quipico, Huaura Valley.

Figure 5.45: Example of massive quantities of shell found despite distance from coast, from Level 8, Unit 6, Structure C, Quipico, Huaura Valley.
Figure 5.47: Worked shell from Feature 42, Unit 7, Structure A, Quípico, Huaura Valley.

Figure 5.48: Fragmentary bones from LP7, Structure B, Quípico, Huaura Valley.
Figure 5.51: Burnt bones from Feature 15, Unit 4, Structure B, Quipico, Huaura Valley.

Figure 5.50: Worked bone from LP2, Structure E, Quipico, Huaura Valley.

Figure 5.49: Duck feathers from pit in Unit 6, Structure C, Quipico, Huaura Valley.
Figure 5.52: Maize from LP8, Structure B, Quipico, Huaura Valley.

Figure 5.53: Maize from Level 9, Unit 6, Structure C, Quipico, Huaura Valley.
Figure 5.54: Squash from LP2, Structure E, Quipico, Huaura Valley.

Figure 5.55: Pods from pacay, from LP7, Structure B, Quipico, Huaura Valley.
Figure 5.56: Lucuma from LP8, Structure B, Quipico, Huaura Valley.

Figure 5.57: Peanut shells from LP8, Structure B, Quipico, Huaura Valley.
Figure 5.58: Gourd from LP8, Structure B, Quipico, Huaura Valley.

Figure 5.61: Cane and wood from LP8, Structure B, Quipico, Huaura Valley.
Figure 5.59: Modern-day lucuma tree at Quipico, Huaura Valley.

Figure 5.60: Example of some of the numerous pacay leaves encountered in excavation. From Level 11, Unit 5, Structure C, Quipico, Huaura Valley.
Figure 5.61: Modern-day pacay tree at Quipico, Huaura Valley.

Figure 5.62: Assortment of coprolites from Unit 4, Structure B, Quipico, Huaura Valley.
Figure 5.63: Textile fragment from LP7, Structure B, Quipico, Huaura Valley.

Figure 5.64: Threads and cotton from rat's nest in Unit 8 (note the bright magenta camelid thread near center-bottom of photo), Structure B, Quipico, Huaura Valley.
Figure 5.65: Cotton with seeds from Level 7, Unit 6, Structure C, Quipico, Huaura Valley.

Figure 5.66: Bead or weight from Unit 4, Structure B, Quipico, Huaura Valley.
Figure 5.67: Wooden weaving tool from LP8, Structure B, Quipico, Huaura Valley.

Figure 5.68: Chunk of red pigment found in Level 1, Unit 10, Structure E, Quipico, Huaura Valley.

Figure 5.69: Chunk of yellow pigment found in Level 2, Unit 9, Structure B, Quipico, Huaura Valley.
Figure 5.70: Skull with red paint still adhering to face, along with green staining from copper, from looted context at Luriyama, Huaura Valley.
APPENDIX A: CERAMIC ANALYSIS - CODING

Ceramic Analysis Coding System for the Huaura Valley, used for analysis of materials from Quipico. The Informe and all original data regarding Quipico from PICA (2009) is available upon request from Stacy Dunn.

PROVENIENCE (Procedencia)
Sherd#: Individual number for every artifact in the pottery database (N1 to infinity) [larger than a quarter]. If too small, proceed to “Bulk Fragments” section on separate worksheet. Este número es de 1 hasta infinito. Cada fragmento tiene un número único [si es de tamaño suficiente]. Si es demasiado pequeño, pasa al parte “Fragmentos al por mayor”.

Provenience/Procedencia: designated by the investigator. In the case of Acaray, the fragment code indicated on each fragment should be written. Indica el código del fragmento (ejemplo: ACA-74-13). In the case of Huaura Valley projects, use HV for Huaura Valley.

Project code/Codigo del Proyecto: Project name & year. e.g. PICA07, PICA09, etc.

Site/Sitio: Name of the site. Use abbreviations -- Rontoy (Ron), Chambara (Cham), Quipico (Qui)

Sector: Sector of site. If no sector is listed, use n/a.

Unit/Unidad: The unit (pit, trench, or surface). E.g. Pozo 1, Trinchera 2, Superficie, etc.

Level/Nivel o Feature/Rasgo: The level or feature. Use N# or R#. If multiple layers are listed, put them all in this single entry. If surface, put ‘S’.


Analyzed by/Analizado por: Initials of the name of person who analyzed sherd. E.g. SMD, AKH, KRN.

SV: Sherd or Whole Vessel, where whole vessel equals approximately 75% of the vessel present. Sherds represent all other. Fragmento (sherd) o vasija entera (whole vessel). Vasija entera es aproximadamente 75% de la vasija presente. Todo lo demás son fragmentos.
1=Sherd/Fragmento
2=Whole Vessel/Vasija entera
GENERAL CHARACTERISTIC (Características generales)

**ProcTerm:** Parochial (Common designation) term for vessel type/style. *Designación común del tipo y/o estilo de la vasija.*
- 0=not known/no conocido
- 1= Early Horizon bright/strong red
- 2= Early Horizon reddish brown wares
- 3= Neckless pot/olla sin cuello
- 4= Burnished pattern unknown association/Patrón bruñido
- 5= White on red
- 6= Huaura style/Estilo Huaura
- 7= Huaura Impressed
- 8= Chancay Polychrome
- 9= Cayash
- 10= Chancay black on white/Chancay negro sobre blanco
- 11= Chancay yellow (w/o black designs) (LIP)
- 12= Chancay-Inca

**EstPeriod:** Estimated time period. *Estimación del periodo.*
- 0=not known/no conocido
- 1=Initial Period/Periodo Inicial
- 2=Early Horizon/Horizonte Temprano
- 3=Early Intermediate Period/Periodo Intermedio Temprano
- 4=Middle Horizon/Horizonte Medio
- 5=Late Intermediate Period/Periodo Intermedio Tardío
- 6=Late Horizon/Horizonte Tardío

**VesPart:** Location of the sherd on the vessel. *Ubicación del fragmento en la vasija.*
- 0=Unknown/no determinado
- 1=Whole Vessel
- 2=Rim/borde
- 3=Body/cuerpo
- 4=Base/base
- 5=Handle/asa
- 6=Rim and body
- 7=Body and base
- 8=Rim, body, and base
- 9= Rim and handle
- 10= Body and handle
- 11= Rim, handle, and body
- 12= Handle, body, and base
- 13= Rim, handle, body, and base

**Length:** Measurement of the maximum length perpendicular to the rim in mm, first orienting the fragment. *Medida del largo máximo perpendicular al borde, en mm. Hay que orientar el fragmento primero.*

**Width:** Measurement of the maximum width parallel to the rim in mm. *Medida del ancho máximo paralelo al borde, en mm.*
**Thickness:** Measurement of the thickness of the wall of the sherd/vessel. Rims should be measured below any thickening at the lip. *Medida del grosor del pared de fragmento/vasija. Las medidas de bordes deben ser tomados abajo cualquier grosor del labio.* 0=not measurable, eroded/no se puede medir, erosionado

**RimRad:** Rim radius measurement in mm. If rim fragment is too small to get an estimate, put an “I”, for Indeterminate. If sherd is not a rim fragment, then put 0. *Medida del radius del borde, en mm.*

**%Rim:** Percentage of the rim present. Should be estimated using the rim diameter form, which indicates 25% of the rim. Record in 5% increments -- if btwn, round down. If rim is Indeterminate for radius measurement or smaller than 5%, just put 5%. If sherd is not a rim fragment, then put 0. *Porcentaje del borde presente. Debe ser calculado usando la ficha del diámetro del borde, la cual indica 25% del borde. Recordelo en incrementos de 5% -- si es entre dos medidas, usa el bajo. Si no es borde, pone 0.*

**FormDet:** Details of form. To be elaborated. *Detalle de la forma. Para elaborar en el proceso del análisis.*

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<tr>
<td>3.3</td>
<td>Angle-sided plate</td>
</tr>
<tr>
<td>3.4</td>
<td>Flaring (concave-sided) plate</td>
</tr>
<tr>
<td>4</td>
<td>Dish</td>
</tr>
<tr>
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<td>Convex-sided dish</td>
</tr>
<tr>
<td>4.2</td>
<td>Straight-sided dish</td>
</tr>
<tr>
<td>4.3</td>
<td>Angle-sided dish</td>
</tr>
<tr>
<td>4.4</td>
<td>Flaring (concave-sided) dish</td>
</tr>
<tr>
<td>5</td>
<td>Bowl/cuenco</td>
</tr>
<tr>
<td>5.1</td>
<td>Convex-sided bowl</td>
</tr>
<tr>
<td>5.2</td>
<td>Straight-sided bowl</td>
</tr>
<tr>
<td>5.3</td>
<td>Angle-sided bowl</td>
</tr>
<tr>
<td>5.4</td>
<td>Flaring (concave-sided) bowl</td>
</tr>
<tr>
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<td>Olla</td>
</tr>
<tr>
<td>6.1</td>
<td>Spherical (globular) olla</td>
</tr>
<tr>
<td>6.2</td>
<td>Vertical ellipsoid (oblong) olla</td>
</tr>
<tr>
<td>6.3</td>
<td>Horizontal ellipsoid olla</td>
</tr>
<tr>
<td>7</td>
<td>Jar/jarra</td>
</tr>
<tr>
<td>7.1</td>
<td>Spherical (globular) jar</td>
</tr>
<tr>
<td>7.2</td>
<td>Vertical ellipsoid (oblong) jar</td>
</tr>
<tr>
<td>7.3</td>
<td>Horizontal ellipsoid jar</td>
</tr>
<tr>
<td>7.4</td>
<td>Top-heavy ovaloid jar</td>
</tr>
<tr>
<td>7.5</td>
<td>Bottom-heavy ovaloid jar</td>
</tr>
<tr>
<td>7.6</td>
<td>Bubblenecked jar</td>
</tr>
<tr>
<td>7.6.2</td>
<td>Double-level bubblenecked jar</td>
</tr>
</tbody>
</table>
7.6.3= Triple-level bubblenecked jar
8= Canteen/Cántaro
  8.1= Convex-walled canteen
  8.2= Straight-walled canteen
9= Vase
  9.4= Top-heavy ovaloid vase
  9.5= Bottom-heavy ovaloid vase
10= Kero
  10.2= Straight-sided kero
  10.4= Flaring (concave-sided) kero
11= Goblet
12= Gigantes
13= Figurine

**VesShp:** Geometric shape of vessel.
  0= undetermined/no determinado
  1= Sphere
  2= Vertical Ellipsoid
  3= Horizontal Ellipsoid
  4= Top-heavy Ovaloid
  5= Bottom-heavy Ovaloid
  6= Cylinder
  7= Hyperboloid
  8= Cone
  99= not applicable/no applicable

**LipShp:** Shape of lip/rim edge (if present).
  0= undetermined/no determinado
  1= rounded
  2= squared
  3= angled towards interior
  4= angled towards exterior
  5= lipped
  6= long-lipped
  7= domed
  8= lipped and angled towards interior (3 + 5)
  99= not applicable/no applicable

**RimPart:** Part of rim present.
  0= undetermined/no determinado
  1= general rim
  2= only neck
  3= only collar
  4= rim and neck
  5= rim and collar
  99= not applicable/no applicable

**ColShp:** Shape of collar (if present).
  0= undetermined/no determinado
  1= rounded
2=squared
3=angular
4=tongued
5= NOT Cayash, with angle to exterior
6= NOT Cayash, with angle to interior
7= lipped
8= double-bump
9= long-lipped
99=not applicable/no aplicable

**NeckShp:** Shape of neck (if present).
0=undetermined/no determinado
1=rounded
2=straight/flat
3=angled inwards
4=angled outwards
5=curved
99=not applicable/no aplicable

**NeckL:** Length of neck (if present).
0=undetermined/no determinado
1=shortneck
2=average
3=longneck
99=not applicable/no aplicable

**BodyPart:** Type of body (if present).
0=undetermined/no determinado
1=general body sherd
2=shoulder
3=lower body
4=shoulder and lower body
99=not applicable/no aplicable

**BaseShp:** Shape of base (if present).
0=undetermined/no determinado
1=rounded
2=squared/flat
3=angular
4=ring-based
5=stemmed
6=flat with open sides
7=tripod, or with feet
99=not applicable/no applicable

**HndlType:** Type of handle (if present).
0=undetermined/no determinado
1=rectangular and flat
2=rope twisted
3=hourglass
4=rounded/tubular
99=not applicable/no applicable

**HndlLoc:** Location of handles (if present).
0=undetermined/no determinado
1= Rim to ...(unidentified area)
  1.1= All rim
  1.2= to neck
  1.3= to collar
  1.4= to shoulder (upper body)
  1.5= to lower body
  1.6= to general body
2= Neck to ...(unidentified area)
  2.2= All neck
  2.4= to shoulder (upper body)
  2.5= to lower body
  2.6= to general body
3= Collar to ...(unidentified area)
  3.3= All collar
  3.4= to shoulder (upper body)
  3.5= to lower body
  3.6= to general body
4= Shoulder to ...(unidentified area)
  4.4= All shoulder (upper body)
  4.5= to lower body
5= Lower body to ...(unidentified area)
  5.5= All lower body
6= General body to ... (unidentified area)
  6.6=Body to body (general)
99=not applicable/no applicable

**Constr:** Construction method. *Método de construcción.*
0=undetermined/no determinado
1=Hand built
2= Coil/padded/hecho de rollos y golpeada ligeramente
3=paddle and anvil/paleteada
4= Mold/hecho por molde

**PstColor:** Color of overall paste of clay used in vessel.
0=not identifiable/no se puede identificar
1=red/reddish brown
2=orange
3=yellow
4=cream/buff
5=tan/lt brown
6=brown
7=gray
8=black
9=strong red
**CoreColor:** Color of core of vessel versus surfaces of vessel as seen in cross-section (not considering any applied pigments to surface of vessel).
0 = undetermined/no determinado  
1 = all paste color  
2 = 1/2 by int darker (gray), 1/2 by ext paste  
3 = 1/2 by int paste, 1/2 by ext darker (gray)  
4 = inner core darker (gray), outer edges paste  
5 = inner core paste, outer edges darker (gray)  
6 = all gray (or almost all)  
7 = mixed variety of 2-5 present in diff parts of sherd  
8 = 1/2 by int pink, 1/2 by ext paste  
9 = 1/2 by int paste, 1/2 by ext pink  
10 = inner core pink, outer edges paste  
11 = inner core paste, outer edges pink  
12 = 1/2 by int gray, core is paste, 1/2 by ext pink  
13 = all pink (or almost all)  
14 = 1/2 by int gray, 1/2 by ext pink, little/no paste at all  
15 = 1/2 by ext gray, 1/2 by int pink, little/no paste at all  
16 = 1/2 by int pink, 1/2 by ext paste, core is gray  
17 = 1/2 by int paste, 1/2 by ext gray, core is pink  
18 = 1/2 by ext paste, 1/2 by int gray, core pink  
19 = 1/2 by int pink, 1/2 by ext gray, core paste  

**Temper:** Type of temper used.  
0 = undetermined/no determinado  
1 = rock  
1.1 = fine ground rock  
1.2 = coarse ground rock  
1.3 = extremely coarse rock (crushed gravel -- 4 mm or larger present)  
2 = grog  
3 = fiber  
4 = dung  

**Firing:** Alteration due to firing including misfires. *Alteración por fallas de cocción.*  
0 = unidentified/no determinado  
1 = fireclouds/manchas por cocción  
2 = bloating/hinchado  
3 = sintering/sinterización  
4 = warped  
5 = coccion reductora (it is darkened/blackened, but it is not sooty, or firecloud, or slip)  
6 = coccion oxidente (it is pinkish/reddened, but not from paste)  
7 = fireclouds and evidence of coccion reductora present  
8 = uncooked  
9 = fireclouds and evidence of coccion oxidente present  
99 = not applicable/no aplicable  

**Vitrif:** Absence or presence of vitrified substance on sherd. *Ausencia o presencia de sustancia vitrificada en el fragmento.*  
0 = unidentified/no determinado
1=Present
2=Absent

**Soot (Ollín):** Absence or presence of soot on sherd. *Ausencia o presencia de ollín en el fragmento.*

- 0= unidentified/no determinado
- 1=Present
- 2=Absent

**ExtColor:** Exterior color is the predominant color of the exterior surface of the vessel. Refer to range categories in appendix. *El color exterior es el color predominante de la superficie exterior de la vasija. Ver rango de las categories en el apéndice.*

- 0=not identifiable/no se puede identificar
- 1=red/reddish brown
- 2=orange
- 3=yellow
- 4=cream/buff
- 5=tan/lt brown
- 6=brown
- 7=gray
- 8=black
- 99=same as paste

**IntColor:** Interior color is the predominate color of the interior surface of the vessel. *El color interior es el color predominante de la superficie interior de la vasija.*

- 0=not identifiable/no se puede identificar
- 1=red/reddish brown
- 2=orange
- 3=yellow
- 4=cream/buff
- 5=tan/lt brown
- 6=brown
- 7=gray
- 8=black
- 99=same as paste

**ExtSurf:** Exterior surface treatment. *Tratamiento de la superficie exterior.*

- 0=unknown (b/c eroded)
- 1=Scraped/raspado
- 2=Smoothed unslipped/alisado sin engobe
- 3=Smoothed slipped/alisado con engobe
  - 3.1=slipped only partially - intentionally, not just eroded off on a part
- 4=Polished/pulido
- 5=Burnished/bruñido (may have been slipped or not)
- 6=slipped and burnished
- 7=wiped, but not smoothed or slipped
- 99=not applicable/no aplicable

**IntSurf:** Interior surface treatment. *Tratamiento de la superficie interior.*
DECORATION (Decoración)
ColorSch: Color scheme of the vessel. General designation of the vessel color scheme. Disposición del color de la vasija. Designación general del color de la vasija.

0=Unidentifiable/no se puede identificar
1=Single color solid (paste and slip same color)
2=Single color slipped (paste and slip are not same color, but only one color of slip)
3=Black on Cream or Yellow/Negro sobre blanco
4=Polychrome (Black and Red on Yellow)/Polícromo (Negro y Rojo sobre Amarillo)
5=Polychrome (Black and Cream/White on Red)/Polícromo (Negro y crema/blanco sobre rojo)
6=black on red
7=black on orange

DecType: Decoration type. Tipo de decoración
0=Unidentifiable/no se puede identificar
1=Incised/Inciso
2=Impressed/Impreso
3=Painted/Pintado
4=Molded/Moldeado
5=Incised and Impressed/Inciso y impreso
6=Incised and Painted/Inciso y pintado
7=Impressed and Painted/Impreso y pintado
8=Patterned Burnishing/Patrón bruñido
9=Impressed and appliqué
10=appliqué
11=painted and molded
99=not applicable/no aplicable

ExtDecType: Decoration type located on the exterior surface of the vessel. Tipo de decoración ubicado en la superficie exterior de la vasija.
1=Incised/Inciso
2=Impressed/Impreso
3=Painted/Pintado
4=Molded/Moldeado
5=Incised and Impressed/Inciso y impres
6=Incised and Painted/Inciso y pintado
7=Impressed and Painted/Impreso y pintado
8=Patterned Burnishing/Patrón bruñido
9=impressed and appliqué
10=appliqué
99=not applicable/no aplicable

**IntDecType:** Decoration type located on the interior of the vessel. *Tipo de decoración ubicado en la parte interior de la vasija.*
1=Incised/Inciso
2=Impressed/Impreso
3=Painted/Pintado
4=Molded/Moldeado
5=Incised and Impressed/Inciso y impresado
6=Incised and Painted/Inciso y pintado
7=Impressed and Painted/Impreso y pintado
8=Patterned Burnishing/Patrón bruñido
99=not applicable/no aplicable

**ExtIncised:** Location of exterior incising. *Ubicación del inciso exterior.*
0=Unknown/no determinado
1=Whole Vessel
2=Rim/borde
3=Body/cuerpo
4=Base/base
5=Handle/asa
6=Rim and body
7=Body and base
8=Rim, body, and base
9=Handle
10=Rim and handle
11=Body and handle
12=Rim, handle, and body
13=Handle, body, and base
14=Rim, handle, body, and base

**EIType:** Type of incising.
0=Unknown/no determinado
1=fine incising
2=groove incising
3=combing
4=excising
5=shallow incising
99=not applicable/no aplicable

**EIPattern:** Exterior Incised Pattern. *Patrón de incision exterior.*
0=Unknown/no determinado
1=Circle/círculo
2=Circle and Dot (dot is impressed but part of the same motif)/círculo y punto (punto está impreso pero parte del mismo diseño).
3=Line/Línea
4= X’s
5=crosshatching
6=circles and lines
99=not applicable/no aplicable

**EIPatOrg**: Exterior Incised Pattern organization on vessel part.
0=Unknown/no determinado
1=grouped/clustered
2=linear
3=in multiple rows
4=in multiple columns
99=not applicable/no aplicable

**EITime**: When the incising occurred on vessel.
0=Unknown/no determinado
1=Preslip
2=Postslip
3=Postfire
99=not applicable/no aplicable

**ExtImp**: Location of Exterior Impressed. *Ubicación del impression exterior.*
0=Unknown/no determinado
1=Whole Vessel
2=Rim/borde
3=Body/cuerpo
4=Base/base
5=Handle/asa
6=Rim and body
7=Body and base
8=Rim, body, and base
9=Handle
10=Rim and handle
11=Body and handle
12=Rim, handle, and body
13=Handle, body, and base
14=Rim, handle, body, and base

**EMType**: Type of impressions.
0=Unknown/no determinado
1=simple impressing
2=stamping
3=rocker stamping
4=punctation
5=simple impressing and punctation
99=not applicable/no aplicable

**EMPATTERN**: Pattern of impressions on the exterior of the vessel. *Patrón de las impresiones en la parte exterior de la vasija.*
0=Unknown/no determinado
1=Circle/círculo
2=Circle and Dot (dot is impressed but part of the same motif)/círculo y punto (punto está impreso pero parte del mismo diseño)
3=Line/línea
4=wide shallow lines
5=points
6=rectangular (ECC); circle and dots, and half-circles (SMD) *need to correct in database
99=not applicable/no applicable

**EMPatOrg**: Pattern of impressions on the exterior of the vessel (codified as we go).
Patrón de las impresiones en la parte exterior de la vasija (codificado durante el proceso del análisis).
0=Unknown/no determinado
1=grouped/clustered
2=linear
3=in rows
4=in columns
99=not applicable/no applicable

**EMTool**: Type of tool/implement likely used for impressions.
0=Unknown/no determinado
1=Reed
2=Corncob
3=Textile
4=Mat
5=Shell
6=pointed implement (stick?)
7=reed and pointed implement (stick?)
99=not applicable/no aplicable

**ExtMold**: Location of Exterior mold made design. Ubicación del diseño hecho por molde en la parte exterior.
0=Unknown/no determinado
1=Whole Vessel
2=Rim/borde
3=Body/cuerpo
4=Base/base
5=Handle/asa
6=Rim and body
7=Body and base
8=Rim, body, and base
9=Handle
10=Rim and handle
11=Body and handle
12=Rim, handle, and body
13=Handle, body, and base
14=Rim, handle, body, and base

**EMoldType**: Type of exterior mold-made design.
0=Unknown/no determinado
1=chicken-pox
   1.1=tiny chicken pox, usually round dot
   1.2=large chicken pox, usually oval/teardrop shape
2=face
   2.1=face and body
3=birds
4=undulating curves (for calabazo, zampallo?)
5=chicken-pox and lines
   5.1=tiny chix-pox and lines
   5.2=large chix-pox and lines
6=line(s)
7=bird and lines (SMD), parallel lines with large round dots inbetween (ECC)
*need to correct in database!
99=not applicable/no aplicable

**ExtPaint**: Location of paint on the exterior of the vessel. *Ubicación de la pintura en la parte exterior de la vasija.*
0=Unknown/no determinado
1=Whole Vessel
2=Rim/borde
3=Body/cuerpo
4=Base/base
5=Handle/asa
6=Rim and body
7=Body and base
8=Rim, body, and base
9=Handle
10=Rim and handle
11=Body and handle
12=Rim, handle, and body
13=Handle, body, and base
14=Rim, handle, body, and base

**EPBinder**: Presence of binder used to make paint adhere to surface. Indicated usually by sloppy red streaks where paint (usually black) has not remained.
0=Unknown/no determinado
1=Present
2=Absent
3=Only binder remaining, no actual paint present
99=not applicable/no applicable

**EPVitrif**: If the paint (usually black) has vitrified.
0=Unknown/no determinado
1=Present
2=Absent
99=not applicable/no applicable
**EPPattern**: Type of pattern created by paint (motif). To be elaborated as analysis proceeds. *Tipo de patron de la pintura (motivo). Elaboramos durante el proceso del análisis.*

- 0=Unknown/no determinado
- 1=dots and ticks
- 2=lines
- 3=checkerboard
- 4=hatching
- 5=cross-hatching
- 6=lines (parallel) and dots
- 7=alternating zig-zags and lines
- 8=v line
- 9=lines and crosshatching
- 10=curving lines and dots
- 11=straight line parallel with curved line, and oval inbetween them
- 12=two parallel straight lines, with a wave/curl attached off one of them
- 99=not applicable/no aplicable

**ExtAppliq**: Location of applique on the exterior of the vessel. *Ubicación del aplicación en la parte exterior de la vasija.*

- 0=Unknown/no determinado
- 1=Whole Vessel
- 2=Rim/borde
- 3=Body/cuerpo
- 4=Base/base
- 5=Handle/asa
- 6=Rim and body
- 7=Body and base
- 8=Rim, body, and base
- 9=Handle
- 10=Rim and handle
- 11=Body and handle
- 12=Rim, handle, and body
- 13=Handle, body, and base
- 14=Rim, handle, body, and base

**EAPattern**: Form of the appliqué. *Forma de la aplicación.*

- 0=unknown/no determinado
- 1=coffee bean/”frejól de café”
- 2=monkey/mono
- 3=frog/sapo
- 4=anthropomorphic/antropomorfo
- 5=dog, fox, jaguar/perro, zorro, jaguar
- 6=pyramid/cone/pinch - could be ear, could be nose, could be fake handle/nubbin. unclear.
- 99=not applicable/no applicable

**IntIncised**: Location of interior incising. *Ubicación de las incisiones en la parte interior.*

- 0=Unknown/no determinado
1=Whole Vessel
2=Rim/borde
3=Body/cuerpo
4=Base/base
5=Handle/asa
6=Rim and body
7=Body and base
8=Rim, body, and base
9=Handle
10=Rim and handle
11=Body and handle
12=Rim, handle, and body
13=Handle, body, and base
14=Rim, handle, body, and base

**IIType**: Type of incising.
0=Unknown/no determinado
1=fine incising
2=groove incising
3=combing
4=excising
99=not applicable/no aplicable

**IIPattern**: Interior Incised Pattern. Patrón de las incisiones en la parte interior.
0=Unknown/no determinado
1=Circle/círculo
2=Circle and Dot (dot is impressed but part of the same motif)/círculo y punto (punto está impreso pero parte del mismo diseño)
3=Line/línea
99=not applicable/no aplicable

**IIPatOrg**: Exterior Incised Pattern organization on vessel part.
0=Unknown/no determinado
1=grouped/clustered
2=linear
99=not applicable/no aplicable

**IITime**: When the incising occurred on vessel.
0=Unknown/no determinado
1=Preslip
2=Postslip
3=Postfire
99=not applicable/no aplicable

**IntImp**: Location of Interior Impressed. Ubicación de las impresiones en la parte interior.
0=Unknown/no determinado
1=Whole Vessel
2=Rim/borde
<table>
<thead>
<tr>
<th>3</th>
<th>Body/cuerpo</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Base/base</td>
</tr>
<tr>
<td>5</td>
<td>Handle/asa</td>
</tr>
<tr>
<td>6</td>
<td>Rim and body</td>
</tr>
<tr>
<td>7</td>
<td>Body and base</td>
</tr>
<tr>
<td>8</td>
<td>Rim, body, and base</td>
</tr>
<tr>
<td>9</td>
<td>Handle</td>
</tr>
<tr>
<td>10</td>
<td>Rim and handle</td>
</tr>
<tr>
<td>11</td>
<td>Body and handle</td>
</tr>
<tr>
<td>12</td>
<td>Rim, handle, and body</td>
</tr>
<tr>
<td>13</td>
<td>Handle, body, and base</td>
</tr>
<tr>
<td>14</td>
<td>Rim, handle, body, and base</td>
</tr>
</tbody>
</table>

**IMType**: Type of impressions.  
0=Unknown/no determinado  
1=simple impressing  
2=stamping  
3=rocker stamping  
4=punctation  
99=not applicable/no aplicable

**IMPattern**: Pattern of impressions on the interior of the vessel. *Patrón de las impresiones en la parte interior de la vasija.*  
0=Unknown/no determinado  
1=Circle/círculo  
2=Circle and Dot (dot is impressed but part of the same motif)/círculo y punto (punto está impreso pero parte del mismo diseño)  
3=Line/línea  
99=not applicable/no aplicable

**IMPatOrg**: Exterior Impressed Pattern organization on vessel part.  
0=Unknown/no determinado  
1=grouped/clustered  
2=linear  
99=not applicable/no applicable

**IMTool**: Type of tool/implement likely used for impressions.  
0=Unknown/no determinado  
1=Reed  
2=Corncob  
3=Textile  
4=Mat  
5=Shell  
99=not applicable/no aplicable

**IntMold**: Location of interior mold made design. *Ubicación del diseño hecho por molde en la parte interior.*  
0=Unknown/no determinado  
1=Whole Vessel  
2=Rim/borde
3=Body/cuerpo  
4=Base/base  
5=Handle/asa  
6=Rim and body  
7=Body and base  
8=Rim, body, and base  
9=Handle  
10=Rim and handle  
11=Body and handle  
12=Rim, handle, and body  
13=Handle, body, and base  
14=Rim, handle, body, and base

**IMoldType:** Type of exterior mold-made design.  
0=Unknown/no determinado  
1=chicken-pox  
2=face  
3=birds  
4=  
99=not applicable/no aplicable

**IntPaint:** Location of paint on the interior of the vessel. *Ubicación de la pintura en la parte interior de la vasija.*  
0=Unknown/no determinado  
1=Whole Vessel  
2=Rim/borde  
3=Body/cuerpo  
4=Base/base  
5=Handle/asa  
6=Rim and body  
7=Body and base  
8=Rim, body, and base  
9=Handle  
10=Rim and handle  
11=Body and handle  
12=Rim, handle, and body  
13=Handle, body, and base  
14=Rim, handle, body, and base

**IPBinder:** Presence of binder used to make paint adhere to surface. Indicated usually by sloppy red streaks where paint (usually black) has not remained.  
0= Unknown/no determinado  
1=Present (w/paint too)  
2=Absent  
3=Only binder remaining, no actual paint present  
99= not applicable/no applicable
**IPVitrif**: If the paint (usually black) has vitrified.
- 0= Unknown/no determinado
- 1= Present
- 2= Absent
- 99= not applicable/no applicable

**IPPattern**: Type of pattern created by paint (motif). To be elaborated as analysis proceeds. *Tipo de patrón hecho por la pintura (motivo). Elaboramos en el proceso del análisis.*
- 0= Unknown/no determinado
- 1= Dots and ticks
- 2= Lines
- 3= Checkerboard
- 4= Hatching
- 5= Cross-hatching
- 6= 
- 99= not applicable/no applicable

**IntAppliq**: Location of appliqué on the interior of the vessel. *Ubicación de la aplicación en la parte interior de la vasija.*
- 0= Unknown/no determinado
- 1= Whole Vessel
- 2= Rim/borde
- 3= Body/cuerpo
- 4= Base/base
- 5= Handle/asa
- 6= Rim and body
- 7= Body and base
- 8= Rim, body, and base
- 9= Handle
- 10= Rim and handle
- 11= Body and handle
- 12= Rim, handle, and body
- 13= Handle, body, and base
- 14= Rim, handle, body, and base

**IAPattern**: Form of the appliqué. *Forma de la aplicación.*
- 0= Unknown/no determinado
- 1= Coffee bean/”frejol de cafe”
- 2= Monkey/mono
- 3= Frog/sapo
- 4= Anthropomorphic/antropomorfo
- 5= Dog, fox, jaguar/perro, zorro, jaguar
- 99= not applicable/no applicable

**Photo**: photo # for sherd

**Comments (Comentarios)**: Any additional information. *Información adicional.*
Appendix I (Apéndice I). Bulk Fragments. Fragmentos al por mayor.
Sherds that are very small (less than a quarter/un nuevo sol, ≤ approx. 2.5 cm max dimension) will not be analyzed individually, but will be done in group. Follow the instructions below. Fragmentos muy pequeños (menos de un Nuevo sol, ≤ approx. 2.5 cm de dimensión maxima) no serán analizado individualmente, pero serán hecho por grupo. Sigue con las instrucciones abajo.

Divide all small sherds into 2 groups -- decorated and not decorated.
A. Divide all decorated sherds by type of decoration.
   Register each group of sherds using the data entry list below.
B. Divide all non-decorated sherds by color (see Munsell chart).
   Register each group of sherds using the data entry list below.

Provenience/Procedencia: designated by the investigator. In the case of Acaray, the fragment code indicated on each fragment should be written. Indica el código del fragmento (ejemplo: ACA-74-13). In the case of Huaura Valley projects, use HV for Huaura Valley.

Project code/Código del Proyecto: Project name & year. e.g. PICA07, PICA09, etc.

Site/Sitio: Name of the site. Use abbreviations -- Rontoy (Ron), Chambara (Cham), Quipico (Qui)

Sector: Sector of site. If no sector is listed, use n/a.

Unit/Unidad: The unit (pit, trench, or surface). E.g. Pozo 1, Trinchera 2, Superficie, etc.

Level/Nivel o Feature/Rasgo: The level or feature. Use N# or R#. If multiple layers are listed, put them all in this single entry. If surface, put ‘S’.


Analyzed by/Analizado por: Initials of the name of person who analyzed sherd. E.g. SMD, AKH, KRN.

Dec : Presence and type of decoration.
   0= unknown or too eroded
   1=incised
   2=impressed
   3=mold
   4=painted/slipped
   5=applique
   6=burnished
   7=molded and painted/slipped
   99=not decorated

ColorPst: Color of overall paste of clay of fragment.
   0=not identifiable/no se puede identificar
   1=red/reddish brown
2=orange  
3=yellow  
4=cream/buff  
5=tan/lt brown  
6=brown  
7=gray  
8=black  

**ColorExtInt**: The color of the exterior or interior surface of the fragment, when different than its paste color (i.e. when it is slipped or painted with a secondary color).  
0=not identifiable/no se puede identificar  
1=red/reddish brown  
2=orange  
3=yellow  
4=cream/buff  
5=tan/lt brown  
6=brown  
7=gray  
8=black  
9=black on cream/yellow  
10=polychrome (red and black on cream)  
11=polychrome (black and white on red)  
12=strong red  
99=not applicable/same as paste  

**Count**: Total number of fragments in the group.  

**Weight**: Total weight of fragments in the group (in g).  

**Misfired**: Number of fragments in the group with evidence of misfires.  

**Burnt**: Number of fragments in the group with evidence of burning.  

**Photo #**: 
Key to Color Groups (Using Munsell Designations). Guía de grupos de color (según designaciones Munsell).

1=RED/REDDISH BROWN
   10R 5/2, 5/3, 5/4, 4/2, 4/3, 4/4, 4/6, 4/8, 3/1, 3/2, 3/3, 3/4, 3/6, 2.5/1, 2.5/2
   2.5YR 4/2, 4/3, 4/4, 3/2, 3/3, 3/4, 3/6, 2.5/1, 2.5/2, 2.5/3, 2.5/4
   5YR 4/2, 4/3, 4/4, 4/6, 3/2, 3/3, 3/4, 2.5/1, 2.5/2

2=ORANGE
   10R 7/6, 7/8, 6/6, 6/8, 5/6, 5/8
   2.5 YR 7/6, 7/8, 6/6, 6/8, 5/6, 5/8, 4/6, 4/8
   5YR 8/4, 7/4, 7/6, 7/8, 6/6, 6/8, 5/6, 5/8
   7.5 YR 8/6, 7/6, 7/8, 6/6, 6/8, 5/6, 5/8

3=YELLOW
   10 YR 8/4, 8/6, 8/8, 7/4, 7/6, 7/8, 6/6, 6/8, 5/6, 5/8
   2.5 Y 8/4, 8/6, 8/8, 7/4, 7/6, 7/8, 6/6, 6/8, 5/6
   5Y 8/3, 8/4, 8/6, 8/8, 7/3, 7/4, 7/6, 7/8, 6/4, 6/6, 6/8, 5/4, 5/6

4=CREAM/BUFF
   GLEY 1 8/2, 7/2
   7.5YR 8/2, 8/3, 8/4, 7/1
   10YR 8/1, 8/2, 8/3, 7/1
   2.5Y 8/1, 8/2, 8/3, 7/1
   5Y 8/1, 8/2, 7/1, 7/2

5=TAN/LT BROWN
   GLEY 1 6/2, 5/2
   5YR 6/2, 6/3, 5/2, 5/3, 5/4
   7.5YR 7/2, 7/3, 7/4, 6/2, 6/3, 6/4, 5/2, 5/3, 5/4, 5/6
   10YR 7/2, 7/3, 6/2, 6/3, 6/4, 5/2, 5/3, 5/4, 5/6
   2.5Y 7/2, 7/3, 6/2, 6/3, 6/4, 5/2, 5/3, 5/4
   5Y 6/2, 6/3, 5/2, 5/3

6=BROWN
   7.5 YR 4/2, 4/3, 4/4, 4/6, 3/2, 3/3, 3/4, 2.5/2, 2.5/3
   10 YR 4/2, 4/3, 4/4, 4/6, 3/2, 3/3, 3/4, 3/6, 2/2
   2.5 Y 4/2, 4/3, 4/4, 3/2, 3/3
   5 Y 4/2, 3/2, 2.5/2

7=GRAY
   GLEY 1 8/N, 7/N, 6/N, 5/N, 4/N, 3/N, 2.5/N
   GLEY 2 7/10B, 7/5PB, 6/10B, 6/5PB, 5/10B, 5/5PB, 4/10B, 4/5PB, 3/10B, 3/5PB
   10 R 6/1, 5/1, 4/1
   2.5 YR 6/1, 5/1, 4/1, 3/1
   5 YR 6/1, 5/1, 4/1, 3/1
   7.5 YR 6/1, 5/1, 4/1, 3/1
   10 YR 6/1, 5/1, 4/1, 3/1
2.5 Y 6/1, 5/1, 4/1, 3/1, 2.5/1
5 Y 6/1, 5/1, 4/1, 3/1, 2.5/1

8=BLACK

GLEY 1 2.5/N
GLEY 2 2.5 all
10 YR 2/1
APPENDIX B: LITHIC ANALYSIS - CODING

Lithic Analysis Coding System for the Huaura Valley, used for analysis of materials from Quipico. The Informe and all original data regarding Quipico from PICA (2009) is available upon request from Stacy Dunn.

Coding for Lithic Analysis, Summer 2010

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<table>
<thead>
<tr>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic info form</td>
<td>1-2</td>
</tr>
<tr>
<td>Cores</td>
<td>3</td>
</tr>
<tr>
<td>Edged/Retouched</td>
<td>3</td>
</tr>
<tr>
<td>Denticulates</td>
<td>4</td>
</tr>
<tr>
<td>Notches</td>
<td>5</td>
</tr>
<tr>
<td>Perforators</td>
<td>5</td>
</tr>
<tr>
<td>Points</td>
<td>6</td>
</tr>
<tr>
<td>Groundstone</td>
<td>7</td>
</tr>
</tbody>
</table>
BASIC INFO FORM
For all artifacts record this info

Numero de Litico - ex. 1, 2, 3… each artifact gets its own sequential number

Site - ex. QUI, RON, CHA,…

Pozo/pit/Unidad/unit/Limpieza de Perfil (looters pit) - ex. P1, U6, LdP4

Nivel/Rasgo - ex. N2, R15…

Bag number - ex. 18, 662

Lithic Type -
0 Angular chunk/shatter
1 Flake
2 Core
3 Edged/Retouched/Utilized
4 Denticulates
5 Notches
6 Perforators
7 Points
8 Groundstone
9 Piedra quemada

Completeness -
0 No vesu
1 Whole (90%-100%)
2 Proximal
3 Non-proximal
4 Fragment with vesu but unidentifiable orientation

Length - in mm to 0.1mm
Width - in mm to 0.1mm
Thickness - in mm to 0.1mm
Weight - in grams to the 0.1g

Raw Material -
0 Not identifiable (usually due to being too burnt)
1.1 UnID fine
1.2 UnID coarse
1 Dark (range from black to dk gray, may have bluish hue)
1.1 fine
1.2 coarse
2 Gray (medium to light, lighter than above)
1.1 fine
1.2 coarse
3 Tan to brown
1.1 fine
1.2 coarse
4 Red (not discoloration from burnt)
1.1 fine
1.2 coarse
5 Quartz
1.1 clear
1.2 opaque
6 Pumice
99 Other

Input -
0 Unidentifiable
1 Nodule
2 Tabular

Amount of Cortex - approximate percent
0 0%
1 1-25%
2 25-50%
3 50-75%
4 75-100%

Facets - # on dorsal/exterior, count whole and partials, as many as you confidently can
<table>
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<tr>
<th>Type of blank</th>
<th>Location of Use Wear</th>
</tr>
</thead>
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<td>0 Absent</td>
</tr>
<tr>
<td>1 Flake</td>
<td>1 Proximal</td>
</tr>
<tr>
<td>2 Core</td>
<td>2 Distal</td>
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<table>
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<tr>
<td>1 Single platform</td>
</tr>
<tr>
<td>2 Opposed (bidirectional)</td>
</tr>
<tr>
<td>3 90-degree platforms</td>
</tr>
<tr>
<td>4 Multiple platform</td>
</tr>
<tr>
<td>4.1 Patterned</td>
</tr>
<tr>
<td>4.2 Unpatterned</td>
</tr>
<tr>
<td>5 Bipolar core</td>
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</table>

<table>
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</tr>
<tr>
<td>2 Multi-facet</td>
</tr>
<tr>
<td>3 Cortical</td>
</tr>
<tr>
<td>4 Ground/scratched</td>
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<td>4 Plunging</td>
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<table>
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<td>0 Absent</td>
</tr>
<tr>
<td>1 Cutting/slicing</td>
</tr>
<tr>
<td>2 Scraping</td>
</tr>
<tr>
<td>3 Boring/drilling</td>
</tr>
<tr>
<td>4 Grinding (looks roughened)</td>
</tr>
<tr>
<td>5 Polishing (looks shiny/smooth)</td>
</tr>
<tr>
<td>6 Pounding (looks pitted)</td>
</tr>
<tr>
<td>7 Post-break working</td>
</tr>
<tr>
<td>8 Residue (not soot)</td>
</tr>
<tr>
<td>9 Fire alteration</td>
</tr>
<tr>
<td>99 Other</td>
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</table>

<table>
<thead>
<tr>
<th>Total length of use wear</th>
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<tbody>
<tr>
<td>Not done for 4-6, 8-9.</td>
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</table>

<table>
<thead>
<tr>
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</tr>
</thead>
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<td>0 Absent</td>
</tr>
<tr>
<td>1 Sooty/blackened areas</td>
</tr>
<tr>
<td>2 Heat discoloration (red-pink)</td>
</tr>
<tr>
<td>3 Spalls</td>
</tr>
<tr>
<td>4 Crumbly/powdery deterioration</td>
</tr>
<tr>
<td>5 Soot &amp; discolor</td>
</tr>
<tr>
<td>6 Soot &amp; spalls</td>
</tr>
<tr>
<td>7 Soot &amp; crumbly</td>
</tr>
<tr>
<td>8 Discoloration &amp; spalls</td>
</tr>
<tr>
<td>9 Discoloration &amp; crumbly</td>
</tr>
<tr>
<td>10 Spalls &amp; crumbly</td>
</tr>
<tr>
<td>11 Soot, discolor, spalls</td>
</tr>
<tr>
<td>12 Soot, discolor, crumbly</td>
</tr>
<tr>
<td>13 Soot, spalls, crumbly</td>
</tr>
<tr>
<td>14 All</td>
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<table>
<thead>
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<th>Photo #</th>
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## CORES

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<tr>
<td>1</td>
<td>Unifacial</td>
</tr>
<tr>
<td>2</td>
<td>Bifacial</td>
</tr>
<tr>
<td>2.1</td>
<td>opposed</td>
</tr>
<tr>
<td>2.2</td>
<td>adjacent</td>
</tr>
<tr>
<td>3</td>
<td>3 areas</td>
</tr>
<tr>
<td>4</td>
<td>4 areas</td>
</tr>
<tr>
<td>5</td>
<td>5 areas</td>
</tr>
<tr>
<td>6</td>
<td>All</td>
</tr>
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</table>

<table>
<thead>
<tr>
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<tr>
<td>1</td>
<td>Single facet</td>
</tr>
<tr>
<td>2</td>
<td>Multi-facet</td>
</tr>
<tr>
<td>3</td>
<td>Cortical</td>
</tr>
<tr>
<td>4</td>
<td>Ground/scratched</td>
</tr>
</tbody>
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---

## EDGED/RETOUCHED

(These incl scrapers)

<table>
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<tr>
<th>End/Side(s) retouched -</th>
<th></th>
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<tbody>
<tr>
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<td>Absent</td>
</tr>
<tr>
<td>1</td>
<td>Proximal</td>
</tr>
<tr>
<td>2</td>
<td>Distal</td>
</tr>
<tr>
<td>3</td>
<td>Sinister</td>
</tr>
<tr>
<td>4</td>
<td>Dexter</td>
</tr>
<tr>
<td>5</td>
<td>Both ends (distal + proximal)</td>
</tr>
<tr>
<td>6</td>
<td>Both sides (sinister + dexter)</td>
</tr>
<tr>
<td>7</td>
<td>Proximal + sinister</td>
</tr>
<tr>
<td>8</td>
<td>Proximal + dexter</td>
</tr>
<tr>
<td>9</td>
<td>Distal + sinister</td>
</tr>
<tr>
<td>10</td>
<td>Distal + dexter</td>
</tr>
<tr>
<td>11</td>
<td>Both ends + sinister</td>
</tr>
<tr>
<td>12</td>
<td>Both ends + dexter</td>
</tr>
<tr>
<td>13</td>
<td>Both sides + sinister</td>
</tr>
<tr>
<td>14</td>
<td>Both sides + proximal</td>
</tr>
<tr>
<td>15</td>
<td>All</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Position of retouch for 1,2,3, 4 -</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Absent</td>
</tr>
<tr>
<td>1</td>
<td>Proximal</td>
</tr>
<tr>
<td>2</td>
<td>Central</td>
</tr>
<tr>
<td>3</td>
<td>Distal</td>
</tr>
<tr>
<td>4</td>
<td>Entire edge</td>
</tr>
<tr>
<td>5</td>
<td>Proximal and central</td>
</tr>
<tr>
<td>6</td>
<td>Proximal and distal</td>
</tr>
<tr>
<td>7</td>
<td>Central and distal</td>
</tr>
<tr>
<td>8</td>
<td>Intermittent</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type of retouch for 1,2,3 and/or 4 -</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Absent</td>
</tr>
<tr>
<td>1</td>
<td>Ouchtata (nibbling)</td>
</tr>
<tr>
<td>2</td>
<td>Obverse (scars on dorsal)</td>
</tr>
<tr>
<td>2.1</td>
<td>Single blow</td>
</tr>
<tr>
<td>3</td>
<td>Inverse (scars on ventral)</td>
</tr>
<tr>
<td>3.1</td>
<td>Single blow</td>
</tr>
<tr>
<td>4</td>
<td>Alternating (obv, then inv, sequentially repeated)</td>
</tr>
<tr>
<td>4.1</td>
<td>Alternate (obv then inv) but not repeating or overlapped</td>
</tr>
<tr>
<td>5</td>
<td>Bifacial (scars both dorsal and ventral, along same part of edge</td>
</tr>
<tr>
<td>6</td>
<td>Serrated</td>
</tr>
<tr>
<td>99</td>
<td>Other</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Length of retouched area, 1,2,3 and/or 4 of retouched area(s)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>in mm to the 0.1 mm</td>
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</table>

<table>
<thead>
<tr>
<th>Maximum depth of retouch for 1, 2, 3 and/or 4</th>
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<tbody>
<tr>
<td></td>
<td>in mm to the nearest 0.1 mm</td>
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<table>
<thead>
<tr>
<th>Shape for 1,2,3 and/or 4 -</th>
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<td>0</td>
<td>Absent/unidentifiable</td>
</tr>
<tr>
<td>1</td>
<td>Concave</td>
</tr>
<tr>
<td>2</td>
<td>Convex</td>
</tr>
<tr>
<td>3</td>
<td>Straight</td>
</tr>
<tr>
<td>4</td>
<td>Concavoconvex</td>
</tr>
<tr>
<td>99</td>
<td>Other</td>
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</table>
### Denticulates

#### Side/End of Denticulations -

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<th>Description</th>
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<td>1</td>
<td>Proximal</td>
</tr>
<tr>
<td>2</td>
<td>Distal</td>
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<tr>
<td>3</td>
<td>Sinister</td>
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<tr>
<td>4</td>
<td>Dexter</td>
</tr>
<tr>
<td>5</td>
<td>Both ends (distal + proximal)</td>
</tr>
<tr>
<td>6</td>
<td>Both sides (sinister + dexter)</td>
</tr>
<tr>
<td>7</td>
<td>Proximal + sinister</td>
</tr>
<tr>
<td>8</td>
<td>Distal + dexter</td>
</tr>
<tr>
<td>9</td>
<td>Proximal + dexter</td>
</tr>
<tr>
<td>10</td>
<td>Distal + dexter</td>
</tr>
<tr>
<td>11</td>
<td>Both ends + sinister</td>
</tr>
<tr>
<td>12</td>
<td>Both ends + dexter</td>
</tr>
<tr>
<td>13</td>
<td>Both sides + proximal</td>
</tr>
<tr>
<td>14</td>
<td>Both sides + distal</td>
</tr>
<tr>
<td>15</td>
<td>All</td>
</tr>
</tbody>
</table>

#### Positions for 1, 2, 3 and/Or 4 of Denticulation(s)

<table>
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<th>Position</th>
<th>Description</th>
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<tr>
<td>1</td>
<td>Proximal</td>
</tr>
<tr>
<td>2</td>
<td>Central</td>
</tr>
<tr>
<td>3</td>
<td>Distal</td>
</tr>
<tr>
<td>4</td>
<td>Entire edge</td>
</tr>
<tr>
<td>5</td>
<td>Proximal and central</td>
</tr>
<tr>
<td>6</td>
<td>Proximal and distal</td>
</tr>
<tr>
<td>7</td>
<td>Central and distal</td>
</tr>
<tr>
<td>8</td>
<td>Intermittent</td>
</tr>
</tbody>
</table>

#### Type of Retouch for 1, 2, 3 and/Or 4 of Denticulation(s)

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<th>Position</th>
<th>Description</th>
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</thead>
<tbody>
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</tr>
<tr>
<td>1</td>
<td>Ouchtata (nibbling)</td>
</tr>
<tr>
<td>2</td>
<td>Obverse (scars on dorsal)</td>
</tr>
<tr>
<td>3</td>
<td>Inverse (scars on ventral)</td>
</tr>
<tr>
<td>4</td>
<td>Alternating (obv, then inv, sequentially repeated)</td>
</tr>
<tr>
<td>5</td>
<td>Bifacial (scars both dorsal and ventral, along same part of edge)</td>
</tr>
<tr>
<td>6</td>
<td>Serrated</td>
</tr>
<tr>
<td>99</td>
<td>Other</td>
</tr>
</tbody>
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#### Length of Retouched Area for 1, 2, 3 and/or 4 of Denticulation(s)

in mm to the 0.1 mm

#### Shape of Side for 1, 2, 3 and/or 4 -

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<th>Description</th>
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<tbody>
<tr>
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<td>Absent/unidentifiable</td>
</tr>
<tr>
<td>1</td>
<td>Concave</td>
</tr>
<tr>
<td>2</td>
<td>Convex</td>
</tr>
<tr>
<td>3</td>
<td>Straight</td>
</tr>
<tr>
<td>4</td>
<td>Concavoconvex</td>
</tr>
<tr>
<td>99</td>
<td>Other</td>
</tr>
</tbody>
</table>

#### Maximum Depth of Retouch for 1, 2, 3 and/or 4

in mm to the nearest 0.1 mm
NOTCHES

Number of notches -
1 1
2 2
3 3
4 >3, but not adjacent

Type of notch -
0 Unidentifiable
1 Single notch
2 Strangled notch
3 Shouldered piece
99 Other

Side/End of 1st notch (and then repeat for 2 and 3, if present) -
1 Proximal
2 Distal
3 Sinister
4 Dexter

Position of 1st notch (and repeat for 2 and 3, if present) -
0 Absent
1 Proximal
2 Central
3 Distal
4 Entire edge
5 Proximal and central
6 Proximal and distal
7 Central and distal
8 Intermittent

Type of 1st notch (repeat for 2 & 3) -
0 Absent
1 Ouchtata (nibbling)
2 Obverse (scars on dorsal)
   2.1 single blow
3 Inverse (scars on ventral)
   3.1 single blow
4 Alternating (obv, then inv, sequentially repeated)
   4.1 Alternate (obv then inv)
   but not repeating or overlapped
5 Bifacial (scars both dorsal and ventral, along same part of edge
6 Serrated
99 Other

Width of 1st notch (and repeat for 2 and 3) to the nearest 0.1mm

Depth of 1st notch (and repeat for 2 and 3) to the nearest 0.1mm

PERFORATORS

How its made (by notch, by retouch, etc) is recorded in those categories

Type of perforator -
1 Simple (straight)
2 Double-ended
3 Curved/hooked

Shape of perforator body -
1 Flat
2 Cylindrical
3 Conical
4 Rectangular

End of perforator -
0 Absent
1 Pointed
2 Rounded
3 Rounded and polished

Max depth of Perforator (length) to the nearest 0.1mm

Size of Perforator (width of end) to the nearest 0.1mm
# POINTS

## Shape of left side
- **0** Absent/unidentifiable
- **1** Concave
- **2** Convex
- **3** Straight
- **4** Concavoconvex
- **99** Other

## Type of retouch on left side
- **0** Absent
- **1** Ouchtata (nibbling)
- **2** Obverse (scars on dorsal)
  - **2.1** single blow
- **3** Inverse (scars on ventral)
  - **3.1** single blow
- **4** Alternating (obv, then inv, sequentially repeated)
  - **4.1** Alternate (obv then inv) but not repeating or overlapped
- **5** Bifacial (scars both dorsal and ventral, along same part of edge
- **6** Serrated
- **99** Other

## Shape of right side, type of retouch on right side
- Repeat from left side examples

## Stems
- **0** Absent
- **1** Square
- **2** Rectangular
- **3** Stocky
- **4** Flared with concave
- **5** Flared and convex (fishtail)
- **6** Flared with straight
- **99** Other

## Length of stem
- To the nearest 0.1mm

## Width of stem
- To the nearest 0.1mm

## Shoulders
- **0** Absent
- **1** Notched and pointed
- **2** Notched and blunt
- **3** Straight and pointed
- **4** Straight and blunt
- **99** Other

## Evidence of Hafting
- **0** Absent
- **1** Wear
- **2** Residue/fibers

## Thinning
- **0** Absent/unidentifiable
- **1** Unifacial
- **2** Bifacial

## Shape of distal end
- **0** Absent
- **1** Pointed
- **2** Blunt
- **99** Other

## Shape of proximal end
- **0** Absent
- **1** Concave
- **2** Convex
- **3** Straight
- **4** Stemmed
- **99** Other
# Areas with grinding -

<p>| | |</p>
<table>
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Position of grinding on E/S/F (E1, E2, S1, S2, F1 and/or F2) -

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Scratches -

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# Areas with polishing -

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<td>Single</td>
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<td>2 areas</td>
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<tr>
<td>2.1</td>
<td>opposed</td>
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<td>2.2</td>
<td>adjacent</td>
</tr>
<tr>
<td>3</td>
<td>3 areas</td>
</tr>
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<td>4</td>
<td>4 areas</td>
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<tr>
<td>5</td>
<td>5 areas</td>
</tr>
<tr>
<td>6</td>
<td>All</td>
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</table>

Position of polishing on E/S/F (E1, E2, S1, S2, F1 and/or F2) -

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>0</td>
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</tr>
<tr>
<td>1</td>
<td>Proximal</td>
</tr>
<tr>
<td>2</td>
<td>Central</td>
</tr>
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<td>Distal</td>
</tr>
<tr>
<td>4</td>
<td>Entire edge</td>
</tr>
<tr>
<td>5</td>
<td>Proximal and central</td>
</tr>
<tr>
<td>6</td>
<td>Proximal and distal</td>
</tr>
<tr>
<td>7</td>
<td>Central and distal</td>
</tr>
<tr>
<td>8</td>
<td>Intermittent</td>
</tr>
</tbody>
</table>
APPENDIX C: BOTANICAL ANALYSIS REPORTS

The following two reports—both by Enrique Bellido Cerda, archaeobotanist—are from the analysis of materials from Quipico (Ruiz Estrada and 2007; PICA 2009). The Informe and all original data regarding Quipico from PICA (2009) is available upon request from Stacy Dunn.

Informe del Análisis Arqueobotánico del sitio arqueológico de Quipico – Valle de Huaura

Materiales de la temporada 2007

Enrique Buenaventura Bellido Cerda. Especialista
INTRODUCCIÓN

El presente informe contiene los resultados del análisis arqueobotánico de los materiales arqueobotánicos procedentes del sitio arqueológico de Quipico. Dicho proyecto pretendía realizar un estudio en los aspectos económicos, cronológicos, sociales y políticos desarrollados dentro de los espacios arquitectónicos estudiados.

Los análisis arqueobotánico centran su potencial explicativo en los económicos y funcionales desarrollados en las áreas de ocupación estudiadas.

La muestra estudiada ha permitido observar de cerca las características de la población de Quipico, que desarrolló una economía principalmente agrícola, que cultivó principalmente semillas y granos comestibles, así como varios frutos, todos propios de los valles costeños.

MATERIALES Y MÉTODOS

Las excavaciones en Quipico

Las excavaciones realizadas en Quipico en 2007, consistieron en 3 pozos de prueba (pozos 1, 2, y 3), los pozos se excavaron siguiendo la estratigrafía natural, cada capa fue cernida en mallas de ¼ de pulgada.

El pozo 1, se trato de un cateo de 1x1.5m, estaba ubicado cerca a pared de tapial
El pozo 2, se trato de un cateo de 1x1m, ubicado en el centro del sitio. En el centro de un conjunto de tapial.
El pozo 3, se trato de un cateo de 1x1m, localizado entre dos paredes de tapial, en la zona sur-central del sitio. Dicha área, estaba llena de recintos pequeños, cuyo uso posiblemente habría sido el de almacenamiento.

Macrorestos arqueobotánicos

La muestra arqueobotánica analizada consistió en más de 6 mil macrorestos dispuestos en 43 bolsas procedentes de los pozos 1, 2 y 3. Las condiciones han permitido la conservación de tejido mesocarpico de lúcuma (Pouteria lucuma). En términos la
conservación es buena, claro esta la conservación depende de las condiciones previas a la deposición del material, además de las condiciones tafonomicas.

**Determinaciones y conteos**

Para la identificación taxonómica del material se empleo literatura especializada y manuales (Cutler & Whitaker, 1961; Pearsall, 2001; Mostacero, et. al. 2002; Towle), así también se recurrió a los Herbarios de la UNMSM (HSM), y la UPCH (HUPCH), para consultas. Los especímenes arqueobotánicos han sido identificados según la conservación de caracteres diagnósticos hasta el nivel de especie, y algunos otros casos solo hasta el nivel de familia o genero.

Con respecto al conteo, se realizaron dos tipos de conteos, el primero de uno en uno, donde se contabilizaron la cantidad total de fragmentos visibles (y plausibles de contar, los fragmentos ≤5mm se obvieron) y un segundo conteo bajo el criterio del NMI, que consiste en usar para cada especie y parte determinada, indicadores de unidad, esto para evitar errores de conteo, en casos tales como: el de frutos y semillas enteros fragmentados. Se empleó básicamente para el conteo de frutos y semillas, así también para el conteo de estructuras asociadas a estas.

**RESULTADOS**

*Diversidad y ecosistema (ver Ilustración No1)*

En las muestras analizadas se pudo identificar unas 19 taxa, las cuales corresponden en su mayoría a especies comestibles y cultivadas.

Debido a que estas especies tienen espacios definidos donde se desarrollan es posible aseverar que biotopos son los que están representados, la tabla No 1 da cuenta de esta información:

<table>
<thead>
<tr>
<th>BIOTOPOS IDENTIFICADOS A TRAVÉS LA TAXA IDENTIFICADA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BIOTOPOS IDENTIFICADOS</strong></td>
</tr>
<tr>
<td>Zonas de cultivos (chacras)</td>
</tr>
<tr>
<td>Marginales de ríos y/o acequias</td>
</tr>
<tr>
<td>Marginal de campos de cultivos o caminos</td>
</tr>
</tbody>
</table>
Como se puede observe en la Tabla No 1, la mayoría de la taxa identificada corresponde a especies cultivadas (11), es decir están crecen en campos de cultivos ("chacras"), y una cantidad menor provienen de áreas marginales a ríos y/o acequias, y otros están creciendo cercanos a caminos. Este panorama coincide con el que se aprecia actualmente en el valle de Huaura. Tenemos que añadir a esta aseveración, que la mayoría de las especies identificadas, en particular los árboles frutales (Pouteria lúcuma, lúcuma; Inga spp., pacae, Psidium guajava, "guayaba"; y Persea americana, "palta") son propias del valle medio, es decir se desarrollan en climas semi-tropicales, a una altitud media de 1000msnm (Sanjines et. al., 2006; Roque, 2003).

Aprovechamiento de recursos

A continuación se muestra la Tabla No 2 donde se especifica la taxa que ha sido identificada, agregando el dato uso referencial o potencial.

Tabla No 2
TAXA IDENTIFICADA Y SUS CARACTERÍSTICAS GENERALES

<table>
<thead>
<tr>
<th>NOMBRE CIENTÍFICO</th>
<th>NOMBRE VULGAR</th>
<th>ESTADO</th>
<th>USO REFERENCIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arachis hypogaea</td>
<td>Maní</td>
<td>Domesticado</td>
<td>Alimenticio</td>
</tr>
<tr>
<td>Bunchosia armeniaca</td>
<td>Ciruela del fraile</td>
<td>Semi-Silvestre</td>
<td>Alimenticio</td>
</tr>
<tr>
<td>CACTACEAE</td>
<td>Cactus</td>
<td>Silvestre</td>
<td>Fabricación de Aguas</td>
</tr>
<tr>
<td>Canna indica</td>
<td>Achiara</td>
<td>Domesticado</td>
<td>Alimenticio</td>
</tr>
<tr>
<td>Capsicum sp.</td>
<td>Ají</td>
<td>Domesticado</td>
<td>Alimenticio</td>
</tr>
<tr>
<td>cf. Equisetum sp.</td>
<td>Cola de caballo</td>
<td>Silvestre</td>
<td>Medicinal</td>
</tr>
<tr>
<td>Cucurbita ficifolia</td>
<td>Calabaza</td>
<td>Domesticado</td>
<td>Alimenticio</td>
</tr>
<tr>
<td>Cucurbita moschata</td>
<td>Calabaza</td>
<td>Domesticado</td>
<td>Alimenticio</td>
</tr>
<tr>
<td>Cyclantera pedata</td>
<td>Caigua</td>
<td>Domesticado</td>
<td>Alimenticio</td>
</tr>
<tr>
<td>Gossypium barbadense</td>
<td>Algodón</td>
<td>Domesticado</td>
<td>Alimenticio</td>
</tr>
<tr>
<td>Gynernium sagittatum</td>
<td>Caña brava</td>
<td>Silvestre</td>
<td>Alimenticio</td>
</tr>
<tr>
<td>Inga sp.</td>
<td>Pacae</td>
<td>Semi-Silvestre</td>
<td>Alimenticio – Maderable</td>
</tr>
<tr>
<td>Lagenaria sicararia</td>
<td>Mate</td>
<td>Domesticado</td>
<td>Recipientes</td>
</tr>
<tr>
<td>Persea americana</td>
<td>Palta</td>
<td>Domesticado</td>
<td>Alimenticio – Maderable</td>
</tr>
<tr>
<td>Phaseolus vulgaris</td>
<td>Frejol</td>
<td>Domesticado</td>
<td>Alimenticio</td>
</tr>
<tr>
<td>Phragmites australis</td>
<td>Carrizo</td>
<td>Cultivado</td>
<td>Alimenticio</td>
</tr>
<tr>
<td>Pouteria lúcuma</td>
<td>Lúcuma</td>
<td>Semi-Silvestre</td>
<td>Alimenticio – Maderable</td>
</tr>
<tr>
<td>Psidium guajava</td>
<td>Guayaba</td>
<td>Semi-Silvestre</td>
<td>Alimenticio – Maderable</td>
</tr>
<tr>
<td>Zea mays</td>
<td>Maíz</td>
<td>Domesticado</td>
<td>Alimenticio</td>
</tr>
</tbody>
</table>
Como se puede observar, la taxa que ha podido identificarse mayormente son especies de uso alimenticio (13n), de consumo humano, claro que una planta suele tener más de un uso\(^1\). Sin embargo resulta obvio que el aprovechamiento de las especies identificadas es primeramente alimenticio. Es necesario ampliar esta referencia del uso según la información que se dispone. Para lo cual a través de la información etnobotánica y etnohistórica (Moraes et. al, 2006, Mostacero et. al, 2000) disponible se presenta la Tabla No3.

| Tabla No 3. |
| USOS POTENCIALES DE LA TAXA IDENTIFICADA |

\(^1\) Por ejemplo el maíz, que es aprovechable en su totalidad, tallo-raíz como forraje, parte de las inflorescencias como medicinal, las brácteas que pueden ser aprovechables para forraje animal, o para la elaboración de cerámica, y por supuesto sus granos (ver Mostacero, 2000..., Alban)
ALIMENTICIAS
En esta tabla se observa que el grupo de especies que conforman el ítem de (especies de uso) alimenticio, es muy variado; si lo observamos desde un punto de vista nutricional, tenemos plantas que aportan carbohidratos, grasas y proteínas (aunque en poca cantidad, como es lo normal al tratarse de una fuente vegetal); es decir la dieta (sino toda, una parte muy importante de la misma) de la población (FAO, 2001) que ocupa Quipico. Con respecto a las otras especies, vemos recipientes (*Lagenaria siceraria* (“mate”)), actividad textil (se han detectado la fibra de algodón y algunas pocas espinas que suelen ser usadas como agujas) de algún tipo; y finalmente se observan cañas que usadas ser usadas para la construcción, y además de que se sabe que muchos de los árboles frutales son fuente importante de madera (usada como combustible y para la construcción), se han distinguido fragmentos de madera (que no ha podido ser identificada más allá de la clase Dicotiledonae) que presentan huellas de corte de algún tipo de herramienta (“virutas” o más dicho de modo general “desechos de talla”), lo que señala directamente algún tipo de actividad de carpintería, sea en la elaboración de objetos muebles o inmuebles.

---

2 Fácilmente esta se complementa con nutrientes de origen animal (carnes y/o huevos)

3 En el caso de la actividad textil, este tipo de análisis se enfoca más las características de la materia prima
Los pozos

La diferencia de evidencia entre pozo y pozo es notorio (ver tabla No).

El pozo 1 se caracteriza (además de tener la mayor cantidad de restos arqueobotánicos) por concentrar prácticamente toda la diversidad de taxa que ha podido ser identificada en Quiqico, sumado a esto también contiene casi toda la cantidad de macrorestos reportados en el análisis. Siendo más detallados la mayor concentración de restos se ubica en la capa XVIII, con una gran concentración de macrorestos de maíz y lúcuma.

La situación en los demás pozos es de una mucho menor concentración, si sumamos la cantidad de macrorestos de los demás pozos no alcanzan lo hallado en el pozo 1.

La evidencia mayor: especies de mayor uso

Maíz y lúcuma

Como mencionamos líneas arriba existe una predominancia de (macrorestos de): “maíz” (Zea mays) y “lúcuma” (Pouteria lucuma), una de las características de estas dos especies, es la de poseer múltiples usos: alimenticio, preparación de bebidas, combustible, madera, medicinal, forraje e industrial. La revisión de la evidencia con respecto a que estructura es hallada con más frecuencia nos indica que en caso del maíz hay un mayor aprovechamiento de toda la planta (se hallan restos de tallos, raíces, tusas, e inflorescencias); mientras que de la lúcuma que básicamente se observan restos de frutos y semillas (Ver Tabla No 5 y 8), aunque casi seguro que una importante cantidad de la muestra de madera corresponda a esta especie.

Sin embargo estamos seguros que el aprovechamiento principal de estas dos especies es el alimenticio, tal como lo indica la alta presencia de restos de frutos.

Arboles y ND.

Durante el análisis se han podido identificar una importante cantidad de muestras que corresponden a especies arbóreas, muchas de ellas no han podido ser identificadas a nivel de especie, debido a que identificación requiere un análisis (de anatomía de maderas) distinto al realizado en este estudio. La evidencia consistió en restos de tallos pequeños en su mayoría (ninguno paso la medida de 5cm de largo, y 0.5cm de diametro).
Este grupo de muestras se ha consignado como ND (No determinadas), correspondientes a la clase DICOTILEDONEAE.

Dentro de lo que se puede inferir en base a las demás muestras identificadas estamos muy seguros de la ubicación taxonómica de una parte de esta muestra, las especies de: “paca” (Inga spp.), “lúcuma” (Pouteria lucuma), “palta” (“Persea americana”) y “guayaba” (Psidum guajava”) son especies arbóreas de reconocidos usos maderable, es decir que se aprovechan como fuente de madera y leña, de muy buena calidad (MOSTACERO et. al, 2000; REYNEL & PENINGTON, 1997; UGENT & OCHOA, 2006; ).

Con respecto al aprovechamiento de esta forma (madera) se han podido distinguir varios fragmentos (pequeños, no más de 1cm) de restos que estamos consignando como desechos de talla (también llamado “viruta”). Lo que evidencia trabajos en madera.

**Composición de Feats.**

Se han analizado los materiales arqueobotánicos procedentes de los rasgos (“feats”) en total 4 procedentes de los pozos 1(3 feats) y 2 (1 feat). Parte de los resultados son presentados en la Tabla No 4.

Se observa una mayor concentración de evidencia, del pozo 1, en el rasgo (“feat”) 2, donde hay la mayor parte de las especies son de uso alimenticio, además se observaron fragmentos de desechos de talla.

En general hay una mayor cantidad de especies de uso alimenticio, por encima de restos que indican alguna otra actividad que no sea la de consumo. En ese sentido en la evidencia de los rasgos también observan restos de actividades al parecer relacionada con el manejo de alimentos, y otras actividades (trabajos en madera).

**Tabla No 4**

<p>| ESPECIES IDENTIFICADAS EN LOS FEATS (“RASGOS”) |</p>
<table>
<thead>
<tr>
<th>NOMBRE CIENTIFICO</th>
<th>NOMBRE VULGAR</th>
<th>POZO 1</th>
<th>POZO 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arachis hypogaea</td>
<td>Maní</td>
<td>-</td>
<td>✓</td>
</tr>
<tr>
<td>Canna indica</td>
<td>Achira</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Cucurbita moschata</td>
<td>Calabaza</td>
<td>-</td>
<td>✓</td>
</tr>
<tr>
<td>Cucurbita sp.</td>
<td>Calabaza</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Gossypium barbadense</td>
<td>Algodón</td>
<td>-</td>
<td>✓</td>
</tr>
<tr>
<td>Gynnerium sagittatum</td>
<td>Caña brava</td>
<td>-</td>
<td>✓</td>
</tr>
<tr>
<td>Inga sp.</td>
<td>Pacae</td>
<td>-</td>
<td>✓</td>
</tr>
<tr>
<td>Lagenaria siceraria</td>
<td>Mate</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>DICOTILEDONEAE*</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Persea americana</td>
<td>Palta</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Phragmites australis</td>
<td>Carrizo</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Pouteria lúcuma</td>
<td>Lúcuma</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Psidium guajava</td>
<td>Guayaba</td>
<td>-</td>
<td>✓</td>
</tr>
<tr>
<td>Zea mays</td>
<td>Maíz</td>
<td>-</td>
<td>✓</td>
</tr>
</tbody>
</table>

*especies arbóreas no identificadas (posiblemente Pacae,)

**DISCUSIÓN**

Este primer análisis es suficiente para visualizar la economía agrícola de Quipico ya que la mayor parte de la taxa identificada corresponde a especies cultivadas, y las que se describen como silvestres o semi silvetres, corresponden a espacios asociados al ecosistema agrícola, del valle medio. Lo que finalmente permite aseverar que no hay un cambio muy significativo de la ecología, aunque si en las especies que actualmente son explotadas en el valle, dominado por cultivo de especies introducidas como la “caña de azúcar” (*Saccharum officinarum* L.).

Este “assemblage” que parece corresponder a la alimentación de los habitantes de Quipico, se caracteriza por una mayor aprovechamiento de maíz y lúcuma, es decir mayor uso de granos y fruta. Si bien ambas son usadas de otras formas, además del alimenticio, parece ser que el alimenticio es la principal. Ante la posibilidad de ver esta concentración como prueba de almacenamiento (en Quipico), sería necesario, a mi criterio, asociarlo a la arquitectura o espacios que puedan cumplir con las funciones para el procesamiento de estas especies, es decir, espacios para el deshidratación de la pulpa de la lúcuma, (Rostoworowski, 2001), o secado de granos (de maíz).

Así mismo pareciera parece que la mayor parte de la actividad relacionada con la manipulación de alimentos sería en el área donde se excava el pozo 1, el cual durante todas las capas tiene una alta concentración de restos.
Se revelan una serie de actividades domésticas, que faltarían asociarlas a la arquitectura y demás materiales que podrían mejorarla las observaciones y conclusiones del presente informe.

CONCLUSIONES

1. Hay evidencia de actividades de manejo de especies alimenticias, como pueden ser preparación destinada al consumo y/o almacenamiento,

2. El conjunto de especies alimenticias parecen corresponder sino a toda a una parte importante de la dieta, ya que permiten completar los aportes nutricionales básicos de una dieta normal.

3. Las principales especies aprovechadas fueron: maíz y lúcuma.

4. Las estructuras de maíz que son hallados con más frecuencia son: frutos y tallos. Creemos que puede tratarse del procesamiento inicial (posterior a la cosecha) de maíz, valdría añadir que una ilustración de Huaman Poma nos da una idea de lo que es la cosecha y traslado de maíz (Ver ilustración No 2).

5. Las estructuras de lúcuma halladas básicamente corresponden al fruto, se ha identificado una importante cantidad de pulpa (mesocarpio) de lúcuma conservada. Hay referencias de que hay almacenamiento de lúcuma, previa deshidratación (Rostworowski, 2000). Es posible que parte de la madera ND (DICOTILEDONEAE) corresponda a esta especie.

6. Se han identificado “desechos de talla” (astillas y viruta) de especies arbóreas, que solo han podido ser determinadas como clase DICOTILEDONEAE, que corresponden a trabajo en madera. La evidencia en frutos y hojas señala que algunas de estos restos serían las especies de: “pacae” (*Inga spp.*), “lúcuma” (*Pouteria lucuma*), “palta” (“*Persea americana*”) y “guayaba” (*Psidium guajava*) que son especies arbóreas de reconocidos usos maderable, además de frutal.

7. La mayor cantidad de evidencia proviene del pozo 1. Al parecer es el espacio donde se concentra la mayor actividad de manejo de plantas.

8. En suma parecen distinguirse las siguientes actividades: manipulación de alimentos (evidenciado por la gran cantidad de especies alimenticias), manipulación
Informe Final del Análisis Arqueobotánico de Quipico

ANEXOS

390

de madera (evidenciado por la presencia de “desechos de talla”), elaboración textil
(evidenciado por la presencia de algodón y espinas usadas como agujas)

BIBLIOGRAFÍA


UGENT, Donald y OCHOA, Carlos (2006) LA ETNOBOTÁNICA DEL PERÚ. DESDE LA PREHISTORIA AL PRESENTE. Lima - Perú. CONCYTEC.


LINKS ASOCIADOS
- Colorado university database seeds (www.seedimages.com)
- ARS database (www.ars-grin.gov/npgs/images/)
- Seed ID workshop (www.oardc.ohio-state.edu/seedid)
- Botánica de la UNEX (http://www.unex.es/botanica/queplantaes/index.htm)
- A Systematic Treatment of Fruit Types (http://www.worldbotanical.com/fruit_types.htm)
- Colección de la Herbario de la UPCH (HUPCH) (http://www.upch.edu.pe/facien/herbario/index_files/page0003.htm)
**TABLA NO 5**

**USO PROBABLE Y/O POTENCIAL DE LAS ESPECIES IDENTIFICADAS**

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<td><em>Inga feullei</em></td>
<td></td>
<td><em>Lagenaria siceraria</em></td>
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- **USOS:**
  - r=raíz, rt=raíz tuberosa, h=hoja, t=tallo, d=tubérculo o rizoma, f=fruto, s=semillas, g=granos.
- **Fuente:** Roque (2003: 36)
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RESULTADOS DETALLADOS DEL ANÁLISIS DE LOS FEATS*

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*Conteo en base a NMI.
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ILUSTRACIÓN 1. ESQUEMA DE LA UBICACIÓN DE LOS BIOTOPOS IDENTIFICADOS A TRAVÉS DE LA MUESTRA.

ILUSTRACIÓN 2. COSECHA DE MAÍZ SEGÚN UNA ILUSTRACIÓN DE HUAMAN POMA DE AYALA
Análisis arqueobotánico de Quipico – Valle medio del río Huaura

Resultados de la temporada 2009

26/05/2011

Enrique B. Bellido Cerda
INTRODUCCIÓN

El presente informe expone los resultados del análisis arqueobotánico de los materiales arqueobotánicos procedentes del sitio arqueológico de Quipico, excavados en la temporada 2009 como parte del “Proyecto de Investigación Arqueológica en el Valle de Huaura, Costa Norcentral del Perú” bajo la dirección de la Lic. Stephanie Pierce Terry. Los resultados se enfocan en aspectos ecológicos - funcionales.

El sitio de Quipico está ubicado en el valle medio del río Huaura, los análisis muestran una gran variedad de especies siendo la mayoría de estas domesticas de uso alimenticio, siendo todas provenientes de este mismo espacio ecológico,

Uno de los datos más importante como resultado de este análisis es la determinación de dos especies introducidas con la ocupación hispánica: trigo (Triticum cf. aestivum) y olivo (Olea europea), las cuales vienen a ser el primer reporte de estas especies en el valle de Huaura.

MATERIALES Y MÉTODOS

Macrostos arqueobotánicos de Quipico

La muestra arqueobotánica analizada se compone de unos 6 mil macrorestos, de estos se han conservado incluso estructuras florales (que suelen ser muy delicadas), también se conservaron tallos, semillas, frutos.

Esta muestra proviene de los sectores A, B, C y E. Los materiales analizados fueron recuperados proceden de 8 unidades excavadas, 8 limpiezas de perfiles.

Determinaciones y cuantificación

Para la determinación de la taxa se construyó una base de datos, se recurrió a literatura especializada de botánica y arqueobotánica (Cutler & Whitaker, 1961; Grobman et al., 1964; Mostacero, et. al. 2002; Pearsall, 2001; Reynel & Pennington, 1997; Tovar, 1997; Towle, 1964;), además se recurrió a los Herbarios y bases de datos online.

La especificidad de las determinaciones de las taxa está en función de la conservación de los caracteres diagnósticos de cada especímen, por lo que en algunos casos puede realizar
determinaciones hasta el nivel de especie (p.e. *Inga feullei*), y en otros solo a nivel clase (p.e. DICOTILEDONEAE).

La cuantificación del material, se realiza bajo dos criterio: conteo individual, uno en uno, contabilizándose la cantidad total de fragmentos visibles (y plausibles de contar, fragmentos de ≤5mm se obvian), el segundo conteo sigue el criterio de NMI, consistiendo este en el uso para cada especie y parte determinada, indicadores de unidad, su uso busca evitar falsear la representatividad de cada muestra, se aplica mayormente para frutos y semillas.

RESULTADOS

La exposición de los resultados del análisis, seguirá la siguiente estructura:

Primero, se hará una descripción de la taxa que se logró determinar, luego se hará una reconstrucción ecosistemica, asociando las biotopos y altitudes a las taxa determinadas; luego se harán asociaciones de los usos reportados por la etnobotánica a las taxa

En una segunda parte, se presentaran tablas con los datos que reporten las taxa según su ubicación en unidad, nivel, rasgo y sector.

CARACTERÍSTICAS DE LA TAXA DETERMINADA

La composición de la taxa determinada para todo el sitio la exponemos en la tabla No 1

<table>
<thead>
<tr>
<th>CLASE*</th>
<th>FAMILIA</th>
<th>TRIBU*</th>
<th>GENERO</th>
<th>ESPECIE</th>
</tr>
</thead>
<tbody>
<tr>
<td>DICOTILEDONEAE</td>
<td>ANNONACEAE</td>
<td>Annona</td>
<td>sp.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ASTERACEAE</td>
<td>Tessaria</td>
<td>integrifolia</td>
<td></td>
</tr>
<tr>
<td></td>
<td>BETULACEAE</td>
<td>Abies</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CUCURBITACEAE</td>
<td>Lagenaria</td>
<td>siceraria</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cucurbita</td>
<td>ficifolia</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cucurbita</td>
<td>maxima</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cucurbita</td>
<td>cf. moschata</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FABACEAE</td>
<td>Arachis</td>
<td>hypogaea</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Phaseolus</td>
<td>vulgaris</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Phaseolus</td>
<td>lunatus</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Canavalia</td>
<td>cf. plagiosperma</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MIMOSOIDEAE</td>
<td>Acacia</td>
<td>sp.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inga</td>
<td>feullei</td>
<td></td>
</tr>
<tr>
<td></td>
<td>LAURACEAE</td>
<td>Persea</td>
<td>americana</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MALPHIGIACEAE</td>
<td>Bunchosia</td>
<td>armeniaca</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MALVACEAE</td>
<td>Gossypium</td>
<td>barbadense</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MYRTACEAE</td>
<td>Psidium</td>
<td>guajava</td>
<td></td>
</tr>
</tbody>
</table>
**OLEACEAE** | **SAPINDACEAE** | **SAPOTACEAE** | **SOLANACEAE**  
---|---|---|---  
Olea | Sapindus | Pouteria | Capsicum  
**europaea** | **saponaria** | **lucuma** | **sp.**  

**MONOCOTILEDONEAE**

| **CANNACEAE** | **Cyperaceae** | **Poaceae** | **Typhaceae**  
---|---|---|---  
Canna | - | Triticum | Typha  
indica | - | cf. aestivum |  

*Se incluye el nivel TRIBÚ debido a que algunas determinaciones alcanzaron este nivel.

Como se consta en esta tabla (No 1) se ha podido identificar la taxa a nivel de: especie (23n), género (4n), familia (1n) y clase (1n). En general se puede apreciar una alta diversidad de especies, concentrada como se verá más adelante en especies útiles.

Se observa que la muestra se compone de especies mayormente pertenecientes a la clase **DICOTILEDONEAE** (21n), siendo menor la composición de la clase **MONOCOTILEDONEAE** (8n).

---

**GRAFICO No1.**

FRECUENCIA DE PRESENCIA DE LA TAXA (POR FAMILIA) EN QUIPICO

---

**TAXA (POR FAMILIA) DE QUIPICO**

<table>
<thead>
<tr>
<th>Familia</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANNONACEAE</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>TYPHACEAE</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOLANACEAE</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>SAPINDACEAE</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OLEACEAE</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MYRTACEAE</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
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<td></td>
</tr>
<tr>
<td>MALPHIGEACEAE</td>
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</tr>
<tr>
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<td></td>
</tr>
<tr>
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<td></td>
</tr>
<tr>
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<td></td>
<td></td>
</tr>
<tr>
<td>ASTERACEAE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CUCURBITACEAE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POACEAE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FABACEAE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
En el gráfico No1 mostramos la composición de la muestra por familia, el gráfico está construido en base al conteo de la presencia de especies y/o géneros claramente diferencias, resalta que las familias botánicas mejor representadas son: POACEAE (5n), FABACEAE (6n), CUCURBITACEAE (4n), mientras que el resto de las familias apenas están representadas por una sola especie. Esta parte condice el hecho de que las familias mencionadas aún en la actualidad son la que poseen especies de gran importancia económica (FAO, 2011), a la vez indica que hubo un mayor aprovechamiento de las especies de estas familias.

**Reconstrucción ecosistemica**

Una vez realizada las determinaciones de los macrorestos se decidió asociar las mismas a los espacios o biotopos en los cuales estos crecen, señalando también las altitudes, con el objeto de obtener el dato de procedencia y ubicación ecosistemita de la taxa recuperada de Quipico. Los resultados dieron permitieron construir la tabla No 2, que a continuación presentamos:

<table>
<thead>
<tr>
<th>BIOTOPOS IDENTIFICADOS</th>
<th># DE TAXA ASOCIADA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Áreas de cultivos (chacras)</td>
<td>18</td>
</tr>
<tr>
<td>Marginales de ríos y/o acequias</td>
<td>5</td>
</tr>
<tr>
<td>Bosque ribereño</td>
<td>2</td>
</tr>
<tr>
<td>Marginal de campos de cultivos o caminos</td>
<td>2</td>
</tr>
<tr>
<td>Áreas húmedas</td>
<td></td>
</tr>
</tbody>
</table>

Esta tabla no pretender ser expose los datos comunes de las diversas taxa, y como logra verse se hacen mención de 5 biotopos importantes, los cuales a su vez configuran el espacio del valle bajo-medio costeño. Así también es notorio que el biotopo mejor representado es el de áreas de cultivo, haciendo notorio que la evidencia de plantas es mayormente producto de la agricultura y la explotación de especies asociados a estos espacios, como son las especies que crecen marginalmente en las acequias que son áreas húmedas con características propias, por otra parte se observan espacios asociados a las riberas de ríos, como son los bosques ribereños, propios de la costa. Con respecto a la referencias de áreas húmedas puede tratarse de humedales o espacios húmedos...
reducidos que no sabríamos identificar. Finalmente no se observan cambios radicales en el ecosistema tal como lo exponen los datos con respecto al actual (Sanjines et. al., 2006; Roque, 2003).

Aprovechamiento de recursos y asociación etnobotánica.

Ahora examinaremos los datos etnobotánicos con respecto a los usos que se asocian a las diferentes taxa que se lograron determinarse, la tabla No 3 da cuenta de estos

**Tabla No3**
TAXA IDENTIFICADA Y SUS CARACTERÍSTICAS GENERALES

<table>
<thead>
<tr>
<th>TAXA</th>
<th>NOMBRE VULGAR</th>
<th>ESTADO</th>
<th>USO REFERENCIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acacia sp.</td>
<td>Huarango</td>
<td>Silvestre</td>
<td>MADERABLE</td>
</tr>
<tr>
<td>Alnus cf. acuminata</td>
<td>Aliso</td>
<td>Silvestre-Cultivada</td>
<td>MADERABLE</td>
</tr>
<tr>
<td>Annona sp.</td>
<td>Chirimoya</td>
<td>Silvestre-Cultivada</td>
<td>ALIMENTICIO</td>
</tr>
<tr>
<td>Arachis hypogaea</td>
<td>Mani</td>
<td>Domesticada</td>
<td>ALIMENTICIO</td>
</tr>
<tr>
<td>Bunchosia armeniaca</td>
<td>Ciruelo del fraile</td>
<td>Silvestre-Cultivada</td>
<td>ALIMENTICIO</td>
</tr>
<tr>
<td>Canna indica</td>
<td>Achira</td>
<td>Domesticada</td>
<td>ALIMENTICIO</td>
</tr>
<tr>
<td>Capsicum sp.</td>
<td>Aji</td>
<td>Domesticada</td>
<td>ALIMENTICIO</td>
</tr>
<tr>
<td>Cf. Paspalidium sp.</td>
<td>Grama</td>
<td>Silvestre</td>
<td>FLORA SILVESTRE</td>
</tr>
<tr>
<td>Cf. Tessaria integrifolia</td>
<td>Pajaro bobo</td>
<td>Silvestre</td>
<td>FLORA SILVESTRE</td>
</tr>
<tr>
<td>Cucurbita cf. moschata</td>
<td>Calabaza</td>
<td>Domesticada</td>
<td>ALIMENTICIO</td>
</tr>
<tr>
<td>Cucurbita ficifolia</td>
<td>Zapallo</td>
<td>Domesticada</td>
<td>ALIMENTICIO</td>
</tr>
<tr>
<td>Cucurbita maxima</td>
<td>Algodón</td>
<td>Domesticada</td>
<td>TEXTIL</td>
</tr>
<tr>
<td>Gossypium barbadense</td>
<td>Caña brava</td>
<td>Silvestre</td>
<td>CONSTRUCCIÓN</td>
</tr>
<tr>
<td>Inga feullei</td>
<td>Pacae</td>
<td>Silvestre-Cultivada</td>
<td>ALIMENTICIO</td>
</tr>
<tr>
<td>Lagenaria siceraria</td>
<td>Mate</td>
<td>Silvestre-Cultivada</td>
<td>UTILLIAJE</td>
</tr>
<tr>
<td>Olea europaea</td>
<td>Olivo</td>
<td>Domesticada</td>
<td>ALIMENTICIO</td>
</tr>
<tr>
<td>Persea americana</td>
<td>Palta</td>
<td>Silvestre-Cultivada</td>
<td>ALIMENTICIO</td>
</tr>
<tr>
<td>Phaseolus lunatus</td>
<td>Pallar</td>
<td>Domesticada</td>
<td>ALIMENTICIO</td>
</tr>
<tr>
<td>Phaseolus vulgaris</td>
<td>Trigo</td>
<td>Domesticada</td>
<td>ALIMENTICIO</td>
</tr>
<tr>
<td>Phragmites australis</td>
<td>Carrizo</td>
<td>Silvestre</td>
<td>CONSTRUCCIÓN</td>
</tr>
<tr>
<td>Pouteria lucuma</td>
<td>Lucuma</td>
<td>Silvestre-Cultivada</td>
<td>ALIMENTICIO</td>
</tr>
<tr>
<td>Psidium guajava</td>
<td>Guayaba</td>
<td>Silvestre-Cultivada</td>
<td>ALIMENTICIO</td>
</tr>
<tr>
<td>Sapindus saponaria</td>
<td>Boliche</td>
<td>Silvestre-Cultivada</td>
<td>ALIMENTICIO</td>
</tr>
<tr>
<td>Triticum cf. aestivum</td>
<td>Trigo</td>
<td>Domesticada</td>
<td>ALIMENTICIO</td>
</tr>
<tr>
<td>Typha sp.</td>
<td>Totora</td>
<td>Silvestre</td>
<td>CESTERÍA</td>
</tr>
<tr>
<td>Zea mays</td>
<td>Maíz</td>
<td>Domesticada</td>
<td>ALIMENTICIO</td>
</tr>
</tbody>
</table>
Como puede observarse además de los usos asociados a las taxa también anotamos el estado de las mismas, con respecto a si se trata de una especie silvestre, domesticadas, y si siendo silvestre se sabe que se cultiva como sucede con algunos árboles, este dato permite observar cómo es el manejo de los recursos vegetales.

A partir de esta tabla presentaremos 3 gráficos que harán aún más explícito lo antes dicho, por ejemplo en la gráfica No2, resulta notorio que la mayor parte de las diferentes especies (19n) que lograron determinarse son de utilidad alimenticia, lo cual en primer lugar nos habla de un abanico muy amplio de recursos alimenticios, a la vez que nos habla de un fuerte sesgo que habría que asociarlo a con otros datos como podrían ser la cerámica, de este tema se comentará más abajo.

Decidimos observar más de cerca esta alta incidencia de especies alimenticias presentes en nuestra muestra, por lo que realizamos una segunda clasificación de estas especies de uso alimenticio de forma más específica los resultados los podemos ver en la Tabla No 3 y en la gráfica No 3.
Tabla No 3.
USOS POTENCIALES DE LA TAXA IDENTIFICADA

Grafico No3.
Clasificación etnobotánico de las especies comestibles.
ALIMENTICIAS
Haciendo una lectura de los datos desde un punto de vista nutricional, las plantas que mayor aporte nutricional otorgan a una dieta diaria no la componen las frutas que son las que tienen una mayor variedad sino las grasas vegetales (como lo otorgan la palta o el maní). A continuación presentaremos una pirámide nutricional en base a las especies que se han logrado determinar:

**GRANOS Y SEMILLAS**
- *Arachis hypogaea* (“maní”)
- *Phaseolus lunatus* (“pallar”)
- *Phaseolus vulgaris* (“frijol”)
- *Zea mays* (“maíz”)

**RAÍCES Y TALLOS**
- *Canna indica* (“achira”)

**CONDIMENTOS**
- *Capsicum sp.* (“ají”)

**FRUTOS NO DULCES (Verduras)**
- *Cucurbita* sp. (“calabaza”)
- *Cucurbita moschata* (“calabaza moscada”)

**FRUTOS COMESTIBLES (Frutas)**
- *Bunchosia armeniaca* (“ciruelo del fraile”)
- *Inga sp.* (“paca”)  
- *Persea americana* (“palta”)
- *Pouteria lucuma* (“lúcuma”)
- *Psidium guajava* (guayaba)

**MADERA**
- *Inga* sp. (“paca”)  
- *Pouteria lucuma* (“lúcuma”)  
- *Psidium guajava* (guayaba)

**AGUJAS**
Diferentes especies de la familia CACTACEAE (“cactus”)

**RECIPIENTES**
- *Lagenaria siceraria* (“mate”)

**FIBRAS**
- *Gossypium barbadense*  
  “algodón”

**OTROS**

**USADOS PARA CONSTRUCCIÓN**
- *Phragmites australis* (“carrizo”)
- *Gynerium sagittatum*  
  (“caña brava”)

**GRASAS VEGETALES** (Palta, maní)

**VERDURAS** (Calabazas)

**FRUTAS** (Guayaba, paca, lúcuma, ciruelo del fraile)

**MENESTRAS** (frejoles y pallares)

**CARBOHIDRATOS** (Maíz)
A partir de esta pirámide se puede observar con respecto a la alimentación, de qué tenemos las plantas que dan un aporte a la dieta diaria, y que son las que están presentes en todo el sitio.

**CARACTERÍSTICAS CUANTITATIVAS DE LAS TAXA EN QUIPICO**

**Sectores**

Los materiales provienen de los sectores A, B, C, y E. A continuación los resultados

SECTOR A.

A continuación presentamos en la siguiente tabla los datos del sector A

**TABLA No4 RESULTADOS DEL ANALISIS DEL SECTOR A**

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<th>4</th>
<th>5</th>
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<td>1</td>
</tr>
<tr>
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<td>-</td>
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<td>189</td>
</tr>
<tr>
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<td>22</td>
<td>4</td>
<td>5</td>
<td>16</td>
<td>2</td>
<td>10</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<td>-</td>
<td>-</td>
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<td>3</td>
<td>22</td>
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Este sector está representado por la unidad 7, la cual reporta restos botánicos en casi todos sus niveles, así también presenta varios rasgos (28, 30, 41, 42, 44 y 45).

Las taxa con mayor cantidad reportada en este sector son: **DICOTILEDONEAE, Pouteria lúcuma, Zea mays, Gossypium barbadense, Cucurbita ficifolia, y Arachis hypogaea**.

Se puede observar que en esta unidad (7) en sus niveles más profundos la densidad de materiales se hace más consistente tanto en cantidad de macrorestos como en diversidad de taxa (que es lo que mide el índice de ubicuidad), con el siguiente gráfico se puede observar cómo se comporta la densidad de materiales (con respecto a la cantidad de materiales, en nivel y rasgo), se observa que en el nivel 5 hay una gran concentración de materiales, sin embargo hay que señalar que se trata de un relleno.

Por otra parte se puede observar que la mayor parte de la taxa que está presente en esta unidad es de utilidad alimenticia, por lo que da pie para aseverar que la actividad principal desarrollada en este sector habría sido la de manipulación de alimentos, y la que suponemos más específicamente que habría sido la actividad de preparación y consumo de alimentos.
GRAFICA No 5. CONTRASTE ENTRE LA EVIDENCIA DE FRUTOS VS. TALLOS DENTRO DE LOS NIVELES, RASGOS Y UNIDADES DEL SECTOR A
## Sector B

A continuación presentamos la tabla con el resumen de los datos de este sector:

### TABLA No5 RESULTADOS DEL ANALISIS DEL SECTOR B

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El sector B está representado por las unidades 8, 9, la excavación en la rampa de acceso a uno de los recintos dentro de este sector, así también como pozo 2.

Ahora bien si bien el pozo 2, concentra la mayor cantidad de macrorestos (2564n), es en las unidades 8 y 9 donde la distribución de la evidencia botánica es más consistente, tanto en diversidad como en cantidad. En ese sentido observamos que una de las características de este sector es su baja diversidad de taxa, en cada una de las unidades. A la vez que la mayor parte de la evidencia del pozo 2 es de *Inga feullei* (hojas) en el nivel 2, que es donde se reporta la mayor parte de la evidencia tanto en cantidad como en diversidad, es de *Inga sp.* ("pacae"); esta concentración de "pacae" es básicamente de hojas y flores, sin frutos; al menos hasta ahí se puede hablar de selección que en ninguna forma parece estar relacionada con algún tipo de uso alimentario, la literatura sobre "pacae" da un par de opciones: abono o posiblemente insecticida natural, nos inclinamos a esperar que aparezcan otros contextos similares para observar un patrón para tener más elementos de juicio. Sin embargo dado que se trata de un nivel superficial podría tratarse de un evento aislado durante el abandono del sitio.

También puede observarse en este sector las taxa con una mayor presencia y densidad de materiales son *Zea mays*, *Inga sp.* DICOTILEDONEAE, *Phragmites australis*, *Pouteria lúcuma* y *Gossypium barbadense*.

Las características de este sector aparecen cuando lo comparamos, por ejemplo con el sector A, la mayor parte de la mayor parte de la evidencia corresponde a especies no comestibles (DICOTILEDONEAE, *Phragmites australis*, y *Gossypium barbadense*), mientras que las especies alimenticias (*Zea mays* y *Pouteria lúcuma*) si bien se reportan no resultan una evidencia muy fuerte; en ese sentido nos parece que si bien actividades relacionadas con consumo o procesamiento se hubieron realizado en algún momento en estos espacios excavados no fueron las principales.
### GRAFICA No 6. CONTRASTE ENTRE LA EVIDENCIA DE FRUTOS VS. TALLOS DENTRO DE LOS NIVELES, RASGOS Y UNIDADES DEL SECTOR B

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Pozo 2 REABIERTO

- Fruto
- Tallo
**TABLA No6 RESULTADOS DEL ANALISIS DEL SECTOR C**

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| Plant Family       | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | 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Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidad (%) | Ubicuidado
Este sector está representado por las unidades 5 y 6, ambas con varios niveles excavados; estas unidades se caracterizan por la poca diversidad en cada nivel excavado y por la distribución consistente de la evidencia; la unidad 6 es la que reporta la mayor cantidad de evidencia lo cual se conduce con su diversidad.

Si bien las taxa que están mejor representadas en este sector son: DICOTILEDONEAE y Zea mays; se observa una gran diversidad de taxa de uso alimenticio, las cuales están presentes en poca cantidad en cada nivel; una primera idea es que estos se traten de espacios de almacenamiento, por decirlo de algún modo no especializados, incluso podríamos decir improvisados; decimos esto partiendo de la suposición de que si se trata de ocupación colonial, habrían sido muchas las modificaciones o reutilizaciones de los diferentes espacios. Sin embargo creemos que este idea es más sostenible con respecto a la unidad 6, que presenta espacios divididos con adobes construidos de forma poco elaborada.
La evidencia de este sector la resumimos en la siguiente tabla

**TABLA No7 RESULTADOS DEL ANALISIS DEL SECTOR E**

<table>
<thead>
<tr>
<th>ESTRUCTURA – TAXA</th>
<th>SECTOR E</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>UNIDAD</strong></td>
<td><strong>10</strong></td>
<td><strong>L de P#2</strong></td>
</tr>
<tr>
<td><strong>NIVEL</strong></td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td><strong>Fruto</strong></td>
<td>2</td>
<td>16</td>
</tr>
<tr>
<td><em>Pouteria lucuma</em></td>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td><em>Arachis hypogaea</em></td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td><em>Zea mays</em></td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><em>Gossypium barbadense</em></td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><em>Capsicum sp.</em></td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Hoja</strong></td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td><strong>Inga sp.</strong></td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td><strong>Semilla</strong></td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td><em>Gossypium barbadense</em></td>
<td>-</td>
<td>7</td>
</tr>
<tr>
<td><em>Cucurbita ficifolia</em></td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><em>Pouteria lucuma</em></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><em>Persea americana</em></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><em>Inga sp.</em></td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><em>Cucurbita sp.</em></td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td><em>FABACEAE</em></td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Tallo</strong></td>
<td>13</td>
<td>20</td>
</tr>
<tr>
<td>DICOTILEDONEAE</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td><em>Phragmites australis</em></td>
<td>6</td>
<td>-</td>
</tr>
<tr>
<td><em>Inga sp.</em></td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total general</strong></td>
<td>18</td>
<td>12</td>
</tr>
<tr>
<td><strong>Ubicuidad</strong></td>
<td>42</td>
<td>42</td>
</tr>
</tbody>
</table>

Como puede observarse este sector es que menos cantidad de evidencia y diversidad tiene. La ocupación de este sector está representada por la unidad 10 y por los materiales procedentes de la limpieza del Perfil #2. Sin embargo resulta claro que la evidencia con mayor consistencia proviene de la unidad 10.
Las taxa con mayor presencia en la unidad 10, son *Gossypium barbadense, DICOTILEDONEAE, Phragmites australis*, y *Pouteria lúcuma*; salvo la última taxa las demás no son comestibles, y al menos sugieren una mayor actividad relacionada con el manejo del algodón; sin embargo hay una presencia importante de especies comestibles.

El nivel más profundo de esta unidad el nive 5, pareciera el de mayor actividad, observándose mejor la actividad mejor representada es la relacionada con el manejo de “algodón” (*Gossypium barbadense*). Mientras que los demás niveles se observa muy poca actividad, tanto con respecto a cantidad de evidencia como diversidad.

GRAFICA No 8. CONTRASTE ENTRE LA EVIDENCIA DE FRUTOS VS. TALLOS DENTRO DE LOS NIVELES, RASGOS Y UNIDADES DEL SECTOR E

Finalmente la evidencia de la limpieza del perfil 2, debido a su poca cantidad resulta referencial, pero no es dato suficientemente fuerte como para discutirlo.
A continuación haremos una correlación entre los distintos datos y comentarios presentados, ya líneas arriba.

**FLORA Y ECONOMÍA DE QUIPICO**

Cuando se presentaron los datos botánicos se observó que algunas familias como POACEAE, CUCURBITACEAE, y FABACEAE, tienen una presencia consistente (cantidad y diversidad de especies de estas familias) en todo el sitio; destacándose estas como las familias económicas más importantes en este sitio.

Un aspecto que señalamos también acerca de la flora determinada es que se trata de especies típicas del valle bajo-medio\(^1\), a lo que hay que señalar que también están presentes en varios (sino todos los) sitios de la costa central, y al correlacionar los biotopos de donde proceden se observan que estos reconstruyen los espacios que todavía hoy en día pueden apreciarse en un valle costeño.

Con respecto al significado que podría tener la presencia de especies de un solo ambiente (valle bajo-medio costeño), nos parece que puede comprenderse a la luz de la hipótesis de que los diferentes grupos sociales que ocupan los valles de la costa central, son señoríos interdependientes (ROSTOWOROWSKI, 1989); por lo que en ese sentido se puede entender como autonomía económica, basada en el aprovechamiento de los diferentes recursos agrícolas\(^2\) que se pueden producir en el valle bajo-medio. Esto sin embargo no descarta la posibilidad de que en el futuro se encuentren especies de otros ecosistemas, y de ser así sugerimos que se trataría de especies con utilidades muy específicas.

Por otra parte observamos que la mayor parte de la producción agrícola está destinada al consumo, con una mínima cantidad de especies destinada para otros usos, como textil

---

\(^1\) Nos parece más prudente decir valle bajo-medio, aunque fácilmente podría señalarse solo como valle medio.

\(^2\) Falta complementar lo dicho con los datos de otros materiales (arqueozoología y malacológico)
(algodón) o para recipientes, donde más bien lo que se hace es recolectar o explotar las especies silvestres. Ante esto hay que ampliar que varias especies que se les usa como alimento también poseen más de un uso, como lo sostienen los algunas crónicas (COBO) y los datos etnobotánico actuales (MOSTACERO et al, 2000).

**TABLA No8 PRESENCIA-AUSENCIA DE LAS TAXA POR SECTORES**

<table>
<thead>
<tr>
<th>TAXA</th>
<th>NOMBRE VULGAR</th>
<th>SECTOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inga sp.</td>
<td>Pacae</td>
<td>A</td>
</tr>
<tr>
<td>Zea mays</td>
<td>Maíz</td>
<td>B</td>
</tr>
<tr>
<td>DICOTILEDONEAE</td>
<td>-</td>
<td>C</td>
</tr>
<tr>
<td>Phragmites australis</td>
<td>Carrizo</td>
<td>E</td>
</tr>
<tr>
<td>POACEAE</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Gossypium barbadense</td>
<td>Algodón</td>
<td></td>
</tr>
<tr>
<td>Pouteria lucum</td>
<td>Lúcuma</td>
<td></td>
</tr>
<tr>
<td>Triticum sp.</td>
<td>Trigo</td>
<td></td>
</tr>
<tr>
<td>Arachis hypogaea</td>
<td>Maní</td>
<td></td>
</tr>
<tr>
<td>Cucurbita ficifolia</td>
<td>Calabaza</td>
<td></td>
</tr>
<tr>
<td>Lagenaria sicaria</td>
<td>Mate</td>
<td></td>
</tr>
<tr>
<td>Cucurbita sp.</td>
<td>Calabaza</td>
<td></td>
</tr>
<tr>
<td>Phaseolus vulgaris</td>
<td>Frejol</td>
<td></td>
</tr>
<tr>
<td>Phaseolus sp.</td>
<td>Frejol?</td>
<td></td>
</tr>
<tr>
<td>Persea americana</td>
<td>Palta</td>
<td></td>
</tr>
<tr>
<td>Psidium guajava</td>
<td>Guayaba</td>
<td></td>
</tr>
<tr>
<td>Olea europaea</td>
<td>Aceituna</td>
<td></td>
</tr>
<tr>
<td>FABACEAE</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Capsicum sp.</td>
<td>Aji</td>
<td></td>
</tr>
<tr>
<td>Bunchosia armeniaca</td>
<td>Ciruelo del fraile</td>
<td></td>
</tr>
<tr>
<td>Gynernium sagittatum</td>
<td>Caña brava</td>
<td></td>
</tr>
<tr>
<td>CYPERACEAE</td>
<td>Junco?</td>
<td></td>
</tr>
<tr>
<td>Cucurbita maxima</td>
<td>Zapallo</td>
<td></td>
</tr>
<tr>
<td>Acacia sp.</td>
<td>Espino</td>
<td></td>
</tr>
<tr>
<td>Tessaria integrifolia</td>
<td>Pájaro bobo</td>
<td></td>
</tr>
<tr>
<td>Canavalia sp.</td>
<td>Pallar de los gentiles</td>
<td>X</td>
</tr>
<tr>
<td>Typha sp.</td>
<td>Totora</td>
<td></td>
</tr>
<tr>
<td>Alnus cf. acuminata</td>
<td>Sauce</td>
<td></td>
</tr>
<tr>
<td>Phaseolus lunatus</td>
<td>Pallar</td>
<td></td>
</tr>
<tr>
<td>Sapindus saponaria</td>
<td>Choloque</td>
<td></td>
</tr>
<tr>
<td>Cucurbita cf. moschata</td>
<td>Calabaza</td>
<td></td>
</tr>
<tr>
<td>Paspalidium geminatum</td>
<td>Grama</td>
<td></td>
</tr>
<tr>
<td>Canna indica</td>
<td>Achira</td>
<td></td>
</tr>
<tr>
<td>CUCURBITACEAE</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>E</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total conteo</strong></td>
<td>22</td>
<td>22</td>
<td>32</td>
<td>12</td>
<td>35</td>
</tr>
</tbody>
</table>
CONSUMO

La evidencia más importante que disponemos para estudiar el consumo en Quipico son las estructuras botánicas que son indicadores de manipulación y consumo de alimentos. Hay una gran cantidad de restos de legumbres vacías, semillas, y pedúnculos (o bases de frutos), en todo Quipico.

En una parte del informe elaboramos una pirámide nutricional, con el objeto de sustentar que la diversidad de las especies determinadas, es suficientes para una alimentación adecuada\(^3\) de un individuo (y por ende a toda la población de Quipico). Lo cual al menos proporciona el dato de que existe la disponibilidad energética suficiente para una alimentación adecuada para la población de Quipico. Ahora bien hay que observar que en pocos de los niveles registrados se puede observar toda esta diversidad junta, es decir salvo en algunos niveles de los sectores A y E, la evidencia de estos sectores sugiere que solo tenemos algunos eventos de consumo colectivo en los niveles de estos sectores.

Por otra parte hay una constante presencia de maíz en varios de los niveles, a lo cual imaginamos que siendo esta la base de la alimentación, junto a su facilidad de traslado y consumo; por ejemplo, el maíz consumido en su forma tostada es decir como “cancha” resulta muy sencillo de ser transportado por cada individuo, así también como para ser consumido mientras se realizan otras actividades sin limitarlas en lo absoluto. Todo esto podría explicar la constante presencia de maíz de maíz en la mayor parte de los niveles en Quipico.

No solo el maíz resulta fácil de transportar, preparar y consumir, sino también especies como maní, la palta, y por supuesto los frutales, proporcionan un aporte calórico y proteico muy importante, lo cual posibilita el consumo mientras se realizan otras actividades. En definitiva esta consideración no excluye la complejidad de la cocina que

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\(^3\) Estos datos hay que complementarlos con los datos acerca del consumo de animales, ya que toda dieta además de tener una cantidad importante de plantas, debe complementarse con ingesta de proteínas animal, como es la carne
puede haberse estado desarrollando en Quipico, sino es una primera aproximación en base a la evidencia disponible.

En base lo antes comentado, una primera hipótesis que manejamos con respecto a las características del consumo en Quipico es que la evidencia podría estar indicando que en algunos espacios el consumo sería individual y que se estaría realizando junto con otras actividades, por ejemplo en algunos espacios se podría estar hilando a la vez que se estaría comiendo; a la vez que en algunos espacios se estaría desarrollando el consumo de forma colectivo. Sin embargo excavaciones en área podría definir mejor esta posibilidad, ya que habría que contextualizar esta propuesta en el marco de la evidencia proporcionada por los otros materiales.

Un dato que también es necesario señalar que las especies que están presentes en nuestro registros son: "maíz" Zea mays, "lúcuma" Pouteria lúcuma, y "maní" Arachis hipogaea, que como insistimos, son sencillos de preparar y transportar.

**Cultivos introducidos**

Un dato casi único en nuestra muestra analizada es la presencia de dos especies introducidas: la aceituna u olivo (Olea europaea) y el trigo (Triticum cf. aestivum), su importancia reside en que son indicadores inequívocos de ocupación española en el sitio, a la vez que la evidencia de especies introducidas en contexto arqueológicos de esta época de transición es escasa, más aún en el valle de Huaura.

Un segundo aspecto a señalar de estos cultivos es que se tratan de especies económicas muy importantes en el viejo mundo, y que una vez introducidas mantienen su importancia, tal como lo muestran las diferentes crónicas.

Sobre el trigo la información disponible es la siguiente:

Por un parte Garcilaso atribuye a María de Escobar, mujer de Diego de Chaves, la introducción intencional del trigo al Perú, y su propagación durante tres años. (Garcilaso, 1945, II, 254), sin embargo no da ninguna fecha.

Cobo, por su lado, dice que la primera persona que sembró trigo en Lima fue Inés Muñoz, mujer de Martín de Alcántara, medio hermano de Francisco Pizarro, con motivo de haber encontrado unos granos de trigo en un barril de arroz, en ocasión en que Preparaba un
potaje para obsequiar con él a su cuñado el marqués, por 1535, poco después de la
fundación de Lima. Doña Inés habría sembrado los granos en una maceta, y habría
cuidado amorosamente las matas hasta obtener la cosecha, perseverando en la
propagación de la semilla y distribuyéndola entre los vecinos (Cobo, 1891, II, 411-413).

Por su Parte Cappa apartándose esta vez de Cobo, a quien sigue a menudo, y basado en
una relación de "antigüedad y servicios", dice que fue doña Beatriz de Salcedo, mujer del
veedor Garcíá de Salcedo, la que sembró el primer trigo. Según esta versión los granos del
cereal venían en una harina mal molida que se trajo de España para hacer hostias, y
también fueron sembrados con todo cuidado y distribuidos entre los vecinos (Cappa,
1890, V, 250-251).

A la llegada de Vaca de Castro (1541), en Lima y en gran parte del territorio peruano se
cosechaba mucho trigo (Cieza, 1884, 91).

Como puede observarse los datos solo hablan de Lima y no de la dispersión de este cultivo
a otras zonas.

ACEITUNA

Sobre la introducción del olivo al Perú existen dos versiones.

Garcilazo señala que fue en 1560 cuando don Antonio de la Ribera logró llegar a Lima con
dos o tres estacas, de muchas que trajo de Sevilla en dos tinajones; y que finalmente logró
cultivar con mucho éxito, hasta el punto de que ya para 1596 se vendía el almud de
aceitunas a dos pesos, y para 1652 en que escribía, la hanaga se vendía a dos pesos.
(GARCILAZO, 1945, II, 258-259).

Cappa, siguiendo la versión de Mendiburu, señala que ya en 1542 Diego de Mora tenía en
su hacienda de Chicama, Trujillo, mil árboles de olivo que le rendían 300 arrobas de aceite
al año. Sobre el empleo de la madera como leña, trae datos confirmatorios, pero relativos
al siglo XVIII. (Cappa, 1890, V, 96; 289-297).

CONCLUSIONES

1. La flora reportada para Quipico pertenece completamente al ecosistema de valle
medio (y posiblemente bajo).
2. La producción agrícola de Quipico habría sido productos alimenticios.
3. Quipico habría tenido independencia económica al sustentar su economía en la producción y consumo de productos agrícolas propios de su ecosistema.
4. Se pueden observar las diferencias entre los diferentes sectores a partir de la evidencia botánica, con respecto a una mayor o menor actividad relacionada a especies comestibles (manipulación y/o consumo de alimentos).
5. La presencia de cultivos como el olivo y el trigo, son marcadores temporales confiables de que existe ocupación hispánica en Quipico.
6. La presencia de olivos y trigo, al ser cultivo económicamente muy importantes y controlados durante la colonia, sugieren que durante la colonia habría sido un sitio importante.

BIBLIOGRAFÍA


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LINKS ASOCIADOS

- Colorado university database seeds (www.seedimages.com)
- ARS database (www.ars-grin.gov/npgs/images/)
- Seed ID workshop (www.oardc.ohio-state.edu/seedid)
- Botánica de la UNEX (http://www.unex.es/botanica/queplantaes/index.htm)
- A Systematic Treatment of Fruit Types (http://www.worldbotanical.com/fruit_types.htm)
- Colección de la Herbario de la UPCH (HUPCH) (http://www.upch.edu.pe/facien/herbario/index_files/page0003.htm)
APPENDIX D: ARCHITECTURAL ANALYSIS & DATA

Keeping in mind the considerations mentioned in Chapter 6, in this appendix I provide my discussion of the particular architectural analyses used to study Quipico, as well as a comparative sample of Andean architecture.

Graph Theory

Graph theory is a branch of mathematics that is concerned about how to encode networks so that their properties can be measured. As an abstraction of reality so that it can be simplified, a graph serves as the symbolic representation of a network and of its connectivity. Mobile phone networks, transportation systems, and even internet servers can be examined through graphs. While this technology is usually applied in modern architectural design and Urban Planning to predict how space might be used and navigated, it can be used within archaeology/architectural history to reverse-engineer space to extract how it have been used previously, or simply its design logic. Graphic studies can provide archaeologists with a more rigorous way to assess issues usually phrased in qualitative terms. Different graphs can be used to examine possible structure forms and arrangements: ground floor area and room shape graphs, adjacency graphs, plan graphs, dual function graphs, access graphs, and route graphs (Hillier et al 1976; Hillier and Hanson 1984; Steadman 1983; contra Ratti 2004). These methods first came from the perspective of comparing architecture to languages in an attempt to identify
architectural patterns as one would a syntax or grammar, as discussed above (Hillier et al 1976; Steadman 1983; Hillier and Hanson 1984).

A graph is a standardized drawing that uses points (vertices, or nodes) connected by edges (links, or lines) [Figure 1]. A vertex (ν) is a terminal point or an intersection point of a graph. It is an abstraction of a location—it can be a city, a road intersection, or in this case of architectural analyses, a room. An edge (e) is a link between two nodes, along which movement or a connection of some sort exists; if an arrow is not used to denote a particular direction of movement, then the link functions bi-directionally. A

*Figure 1: A basic planar graph of a structure with vertices and edges labeled.*
graph can be divided into different levels of activity and these subsets are called sub-
graphs. When considering different scales of networks, each level can be considered a
sub-graph of another. For instance, one can graph the sites in a valley, the buildings at a
site, or the rooms in a building. Looking at a graph of the rooms in a building, if there
were several disconnected portions of the building (such as a main structure and a
detached storeroom), each of those would be considered a sub-graph. The number of sub-
graphs is represented by $p$. When all of the intersections of edges are at vertices and there
is no crossing over of movement (i.e. the topology used is two-dimensional), the graph is
a planar graph. This has an important impact on the formulas used, as the potential
linkages in a non-planar graph is much greater than a planar one. For the purposes of
these analyses, the graphs used are all planar because although buildings do operate in
three-dimensions, movement through them is still does not have overlap (i.e. all
movement occurs on one level); the Chancay did not use bridges within their buildings
and there is currently no good evidence for multiple stories.

The organization of vertices and edges in a graph allows it to be described and
labeled; different graph forms can be used to explore the underlying social logic in
layouts. Identifying patterns of construction can be useful to contrast against other sites in
the region and elsewhere during the LIP; such as others (Bawden 1990; McEwan 1990;
Moore 1996a, 1996b) have done for comparisons of Moche, Chimu, and Wari patterns in
architectural floor plans. I applied the following analyses to other sites: in the Huaura
Valley (Nelson and Ruiz 2004, 2005; Ruiz Estrada and Nelson 2007), other Chancay sites
(Krzanowski 1986; Azami 2008), Ichsma centers (e.g. Agorto Calvo 1987; Eeckhout
2000), Wari administrative architectural styles (Isbell and Schreiber 1978; Schreiber

Open Space Structures and Floor Plans

Hillier and Hanson (1984) developed a set of techniques to examine the continuous open space that surrounds buildings (also known as the open space structure), which have been used for several archaeological analyses (Ferguson 1996). The area of the site not occupied by buildings is divided up into convex spaces, which are polygons that represent the two-dimensional space in which any two people that can be seen by a third person can also see each other. Then, straight (axial) lines are drawn through each convex space until all links are made and all spaces crossed. These graphs can be examined in terms of articulation, convexity, ‘ringiness’ (y-distribution), and relative asymmetry (Ferguson 1996). Unfortunately for this project, analysis of the open space structure did not reveal any useful results. Although these graphs and calculations were produced for Quipico, they were discarded for the following problems, although not for all of the same problems Ferguson (1996) warned of. Though the site boundary has been fairly consistent over time, as indicated by the lack of archaeological remains in the surrounding agricultural fields and the corroboration of the 1940s SAN aerial photos, there were too many incomplete building fragments to accurately divide the area into convex spaces. There was also clear evidence that some of the areas of the site may have
once had buildings on them that were destroyed in a flash-flood event, since there were areas of adobe melt and water-deposited sediments in the larger open areas of the site. Evidence of cane perishable structures at or near Quipico was also found in construction fill, so we cannot account for any temporary structures that may have once been throughout the site. This lack of data would greatly distort the open space analysis. The open space structure also does not account for elevation, which has a significant impact on between-building visibility and movement routes. Also, the thresholds of buildings are an important syntactic variable for this type of analysis, but for Quipico it was exceptionally difficult to identify building entrances because many of them were blocked up upon site abandonment. Finally, it was not possible to gather this data from most other sites examined for this project because many of the maps were unclear as to the full spatial extent of the site. I include the mention of this attempt because for other archaeologists considering these methods, I would not recommend using open space structure for analysis unless these factors are able to be accounted for.

Instead, I kept my analyses to the structures themselves rather than the areas between them as a more fruitful line of inquiry. The most basic floor plan analysis uses the specific measurements of room dimensions. The length and width of each room are used to calculate the mean and standard deviation for wall-length ratio and ground floor area for the overall structure. These measurements can be used (cf. Bawden 1982a; Fletcher 1977) for comparing different structures by the ranges of ground floor area and regularity of room shape.

Wall-to-length Ratios and Ground Floor Area for Quipico and Other Sites
I calculated the mean and standard deviation for wall-to-length ratio and the ground floor area for Quipico; this was not possible, however, for other sites since most maps for this region are lacking fine enough detail to make these calculations with any degree of certainty. Overall structure size was correlated with the overall size of the site only for considering large buildings; i.e. no very small sites had disproportionately large structures, but many large sites included very small structures. Thus, the range of room sizes present at a site became broader the larger that the site was.

**Access Graphs and Route Graphs**

Access graphs and route graphs are slightly different in their representations, and require very specific information about doorway locations [Figure 2]. In an access graph, the spaces are marked with points and their connections via doorways are represented by linking lines; when aligned vertically, rather than in the same layout as the original floor plan, this is considered a *justified access* graph. This allows for a calculation of depth, or how many other rooms one must pass through in order to go from outside to the furthermost room; rooms can be compared to each other based upon their relative level of depth (e.g. Foster 1989; Moore 1996a). Access graphs can also be used for a visual comparison of configurations based on their symmetry and degree of distribution. Route maps, also known as axial graphs, show the architecturally formalized path between spaces, though usually not the spaces themselves. Route maps are drawn using only lines, where each line is the maximum axis of view or flow from one room into the next (Hillier and Hanson 1984; Moore 1996a). This can demonstrate patterns of site circulation; it has
also been used to examine possible preferential treatment of right-handed routes leading to areas of higher status than routes leading to the left (Donnan 1986; Moore 1996b).

These analytical tools have provided useful cross-cultural comparison of issues of privacy and public space, density or clustering of populations within sites, pedestrian flow, and identification of ethnic or social group markers (e.g. Bagwell 2004; Brewster-Wray 1983; Czwarno 1989; Ford and Arnold 1982; Foster 1989; Grahame 1997; Hillier and Hanson 1984; Isbell et al 1991; Moore 1992, 1996a, 1996b; Sanders 1990; Steadman...
1983; contra Folan et al 1982; Haviland 1982). These graphs have also been used to demonstrate that buildings that appear to have different configurations actually have a shared spatial pattern (March and Steadman 1971).

Access at Quipico and Other Sites

For Quipico, I had expected this to reveal subtleties in spatial complexity for the compounds. Access would be expected to be restricted, especially for storage areas that would contain goods controlled by elites and collected for redistribution or transport. Patterns of access and routes can demonstrate an emphasis on certain areas of site circulation. Degree of access to all compounds at Quipico appeared quite limited, with only one or two entrances into each building. However, it was not possible to clearly identify many of the doorways at Quipico. Due to the fact that tapial walls are built in large sections, when a portion of the wall is removed or collapsed, the resulting gap can resemble a doorway. It is only possible to determine whether or not it was an original entry through excavation of the base of the wall, which still might not have been preserved. Doorways at Quipico had also been blocked up using adobe bricks upon site abandonment, and with wind erosion these areas become almost indistinguishable from heavily deteriorated sections of tapial wall. The use of thresholds for doorway entries (such as seen in Structure E Unit 10) also can obscure the presence of entryways, if the area is very eroded. The final issue regarding identification of entries is that the original height of internal walls is often unknown. For example, if a dividing wall originally had higher courses or served as the base for a perishable quincha wall, then it would have been impossible to go between the two rooms. If the wall only served as a low barrier
(such as is used to keep guinea pigs restricted to certain areas in households), then the inhabitants could have easily stepped over the wall and thus access between the rooms would have been possible.

Beyond the issues with identifying doorways at Quipico, this information is also not often available for other archaeological sites. Those researchers were often similarly uncertain about doorway locations, and so this data was not obtained. With all of the obstacles that I have just described, it was determined that access and route graphs were extremely difficult to reconstruct considering archaeological preservation. Thus, it is not recommended for use in future archaeological projects unless these troublesome factors can be accounted for.

**Adjacency, plan, and dual function graphs**

A plan graph is made by marking the junctions between walls as vertices, and each wall segment as edges; essentially, a plan graph is a basic building blueprint [Figure 3]. This is used to show how areas are segmented and can be used to examine clusters of construction.

*Figure 3: A basic plan graph.*
Adjacency graphs are made by representing each room or space as a vertex and each connecting wall as an edge [Figure 4]. This graph captures the relationship or articulation between rooms. Adjacency can demonstrate possible arrangement purposes or limitations for a structure; rooms may be adjacent because they share common services or features, and they may be non-adjacent based on needs for privacy or sound insulation. It can also show the constraints on door and window placement for direct outside access or determine route paths by which people can circulate.

![Vertex and Edge Diagram](image)

*Figure 4: A basic adjacency graph.*

When these two graphs are combined (along with an additional point marking the space outside the structure, referred to as the carrier space or root), it is called a dual function graph, and can be useful for both mathematical and qualitative assessments of structure layout [Figures 5 & 6]. Each defined space is analyzed in terms of its links to every other space in the network.
Figure 5: A simple dual function graph, without the addition of the linkages to the outside.

Figure 6: Dual function graph, with additional lines (blue) for linkages to outside, of Structure A, Quipico, Huaura Valley.
Several measures and indices can be used to analyze the graphs to understand network efficiency and organization:

- General network size can be described in terms of the number of vertices (v) and edges (e).
- Diameter (d) is the length of the shortest path between the two vertices that are the furthest apart; it measures the extent of a graph, its spread or compactness. It can be used to examine the development of a network over time (i.e. how it increases in expanse over time). The higher the diameter, the less linked a network tends to be. An important consideration is that graphs whose extent is large may still have low diameter values if they have a high degree of connectivity. Planar graphs in particular tend to have a large diameter due to the presence of many intermediate stops between the nodes, since there is no cross-over.
- The cyclomatic number examines a graph in terms of cycles for understanding access routes and how a structure is internally oriented. The maximum number (u) of independent cycles in a graph is estimated through the number of vertices, edges, and sub-graphs: the formula is \( u = e - v + p \). The more complex a network is, the higher the value of u it has.
- The Alpha index (α) (also known as the Meshedness Coefficient) is a measure of the level of connectivity independently of the number of nodes. It evaluates the number of cycles in a graph in comparison with the maximum number of cycles. The higher the alpha index is, the more connected the network is. The simplest networks will have a value of zero,
whereas a value of one is a completely connected network; it is very rare for a network will have an alpha value of one, because that would indicate that the graph has a high level of redundancies. The formula for the alpha of planar graphs is: $\alpha = u / (2v-5)$.

The Beta index ($\beta$) is a measure of the level of connectivity in a graph and is calculated by the number of links over the number of nodes: $\beta = e/v$. A connected network with one cycle has a value of one, and simpler networks are less than one. Most complex graphs have a high value of beta, greater than one. If there is a fixed number of nodes, the higher the number of links, the higher the number of paths are possible in the network.

The Gamma index ($\varphi$) is a measure of examining the degree of interconnectedness of a structure by considering the number of observed links related to the number of possible links. It is calculated from the formula: $\varphi = e / 3(v-2)$ The value obtained will be within zero and one; the higher the number is, the more connected the network is. It is extremely unlikely in reality to ever obtain a value of one.

Being solely based on the number of vertices and edges, these indices are excellent to examine structural differences between networks of various sizes (see Dickens 1977; Haggett and Chorley 1969; Hillier and Hanson 1984; Moore 1996a, 1996b; Steadman 1983 for some uses of these formulas).

Vertices and edges were calculated from the adjacency graphs for each structure and these were the numbers used for calculations of the diameter, cyclomatic number,
compactness, alpha, beta, and gamma indices. The plan graphs were used to visually assess groupings of construction; calculating the indices with the vertices and edges from the plan graph did not provide any additional meaningful data.

These indices were calculated twice for a sub-set of the structures, once with considering the outside as its own vertex and once without including the exterior. This was done to compare which method would yield the most information. Initial data manipulation revealed that including the outside for calculations distorted the indices; it created redundancy in the system and misrepresented diameter greatly. The visual depiction of the links to the outside, however, was very helpful visually in assessing the overall structure layout. So instead, it was decided to use only the inside vertices and their linkages for all calculations [Appendix C].

I also developed a new measurement to consider: compactness (ς). I counted the number of total edges that connect to the outside, represented by $e_o$. This is equivalent to the number of rooms that have adjacency to the exterior. Since I wanted to consider how the number of rooms touching the exterior compared to the number of rooms that were completely enclosed in the structure, and $\nu$ is essentially the total number of rooms in the structure, I used the formula: $\varsigma = \frac{e_o}{\nu}$ This is the ratio of the externally adjacent rooms to total number of rooms and the result will be between zero and one. As this number approaches one, it is indicative of a structure that has a high amount of external access and is thus less compact. This can have bearing regarding movement routes and temperature (i.e. ventilation vs heat conservation).
Isovistas and Visibility Analysis

Architecture also has vertical, volumetric, and decorative elements that need to be considered (Allison 1999a). Structure visibility can be assessed using measurements of the angles of vision and ranges of perception, borrowed from studies of physiology and proxemics (Gibson 1960; Hall 1966, 1968, 1972; Higuchi 1983; Moore 1996a, 1996b). The line of sight off the horizon is based upon optimum eye rotation and limits of the visual field (Higuchi 1983). Measurements of different angles between the observer and a structure or site can be used to discuss in quantitative terms their visual impact and possible impression on the viewer. These analyses have been done with great success to understand visibility factors of public architecture from a wide sampling of Andean architecture by Moore (1996a, 1996b, 2004), including Chimú ciudadelas at Chan Chan. Analysis of each structure’s visibility can provide a more quantifiable form of data to support (or negate) ideas regarding the perhaps intentional ways in which visibility was enhanced or restricted by these structures (Moore 1996a). This method can allow inferences about information communication across distances, and whether the point served for observation purposes or to provide a visual statement about presence. An advantage that this region has is that it does not need to account for paleovegetation; there is a lack of tall, thick vegetation (such as the Yucatan) or heavily forested areas (as in N. American sites), so the viewsheds are fairly clear and likely were in the past as well.

Visibility analyses also can consider the distance at which details, color, and sounds can be perceived (Ching 2007; Hall 1966; Tschumi 1990). These were not calculated for Quipico because these factors vary greatly due to the degree of wind, sunlight, and fog. For this region of the coast, climate clarity is a significant factor; there
is haze and fog that can vary both throughout the day as well as seasonally, heaviest in the morning and especially during their winter season. Thus, only angles of vision were used because they account for the total potential visibility a point may have, regardless of other factors.

The slope from the top of a structure to someone standing at its nearest viewing point is called the ‘angle of incidence’ and affects the viewer’s depth perception and sense of visual oppression (Moore 1996a). Using the angles of different thresholds, defined as 18, 27, and 45 degrees (cf. Higuchi 1983), an isovista map can be drawn using continuous lines like that of the contour lines on a topographic map [Figures 7 & 8]. To calculate the angles, I chose the top of each mound as well as several other points, including the open area in the middle of the site, the agricultural fields in front of the site, the small burial area to the east of the site, the main modern road up the valley, the Huaura River, and the hacienda at the modern-day town of Quipico. The angles were measured from this point and extended back to find the location at which a person would have a view of that point that filled the different angles of vision. This was not calculated for the other sites examined in this study because the vertical dimensions at key points were not available for these structures.
Figure 7: Angle of incidence, from Moore (2006), modified originally from Higuchi (1983).

Figure 8: Obstructed isovista angles, from Moore (2006).
**Composition Analysis**

Understanding how a building was built and what it was built with have been used to place sites into a regional context with regard to social or ethnic group membership (Bagwell 2004), and calculate labor investments as an representation of elite power (Arnold and Ford 1980). Samples can be tested to determine the mineralogy, granulometry, density, plasticity, and color of the adobe used; the results of these tests provide a ‘compositional profile’ for the type of adobe used in each architectural compound.

Testing procedures follow guidelines established by Teutonico (1988), a technique I utilized in an Earth Conservation course from the Instituto Superior Yachay Wasi and the Proyecto Arqueológico Cajamarquilla (PAC) in 2006. The tests are inexpensive and involve simple, readily available tools and materials [Figures 9 & 10]; samples can be readily processed in the field lab and do not need to be removed from the country.

*Figure 9: Processing of adobe samples for dry components (aggregates).*
Small (100 gram) samples of adobe are broken down, put into a water solution, agitated lightly and separated into 2 categories—large aggregate and fine sediments, the latter of which are still suspended in the liquid—using an 1/32-inch screen. The aggregate then is dried and separated into particle sizes using a series of graduated screen sizes, with each step weighed. The particles sizes in the liquid component are measured using a soil hydrometer and density calculations. This obtains a full outline of what range of proportions of particle sizes are in each sample. This data is compared as a table and also plotted as a pair of particle size distribution curves for a visual comparison of each sample [Figure 11]. Different size proportions will affect the durability of the adobe as well as the time needed to make it (cf. McHenry 1984 regarding in-depth analysis of adobe composition for construction). The coarser an adobe is, the more likely it is to break apart due to heavy impact. We can compare the size summaries between adobe
samples to assess the relative strengths of the adobe used in different areas or features.

Samples are also examined via microscope [Figure 12] to determine the mineralogy and color of the adobe, which can be considered in terms of the regional geology [see Figure] (Institutio de Geologia y Mineralogia 1975). Plasticity tests are done by rolling clay tubes of various lengths and examining breakage; this is a measure of the adobe's durability.

*Figure 71: Particle size distribution curves for adobe sample of wall from Structure E, near Unit 10, Quipicó, Huaura Valley.*
Compositional profiles can be used to compare access to different quality materials and sources; elite residences often use high-quality construction methods and materials. Adobe is an especially advantageous substance to use for construction because most soils are satisfactory for use with only minor modifications, although some may be more ideal than others (McHenry 1984:47). Another use is that if the compositional profiles of two compounds do not match, then this suggests multiple construction episodes utilizing different material sources. Similarly, the differences in composition between tapial and brick walls can help interpretations regarding a structure’s use and reuse throughout time. Adobe with higher aggregates is strong when dry, but is more vulnerable to erosion by rains, whereas adobe with higher amounts of clay particles is more resistant to water and erosion but not as strong (McHenry 1984: 48).
Creating Dual Plan Graphs

Note: Figures 19-35 below are drawn modified from a number of published architectural drawings from a wide number of publications; the original blueprints were not made by this author.

Procedure:

1. Draw an outline of the building showing all walls.
2. Determine the number of separate structures, usually one, but can be greater. This value is \( p \).
3. Place a point in the center of all defined rooms. The number of these points is \( V \).
4. Each point in rooms with connecting walls are adjacent. Connect with a red line.
5. Once all adjacent points are connected, count the number of red lines drawn. This value is \( e \). Number each line as it is counted.
6. Count the number of lines traversed to connect the two farthest points in the structure. The shortest path counted will be the diameter.
7. Define a point outside of the structure. This point encompasses all space not within the structure. Label it “outside”.
8. All rooms that have an external wall are adjacent to “outside”. Connect the points in those rooms to “outside” using a blue line.
9. Once all rooms adjacent to “outside” have been connected to the point, count the number of blue lines drawn. This is \( e_0 \). Number each line as it is counted.
10. Calculate the derived values using the following formulas:
    - \( u = e - V + p \)
    - \( \beta = e / V \)
- $\alpha = \frac{u}{2V - 5}$
- $\varphi = \frac{e}{3(V - 2)}$
- $\varsigma = \frac{e_0}{V}$

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<th>$p$</th>
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Table 1: Dual Plan Graph calculations for some of the sites examined.
Figure 13: Structure A, Quipico, Huaura Valley.
Figure 14: Structure B, Quipico, Huaura Valley.
Figure 15: Structure C, Quipico, Huaura Valley.
Figure 16: Structure D, Quipico, Huaura Valley.
Figure 17: Structure E, Quipico, Huaura Valley.
Figure 18: Structure F, Quipico, Huaura Valley.

Figure 19: Structure G, Quipico, Huaura Valley.
Figure 20: Type V unit.
Figure 21: Structure D at Cerro Azul (original from Marcus 2008).
Figure 22: Structures from Quebrada 5, Cerro Camancho (original from Marcus 2008).
Figure 23: Casa Blanca A, Huaura Valley (from Krzanowski 1991).
Figure 24: Casa Blanca D (cemetery?), Huaura Valley (from Krzanowski 1991).
Figure 25: Pancha La Huaca, Chancay Valley (from Krzanowski 1991).
Figure 26: Tronconal #2, Chancay Valley (from Krzanowski 1991).
Figure 27: Cercadura A, Galindo (from Bawden 1982a).
Figure 28: Unit 12, Type III unit.
Figure 29: Sectors A & B, Cuyo.
Figure 30: Platform A complex, Galindo (from Bawden 1982a).
Figure 31: Domestic residence on Plain A, Galindo (from Bawden 1982a).
Figure 32: Cercadura C, Galindo (from Bawden 1982a).
Figure 33: Residential structure, Plain A, Galindo (from Bawden 1982a).
Figure 34: Unit 14, Type VI unit.
Figure 35: Laberinto burial platform at Huaca Las Avispas
Adobe Composition Analysis

Procedure

A particle size distribution curve was created for each sample using the results from the dry granulometry and the liquid density tests. This curve (% vs grain diameter) provides a visual representation of the proportions of gravel, sand, silt, and clay in each sample. For Quipico, 39 adobe samples were processed [Table 2]. When possible, 100 grams was used for each sample. Each sample was initially separated into large particles (the aggregates) for dry sorting and smaller particles (fines) for liquid hydrometer measurements. See Figures 39 & 40, and Table 3 for a sample, which corresponds to the particle curve in Figure 1. This was done via the following processes:

Separate the aggregate from the fines:

1) Take 100 grams of the sample, when possible.

2) Break the sample gently into pieces. Do not grind completely or forcefully, since this can mechanically change particle size and distort results.

3) Place sample in a beaker and add approximately 500 mL of water. Stir gently for 5 minutes, then let the sample sit for 30 minutes.

4) Stir the sample thoroughly to make certain it is totally mixed, then pour the mix through a #200 (75 micron) screen to separate the water with the fines from the larger aggregates. Save the water with fines in a separate container from the aggregates.

5) Rinse the aggregates with a small amount of water (~200-300 mL), making certain to save the rinse water to combine it with the water with fines (not exceeding a total...
liquid amount of water and fines of 1000mL).

6) Let the aggregates air-dry in an open flat container for at least 1 hour (covered loosely from dust), then process them according to the granulometry section. Take the water with fines and process it according to the density section.

**Granulometry Process for dry aggregates:**

1) Weigh the total amount of the aggregates ($W_a$)

2) Pass the aggregates through a series of fine screens (American Standard system for screens used, ASTM) in the following order:
   a. Large unnumbered (4.00mm)
   b. #4 (4.75mm)
   c. #8 (2.36mm)
   d. #16 (1.18mm)
   e. #30 (600 micron)
   f. #50 (300 micron)
   g. #100 (150 micron)
   h. #200 (75 micron)

3) Weigh each level independently as the weight retained ($W_{ret}$), including the final amount that passes through all the screens, and write the measurements on the form (Ficha #1 de Datos: Tamaño de Gránulos – Mecánico).

4) Use the weights recorded for each level and calculate the cumulative percentage by mass of particles finer than each sieve aperture size (i.e. passing each sieve). Use the following calculations:
a. Weight retained for sieve divided by original weight of the sample \( W_{ret} / W_o \)

\[ = \% \text{ retained} \]

b. Percent passing each sieve (also called the Percent Finer) \( \% \text{pass} = 100 - \sum \% \text{ retained} \)

5) Make a semilogarithmic plot of grain size versus percent finer. This creates a particle size distribution curve that can be compared between samples.

6) Once completed, the aggregates should be recombined and examined according to the Mineralogy processed described below.

_Density Process for liquid with fines:_

Get this info before the overall test, absolutely necessary for the calculations –

Insert hydrometer into 1000mL cylinder \( \frac{3}{4} \) full of water. There will be a meniscus, a rim of water [Figure 36]. So, raise the eye until the surface of the water is seen as a straight line and take a reading (A). Then take a 2nd reading (B) at the upper level of the

*Figure 36: Illustration of meniscus on a hydrometer, from Teutonico (1988).*
meniscus (where the water bows up due to tension, won’t be able to do this each time, and water with soil is cloudy, so do this once at the beginning with clear water).

Correction for meniscus \( (C_m) = (B-A) \)

1) Put the collected water with fines from the separation process in a 1000 mL graduated cylinder and add water to 1000 mL if less.

2) Place the hydrometer into a second 1000 mL graduated cylinder with 1000 mL plain water.

3) Measure the temperature of both cylinders and wait until both are at the same temperature. Record this temperature.

4) Stir the cylinder with the water and fines to make sure it is fully distributed in solution. Immediately place the hydrometer gently into the cylinder with water and fines and take the first measurement (where the surface of the water meets the hydrometer).

5) Wait 30 seconds and take another measurement. Continue measuring the level of the hydrometer at the following time intervals (total amount of time elapsed since start): 1 min, 2 min, 4 min, 5 min, 8 min, 10 min, 15 min, 30 min, 45 min, and 1 hour, recording this information on the form (Ficha #2 de Datos: Tamaño de Gránulos – Densidad – Método Hidrometro).

6) After 1 hour, the water with fines can be discarded. The information on the sheet then must be run through the following calculations using correction tables [Figures 26 & 27]:

   a. Calculate the true hydrometer reading \( (R) \) by adjusting the actual reading \( (R_a) \) with the meniscus correction \( (C_m) \)

\[ R = R_a - C_m \]
b. Use R and Table 4 to obtain the values for L (effective depth).

c. Since the specific gravity \((G_s)\) of the particles is unknown, we will be using a standard measurement of 2.70. With this \(G_s\) and the temperature for each hydrometer reading, use Table 3 to obtain the \(K\) value.

d. With the values of \(K\), \(L\), and the elapsed time \((t)\) for each reading, compute the value of \(D\) (particle diameter) using the following equation: \(D = K\sqrt{L/t}\)

e. For each reading, calculate a full corrected value for the hydrometer \((R_c)\) by adjusting for temperature \((C_t)\), which is obtained from Table 1: \(R_c = R_a + C_t\)

f. Calculate the weight of the original soil sample in suspension \((W_s)\) from the original weight of the sample \((W)\) accounting for the weight of the aggregates.

g. Calculate the percent finer for the particle diameters \((D)\), including the correction factor \((a)\) from Table 2, which in our analysis was always 0.99 due to a set estimated \(G_s\) of 2.70 %finer = \(R_c(a)/W_s\)
Figure 37: Correction tables used for density/hydrometer process calculations, from Teutonico (1988).

### Table 1: Temperature Correction Factors $C_t$

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### Table 2: Correction Factors (a) for Unit Weight of Solids

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### Table 3: Values of $K$ for Several Unit Weights of Soil Solids and Temperature Combinations

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**Mineralology Process for Aggregates**

1. Place some of the aggregates from the Granulometry processing on a clear plate.

2. Place the plate on a light-colored background, preferably white. Examine the aggregate with a microscope (400x magnification) and choose a representative area.

3. Take a photo using the microcam. Label appropriately.

---

**Table 4: Values of L (Effective Depth) for Use in Stokes's Formula for Diameters of Particles for ASTM Soil Hydrometer 152H**

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<th>Effective depth L (cm)</th>
<th>Original hydrometer reading (corrected for meniscus only)</th>
<th>Effective depth L (cm)</th>
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<td>10.5</td>
<td>56</td>
<td>7.1</td>
</tr>
<tr>
<td>15</td>
<td>13.8</td>
<td>36</td>
<td>10.4</td>
<td>57</td>
<td>7.0</td>
</tr>
<tr>
<td>16</td>
<td>13.7</td>
<td>37</td>
<td>10.2</td>
<td>58</td>
<td>6.8</td>
</tr>
<tr>
<td>17</td>
<td>13.5</td>
<td>38</td>
<td>10.1</td>
<td>59</td>
<td>6.6</td>
</tr>
<tr>
<td>18</td>
<td>13.3</td>
<td>39</td>
<td>9.9</td>
<td>60</td>
<td>6.5</td>
</tr>
<tr>
<td>19</td>
<td>13.2</td>
<td>40</td>
<td>9.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>13.0</td>
<td>41</td>
<td>9.6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Figure 38: Correction table used for density/hydrometer process calculations, from Teutonico (1988)*
4. Estimate the percentage of each mineral (as possible, according to descriptions below, based on Teutonico 1988); the total of the percentages should be equal to 100%.

Appearance:

- Feldspar – orange or off-black
- Pirite – like gold, reflective.
- Iron – Brilliant black
- Quartz – usually angular, clear or white.
- Quartz conglomerate – regular quartz mixed with impurities, will alter color but retain angular quality and much of its transparency.
- Gravel – pieces of stone, if possible, identify if sedimentary, volcanic, or metamorphic.

<table>
<thead>
<tr>
<th>Structure</th>
<th>Unit</th>
<th>Sample #</th>
<th>Description</th>
<th>Context</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>9</td>
<td>n.a.</td>
<td>Adobe</td>
<td>From piece with burnt cane impression</td>
</tr>
<tr>
<td>E</td>
<td>10</td>
<td>n.a.</td>
<td>Adobe</td>
<td>From tapial wall</td>
</tr>
<tr>
<td>C</td>
<td>LP1</td>
<td>n.a.</td>
<td>Adobe</td>
<td>From wall</td>
</tr>
<tr>
<td>C</td>
<td>5</td>
<td>n.a.</td>
<td>Adobe</td>
<td>From feature 21</td>
</tr>
<tr>
<td>D</td>
<td>Near LP6</td>
<td>n.a.</td>
<td>Adobe</td>
<td>From doorway, right side</td>
</tr>
<tr>
<td>C</td>
<td>Near U6</td>
<td>n.a.</td>
<td>Adobe</td>
<td>From tapial wall, north to unit</td>
</tr>
<tr>
<td>A</td>
<td>Near U7</td>
<td>n.a.</td>
<td>Adobe</td>
<td>From tapial wall, north to unit</td>
</tr>
<tr>
<td>B</td>
<td>Near U9/ramp</td>
<td>n.a.</td>
<td>Adobe</td>
<td>From main north tapial wall of Structure B, east of U9,</td>
</tr>
<tr>
<td>E</td>
<td>Near LP2</td>
<td>n.a.</td>
<td>Adobe</td>
<td>From tapial wall of corral</td>
</tr>
<tr>
<td>C</td>
<td>5</td>
<td>9</td>
<td>Adobe</td>
<td>With cane impressions</td>
</tr>
<tr>
<td>C</td>
<td>5</td>
<td>10</td>
<td>Adobe</td>
<td>Chunks used as part of fill</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----</td>
<td>------</td>
<td>-----</td>
<td>---</td>
<td>-----------------------------------------------------------------</td>
</tr>
<tr>
<td>C</td>
<td>5</td>
<td>36</td>
<td>Floor</td>
<td>Compacted surface, not full plastered floor. Under level 6.</td>
</tr>
<tr>
<td>B</td>
<td>4</td>
<td>45</td>
<td>Adobe</td>
<td>Burnt piece, underneath cane remnants</td>
</tr>
<tr>
<td>C</td>
<td>6</td>
<td>60</td>
<td>Floor</td>
<td>Level 6</td>
</tr>
<tr>
<td>B</td>
<td>4</td>
<td>65</td>
<td>Floor</td>
<td>Level 5, NE area</td>
</tr>
<tr>
<td>B</td>
<td>4</td>
<td>66</td>
<td>Floor</td>
<td>Level 5, NW area</td>
</tr>
<tr>
<td>C</td>
<td>6</td>
<td>93</td>
<td>Mortar</td>
<td>From remodeling of adobe brick wall</td>
</tr>
<tr>
<td>C</td>
<td>6</td>
<td>94</td>
<td>Adobe</td>
<td>From remodeling of brick wall</td>
</tr>
<tr>
<td>C</td>
<td>6</td>
<td>95</td>
<td>Mortar</td>
<td>From original adobe brick wall</td>
</tr>
<tr>
<td>C</td>
<td>6</td>
<td>96</td>
<td>Adobe</td>
<td>From original adobe brick wall</td>
</tr>
<tr>
<td>C</td>
<td>6</td>
<td>110</td>
<td>Floor</td>
<td>From Level 3</td>
</tr>
<tr>
<td>C</td>
<td>6</td>
<td>111</td>
<td>Floor</td>
<td>From Level 3</td>
</tr>
<tr>
<td>C</td>
<td>6</td>
<td>134</td>
<td>Adobe</td>
<td>From fill of level 8.</td>
</tr>
<tr>
<td>E</td>
<td>LP2</td>
<td>145</td>
<td>Floor</td>
<td>Floor #1</td>
</tr>
<tr>
<td>E</td>
<td>LP2</td>
<td>146</td>
<td>Floor</td>
<td>Floor #2</td>
</tr>
<tr>
<td>E</td>
<td>LP2</td>
<td>147</td>
<td>Floor</td>
<td>Floor #3</td>
</tr>
<tr>
<td>E</td>
<td>LP2</td>
<td>148</td>
<td>Floor</td>
<td>Floor #4</td>
</tr>
<tr>
<td>C</td>
<td>6</td>
<td>150</td>
<td>Floor</td>
<td>From level 10</td>
</tr>
<tr>
<td>A</td>
<td>7</td>
<td>170</td>
<td>Adobe</td>
<td>From fill, level 4</td>
</tr>
<tr>
<td>A</td>
<td>7</td>
<td>186</td>
<td>Floor</td>
<td>Compacted surface, not full plastered floor. Feature 29.</td>
</tr>
<tr>
<td>B</td>
<td>8</td>
<td>196</td>
<td>Floor</td>
<td>From level 3</td>
</tr>
<tr>
<td>B</td>
<td>LP7</td>
<td>206</td>
<td>Floor</td>
<td>Floor immediately above ash level</td>
</tr>
<tr>
<td>A</td>
<td>7</td>
<td>213</td>
<td>Floor</td>
<td>Deteriorated floor, feature 43.</td>
</tr>
<tr>
<td>A</td>
<td>7</td>
<td>216</td>
<td>Floor</td>
<td>Preserved floor, feature 42.</td>
</tr>
<tr>
<td>A</td>
<td>7</td>
<td>217</td>
<td>Floor</td>
<td>From second floor, feature 44.</td>
</tr>
<tr>
<td>A</td>
<td>7</td>
<td>218</td>
<td>Floor</td>
<td>From feature 45.</td>
</tr>
<tr>
<td>B</td>
<td>9</td>
<td>224</td>
<td>Adobe</td>
<td>From tapial wall collapse</td>
</tr>
<tr>
<td>E</td>
<td>10</td>
<td>235</td>
<td>Floor</td>
<td>From level 4</td>
</tr>
<tr>
<td>D</td>
<td>LP6</td>
<td>257</td>
<td>Adobe</td>
<td>From wall</td>
</tr>
</tbody>
</table>

Table 2: Samples tested for adobe composition analysis.
Figure 39: Granulometry process, sample data (adobe from near Unit 10, Structure E, Quipico).
Proyecto de Investigaciones de Culturas Antiguas (PICA) 2012
Ficha #2 de Datos: Tamaño de Gránulos– Densidad – Método Hidrometro

Proyecto Quípico Sector E Unidad Near U10
Nivel/Rasgo Wall Bolsa Muestra

Descripción de Muestra

Registrado por SMD Fecha de Prueba 15 May

Peso de la arcilla en el agua colado (Pc = Po – Pa de Ficha 1: Granulometria)

<table>
<thead>
<tr>
<th>Hora</th>
<th>t</th>
<th>Temp</th>
<th>Ra</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:45 am</td>
<td>30sec</td>
<td>24.5°C</td>
<td>21</td>
</tr>
<tr>
<td>9:46 am</td>
<td>1min</td>
<td>24.5°C</td>
<td>20</td>
</tr>
<tr>
<td>9:47 am</td>
<td>2min</td>
<td>24.5°C</td>
<td>18.5</td>
</tr>
<tr>
<td>9:49 am</td>
<td>4min</td>
<td>24.5°C</td>
<td>17.5</td>
</tr>
<tr>
<td>9:50 am</td>
<td>5min</td>
<td>24.5°C</td>
<td>17</td>
</tr>
<tr>
<td>9:53 am</td>
<td>8min</td>
<td>24.5°C</td>
<td>16</td>
</tr>
<tr>
<td>9:55 am</td>
<td>10min</td>
<td>24.5°C</td>
<td>15.5</td>
</tr>
<tr>
<td>10:00 am</td>
<td>15min</td>
<td>24.5°C</td>
<td>14</td>
</tr>
<tr>
<td>10:15 am</td>
<td>30min</td>
<td>24.5°C</td>
<td>4.5</td>
</tr>
<tr>
<td>10:30 am</td>
<td>45min</td>
<td>24°C</td>
<td>2</td>
</tr>
<tr>
<td>10:45 am</td>
<td>1hr</td>
<td>24°C</td>
<td>0</td>
</tr>
</tbody>
</table>

Leyenda:
t = tiempo elapsado desde comienza de la prueba
Temp. = Temperatura de la muestra °C
Ra = Medida del hidrometro

Figure 40: Density/Hydrometer process, sample data (adobe from near Unit 10, Structure E, Quípico).
<table>
<thead>
<tr>
<th>Time</th>
<th>Temp</th>
<th>$R_a$</th>
<th>$R$</th>
<th>$L_a$</th>
<th>$K$</th>
<th>$D$</th>
<th>$R_s$</th>
<th>$%\text{ Finer}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>30 sec</td>
<td>24.5°C</td>
<td>21</td>
<td>21.5</td>
<td>12.9</td>
<td>0.0128</td>
<td>0.065</td>
<td>22</td>
<td>0.99</td>
</tr>
<tr>
<td>1 min</td>
<td>24.5°C</td>
<td>20</td>
<td>20.5</td>
<td>13.0</td>
<td>0.0128</td>
<td>0.046</td>
<td>21</td>
<td>0.94</td>
</tr>
<tr>
<td>2 min</td>
<td>24.5°C</td>
<td>18.5</td>
<td>19</td>
<td>13.2</td>
<td>0.0128</td>
<td>0.032</td>
<td>19.5</td>
<td>0.87</td>
</tr>
<tr>
<td>4 min</td>
<td>24.5°C</td>
<td>17.5</td>
<td>18</td>
<td>13.3</td>
<td>0.0128</td>
<td>0.023</td>
<td>18.5</td>
<td>0.83</td>
</tr>
<tr>
<td>5 min</td>
<td>24.5°C</td>
<td>17</td>
<td>17.5</td>
<td>13.5</td>
<td>0.0128</td>
<td>0.021</td>
<td>18</td>
<td>0.81</td>
</tr>
<tr>
<td>8 min</td>
<td>24.5°C</td>
<td>16</td>
<td>16.5</td>
<td>13.7</td>
<td>0.0128</td>
<td>0.016</td>
<td>17</td>
<td>0.76</td>
</tr>
<tr>
<td>10 min</td>
<td>24.5°C</td>
<td>15.5</td>
<td>16</td>
<td>13.7</td>
<td>0.0128</td>
<td>0.014</td>
<td>16.5</td>
<td>0.74</td>
</tr>
<tr>
<td>15 min</td>
<td>24.5°C</td>
<td>14</td>
<td>14.5</td>
<td>14.0</td>
<td>0.0128</td>
<td>0.012</td>
<td>15</td>
<td>0.67</td>
</tr>
<tr>
<td>30 min</td>
<td>24.5°C</td>
<td>4.5</td>
<td>5</td>
<td>15.5</td>
<td>0.0128</td>
<td>0.009</td>
<td>5.5</td>
<td>0.24</td>
</tr>
<tr>
<td>45 min</td>
<td>24°C</td>
<td>2</td>
<td>2.5</td>
<td>16.0</td>
<td>0.0128</td>
<td>0.007</td>
<td>3</td>
<td>0.13</td>
</tr>
<tr>
<td>1 hour</td>
<td>24°C</td>
<td>0</td>
<td>0.5</td>
<td>16.3</td>
<td>0.0128</td>
<td>0.006</td>
<td>1</td>
<td>0.04</td>
</tr>
</tbody>
</table>

*Table 3: Calculations for sample (adobe from near Unit 10, Structure E, Quipico).*
APPENDIX E: ETYMOLOGY

There are clear signs that many of the names of sites and towns in the Huaura Valley originate from pre-conquest times. In the archival documents examined by Ipinze Jordan (2005), many of the site names are listed as having been used in the Inca division of the region. Indeed, many of the names in the valley are based on Quechua words, although they have since been somewhat 'Hispanicized'.

The meaning of the name Chancay is not clear because there is no exact translation from Quechua. According to Holguin (1952[1609]), however, chanca means “leg” in the language of Chinchaysuyo (the quarter of the Inca empire that includes the Peruvian coast), so the suggestion is that Chancay signifies “to hit with the foot” or “to give a kick”. Another possible interpretation (Córdova 1935) is that Chancay is an altered and shortened version of the name Chankayllo, or “Ayllu-Chanka”, referring to a Late Intermediate Period group called the Chanka who were a large ethnic group in the southern highlands near modern-day Andahuaylas (Bauer and Kellet 2010; Bauer et al. 2010). Córdova proposes that a group of the Chanka may have split off and established themselves in the central coast region before Inca domination. Another possibility is that a group of the Chanka may have been displaced by the Inca to this region of the coast as forced laborer mitimaes to break down Chanka resistance to Inca rule. Either way, it would have been a very long and difficult trek, since it is roughly 750 kilometers between Chancay and Andahuaylas, with several other groups en route. Interestingly, the Chancay
Valley was known in antiquity by the original name of the river, which was called Pasamayo. In Aymara, this means River of the Moon (Billet 1998), and one sub-group of the Chanka was said to have spoken Aymara.

Galarza (1973), who wrote a book on the Quecha-based toponyms of Peru and their Spanish translations, derived the meaning of the name Quipico as from the root qipu, which refers to the knotted cord recording systems of the Inca (khipu). He claims that in the coastal variant of Quechua (chinchaisimi) in Chinchasuyu, qipu was also known as qipu devino (divine khipu), whereas qipi or jipi meant ”tied made with a blanket in which was placed all that they wished to transport, generally on the back, afterwhich to knot the extremes of said blanket” (Galarza 1973:331, this author’s translation of original Spanish). Quipicuj is the adjective ‘that which has the ties’ and it is this word Galarza claims had been Hispaniszed into Quipico to serve as the name of the pueblo. Thus, Galarza translates the name Quipico as ‘that which transports with knotted blanket’. Going back to the oldest Quechua lexicon recorded by Fray Domingo de Santo Thomas in 1560 (Szemiński 2006:434), the word q’ipi (qipi, quipe, quippe, quepi in different dialects of Quechua) means carga de bestia in Spanish, or burden carried by beasts. Santo Thomas also provides the term qipi-cha-sqa, which means ‘carried thing’.

The nearby town of Sayán is similarly named, perhaps also indicative of its role as a waypoint for travelers and a center for mit’a workers. Its original name was ‘Sallan de Checta’, which means ‘estar en pie’, translated as ‘to be on foot’ (Ipinze Jordan 2005).
APPENDIX F: QUIPICO AFTER CONTACT

Quiptico and the Huaura Valley at the Time of Conquest

Recorded by his chronicler Miguel de Estete, Hernando Pizarro visited this area of the central coast (De Estete 1891[1533]). Estete wrote that the group passed from Paramonga (the Late Intermediate Period-Late Horizon fort located just north of Barranca at the mouth of the Pativilca River) to Pachacamac (on the south side of modern-day Lima) in 1533 (Lavalle and Lang 1982). During this trip, at one point they stopped at a pueblo named Llachu; Córdova (1935:253) interpreted that Estete was referring to a site called Llacha located close to the Lomas de Lachay, a distinctive fog-fed ecosystem reserve located in the coastal desert foothills in the pampas of Cerro Luchihuasi (approximately 40 kilometers southeast of Huacho). It is also very possible that Estete was referring to Huacho, since the Lomas de Lachay would be off-route of easy coastal travel and the description of the conquistadors of Llachu as well-inhabited, which would not fit the archaeological evidence currently known. They renamed the pueblo Llachu as de las Perdices, because supposedly in every house there was a cage with birds the conquistadors called perdices (De Estete 1891[1533]). Perdix translates to partridge, but since partridges are exclusively an Old World bird, I suggest that this animal actually was a quail. Wood-quails are forest-dwelling, terrestrial birds that come from the eastern slopes of the Andes, and would have been prized for excellent feathers (Schulenberg et al 2010). Las Perdices is referred to again by Fray Diego de Ocana, a monk from the
Monastery of Guadelupe in Castilla who arrived in Peru in Fall 1599. His
description of Las Perdices, however, is more likely about Lachay, since he refers to it as
an area without a significant town, but with lots of cattle, fog, and very abundant fields.

During the colonization and reorganization of the Huaura Valley from 1535-1555,
Sayán served as the center for the reducciones of the ayllus, including Quipico. In 1561
Fray Francisco Martinez Viedma, a missionary from the Order of San Agustín,
evangelized in Barranca (at the mouth of the Patilica and Fortaleza Rivers) and its
surroundings, extending his work southwards to Supe, Vegueta, Huaura, and Huacho.
Supposedly, he was very successful despite doing this without collaborating with “the
omnipresent Fray Ramirez” (Garcia 2000:110), another missionary from the Order.
Sometime in the 1600s, Quipico was celebrated as the seat of the “marvels of the famous
Grace” Fray Pedro de la Trinidad y Urraca de Baños, a member of the religious order of
the Mercederians (Ipinze Jordan 2005; Villena and Solano 1993: 433). Although we do
not know what marvels he performed, the Mercederians are notable for obtaining the
ransoms to recover captives taken in war, and a special fourth vow proclaiming their
willingness to die for someone in danger of losing their faith (Ball 2003: 545). Their
particular zeal may have played a role in the rapidity of religious and linguistic transition
in this region. Additional accounts reveal the extent of the persecution of idolatry,
particularly post-contact in the Colonial Period in the Huaura Valley (Dunn 2012; De la
**Hacienda Quipico and the Colonial Period**

As was the case for many towns during the beginning of the Colonial Period in the mid-1500s shortly after conquest, Huacho and the other centers of population in the Huaura Valley were parceled into *encomiendas* (estates, villages, and land parcels, along with the inhabiting locals, formally given to colonists by official decree of the conquering empire; a system instituted in 1503) and granted and exchanged between Spanish elites and military men (Cuadros 1992; Ipinze Jordan 2005). Numerous sugar cane plantations were founded throughout Huaura on these encomiendas. The other main products of the valley at the beginning of the Colonial Period were wheat and wine, but by the late 1700s, the production of wine had almost completely ceased (Jaramillo-Arango 1998: 74). The presence of olives and wheat at Quipico, two crops introduced to Peru and tightly controlled during the colonial period, confirm that this was an economically important area for production during that time.

During this period, Santo Toribio de Mogrovejo, who was the Archbishop of Lima, traveled through his religious jurisdiction and recorded his *visitas* (visits as part of his ecclesiastical duties) of the parishes during a ‘Preliminary’ visit and four successive official visits (Benito 2006). He passed through the Huaura Valley around July of 1584 as part of his official First Visit (1584-1591), and again in July 1593 during his Second Visit (1593-1598). Mogrovejo stayed overnight at Arnedo (now the modern-day town of Chancay) in February 1598. More importantly, it is at the end of his Third Visit (1601-1604) and in his final, Fourth Visit (1605) that Mogrovejo records information about Quipico. At that time, Quipico was owned by Don Juan Gutiérrez Flórez, a gentleman from Lima (Ipinze Jordan 2005).
As recorded by Mogrovejo, in 1605, the population of the hacienda at Quipico consisted of a total of 130 people (Ipinze Jordan 2005). There were 4 Spanish mayordomos (household stewards), 70 African slave men (six of whom were married to indigenous women), 6 African slave women, and 50 indios yanaconas (coastal indigenous men) with their women and children. Since the Hacienda Quipico was not large enough to house 130 people, some of them likely lived at the archaeological site of Quipico nearby; this is confirmed in the excavations by the latest levels at the site, in particular the food storerooms and animal corral. The sugarmill at Quipico produced ‘a large quantity’ of sugar and the attached vineyard supplied 200 to 300 bottles of wine, presumably yearly. Mogrovejo points out that the agricultural fields around Quipico grew wheat and maize to provide for the residents; I tentatively suggest that this is the source of the offerings made in the corner of the storeroom in Structure C (see Dunn 2012 for a discussion of these materials and food, ritual, and the colonial period at Quipico).

One religious officiate resided at the hacienda, Padre Hernando de Jesús, who was a presbítero (in the Catholic Church, a person who has received the second level of the sacrament of the order). This allows them to perform five out of the seven sacraments; they can do all but provide confirmation and grant holy order (ordain new priests). This is likely why Mogrovejo went on his visita through the coast—to confirm members into the church. He recorded that 66 members of hacienda Quipico were confirmed into the church (17 in 1604, another 49 in 1605). Mogrovejo also wrote that Padre Hernando received a salary that included local food provided by the hacienda. Interestingly, he notes that already by this time, although Padre Hernando knew la lengua general (i.e.
Quechua), that the *indios yanaconas* preferred to be indoctrinated in Spanish, indicating a rapid generational linguistic shift.

Hipolito Ruiz described his visit for several days to the hacienda of Quipico in September of 1781, which was then owned by Don Antonio Boza, a gentleman originally from Lima (Jaramillo-Arango 1998). At the time, the hacienda produced “from 24 to 30 loaves of sugar of good quality” (Jaramillo-Arango 1998:188; author’s translation) with extensive mills, drying equipment, refining machinery, and warehouses for its production. Ruiz did not mention the archaeological site of Quipico, and the evidence from the excavation suggests that the site was no longer occupied at this time.

There are only scant references to Quipico after its abandonment throughout the rest of the Colonial Period, and are all likely referring solely to the hacienda. A map of the Chancay region dating from the late 1700s (Jaramillo-Arango 1998) marks that hacienda Quipico had a built, active chapel at that time. A census in 1813 recorded that hacienda Quipico, owned then by Antonio Boza, an Oidor of the royal audiencia of Lima, had a total of 79 inhabitants which included *indios*, freed Africans, and slaves (Ipinze Jordan 2005:50-51). The area from the Chancay through Supe valleys was a hotbed of conflict in the 2nd half of the 18th century, due to the revolts of African slaves, some of the first to happen in Peru (Glave 1999). Between 1768 and 1779 violence broke out on estates in Supe and Andahuasi (the latter which is 4 kilometers east of Quipico) (Glave 1999:528-530). Due to this conflict, there is little information for those centuries about activity at Hacienda Quipico, which is still occupied today [Figures 1 & 2].

The entire Huaura Valley as well as the general Chancay region seems to have played a significant role in the transport of goods in the Colonial Period. As early as
1611, a single arch bridge was built to facilitate the movement of goods and people over the Huaura River (Jaramillo-Arango 1998:73). Ipinze Jordan (2005), who was originally from Sayán, discovered in the archives in Sayán, Huacho, and Lima that Sayán and the nearby areas (presumably including Quipico) used to be inhabited in the Colonial Period by indigenous groups who travelled between the highlands and the coast transporting goods. Indeed, this is very similar to the town’s role in modern-times as a waypoint for the buses that take traders with their goods from the middle valley to Huacho for the weekend market. Ipinze also stated that the residents of Sayán and the area served as workers for the obligatory *mita* service required by whatever conquerors—Chancay, Inca, or Spanish—were in charge (Ipinze Jordan 2005).

The port of Chancay was where the boats from the islands off the coast brought in all of the guano used for fertilizer in the province. In the 18th century (and possibly earlier), boats from Guayaquil, Ecuador put into port at Chancay to unload wood as well (Jaramillo-Arango 1998:73). Huacho was also a port during this time, but it served instead as a harbor for the larger boats as they passed between Guayaquil to Lima because it was deeper than that of Chancay. The only other safe harbor in this area was the small port of Chancayllo, between Chancay and Huacho along the coast, which could allow entry to a few guano boats. The different depths of these harbors have contributed partially to the different development of the ports over time. Since Chancay was a wider and shallower harbor, it served well in ancient times for trade and fishing boats. After the conquest with increased coastal trade and the use of significantly larger boats, the harbor at Huacho would have been more useful because it was deep enough to accommodate those boats; Huacho serves as a major port even in modern times [Figure 3].
Figure 1: Hacienda Quipico, Huaura Valley.

Figure 2: Church at Quipico, although not in use today. Huaura Valley.
Figure 3: Boats in the port of Huacho, Huaura Valley.
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BIOGRAPHY

Stacy Michelle Dunn is originally from the west side of Cleveland, Ohio, where she received a solid education from the North Olmsted City Schools system and spent far too much time in the public library reading books on different cultures and foreign travel. By the 3rd grade she had decided to become an archaeologist. She went to the University of Cincinnati, Ohio, for a B.A. in Anthropology. Unable to decide between Mesoamerican or Andean regions and needing field experience, she went on three back-to-back projects—Panama, Belize, and Colorado—and after all of this, realized that the jungle was not for her. Upon arrival for graduate school at Tulane University in New Orleans, LA, she asked to work on coastal Andean archaeology. Luckily, Dr. Kit Nelson took her on as a student and brought her to her first project in Peru with the Proyecto Archaeológico Norte Chico under Drs. Jonathan Haas and Winifred Creamer. Over the next several years, she received training both in the field and at museums, traveling to work in Peru, Spain, Missouri, South Carolina, Georgia, and Washington DC. She became familiar with the Huaura Valley and most interested in the Chancay archaeological culture, and with her fellow graduate student Ashley Heaton, started her fieldwork in 2009 at the site of Quipico. With Stephanie Pierce Terry, a licensed Peruvian archaeologist, and the permits from the Ministerio de Cultura, they developed the infrastructure necessary to run the Proyecto de Investigaciones de Culturas Antiguas and complete excavations. Albeit delayed by the vagaries of life, Stacy completed her write-up and graduated from Tulane in December 2015.