Title
Mortuary Practice, Imperial Conquest, and Sociopolitical Change in the Middle Chincha Valley, Peru (ca. AD 1200 – 1650)

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Publication Date
2019

Peer reviewed|Thesis/dissertation

UNIVERSITY OF CALIFORNIA

Los Angeles

Mortuary Practice, Imperial Conquest, and Sociopolitical Change in the Middle Chincha Valley, Peru (ca. AD 1200 – 1650)

A dissertation submitted in partial satisfaction

of the requirements for the degree Doctor of Philosophy

in Archaeology

by

Jacob Lewis Bongers

2019

ABSTRACT OF THE DISSERTATION

Mortuary Practice, Imperial Conquest, and Sociopolitical Change

in the Middle Chincha Valley, Peru (ca. AD 1200 – 1650)

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Jacob Lewis Bongers

Doctor of Philosophy in Archaeology

University of California, Los Angeles, 2019

Professors Charles S. Stanish and Stella E. Nair, Co-Chairs

This research explores the relationship between mortuary practice and sociopolitical change among a collection of communities incorporated into the Inca Empire. I conducted this work in the Chincha Valley of central Peru, an area controlled by a complex polity known as the Chincha Kingdom in the Late Intermediate Period, or LIP (AD 1000 – 1400). During the Late Horizon (AD 1400 – 1532), the Chincha Kingdom fell under the rule of the Inca Empire. In this study, I investigated a dense, well-preserved distribution of graves in the middle Chincha Valley. Using methods from archaeology, GIS, and Bayesian statistical modeling, I examined the nature and development of local mortuary practice in the mid-valley from the LIP to the Late Horizon and recorded over 500 well-preserved graves that cluster into 44 mortuary sites. These sites vary

in layout and have two distinct grave types that differ in architecture and use: above-ground and subterranean graves (*chullpas*) and subterranean cists. Radiocarbon data indicate continuity, change, and innovation in tomb use and treatment of the dead through time. I argue that these diachronic mortuary patterns were products of negotiations among indigenous groups and the Inca. Mid-valley peoples manipulated the remains of their dead to produce new deceased persons before and during their incorporation into the Inca Empire. They dynamically reconfigured the ways relationships among the living and the deceased were performed, thereby transforming their sociopolitical landscape in the face of imperial conquest. This study provides support for a model of mortuary practice as an interface through which interactions between complex societies and expansionist empires occurred.

The dissertation of Jacob Lewis Bongers is approved

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Danielle S. Kurin

Lisa DeLeonardis

Stella E. Nair, Co-Chair

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University of Calfornia, Los Angeles

2019

For Opa (Willem Bongers), my grandmother (Indiana Lewis), and my family

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ACKNOWLEDGMENTS

Archaeological fieldwork in Peru was generously supported by an NSF Graduate Research Fellowship (Grant Number: DGE-1144087), a Ford Foundation Predoctoral Fellowship, a National Geographic Young Explorers Grant (Grant Number: 9347-13), a Mellon Mays Predoctoral Research Grant, a Mellon Mays Travel and Research Award, and a UCLA International Institute Fieldwork Fellowship. Supplemental support was provided by two Mellon Mays Graduate Studies Enhancement Grants, an Explorers Club San Diego Chapter Grant, a Sigma Xi Grant-in-Aid, the Institute for Field Research, the Cotsen Endowments, and four Steinmetz Travel Awards. Funding for radiocarbon dating of organic materials was provided by an Archaeological Institute of America (AIA)-Orange County Scholarship. Fieldwork was performed under permits from the Peruvian Ministry of Culture (206-2013-DGPC-VMPCIC/MC and 218-2015-DGPA-VMPCIC/MC). Radiocarbon samples were exported to the U.S. under a permit from the Peruvian Ministry of Culture (107-2016-VMPCIC-MC).

I am heavily indebted to numerous people who invaluably supported this dissertation research. I would especially like to thank my principal adviser, Chip Stanish, for his unwavering encouragement, clear advice, and spirited storytelling, and for offering me that fateful opportunity to work in the Chincha Valley in 2012. I am grateful for his inspiration in difficult times, his encouragement to think broadly about anthropological topics, and his fully-fledged support of my desire to use cutting-edge technology for gathering dissertation data. It has been a real pleasure working with him over several years.

Many thanks go to the other members of my dissertation committee: Stella Nair (co-chair), John Papadopoulos, Danielle Kurin, and Lisa DeLeonardis. Stella Nair taught me about

Andean architecture, architectural drawing, and theories revolving around space and place. John Papadopoulos provided important insights into mortuary theory and archaeology and offered critical aid as Chair of the Archaeology IDP. Danielle Kurin offered key advice on bioarchaeological methods, held informative discussions with me about ancient Andean mortuary practices, and helped me develop interpretive frameworks for the dissertation. Lisa DeLeonardis has been an inspiring mentor whose honest, constructive feedback greatly strengthened my research. I cannot thank my committee members enough.

Before and throughout the dissertation research process, I received important guidance, mentorship, and support from several professors. I would like to especially thank Ran Boytner, Elizabeth Arkush, and Michael Harrower for being such helpful and insightful mentors over many years. They gave me important fieldwork opportunities in the early stages of my career and engendered my interests in Andean archaeology, the Late Intermediate Period, mortuary practice, and GIS analyses. My gratitude to them knows no bounds. I am thankful to Hans Barnard for taking the time to hear and brainstorm ideas for the dissertation and other research projects. Both Hans and Ran helped with our textile analyses and extracted several textile dye samples for laboratory analysis. Tom Wake and John Verano were gracious enough to take the time to review photos of cut marks and offer their opinions. Thanks to Erv Taylor and the staff at the W.M. Keck Carbon Cycle AMS Lab at UC Irvine for conducting radiocarbon analysis. I thank Alan Farahani for teaching me how to analyze and visualize quantitative archaeological data, reviewing several of my papers, and being a phenomenal mentor in times of stress and need. I cannot say enough about how much I have learned from Alan and how important he has been in my development as a scholar. I am very thankful that we crossed paths at UCLA.

Several project members in Peru helped to make this study a reality. I sincerely thank Henry Tantaleán and Alexis Rodríguez Yábar for their considerable and much-appreciated efforts in helping to secure permits from the Peruvian Ministry of Culture for archaeological fieldwork and exportation of radiocarbon samples. I thank the Peruvian Ministry of Culture for their supervision and permits and acknowledge the assistance of Rubén García as the representative of the Dirección Desconcentrada of the Ministerio de Cultura in Ica. I am especially grateful to all staff at the Museo Regional de Ica for providing a space where we could conduct bioarchaeological analyses of human remains from the middle Chincha Valley. I also acknowledge Henry Tantaleán and Rosa Estefita Zavaleta Barrios for co-directing the fieldwork conducted in the mid-Chincha Valley in 2013 and 2015 respectively.

I am thankful to many individuals who generously allowed me to use equipment for archaeological fieldwork and who made critical contributions to my dissertation. Many thanks to Isaiah Mack, Darren Ruddell, and the staff at the University of Southern California Spatial Sciences Institute for lending me GPS equipment for field mapping. I sincerely appreciate Brittany Jackson and Susanna Seidensticker for their help in conducting mortuary excavations, surface collections, and bioarchaeological analyses. I am incredibly grateful to Juliana Gómez Mejía and Noemi Oncebay Pizarro for analyzing human remains recovered from the middle Chincha Valley. My exciting discussions with Juliana regarding mortuary practice in the study area proved to be very insightful. I am so happy that Juliana and I collaborated on this study. A special thanks to Colleen O'Shea for conducting textile analyses, taking high-quality photos, extracting red pigment and teeth samples, and helping to conserve our most precious finds over the course of 3 field seasons.

Colleen's outstanding work tremendously improved our understanding of mortuary practice in the study area and laid the groundwork for future analyses. She is a wonderful collaborator and a dear friend. I am very grateful to Vanessa Muros for performing x-ray fluorescence (XRF) and x-ray diffraction (XRD) analyses of red pigment samples at UCLA. Vanessa's work contributed invaluable data to this study, and I am so thrilled to be working alongside her. I thank Christine Hastorf, David Beresford-Jones, and Carrie Arbuckle for conducting wood analysis. I also thank Ben Nigra, Terrah Jones, Camille Weinberg, Jo Osborne, Jordan Dalton, Michael Rosales, Kevin Hill, and the rest of the members of the Chincha archaeological teams for their critical roles in conducting fieldwork and analyzing data over three field seasons (2012-2015).

I sincerely appreciate the support I received from academic colleagues and staff at UCLA and as a Visiting Graduate Student at Johns Hopkins University (2016 – 2019). The Cotsen Institute of Archaeology at UCLA provided a highly collaborative, fruitful research environment during my graduate study. My gratitude to Charlie Steinmetz, Sonia Gottesman, and the UCLA Friends of Archaeology for granting generous aid that helped me conduct my dissertation research and share it with others in conference settings. Special thanks go to several of my peers at UCLA, including Rose Campbell, Richard Ehrich, Trevor van Damme, Kate Bishop, Georgi Kyorlenski, Hannah Lau, Kevin Hill, Karl La Favre, and Kristine Martirosyan-Olshansky for their encouragement through the years. I offer thanks to the staff affiliated with UCLA's Technology Sandbox, especially Yoh Kawano, Lisa Snyder, and Albert Kochaphum, for their incredibly generous technical support and their help in producing maps.

I also thank the faculty, staff, and graduate students at the Department of Near Eastern Studies at Johns Hopkins for welcoming me into their community and providing a nurturing place for writing.

Finally, my family has been an important source of support throughout the very challenging process of pursuing a doctoral degree. The endless love offered by my parents, Mary Lewis and Jaap Bongers, my brother, Joshua Bongers, and my partner, Ioana A. Dumitru, kept me moving towards the finish line. This research would not have been possible without them.

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2019 Bongers, J.L. Local Mortuary Practice and Inca Imperial Conquest in the Middle Chincha Valley, Peru. Paper presented at the Society of American Archaeology Annual Meeting. April 12th.

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CHAPTER 1

Mortuary Practice, Religion, and Imperial Conquest

Human cultures have developed an array of mortuary practices, raising questions about the relationship between mortuary behavior and society that have been the subject of scholarly inquiry for decades. These practices oftentimes involve feasts, protracted interactions between the living and the dead[1], mourning rituals, and public ceremonies. Anthropologists have called attention to the broad connections between mortuary activities, belief systems, and economic and sociopolitical dynamics. The diversity and multidimensionality of mortuary practices underlie their significance as variable, contextually specific, and cross-cultural processes, and as essential components to religious and social life in past societies.

Indeed, mortuary practice is embedded within religion, a concept that has received much attention in anthropology and archaeology. As Mark Aldenderfer (2010, p. 80) notes, developing a definition of religion that is both cross-cultural and cross-theoretical is difficult, but this impediment does not preclude an understanding of what it does in particular circumstances. In reference to several authors who have investigated religion (Bloch, 1992; Geertz, 1973; Malinowski, 1954; Tylor, 1871; Wallace, 1966), Aldenderfer (2010, p. 81) states that it provides a worldview, creates opportunity for group cohesion and solidarity, defines individual and group identities and the nature of social relationships within and between societies, serves as a means through which new sociopolitical spaces and relationships can be created and undermined, and generates sets of activities and processes (e.g., ritual) that can affect the course of events.

[1] In this study, I use the term "dead" to refer to human remains, unless otherwise stated.

Religion is a catalyst of social action, a tool that individuals and groups can use to fulfill various goals, such as 1) maintaining preexisting rules, relationships, and identities, 2) transforming them, or 3) introducing entirely new ones. These goals can be achieved through the manipulation of ritual processes, but how religion is used to facilitate and constrain social action largely depends on the context. This point raises an important anthropological question: Under what conditions do local groups change, continue, or innovate their religious practices? For instance, religion can act as a powerful force of sociopolitical change and continuity in contexts of contradiction, within which sociopolitical relationships and rules can become blurred and threatened, and status differences can become exacerbated (Aldenderfer, 2010, p. 83). Imperial conquests can produce local contexts of contradiction. Although mortuary practices are ritual processes designed to achieve a transition in the status of the deceased (Knüsel and Robb, 2016, p. 656), they are not reducible to religion. They leave behind material and biological traces (e.g., architecture, human remains, treatments of the dead, etc.) that signal "religion at work." For this dissertation, I investigate the development of mortuary practice in an area that experienced imperial conquest to evaluate whether and how local groups transformed religious practices through time and amid profound sociopolitical change.

At their core, mortuary practices constitute and reconstitute society in the wake of death because they reassert relationships and authority that underpin sociopolitical order. During periods of dramatic sociopolitical change, however, the mortuary process can take on a more significant role in broader political economic relations and become contested. This is because as social relationships, economies, and politics change through time, death can occasion conflict and instability and provide opportunities for select groups to modify the form, structure, and

meaning[2] of mortuary activities. In doing so, these groups can reconstitute sociopolitical orders in ways that better fulfill their interests. To be clear, the relationship between religion, ritual process, and politics is complex. Mortuary practices may reflect existing sociopolitical relationships, but as these relationships and the fortunes of individuals and groups wax and wane, aspects of these practices may change, or not, and new meanings may emerge based on different societal dynamics (Aldenderfer, 2010, p. 82). Imperial conquest, for example, can foster significant changes in the organizations of local societies and the connections between the living and the dead that, in turn, bring the politics of the dead to the fore. In this context, local groups may elect to maintain preexisting mortuary practices to reaffirm their positions of power or change them to seize authority and express affiliations to imperial elites. Clarifying the developmental trajectories of mortuary practice over the course of imperial conquests can broaden understandings of the religious practices through which local groups negotiated political economies in times of transition.

In this study, I investigate mortuary practice in an Andean landscape on the Peruvian southern coast—the middle Chincha Valley (Figure 1.1)—that underwent profound sociopolitical and economic change following integration into the Inca Empire and the Spanish Empire. A complex, centralized polity known as the Chincha[3] Kingdom controlled the Chincha Valley during the Late Intermediate Period, or LIP (AD 1000 – 1400) before falling under the

[2] The meanings, or cultural ideas and values (Bell, 1997, p. 34), expressed by the patterns and symbols of mortuary practices are clearly important elements of such practices, but they are more difficult to ascertain in the archaeological record than form and structure. This difficulty does not preclude understandings of mortuary practices. In this dissertation, I focus on elucidating the structure, form, and development of mortuary practices in the middle Chincha Valley, Peru. I only provide speculation about what mortuary patterns may have meant in the past.

[3] The origins of the name "Chincha" are unclear. Since it is not known what these people called themselves, I employ the terms that were in use at the time of the Iberian invasion (e.g. Chincha, Chincha Kingdom).

rule of the expanding Inca Empire in the Late Horizon, or Inca period (AD 1400 – 1532)[4]. The LIP occurred after the collapse of the Wari and Tiwanaku states (ca. AD 1000) and featured Andean groups reconfiguring lifeways in different ways. For instance, the expansion and integration of coastal polities such as the Chincha Kingdom contrast sharply with the outbreak of intensified warfare and decentralization among societies in the highlands (Arkush, 2008; Conlee et al., 2004; Covey, 2008a; Dulanto, 2008; Kurin, 2016). The Late Horizon, however, experienced the rise of the Inca Empire, the largest native state to develop in South America before the arrival of the Spanish Empire. This period was an era of imperial expansion, in which the Inca adopted and modified millennium-long traditions of Andean statecraft to incorporate a diverse array of environments and polities with varying levels of sociopolitical complexity across the Andes (Covey, 2008b; Malpass and Alconini Mujica, 2010; Stanish, 2001).

[4] This chronology derives from John H. Rowe's (1945) foundational work. While John Rowe and Dorothy Menzel (1966) assert that Inca annexation of the Chincha Valley took place in AD 1476, Catherine Julien's (2008) review of written sources pertaining to the Chincha Valley lead her to argue that it likely started as early as AD 1408. Additionally, several studies, including Erik Marsh et al. (2017), provide radiocarbon data that indicate that Inca expansion into the southern Andes may have occurred in the early 15th century. I further discuss these lines of evidence in chapter 3. For the purposes of this dissertation, I tentatively suggest that the Late Horizon in the Chincha Valley is (AD 1400 - 1532).

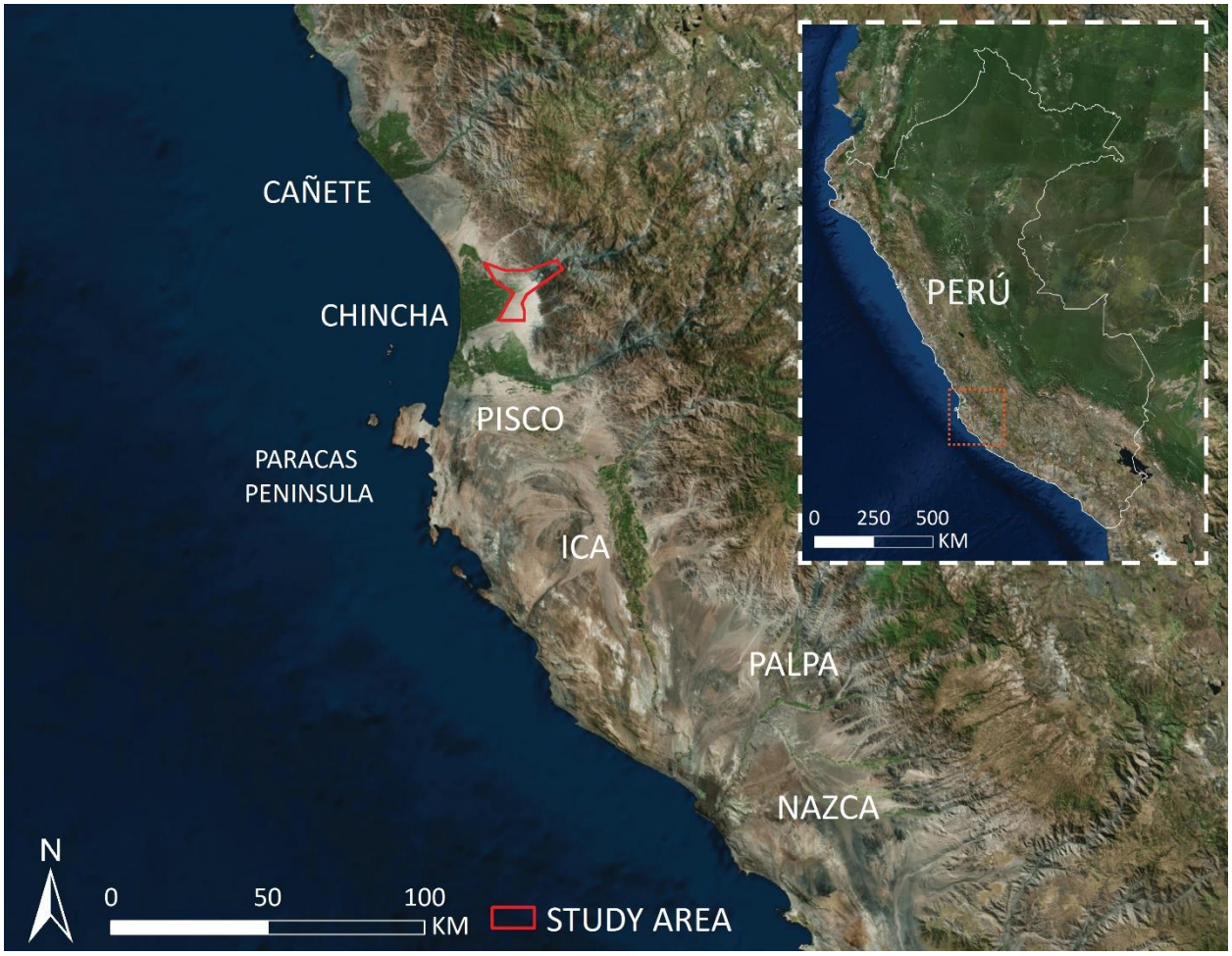

Figure 1.1: The location of the Chincha Valley, indicated by the red arrow

Imperial expansions reshaped cultural landscapes across space and time (D'Altroy and Hastorf, 2001; Schreiber, 2004; Sinopoli, 2001, 1994; Stein, 2005). Interactions between imperial administrators and local groups articulated efforts to institutionalize power relationships with local interests, practices, and material culture (Wernke, 2013, p. 8). These interactions produce contexts in which dynamic political and social orders develop, complicating distinctions between local and foreign groups (Gose, 2008, p. 7) and changing both parties into "something other than what they were before" (Dietler, 2010, p. 54). In turn, entirely new societies form, oftentimes consisting of new configurations of local economies, political structures, social

arrangements (D'Altroy and Hastorf, 2001; Sinopoli, 2001; Wernke, 2013), and mortuary practices, as demonstrated by this study.

Mortuary practices serve as key contexts in which political interactions between expansionist states and local groups occur. Such practices are cultural strategies and processes through which groups negotiate sociopolitical relationships among themselves and in relation to others and the cosmos (Brown, 2008; Fitzsimmons and Shimada, 2011; Quinn, 2015; Shimada and Fitzsimmons, 2015; Verdery, 1999). In the Andes, they are considered primary strategies for negotiating community relations, group identities, territorial claims, and authority (Buikstra and Nystrom, 2015; Dillehay, 1995a; Eeckhout and Owens, 2015; Shimada and Fitzsimmons, 2015). Political interactions between expansionist states and local groups can impact mortuary practices (Buikstra and Nystrom, 2015; Toyne et al., 2016), yet the local-level manifestations of these impacts—abandonment, continuity, and/or change—vary contextually. For instance, over the course of the Colonial Period (AD 1532 – 1825) in Peru, the Spanish systematically destroyed Andean mummified ancestors and eradicated local mortuary practices to establish their Christian belief system. The ways in which local groups treated mortuary practices during encounters with expansionist states can be revelatory for the conquest process, its local-level effects, local populations before they were placed under rule, and the religious and political dynamics involving these local populations and imperial administrators.

Case Study: The Chincha Valley (ca. AD 1200 – 1650)

In the Chincha Valley, a complex state rose to prominence before becoming incorporated into an empire, making this area an important case study for understanding the development of mortuary practice during a period of significant change. The Chincha Kingdom was one of the

largest complex states on the Peruvian southern coast during the LIP. It included an administrative "core" of structures in the lower Chincha Valley (Canziani, 2009) and a network of numerous specialists including farmers, fishermen, and merchants that were organized into *ayllus*[5], or kin-based social units, each with its own territory, ancestry, and chief (Crespo, 1975; Wallace, 1991). Several roads across the Chincha Valley were constructed that likely facilitated exchange relationships among and between these specialists. The Chincha Kingdom also possessed abundant wealth likely derived from silver, gold, guano (Curátola, 1997) and other prestigious items allegedly acquired in far-flung overseas and land-based exchange relationships that eventually stretched from Ecuador to the Titicaca basin. Written sources describe a calculated alliance between the Chincha Kingdom and the Inca Empire forged during the Late Horizon, one of the few, if only, political relationships of its kind brokered in this era (Menzel and Rowe, 1966). These accounts and archaeological research to date reveal that despite, or because of, this alleged alliance, Inca consolidation of the Chincha Valley resulted in notable changes including an intensification of local fishing production, an expansion of trade networks, and a "dual rule" political system in which Chincha and Inca elites maintained power (Sandweiss, 1992; Sandweiss and Reid, 2015).

[5] Quechua terms are used throughout this study to describe numerous concepts related to social organization and the environment. Colonial Period sources provide various spellings of these terms, likely because their authors were not attuned to the regional variations of Quechua. Research to date demonstrates that ancient Andean groups did not develop a system of writing. Since many of the points made in this study are based on interpretations of Quechua made by these writers, I follow Stella Nair (2015) and elect to use the most widely accepted colonial-era spellings whenever possible.

Research Goals

Given that imperial conquest is transformative in nature and results in the development and institutionalization of new power relationships, under-investigated archaeological questions remain in need of empirical verification. How do local groups conduct their mortuary practices before and after imperial conquest? What does the development of these practices suggest about the use and role of religion during this period of transformation and the broader relationship between local ritual practice and imperial conquest? To address these questions, I bring the mortuary practices of the middle Chincha Valley[6] to the center of analysis. The middle Chincha Valley is an ideal environment for this study because it lies within a coastal desert environment that contains large amounts of well-preserved graves, human remains, botanical remains, and textiles. This dense mortuary landscape and its excellent preservation conditions are highly conducive to large-scale radiocarbon dating and geospatial, architectural, and archaeological data collection.

In this study, I focus on three principal research goals. First, I describe the nature and variation of mortuary practice in the mid-Chincha Valley. I focus primary, but not exclusively, on three dimensions of mortuary practice that may have been impacted by the changing sociopolitical conditions of imperial conquest: demographic profiles (age and sex distribution) of grave populations, mortuary architecture, and treatment of the dead. I also report on grave inclusions and representations of different types of bones. Second, I use radiocarbon data to characterize the development of mortuary practice from the LIP to the early colonial period (ca. AD 1532 – 1650). Third, I model processes of mortuary activities in the study area with available

[6] The middle Chincha Valley will be henceforth referred to as the mid-Chincha Valley for brevity.

data. In parallel with fulfilling these research goals, I evaluate hypotheses and consider models derived from written sources and theoretical frameworks built around mortuary politics and conquest, living-dead interactions, and types of grave use as potential explanations for observed mortuary patterns.

Overview of Materials and Methods

This investigation adopts an interdisciplinary, multi-scalar approach to address these research objectives. Five seasons of archaeological fieldwork and analysis (2013-2017) were conducted in the mid-Chincha Valley. Archaeological fieldwork involved 1) an archaeological survey of an approximately 40 km^2 zone within the study area, 2) an intensive surface collection of a *chullpa*, 3) excavations of a *chullpa* and 2 cists, 4) geospatial mapping, aerial photography, and architectural documentation of mortuary sites (including cemeteries)[7], and 5) the collection of radiocarbon samples, red pigment[8] samples, and posts with human vertebrae from *chullpas* and cists located throughout the survey zone[9]. Laboratory work included 1) bioarchaeological analyses of human remains, crania with red pigment, and vertebrae placed on posts recovered from the survey, surface collection, and excavations, 2) radiocarbon analyses of samples recovered from *chullpas* and cists, 3) analyses of textiles recovered from the *chullpa* surface collection, 4) x-ray fluorescence (XRF), x-ray diffraction (XRD), and gas chromatography – mass spectrometry (GC-MS) analyses of red pigment samples extracted from human remains, textiles, and soil layers, 5) production, examination, and comparison of digital site plans for

[7] For this study, a distinction is made between cemeteries and mortuary sites. Cemeteries are archaeological sites with evidence of more than one grave with human remains. Mortuary sites include cemeteries, but they can also refer to archaeological sites with a single grave and human remains.
[8] The term "red pigment" is used to refer to pigment derived from either cinnabar or hematite.
[9] The application of red pigment to human remains and the placement of human vertebrae on posts constitute the most pervasive forms of treatment of the dead in the mid-Chincha Valley.

cemeteries, and 6) exploratory and descriptive statistical analyses of mortuary architecture and treatment of the dead.

Since my study overlaps with the early colonial period, I analyze written sources. Writing was introduced after the Spanish assumed control of Peru. I rely on a rich record of published, colonial documents to contextualize Andean mortuary behavior and discuss the history of occupation in the Chincha Valley. For instance, I draw upon sixteenth century documents[10] written by Pedro de Cieza de León (1959 [1553]), Pedro Pizarro (1921 [1571]), and Fray Cristóbal de Castro and Diego Ortega Morejón (Crespo, 1975) to provide key insights into the Chincha Kingdom. Colonial sources are biased because, in general, authors rendered the information they acquired within a European worldview. These sources, however, yield valuable information on Andean lifeways that is useful for this investigation.

Structure of the Dissertation

In Chapter 2 ("Mortuary Practice and Imperial Conquest in Theory"), I summarize processual and post-processual mortuary theories and present theoretical perspectives concerning mortuary politics and imperial conquest, mortuary practice as a ritual process, treatment of the dead, mortuary architecture, and grave use. For Chapter 3 ("The Chincha Valley: Environment, History, and Archaeology"), I bring the environment, archaeological research, and history of the Chincha Valley into focus. I describe the environment of the Chincha Valley and review relevant written sources and previously conducted archaeological research to describe the Chincha Kingdom, its incorporation into the Inca Empire, and the effects of Inca conquest on local groups

[10] These documents, and the authors that wrote them, are discussed in more detail in chapter 3.

in the area. In Chapter 4 (“Research Design and Methods”), I outline the research questions, research design, and methods of the dissertation.

In chapter 5 (“The Archaeological Landscape of the Mid-Chincha Valley: Spatial, Radiocarbon, Material, and Skeletal Data”), I discuss the mortuary landscape of the mid-Chincha Valley by referring to spatial, material, radiocarbon, and skeletal data collected through fieldwork and laboratory analysis. First, I examine colonial-era written sources that discuss mortuary practices in Andean societies. Afterwards, I discuss the results from the 2013 regional survey, the 2014 surface collection of UC-008 Tomb 1 (*chullpa*), and the 2015 mortuary excavations of a *chullpa* and two cists in a site known as Sector B. I present radiocarbon dates from select *chullpas* and cists in the study area. I write about the spatial distribution of mortuary sites in the study area and types of grave inclusions. I also discuss bone representation and age and sex distributions among grave populations from UC-008 Tomb 1 and the excavated graves of Sector B.

For Chapter 6 (“Mortuary Architecture”), I present data on the variation of mortuary architecture in the mid-Chincha Valley. I survey examples of pre-AD 1532 Andean mortuary architecture before discussing patterns of grave construction and cemetery site layouts in the study area. In Chapter 7 (“Treatment of the Dead”), I explore treatment of the dead (e.g., postmortem body manipulation) in the mid-Chincha Valley. I first write about comparable examples of this practice within the Andes. I then focus on the application of red pigment on human remains and the placement of vertebrae on posts in the study area. I discuss interpretations of these treatments and argue that they constitute an elaborate mortuary process. I provide a model for such a process at the end of the chapter.

In chapter 8 (“Summary and Conclusions”), I conclude by evaluating the hypotheses, summarizing salient findings, and highlighting the contributions of the study. I close with a discussion of future directions that this project can take.

Main Conclusions

Data from these five seasons demonstrate that the mid-Chincha Valley contains a dense mortuary landscape of over 500 graves that cluster into 44 mortuary sites (43 of which are cemeteries), and two distinct grave types that differ in architecture and treatment of the dead: above-ground and subterranean graves (*chullpas*) and subterranean cists. *Chullpas* are made of fieldstone, *tapia*, and adobe[11]. They have forecourts, interior benches, and openings facilitating reentry. Cists are made of fieldstone materials and have *no* openings, interior benches, or forecourts. There is considerable variation in cemetery site plans. Some cemeteries have densely packed clusters of graves, and others have plazas surrounded by graves. A few have linear arrangements of abutting graves. Some cemeteries contain only cists, while others have *chullpas* and cists positioned in groups set apart from each other. C*hullpas* contain disarticulated, partially articulated, and commingled depositions of individuals of varying age and sex classes. At least one cist provides evidence of extended, articulated adult primary depositions and commingled depositions of juveniles. Local groups applied pigments derived from cinnabar and hematite to deceased individuals deposited in *chullpas*. Local populations also placed human vertebrae on reed (likely *Phragmites* sp.) and wooden posts and placed these artifacts in *chullpas*.

[11] T*apia* and adobe are construction methods and and materials. *Tapia*-making practices frequently entail constructing wall molds, mixing clay and water, and pouring and pounding mud into movable frames. Adobe-making practices commonly encompass air- or sun-drying clays and shaping them by hand or with molds.

Radiocarbon data suggest that mortuary variations represent patterns of synchronic differentiation, diachronic change and continuity, and innovation in local mortuary practice. Local groups started using cists and *chullpas* in the LIP, but only continued to use *chullpas* during the Late Horizon and early colonial periods. Red pigment is associated with LIP (AD 1000 – 1400), Late Horizon (AD 1400 – 1532), and early colonial period (AD 1532 – 1825) dates. Posts with vertebrae date to the Late Horizon and early colonial periods.

These results provide insights into grave use, living-dead interactions, and the development of mortuary practice in the mid-Chincha Valley before and after Inca conquest in the 15th century. Locals may have deposited lineage groups in *chullpas* because these graves contained high numbers of individuals[12] and members of different age and sex classes, and they tend to be organized into cemeteries. Cists were also built in cemeteries at times, but they were designed to contain fewer people and to be used over smaller timescales compared to *chullpas*. At least one cist contained an adult male, adult female, and three children, suggesting the presence of a *wasifamilia*[13]. Evidence of elaborate postmortem manipulation of the dead (e.g., red pigment application, placement of vertebrae on posts) among *chullpas* and the lack of such evidence in cists indicate dynamic, protracted living-dead interactions on one level, and perhaps differences in status and conceptions of the dead on another. The contemporaneous use of *chullpas* and cists during the LIP may suggest that these differences—whatever their nature—emerged at this time. During the Late Horizon, local populations ceased to use cists and instead used *chullpas* in their mortuary practices. During this time, they continued to apply red pigment

[12] The lowest documented MNI (minimum number of individuals) among *chullpas* in the mid-Chincha Valley is 37.
[13] According to Danielle Kurin (2016, p. 55), a *wasifamilia* is a household unit that shares work obligations and expresses its organization in relation to other groups.

to their dead. They also introduced a new treatment of the dead: the placement of vertebrae on reed and wooden posts, a new death ritual that reflects intense tactile interaction with the corpses of their kin. I discuss several models that can explain observed practices of painting the dead and placing vertebrae on posts in this study. Suffice it to say, I argue that such practices transformed the status and personhood of the dead, rendering them as objects of display for use in ceremonial activities.

I argue that mortuary practice served as an interface through which interactions between these societies occurred. I suggest that indigenous groups in the mid-valley negotiated with the Inca to sustain their mortuary traditions, cease others, and create entirely new ones. In doing so, these groups dynamically reconfigured the ways relationships among the living and the deceased were performed in the face of imperial conquest. Thus, this study contributes data to debates about how religion and ritual practice functioned in political relations between past societies of varying complexity. It widens the scope of imperialism studies that traditionally focus on forced transformations of local economies and sociopolitical organizations to include a mortuary perspective on the dynamics between indigenous groups and foreign empires.

CHAPTER 2

MORTUARY PRACTICE AND IMPERIAL CONQUEST IN THEORY

Anthropologists and archaeologists have long been interested in the significance of mortuary practices for developing understandings of past societies. In the anthropological and archaeological literature, theoretical models offered to explain mortuary behavior are diverse and not necessarily mutually exclusive. Mortuary activities have been described as indicators of status, group identity, and social complexity (e.g., Binford, 1971; Tainter, 1978), efforts to mark territory and access to resources associated with descent groups (e.g. Isbell, 1997; Morris, 1991; Renfrew, 1976; Saxe, 1970), and processes of negotiating sociopolitical relationships among and between societies of varying complexity (e.g. Brown, 2008; Fitzsimmons and Shimada, 2011; O'Shea, 1996; Quinn, 2015; Shimada and Fitzsimmons, 2015; Verdery, 1999). They have also been connected to belief systems, worldviews, and ideologies (Carr, 1995; Hodder, 1982a, 1984; Jiménez et al., 2017; Pearson, 1982; Sugiyama, 1993, p. 117). Variation in mortuary practices across space and time reflects the wide range of models offered to explain this human behavior.

This chapter concerns theoretical and ethnographic perspectives that anthropologists and archaeologists have used or referred to for explaining mortuary practice[14]. First, I delve into the foundational processual and post-processual debate surrounding mortuary practice. Second, I explore the politics of mortuary practice in the context of imperial conquest and refer to anthropological scholarship that treats mortuary practice as a ritual process. Lastly, I refer to theoretical perspectives, ethnographic case studies, and written accounts to approach the three

[14] The reader is referred to Carr (1995) and the introductory chapter of Rakita et al. (2005) for comprehensive overviews of the historical development of mortuary theory.

primary dimensions of mortuary practice that this study focuses on treatment of the dead, mortuary architecture, and demographic profiles (age and sex distributions) of grave populations.

Processual and Post-Processual Mortuary Theory

Mortuary theories pertaining to the processual school of thought developed in response to some early 20th century studies that cautioned against inferring social significance from mortuary practices (Kroeber, 1927) and positioned human burials as important subjects of anthropological and archaeological inquiry. One such early study is Alfred L. Kroeber's (1927, p. 314) influential, cross-cultural analysis of mortuary patterns observed in California and various "culture areas" in South America. He concluded that mortuary practices are detached from religion and social organization and are more akin to "fashions of dress, luxury, and etiquette." This study influenced many archaeologists to approach cautiously social interpretations of mortuary practice and helped inspire a scholarly tradition in which mortuary excavations were conducted to develop chronologies and perform stylistic analyses of grave goods. In the 1960s and 1970s, several ethnographic studies exploring the nature of mortuary practice were conducted (Bloch, 1971; Douglass, 1969; Goody, 1962) as part of a renewed interest in activities concerning death. The "new," processual archaeology emerged alongside these studies.

Within this intellectual context, Saxe (1970) and Binford (1971) surveyed ethnographic cases and claimed that, contrary to Kroeber's (1927) arguments, variations in mortuary practice are socially derived. Saxe (1970) sought to develop a broad theoretical model that explained the relationship of mortuary practice to the "sociocultural system" of society. He drew influence from Goodenough's (1965) discussion of role theory, which stated that all individuals are composed of social personae, or identities based in age, sex, and status that are maintained in life

and recognized at death. Saxe formulated eight hypotheses concerning the extent to which mortuary practices materialized social personae and the complexity of a society's social organization.[15] Saxe tested these hypotheses against ethnographic data drawn from three societies: Bontoc Igorot, Kapauku Papuans, and the Ashanti. His findings contributed to the creation of a cross-cultural model for inferring the complexity of social organizations from mortuary archaeological data (Rakita et al., 2005, p. 3).

Binford (1971) also relied upon Goodenough's (1965) work and emphasized the social context of mortuary practice. He proposed a hypothesis: heterogeneity in mortuary practice characteristic of a single sociocultural unit varies directly with the complexities of the status hierarchy and social organization. He tested this hypothesis using cross-cultural ethnographic surveys and made several connections between social dimensions and mortuary practice. Binford (1971, p. 22) claimed that variations in dress and grave goods, especially tools, likely indicated horizontal status distinctions associated with age and sex. Furthermore, Binford (1971, p. 22) suggested that grave locations and totemic items may reflect kin or lineage affiliations and that variations in treatments of the dead may reflect different causes of death or even social deviance. He also noted regularities between subsistence strategies and elaboration in mortuary practice, leading him to conclude that as societies develop complexity, shifting from hunting and gathering strategies to sedentary, agricultural lifestyles, mortuary practices become increasingly more complex.

[15] Saxe's Hypothesis 8, which posits that descent groups construct and use cemeteries to exert control over resources through lineal transmission, and its subsequent refinements made by others (Goldstein, 1981, 1980; Morris, 1991) will be explored more fully in the section titled "Mortuary Architecture: Perspectives on the Built Environment."

The ideas, theories, and findings put forth by Saxe (1970) and Binford (1971) crystallized into a theoretical paradigm known as the "Saxe-Binford program" (Brown, 1995) that set the foundations for a processual approach to investigating and explaining mortuary practice. The Saxe-Binford program characterized mortuary practices as a discrete cultural unit, existing within an overarching social system, that represents the living identities of the deceased. Following this paradigm, many studies in American mortuary archaeology reaffirmed social organization and social identity as the primary determinants of mortuary practices (Carr, 1995, p. 109). Tainter (1978, p. 107) noted that Binford's (1971) work confirmed "beyond serious contention" that variability in mortuary practices corresponds to "variability in the form and organization of social systems." Rothschild (1979, p. 660) and Greber (1979, p. 38) similarly argued that mortuary patterns directly reflect social patterns. Moreover, the Saxe-Binford program ignited a wave of mortuary studies and sparked developments in formal-structural and quantitative methods that attempted to clarify "distinct social personae, the organizing principles of the mortuary system, and organizing principles of the social system at large" (Keswani, 2004, p. 7). For example, Tainter (1975) proposed that ranking is connected to the material and energetic expenditures associated with grave construction, Shennan (1975) related the quality and quantity of grave goods to the social status of the deceased, Peebles and Kus (1977) linked rank with the presence of grave goods indicative of power and authority, and Goldstein (1981) inferred social hierarchy from the spatial distribution of graves.

Critiques of the Saxe-Binford program from within processual archaeology moderated the initial appeal of reconstructing social organization through mortuary analysis and generated calls to refine and broaden the methods and interpretive frameworks emphasized in this program. Brown (1981) recognized that mortuary practices are oftentimes multi-stage processes and that

the “search for rank” in mortuary contexts is a complex process because rank can be variously expressed and may not always be visible in the archaeological record. Goldstein (1976), Kan (1989), and Trinkaus (1984) agreed, suggesting that while funeral attendees, feasting, and ritual performances are difficult to recognize in the archaeological record, they may have more significant implications for rank than the materials left behind by the funeral itself. Brown (1981, pp. 29–30) also made it clear that rank can exist in societies without evidence of centralized leadership and considered alternative interpretations for rich child graves. O’Shea (1984, pp. 23–26) highlighted taphonomic processes and sampling strategies as biases that impact the available archaeological record. Braun (1981) criticized the use of quantitative ranking because several proponents of this approach failed to offer justification for why one mortuary variable ranked higher than the other. Carr’s (1995) systematic, cross-cultural survey evaluates the extent to which social organizational, philosophical-religious, physical, and circumstantial factors structure mortuary practices. In general, he finds that social organization and philosophical-religious beliefs equally structure mortuary practices and advocates for a broader, more holistic approach in mortuary studies that considers multiple explanatory variables.

In response to these criticisms, several scholars restudied, developed, and changed key aspects of the Saxe-Binford approach (Carr, 1995; Goldstein, 1980, 1976; Kamp, 1998; Morris, 1991). For instance, Carr (1995) and Kamp (1998) assessed cross-cultural evidence and found some support for the generalized, nomothetic models put forth by Binford (1971) and Saxe (1970) to explain variation in mortuary practices. These studies demonstrate that formulating and testing generalized models to interpret mortuary patterns remain robust endeavors. On a similar note, Chapman (1995, p. 37) states that although there are no “laws” of mortuary behavior, structuring observations through theoretically informed principles and then analyzing

archaeological contexts to evaluate the limits of such principles is critical for drawing insights into mortuary practices. Continuous attempts to revise processual mortuary theories contributed to a shift in the spatial scale of mortuary studies beyond intra-cemetery analyses (Beck, 1995; Dillehay, 1995a; Milner, 1984). This regional "turn" in mortuary archaeology not only expanded the geographical scope of these studies, but also drew more attention to archaeological and historical context and diachronic variation as important variables for understanding differences in mortuary practice.

Carr's (1995) arguments echo many critiques of the Saxe-Binford program offered by proponents of the post-processual school of thought (Hodder, 1982a, 1982b, 1982c; Pearson, 1982; Shanks and Tilley, 1982). One of the core ideas behind post-processualism is that cultural practices are "meaningfully constituted" because they are selected and shaped by actors in accordance with their beliefs and worldviews (Hodder, 1982b, pp. 9–10). Since beliefs inherently carry ambiguity, they can be reinterpreted in several ways and through various behaviors such as mortuary practices, depending on context and intention (Hodder, 1982a, p. 186). Based on these ideas, mortuary practices are conceptualized to be "occasions for display, social self-promotion, and the transfer or reallocation of rights and positions among the living" (Keswani, 2004, p. 8). Here, the focus is placed squarely on the fact that the "dead don't bury themselves." Decisions made by the living regarding the placement and manner of burial are not merely direct and unambiguous indexes of social differences and organizations that can be explained through cross-cultural generalization (Chesson, 2001). Rather, they are strategies—conditioned by ideological and political mechanisms—that can be manipulated and contested to fulfill certain interests and negotiate, mask, idealize, maintain, and transform power relationships within society (Cannon, 1989; Morris, 1992, 1987; Pader, 1982; Parker Pearson, 1984; Pearson, 1993,

1982; Shanks and Tilley, 1982). Mortuary practices are held to be opportunities for sociopolitical maneuvering, in which political dominance can be made to appear legitimate through associations with the dead[16].

Therefore, mortuary practices, as behavior subject to ideological and political manipulation, tend to provide information on *social structure* as opposed to *social organization* (Morris, 1987, p. 39). According to McHugh (1999, p. 2), social organization encompasses the "day-to-day" relationships of a community that reflect social realities, and social structure refers to an "idealized set of relationships." Early proponents of processual mortuary theory may not have considered the distinction between these terms to be important. In the post-processual mortuary paradigm, the living are knowledgeable actors who are constantly changing sociopolitical relationships, and mortuary practice is an integral part of dynamic processes that constitute and reconstitute social structure. This approach is based on practice theory (Bourdieu, 1977; Giddens, 1984), which explores the recursive relationship between agency and structure, where routine or repeated practices can cumulatively result in culture change and reproduce the conditions that make these practices possible. Agency refers to the capacity to engage in a willful act, a capacity that varies according to the social agent and that is continually recreated through interactions either with living or non-living entities (Tung, 2014, p. 441). From this perspective, the mortuary record is an accumulation of intentional decisions made by the living over time that can yield various insights into the sociopolitical dynamics within past societies.

The extent to which mortuary practices reflect or exaggerate sociopolitical relationships depends on the context. This behavior is frequently linked with status display and competition,

[16] The political nature of mortuary practice will be further explored in a later section titled "Mortuary Politics and Conquest".

where status is treated as a composite of one's 1) political, kinship, and gender entitlements, 2) lifestyle (i.e., dress, speech, bodily disposition), and 3) control and ownership over the means of production (Pearson, 1999, p. 83). The role that mortuary practice plays in facilitating the display of status distinctions and the nature of *how* these social differences are displayed are contextually-specific and subject to diachronic change. Cannon's (1989) comparative analysis of cycles of competitive status display among different cultures demonstrates this point. He explores case studies drawn from 18th and 20th century England, historic Iroquois groups, and pre-Classic Greece. He reveals a broadly shared, predictable 3-step sequence in which 1) elites elaborate mortuary practices in conditions of "increased affluence, socioeconomic flux, and status uncertainty," 2) lower class groups adopt and emulate elite symbols, and then 3) elites refrain from displaying their previously sanctioned status distinctions in mortuary practice to maintain their status differentiation (Cannon, 1989, p. 438). Cannon's work supports post-processual critiques that emphasize the contingency of cultural practices and shows how adopting a diachronic perspective can be useful in explaining mortuary variation.

The ethnographic literature includes several examples that challenge the Saxe-Binford program and support the core tenets of post-processual mortuary theory. For instance, levels of material and energy investment in grave constructions do not always correspond to the ranks of the deceased. The Merina of Madagascar construct large, costly tombs that reflect the collaborative effort of a collective rather than the material wealth of an individual (Bloch, 1971). Ucko (1969, p. 267) finds that among some societies such as the Yoruba, the relative quantity of grave goods may not always reflect the "actual material conditions of a society or the actual wealth of any individual." Goody's (1962, p. 24) examination of mortuary practice among the LoDagaa and LoWiili is another example, demonstrating that differences in intrasocietal

mourning practices are connected to differences in nuclear social relationships and inheritance and domestic authority structures.

Other ethnographic examples demonstrate mortuary practices as strategies that do not always directly represent social realities. In the case of the Berawan of Borneo (Huntington and Metcalf, 1979; Metcalf, 1982), incumbent and aspiring political leaders marshal labor for tomb construction to demonstrate prestige in the community. Since these tombs oftentimes contain "nobodies" (Huntington and Metcalf, 1979, p. 150), it appears that tomb construction is a means of fulfilling political interests rather than reflecting the living identities of the deceased. Parker Pearson (1982) similarly argued that mortuary practices do not directly reflect such relations; the living could manipulate the dead for their own interests. As an example, albeit a modern one, he examined funerals that took place in Cambridge in 1977 and found that lower class gypsies organized the most expensive funerals. He also discovered that the amounts of wealth invested in funerals and funeral monuments reached a peak in the Victorian period and declined in the twentieth century. He suggests that there is no correlation between the costs of the funeral and the value of the property of the deceased and that mortuary practices may not necessarily become more elaborate through time. Lastly, Hodder (1982a) used the example of burial customs among the Nuba of Sudan to criticize the proposal that patterns of death reflect patterns in the life of a society. Nuba burial customs portrayed, he argued, idealized images of people's lifestyles and social groupings.

Post-processual mortuary theory has also been criticized. Most ethnographic and archaeological case studies offered to demonstrate the pitfalls of processual mortuary theory and the salience of post-processual mortuary theory are drawn from societies that possess a writing system. Some question the extent to which extreme manipulations of mortuary practices evident

in these cases characterized non-state societies (Trigger 1990: 126). It seems more emphasis is placed on referencing misrepresentations of social structure in the ethnographic record than on developing methodologies for understanding under what conditions, and why, such manipulations occur in the mortuary record. This task is complicated by the fact that distinguishing between purposeful, ideological manipulation of mortuary remains from natural or cultural causes is not always straightforward (McHugh, 1999, p. 16).

Over the past two decades, new scholarly themes developed from within the post-processualist paradigm. Some studies continued to criticize the use of generalized models in mortuary archaeology (Pearson, 1993). Others widened the analytical scope of practice-oriented approaches to consider specific dimensions of mortuary behavior including space and place (Ashmore and Geller, 2005; Silverman and Small, 2002), social memory (Chesson, 2001; Nielsen, 2008), and identity (Hu, 2013; Stovel, 2013). The role that the dead play in the world of the living and forms of interaction between the living and the dead such as ancestor veneration and mortuary ritual have also been examined[17].

Overall, the processual and post-processual debate created new, productive research directions for mortuary theory because it engendered efforts to evaluate further and challenge core tenets of both paradigms and broadened the range of research topics and questions in mortuary archaeology.

There are several points associated with this debate that this dissertation takes heed to. First, the processual and post-processual theoretical frameworks are perhaps best understood as alternative viewpoints—not mutually exclusive perspectives—concerning the relationship

[17] I draw Andean examples from ethnography and mortuary studies to explore the distinction between mortuary ritual and ancestor veneration in chapter 7.

between mortuary practice and society. The variation in mortuary practices across time and space and the multiple factors that govern and shape these practices warrant consideration of multiple theoretical frameworks for interpretation (Charles, 2005, pp. 15–16; Papadopoulos, 2005, p. 353). Second, mortuary practice is a complex, and frequently multi-staged, process interweaving several cultural dimensions (e.g., architecture, grave goods, treatment of the dead, etc.), each of which is frequently related to aspects of biological identity (e.g., age and sex). Given this, a biocultural approach that integrates multiple types of biological and mortuary archaeological data is important for evaluating associations between the "performed" activities of mortuary practice and "lived" biological identities (Quinn and Beck, 2016, p. 19), and for developing a more complete understanding of this multifaceted human behavior.

Lastly, variation in mortuary practices may also relate to conditions and developments, at both local and regional scales, in belief systems and economic and sociopolitical structures. Mortuary practices and these variables are mutually constitutive and not independent of prevailing cultural and historical circumstances; they are both subject to diachronic change and continuity and can evolve and persist in conjunction with each other. Several scholars highlight the importance of time in explaining mortuary behavior (Cadwallader et al., 2015; Chapman, 2005; Jiménez et al., 2017; Quinn, 2015; Scarre, 2010), and Cannon (1989) goes so far as to argue that mortuary variability can only be explained in the context of diachronic development because the significance and meaning of mortuary practice derive "through contrast with contemporary and past expressions." Keswani (2004, p. 20) adds that defining the major dimensions of change taking place in mortuary practice over long diachronic sequences facilitates understanding and interpretation of the significance of mortuary variation. This point reinforces the need to investigate the multiple dimensions of mortuary practice. Therefore, it is

important to 1) place dimensions of mortuary practice in their historical contexts and consider how prevailing circumstances may have impacted this human behavior and 2) uncover diachronic and synchronic patterns that may, in turn, help explain any observed variations in these dimensions.

This study considers these points to approach an Andean case study that explores the development of mortuary practice in the context of imperial conquest. This study draws from theoretical perspectives that foreground the political nature of mortuary practice and the transformative nature of conquest as a driver of profound sociopolitical change.

Mortuary Politics and Imperial Conquest

I draw from the theoretical model of "mortuary politics" (Brown, 2008; Verdery, 1999) to conceptualize the political nature of mortuary practices. Mortuary politics refer to a broad field of social action that involves the strategic use of the dead and activities surrounding death to achieve political goals (Brown, 2008; Buikstra and Nystrom, 2015; Velasco, 2016, p. 64; Verdery, 1999). Here, dead bodies are biologically dead, yet politically viable tools and symbols that the living can use to make claims of identity, legitimacy, and power (Shimada and Fitzsimmons, 2015, p. 31; Sofaer, 2006; Weiss-Krejci, 2011, p. 18). Mortuary practices encompassing interactions with the dead, tomb construction, and grave good deposition can provide insights into the social status of the deceased (Binford, 1971; Saxe, 1970; Tainter, 1978). I view these activities, however, as deliberate, religiously charged processes (Bradley, 1998; Chesson, 2001; O'Shea, 1996; Pearson, 1982) geared towards configuring social structure and political relationships among the living and the dead (Brown, 2008; Fitzsimmons and Shimada, 2011; Shimada and Fitzsimmons, 2015; Verdery, 1999). They play critical roles in the political

negotiations among and between several types of groups, such as kin-based lineages (Dillehay, 1995b), resource-holding groups (Chapman, 1995), social classes (Bennett 1994; Morris 1991), and residential collectivities (Joyce 1999). Mortuary practices envelop efforts to mark affiliation and difference with a religious "aura of sanctity" (Verdery, 1999, p. 32). They link public and private spheres by aligning "individual experiences of loss and memory with the interests of the community or state" (Brown, 2008, p. 6). Mortuary practices integrate religion and politics and can intervene in the development of state sovereignty and community autonomy (Velasco, 2016, p. 56).

In the ancient Americas, archaeological studies demonstrate that mortuary practices established political legitimacy at various points in time and under varying circumstances. Blomster (2011) tracks developments in the treatment of the dead in Oaxaca from the Formative to Postclassic periods (1500 BC – AD 1521). He finds that Formative villagers buried their dead in extended, supine positions under or close to houses to express social identities and materialize lineal ties to the land. There is little to no evidence for direct interaction and manipulation of the bones of the deceased during this time (Blomster, 2011, p. 116). In Late Classic and Postclassic Oaxaca, however, dead bodies and body parts of rulers and elites are curated and displayed as symbols of authority. Skulls and femora received much attention in mortuary practice because they likely "abstracted and summarized" certain bodies (Blomster, 2011, p. 138). Skulls and femora were modified for display: femora were cut and painted red and skulls were decorated with stones and minerals and painted red. Mummy[18] bundles also emerged in the Postclassic

[18] A mummy is defined here as a preserved corpse with evidence of soft tissue (Guillén, 2005, p. 146).

period as material evidence for the royal line and an anchor for social order. Blomster's (2011) examination demonstrates that through time, there were growing emphases on manipulating human remains for display in rituals and invoking the dead as a source of power and legitimacy.

The political use of the dead is also apparent in ancient Mayan society. Weiss-Krejci (2011) investigates the use of dead bodies in Late Classic Maya politics. She finds that cases of corpse manipulation (e.g., desecration, exhumation) documented in the archaeological and written records date from AD 600 – 700, which represents a time of frequent wars and intensified dynastic struggle in the Central Lowlands and the western and southern regions of the Maya world (Weiss-Krejci, 2011, p. 22). Weiss-Krejci (2011, p. 43) states that elites "introduced new rituals, modified older forms, and extensively used dead bodies to legitimize their right to rule and overcome dynastic crisis." She argues that, in the Maya case, the dead can become loci of sociopolitical action, especially during times of political transition and conflict. Both Blomster and Weiss-Krejci illustrate the political nature of mortuary practice and the importance of situating these practices in their broader sociopolitical contexts.

In the Andes, written records demonstrate the key roles that mortuary practices and the dead played in the political affairs of the Inca Empire. In regard to Inca royal mummies, written sources state that they continued to live sociopolitical lives past biological death (Betanzos [1551] 1996; Guamán Poma de Ayala [1615] 1980). They were wrapped in textiles, fed, cared for, and feted by special attendants (Guamán Poma de Ayala [1615] 1980). They were consulted as advisers through oracles, employed as ambassadors during Inca imperial expansion, and periodically brought out to be paraded around in ceremonies that took place in the main square of Cusco (Bauer 2004; Betanzos [1551] 1996; Conrad 1992, pp.101–102; Gose 1996). Thus, Inca royal mummies were vital to the constitution of political order because they enabled Inca rulers

to claim legitimacy and power. Mortuary practices also served as important loci for political action in relation to periods of dramatic sociopolitical change. The pervasive construction and use of above-ground and subterranean tombs known as *chullpas* in the Andes during the LIP illustrate this point for a period following state collapse.

The LIP followed the collapse of the Tiwanaku and Wari states and conditioned the rise of the Inca Empire. Although it has been characterized as a period of sociopolitical decentralization, intensified warfare and competition, and population growth (Arkush, 2008; Arkush and Tung, 2013; Covey, 2008a; Kurin, 2016), the LIP was also a period of cultural transformation and innovation in which groups expanded economic networks and reconstituted political, social, and religious orders in the absence of a state framework (Conlee, 2003; Janusek, 2004; Parsons et al., 1997). LIP communities are described as resource-holding groups that traced their affiliation by reference to focal, mummified ancestors, typically housed in multiple-interment *chullpas* located in highly visible, fixed locations (Bongers et al., 2012; Dillehay, 1995a; Isbell, 1997; Mantha, 2009; Salomon, 1995). Members of these communities negotiated their affiliations and political relationships by feting deceased ancestors (Dillehay, 1995a; Isbell, 1997; Nielsen, 2008).

C*hullpas* were not only used during the LIP. Andean groups likely first used them in the central highlands during the Middle Horizon (AD 600 – 1000) (Lau, 2002). During the same period and within the central Nazca Valley, south of the Chincha Valley, local groups constructed and used above-ground graves resembling *chullpas* (Buzon et al., 2012; Conlee, 2011) *Chullpa* use also continued into the Late Horizon as the Inca expanded their empire (Nielsen, 2016; Tantaleán, 2006). Nevertheless, the widespread adoption of *chullpas* before AD 1532 likely signals a shift towards accessible, collective graves and kin-based social

configurations and mortuary rituals after the collapse of the Tiwanaku and Wari states. Some scholars argue that *chullpa* mortuary practices consolidated claims to resources and marked group differences while promoting group autonomy (Hyslop, 1977; Isbell, 1997), while others stress their role in facilitating inter-zonal exchange relationships and inter-elite alliances (Parsons et al., 1997; Stanish, 2012). What is clear, however, is that *chullpas* and their associated mortuary practices provided a basis for the sociopolitical relationships that underpinned the constitution of society in a post-collapse period defined by conflict, decentralization, and innovation.

The political nature of mortuary practices is also evident in another typically calamitous and culturally disruptive process: conquest. I build upon a theoretical framework that models power strategies of expansionist states as a continuum ranging from direct to indirect forms of control (D'Altroy, 1992). Direct control involves significant reorganization of conquered polities that permits the establishment of centralized governments and highly extractive economic systems headed by imperial administrators, but it also involves costly investments in infrastructure, personnel, and resettlement (Alconini, 2008; D'Altroy, 1992; Malpass and Alconini Mujica, 2010, p. 281; Wernke, 2013, p. 8). Indirect control involves minimal political and economic reorganization of conquered polities and lower levels of infrastructural investment, but at the cost of considerable autonomy provided to local elites (Alconini, 2008; D'Altroy, 1992; Malpass and Alconini Mujica, 2010, p. 281; Wernke, 2013, p. 8). The Inca flexibly used both strategies to exert control over subject populations in response to several factors such as preexisting levels of local sociopolitical complexity and the degree of resistance expressed by local groups (D'Altroy, 1992; Malpass and Alconini Mujica, 2010; Menzel, 1959; Stanish,

2001). They exercised indirect strategies of delegating administration to local elites in order to expand the empire over large stretches of land (Malpass and Alconini Mujica, 2010, p. 4).

While this theoretical framework contributes a dynamic conception of politics that can account for variations in strategies of conquest and colonization along spatial and temporal scales, it is strongly premised on a "top-down" model of how expansionist states manage their relations with local populations. Perspectives on how local groups engaged expansionist states are also necessary to improve understandings of conquest and its transformative effects on both parties.

For instance, from a local perspective, conquest presents both challenges and opportunities for local leaders. These engagements represent threats to local autonomy, which may elicit responses ranging from open resistance to calculated alliances (Malpass and Alconini Mujica, 2010, p. 284). On the Peruvian south coast, written sources suggest that the Huarco Kingdom of the Cañete Valley and the Chincha Kingdom responded differently to Inca arrival. Huarco violently resisted Inca conquest (Marcus, 2008, p. 2) whereas the Chincha Kingdom negotiated a "peaceful alliance" (i.e., lacking armed conflict) with the Inca (Menzel and Rowe, 1966; Sandweiss and Reid, 2015). The arrival of an expansionist state may also provide opportunities for local elites to advance political agendas. Local elites may reorganize preexisting forms of social interaction and local economic structures to ensure increased access to surplus goods while implementing strategies that legitimized these new developments (Malpass and Alconini Mujica, 2010, p. 284). Such strategies may include the intensification of celebrations and feasts and the insertion of new religious ideologies (Malpass and Alconini Mujica, 2010, p. 284).

I use the concept of "improvisational order," developed by Wernke (2013), in addition to

"top-down" and local perspectives for understanding the sociopolitical transformations that can result from interactions between expansionist states and complex polities. At its core, conquest can bring together an expansionist state's efforts to implant and legitimize power relationships with the economic, social, political, and religious structures of local populations. Local groups engaged expansionist states in accordance with "their own cultural postulates and practices," transforming people, relationships, and places, and creating new, contested sociopolitical arrangements (Wernke, 2007a, p. 130, 2013). These emergent, continuously developing configurations of society, shaped by cultural interactions, are described as "improvisational orders" by Wernke (2013). This model moves beyond "top-down" frameworks of imperial rule toward a view that conceptualizes sociopolitical transformations resulting from conquest as arising through the recursive relationships between expansionist states and local groups. These emergent orders do not entirely result from "imperial impositions" or "local responses," but rather from the ongoing, two-way interactions taking place between both parties concerning land, cultural practice, identity, and sociopolitical relationships.

Interactions between expansionist states and local groups that constitute "improvisational orders" operated through, and variously impacted, key interfaces. These include community organization, landscape, and, as I argue below, religion and its associated ritual activities such as mortuary practice. This study explores the extent to which local groups continued, changed, and abandoned preexisting mortuary practices as these processes unfolded. Andean case studies illustrating the dynamic relationship between conquest and local religion are presented below.

Several scholars employ a top-down perspective[19] to understand how expansionist states deal with local religions (Jennings, 2003a, 2003b; Ogburn, 2010; Schreiber, 2004). From this perspective, imperial strategies for treating local religious practices can range from the extremes of non-interference to outright elimination (Ogburn, 2010; Schreiber, 2004). In general, the Inca followed a strategy that facilitated the continuity of local religious practices while sometimes opportunistically co-opting and manipulating such practices to exert control (Jennings, 2003a, 2003b; Ogburn, 2010, p. 168). Inca religious reform was based on the development and spread of a state religion that reorganized local cosmologies, incorporating local gods and practices into a broader pantheon where Inca gods (e.g., Inti) stood at the top (Cobo, 1990 [1653], pp. 22–36; Jennings, 2003, p. 107; Kendall, 1973, p. 181). Written documents, while insightful, frequently reflect the perspectives of Inca elites; there are few sources that provide nuanced information on the impacts of state religion on local religious traditions. Some written sources, however, reveal that the Inca strived to learn about local religions and even encouraged their maintenance. For instance, Cristóbal de Albornoz (1967 [1582], p. 17), quoted by Ogburn (2010, p. 168), writes about how the Inca sought to learn about local *huacas*, how offerings and sacrifices were made to them, what property they owned, and how they were serviced by locals. The Inca subsequently ordered these practices to be maintained (Ogburn, 2010, p. 168). Furthermore, the Inca allegedly made efforts to respect the local religious practices of political allies (Guamán Poma de Ayala, 1980 [1615]). They are also known to have made use of local cemeteries to mark their presence in strategic zones (Ramos, 2010, p. 16). Reuse of and intrusion into graves by invading forces is

[19] In this investigation, I question the use of the top-down perspective to explain developments in local mortuary practice that coincide with the arrival of an expansionist state. Distinguishing between imperially influenced and locally derived changes in religious practices is a challenging task. It is important, however, to consider the role of local groups in restructuring their cultural practices in times of sociopolitical change.

a well-documented phenomenon with a long history in the coast and highlands (DeLeonardis and Lau, 2004, pp. 96, 114). Provincial areas generally did not resist imperially mandated religious reorganization because 1) the Inca worked local traditions into imperial cosmologies in such a way as to not require "radical" reform and 2) Inca religion drew upon preexisting belief systems held throughout much of the Andes (Conrad, 1992; Jennings, 2003b, p. 111; Patterson, 1986, p. 82; Rowe, 1982, p. 94).

This is not to say that the Inca approaches to local religions did not lead to any changes. The prospect of changing local religious traditions is risky on behalf of imperial parties because the community may deem the changes unacceptable (Bell, 1997, p. 145; Geertz, 1973, p. 164). If changes in religious practices were to occur, Jennings (2003a, p. 455) argues that they tend to "follow in the footsteps of conquerors," because the Inca transformed the central Andean ritual world[20]. Indeed, archaeological evidence in the Andes demonstrates changes in local ritual practices that occurred during the Late Horizon that may be imperially influenced. Jennings (2003a, 2003b) investigates the impacts of Inca imperialism on local religion in the Cotahuasi Valley of southern Peru. He finds that a long-standing and widely held ritual tradition involving offerings of painted tablets was abandoned[21] in the Inca period in favor of traditional Inca offerings (e.g., coca leaves, *chicha* or corn beer, and camelids). Jennings argues that the Inca terminated the painted tablet tradition because it was incompatible with the Inca system of offerings and thus posed a threat to Inca legitimacy in the area. He further suggests that this change exists alongside a continuity in underlying structure that in turn, rendered this

[20] This argument may be true in some cases, but as I have already established, interactions between expansionist states and local populations are rarely one-way or top-down.
[21] Jennings (2003b, 2003a) notes that the painted tablet tradition was abandoned *throughout* southern Peru, which suggests this development was systematic and not tied to local conditions.

development intelligible within local cosmology. Although the painted tablet tradition ended, likely in service of legitimizing a new Inca religious and sociopolitical order, other types of offerings took its place that served a similar function. The Inca do not stamp out the *act* of offering and its significance as a means of ensuring cooperation with supernatural beings; they modified the kinds of offerings to render the act effective within their newly configured religious program.

I turn now to mortuary practice. The contestation of local mortuary practices in Andean contexts dating to the Late Horizon and Colonial Period demonstrate their political significance as an interface between expansionist states and local groups. Buikstra and Nystrom (2015) suggest that, during the Late Horizon, the Inca appropriated a local mortuary site (Laguna de Los Cóndores) affiliated with the Chachapoya culture (AD 800 – 1470) in northeastern Peru and shifted local mortuary practices from disarticulated, secondary burials to artificial mummification. They argue that the Inca instigated this change in local mortuary practice to subordinate the Chachapoya dead and modify local descent ideologies to legitimize their new political order. This argument is in line with Silverblatt's (1988) description of how the Inca "captured" and reworked local histories and ideologies of descent to lay claim to being the kin and ancestors of their subjects. Among the mortuary contexts of Armatambo, an archaeological site near Lima, Díaz Arriola (2004) argues that although local mortuary practices were retained during the Late Horizon, they were progressively influenced by Inca cultural patterns (Ramos, 2010, p. 16). Tantaleán (2006, p. 140) documents a similar process of "enrichment and retention" for mortuary practices at the site of Cutimbo in the Lake Titicaca basin. He finds that on the one hand, a diversity of mortuary practices (e.g., *chullpas* and cists) were maintained from the LIP to the Late Horizon, but on the other hand, that some monumental *chullpas* were built in the Inca

style (2006). Based on these patterns, he (2006) argues that local Lupaca lords retained social asymmetries and ordered the construction of Inca-style *chullpas* to materialize their affiliation with the Inca Empire. In doing so, these lords reproduced preexisting sociopolitical conditions as a new political regime was being established.

There are also cases in which local mortuary practices appear to have been violently contested by the Inca. For example, Nielsen (2008, pp. 227–228) describes instances of Inca "campaigns of forgetting" throughout the southern Andes whereby the Inca selectively destroyed local mortuary sites to establish new foundations of political autonomy and territorial rights. In Quebrada de Humahuaca (Argentina), the Inca allegedly destroyed the above-ground graves of Los Amarillos and burned their bodies and offerings. In the Upper Loa region of northern Chile, the Inca also apparently dismantled *chullpas* and built a plaza on top of them (Nielsen 2008: 227). These cases demonstrate that the Inca destroyed local mortuary sites, at least in the southern Andes. Despite their expansionist aims, however, the Inca did not commonly destroy local architectural sites (Stella Nair, oral communication).

Continuities in LIP mortuary practice during the Late Horizon have also been documented. Jennings (2003a, p. 449) identifies two grave types with collective depositions of human remains in Cotahuasi: boulder tombs and above-ground sepulchers. Boulder tombs were constructed in spaces underneath naturally disposed boulders and sealed with a wall of fieldstones set in mud mortar, and above-ground sepulchers were single-chambered graves that were at times multi-storied (Jennings, 2003a, pp. 440–441). Jennings (2003a, p. 449) argues that LIP mortuary traditions did not change between the LIP and the Late Horizon because people were deposited in the "same places, in the same form, and, occasionally, in the same structures."

Even though data indicate that only four out of 14 cemeteries with above-ground sepulchers were used during the LIP, suggesting a possible shift away from, or abandonment of, this grave type, minimal, if any, evidence was found for the destruction of LIP graves or the introduction of new forms of mortuary practices (Jennings, 2003a, p. 449).

This stands in marked contrast to the Spanish treatment of local Andean mortuary practices. During the Colonial Period, the Spanish systematically destroyed Andean mummified ancestors and eradicated local mortuary practices that they considered to be heretical. In the face of policies of extirpation, local groups exhumed the remains of their ancestors from church cemeteries and returned them to their original graves. Both parties contested local mortuary practices for political reasons: local groups sought to maintain them as a way of preserving the foundation for their sociopolitical order while the Spanish perceived these practices as threats to their legitimacy and power and thereby strove to eradicate them.

It is during processes of profound cultural transformation, as "changes in social relations, political ideas, behavior, worldviews, and religious ideas take place," that mortuary practices and dead bodies become "especially important" (Verdery, 1999; Weiss-Krejci, 2011, p. 18). For this reason, it is critical to elucidate the relationship between local mortuary practice and the broader sociopolitical contexts in which they occur (Keswani, 2004; Verdery, 1999). This investigation treats mortuary practice as a ritual process and focuses on the changes and continuities of three primary dimensions of mortuary practice in the context of imperial conquest: mortuary architecture, treatment of the dead, and demographic profiles. In the following sections, I refer to anthropological works that frame mortuary practice as a ritual process and consider theoretical perspectives related to each of these dimensions.

Mortuary Practice as Ritual Process: The Works of Van Gennep, Turner, and Hertz

Although ritual is a complex concept that evades simple definition (Bell, 2007), it has been an important topic of study in anthropology (Bastien, 1978; Douglas, 1982; Geertz, 1973; Rappaport, 1999; Salomon, 2018; Turner, 1969; van Gennep, 1960 [1909]) and religious studies (Bell, 1997, 1992). In archaeology, ritual is currently held to be a fundamental component of society (Bauer and Stanish, 2001; Benson and Cook, 2001; Insoll, 2004; Kyriakidis, 2007), and many consider it as a field of social action that is instrumental in the creation, maintenance, and change of sociopolitical systems (Demarrais et al., 1996; Marcus and Flannery, 2004; Moore, 2005, 1996; Stanish, 2017). Some have criticized archaeologists, however, for "disembodying" ritual: overemphasizing the identification of the ritual process in such a way that ignores its connection to religion and its significance for understanding how religion can enable sociopolitical change (Aldenderfer, 2011, p. 24). Religion is a "dynamic entity within all societies and has multiple, overlapping, and often contradictory functions and roles in the hands of agents with different and competing agendas" (Aldenderfer, 2011, p. 24). To avoid "disembodying ritual," I follow Aldenderfer (2011, 2010) by characterizing ritual (such as mortuary practice) as "religion in action" intertwined with sociopolitical dynamics[22], identifying "contrasts" in ritual practice to elucidate its nature, variation, and process, and interpret these data in the context of imperial conquest to advance understandings of how religion may have been employed to enable sociopolitical change.

The works of van Gennep (1973, 1960 [1909]), Turner (1974, 1969, 1967), and Hertz (1960 [1907]) inform my approach to mortuary practices as ritual processes that play critical

[22] This point is also influenced by Gluckman's (1962, pp. 20–24) conception of ritual as a broad field of social action that is associated with both social structure and religion.

roles in social and religious life. Van Gennep focused on rituals that mark passage through the life course and enable individuals to transition from one status to another. He suggested that these rituals can only be understood in their original social contexts and in their entirety. These points underline van Gennep's (1973, pp. 298–299) "sequential method," which examines a ritual "only in relation to what precedes and what follows it." From here, van Gennep sought to develop an analytical framework for rituals that demonstrated "a wide degree of similarity among ceremonies of birth, childhood, social puberty, betrothal, marriage, pregnancy, fatherhood, initiation into religious societies and funerals" (van Gennep, 1960 [1909], p. 3). He drew from an extensive body of ethnographic literature to identify similarities in the forms of rituals, which in turn, led him to produce a scheme that modeled the structure of rites of passage.

His model suggests that these rituals follow a tripartite sequence comprising rites of separation, transition, and incorporation. Through these three distinct stages, rituals are conducted to socially remove persons from society and an original social status (separation), place them in an ambiguous, liminal state that stands betwixt and between fixed positions (transition), and allow their reentry into society with a new status (reincorporation). While separation stages frequently feature rites that purify persons and symbolize the loss of old identities (e.g., bathing, washing) (van Gennep, 1960 [1909], p. 3), transition stages can involve persons being positioned outside (physically and/or symbolically) of society and subjected to idiosyncratic rules (i.e. cannot touch the ground, cannot contact people) (Bell, 1997, p. 36). During reincorporation stages, events celebrating the transformation of the person (i.e. feasts) (van Gennep, 1960 [1909], p. 3) and activities that mark the newly acquired status or identity (i.e. conferral of new names and/or insignia) can occur (Bell, 1997, p. 36). Certain rites may place more emphasis on one of the stages or display a stage that is more elaborate than the

others. For instance, marriages tend to focus more on rites of reincorporation that bring an individual into a new family group and mortuary practices tend to emphasize rites of transition—frequently marked by treatments of the dead—because they entail transforming the dead for eventual entry into the world of the dead (Hockey, 2002, p. 212; van Gennep, 1960 [1909], p. 146). Rites of passage may also involve movement from one place to another through doors, gates, and other thresholds to signal changes in social status or identity.

Van Gennep argues that these rituals reinforce the stability of society during times of significant social change. He notes that rites ensure that significant transitions in life courses were "regulated and guarded so that society as a whole will suffer no discomfort or injury" (van Gennep, 1960 [1909], p. 3). In other words, van Gennep is stating that they serve to order significant changes in social status or identity, which tend to coincide with biological changes, that may threaten the foundations of society. Van Gennep, however, suggests that rites do not merely legitimize biological developments, they retain their own order, logic, and purpose that can be used to exert some measure of control over human biology. They can also potentially distinguish status groups with clearly marked boundaries, which can then foster stability of social identities and roles (Bell, 1997, p. 37). Rites are thus a way to reframe changing circumstances, roles, identities in such a way that maintains the constitution of society (Bell, 1997, p. 37).

Turner builds upon van Gennep's analytical framework and concept of liminality to improve understandings of social life. He is broadly interested in the internal social dynamics of change and the fluidity of social relationships (Hockey, 2002, p. 215). Turner considers social life to be a dialectical process encompassing dynamics between several opposites (e.g., homogeneity and differentiation, equality and inequality) that mutually constitute each other

(Turner, 1969, p. 97). For Turner, social structures are not merely closed, timeless systems that deploy rituals to resolve conflict and maintain harmonious equilibrium. They are dynamic, ongoing processes in which groups continually transform and redefine themselves in relation to tensions between these oppositional forces. He argues that rites of passage "indicate and constitute" transitions into new social statuses (Turner, 1969, p. 93), suggesting that they serve a creative function: producing and transforming social structures (Hockey, 2002, p. 215). An important part of this belief is the notion of the "social drama," a type of performance through which conflicts are resolved. Social dramas involve four distinct stages: a breach in norms and customs, an escalating sense of crisis and tension, subsequent procedures of adjustment, and finally activities that indicate the resolution of the crisis and recognition of a new status (Turner, 1974, pp. 38–41). Turner considered rituals to be a form of social drama through which individuals and groups performed orchestrated sequences of distinct activities to materialize and work through social conflicts. Through rituals, people express shared values that tie groups together and experience several important aspects of social life: 1) the dynamism and authority of the social order, 2) the liminality and intense connections of community, and 3) passage from one status in the original social order to another in a new, reconstituted order (Bell, 1997, p. 40).

Turner explored the concept of liminality and the strong social bonds that it can forge. Considering society as a "structure of positions," Turner states that "we must regard the period of margin or 'liminality' as an interstructural situation" (1967, p. 93). In the context of rites of passage, liminal periods are "neither here nor there; they are betwixt and between the positions assigned and arrayed by law, custom, convention, and ceremonial" (Turner, 1969, p. 95). During periods of liminality, participants stand beyond the structure of society and experience strong social bonds and community, which he termed *communitas*, among themselves. The nature of

social relationships becomes "unstructured or rudimentarily structured and relatively undifferentiated communitas, community, or even communion of equal individuals" (Turner, 1969, p. 96). Turner reframed van Gennep's tripartite framework for rites of passage into a dialectic between two major foci of social relationships: social order (structure) and *communitas* (antistructure). Rituals reinforce social orders by facilitating an unstructured reconfiguration of that order. That is, through such an "inversion," the original social order can be legitimated in its basic structure and modified by transitioning persons from one status to another (Bell, 1997, p. 40).

One of the most critical transitions in the life course is death, and Hertz explores this topic through the lens of secondary mortuary practice in *Death and the Right Hand* (1960 [1907]). Here, secondary mortuary practice refers to the process of "secondary deposition," which is generally defined as the "subsequent placement of human remains, following movement from their primary location," according to Knüsel and Robb (2016, p. 658). Based on ethnographic observations among the indigenous groups of Melanesia, Hertz constructed a generalized model for explaining the cross-cultural practice of secondary mortuary practice[23]. This model 1) broadly encompasses the corpse, soul, and the community of mourners and 2) recasts and embellishes van Gennep's analytical model for rites of passage into a framework in which the corpse's rite of passage mirrors that of the soul and the community (Rakita and Buikstra, 2005, pp. 97–98).

At death, the body is composed of flesh, the soul resides in the world of the living, and relatives of the dead exist within a social order (Rakita and Buikstra, 2005, p. 98). The deceased

[23] Secondary mortuary practices have been documented in several areas around the world, including but not limited to Peru (Millaire, 2004), Mexico (Rhodes et al., 2016), Madagascar (Bloch, 1971), and Israel (Osborne, 2011).

is temporarily deposited in a place (e.g., charnel house, coffin, etc.) situated away from the community's settlement that differs from the final burial location (Hertz, 1960 [1907], p. 30). Doing so commences an intermediate period in which the corpse decomposes, and both the soul and the community enter liminal contexts. The soul exists neither in the world of the living nor the world of the dead, and relatives of the deceased—who experience bereavement and must fulfill obligations to the deceased—are "changed, and set apart from the rest of humanity; therefore they can no longer live the way others do" (Hertz, 1960 [1907], p. 38). These relatives are subjected to several proscriptions which may ban them from the rest of the community, limit their ability to leave the settlement and receive visitors, and forbid them from following social norms in diet and dress (Hertz, 1960 [1907], p. 38). *Communitas* may be experienced during this stage among the beleaguered relatives. Once the corpse has completed the decomposition process, the relatives retrieve the remains, transport them to their home for washing and wrapping, and finally deliver the remains to the collective grave[24] (Hertz, 1960 [1907], p. 55). A final burial ceremony takes place that frequently prompts relatives to offer sacrifices, after which the proscriptions formally end (Hertz, 1960 [1907], pp. 63–64). The corpse becomes a member of the realm of the ancestors, the soul enters the world of the dead, and the relatives assume new social statuses and enter a reconfigured social order.

Hertz's work also identified several patterns in the belief systems surrounding the soul and the afterlife that accompanied secondary mortuary practice. The state of the corpse is oftentimes believed to serve as a "model" for the soul (Huntington and Metcalf, 1979, p. 14). Among several groups in Borneo, for example, the soul is thought to be aimless and

[24] A collective grave is defined as a grave with multiple biological individuals.

uncomfortable as the corpse decomposes, operating along the margins of the world of the living and the world of the dead and fully capable of causing trouble and infecting the community with illness (Huntington and Metcalf, 1979). When the corpse is finally reduced to dry bones, the soul is deemed worthy enough to gain access to a "community of ancestors" situated in a collective grave: "The reduction of the corpse to bones, which are more or less unchangeable and upon which death will have no further hold, seems to be the condition and sign of final deliverance. Now that the body is similar to those of its ancestors, there seems to be no longer any obstacle to the soul's entering their community" (Hertz, 1960 [1907], p. 83).

Carr (1995, pp. 175–178) argues that Hertz's ideas offer a middle-range, heuristic framework for learning about beliefs from secondary mortuary practice. One of the most important implications of Hertz's model is that belief systems are capable of directly determining mortuary practice independently from social organization. If the society under investigation conducted secondary mortuary practices, then it follows that the society *may* have held a belief system that linked the corpse to the soul and envisioned secondary mortuary practice as a means of impacting the fate of the soul, or perhaps ensuring its safe passage into an afterworld of some sort (Huntington and Metcalf, 1979, pp. 53–57). From an archaeological perspective, manipulation of the dead is directly observable and insightful in several ways according to Carr (1995, p. 177): "The manner in which the body is handled in various mortuary practices may directly reflect a society's beliefs about the nature of the soul, the afterlife, the soul's journey to the afterlife, and other aspects of worldview." Reconstructing belief systems from data on corpse manipulation is not the goal of this dissertation; rather, the goal is, in part, to evaluate whether and how treatments of the dead transformed as sociopolitical circumstances changed, and to survey plausible explanations for the nature of these treatments.

The notion that death is an extended process featuring multiple transitions in which the physical state of the corpse reflects the condition of the soul is apparent in the pre-AD 1532 and colonial-era Andes and thus apt for this study. Salomon (1995, pp. 328–334) references colonial sources and Quechua terminology to discuss Andean mortuary practices and conceptions of dying and the dead. He specifically draws from the Huarochirí manuscript[25] (circa 1608), the only available colonial text that presents a local Andean belief system in Quechua (Salomon, 1998, p. 7; Salomon et al., 1991). It describes religious practices of local groups in the Huarochirí province of Peru that were conducted before and after AD 1532. Based on this text, Salomon (1995, pp. 328–336) discusses Andean conceptions of the "death continuum." In general, humans were thought to possess fleshy, soft parts, a durable, hard skeleton, and a spirit (*anyma*) that departed both from flesh and bone to either places of origin (*pacarinas*) or an afterworld (*Uma Pacha*) (Salomon, 1998, p. 11). Strong associations between *pacarinas,* sacred geographical features, and tombs existed in the Andes (Lau, 2016, p. 182, 2015, pp. 220–221; Urton, 1999).

The death continuum distinguishes between three different corporeal states of the dead, each displaying a distinct materiality: *huañuc*, *aya*, and *mallqui*. *Huañuc*, which refers to those who are approaching death or dying, transform after death from vital, fresh, and immutable beings into fleshy, recently expired corpses. At this stage, a mourning period of five days takes place in which coca, maize beer, and toasted maize are shared amongst community members (Salomon, 1995, p. 329). According to Chapter 28 of the Huarochirí manuscript (Salomon et al., 1991, pp. 130–131), a woman is tasked with having to take the dead, different food items, and

[25] It is important to keep in mind that the Huarochirí Manuscript concerns one region of the Andes and provides critical insights into a non-Inca perspective on death before and after AD 1532.

maize beer to a special place called *Yaru Tini*, where she would wait for the spirit of the dead to emerge. The passage describes the woman witnessing insects eat the deceased's soft tissues, which may have signaled the separation and release of the spirit from the fleshy body to commence its journey to its place of origin (Salomon, 1995, p. 330; Salomon et al., 1991, p. 131). In the year following death, dead persons and their spirits were thought to have to overcome several hardships on the way to their place of origin, and they would curse the living if they were not helped along their path (Salomon, 1995, p. 331). Women are described in the Huarochirí manuscript as spearheading efforts to remove and dispose of putrescent matter, perhaps as a means of aiding the spirit along its journey to the afterworld or its origin place (Salomon, 1995, p. 331) Over time, through naturally or artificially induced decomposition, these corpses revealed their hard bones, which marked their passage into the "ever more firm and resistant but also dryer and more rigid" status of *aya* (Salomon, 1998, p. 11). Once these fully decomposed corpses were "enshrined" by members of the community through rituals, textile wrapping, and placement in collective graves known as *machays* (anthropogenically hewn cave graves) (Kurin, 2016, p. 13) and *chullpas*, they become ancestor mummies (*mallquis*).

Hertz's model, however, does not capture the complexity of Inca mummification practices according to Rakita and Buikstra (2005). The Inca are known for carefully curating their royal dead and treating them as if they were still alive. Hertz's model would lead scholars to believe that these royal Inca mummies were left to rest permanently in these graves (Rakita and Buikstra, 2005, p. 105). Hertz's model, however, is not supported by written sources because royal Inca mummies were periodically brought out for public display in Cusco (Bauer 2004; Betanzos [1551] 1996; Conrad 1992, pp.101–102; Gose 1996). For the Inca, therefore, the completion of the mummification process is not marked by the final removal of the corpse from

the world of the living and into the grave. Rakita and Buikstra argue that Inca mummification provided a way to sustain the position of the soul in the liminal phase. Indeed, the corpse reflects the soul, as Hertz asserts, but the corpse exists in the world of the living in a form that contrasts with the one it embodied during life. Thus, the corpse represents the "extended liminality" of the deceased's soul (Rakita and Buikstra, 2005, p. 106). The power and danger of the Inca royal dead rested on their ability to 1) anchor social structures and bolster the Inca state, 2) exert influence over the world of the living as a force that was not *of* that world, and 3) maintain a continued sense of *communitas* with both living societies and the community of the dead (Rakita and Buikstra, 2005, pp. 105–106). After making some important tweaks, Rakita and Buikstra demonstrate the utility of Hertz's model for developing understandings of Inca mortuary practices and their associated belief systems. Overall, written documents suggest that for both Inca and provincial societies, there were connections between treatments and beliefs of the dead.

Hertz was one of the first scholars to develop a model for understanding the structure of secondary mortuary practices and their relationships to belief systems and society. Secondary mortuary practices frequently encompasses two distinct stages between which a length of time elapses, and where the body is subjected to manipulation and movement: in the first stage, the flesh of the dead body is removed and disposed of through excarnation, temporary burial, cannibalism, and/or exposure before the second stage, in which the body is finally deposited in a collective grave (Chénier, 2009, p. 23). More broadly, Hertz's work focused on postmortem treatment of the dead as an important dimension of mortuary practice. This topic is further discussed below.

Treatment of the Dead: Perspectives on Postmortem Manipulation of Dead Bodies and Body Parts

Societies, both ancient and modern, handle their dead in diverse ways. Dead bodies may be burned or buried in a variety of positions, preserved through embalming and smoking, eaten in raw, cooked, or rotten forms, exposed in open-air spaces as carrion, or dismembered and reassembled to create new entities (Huntington and Metcalf, 1979, p. 24). These activities may serve to venerate, violate, obscure, and memorialize the dead. Postmortem body manipulation developed early in human prehistory: some of the earliest evidence of this practice is the use of ochre on bodies in Middle Paleolithic deposits in Israel and France (Hovers et al., 2003; Riel-Salvatore and Clark, 2001). Building upon the works of van Gennep, Turner, and Hertz, I consider postmortem manipulation of the dead as an important ritual activity and a critical step within the larger mortuary process. The variability of postmortem treatment of the dead highlights a significant degree of physicality that raises several questions. Beyond illustrating a connection between body and soul, what do these practices suggest about how past societies conceived of dead bodies and their relationship to these bodies? How were modified dead bodies and body parts employed in religious and social life, and what kinds of information did they convey? What is the relationship between treatments of the dead and sociopolitical change?

In this section, I explore theoretical frameworks and written sources revolving around the body, personhood, and ancestor veneration that are useful for addressing these questions and explaining patterns in treatment of the dead. Such frameworks can help reveal the implications that these patterns carry for understanding 1) death as an extended process occurring over a period in which the dead and the living experience transitions and transformations in ontological

status and 2) the materiality of the dead and how it can be physically manipulated (or not) to convey living-dead relationships and instantiate different types of dead people in religious and social life.

Several fundamental points can be made about dead bodies and their postmortem manipulation. The dead body has been deemed in many past societies as an influential entity and/or resource that can be manipulated as part of social action. As Sofaer (2006, p. 20) puts it, the "dead body was flagged as a highly visible social resource that was appropriated to act as a focus for the communication of intended meanings related to the social perception of the deceased by others." The various treatments of the dead documented around the world demonstrate both the myriad ways corpses were "appropriated" by groups, and the extended sociopolitical viability of the biologically dead (Geller, 2012, p. 115). For some societies conducting these activities, the corpse and its body parts may have possessed enduring qualities, statuses, memories, and histories—retained from the once-living person—that shaped how they were perceived and manipulated (Tung, 2014, p. 438). Moreover, these treatments reflect a recognition of the materiality and malleability of the corpse, an understanding that it can be modified and reshaped through physical handling and the application of materials in ritual processes perhaps as a means of repurposing it in some way.

It is worth considering anthropological perspectives on the body to gain insights into postmortem manipulations of *dead* bodies. Even though several theoretical approaches have been developed on this topic (Joyce, 2005), I focus on views that conceptualize the body as an inscribable surface, a medium of expression, and a culturally produced artifact with a capacity to serve as a symbol and influence and enable social action. Many of these ideas were developed in

relation to living bodies, but I argue that they can apply to dead bodies as well. Various social meanings can be inscribed on bodies. For Bourdieu (1977) and Butler (1993), bodies can thus track and represent sociopolitical processes. Yet the idea that they merely represent sociopolitical processes is incomplete according to Grosz (1994, p. x): "It is not simply that the body is represented in a variety of ways according to historical, social, and cultural exigencies while it remains basically the same; these factors actively produce the body as a body of a determinate type." Thus, bodies are cultural artifacts that are produced by sociopolitical forces and contingencies. As artifacts, they are not fixed, passive materials, but rather dynamic, malleable objects that can be actively used to fulfill several goals. They can serve as both a medium and a symbol for expressing beliefs, sociopolitical hierarchies, values, group membership, and identity, depending on the cultural and sociopolitical contexts they exist in (Chesson, 1999; Hertz, 1960 [1907]; Martínez et al., 2012). They can also impact their sociopolitical and cultural contexts by reinscribing and projecting themselves "onto their sociocultural environment so that this environment both produces and reflects the form and interest of the body" (Grosz, 1992, p. 242). This statement can be reframed for the purposes of this study to suggest that the living can use and manipulate dead bodies and body parts to reshape sociocultural environments in their interests.

This point also brings to focus a recent debate concerning whether dead bodies shaped sociopolitical relationships and human activity through a form of agency. Scholars have begun to consider Sofaer's (2006, p. 43) argument that people can maintain a "social presence, but lack a living body" in light of the deceased, theorizing whether dead bodies possessed "post-mortem agency" (Crandall and Martin, 2014; Tung, 2014) For example, Tung (2014) examines an Andean case study in which at least 240 individuals were dismembered and discarded in two

ritual spaces at the site of Wari and argues that these dead bodies and body parts not only represented symbols of power, but also actively enabled the "attackers" to establish their authority and undermine the status of victim communities. For Tung, interactions between the living and the dead can imbue the dead with post-mortem agency: a capacity to affect the status and actions of the living without volition. Despite Tung's investigation, whether the effects of the dead on human action constitute a form of agency remains an open question.

On another level, the manipulation of the deceased may also be interpreted as a way of materializing the deceased's position within the perceived network of relationships that compose the social and cosmological world. Theoretical frameworks centered on the concept of personhood explore relationality, or ways of relating to others, often through material distribution, exchange, and treatment of the dead. Fowler (2004, p. 7) defines personhood as a state of being that is "attained and maintained through relationships not only with human beings but with things, places, animals, and spiritual features of the cosmos." By extension, a person can then be defined as entities, human and otherwise, that occupy a place in the social and cosmological world and possess connections with things and other persons. The complex web of relationships that persons are embedded in is viewed as an important part of selfhood and identity (Brück, 2006, p. 308). Nonhuman and inanimate entities carry the potential to become and be treated as persons, either temporarily or more enduringly, and to be referents for many types of relationships (Fowler, 2016, p. 398). Furthermore, persons are neither static nor fixed; they are produced, manipulated, and transformed through social processes during life and after death. Entities can enter and exit personhood and pass from one state or stage of personhood to another (Fowler, 2004, p. 4).

Distinct constructs of personhood have been conceptualized, documented in ethnographic studies, and investigated in archaeological studies (Fowler, 2004, pp. 4–5; Jones, 2005, p. 196; Wilkinson, 2013, p. 418). Individual and "dividual" forms of personhood have received the most debate. The Western, Cartesian individual is commonly perceived as an indivisible person with a personal identity, whose boundaries are fixed and biological in nature. The biomedical body, in this sense, is an individual. The notion of a dividual person stems from ethnographic studies in Melanesia, notably Strathern's (1988) work in Highland New Guinea. Strathern describes the dividual person as relational, composite, and multi-authored, constituted from social practices, material exchanges, and multiple relationships of reciprocity and shared identity among others, particularly kin. Relational, in this context, refers to social relationships or interpersonal connections between people and through material things (Brück, 2004, p. 311; Wilkinson, 2013, p. 418). The model of dividual personhood was explicitly developed to critique and contrast with Western, Cartesian ideas of the individual, and to make the point that alternative forms of personhood operate in non-Western areas. This conception has attracted the attention of several archaeologists (Brück, 2006, 2004; Chapman, 2000; Fowler, 2004; Gosden, 2004; Thomas, 1999) (Fowler 2004, 2008, Gosden 2004, Brück 2004, Chapman 2000, and Thomas 1999).

The "single spectrum" model (Fowler, 2016, pp. 398–399) that dichotomizes between dividual and individual personhood has also, however, generated much criticism. Uncritical use of dividual personhood by archaeologists, especially in Neolithic contexts, has led some to argue that unsupported connections between Melanesian and ancient populations are being made (Jones, 2005). Distinguishing between individuals and dividuals can run the risk of underscoring a problematic dichotomy between the "modern West and the non-modern 'Rest'" (Wilkinson, 2013, p. 425). LiPuma (1998) disagrees with Strathern's work and tweaks the single spectrum

model of personhood that encompasses individuals and dividuals. He does not subscribe to views of Western individuals and Melanesians as dividuals. Instead, he broadly argues that all persons in all societies possess dividual and individual aspects and that they are always in tension with each other. Importantly, the extent to which a specific form of personhood is emphasized over the other depends on the social context. Western and Melanesian ideas of personhood may place more emphasis on individualism and dividualism respectively and under certain conditions, but persons from both regions are ontologically similar in that they both possess individual and dividual aspects.

While LiPuma's work is a theoretical step forward, some authors (Brittain and Harris, 2010, p. 587; Fowler, 2016), have described this as an oversimplified "sliding scale" model framework that treats individuality and dividuality as opposite poles. Personhood is historically situated and fundamentally relational, yet because it is enmeshed in a network of traditions, social ties, and obligations (Fowler, 2004; LiPuma, 1998; Moutafi and Voutsaki, 2016, p. 781), it is important to acknowledge that many forms of personhood—beyond individualism and dividualism—with varying material expressions likely existed. This is not to say that I believe that models of individualism or dividualism have no application in archaeology; they are both helpful constructs and distinct forms of relationality that promote analyses of systems of relationships between persons and through things (Jones, 2005, p. 196). Rather, I am suggesting, following Fowler (2016, p. 403), that it is important to appreciate, allow room for, and evaluate "the ways that personhood is distributed in time and space with respect to bodies, objects, and materials."

According to Brittania and Harris (2010, p. 587) and Fowler (2016, p. 402, 2004, p. 22) (2004: 22, 2016: 402), theoretical models of personhood are perhaps best served by thinking through 1) various foundational aspects of personhood that intersect with each other in varied ways and 2) how these may have operated in terms of social action and translated into material patterns in the region, period, and archaeological context of interest, as opposed to imposing them uncritically as pre-packaged analytical frameworks. Fowler's (2016, p. 402, 2010, 2008, 2004) work on modes of personhood and the ways they are constructed through social processes has culminated into a framework that recognizes several aspects of personhood that may exist in tension with each other. Examples include but are not limited to indivisible/divisible, independence/interdependence, and singular/plural. Tensions among these aspects are not assumed *a priori* to be related to other tensions, and certain aspects may more closely align with individual or dividual forms of personhood, depending, most importantly, on how these terms are defined. This heuristic model, in a sense, significantly broadens LiPuma's (1998) model to incorporate tensions between other facets of personhood. Fowler (2016, p. 402) states that the point is not to explore all these aspects for a given archaeological study, but to be selective and identify the most relevant terms for interpreting past modes of personhood.

What is the relationship between personhood, mortuary practice, and postmortem manipulations of the dead, and how may distinct forms of personhood have been materially expressed in mortuary contexts? As Hertz, van Gennep, and Turner have demonstrated, mortuary practices produce and materialize transformations and transitions for both the living and the dead. After someone dies, mortuary activities are conducted to construct and renew relationships among the living and the dead and to mark the newly deceased as somehow different from the living members of society (Pearson, 1999). For this reason, I suggest that *one* of the aspects of

the deceased that likely undergoes some form of change over the duration of the mortuary process is personhood and that this transformation can be expressed through the medium of the corpse.

The dead body emerges as something that has the potential to be dismembered, dispersed, and modified, a potential that clearly has been recognized and exploited across time and by many past societies in the Americas and elsewhere. The previous status of the once-living person likely influences how the associated corpse and its body parts are perceived and manipulated and how they may impact the affairs of the living (Tung, 2014, p. 438). Postmortem manipulation can produce dead persons[26], removing one status and replacing it with another, and serve many functions including but not limited to removing them from the community, thrusting them into an afterworld, or reincorporating them into society. The manipulated dead body becomes an index of relationships constituted by connections to the living, to other members of the dead, and perhaps to other cosmological forces, and may even be thought of as carrying traces of events, places, and people perceived as genealogically and spatially distant (Brück, 2006; Jones, 2005, p. 196). These functions underline how access to the deceased and their body parts was likely sociopolitically and religiously charged. The production of dead persons does not always revolve around dead bodies, but for the purposes of this study, corpse manipulation is brought to the center of attention.

Furthermore, I am most interested in partibility as a form of social action and its relationship to personhood. Drawing influence from several authors who have discussed

[26] To be clear, I am not implying that dead bodies exhibit any form of agency. On the contrary, I am suggesting that living people *can*, and do, perceive the deceased as persons according to the definition outlined here, and that these perceptions may be connected to specific forms of postmortem manipulation of the deceased.

partibility in ethnographic and archaeological contexts within and outside of the Americas (Allen, 2015; Blomster, 2011; Fitzsimmons, 2009; Fowler, 2004; Geller, 2012; Strathern, 1988; Weismantel, 2015), I define it as patterns of action that appropriate constituent parts from a human body for use in social and religious life.[27] The widespread use of certain bones as a form of media to instantiate the deceased in the world of the living to legitimize political legitimacy indicates partibility. These component body parts may have been subjected to natural disarticulation and subsequent rearrangement, intentional removal from the body, or perhaps the application of natural substances.

My focus, however, is on the formation of composite artifacts composed of multiple body parts and natural elements. Some aspects of personhood are helpful in describing this pattern of action that I characterize as a form of partibility. First, efforts made to maintain the integrity and "wholeness" of the dead body, perhaps by keeping distinct body parts of similar age categories together in composite artifacts or by mummifying the body, may align with aspects of indivisibility, singularity, and independence. Second, actions made to combine body parts from different dead bodies to create composite artifacts can align with aspects of divisibility, plurality, and interdependence. One may argue that the first example *emphasizes* the notion of individuality *after death and in relation to other members of the dead*. The second may emphasize dividuality after death and in relation to other deceased.

Several caveats, however, deserve to be discussed. Since the relationship between personhood and corpse manipulation is complex, it is important to be cautious of making direct

[27] As Brittain and Harris (2010, pp. 588–589) demonstrate, the relationship between parts and wholes is a complex issue. Strathern (2004, pp. 7–8) points out that "what is part and what is whole will depend on where the actor is, the culture he/she belongs to, and the period in history it is." Partibility, parts, and wholes, are clearly contingent in various ways. I explore Andean concepts of parts and whole in relation to the dead later in chapter 7.

interpretations based on the state of the human remains. The presence of commingled human remains derived from different biological individuals is sometimes assumed as evidence of strongly relational forms of personhood (Brück, 2004, p. 311). In agreement with Moutafi and Voutsaki (Moutafi and Voutsaki, 2016, p. 781), I do not advocate direct associations of commingled human remains with dividual personhood and primary depositions of human remains with individual notions.

Personhood cannot simply be "read" from fragmented remains of human bodies; one must consider the social processes that produce persons through the use and manipulation of human remains (Jones, 2005, p. 199). For several Andean societies including the Inca, the human body and its associated processes and structures were considered "organizing principles of the social and physical worlds" (Bray, 2018, p. 246; Classen, 1993). State rituals involving the periodic display of royal Inca mummies (Bauer 2004; Betanzos [1551] 1996; Conrad 1992, pp.101–102; Gose 1996) reveal that Inca bodies were of chief concern for the state. Since Andean groups retained, manipulated, and interacted with royal and non-royal dead, the use of Western notions such as the living-dead dichotomy and the individual to explain past Andean personhood is problematic (Dean, 2010, p. 29).

This should not, however, "banish" the use of the term *individual* for interpreting personhood (Wilkinson, 2013, p. 427). Wilkinson's (2013) analysis of Atahuallpa's personhood makes this case. He notes that everything Atahuallpa touched transformed into himself and necessitated sequestration and ritualized neutralization and that he was co-present with statues of himself (*wawqis*) that were sometimes constructed using his hair and nails. Wilkinson argues that Atahuallpa's personhood was "contagious," additive, indivisible, and bounded. His boundaries

did not coincide with the boundaries of his biological body, as is frequently assumed with Western, Cartesian individuals. In short, Atahuallpa is a specific type of individual, which Wilkinson (2013, p. 428) broadly defines as "an entity which is a single whole within which all its proper components shared an identity and where it is possible to mark clearly that which is internal to it, and that which is external to it."

Common criticisms of theoretical models of personhood assert that these perspectives offer heavily abstract, generalized frameworks that overly rely on ethnographies, overlook historical contingency, and minimally, if at all, engage empirical data and patterns of variation (Brittain and Harris, 2010; Moutafi and Voutsaki, 2016, p. 781). Contextualization remains critical for employing these models effectively. According to Fowler (2016, p. 403), the point is not to assign merely a mode of personhood to a specific practice, but to explore the extent to which distinct modes of personhood "can be identified, through what media, in what contexts and assemblages, and so on." Precisely who or what may or may not be a person and how personhood is achieved, materialized, and transformed are contextually variable (Fowler, 2004, p. 4). I draw influence from the perspective of "dynamic nominalism," which proposes that persons, categories of persons, and the social relations that frame both covary with changing circumstances (Jones, 2005, p. 200). Opportunities to develop new categories of personhood and persons arise in different contexts and as material conditions, social processes, and relationships transform through time (Fowler, 2016, p. 401). Given this framework, I can expect dead persons to be materialized in different ways following imperial conquest and as networks of relationships change. I suggest that by attending not only to the archaeological and bioarchaeological data of corpse manipulation in the mid-Chincha Valley, but also to ideas of personhood in the Andes attested in the written and ethnographic records (discussed in chapter 7), I can develop *plausible*

models of personhood that may explain the development of treatment of the dead amid imperial conquest.

Mortuary Architecture: Perspectives on the Built Environment

The built environment refers to the products of human building activity and any kind of artificial alteration of the natural environment (Lawrence and Low, 1990, p. 454; Upton, 1993, p. 14). Built forms refer to building types (e.g., house, tomb) and their various elements (e.g., doorways, windows) that are designed and constructed for activities to be enacted (e.g., sheltering a family, containing members of the dead) (Lawrence and Low, 1990, p. 454). To understand mortuary architecture, I draw from anthropological perspectives on the built environment that concern environment-behavior theory, ritual architecture, architectural communication theory, cemeteries, and the social history and production of built forms. I employ these perspectives to address 1) the dynamic relationship between the built environment and human behaviors, especially ritual practice, 2) how built environments communicate messages associated with sociopolitical structure and organization, and 3) the ways in which built environments arise from social forces and develop in relation to changes in society.

Environment-behavior theory sheds light on the recursive relationship between the built environment and human activities, which carry several important implications for archaeological research (Moore, 1996, p. 10; Rapoport, 2006, 1992, 1990, 1988, 1982; Smith, 2011, p. 173). There are three questions that guide environment-behavior studies (Rapoport, 2006, pp. 59–60), paraphrased as follows: 1) What characteristics of individuals and groups affect how built environments are shaped? 2) What effects do built environments have on individuals and groups,

under what sets of conditions and under what circumstances, and why? 3) Given this recursive relationship between people and built environments, what mechanisms connect them?

The dynamics between culture, society, and the built environment have been theorized for decades. Architecture is a subset of the built environment that refers to the built forms characteristic of a society (Lawrence and Low, 1990, p. 454) that can 1) reflect social identities, technical expertise, and cultural dispositions and 2) produce norms, values, and practices (Ashmore, 1991; Ashmore and Sabloff, 2002; Glassie, 1975; Schwarz, 2013). Social and cultural processes operate in, and through, space, place, and architecture (Ashmore and Sabloff, 2002; Bradley, 1998; Casey, 1997; Ingold, 1993; Lefebvre, 1974; Soja, 1989; Tilley, 1994). Architecture serves as a medium through which groups can relate to each other and their landscapes (Halperin and Schwartz, 2016, p. 7). The belief that individuals and structures produce each other and, in turn, broader social, political, and ideological worlds, connects with material culture, landscape, and space and place studies (Ashmore and Sabloff, 2002; Bourdieu, 1977; David and Thomas, 2008; Giddens, 1984; Hall, 1990; Halperin and Schwartz, 2016; Kent, 1993; Lefebvre, 1974; Low and Lawrence-Zúñiga, 2003; Miller, 2002; Tuan, 1977).

Before proceeding further, it is important to examine critically the notion of the built environment as socially significant and constitutive. This idea is founded upon the following premise, which is discussed and criticized by Dell Upton (1993, p. 12): the built environment is both an arena of social experiences *and* an artifact that can provide insights into the social realm. As Upton (1993, p. 12) notes, the implicit beliefs in the connections between structures and builders, between architecture and society, encourage us "to value enduring patterns of human action reified in the concept of the vernacular over the disruptions and disassociations that

characterize the human landscape as built and lived." Here, in Upton's eyes, the concept of the vernacular refers to a cultural landscape that has been shaped by everyday human use, yet problematically assumed to be static, unchanging, and representative of shared community values. Vernacular studies are oftentimes limited in their scope and aims: they tend to "illuminate the social structures, cultural values, and patterns of learning and living among relatively small groups of people builders" (Upton, 1991, p. 196).

Architecture is an artifact of human activity, but it is not necessarily an "authentic" sign of its makers or users because architecture—alongside space and place—can be experienced in myriad ways (Buttimer and Seamon, 1980; Nast and Pile, 1998; Seamon, 1979; Seamon and Mugerauer, 1985; Tuan, 1977; Upton, 1991, p. 197), and various meanings can be invested into, and emerge from, architecture and landscape (Relph, 1976; Tuan, 1974; Upton, 1993). This is not to say that there is no connection between the built environment and human behavior. For Upton (1991, p. 197), architecture is merely a "gesture" in the continuous articulation between individuals and the built environment, an environment which is "created more by construing than by construction." Therefore, the recursive relationship between social meanings and built forms is highly complex, and positivist approaches resting upon the idea that architecture is authentically linked with a discrete group of people are deeply flawed (Upton, 1993, 1985).

It remains critical, however, to explore ways of modeling the relationship between human behavior and architecture for this study. To model this dynamic and recursive relationship, I employ Rapoport's (1990) theoretical framework built around activities and settings that form important parts of the built environment. Rapoport (1990, p. 10) suggests that a built environment does not define a culture, but rather constitutes it, encompassing built forms and

settings "associated with social expressions of culture, such as groups, family structures, institutions, social networks, status relations, and many others." Some built forms are settings, which are contexts or milieus characterized by rules and cues that help guide certain kinds of activities (Rapoport, 1990, pp. 12–14). Such cues or "props" remind participants of the situation or event occurring and express rules that define the kinds of "appropriate" behavior and activities that can take place (Rapoport, 1990, p. 12). There are distinct types of "props" or visual cues in the built environment that help stimulate human behavior: "fixed feature elements" (such as buildings, walls, and floors) are not easily moved, "semi-fixed feature elements" (e.g., furniture) are portable, and "non-fixed feature elements" include people and their behaviors (Rapoport, 1990, p. 13). Whether a setting effectively engenders appropriate behavior depends on the extent to which participants possess the correct kind of knowledge to understand the cues and conduct activities accordingly.

Settings and their cues are culturally-specific, and they can vary through time. Changes in any type of cue can fundamentally transform the setting and the activities that take place. For example, the placement of tents, fruit stands, and carts help transform parking lots and streets into farmer's markets. There is also a significant historical element to these types of transformations, as activities enacted in a setting may also change diachronically as "fixed-feature elements" and "semi-fixed feature elements" remain. For instance, distinct groups may use the same restaurant or classroom differently during different times of the day. Conflicts may arise among groups competing over the use of a setting at a specific time, and more powerful, dominant groups may disrupt the activities conducted by others. Settings and their cues have spatial and historical components, making the analysis of "fixed feature elements" and "semi-fixed feature elements" and control over time especially critical for archaeological inquiries into

the built environment that may not have access to information on the impact of people (Rapoport, 1990, p. 13).

Furthermore, to understand the dynamics between the built environment and human behavior, it is important to consider settings and activities as situated within broader systems. Single settings and single activities are not appropriate units of analysis because what happens in an activity or setting will likely bear influence on what occurs in another activity or setting (Tuan, 1977). This is because most activities form part of larger processes ("activity systems") that connect multiple settings. Rapoport (1990, p. 15) summarizes this point:

> One has a range of activity systems which can be specified for various individuals and groups. One also has a system of settings with certain characteristics, parts of which will, or will not, be used for various activities. One can, therefore, understand what happens in any given part of the setting system only if one knows what happens elsewhere and what is supposed to happen (i.e. the activity system).

The built environment is a "system of settings" whose relationship with human behavior can be characterized as a feedback loop: built environments and their constituent settings are designed and constructed to direct and facilitate the enactment of specific activities and social processes (Hillier and Hanson, 1984), and these activities in turn impact and shape settings and built environments. Even though architecture characteristic of a society encloses and contains human behavior, it does so loosely because cultural variability and interconnected, interdependent systems contribute to varying degrees of congruence between architecture and activity (Rapoport, 1990, p. 18). Architectural values, meanings, and experiences were created

and contested through activities and forms of engagement and that included rituals, inhabitation, modeling and remodeling, destruction, and abandonment (Halperin and Schwartz, 2016, p. 13; Hendon, 2010). The dynamics between architecture and activity cannot be assumed *a priori*; they must be demonstrated through an approach that combines regional and diachronic perspectives of built environments with a view of activities, especially rituals, as multi-stage, complex processes that likely incorporated and connected several contexts.

Ritual architecture refers to built forms and settings that help guide rituals. Some scholars treat it as an "objectification of social experience" or as a manifestation of symbolic or sociopolitical relationships and meanings that become activated during the enactment and performance of rituals (Lawrence and Low, 1990, p. 475; Richardson, 1980, p. 217). Ritual architecture tends to be distinct and formalized, displaying conventional built forms, site plans, and activities that are different from that of other types of architecture. This is because rituals themselves tend to be formalized, encompassing clearly defined and restricted codes of verbal and nonverbal communication that convey information about "relations between members of society and between society and the cosmos" (Moore, 2005, p. 129, 1996, p. 137). Variation in ritual architecture may imply differences in sociopolitical order and in the conception of power (Moore, 1996, p. 139).

Moore (1996, pp. 139–141) develops an archaeological approach for identifying variation in ritual architecture that analyzes five attributes: permanence, centrality, ubiquity, scale, and visibility. Moore's methodology is designed to permit inferences into social behaviors and dynamics associated with different kinds of ritual architecture. Indeed, Beck (2004) adopts Moore's five-attribute framework to trace the development of ritual architecture in the Middle

Formative Period (800 – 250 BC) and argues that variations in these attributes coincided with increasing status differentiation and significant institutional transformations in society.

Built forms are not only capable of facilitating human activities and materializing their meanings, but also communicating sociopolitical messages among groups. This topic stands at the center of architectural communication theory (Lawrence and Low, 1990, p. 471; Smith, 2011, p. 174; Steadman, 1996, pp. 66–68), which is closely related to notions of how material culture broadcasts information (Wobst, 1977) and renders ideology in concrete form to fulfill sociopolitical goals (Demarrais et al., 1996). Blanton (1989, 1994) and Lynch (1960) have contributed significantly to this body of theory. In his discussion of ancient architecture in the Oaxaca Valley, Blanton (1989, p. 413) asserts that built forms simultaneously frame human activity and broadcast visible, socially significant messages to those who are receptive to them. Certain attributes, including visibility and scale, can shape the "communicative function of the building, or how it transmits a message" (Blanton, 1989, p. 413). Lynch (1960) phrases the communicative aspects of architecture in terms of "imageability" and "legibility," which refer to the capacity of a built form to broadcast meaning and the clarity with which the meaning can be recognized and understood in the landscape. This suggests that some structures are more effective at conveying meanings than others and that there is a relationship between a structure's design and construction and its so-called communicative potential (Moore, 1996, p. 98). Monuments are one type of built form held to be effective and efficient "communicative media" that can convey sociopolitical messages for some time (Blanton, 1989, p. 413; Moore, 1996, p. 97; Trigger, 1990; Upton, 1991, 2015).

What kinds of information do structures convey, and what impact does it have on social action? The design, arrangement, and construction of built forms can convey information related to group affiliation, identity, status, wealth, and power (Agnew, 1987; Lefebvre, 1974; Smith, 2011, p. 174). This is because, as studies of vernacular architecture have demonstrated, design, construction, and arrangement result from deliberate, embodied, and conscious mechanics, mechanics that influence how individuals reproduce canons of traditional architecture (Bourdier and Alsayyad, 1989; Colloredo-Mansfeld, 1994; Hubka, 1979; Lyons, 2007; Upton, 1993). In fact, Blanton (1994) develops a model that distinguishes between canonical and indexical messages transmitted by households. Canonical messages underscore meanings broadly shared by societies, whereas indexical communication express claims of status (Blanton, 1994; Smith, 2011, p. 174). Although this model was designed with households in mind, I argue that it can apply to other built forms including graves. Households and graves that are designed, constructed, and organized in similar ways may convey canonical information that signals participation in a wider tradition, and the use of monuments may broadcast indexical information that displays the wealth and power of a ruler. In these cases, canonical information can serve to promote social cohesion among one group in relation to another ("us vs. them") and indexical information can mark social differences between individuals of distinct statuses.

In addition to broadcasting shared meanings and expressing social difference, built forms have been directly connected to social organization. Hillier and Hanson (1984) explore the relationship between the arrangement of built forms and spatial organization. They examine site plans exhibiting symmetrical and asymmetrical distributions of structures and inclusionary and additive arrangements of space and compare recent and past built environments (Hillier and Hanson, 1984; Lawrence and Low, 1990, p. 471). They argue that varying configurations of the

built environment correspond to differences in social organization (Hillier and Hanson, 1984; Lawrence and Low, 1990, p. 471). Scholars have explored the relationship between social organization and specific types of architecture (Kent, 1993; McGuire and Schiffer, 1983), including domestic (M. S. Aldenderfer, 1993; Kent, 1993; Rapoport, 1969; Stanish, 1989; Wilk and Ashmore, 1988) and mortuary (Chapman, 1995; Goldstein, 1981, 1976; Morris, 1987; Renfrew, 1976; Saxe, 1970).

The significance of cemeteries for understanding social organization has been the subject of archaeological debate for decades. Cemeteries are defined as "specifically demarcated sites of burial, with an ordered internal layout that is conducive both to families claiming control over their grave spaces, and to the conducting of what might be deemed by the community as appropriate funerary ritual" (Rugg, 2000, p. 260). Saxe's Hypothesis 8 (1970, p. 179) proposes a connection between kin-based corporate (or descent-based) groups, control over access to vital resources and property through lineal transmission, and the cemetery: "To the degree that corporate group rights to use and/or control crucial restricted resources are attained and/or legitimized by means of lineal descent from the dead, such groups will maintain formal disposal areas for the exclusive disposal of the dead, and conversely." Goldstein (1981, 1976) tested this hypothesis against a cross-cultural sample of societies and refined it to state that 1) cemeteries represent *one* strategy of ritualization that descent groups may use when control over resources is rooted in lineal descent and that 2) the presence of cemeteries, especially structured and formalized ones, likely implies that a descent group retains rights over certain resources. The revised hypothesis reasserts that there is a clear connection between cemeteries and social organization and implies that descent groups can use graves to exert control over territories. This implication has drawn support from some (Chapman, 1995; Renfrew, 1976) and criticism from

others (Hodder, 1982d; Morris, 1991) who have underlined the importance of beliefs, ideas, and identities in structuring the use of cemeteries.

Although architecture can directly express sociopolitical structures and organizations, the material forms and meanings of architecture are subject to manipulation and change, especially as societies transform through time (Hillier and Hanson, 1984; Lawrence and Low, 1990, pp. 466–467; Steadman, 1996, pp. 66–68). These points raise questions concerning how the nature and development of built forms relate to changes in society that are addressed by social-historical approaches to the built environment. What can we learn about the built environment by examining the society in which it exists, and how do sociopolitical changes impact the ways in which built environments are designed, constructed, and used? King (1980, p. 1) succinctly addresses these questions by outlining his ideas on the built environment, which deserve to be quoted in full:

> [B]uildings, indeed, the entire built environment, are essentially social and cultural products. Buildings result from social needs and accommodate a variety of functions—economic, social, political, religious, and cultural. Their size, appearance, location, and form are governed not simply by physical factors (climate, materials, or topography) but by a society's ideas, its forms of economic and social organization, its distribution of resources and authority, its activities, and the beliefs and values that prevail at any one period of time. As changes in society occur, so too does change in its built environment. New building types emerge and existing ones become obsolete. Some buildings are modified, extended and take on different functions; others may simply disappear. Society

> produces its buildings, and the buildings, although not producing society, help maintain many of its social forms.

This quote draws highlights the many kinds of forces (e.g., economic, social, political, etc.) that give rise to, or "produce", the built environment, which is viewed here not as a bystander to societal changes, but as an active participant in it (Ashmore and Sabloff, 2002; Bradley, 1998; Casey, 1997; Ingold, 1993; Lefebvre, 1974; Soja, 1989; Tilley, 1994). King (1980, p. 1) also argues that structures do not directly produce society itself but rather its social forms, which is akin to Rapoport's (1990, p. 10) suggestion that buildings do not directly reflect culture; they express its social manifestations. Built forms are clearly affected by these changes because they can be contested by competing groups, but how groups modify their built forms to enact secondary reproduction, or "the reproduction of the social and economic order in such a way as to ensure either its continued existence as a definite social formation or its propitious transformation," varies cross-contextually. In scenarios of imperial conquest in which new sociopolitical orders are being entrenched, built forms like temples or graves can be targeted for manipulation and new built forms may emerge.

For instance, in the Andes, the Inca appropriated and modified local sacred places and materialized their presence within their empire through an "architecture of power" (Gasparini and Margolies, 1980)**,** which encompassed roads, royal estates, administrative facilities, settlements, and fortresses that stood in contrast to local architecture (Alconini, 2008; Bauer and Stanish, 2001; Demarrais et al., 1996; Nair, 2015; Nair and Protzen, 2015; Niles, 1999; Protzen and Batson, 1993). As Cristóbal de Albornoz (1967 [1582], pp. 20–21) observes, the Inca "re-built" local sacred places. The Inca viewed themselves as divinely appointed agents of

civilization, whose architecture of power and co-option sought to foster order amid chaos and bring the provincial, natural, and "wild" world under control for their own benefit (Dean, 2007; Niles, 1992). They practiced an "artistic imperialism" that aimed to spread their construction practices and styles by force (Niles, 1992) and engaged in a specific form of place-making that converted foreign land into Inca land. For example, the Inca built walls around religiously significant rock outcrops that served as ancestors and heroes in provincial areas, perhaps to "delocalize" these places, symbolically seize these essences, and materialize Inca ownership (Dean, 2007, p. 514).

Architectural modification was even said to have "ennobled" (Albornoz, 1967 [1582], pp. 20–21) these places, thereby allowing the Inca to control them and appropriate their religious power (Dean, 2007; Niles, 1992; Ogburn, 2010, p. 168). There is archaeological support for these claims. Ogburn (2010) demonstrates that the Inca manipulated the sacred landscape of Saraguro (Ecuador) in several ways. Examples include the construction of storehouses (*qollqas*) and roads to mark certain places, co-opting sacred sites through ceremonial construction and carving of natural features, and placing administrative centers near major shrines (Ogburn, 2010, p. 186). The Inca also manipulated the sacred landscape of the Island of the Sun (Bauer and Stanish, 2001)**,** constructing a temple that served "to acknowledge the cultural heritage of the past, to redirect political and religious loyalties, and to commemorate sacred space" (Niles, 1992, pp. 352–353)**.**

The social-historical framework lends a key diachronic perspective to studies of the built environment and highlights how developments in built forms are connected to changes in society.

Demographic Profiles of Grave Populations: Insights into Collective Grave Use

In this brief section, I bring the final dimension of mortuary practice of interest for this study into focus: demographic profiles of collective grave populations. Collective graves are one of the primary units of analysis for this study because all graves documented in the mid-Chincha Valley appear to adhere to this label. First, I review literature that connects collective graves to descent groups and develop testable models for understanding various types of grave use. Then, I direct attention to how age-at-death and sex distributions of populations in collective graves can evaluate these models.

Collective grave populations are commonly thought to express idealized visions of social arrangements (i.e., social structure), ranging from descent-based groups to household ones. This argument is based on ethnographic studies and written sources from around the world. Among the LoDagaa, for example, graves typically contain single-generation groups of close-knit brothers born from the same mother and father who tend to cooperate on work projects, reside together, and share property rights (Goody, 1962). For the Bara culture of Madagascar, individuals are deposited in graves according to their membership in ranked patrilineal descent groups that operate over a multi-generational period (Huntington and Metcalf, 1979). Turning to the Andes, collective graves (for which *chullpas* and *machays* are essentially synonymous) are traditionally thought to have demarcated the territorial and social boundaries of descent-based *ayllus* (Doyle, 1988; Duviols, 1986, p. 289; Hyslop, 1977; Isbell, 1997; Mantha, 2009; Salomon, 1995).

Much of our knowledge of these graves is based on written documents and research conducted by mortuary archaeologists and bioarchaeologists (Bongers et al., 2012; Dillehay,

1995a; Duviols, 1986; Hyslop, 1977; Kesseli and Pärssinen, 2005; Kurin, 2016; Rossi et al., 2002; Salomon, 1995; Velasco, 2016; Weinberg et al., 2016). Testimonies from the Spanish idolatry campaigns suggest strong associations between collective graves and their respective descent groups and that these graves were known publicly by name. A testimony made on behalf of the Otuco community located in the Cajatambo region of highland Lima demonstrates how distinct, named *machays* contained the remains of different *ayllus* (Duviols, 2003, p. 184; Lau, 2016, p. 175). Local groups reportedly disinterred bodies from church grounds and redeposited them in specific collective graves that they recalled from memory (Duviols, 1986, p. 289; Kurin, 2016, p. 75). Other extirpation testimonies state that distinct lineages were placed in closely associated cave graves (Doyle, 1988; Duviols, 1986, pp. 52–53) and that direct descendants maintained knowledge concerning patrilineal lineages and their corresponding collective graves (Cobo, 1983 [1653]). Since monitoring the complex genealogies of these graves was no easy task, ritual specialists were allegedly tasked with making offerings, serving as oracles, and remembering names of graves in addition to the individuals deposited therein (Kurin, 2016, p. 75). Moreover, Cobo[28] (1964 [1653], p. 165) asserts a patrilineal basis for *machay* graves and explains that local groups only remembered and venerated their direct descendants; they neither worshipped all their relatives nor all members of the dead.

[28] Bernabé Cobo was born in Lopera, Spain in 1580 and spent many years of his life in Peru (Hamilton, 2008, p. 152). He studied in the Jesuit schools of Lima, read theology in Cusco, taught Latin in Arequipa, and likely directed a Jesuit school on the Peruvian coast (Hamilton, 2008, p. 152). Cobo generated arguably one of the most robust studies of local Andean history and tradition, drawing attention to topics such as "monuments, dress, farming technology, myths, and other customs" (Hamilton, 2008, p. 152). His accounts are based on written sources, interviews with local descendants of royal Inca lineages, and observations made of Andeans during parish work (Hamilton, 2008, p. 152).

Indeed, recent genetic research into *chullpas* supports a patrilineal basis for collective graves. Baca et al. (2012) conducted ancient DNA analyses on 41 individuals from six different *chullpas* located in Arequipa, Peru to evaluate the extent to which the *ayllu* model structured the use of these graves. Their data reveal that individuals deposited in the same *chullpa* were more closely related in comparison to those placed in different *chullpas* and that all males placed in one *chullpa* shared identical Y chromosome profiles and appear to have been distant relatives belonging to distinct generations. These findings suggest that these graves contained patrilineal family groups.

Despite these genetic findings and arguments made in written records that link collective graves to descent groups, debate continues to surround the use of these graves. Kurin (2016, p. 13, 2012, pp. 60–63) describes three models that have been put forth to explain their cultural functions and the social principles that structured *who* was deposited in them. Kurin (2012, pp. 60–61) notes that *machays* were used for the haphazard disposal of "polluting" corpses (Harris, 1982, p. 54) and references Montesinos (1920[1642]) to explain that the Chanka (a LIP group based in Andahuaylas, Peru) war dead were deposited in sepulchers. Thus, if *machays* (and arguably *chullpas*) were used as mass graves, we would expect 1) many war casualties (young adult males) or massacred individuals (wounded individuals of all ages) with evidence of animal gnawing and scavenging (evidence they were left in the open) (Willey and Emerson, 1993) to be unceremoniously and haphazardly deposited in caves and 2) limited, if any, evidence of grave goods, feasting, and offerings (Kurin, 2016, p. 13). If collective graves were used to contain exclusively mummified or desiccated ancestors (*mallquis*) or prominent lineage heads, however, we would expect the remains of older adult males and possibly their wives, complex body curation practices and mummification, evidence of feasting and sumptuary grave goods, and no

evidence of sexually immature sub-adults incapable of leaving behind descendants (Kurin, 2016, p. 13, 2012, p. 61). Alternatively, if collective graves contained descent groups, we would expect them to include individuals encompassing various age and sex categories (adult, sub-adult, male, and female) and exhibiting a range of statuses (injured, uninjured, modified postmortem, unmodified) (Kurin, 2012, pp. 62–63).

Demographic profiles of collective grave populations incorporating both modified and unmodified dead in the mid-Chincha Valley are useful for evaluating these models and written accounts. These data can aid in understanding who and what types of people composed these populations and the social rules and principles that guided the use of these graves (Kurin, 2016, p. 89). In short, they can yield insights into a contingent social structure "put on display" by the living through mortuary practice. By comparing age-at-death and sex distributions of grave populations associated with the LIP and Late Horizon, the extent to which demographic profiles and social structure changed following imperial conquest can be assessed.

Conclusion

Mortuary practice is a complex, universal, and highly diverse form of human behavior with strong connections to religion, identity, and sociopolitical and economic dynamics. As such, mortuary practice can be approached and understood from several scholarly perspectives, some of which have been reviewed in this chapter. The foundational processual and post-processual debate brought the complex relationship between mortuary practice and society to the fore and set the stage for modern and more nuanced mortuary theories to develop. I focused on mortuary politics, one of these recent theoretical frameworks, to show how mortuary practice is a political activity that enables groups to express and legitimize authority and relationships and configure

society in different ways. I explored the transformative nature of imperial conquest and its relationship to mortuary practice to demonstrate how processes of sociopolitical change can significantly impact not only the constitution of society, but also relationships between the living and the dead. I referred to the seminal anthropological works by van Gennep, Turner, and Hertz, to show that death can be a prolonged process of transformation and transition for both the living and dead, an idea with strong connections to Andean mortuary practice. Lastly, I reviewed theories and written accounts in relation to treatment of the dead, mortuary architecture, and demographic profiles.

One of the most important points of this chapter is the need to consider the potential for mortuary practices to produce different social orders and categories through time and in relation to imperial conquest and other profound processes of sociopolitical change. Imperial conquests result in "improvised" societies with new power relationships and social arrangements that set the foundation for distinct social orders and categories to emerge. Mortuary practice is one of the extended processes through which societies materialized these distinct orders and categories. Therefore, it is imperative not to think of the dead in overgeneralized and oversimplified terms. Salomon's (2015, p. 337) description of a mortuary landscape summarizes this point well: "A landscape studded with differently disposed, *differently dead* folk (the entombed, the trophied, the destroyed) would have been one marked out for the many relationships that explain, uphold, and sometimes endanger order among the living." This chapter served to orient the study towards this more effective direction.

CHAPTER 3

THE CHINCHA VALLEY: ENVIRONMENT, HISTORY, AND ARCHAEOLOGY

Introduction

This chapter concerns the environment, history, and previously conducted archaeological research of the Chincha Valley, one of the Peruvian southern coast's most productive river valleys (Figure 3.1). The south coast is an extremely dry environment encompassing several circumscribed river valleys that cut across the desert landscape and provide water and arable land to inhabitants (Conlee, 2003, p. 49). Throughout Andean history, the societies that lived in these valleys engaged in high levels of interaction. Recent research has begun to clarify regional trajectories on the south coast. In the LIP, for example, groups that were once occupied by the Wari (AD 500 - 1000) fragmented into smaller polities while valleys that were largely autonomous during the Wari period gave rise to secondary state formation (Covey, 2008a, p. 309). The Chincha Valley represents an exception to this point. After experiencing direct Wari settlement, the valley witnessed the development of one of the largest and most complex polities of the south coast: the Chincha Kingdom. This society constitutes a rich history of occupation in the Chincha Valley initiated at least in the 1st millennium BC by the Paracas culture and continuing through the Late Horizon into the 16th century (Stanish et al., 2014, p. 7218).

The objective of this chapter is to contextualize this study on multiple fronts. First, I will briefly describe the environment of the Chincha Valley. Second, I will reference written sources from the 16th and 17th centuries to discuss the nature and historical trajectory of the Chincha Kingdom. I will draw attention to their alleged origins, underscore their economy, religion, and sociopolitical structure, and delve into their well-known and supposedly peaceful encounter with

the Inca Empire before turning to Inca administrative efforts to consolidate the Chincha Valley. Lastly, I will summarize previous archaeological research conducted in the 20th century in the Chincha Valley that this investigation builds upon.

Environment

The Chincha Valley, located approximately 200 km south of Lima, exists in the Chincha Province within the Ica Department. Based on aerial photographs taken in the 1960s, the total area of the valley is 30,000 ha with approximately 22,000 ha of cultivated fields and 25 km of open beach (ONERN, 1970; Wallace, 1991, p. 256). In general, the Chincha Valley is characterized by the following: arid to semi-arid climate, irrigation required for year-round agriculture, and alluvial, colluvial, and lithosolic soils (Sandweiss, 1992, p. 18). It comprises a lower triangular valley that emerges from a narrow gorge or mid-valley (described below) situated 20 km east of the Pacific Ocean. From January to March, the average annual temperature in the lower valley is 19.1°C with a peak around 23°C, and from June to October, the low is between 17°C to 18°C (ONERN, 1970; Sandweiss, 1992, p. 18). The entire Chincha Valley experiences minimal, if any, rainfall: average annual precipitation is 0 mm in the absence of an El Niño event (ONERN, 1970; Sandweiss, 1992, p. 18). Bluffs line the northern and southern sides of the lower valley, cut from *pampas* (flatlands) that are remnants of old uplifted ocean floor (Wallace, 1991, p. 256). Chincha Alta, the current center, was originally a colonial period settlement of local inhabitants (*reducción*) established by the Spanish in the 16th century. The city sits on a natural terrace known locally as a *meseta* or tableland overlooking an alluvial plain.

This lower alluvial plain is watered by the Río San Juan, which exits from bedrock 20 km east of the Pacific Ocean and splits into two branches: the Río Chico in the north and the Río Matagente in the south (Sandweiss, 1992, p. 18) (Figure 3). These two distributaries are seasonal: while they witness significant flow during the Peruvian summer months (December to April), they are oftentimes dry during the rest of the year (ONERN, 1970). Agricultural productivity depends on the quality and magnitude of the summer hydrological cycle because the flow of water during this time nourishes and desalinizes the land (Lumbreras, 2001, p. 33). Flooding can sometimes occur. The area between these distributaries experienced a major flood in the early 20th century (Wallace, 1991, p. 256). The Río San Juan has sufficient flow to irrigate the entire valley, making Chincha one of the most agriculturally productive valleys in all of Peru. Indeed, according to Romero (1953, p. 96), the Chincha Valley was ranked sixth among all Peruvian valleys and first among those south of Lima in terms of agricultural production during the mid-20th century (Sandweiss, 1992, p. 18). Agricultural products of the modern lower Chincha Valley include cotton, maize, sweet potato, and cucumber (Lumbreras, 2001, p. 33).

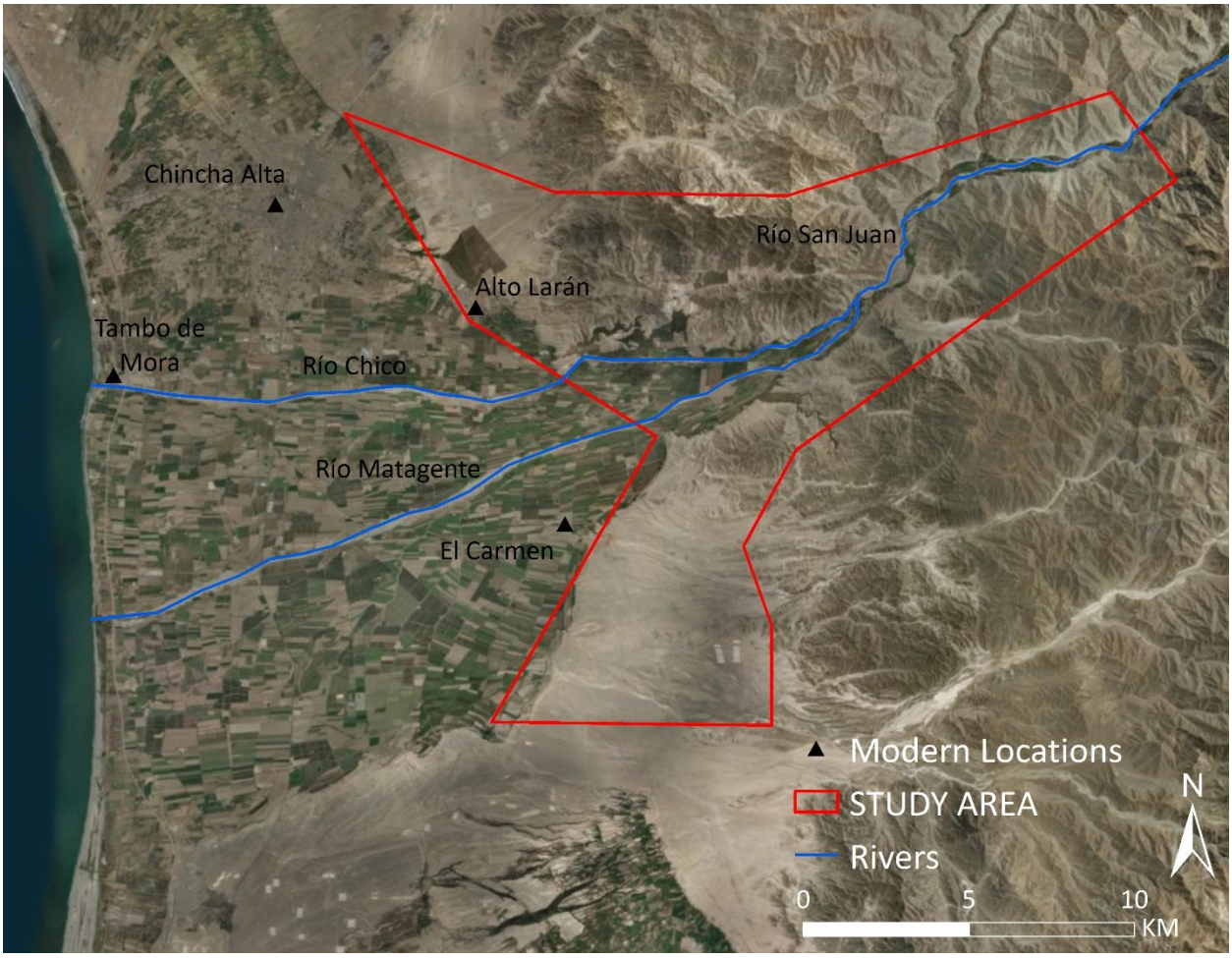

Figure 3.1: The Chincha Valley

The mid-Chincha Valley (Figure 3.2) is an example of a *chaupiyunga*, a transitional ecological area situated between the coastal plain (*chala*) and the highland valleys (*yunga*). These areas are typically well-suited for growing agriculturally and ritually significant crops including coca, maize, and chili peppers (Plowman, 1984a, 1984b; Rostworowski de Diez Canseco, 1988; Szremski, 2017, p. 86). Written sources also reveal that coastal and highland groups oftentimes moved into *chaupiyunga* zones to gain control of agricultural lands (Dillehay, 1977; Rostworowski de Diez Canseco, 1988; Szremski, 2017, p. 86). Since groups living in these zones commonly controlled access to irrigation headwaters and important mineral sources

located in the highlands (Topic, 2013), the *chaupiyunga* became a "focal point for many different types of interaction and a prime setting where…coastal, local, and highland groups came together to exchange products and to negotiate for access to land, water, and minerals" (Szremski, 2017, p. 86). This model likely characterizes the mid-Chincha Valley before AD 1532. This zone is hot and semi-arid, receiving minimal rainfall throughout the year. The Río San Juan is prone to flooding, which would have made water management in the area important. Copper mines are found near the rock art site of Huancor (Uhle, 1924, p. 91) Modern farmers have increased their presence in the area over the last few years. Currently, at least avocados and oranges are cultivated in the mid-Chincha Valley. Archaeological research shows a wide distribution and a high number of maize across the *chaupiyunga* and that it was cultivated at least during the LIP. The mid-Chincha Valley is, and was, clearly a fertile landscape. More crops were likely grown during the past, but the lack of a rigorous paleoethnobotanical analysis in this area impedes better understandings of agricultural productivity and crop diversity.

Figure 3.2: Aerial view of the mid-Chincha Valley, facing northeast

Written Sources

There is a rich written record of the Chincha Valley that dates to the early years of the Iberian invasion. Several chroniclers, explorers, and soldiers (*conquistadors*) reference the Chincha Valley and the Chincha Kingdom. Pedro de Cieza de León[29] (1959 [1553]) offers some of the most insightful information in his work, which is held to be a significant source for Inca

[29] Pedro de Cieza de León is considered one of the most important soldier-chroniclers of early Peruvian history (Pease, 2008, p. 143). He was born in Llerena (Extremadura, Spain) around 1518 (Pease, 2008, p. 143). In 1549, he traveled across Peru, acquiring direct knowledge from many of the ecological zones of Peru (e.g. coast, northern highlands, Cusco, Lake Titicaca, highland Bolivia) (Pease, 2008, p. 143). He was critical of the Spanish invasion and made efforts to demonstrate Inca legitimacy (Pease, 2008, p. 147).

studies. Pedro Pizarro[30], an alleged family relative of the leader of the military forces that invaded Peru (Francisco Pizarro), wrote later about Spanish encounters with the Inca during the 16th century. In his *Relación del Decubrimiento y Conquista de Los Reinos del Perú* (Pizarro, 1921 [1571]), he accounts for the time spent under command of Francisco and describes the Chincha ruler among Atahualpa's (the Inca ruler at the time of Spanish conquest) entourage during the well-known Inca-Spanish confrontation in Cajamarca in AD 1532. Fray Cristóbal de Castro and Diego Ortega Morejón[31] interviewed local inhabitants in the Chincha Valley and published their work in a document known as "Relación y declaración del modo que este valle de Chincha y sus comarcanos se governavan antes que havía en el govierno de los indios en tiempo del inga y como se repartían las tierras y tributos"[32] (Crespo, 1975). An anonymous and undated document known as the "Aviso de el modo que havía en el govierno de los indios en tiempo del inga y como se repartían las tierras y tributos"[33] offers information on the economic and sociopolitical organization of the Chincha Kingdom under Inca rule (Rostworowski de Diez Canseco, 1970).

[30] Pedro Pizarro was born in Toledo, Spain around AD 1513 (Gabai, 2008, p. 524). He joined Francisco Pizarro's expedition to Peru as a page (Gabai, 2008, p. 524). He is known to have shifted alliances during the rebellion of Gonzalo Pizarro (AD 1544 – 1548), Francisco's younger brother (Gabai, 2008, p. 524). Pedro Pizarro's *Relación del decubrimiento y conquista de los reinos del Perú* has been described as a direct account of the events of Spanish invasion by an eyewitness (Gabai, 2008, p. 525).

[31] Castro was a Dominican friar who accompanied Domingo de Santo Tomás (another Dominican friar) to Chincha in AD 1542 and served as the priest of a local parish (*doctrina*) of Chincha in AD 1558 (C. Julien, 2008, p. 140). Diego de Ortega Morejón was the administrative judge (*corregidor*) in Chincha (C. Julien, 2008, p. 140).

[32] This document is henceforth known as the "Relación."

[33] This document is henceforth known as the "Aviso," and it warrants elaboration here. Rostworowski (1970, pp. 138–140) argues that the "Aviso" was written in the 1570s and that it was based on the writings of Fray Domingo de Santo Tomás, a Dominican friar who founded the first monastery in Chincha (ca. AD 1542) (Sandweiss, 1992, p. 3). Despite these claims, historians have recently suggested that the "Aviso" was in fact an 18th century forgery (Lisa DeLeonardis, oral communication). This suggestion does not necessarily invalidate the "Aviso", but it does call for increased scrutiny, caution, and skepticism to be directed towards the points made in the document. Furthermore, some of these points can still serve as hypotheses that can be tested through archaeological investigation.

In this section, I will primarily draw upon these sources to explore the following themes: the origins of the Chincha Kingdom, Chincha sociopolitical organization, religion, economy and wealth, and Inca conquest and administration of the Chincha Valley. Before doing so, however, it is crucial to discuss several interpretive issues and biases associated with these sources that Sandweiss (1992, pp. 3–5) discusses in-depth. First, the extent to which these documents refer to the Chincha Valley and not other valleys brought under Inca rule is sometimes murky. The anonymous author of the "Aviso," for instance, writes about Inca government and administration in a generalized (rather than localized) way, and routinely switches between the present and past tense to, presumably, discuss the economic and sociopolitical conditions of the Chincha Valley before and after the Inca conquest (Rostworowski de Diez Canseco, 1970, p. 137). The "Relación" specifies whether the information pertains to Chincha, and unqualified statements made in the document likely refer to the Inca Empire in general (Sandweiss, 1992, p. 3). Second, the degree to which information pertaining to the Chincha Kingdom demonstrates a continuity of local customs or the consequence of Inca administrative efforts is not always qualified. Cieza differentiates between LIP (before the Inca arrival) and Late Horizon (after the Inca arrival) conditions, and the first two paragraphs of the "Relación" explicitly deal with sociopolitical structure and relations between valleys along the south coast that predate the Inca reign (Crespo, 1975, p. 93). Another section in the "Relación" discusses LIP and Late Horizon inheritance practices (Crespo, 1975, pp. 100–101), but fails to state explicitly which information relates to the LIP. Third, the accuracy of these documents is questionable because the information gathered from local informants needed to be translated and rendered compatible with a European worldview. Lastly, considering that local Andean groups kept their history through oral tradition and that the Inca rewrote these local histories to legitimize their rule, the authors of the written

sources frequently needed to make choices among competing narratives, potentially obscuring original conditions and events (Sandweiss, 1992, pp. 3–5).

With these caveats in mind, I will present relevant information primarily from Cieza, Pedro Pizarro, the "Relación," and the "Aviso," and cover several themes centering upon the Chincha Kingdom and its encounter with the Inca Empire. To start, I discuss the alleged origins of the Chincha Kingdom and the political conditions of the south coast. According to Cieza (1959 [1553], p. 345), the Chincha people were led by a valiant captain whose leadership and zealous devotion to their religion enabled the group to reach the Chincha Valley and encounter a society of "cowardly and timid" midgets. The Chincha people conquered these inhabitants and gained control over the "cool and fertile" Chincha Valley (Cieza de León, 1959 [1553], p. 345). Presumably, during this time before the Inca arrival, the entire south coast was entrenched in a state of constant warfare. The "Relación" explains that, in this period, those who passed from one valley to another could be killed (Crespo, 1975, p. 93). The Chincha eventually grew so powerful and numerous that other polities in the region "sought their alliance and friendship, to their profit and honor" (Cieza de León, 1959 [1553], p. 346). The Chincha developed an armed force and made incursions into the highlands, where they raided the *Rucanas* and the *Soras* and reached the Lake Titicaca basin (Cieza de León, 1959 [1553], p. 346). The Chincha brought back an abundance of booty and followed and observed "the customs and rites of the others." The identity of these "others" and the nature of these "customs and rites" are vague, but this statement may imply cultural transmission between the Chincha and the highland societies that they were battling (and perhaps exchanging with). It appears that these raids led Chincha society to flourish and ushered in a sort of "golden age." For an additional reason not stated above, these accounts of Chincha and south coastal warfare must be viewed with caution. Sandweiss (1992, p.

5) points out that local informants exaggerated local endemic warfare before the Inca Empire to support the notion of the Inca as civilizers of the Andes.[34]

Chincha religion is discussed in the early colonial written records. Cieza (1959 [1553], p. 345) writes that after the Chincha established control over the Chincha Valley, "out of a rock came the voice of an oracle, and all held this to be a sacred spot, and they called it Chincha and Camac. And they always performed sacrifices there…" "Chinchacamac" was likely a branch oracle of Pachacamac, one of the most important pilgrimage centers in the ancient Andean world. Coastal polities exercised integration through religious hierarchies, as evidenced by documented pan-regional pilgrimages to the Pariacaca shrine and oracle at Pachacamac (Salomon et al., 1991, p. 75). Branch pilgrimage centers and local shrines have been described as children, spouses, and siblings of Pachacamac and Pariacaca (Albórnoz, 1989 [1582], pp. 190–191; Salomon et al., 1991, pp. 101–106; Santillán, 1968 [1563]). In particular, Santillán (1968, p. 111) says that one of Pachacamac's "sons" was located in the Chincha Valley during Inca times (Menzel and Rowe, 1966, p. 68; Patterson, 1985, p. 164; Rostworowski de Diez Canseco, 1970, p. 142). Some have explicitly suggested that the Chinchacamac oracle was established prior to Inca dominance. Patterson (1985, p. 164) argues that the Chinchacamac oracle was strategically established by Pachacamac priests to acquire information on the Chincha Kingdom, and Cieza (1959 [1553], p. 346) states that the "Chincha did not give up worship in their ancient temple of Chinchay-camac." The location of this "temple of Chinchay-camac" is debated. Uhle (1924, p. 67) believed La Cumbe, one of the major archaeological sites in the lower valley (Figure 6), was Chinchay-camac. Morris and Santillana (2007, p. 144) disagree and argue that it was more likely

[34] That being said, recent archaeological research has clearly demonstrated the presence of warfare throughout the Andes during the LIP (Arkush, 2008; Arkush and Tung, 2013; Kurin, 2016). There is also abundant evidence of warfare in the mid-Chincha Valley that will be described in chapter 5.

the main Chincha platform mound at the site of La Centinela de Tambo de Mora, or Huaca La Centinela (Figures 3.6 and 3.7). Concerning local religious practice, the "Relación" is one of the only, if any, sources to provide details. It states that the Chincha people continued to worship their sacred sites or supernatural beings (*huacas*) and did not worship the sun, one of the principal aspects of Inca religion (Crespo, 1975, p. 103).

Some insights into Chincha sociopolitical organization and leadership are offered by the written sources. The "Relación" briefly describes that the LIP Chincha Kingdom was organized into *ayllus*, each comprising a lord and fields. Much more detail can be gleaned from several documents about the Chincha ruler. The "Relación" (Crespo, 1975, p. 93) states that the name of this ruler is *Guavia rucana*, "whose house still exists and whose kin and hereditary properties are known"[35] (Crespo, 1975, p. 93). The "rucana" part of the name may be a reference to the "Rucana" highland people that the Chincha allegedly raided (Cieza de León, 1959 [1553], p. 345). The "Aviso" also refers to a paramount lord. The only statement in this document that explicitly highlights conditions predating the Inca conquest says that there was a great lord that the Chincha people respected and obeyed before Thupa Inca Yupanki (Rostworowski de Diez Canseco, 1970, p. 170). In Pedro Pizarro's first-hand account of the events that occurred at Cajamarca, he notes that the Chincha lord himself was being transported on a litter, occupying an esteemed position in the Inca royal procession close to Atahualpa (Pizarro, 1921 [1571], pp. 180–181, 183). Juan Pizarro, Francisco's half-brother, stabbed and killed the Chincha lord in his litter as the Spanish forces attacked Atahualpa and his people (Pizarro, 1921 [1571], p. 184). He wrote that the captured Atahualpa had described the Chincha lord as an important leader of

[35] "Y era señor en este valle de Chincha Guavia rucana cuya casa el día de [h]oy está en pie y parientes y [h]eredades conosçidos."

coastal people, a commander of 100,000 ships and a good friend whose rich province directly inspired the naming of *Chinchaysuyo*, one of the four major regions of the Inca Empire (Pizarro, 1921 [1571]). The high position granted to the Chincha lord and the certainly exaggerated count of "100,000" ships suggest amiable Inca-Chincha relations and high levels of wealth, a well-developed economy, and a seafaring capacity associated with the Chincha Kingdom. These topics are explored below.

The abundant wealth of the Chincha Kingdom is well-attested in the early colonial written records. Cieza (1959 [1553], pp. 346–347) describes a prosperous and agriculturally productive Chincha Kingdom that supported some 25,000 people. He (1959 [1553], pp. 346–347) writes that the Chincha Valley is "one of the largest of all Peru, and it is a beautiful sight to see its groves and irrigation ditches, and the fruits that abound in it." The prosperity of Chincha caught the attention of Francisco Pizarro, who requested the incorporation of the Chincha Valley into his domain (Cieza de León, 1959 [1553], p. 345). Some members of Pizarro's expedition crew acquired a report, recorded by Jerez (1862 [1534], p. 335), that the richest mines were found in Quito and Chincha. By the time of Spanish conquest, Chincha had acquired precious metals from the nearby copper mines in the mid-Chincha Valley and presumably from elsewhere (Sandweiss and Reid, 2015, p. 4). It retained silversmiths until at least the end of the 16th century (Lizárraga, 1946 [1605], p. 90). Much of the gold, silver, and copper items were placed in graves that the Spanish subsequently looted. The "Aviso" reports that the Francisco Pizarro sent two Spaniards to Chincha where they looted graves and recovered "one hundred thousand marks of silver in large vessels and small ones and other bugs and snakes and little dogs and deer all in gold and silver…And after that much gold and silver has been taken from that valley" (Rostworowski de Diez Canseco, 1970, pp. 171–172; Sandweiss and Reid, 2015, p. 4). Other

potential sources of wealth include the guano deposits on the Chincha islands (Curátola, 1997) and fish. Guano fertilizer would have been highly valuable in an environment characterized as an arid coastal desert made fertile through irrigation, and fish represent a renewable resource that can be dried, transported, and traded[36] (Sandweiss and Reid, 2015, p. 4).

Early colonial written accounts provide detailed information on Chincha economic organization and practices. One of the most detailed accounts is the "Aviso," which describes the Chincha economy under Inca rule. Although it remains problematic to assume *a priori* that any of this information pertains to the pre-Inca Chincha economy, it is perhaps reasonable to assume that at least the key economic specialists that the "Aviso" describes (e.g., fishermen and farmers) existed and operated before the Inca conquest. Moving forward, the "Aviso" explicitly states that the Chincha Kingdom contained 30,000 tribute payers divided into 12,000 farmers, 10,000 fishermen, and 6,000 merchants (Rostworowski de Diez Canseco, 1970, pp. 170–171). In Reginaldo de Lizárraga's (Lizárraga, 1946 [1605], p. 90) chapter on the Chincha in *Descripción de las Indias*, considered a close copy of the "Aviso," (Rostworowski de Diez Canseco, 1970, p. 137), he lists 30,000 tribute payers and divides the population into 3 groups of 10,000 farmers, fishermen, and merchants. These 30,000 individuals were divided into groups of 1,000, each of which was commanded by a lord (30 in total) (Rostworowski de Diez Canseco, 1970, p. 170; Sandweiss, 1992, p. 7). This point is reinforced in the "Relación," which explains that the Inca divided the Chincha population and appointed a local lord or chief (*curaca*) for every group of 1,000, with chiefs of 100 under him and heads of 10 below them[37] (Crespo, 1975, p. 94;

[36] Archaeological evidence for these practices has been recovered at Lo Demás (Sandweiss, 1992) and Cerro Azul (Marcus, 2016, 2008; Marcus et al., 1999). I will discuss these findings in the next section.
[37] This decimal system is one of the core administrative strategies that the Inca implemented in the provinces. The degree to which this system was implemented in the Inca empire is unclear (Julien, 1988). It appears the system was put in place at least nominally in Chincha based on the "Aviso" and the "Relación."

Sandweiss, 1992, p. 7). Many of these leaders were likely local, but whether some of them were nonlocal cannot be ruled out.

Written sources assert the importance of farmers, fishermen, and other specialists and artisans in Chincha. Farmers are described as exclusively understanding the planting of maize and other crops for their nourishment (Rostworowski de Diez Canseco, 1970, p. 170). These farmers worked fields assigned to various members of Inca society, the sun, and presumably local *huacas*, and placed their produce in storehouses from which it was transported to other locations including Cusco and Pachacamac (Crespo, 1975, p. 101). Turning to the fishermen, the "Aviso" claims that they exclusively fished, lived in a circumscribed residential sector located along the shoreline, possessed their own lords, and worked under the supervision and authority of local fishing lords and the Inca (Rostworowski de Diez Canseco, 1970, pp. 170–171; Sandweiss, 1992, p. 9). The fishermen are the only specialist group for which a specific residential location is described in the written sources. Producers of fine textiles are specified as *serranos* (Highlanders), suggesting that nonlocal specialists were incorporated into Chincha's economic network (Rostworowski de Diez Canseco, 1970). Other artisans and specialists included servants at Inca waystations (*tambos*), bridgekeepers, messengers (*chasquis*), *huaca* and cemetery guards, herders, carpenters, sling-makers, sling-stone gatherers, metalsmiths, and miners (Rostworowski de Diez Canseco, 1970, pp. 167–169; Sandweiss, 1992, p. 10). One of the first and earliest written sources that directly references Chincha and its artisans describes a grant of the rights to the labor of local groups (*encomienda*), in this case, those living in Chincha, that Francisco Pizarro gave his brother Hernando Pizarro (Lumbreras, 2001, pp. 24–25; Rostworowski de Diez Canseco, 1975, p. 285). This document, known henceforth as the

"Encomienda," reports that Chincha silversmiths were forcibly moved by the Inca to work outside of Chincha as *mitimaes* (nonlocal laborers).

Chincha merchants occupy a prominent place in the written record, especially the "Aviso," and their alleged economic activities have sparked considerable scholarly debate. In the "Aviso," Chincha merchants are described as conducting maritime and land-based trade: they reportedly sailed to Ecuador using balsa rafts[38] and traveled to Cusco and the Titicaca basin (*Collao*) over land[39] (Rostworowski de Diez Canseco, 1970). They carried locally grown and oftentimes painted, decorated, and pyro-engraved gourds or *mates* (*Lagenaria vulgaris*) to the highlands for trade[40]. They traded for gold, emeralds, timber, and spondylus shell (*Spondylus princeps*) in what is now Ecuador and for gold, silver, copper, and camelids in presumably the Titicaca basin and other highland areas (Rostworowski de Diez Canseco, 1970). These items were acquired for various reasons. In the past, spondylus was a highly valuable mollusk employed in rituals throughout the Andean world (Blower, 2000; Pillsbury, 1996; Rostworowski de Diez Canseco, 1970). Gold and emeralds were sold to prominent chiefs in Ica (Rostworowski de Diez Canseco, 1970, p. 156). Rostworowski (1970, p. 154) hypothesizes that merchants

[38] Although some have doubted the technological capacity for long-distance maritime trade (Hocquenghem, 1993), some accounts other than the "Aviso" suggest that coastal polities like the Chincha possessed a capacity for seafaring trade prior to Spanish conquest. In 1526, during Francisco Pizarro's second expedition down the western South American coast, he reportedly ordered Bartolomé Ruiz to command a boat from Colombia to Ecuador (Sandweiss and Reid, 2015, p. 5). Ruiz captured a seafaring trading vessel near the Peru-Ecuador border featuring cotton sails, an estimated 25-ton carrying capacity, a 20-person crew, and high-value goods including metal objects, gems, fine textiles, and likely spondylus shells (Sámano and Xérez, 1967 [1528]; Sandweiss and Reid, 2015, p. 5).
[39] The Chincha likely traveled to the highlands using llamas based on colonial and modern accounts. Cieza (1959 [1553], p. 347) remarks that the native llamas in Chincha were depleted after Spanish conquest. Uhle (1924, p. 60) observed individuals "descending with llamas" from the highland provinces of Huancavelica and Huancayo to the Chincha Valley.
[40] According to Lizárraga (1946 [1605]), these gourds were highly valued at the site of Chucuito in the Titicaca basin. Lumbreras (2001, p. 14) also suggests that painted gourds were important objects of trade that can distinguish merchants from other specialists in the archaeological record. A pyro-engraved gourd was recently discovered in a grave in the mid-Chincha Valley and another was found at the site of Las Huacas (Jordan Dalton, oral communication). In chapter 5, I point out that gourds are a common grave inclusion in mid-Chincha Valley mortuary contexts.

primarily acquired copper on the Peru-Bolivia border and sailed with it to Ecuador for trade. Merchants also apparently rendered copper a "currency," using it among themselves to buy and sell food and clothing, and supposedly employed fixed exchange rates for weights of gold and silver (1:10) (Rostworowski de Diez Canseco, 1970, p. 171). These forms of price-fixing mechanisms suggest a monetary-based market system otherwise unknown in the pre – AD 1532 Andes (Stanish, 1992).

Some of these provocative points about the Chincha merchants—sailing balsa rafts to Ecuador to conduct long-distance trade for spondylus shell and developing a market system—raise additional questions and spark debate. A few of the most debated issues concern the alleged market system and the origin of the Chincha merchants: did this system and these merchants *exist* and, if so, did this group operate before the Inca conquest or after? Notions of a 1) metal currency, 2) a market-based economy, and 3) an institutionalized class of seafaring merchants are cast as rare or nonexistent in the Andes (Sandweiss and Reid, 2015, p. 4). First, only limited support exists for metal currencies in the Andean world. Copper axe-monies have been documented in the northern Andes, in what is now Ecuador (Hosler et al., 1990) and a cache of copper found in the lower Chincha Valley may have functioned as some form of currency or trading object (Sandweiss and Reid, 2015, p. 8). Second, few, if any, Andean market-based economies or commercial enterprises have been documented before AD 1532. Yet they remain theoretically possible, perhaps even plausible, for a Chincha society organized around economic specialists that are horizontally integrated into a broader political system— the *señorío*—understood to be typical among LIP polities (Lozada and Buikstra, 2002; Rostworowski de Diez Canseco, 1977, 1970; Shimada, 1982). For Sandweiss and Reid (2015, p. 9), market exchange could have provisioned households "beyond their own labor" and served as a "solution to the

problem of provisioning a society composed of endogamous producer-specialists, as Chincha (and much of the coast) seems to have been."

Third, Rostworowski (1970, p. 148) references words related to merchants and mercantilism in two important early colonial dictionaries: a Quechua dictionary (Santo Tomás, 1951 [1560]) and an Aymara one (Bertonio, 1956 [1612]). There are also other sources besides the "Aviso" that mention merchant-type figures. The "Encomienda" document, for instance, describes Chincha *tratantes*, which, according to the 18th century *Dictionario de la Lengua Castellana*, are defined as those "who buys goods and comestibles wholesale and sells them retail" (Rostworowski de Diez Canseco, 1975, p. 338; Sandweiss and Reid, 2015, p. 8). These lines of evidence demonstrate that merchants and mercantilism were at least conceptualized in the Andean world prior to Spanish invasion and thus do not rule out the existence of Chincha merchants.

The chronology behind Chincha merchants and their activities is also debated. Rostworowski (1970, p. 144) argues that Chincha merchants functioned before Inca invasion primarily because they would not be compatible with the "vertical hierarchy" of Inca economic and social organization built around age divisions, the decimal system, and the redistribution of resources. Indeed, if the Chincha case study is an early exercise in indigenous merchant capital, as Patterson (1987) believes, the merchants, in theory, could have acted as debt financiers that mediate exchanges between local and independent producers (Nigra et al., 2014, p. 43). To Rostworowski's point, a system in which merchants mediate between producers who retain control over the means of production (Chincha merchant capital) would likely be curtailed by a centralized, state-imposed system that would want to preside over supply and demand (Inca

redistribution) (Nigra et al., 2014, p. 43). Other scholars agree that Chincha merchants conducted economic activities prior to Inca conquest. Shimada (1991, p. LIV) argues that during the LIP, the Chimú, a highly complex coastal state centered at the site of Chan Chan on the northern coast of what is now Peru, "probably came to be the principal north coast sponsor of maritime trade…while the specialized Chincha traders…managed the actual operation of the trade, including navigation." Hosler (1988) asserts that the beginning of Chincha long-distance trade in the LIP coincided with the importation of metallurgical traditions from southern Andean sources, rather than northern ones, into western Mesoamerica during the 13th century.

Although Chincha merchants may have originated in the LIP, Sandweiss and Reid (2015) make a strong case against the proposal for a LIP Chincha spondylus trade enterprise. They argue that an expansion of Chincha mercantilism to include the long-distance spondylus trade enterprise likely occurred following Inca conquest for two main reasons. First, limited quantities of spondylus shell and artifacts have been recovered in the Chincha Valley, and most, if not all, of these are found in archaeological sites that date after the Inca conquest. Kroeber and Strong (1924) examined the graves that Max Uhle excavated in Chincha during the early 20th century[41]. Given that that spondylus was found in Inca graves[42], but not in LIP Chincha ones, they (1924, p. 31) argue that "trade in spondylus, which was brought from the far north, did not attain considerable proportions until the Inca period." Later archaeological projects in the Chincha Valley commenced in the 1980s and sponsored by the American Museum of Natural History, the Instituto Andino de Estudios Arqueológicos (INDEA), and the Institute of Andean Research did

[41] I further discuss Uhle's archaeological investigations and later archaeological research conducted in the Chincha Valley in the next section.
[42] In 2014, a single spondylus bead was recovered from a *chullpa* in the mid-Chincha Valley that dates to the Inca period, thereby supporting this claim.

not discover significant quantities of spondylus (Morris and Santillana, 2007, p. 136). Nigra's (2017) more recent excavations at Huaca Soto, a sunken court structure in the Chincha Valley, yielded spondylus shells and figurines that date to the Inca period. Second, the Chimú Empire would have controlled the spondylus trade routes during the LIP, making it difficult for the Chincha to acquire the shell unless they were collaborating with the Chimú. This is unlikely, however, since the Chimú inherited a long-standing tradition of maritime trade that would probably not have engendered a strong need to employ Chincha seafaring merchants. Sandweiss and Reid (2015) instead suggest that the Chincha negotiated with the Inca to gain control over the spondylus trading franchise in return for their peaceful subjugation. In this model, the Chincha merchants served as agents for the Inca state that used their seafaring capacity to acquire spondylus shells and then trans-shipped them across their extensive road network and likely through the Pisco Valley to Cusco.

Inca-Chincha relations serve as a core topic of the written sources, yet the chronology of Inca conquest and consolidation of the broader south coast— and therefore the Chincha Valley— remains debated. I reference Julien (2008) in large part to provide an overview of the debate on the beginning of the Late Horizon for the south coast. She (2008, pp. 164–165) notes that there are four written accounts of the Inca expansion that supply important information on the Inca conquest of the south coast: Cabello Valboa's (1951 [1586]) *Miscelánea Antárctica* , Cieza's (1959 [1553]) *La Crónica del Peru*, the "Relación," and Cobo's (1956 [1586]) *Historia General del Perú*.

These sources describe a similar series of events leading up to the Inca conquest of the south coast, but they do not agree on *who* spearheaded the conquest and *when* the conquest

occurred (see Table 3.1). Valboa's narrative suggests that Thupa Inca, the son of Pachacuti and the 10th Inca ruler on the dynastic list (Rowe, 1945, p. 279), annexed the south coast near the end of his reign. According to Valboa, Thupa Inca's campaigns extended the empire as far as the city of Quito and what is now the nation Chile, noting that the latter campaign in the southern Andes occurred ca. AD 1473 while the annexation of the south coast took place afterward (C. J. Julien, 2008, p. 166) He explains that Thupa Inca apparently traveled to the south coast, arriving in Pachacamac, where he ordered his captains to conquer Mara, Lunahuaná (local group in the Cañete Valley), and Chincha. Valleys reached first submitted peacefully, but Inca forces encountered armed resistance in Chincha and Cañete. Cieza (1959 [1553]) recounts that Thupa Inca's father, Pachacuti, sent a captain named Capa Yupanqui from Soras in the highlands to engage with the Chincha. This attempt at annexation was unsuccessful. A generation or so later, Thupa Inca tried to annex the south coast, received a mixed reception, and proceeded to conquer Chincha peacefully. The "Relación" states that an Inca "son of the sun" named Capa Yupanqui[43] annexed the south coast. The title of "son of the sun" can only be claimed by direct descendants of Manco Capac and his sister (Julien, 2000, pp. 24–25, 262–263). In this document, Capa Yupanqui, the father of Thupa Inca, peacefully brought the Chincha Valley under control, but the province was not fully organized and consolidated until a generation later by Thupa Inca. Lastly, Cobo (1956 [1586], p. 81) claims that Thupa Inca's father commanded his brother, a captain in

[43] Local Chincha sources may have confused the name of the captain with the name of the Inca himself. Cieza (1959 [1553]), who interviewed local Chincha inhabitants, reports that an Inca captain named Capa Yupanqui unsuccessfully campaigned in Chincha, while the "Relación," also derived from Chincha locals, describes Capa Yupanqui as the father of Thupa Inca who successfully annexes the south coast. It is also important to keep in mind that "Capa" is a variant spelling of "Capac," which is another word for ruler. Therefore, Capa Yupanqui may have referred to Pachacuti or Thupa Inca.

the Inca army, to gain control over the south coast. The captain reportedly faced armed resistance in Chincha and Cañete.

Table 3.1: Overview of different written accounts that describe when the Inca annexation of the south coast occurred. This table is adapted from Julien (2008, p. 168).

	Cabello	Cieza	*Relación de Chincha*	Cobo
When the annexation occurred	During the rule of Thupa Inca, after the death of his father, Inca Yupanqui, about 1473.	During the rule of Thupa Inca. A captain named Capa Yupanqui had been sent by his father, Inca Yupanqui, to annex the region, but had returned without success.	During the rule of Capa Yupanqui, father of Thupa Inca, about 1408.	During the rule of Inca Yupanqui, father of Thupa Inca.
Who carried it out	Captains sent by Thupa Inca	Thupa Inca	Capa Yupanqui	A brother of Inca Yupanqui

Considering these accounts and others (see below), there are arguments for a "late" and "early" temporal placement of the Inca annexation of the south coast (C. J. Julien, 2008). John H. Rowe is a proponent of the late placement model. Although he consulted all four documents referenced above, he principally relied on the calendar dates offered by Valboa, which he deemed to be reasonable estimates, to suggest a date of AD 1476 for the Inca annexation of Ica (Menzel and Rowe, 1966; Rowe, 1945, p. 277). This date is commonly cited as the beginning of the Late Horizon on the south coast. Rowe's estimate was based on his reading of written documents available to him in 1945, and it has stood for more than 70 years (C. J. Julien, 2008, pp. 164–165). This model holds that Inca conquest of the south coast occurred during the rule of Thupa Inca.

Other scholars (C. J. Julien, 2008; Marsh et al., 2017; Ogburn, 2012) make reference to the nature of Inca histories, the issues of Spanish interpretation of those histories, other sources, and recently acquired radiocarbon dates to support the early placement model. Valboa's calendar dates, which form the basis of the traditional, "standard version" of Inca history (Rowe, 1945, p. 272) are problematic for several reasons. According to Cobo (1979 [1653], p. 252), local Andean groups did not prioritize linear time: "they did not count their age in years; neither did they measure the duration of their acts in years; nor did they have any fixed points in time from which to measure historical events." Research to date offers no strong evidence of linear calendars in the Andes, suggesting that Valboa's dates may have been estimates (Bauer, 1992, p. 38). Moreover, Inca histories seem to have emphasized standardized narrative sequences rather than chronology, which is to be expected for a primarily oral history (Marsh et al., 2017, p. 119; Ogburn, 2012, pp. 232–233). Several chroniclers (Betanzos, 1987 [1551]; Sarmiento de Gamboa, 2007 [1572]) list conquered provincial areas in the same geographic order—Chinchasuyu, Antisuyu, Collasuyu, and Condesuyu—which led many to assume this order was chronologically based. Yet as Julien (2000, p. 52) notes, the temporal order of Inca historical narratives was structured by "genealogy, not chronology." It appears that many Spanish chroniclers, including Valboa, did not recognize the genealogical nature of Inca histories and instead sequenced the events they heard about linearly.

Julien (2008) refers to a document titled "Memoria de las Provincias," henceforth known as the "Memoria," to cast additional doubt on the late placement model. A petition presented in Cusco in 1569 by descendants of Thupa Inca known as the "Incas nietos," published by Rowe (1986, pp. 221–245), incorporates the "Memoria" document. The "Memoria" lists the conquests of Thupa Inca in Chinchasuyu northward from Cusco following the highland road, exclusively

records military engagements, and appears to have omitted peaceful incorporations of provincial areas that did not involve armed conflict (C. J. Julien, 2008, p. 169). Rowe demonstrated parallels between the "Memoria" and other accounts written by Valboa, Sarmiento de Gamboa, and Murúa[44], which raised the possibility that these authors employed the "Memoria" or a similar source to craft their historical narratives. Curiously, however, the "Memoria" does not account for the Inca annexation of the south coast, including the reportedly violent conquest of Cañete. This raises the question as to why Valboa associated the south coast campaign with Thupa Inca in the first place. Certainly, Valboa may have relied on another source, but another reason that this might be the case, according to Julien (2008), is that Valboa treated Thupa Inca and Pachacuti as the same person: "what is true and certain is…that Thupa Inca Yupanqui and Pachacuti are one and the same" (Cabello Valboa, 1951 [1586], p. 339). Valboa may have done so because Thupa Inca was the heir apparent at this time and conducted most of the military fighting on his father's behalf (Stella Nair, oral communication). It remains plausible that Valboa learned from another source that the annexation of the south coast was conducted by Pachacuti. Valboa might have changed the name to Thupa Inca in his account, incorrectly believing that these individuals were the same person (C. J. Julien, 2008, p. 172). This hypothesis calls the late placement model into question and grants support to the early placement model.

There is more support for an earlier beginning of the Late Horizon on the south coast. A growing body of calibrated ^{14}C and TL dates acquired from archaeological sites in Bolivia, Chile, Ecuador, and northwestern Argentina demonstrate that Inca expansions north and south of

[44] Martín de Murúa was a Mercedarian friar whose birthdate is unknown (Ossio, 2008, p. 436). He reached the Andes prior to 1585 and by 1601 was in the friary of San Juan Letrán in Arequipa (Ossio, 2008, p. 436). He died around 1620.

Cusco occurred earlier than Valboa's dates (Cornejo, 2014; D'Altroy et al., 2007; Leibowicz and Jacob, 2012; Lynch, 2012; Marsh et al., 2017; Ogburn, 2012; Ovalle and Rodriguez, 1988; Pärssinen and Siiriäinen, 1997; Schiappacasse, 1999; Williams and D'Altroy, 1998). Most recently, Marsh et al.'s (2017) dates indicate that the Inca likely expanded southward *first*, arriving in northern Argentina and Chile in the late 14th century, while Ogburn's (2012, p. 236) dates suggest that the Inca later expanded into what is now southern Ecuador sometime between AD 1440-1455. These findings imply that the Inca conquest of the south coast took place earlier as well. In addition, the "Relación" explicitly states that the Inca annexed Chincha 150 years ago. Since the "Relación" was published in 1558, this statement suggests that this event occurred ca. 1408.

All these lines of evidence support the following early placement model for the beginning of the south coast, outlined by Julien (2008). Capa Yupanqui was likely a younger brother of Pachacuti. He was ordered by Pachacuti to campaign on the south coast[45]. Although whether Capa Yupanqui peacefully annexed the Chincha Valley remains debated, it appears that he may have successfully brought the Chincha Valley under Inca rule. This is because according to the "Relación" (Crespo, 1975, p. 93), local Chincha groups allegedly assigned a house (or palace) called "Hatuncancha," women, specialized workers, and agricultural fields to Capa Yupanqui after he left to continue his campaign. Therefore, it is plausible to argue that the Inca conquest of the Chincha Valley was initiated before AD 1476 and during the reign of Pachacuti, perhaps in

[45] There existed a precedent for Inca rulers to order their brothers to campaign under their names. Viracocha reportedly ordered Inca Roca, his brother, to carry out campaigns (Sarmiento de Gamboa, 2007 [1572]).

the early to mid-15th century. For this study, I tentatively suggest that the Late Horizon (aka the Inca occupation) in the Chincha Valley is (AD 1400 – 1532).

Written sources from the early colonial period detail the administrative strategies employed by the Inca in the Chincha Valley. These strategies, discussed below, align with regional research on Inca provincial administration, which broadly indicates 1) a strong dependence on "intermediate elites," constituted by Inca elites (e.g., relatives of the emperor, colonists from the Inca heartland, and religious practitioners) and local elites and 2) significantly different strategies employed on the coast and in the highlands (Morris and Covey, 2006; Stanish, 2001). While the Inca, in general, exploited politically decentralized polities and more directly intensified agricultural production and camelid herd management to fund provincial infrastructure in the highlands, many of the highly centralized *señoríos* situated along the coast elicited different administrative strategies that minimally reorganized preexisting political hierarchies. This is because these coastal polities (like the Chincha) frequently maintained well-developed political economies, agricultural and fishing production, and labor specialization that demanded more indirect forms of imperial intervention (Morris and Covey, 2006; Stanish, 2001).

Indeed, Inca administration in Chincha leans more towards the indirect end of the political spectrum based on the written sources. After Capa Yupanqui incorporated the Chincha Valley into the Inca Empire, Thupa Inca consolidated the province. During his reign, a "dual rule" (Morris and Santillana, 2007, p. 156; Sandweiss and Reid, 2015, p. 10) political system was established in which Inca and Chincha elites operated in parallel with each other. For example, the Chincha lord possessed the judicial authority to prosecute crimes against all local inhabitants, whereas an appointed Inca official could prosecute crimes committed against the

Inca ruler or the state (Crespo, 1975; Nigra et al., 2014, p. 39). As Cieza (1959 [1553], p. 346) remarks, the "Incas did not strip the [Chincha] caciques and headmen of their power." Thus, the dual rule system appears to have granted autonomy to Chincha elites and kept the local political hierarchy mostly intact while establishing Inca supremacy[46].

Despite the alleged political autonomy given to the Chincha, the Inca established their presence in several ways and reorganized local economic and social structures substantially as part of their administrative efforts. Cieza (1959 [1553], p. 346) reports that the Inca ordered the construction of "large and sumptuous lodgings," storehouses, and a temple of the sun. This temple was staffed by "chosen women" (*aclla*[47]) and priests who supervised feasts and sacrifices (Cieza de León, 1959 [1553], p. 346). The "Relación" also describes a local woman designated for the Inca who presumably was an *aclla* placed in the temple of the sun (Crespo, 1975, p. 99; Sandweiss, 1992, p. 6). The "Relación" describes the installation of state retainers and specialist workers (*yanacona* and *mamacona*) for the Inca or the sun, but whether this activity happened in Chincha is unclear (Crespo, 1975, p. 96). The Inca organized the Chincha populace into a decimal-based administration (Crespo, 1975, p. 94; Sandweiss, 1992, p. 7). The administrative units of ten, one hundred, and a thousand individuals worked fields and wove textiles, supplying tribute to the Inca state apparatus (Crespo, 1975; Morris and Covey, 2006, p. 148). A periodic census was taken for levying tribute and assigning new local elites (Crespo, 1975; Morris and Covey, 2006, p. 148). This administrative restructuring may have been accompanied by a division of the Chincha population into two social units (*parcialidades*). The "Relación"

[46] The architecture and site layout of La Centinela, discussed in the next section, have been interpreted as providing additional support for this system (Morris and Santillana, 2007). I discuss this topic in the next section.
[47] Most *aclla* were not ethnically Inca. This is also true for most Inca soldiers and workers.

(Crespo, 1975, p. 94) states that Thupa Inca ordered a division of two *parcialidades*, one named *hanan* and the other *lorin*, for all valleys under his control, but whether this policy was enacted in Chincha is not explicitly said[48]. The "Aviso" (Rostworowski de Diez Canseco, 1970, p. 170) mentions the presence of "Lurinchincha," which implies the existence of a "Hananchincha" if this dual organization existed in Chincha during Inca times.

This review of the early colonial written record brings into focus several statements, arguments, and observations about the nature of Chincha society and its relations with the Inca Empire. Many of these are informative, while others are dubious, unclear, or both. Focusing solely on these early colonial written sources, produced during the violent and brutal Iberian invasion and written by Europeans, is problematic. To exclude other evidence, such as that produced from archaeological studies, welcomes the "tyranny of the text" (Papadopoulos, 1999, p. 383) and the silencing of indigenous material records. Written records serve as an important line of inquiry into understanding the history of the Chincha Valley; the material record serves as another. Previous archaeological research conducted in the Chincha Valley is the topic I turn to next.

Previous Archaeological Research

Max Uhle led the first archaeological excavations in the Chincha Valley during the early 20th century under the auspices of the University of California. From 1899 to 1901, Uhle

[48] In the Andes, larger political entities, towns, and villages were, and still are, organized into dual divisions (Moore, 1995; Zuidema, 1989, 1983). Provinces were said to have been divided into two parts—an upper (*hanan*) one and a lower (*hurin*) one—with *hanan* being generally considered higher in rank than *hunin* (Zuidema, 1989, 1983). *Lorin*, which is explicitly mentioned in the "Relación" (Crespo, 1975, p. 94) appears to be equivalent to *hurin*.

excavated and gathered archaeological collections in the districts of Trujillo, Huamachuco, Chincha, Pisco, and Ica (Kroeber and Strong, 1924, p. 3). In Chincha, Uhle excavated six mortuary sites (Sites A-F) located near and within the La Centinela-La Cumbe-Tambo de Mora complex (henceforth known as the La Centinela complex, Figure 3.3). This complex is described later in this section. The graves at Site D are described by Uhle as "chamber-like tombs, which had been dug out in a mound-like older huaca" (Kroeber and Strong, 1924, p. 8). Uhle (1924, p. 89) also documented multiple types of graves that "formed cave-like holes" at Site C. Kroeber and Strong (1924, p. 48) also note that Uhle described many graves (E13, F5, F6) as containing several bodies. At Site E, Uhle (1924, p. 88) uncovered "horizontally laid mummies," which he attributed to the Late Horizon and Colonial Period[49] . It appears that some or all these graves were subterranean graves containing multiple individuals.

Uhle also uncovered a diverse array of grave inclusions from these mortuary contexts. The ceramics discovered from these excavations led Uhle to identify a local Chincha design style that was later subdivided into two Chincha period styles ("Late Chincha I" and a transitional style known as "Late Chincha II") and an Inca-influenced style[50] (Kroeber and Strong, 1924). Bevel-lip bowls, jars with rhomboids and continuous patterns that appear derived from textile motifs and small blackware jars are among the ceramics associated with the Late Chincha I style.

[49] These mummies likely refer to extended, articulated bodies placed in graves. I will report radiocarbon evidence that suggests this treatment is associated with the LIP in chapter 7. Evidence for this treatment has been found at Las Huacas (Jordan Dalton, oral communication).

[50] Menzel's (1966) later analysis of Chincha pottery essentially reinforces the broad distinction between Chincha period and Inca period wares discussed in Kroeber and Strong (1924). She (1966, p. 79) describes two major, chronologically distinct units of Chincha pottery: one consisting of a local Chincha style dating to the LIP and early Late Horizon, and another composed of a Late Horizon and early colonial period style. Sandweiss's (1992) excavations at Lo Demás, however, raised issues with Menzel's typology. His work revealed the co-existence of the early Late Horizon style and the later Late Horizon style ceramics in stratigraphic layers, suggesting that these styles were not chronologically distinct, as Menzel believed, and that the local Chincha style persisted into Late Horizon. Thus, "Chincha-style pottery" does not necessarily correspond to an LIP date.

Double-jars and incised blackware jars are attributed to Late Chincha II and "aryballoid" jars are linked to the Inca style. Some graves exclusively contained ceramics dated to the Late Horizon, while others contained European artifacts (e.g., blue glass beads and leather ornaments) that indicate grave use into the Colonial Period. Several non-ceramic grave inclusions were recovered as well. Uhle recovered red ceramic figurines with whitish slips, shells with red pigment, spondylus shells and beads, twilled baskets and reed mats with weaving implements, spindles and whorls, wooden "stakes," pyro-engraved gourds, fragments of balance beams, metal tweezers, bronze headbands and neckbands, and silver goblets[51]. Several scholars conducted analyses on grave inclusions recovered from Uhle's excavations, namely textiles (Garaventa, 1979, 1977; O'Neale et al., 1949), ceramics (Menzel, 1966), gourd seeds (Carter, 1945), and gourd vessels (Whitaker, 1948).

Considering all of Uhle's finds from his mortuary excavations, Kroeber and Strong (1924, pp. 47–50) draw out several sociopolitical implications. They argue that local Chincha groups used and abandoned different graves at different times from the LIP to the Colonial Period, likely over the course of many generations. This does not necessarily mean that the deposition of grave inclusions reflects the decisions made by a homogenous population. The various grave inclusions may underline social differences among local families or descent groups, or perhaps mark the presence of distinct groups that formed an "imperfectly assimilated" (Kroeber and Strong, 1924, p. 49) population including individuals from Cusco and workers brought in from other provinces.

[51] Our archaeological fieldwork in the mid-Chincha Valley has recovered most of these non-ceramic finds from mortuary contexts. The significance of these finds will be discussed in Chapter 5.

After Uhle's archaeological fieldwork in Chincha, archaeological surveys first conducted by Dwight Wallace (1971, 1959) brought settlement and architectural patterns of the valley into focus. Even though these works report sites ranging in date from the Early Horizon to the Colonial Period, I will only examine settlement patterns and architectural patterns dating from the LIP to the Late Horizon for the purposes of this study.

One of Wallace's most significant discoveries is an extensive road network that radiates from the La Centinela complex (Figure 6). Six roads comprise this network. Two of the outer ones roughly form a right angle, one runs east-west toward the mid-Chincha Valley, and another runs north-south along the beach. This east-west, "up-valley" road proceeds through a notch in a foothill spur, making it one of the few, if any, paths that directly pass through the narrow mouth of the mountain gorge that marks the beginning of the mid-Chincha Valley (Wallace, 1991, p. 257). Uhle (1924, pp. 60–61) identified it during his early exploration of Chincha. He describes a 5-meter wide road lined with *tapia* walls running from the La Centinela complex to a "pass-like break in the hills," and argues that this path was in use before AD 1532 as the "natural and best line of communication with the coast" (Uhle, 1924, pp. 60–61). These observations are important for this study because they demonstrate a physical link between the middle and lower Chincha Valley that may have served to integrate mid-valley communities into the Chincha sphere of influence. The outer, north-south road connects the La Centinela complex to the San Pedro complex and may have extended to the lower Pisco Valley. Since the San Pedro complex is situated near an ex-hacienda named "Lurinchincha," Wallace (1991, p. 258) argues that La Centinela and San Pedro complexes may have functioned as core centers of the two *parcialidades* mentioned in the "Relación." Two paths proceed diagonally from the La Centinela complex across the entire valley, and at least two additional ones radiate from the San Pedro

complex; one heads up-valley and the other runs diagonally. In general, the roads are closely associated with major Chincha sites (e.g., La Centinela complex, San Pedro complex) shortly before the European invasion and some large (over 10 ha) sites with habitation areas (Wallace, 1991, p. 260)

Wallace (1991) proposes several explanations for this road network. He rejects arguments that date these paths exclusively to the Late Horizon because 1) there is no evidence that the Inca constructed roads in such ways and 2) it is unlikely that the Inca would "superimpose" these roads in an already heavily populated area (Wallace, 1991, p. 258). It appears more likely that Chincha populations built them during the LIP in such a way as to spread across the entire valley and to converge on the La Centinela complex, which raises multiple questions. Why do the main roads radiate from this complex, what functions did this network serve, and what does it say about Chincha society? If one of the archaeological sites that comprise the La Centinela complex served as the pilgrimage center of Chinchay-camac, then the roads may have served as a means for Chincha and non-Chincha populations to travel to this ceremonial center. As Wallace (1991, p. 258) remarks, the paths can be explained as an "extension of the monumentality and symbolism of the site [La Centinela] as a pilgrimage center for populations far beyond the inhabitants of Chincha alone."

The road system can also be viewed as a mechanism of the Chincha economic network. Wallace makes reference to how the system provides direct access to important routes leading east and south, including a highland road (Wallace, 1991, p. 259). The east-west, up-valley path from the La Centinela complex leads to the mid-Chincha Valley, which appears to have been a densely populated area of farmers. The north-south coastal road, if extended, makes its way to

the lower Pisco Valley and Paracas Bay, and additional paths could have emanated from this road heading towards the middle Ica Valley and the Nasca Valley. One of the diagonal roads that runs across the pampas connects with a point where the Pisco Valley enters the foothills, joining a major up-valley road to the highlands that passes by Tambo Colorado, a significant Inca site. The up-valley path stretching from the San Pedro complex would have connected with this diagonal path. Based on these patterns, the roads, in theory, could have integrated different economic specialists described in the written sources (e.g., fishermen, farmers, merchants) and facilitated the movement of goods away from and toward the La Centinela complex. For example, agrarian goods from the mid-Chincha Valley could have been transported towards the coast, while fish remains dried at a coastal Chincha site (e.g., Lo Demás) could have been transported to agrarian communities within and outside the Chincha Valley.

Overall, these models for the Chincha road network are not mutually exclusive. Wallace broadly interprets the network as a physical expression of ideological, economic, and sociopolitical integration that enhances the centrality of the La Centinela complex as a likely pilgrimage center and offers a means of moving goods and people (e.g. pilgrims) bidirectionally between the coastal and highland areas (Wallace, 1991, p. 261). The road system may have even provided a centralizing "counterforce" to the dispersed settlement patterns observed in the valley (Wallace, 1991, p. 261), patterns that I describe in more detail below.

The archaeological surveys conducted by Wallace (1971, 1959), as well as Lumbreras (2001) and Canziani (2009, 1992), contribute to our current understanding of LIP and Late Horizon settlement patterns in the Chincha Valley. In total, Wallace's (1971) survey identified 112 archaeological sites—of which 70 are currently recognized as being LIP or Late Horizon in

date. His work revealed the La Centinela complex as a major Chincha center (Wallace, 1998) surrounded by a dense array of mound clusters and hamlets. He identified "rectangular, semi-subterranean, communal, chullpa-like tombs" and several more graves along the lower valley edges, many of which were looted likely not long after the Spanish invasion (Wallace, 1991, p. 258, 1971). Wallace (1971) argued that poured mud and/or rammed earth construction (*tapia*) marked Chincha-affiliated sites and that rectangular, adobe materials signaled Inca construction in the valley. Building upon Wallace's initial reconnaissance survey, Lumbreras and Canziani, operating under the auspices of INDEA, identified at least 30 more sites dating to the LIP or Late Horizon, raising the total number of these sites to around 100 (Canziani, 2009, 1992; Engel, 2010; Lumbreras, 2001; Nigra et al., 2014, p. 41) (Figure 6).

Canziani (2009, pp. 388–402) provides a recent discussion of these settlement patterns. He describes the overall Chincha organization of territorial space as combining aspects of concentration and dispersion. On the one hand, political, economic, and perhaps religious power and authority appear to have been concentrated at three major centers in the Chincha Valley: La Centinela complex (Huaca La Centinela, La Cumbe, and Tambo de Mora) San Pedro complex (La Centinela de San Pedro and at least eight irregularly distributed mounds), and Las Huacas (Figure 6). These sites warrant brief, introductory descriptions here. La Cumbe (200 x 150 m) is an important platform complex located approximately 200 m northwest of La Centinela. It features the remains of *tapia* and adobe buildings (Canziani, 2009, p. 392) and early ceramics that suggest the site was occupied from Paracas to Inca times. Tambo de Mora covers an area of at least 20 ha, displaying a "U" shaped arrangement of patios, terraces, and enclosures on stepped platforms (Canziani, 2009, p. 393). Huaca La Centinela, the supposed center of the Chincha Kingdom and Inca administration, is an approximately 30 ha site whose main

architectural units include a *tapia* platform structure (likely Chincha) and an adobe administrative complex (likely Inca). The San Pedro complex, situated at the southern end of the valley, occupies an area of approximately 60-70 total ha and comprises two broad sectors: La Centinela de San Pedro (85 x 85 m) and eight mounds located to its east (Canziani, 2009, p. 394). These deteriorated architectural remains contain large retaining walls, stepped platforms, and adobe and *tapia* construction. Lastly, Las Huacas, located in the middle of the lower Chincha Valley, is a massive (approximately 105 ha) site with multiple clusters of structures (Canziani, 2009, p. 396). Lumbreras (2001, p. 52) proposes that Las Huacas functioned as an agricultural center because of its location.

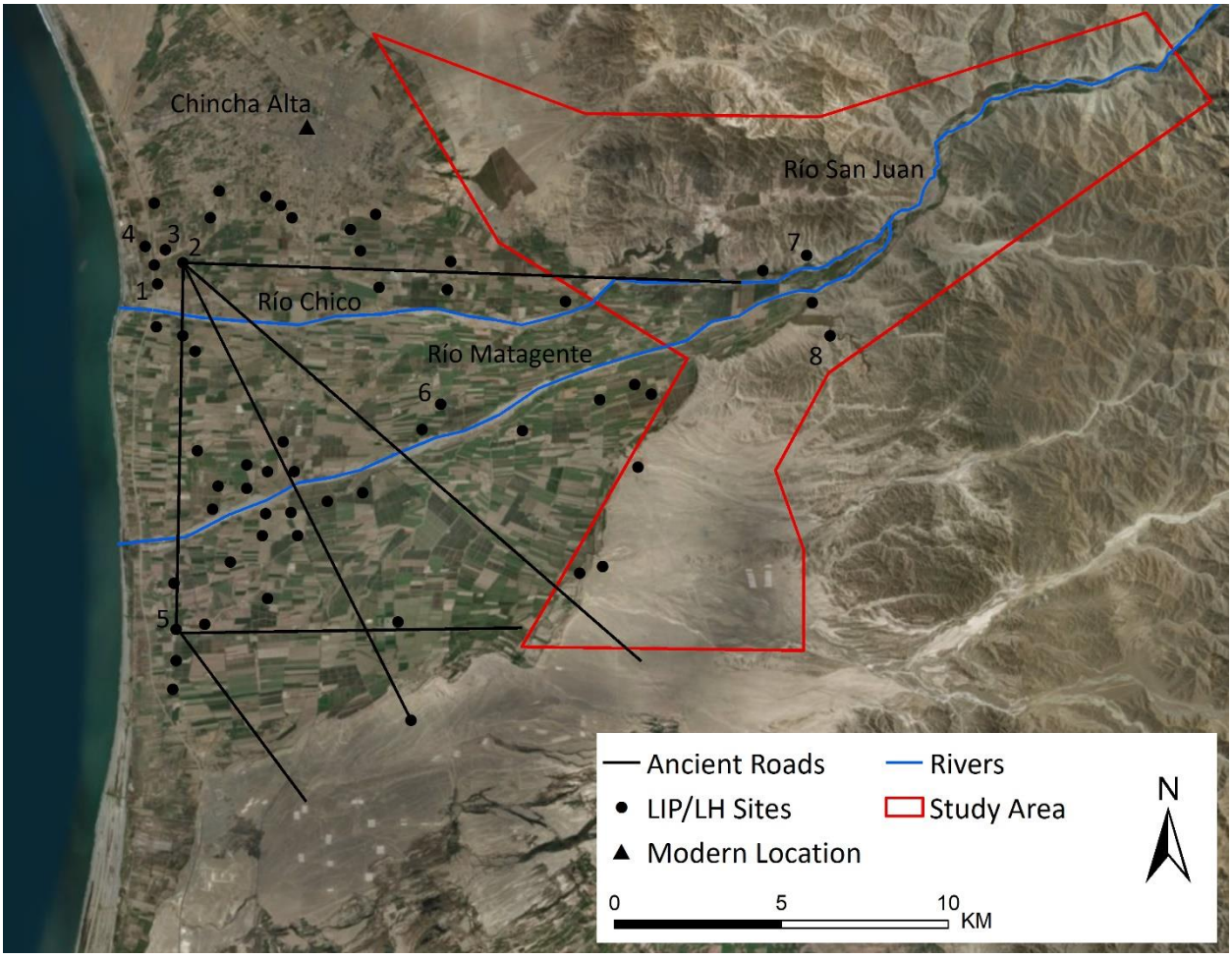

Figure 3.3: Principal LIP and Late Horizon sites from the Chincha Valley. These sites are drawn from Canziani (2009), Engel (2010), Lumbreras (2001), and Wallace (1971, 1991). Numbered sites are mentioned in the text: 1) Tambo de Mora, 2) Huaca La Centinela, 3) La Cumbe, 4) Lo Demás, 5) La Centinela de San Pedro, 6) Las Huacas, 7) Casagrande, 8) Pampa de la Pelota. Mortuary sites documented in the mid-Chincha Valley have been excluded; they will be shown in a map later.

On the other hand, the Chincha settlement pattern is also highly dispersed. There are several sites that were established strategically throughout the valley, presumably to manage irrigation and coastal and agricultural production. In addition to the road network, these sites

include habitations, administrative complexes, cemeteries, and agricultural infrastructure consisting of irrigation canals and cultivation fields (Canziani, 2009, p. 389, 1992). What becomes clear is that there is a considerable density of LIP and Late Horizon settlement in the Chincha Valley, which carries multiple implications. The dense distribution of these sites suggests that population, irrigation, and agricultural production levels expanded during these times. For example, Canziani (2009, p. 389) finds that some areas of the lower Chincha Valley possess exclusively LIP and Late Horizon sites that do not appear to have been occupied previously. Several late sites were established on the northern plain of Chincha Alta, which is a naturally elevated terrace above the alluvial valley floor, and along the southern margins of the valley above the supposed limit of cultivated fields. Thus, Canziani (2009, p. 389) argues that during this time, the irrigation system expanded and large tracts of land became incorporated into agricultural production. The relative lack of sites situated between the Matagente and Chico rivers might be due to a flood that occurred in the early 20th century (Wallace, 1991, p. 256).

Canziani (2009, pp. 397–400) also reports on the settlement patterns of the mid-Chincha Valley, focusing on administrative sites and cemeteries. Casagrande (Figures 3.4 - 3.5) and Pampa de la Pelota (recently destroyed), located in the "neck" of the mid-Chincha Valley (Figure 6), are characterized as administrative complexes presumably constructed to manage hydrological systems and/or agricultural production. Pampa de la Pelota (180 x 80 m) was a rectangular enclosure featuring a plaza, a double-sided stone outer wall, and interior subdivisions arranged around a central corridor (Canziani, 2009, p. 398). The site was associated with a high density of terraces built on a hillside that contain evidence of domestic use (Canziani, 2009, p. 398). Casagrande is similarly associated with several domestic terraces built on a nearby hillside (Canziani, 2009, p. 398). This site, still in existence at the time of writing, reaches 86 m long

along its north-south axis and varies between 60 m and 75 m in width (Canziani, 2009, p. 398). It exhibits a trapezoidal plan, stone walls, a central corridor, and multiple internal subdivisions fashioned as terraces to overcome the slope of the terrain (Canziani, 2009, p. 398).

Figure 3.4: Aerial photo of Casagrande (right side of image) and its associated terraces (left side)

Figure 3.5: Aerial view of Casagrande, facing north

The mid-Chincha Valley exhibits a dense distribution of mortuary sites, most of which can be characterized as cemeteries. Canziani (2009, p. 398) notes the presence of "simple tombs"[52] and collective tombs that resemble the *chullpas* found in the highlands and other regions of the Central Andes. The "simple tombs" are hypothesized to be individual graves, and they are associated with the deposition of bodies in large ceramic pots (Canziani, 2009, p. 398). Canziani (2009, p. 399) describes the Chincha *chullpas* as semi-subterranean graves that contain mummy bundles and display quadrangular plans measuring 4-5 m at a side. Canziani (2009, p. 398) hypothesizes that the mummy bundles in these graves were not "buried" per se, but rather deposited and arranged in *chullpas* over a period of time as communities of the dead, family

[52] These "simple tombs" appear to correspond to the stone-lined, subterranean graves that we label as cists in this study.

groups, or clans who were routinely worshipped as ancestors[53]. *Chullpas* tend to feature 2) openings that face north or west, 3) steps leading to subterranean floors, 4) remnants of interior benches and roofs, 5) fieldstone and *tapia* construction (2009, p. 399). There are clear differences in site planning: they are found isolated, arranged in rows or on platforms with retaining walls, densely clustered as to create a network of passageways, and positioned around central spaces to which their openings face towards (Canziani, 2009, p. 400). Some *chullpas*, like the so-called "tomb of the king" (Canziani, 2009, p. 399) (known as UC-007-A Tomb 21 in this study) show evidence of monumentality and more elaborate construction (e.g. remnants of red pigment on walls, niches, more sophisticated accessways) compared to others, possibly implying status differences. Despite these architectural differences, Canziani argues that Chincha *chullpas* demonstrate the development of a "singular architectural tradition." I build upon Canziani's work in the mid-Chincha Valley by systematically gathering more archaeological data on mortuary practice and evaluating several of his claims against a larger, more detailed mortuary dataset.

Archaeological excavations conducted at prominent LIP and Inca period sites in the Chincha Valley complement the archaeological surveys led by Wallace, Lumbreras, and Canziani. Alcalde Gonzales et al.'s (2002) excavations at Tambo de Mora uncovered evidence for metallurgical workshops likely dating to the Late Horizon. The authors discovered furnaces used for heating and refining, slag, and artifact molds. Analyses of such molds revealed that they were used to cast silver with lead and copper (Alcalde Gonzales et al., 2002). The lack of production debris at the site suggests that silver refining activities occurred elsewhere and that

[53] This hypothesis aligns with the notion of *chullpas* as accessible, open-air graves containing remains that were not immediately buried so as to facilitate routine living-dead interaction (Lau, 2016, 2015; Ramos, 2010, p. 26; Sillar, 1996). This hypothesis receives strong empirical support in this study.

purified silver was likely brought to the site for the production of finished artifacts (Zori and Tropper, 2013, pp. 3284–3285). Lumbreras (2001, pp. 14–15) explains the significance of the silversmith workshops at Tambo de Mora. These data may demonstrate that certain artisans may have had residences differentiated from other workers and may offer support for Lizárraga's (1946 [1605]) claim that some farmers in Chincha worked as silversmiths.

Sandweiss (1992) excavated the settlement of Lo Demás to evaluate the historical record for Chincha, assess the role of fishermen in fishing economies, and contribute to understandings of coastal Andean economic organization. Lo Demás is located on the northern side of the Chincha Valley, approximately 250 m west of La Cumbe (Figure 6). Sandweiss divides the site into four sectors: Sector I (Late Horizon commoner residences), Sectors II and III (graves and a Paracas structure), and Sector IV (monumental structures). He tests two models of economic specialization. The first model, based on sources that describe the Chincha Kingdom, states that fishermen were attached specialists working for the state, living in nucleated settlements, and consisting of aggregates of individual producers who worked full-time at fishing (Sandweiss, 1992, p. 16). The second model, based on sources that describe north coast economic organization, posits that fishermen were attached specialists working for an Inca administrator and local lord who also served as independent specialists that exchanged with local producers (Sandweiss, 1992, p. 16). The second model expects evidence of hierarchical levels within the fishing population.

Sandweiss's (1992) excavations identified Lo Demás as a fishing settlement occupied in the Late Horizon. Evidence of various methods of salting and drying fish and camelid dung and the lack of camelid faunal remains and woolen textiles at the site indicate that dried fish and

other goods were likely transported inland by camelid caravans across the documented road network (Sandweiss, 1992, p. 140; Sandweiss and Reid, 2015, p. 4; Wallace, 1991). Radiocarbon dates, architecture, pottery, figurines, pyro-engraved gourd fragments, spindles, and spindle whorls suggest a Late Horizon occupation for the site. Sandweiss found evidence for status differences between Sector I and IV. Sector I contains small, ephemeral structures and Sector IV features monumental structures. Sandweiss (1992, p. 142) interprets the rectangular adobes found in some walls of Sector IV as demonstrating a close connection with Inca administrators The economic activities of Sector I are confined to fishing and domestic chores whereas activities associated with Sector IV are limited to fishing and artisanal production of gourds, cotton products, and wooden objects. Based on all these data, Sandweiss advocates for the second model and argues that 1) commoner fishermen carried out domestic and fishing activities, 2) fishing lords controlled craft specialists and fishermen, 3) the lack of an LIP component at the site indicates that the Inca reorganized and intensified the local Chincha economy.

Morris and Santillana (2007) conducted excavations and architectural analysis at Huaca La Centinela. Morris and Santillana organize the site into eleven architectural sectors—collectively spanning approximately 30 ha—separated by walls, passages, and plazas. They argue that that the site does not provide evidence for strict planning; rather, it appears to have expanded organically (Morris and Santillana, 2007, p. 138). Ten of the eleven sectors were built during the LIP, some of which were modified during the Late Horizon. The Chincha-style *tapia* platform structure (Figure 3.6), mistakenly described as a "truncated pyramid" and held to be the temple of Chinchay-camac by the authors, is situated in Sector II. Only the adobe administrative and religious complex of Sector III (Figure 3.7) is argued to have been constructed exclusively during the Late Horizon. Although excavations discovered Inca-influenced ceramics throughout

the entire site, local Chincha-style ceramics were rarely found (Morris and Santillana, 2007, p. 140).

Figure 3.6: The tapia platform mound in Sector II of Huaca La Centinela

Figure 3.7: The adobe complex in Sector III of Huaca La Centinela

Morris and Santillana argue that the Inca transformed the architecture of Huaca La Centinela. They argue that the Inca modified and incorporated—rather than excluded and/or eliminated—local architectural elements. For example, Morris and Santillana (2007, p. 143) observe that the stairway ascending the Sector II *tapia* platform complex includes a large adobe section that "modifies the side of the tapia pyramid and contrasts with the sloping ramps that are the common interconnections between the various levels of Chincha truncated pyramids." Additionally, the entrance plaza of the Sector III complex is oriented towards this staircase. Based on this observation, Morris and Santillana (2007, pp. 143–144) argue that the Inca co-

opted the Sector II platform complex by reorienting its access through their administrative and religious complex.

The Inca also appear to have modified the local compound of Sector VIII. This sector contains two sub-sectors: A and B. An adobe wall running north-south in sub-sector A was likely constructed in the Late Horizon, dividing the sub-sector into a western area and an eastern one (Morris and Santillana, 2007, p. 152). The western area is associated with enclosed, Inca-style rectangular buildings and a larger proportion of Inca-style vessel shapes compared to the eastern area (30% vs. 8%). The eastern area displays Chincha-style ramps, passageways, and open platforms (Morris and Santillana, 2007, pp. 152–153). The western area likely featured more restricted activities involving smaller numbers of people, and the eastern area's open platform spaces may have been the foci for public ceremonies (Morris and Santillana, 2007, p. 153). Furthermore, the eastern area is oriented toward and accessed from sub-sector B, which is characterized by a large, trapezoidal plaza with *tapia* enclosure walls and an adobe platform. The authors suggest that the eastern area of sub-sector A and sub-sector B were connected as ceremonial spaces, and that sub-sector B was a public space that "represents an expansion of the role of public ceremony in the compound during Inka times."

Morris and Santillana draw out the religious and sociopolitical implications of these architectural changes for understanding Chincha-Inca relations. Once again, if the Sector II platform complex is assumed to have been the temple of Chinchay-camac, then the reorientation of this structure towards the entrance plaza of the Sector III complex can be viewed as an Inca effort to control public access to a significant, local religious center. This can suggest an emphasis on local Chincha religion as opposed to the introduction of an entirely new religion

from Cusco (Morris and Santillana, 2007, p. 155). From this perspective, religion played a critical role in the process of establishing a new order in Chincha during the Late Horizon. Inca architectural modifications (especially the construction of Sector VIII's adobe wall division), on one level, may also materialize an establishment of a "dual rule" system through which the Inca could share political power with local elites and perhaps local commoners brought in for local ceremonies (Morris and Santillana, 2007, p. 155). On another level, these modifications, in addition to Inca construction of plazas (e.g., entrance plaza of Sector III), signaled an increasing emphasis on public gathering space and enabled the Inca to participate in newly expanded ceremonies (Morris and Santillana, 2007, p. 156). The Inca emphasized public ceremony as part of their rule over local populations at other provincial centers such as Huánuco Pampa (Morris and Thompson, 1985). Although ceremonial spaces at Huánuco Pampa were arguably designed to develop obedience and a local hierarchical structure (Morris and Covey, 2003), Morris and Santillana (2007, p. 156) argue that at Huaca La Centinela, the expansion and modification of ceremonial space likely functioned to bring the Inca into an already well-established local sociopolitical hierarchy. This study explores, in part, whether mid-Chincha Valley mortuary sites present evidence of an increasing role of public ceremony during the Late Horizon.

Most recently, Charles Stanish (USF) and Henry Tantaleán (Escuela Superior politécnica del Litoral Guayaquil, Ecuador) started the Proyecto Arqueológica Chincha (PACH) in 2012 to investigate further the development of sociopolitical complexity in the Chincha Valley. The first aim of the project is to explain the Paracas presence in Chincha. Research conducted by fellow collaborators of PACH has demonstrated intensive and extensive Paracas settlement throughout Chincha, characterized by large platform structures, ceremonial sites, and an indeterminate number of domestic sites (Nigra, 2017; Stanish et al., 2014; Tantaleán, 2016; Tantaleán et al.,

2016, 2013). In addition, there is an elaborate geoglyph complex (Stanish et al., 2014). The second goal of the Chincha project is to build upon previous archaeological investigations into the LIP and Late Horizon occupations in the Chincha Valley to develop understandings of the Chincha Kingdom and its relationship to the Inca Empire, a goal to which this study is oriented.

Conclusion

In this chapter, I contextualized this study by presenting an overview of the environment, textual sources, and previous archaeological research of the Chincha Valley. My review of this background information yields several important insights. The Chincha Valley was a highly fertile, agriculturally productive area that set the foundation for the development of the Chincha Kingdom. Early colonial written sources broadly paint the Chincha Kingdom as a society organized around socially differentiated activities including agriculture, fishing, precious metal production, and mercantilism. These texts generally suggest that the Inca Empire brought the Chincha Kingdom under control in the 15th century, reorganizing local economic and sociopolitical structures. At their core, previous archaeological investigations in the Chincha Valley reveal a broad, dispersed, and clustered array of LIP and Inca period sites, and evidence for a local ceramic style, economic specialization, Inca period architectural modification of an important political center, and a valley-wide road network that likely served economic and ceremonial functions.

Moreover, the relationship between the written and archaeological records is complex for Chincha. Both records align in many ways. They demonstrate that the Chincha Kingdom was one of the most well-developed, centralized, and densely populated societies on the south coast during the LIP and Late Horizon. They show that populations of fishermen worked and lived

near the coastline and that metallurgists operated in Chincha. The textual sources also make several provocative points regarding the nature and organization of the Chincha Kingdom and its relations with the Inca Empire that find little to no support. Some describe a society organized around a copper currency and an institutionalized class of seafaring merchants that sailed to Ecuador to acquire spondylus during the LIP. Archaeological research to date indicates that copper was indeed produced in Chincha, but there is no evidence suggesting it was fashioned into a currency. No archaeological evidence of balsa rafts has been recovered in Chincha, but this does not reject written observations of local Andean balsa rafts that reflect a pre – AD 1532 capacity for seafaring. Spondylus shells and artifacts have been discovered in Chincha, but most, if not all, are associated with Late Horizon period contexts, casting the notion of a LIP Chincha spondylus trade enterprise in doubt. Some sources note that the Inca peacefully brought the Chincha under rule; others reveal that armed conflict between both parties occurred. Although evidence for warfare in the mid-Chincha Valley has been found, the extent of this conflict and the parties involved are unclear.

Despite the rich archaeological and textual records of the Chincha Valley, several questions and limitations remain. The relationship between the Chincha Kingdom and the Inca Empire is debated, and few, if any, mortuary investigations have been carried out since the early 20th century, thereby severely limiting our understanding of Chincha mortuary practice. I have demonstrated in chapters 1 and 2 that mortuary practice can serve as a context through which political and religious interactions between expansionist states and local populations occur. Therefore, this study helps address these issues by investigating the development of mortuary practice from the LIP to the early colonial period in the mid-Chincha Valley. Archaeological

fieldwork and analyses conducted from 2013-2017 in this area constitute this study. The methods and research design of this work are described in the next chapter.

CHAPTER 4

RESEARCH DESIGN AND METHODS

Introduction

In this chapter, I first outline the research questions, hypotheses, and test implications for this study. Then, I discuss the research design and methods employed to evaluate the main hypotheses, address these core questions, and achieve the broader research goals. I have already established the theoretical and cultural contexts of this investigation and reviewed several theoretical perspectives that inform this work, such as mortuary politics, imperial conquest, death as a process, and personhood. I have discussed the environmental, written, and archaeological background of the Chincha Valley.

Before fulfilling the objectives of this chapter, it is important to reiterate the broader theoretical questions and research goals that guide this investigation. Religion can be understood as a means of enabling—and constraining—social action. Ritual activities and processes constitute and materially signal religion at work, and they can be manipulated in different ways and in different contexts to achieve sociopolitical goals. In the context of a changing political landscape undergoing integration into an empire, how do local groups treat their preexisting religious practices? Are these practices maintained, transformed, or innovated, and what do these decisions suggest about the political dynamics between local and imperial parties, and the broader relationships between local religious practice and sociopolitical change? Imperial conquest can foster dramatic sociopolitical change, and mortuary practice represents a primary, cross-cultural form of religious practice. This study explores the relationship between mortuary

practice, imperial conquest, and sociopolitical change in the mid-Chincha Valley, an area that was consolidated by the Inca Empire in the 15th century.

The goals of this dissertation are threefold. First, I aim to report on the nature and variation of mortuary practice in the mid-Chincha Valley, focusing primarily, but not exclusively, on mortuary architecture, treatment of the dead, and age and sex distributions of select grave populations. Second, I seek to characterize the development of mortuary practice from the LIP to the early colonial period using radiometric data. Third, I strive to integrate all data to develop models of mortuary process in the study area. Accompanying these goals are a series of research questions and hypotheses that I describe below.

Research Questions

Research Question #1: *How did local groups in the mid-Chincha Valley treat their preexisting mortuary practices after the Inca arrived in the early 15th century?*

To characterize and understand the development of local mortuary behavior in the mid-Chincha Valley, I first evaluate whether the differences between *chullpas* and cists represent changes in local mortuary practice through time. This step requires collection and AMS radiocarbon analyses[54] of a representative and robust sample of organic samples from *chullpas* and cists. This research question derives from the broader anthropological debate surrounding how local religious traditions develop in the context of sociopolitical change. My hypotheses are based on the different developmental trajectories of local religious activities—both mortuary and non-mortuary—that have been theorized and documented in the written and archaeological

[54] These methods are discussed later in the chapter.

records of the Andes. Since the eradication of local cultural practices and the introduction of new ones are both socially and economically costly (Schreiber, 2004, p. 143), expansionist states generally work with local groups to co-opt, build upon, and/or reproduce preexisting cultural practices to drive and legitimize sociopolitical transformations of conquered populations (Brumfiel 1998; Joyce 1997; Wernke 2013, 10–11; Wernke 2007a). Written documents and archaeological research conducted in the Andes demonstrate that, in some cases, interactions between the Inca and local groups resulted in the maintenance of preexisting LIP religious practices during the Late Horizon (Albornoz, 1967 [1582]; Díaz Arriola, 2004; Guamán Poma de Ayala, 1980; Jennings, 2003a; Tantaleán, 2006). My first hypothesis aligns with this notion. On the contrary, there is also archaeological evidence for profound changes in these practices following the onset of the Inca period (Buikstra and Nystrom, 2015; Díaz Arriola, 2004; Jennings, 2003a, 2003b; Nielsen, 2008; Tantaleán, 2006). My second hypothesis supports this idea.

Hypothesis #1a: *Local groups maintained preexisting forms of mortuary practice after the Inca arrived in Chincha*

If mid-valley groups continued preexisting mortuary practices after Inca conquest, then the radiocarbon data would demonstrate that 1) cist samples date to both the LIP and Late Horizon and 2) *chullpa* samples similarly date to both periods. In this case, the estimated starting and ending boundary dates for *chullpa* and cist use would be similar, encompassing the LIP and the Late Horizon. These findings can be explained in many ways, depending on perspective (e.g., top-down, bottom-up, improvisational).

From a top-down perspective, the Inca may have adopted an “indirect” form of imperial

rule (D'Altroy, 1992) in the mid-valley, providing autonomy to local elites and encouraging local groups to retain *chullpa* and cist mortuary practices so that social differences and integration among and between these groups could be maintained.

In a bottom-up view, the incorporation of the Chincha Kingdom into the Inca Empire may have also spurred mid-valley groups to maintain preexisting mortuary traditions and sociopolitical relationships during a period of profound change. Such maintenance of not only preexisting mortuary traditions, but also *different* mortuary traditions, may have represented local efforts to retain local authority, identities, social differences, and community structures as a new political regime was being established.

From an improvisational, two-way perspective, continuity in local mortuary practice may have been mutually agreed upon by Inca administrators and mid-valley groups as a cost-effective, nonintrusive strategy for materializing the alleged alliance between the Inca Empire and the Chincha Kingdom.

Hypothesis #1b**:** *Local groups transformed preexisting forms of mortuary practice after the Inca arrived in Chincha*

If local groups transformed preexisting mortuary practices in the mid-valley during the Late Horizon, then the radiocarbon data would demonstrate that 1) samples from one grave type exclusively date to the LIP and 2) samples from the other grave type exclusively date to the Late Horizon. Here, the estimated starting and ending boundary dates for the use of one grave type would only span the LIP, and the estimated start and end dates for the use of the other grave type would only span the Late Horizon. These findings carry many implications.

The Inca may have employed a “direct” form of imperial rule (D’Altroy, 1992) in the mid-valley, instigating the abandonment of one grave type and accelerating the widespread adoption of the other grave type to transform local mortuary practice. Such a change may have minimized differences between mid-valley groups and “socially engineered” new communities for administrative purposes, both of which are regarded as Inca imperial strategies (Wernke, 2013, p. 30).

Inca conquest and consolidation of the Chincha Kingdom may have also afforded opportunities for several local groups across the mid-Chincha Valley to establish and expand new bases of authority, reinforce territorial land claims**,** and forge new sociopolitical relationships among themselves and with Inca administrators by shifting towards another form of mortuary practice. Several groups may have coordinated with each other to designate this form of mortuary practice as a preferred strategy for constituting and reconstituting social structure under Inca rule.

This transformation in mortuary practice may also indicate political tensions between the Inca Empire and the Chincha Kingdom. Considering the Spanish extirpation of Andean mortuary practices during the Colonial Period, transformations in local mortuary practice can be symptomatic of political conflict between expansionist states and complex polities. Transformation of mortuary practices in the mid-valley may demonstrate political tensions that challenge written claims that Chincha groups peacefully capitulated to the Inca Empire, at least within the mid-Chincha Valley.

Research Question #2: *How long did local groups use individual graves?*

This research question and the others following it are designed to develop understandings of grave use in the mid-Chincha Valley. Toward this end, it is critical to evaluate time scales for individual grave use because they provide insight into how the living engaged with the dead and serve as an important distinguishing feature for the construction of grave typologies (Knüsel and Robb, 2016; Osterholtz et al., 2014). Since all documented graves in the study area are commingled, I needed to develop hypotheses that accounted for this observation.

I draw from Knüsel and Robb (2016) and Osterholtz et al. (2014) to develop these hypotheses. The two types of commingled assemblages discussed by Osterholtz et al. (2014) that are most relevant for this study are long-term usage and episodic usage. Long-term usage assemblages exhibit evidence for "use of the same tomb through time, sometimes over hundreds of years" (Osterholtz et al., 2014, p. 2). They are characterized by high levels of commingling and more fragmentation likely caused by the collision between new and old depositions of human remains. Episodic usage assemblages contain evidence for the deposition or burial of multiple individuals in a single event (Osterholtz et al., 2014, p. 2). They typically display 1) less commingling and fragmentation compared to long-term usage assemblages and 2) less processing of bodies at the time of death. Knüsel and Robb (2016) define similar categories. They (2016, p. 657) designate collective depositions, which are essentially long-term usage assemblages, as "human remains deposited successively over time rather than in a single episode, often inferred from variations in completeness and articulation among the remains." Multiple depositions, which are similar to episodic usage assemblages, are defined as "simultaneous deposition of several bodies in the same place" (Knüsel and Robb, 2016, p. 657).

For this study, I modify and employ the "long-term usage" and "episodic usage" to refer to distinct periods of grave use in my hypotheses. Here, grave use is not limited to the deposition of human remains; it also incorporates the deposition of grave inclusions. Although the types proposed by Osterholtz et al. (2014) and Knüsel and Robb (2016) refer to bioarchaeological data (e.g., fragmentation and completeness), one of the most important distinguishing features is *time*. Long-term usage of graves entails the deposition (or burial) of human remains and grave inclusions in graves over several years, and episodic usage entails the depositions of such remains and inclusions in graves simultaneously. Therefore, radiometric data can also distinguish between long-term and episodic usage assemblages. This is not to say that the noted bioarchaeological data are not important in making these distinctions. They certainly are, but given the heavily looted nature of mid-Chincha Valley graves, many of the patterns related to commingling, fragmentation, and articulation may be more indicative of the looting occurring during and after the Colonial Period rather than pre-Colonial Period use.

I propose that radiometric data are a more reliable indicator of periods of grave use. To use these data for distinguishing between long-term and episodic usage, multiple radiocarbon dates from a series of individual graves are required, and the contemporaneity between multiple dates from single graves needs to be assessed[55]. I discuss the hypotheses stemming from this research question below. They are tested for both *chullpas* and cists, and they focus attention on radiometric data.

[55] The methods I employ to achieve these aims are discussed in the next section of this chapter.

Hypothesis #2a: *Local groups used graves over the long term*

If local groups placed depositions of human remains and grave inclusions in a grave over the long term, then the radiocarbon data would show that multiple dates from the individual grave are not contemporaneous. Contemporaneity can be defined and tested in several ways. In this study, I test contemporaneity by 1) creating a Bayesian model for the dates of interest, 2) evaluating whether the 95% probability distributions of modeled start and end dates from single graves with multiple dates overlap, and 3) using the "Difference" function in OxCal 4.3 to calculate the 95% probability distribution for the differences between the start and end dates of these graves. I provide an example to illustrate this process. Given an individual grave with 2 dates, if the 95% probability distributions of Bayesian modeled start and end dates from this grave do not overlap and the 95% probability distribution of the difference between these dates does not include zero, then this suggests that the dates are not contemporaneous.

This hypothesis connects to several ideas and models that have been put forth to explain the long-term usage of graves. Depending on how long the graves were in use, it would support the claim made by Kroeber and Strong (1924, p. 48) that the lower Chincha Valley graves excavated by Uhle were used over several years, perhaps stretching "over two or three generations." They imply that families are depositing the remains of their relatives in the same grave over a long-term period. Evidence in favor of this hypothesis makes this a possibility, but it also brings additional models to mind. Individuals or groups may have returned to graves and reentered them to make additional offerings to the deceased, perhaps ancestors. They may have come back to modify the grave architecturally. Or, they may have done so to manipulate the deceased in some way, marking an important transition into a new status.

Hypothesis #2b: *Local groups used graves episodically*

If local groups placed depositions of human remains and grave inclusions in a grave episodically, then the radiocarbon data would show that there is no evidence to reject the claim that multiple dates from individual graves are contemporaneous. Following the discussion above concerning contemporaneity, I provide an additional example to demonstrate support for this hypothesis. Considering an individual grave with 4 Bayesian modeled dates, if the 95% probability distributions for the start and end dates overlap, then there is no evidence to reject the proposal that the dates are contemporaneous. This aligns with the notion that the grave was used episodically.

Graves can be used episodically for numerous reasons. Episodic usage assemblages are sometimes interpreted as mass graves. For Knusel and Robb (2016, p. 658), this term "is interpretive and can only be used when simultaneous deposition of many bodies suggests a causative agent such as violence, disaster, or disease." In this study, a mass grave can refer to the simultaneous deposition of bodies and grave inclusions. Indeed, graves that show signs of episodic usage may have been associated with an event that caused many to die at the same time and to be deposited simultaneously. Determining the "event" requires additional lines of bioarchaeological and material evidence. Osterholtz et al. (2014, p. 2) delineate different expectations for bioarchaeological data that correspond to different causative agents for episodic usage assemblages. For instance, mass graves with war dead commonly have an overrepresentation of young males with high levels of trauma. I build upon these ideas in my discussion of Hypothesis 4a. To be clear, contemporaneous dates do not confirm the type of

episodic usage on their own; they can act as a precursor that supplements other lines of evidence for further interpretation.

Research Question #3: *How did local groups deposit human remains in these graves?*

Evaluating how human remains were being deposited in graves is another important step towards explaining grave use that simultaneously develops understandings of mortuary process. Two major types of deposition identified by bioarchaeologists and mortuary archaeologists are primary and secondary. A primary deposition of human remains refers to the "original placement of the corpse," and a secondary deposition refers to movement of human remains from an original, primary location to another, secondary one (Knüsel and Robb, 2016, p. 657).

Distinguishing between primary and secondary depositions, especially in commingled contexts, is challenging. Scholars frequently define these types of depositions based on skeletal part representation. As Bello and Andrews (2006, p. 9) state, the movement of human remains from one location to another, characteristic of secondary depositions, can result in the involuntary loss of small, labile elements of the human skeleton. These elements tend to disarticulate rapidly during soft tissue decomposition. They include terminal phalanges of hands and feet, the patella, hyoid, and cervical vertebrae (Knüsel, 2014; Knüsel and Robb, 2016, p. 658). Definitive evidence for secondary depositions, however, is rare and frequently tied to the absence or underrepresentation of labile elements (Duday, 2006) which, for some (Bello and Andrews, 2006, p. 9), is insufficient. Additional lines of evidence that may reveal secondary depositions are cut marks, bone bundles (oral communication, Danielle Kurin) extensive disarticulation, and breakage (Bello and Andrews, 2006). In primary depositions, labile bones are commonly present

and in anatomical articulation, though movement of these remains may occur depending on the position of the corpse (Knüsel and Robb, 2016, p. 658).

In consideration of these points, I tested the following hypotheses with bioarchaeological data gathered from human remains. These remains were collected from 2 *chullpas* and a cist that were selected for surface collection and excavation. The commingled nature of these contexts makes it difficult to formulate interpretations. That is, evidence for one type in a grave does not necessarily mean that the other was not present. This work stands as part of an initial inquiry into types of deposition of human remains in mid-Chincha Valley graves. These hypotheses center on elemental distributions of remains.

Hypothesis #3a: *Local groups placed primary depositions and few, if any, secondary depositions in graves*

Within a sampled assemblage of human remains from a grave, if 1) the number of labile elements is relatively high, 2) the distribution of bone elements is reasonably complete, and 3) bones in articulation are observed, then these finds suggest the presence of at least some primary depositions. This would coincide with a previous bioarchaeological analysis of a commingled *chullpa* in the mid-Chincha Valley that found a "reasonably complete distribution of elements," suggesting that the grave was a locus for primary deposition of "relatively complete individuals, rather than an ossuary for disparate human remains" (Weinberg et al., 2016, p. 140). Primary deposition does not necessarily imply that the human remains were not moved or that they were not further manipulated. Some degree of movement is to be expected, especially in built environments where mortuary sites were built away from domestic sites. In some cases, the

original intention behind primary deposition was to transfer all elements to the location of interest. Human remains deposited in this way may not have been immediately buried and may not have been laid to *rest*. Millaire (2004) documents cases in which the Moche reopened graves and disturbed or rearranged preexisting primary depositions of human remains, and Takigami et al. (2014) reveal that, in the context of a recently excavated grave at Pachacamac, textile bundles containing mostly intact bodies were reshuffled as new primary depositions were made.

Hypothesis #3b: *Local groups placed secondary depositions and few, if any, primary depositions in graves*

If the number of labile elements is relatively low and the distribution of bone elements is significantly incomplete, then this suggests the presence of at least some secondary depositions within the sampled assemblage of human remains. As discussed in chapter 2, secondary deposition of human remains is a cross-cultural practice. It is well-attested in the archaeological and ethnographic records within and outside of the Andes and frequently associated with belief systems surrounding the soul and the afterlife (Carr, 1995; Hertz, 1960 [1907]). These depositions may have constituted the last stage of a multi-phase mortuary process in which the human remains were curated in a primary location (e.g., charnel house) and then subsequently placed in a secondary location (e.g., collective grave). Societies curate their dead as part of efforts to delay deposition and/or burial over many time scales and for many reasons (e.g., seasonality, need to assemble groups for a funeral, ceremonial use) (Hanna et al., 2012; Knüsel and Robb, 2016, p. 669; Millaire, 2004; Pearson et al., 2005; Strauss et al., 2016). The primary location may have facilitated the decomposition of the flesh and a transition into a new status for the deceased. Certain body parts (e.g., crania, femora) may have been held in high esteem and

thus selected for deposition elsewhere, perhaps as offerings (Millaire, 2004) or as representations of entire persons (Weismantel, 2015). It is also important to consider how the remains were moved to the secondary location (e.g., textile bundling, litter, etc.).

Research Question #4: Who was deposited in these graves?

This last research question explores the rules governing inclusion in graves and their relationship to social structure. Most, if not all, documented graves in the mid-Chincha Valley contain multiple individuals and can thus be considered collective graves. Most graves are arranged into spatially discrete cemeteries. Some graves are above-ground structures, and others are subterranean, stone-lined pits. Some human remains show evidence of elaborate treatment (e.g., textile bundling, red pigment application, vertebrae placed on posts) and others do not. These variations—elaborated over the course of the next 3 chapters—suggest social differences among those placed in these graves and raise questions concerning their identities. In chapter 2, I discussed three models drawn from Kurin's (2016) work that focus on social principles structuring *who* was deposited in collective graves. Here, I reframe them as three hypotheses that I test using bioarchaeological and material data. These data are associated with treated and untreated human remains and grave inclusions recovered through excavations of a *chullpa* and cist and a surface collection of another *chullpa*.

Hypothesis #4a: *Local groups deposited war casualties in graves*

If a collective grave of interest was used as a mass grave with war casualties, I would expect 1) individuals comprising mostly young adult males showing signs of trauma, 2) evidence of animal gnawing and scavenging on human remains, and 3) limited, if any, evidence of grave inclusions, feasting, or offerings (Kurin, 2016, p. 13). The demographic profile may also include

wounded individuals of all ages. Evidence of animal gnawing and scavenging demonstrates that the human remains were likely left in the open for some time (Willey and Emerson, 1993). The lack of grave inclusions would suggest that the dead were unceremoniously and perhaps haphazardly deposited in the grave (Kurin, 2016, p. 13). Evidence for Hypothesis 2b (episodic use) and Hypothesis 3b (secondary deposition) would provide additional support for this hypothesis. Abundant data for warfare in the mid-Chincha Valley (presented in chapter 5) coincide with archaeological and bioarchaeological analyses of LIP sites (Arkush, 2008; Arkush and Tung, 2013; Kurin, 2016) and at the least, render this hypothesis as a strong possibility.

Hypothesis #4b: *Locals deposited ancestors and/or prominent leaders of groups in graves*

If a collective grave housed ancestors (*mallquis*) and/or prominent leaders, I would expect 1) the remains of older adult males and possibly their wives, but no evidence of sexually immature sub-adults incapable of leaving behind descendants, 2) complex body curation practices and mummification, 3) and evidence of feasting and sumptuary grave inclusions (Kurin, 2016, p. 13, 2012, p. 61). Definitions of ancestor (described in chapter 2) inform this hypothesis. These definitions vary cross-culturally, but what is clear is that for several cultures, including Andean ones, ancestors are highly esteemed members of the dead that fall into specific age and sex categories. They are commonly adult males, not sub-adults. This hypothesis would support written documents that report on Andean ancestor veneration. These documents describe ancestors as mummified or desiccated individuals that were curated in above-ground, accessible graves, repeatedly given offerings, and sometimes subjected to postmortem treatment (e.g. textile wrapping, painting) that changed their physical appearance (Doyle, 1988; Dulanto, 2002, p. 99; Ramos, 2010; Salomon, 1995).

Hypothesis #4c: *Locals placed descent groups in graves*

Alternatively, mid-Chincha Valley groups may have deposited the remains of descent groups into graves. If this was the case, I would expect a given grave to include individuals encompassing various age and sex categories (adult, sub-adult, male, and female) and exhibiting a range of statuses (injured, uninjured, treated, untreated) (Kurin, 2012, pp. 62–63). This hypothesis would grant support to written testimonies from the Spanish idolatry campaigns and documents that describe collective graves as loci for distinct lineages (Cobo, 1964 [1653], p. 165; Doyle, 1988; Duviols, 2003, p. 184, 1986, pp. 52–53; Lau, 2016, p. 175). It would align with previous bioarchaeological and archaeological research in Moquegua that suggests cemeteries represented residential descent groups (Hoshower et al., 1995). It would also coincide with previous analysis of a mid-Chincha Valley *chullpa*, which discovered a highly mixed grave population consisting of more than 60 males and females ranging from infants to older adults (Weinberg et al., 2016). It would also provide preliminary support for recent genetic research demonstrating that *chullpas* in southern Peru contained patrilineal family groups (Baca et al., 2012).

These research questions and hypotheses collectively require an elaborate research design and a set of interdisciplinary methods to address. I delve into these topics below.

Research Design and Methods

I developed a multi-year, multi-scalar, and interdisciplinary research design for this investigation. From 2013-2017, my colleagues and I carried out archaeological fieldwork in the mid-Chincha Valley at two scales— regional and targeted—and conducted laboratory analyses. At the regional scale, we conducted a full-coverage archaeological survey in the mid-Chincha

Valley, geospatial mapping, architectural documentation, and aerial photography of mortuary sites, and collection of various types of samples (e.g., radiocarbon, pigment, skeletal) from graves across the study area. At the targeted scale, we performed an intensive surface collection of a *chullpa* and excavations of a *chullpa* and 2 cists. No ethnographic work in the study area was possible because there are no indigenous groups who are descended from mid-valley, Chincha-affiliated groups. Fieldwork participants included graduate students from UCLA and other universities in the U.S., licensed archaeologists and undergraduate students from Peru, and undergraduates within the Chincha Valley Field School (affiliated with the Institute of Field Research). There are no indigenous groups who are descended from local

Laboratory work consisted of analyses of samples recovered from mortuary contexts through survey, surface collection, or excavation, some of which were exported to the U.S. with permission from the Peruvian Ministry of Culture (107-2016-VMPCIC-MC). Juliana Gómez Mejía, Susanna Seidensticker, Brittany Jackson, and Noemí Oncebay Pizarro conducted bioarchaeological analyses of human remains and vertebrae placed on posts. Colleen O'Shea served as our field conservator who was responsible for cleaning, stabilizing, and documenting fragile finds recovered through fieldwork. O'Shea assessed artifact conditions, developed treatment plans, prepared conservation reports, and photographed many of our finds. Erv Taylor and staff at the W.M. Keck Carbon Cycle AMS Lab at UC Irvine carried out radiocarbon analysis. Vanessa Muros and Hans Barnard performed XRF, XRD, and GC-MS analyses of pigment samples. Carrie Arbuckle prepared and photographed wood samples extracted from grave roof beams for analysis. Christine Hastorf and David Beresford-Jones examined the photos and identified the wood. I executed exploratory and descriptive statistical analyses and data visualization of attributes that I recorded on mortuary architecture and treatment of the dead. I

also produced 3D models and digital site plans of select cemeteries. I detail these methods below.

Regional Fieldwork

Full-Coverage Archaeological Survey

In 2013, we conducted a full-coverage, pedestrian survey within an estimated 40 km^2 area situated in the mid-Chincha Valley (Figure 4.1). We defined "sites" as areas containing any material traces of ancient use. Within sites, we recorded visible standing architecture and infrastructure as "features," and deemed discrete areas within sites exhibiting significant differentiation in terms of use as "sectors." We wrote detailed descriptions of the architecture, geographical context, and artifacts of the site using paper forms.

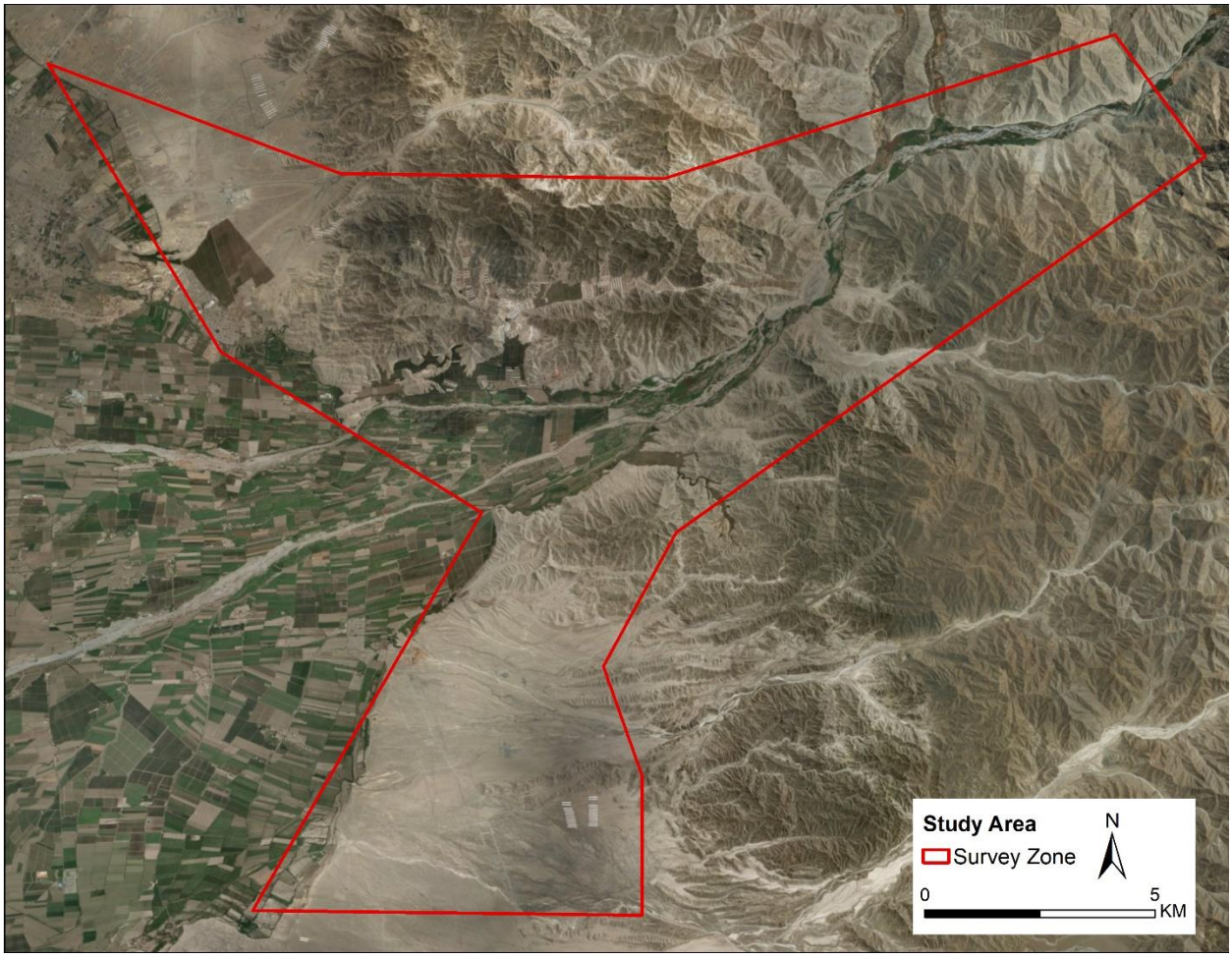

Figure 4.1: The survey zone

We recorded the locations of all sites and features including tombs, roads, public architecture, defensive architecture, and habitation sites as points, polygons, and polylines with a Trimble GeoXH GPS. We entered various attributes relating to architecture and artifacts into the GPS and imported these data into a GIS. We were not able to record all attributes for all graves because of time constraints. We were able, however, to record data concerning opening orientation, tomb shape, construction material, presence of architectural features (e.g. interior benches and forecourts), and the presence of treatments of the dead (e.g., posts put through human vertebrae and human remains with red pigment) for all the tombs we encountered on

survey. We collected important artifacts, including diagnostic ceramics, spindle whorls, and figurines, and brought them back to our laboratory for analysis and storage. We uploaded all geospatial data to the GIS Pro application on the iPad as a means of backing up the data and facilitating future returns to sites. This application allows users to visualize their real-time location in relation to previously recorded locations on a digital map.

Geospatial Mapping, Architectural Documentation, and Aerial Photography

Indeed, I returned to 18 previously recorded cemeteries in 2016 and 2017 to collect more accurate geospatial data and more detailed architectural data, and to capture aerial photos to be used in the production of 3D models and orthomosaics (raster images produced by merging geometrically corrected photos). These data build upon and complement the 2013 geospatial dataset[56]. I developed a digital form with attributes related to mortuary architecture (e.g., construction technique, building material, masonry type, dimensions) and uploaded it to an iPad. At each grave within each selected mortuary site for investigation, I performed two tasks. First, I recorded these attributes into the iPad. Second, I used a Trimble R2 GPS with 4 cm accuracy to map these graves and other mortuary structures.

[56] During this phase of the investigation, I did not return to all graves that we recorded in 2013. Thus, the 2016 geospatial dataset (n=294 total graves) that I recorded in this phase is a subset of the 2013 dataset (n=664 total graves). For example, I recorded the dimensions (e.g. interior width, interior length, etc.) of all graves that I returned to in 2016, but I was not able to do so for *all* graves recorded in 2013. Some graves have these attributes and others do not. In some cases, however, the 2016 subset complements the 2013 dataset. For instance, I re-recorded the presence of posts with vertebrae in graves that I revisited in 2016 and synthesized these data with the broader 2013 dataset. Therefore, when I discuss distributions of any attributes in this study, I clarify the sample size of graves and the dataset(s) (2013, 2016, or both) that they are derived from.

During the 2017 field season, I used a DJI Mavic Pro drone to take aerial photos of 18 cemeteries. I manually flew the drone along transects over areas of interest. I would stop the drone at several points along these transects to take photos. Oblique and top-down raw photos were captured at varying altitudes and in such a way as to maximize overlap and to ensure adequate resolution of mortuary structures.

Sample Collection

Since graves in the mid-Chincha Valley display varying levels of looting and preservation, we performed an opportunistic sample collection through survey, surface collection, and excavation. To limit selection and spatial biases, we gathered different types of samples from *chullpas* and cists throughout the entire survey zone. Our efforts amassed samples of organic materials for dating, pigment, crania with red pigment, posts with human vertebrae, and wood from grave roof beams. In total, we collected and exported 156 radiocarbon samples (25 of which were analyzed) from 40 *chullpas* and 7 cists. Various radiocarbon sample types were collected in graves whenever possible. These samples include human hair, fragments of reed with vertebrae, vertebrae on reeds, maize, fragments of textiles, carbon, and reeds found in *chullpa* roofs. Preference was given to short-lived plants (maize) and well-preserved hair because they are among the most reliable samples for accurate ^{14}C age determinations of burials and grave use (Koons and Alex, 2014; Taylor et al., 1995).

In addition, we collected and analyzed 1) 35 samples of red pigment from 19 *chullpas*, 1 cist, and a copper and iron oxide source (five of these samples were collected outside of graves), 2) 31 mostly complete crania with red pigment from 10 *chullpas* (one of these crania was collected outside of a grave), 3) 72 posts with vertebrae from 26 *chullpas* (36 samples were

collected outside of graves) and 5) 5 samples of wood from roof beams found within 5 *chullpas*. Wood samples were exported to the U.S. for analysis. Red pigment samples were collected from human remains, textiles, and soil layers in the field and exported to the U.S. for chemical analyses. Crania with red pigment and posts with vertebrae were brought back to the lab for bioarchaeological analysis. All samples were bagged and handled with protective gloves to prevent contamination. The distribution of cemeteries selected for sampling and analysis is displayed in Figure 4.2.

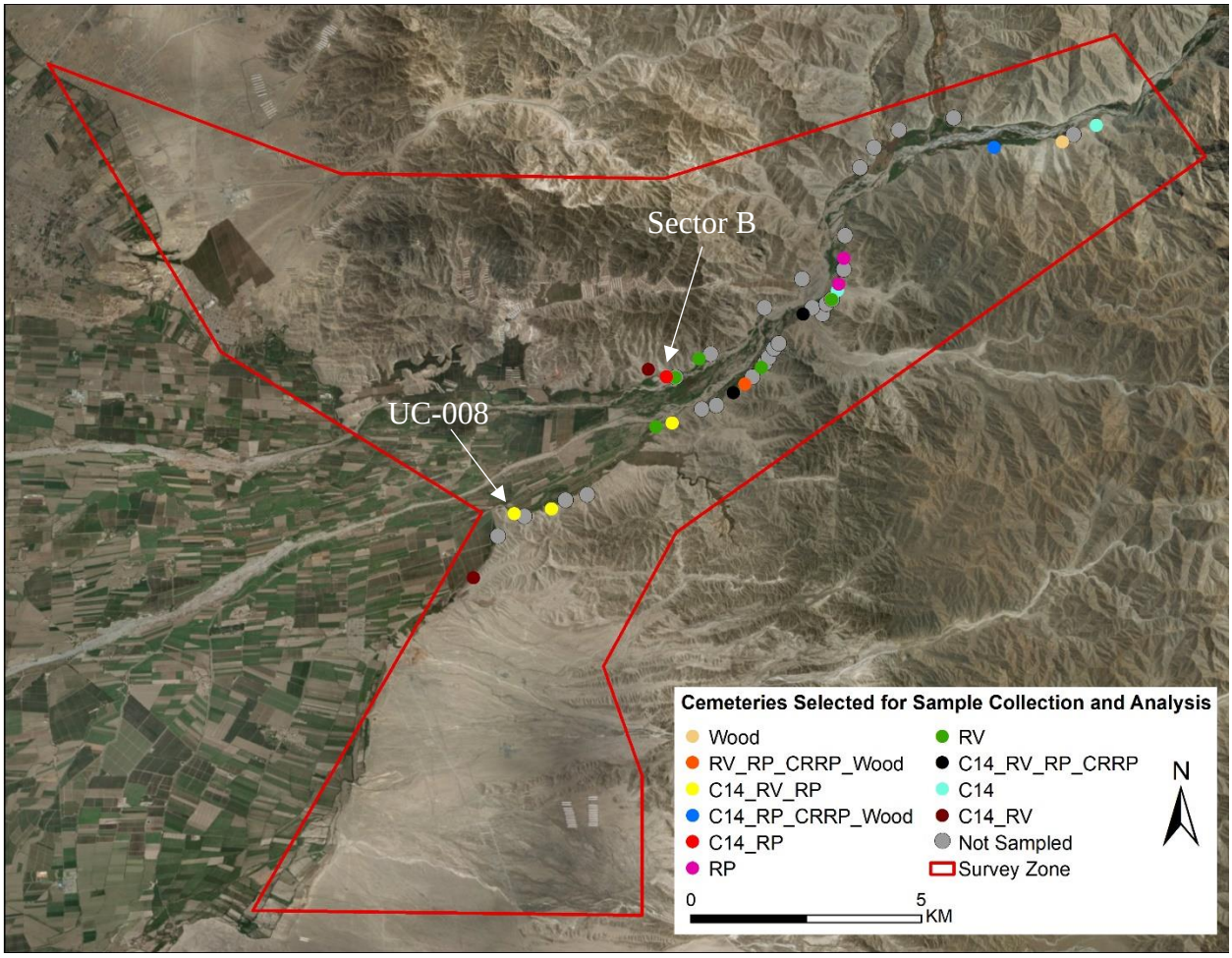

Figure 4.2: The distribution of cemeteries selected for sample collection and analysis. Each colored circle designates a cemetery. The different colors refer to the different types of samples collected. “RP,” “RV,” and “CRRP” refer to red pigment, post with vertebrae, and cranium with red pigment respectively. Multiple sample types were collected from some cemeteries. For example, a cemetery marked as “C14_RV_RP” demonstrates that radiocarbon, red pigment, and post with vertebrae samples were collected from this site and analyzed. UC-008 and Sector B are sites that were selected for targeted excavation.

Targeted Fieldwork

Surface Collection of UC-008 Tomb 1

In 2014, we conducted a surface collection of human remains and grave inclusions from a previously disturbed *chullpa*. This *chullpa* is known as UC-008 Tomb 1 (Figure 4.5), and it is in the UC-008 cemetery (Figures 4.3 – 4.4). This grave was selected because it contained a higher density of human remains and grave inclusions compared to other graves documented in the study area. I took photos of UC-008 Tomb 1 from multiple angles for 3D model and orthomosaic production. Sometime between 2013 and 2014, some interior grave contents were moved outside of the southern edge of the grave. We thus divided the grave into 2 collection units: one comprising these outside contents, and another comprising the interior contents.

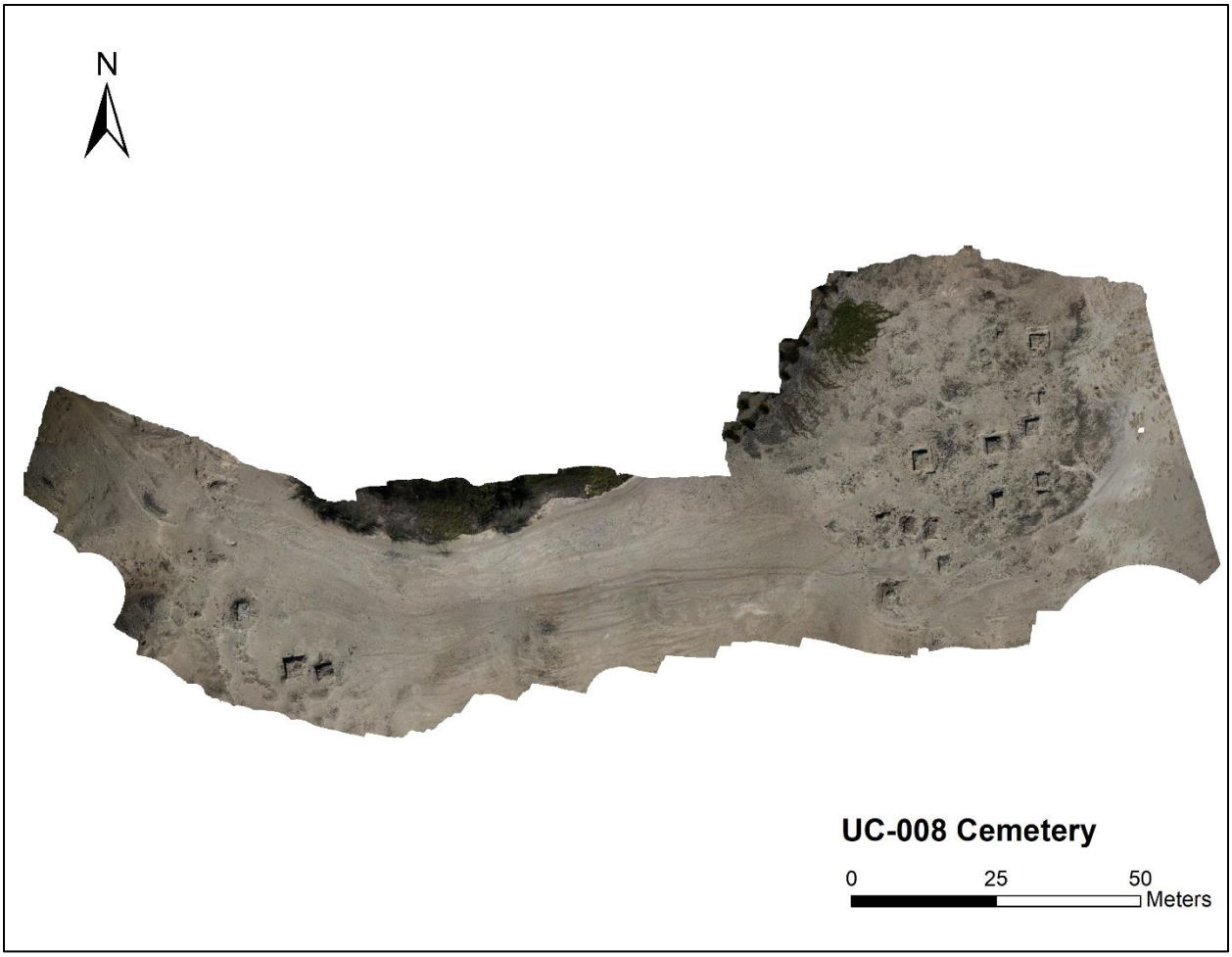

Figure 4.3: Orthomosaic of UC-008

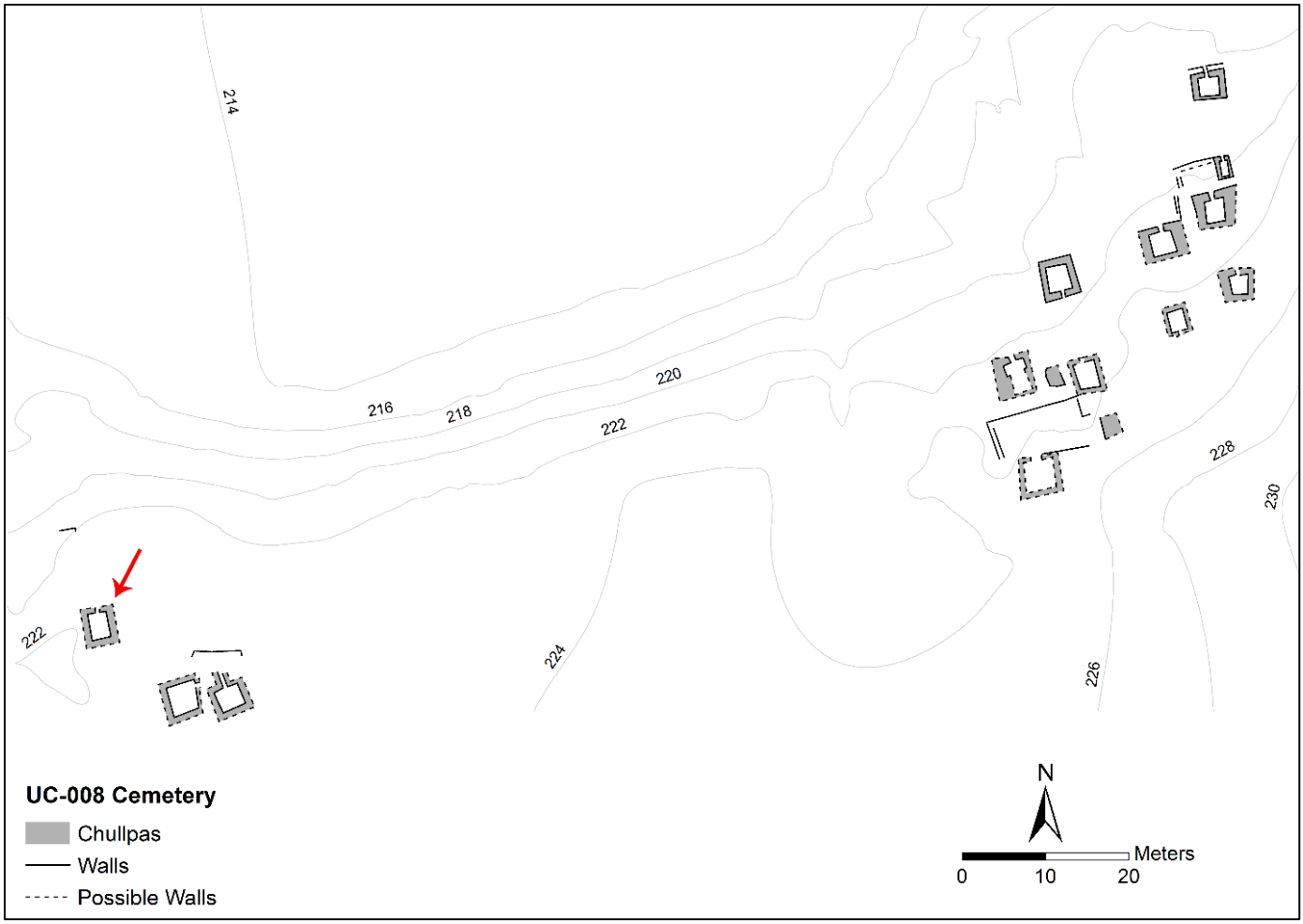

Figure 4.4: Map of UC-008 cemetery

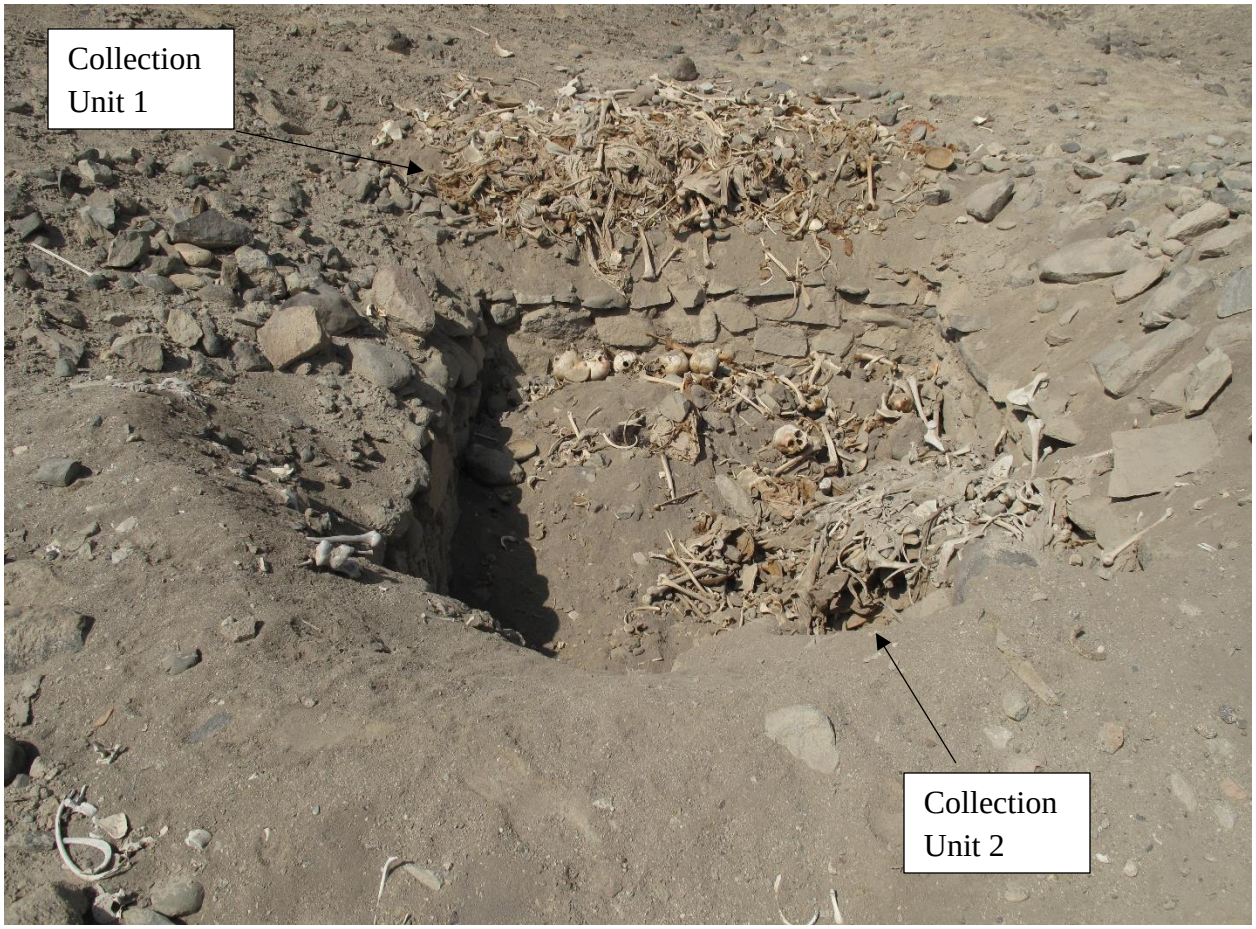

Figure 4.5: Photo of UC-008 Tomb 1 prior to surface collection, facing south. Collection Unit 1 includes contents moved outside the southern edge of the grave. Collection Unit 2 includes all contents recovered from inside of the grave.

We placed all finds from these collection units in plastic geological sample bags. Different bulk finds were placed in different bags according to their type. For example, human remains and botanical finds were placed in separate bags. “Composite” finds such as textile bundles containing human remains, were placed in the same bag. Each bag received bag number (*lote*) and collection unit designations that we recorded in a registry. We wore protective gloves and masks to prevent contamination. All finds were secured and safely transported to our lab.

Excavations at Sector B

During the 2015 field season, our team excavated nine units in Sector B (Figures 4.6 – 4.7), a cemetery located 475 meters from the site of Casagrande. We recorded this site in 2013 as having one *chullpa*, but when we revisited the site in 2014, we found that three additional *chullpas* had been opened. Each of these graves displayed well-preserved architecture and high densities of human remains. We thus chose to excavate this site because we suspected that it contained undisturbed graves.

We excavated two 2 x 2 m units and seven 1 x 1 m units across the cemetery (see Figure 4.7). We placed Unit 1 (2 x 2 m) over a looter's pit that was discovered during a reconnaissance survey performed in 2014. We surface collected all human remains and materials that were moved from this unit during the looting event. The looter's pit was dug into a grave that we recorded as Tomb 4 (check and make sure). Unit 2 (1 x 1 m) was placed on the western side of a partially exposed wall on the southeastern end of Sector B, and Unit 3 (1 x 1 m) was placed on the eastern side of this wall. Our team positioned Unit 4 (1 x 1 m) on the western side of a partially exposed wall in Unidad 1. Unit 5 (2 x 2 m) was put inside a *chullpa* known as Tomb 3 that was exposed due to looting activity. We also surface collected all human remains and materials that were moved outside of this *chullpa* by looters (*huaqueros*). Unit 5 comprises the northeast and northwest corners of the *chullpa* wall. We placed Units 6-9 (each 1 x 1 m) south of Unit 5 to expose the remaining *chullpa* architecture. In this study, I focus on Unit 1 and Units 5-9 because they comprised graves. All excavators wore protective gear while working.

Figure 4.6: Aerial photo of Sector B, facing north

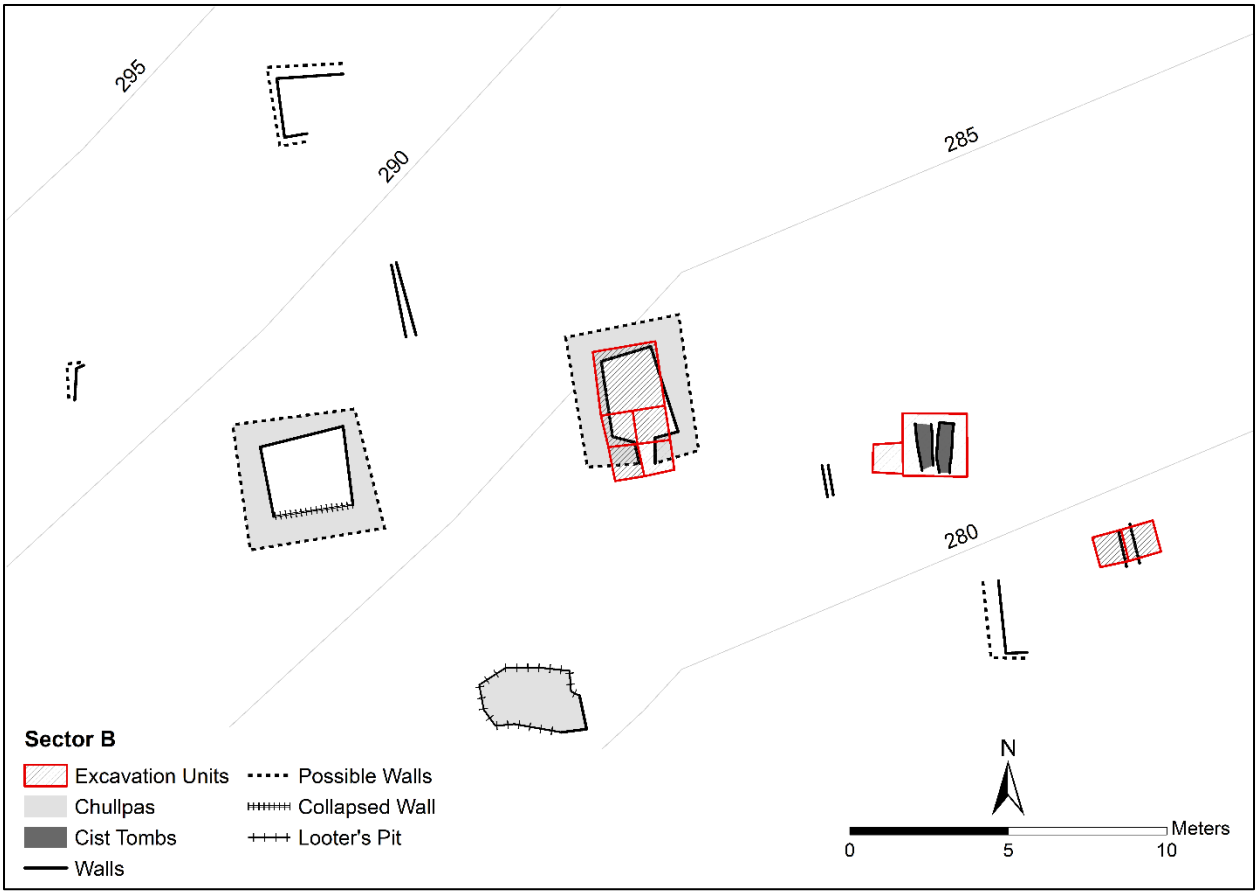

Figure 4.7: General map of Sector B

We employed a recording system built around levels (*niveles*), loci, and features (*rasgos*) to facilitate the production of reports (*informes*) required by the Ministry of Culture. We controlled stratigraphy in each excavation units by using a system of natural levels. This proved extremely difficult because most units were previously disturbed and commingled. We distinguished new niveles based on differences in matrix content, density, consistency, and color. Rasgos are important features worthy of close attention, including looter's pits and offerings. A locus number was assigned to each nivel and rasgo. Therefore, each nivel and rasgo is technically a locus. This system, as Nigra (2017, p. 198) puts it, essentially amounts to a "single-

context recording system" that facilitates field documentation, photo documentation, and inventory creation.

We combined digital and paper-based techniques to map at Sector B. We used a Topcon Total Station to map 1) all standing architecture, 2) excavation units, 3) ground control points (GCP's) distributed across units, and 4) radiocarbon samples and finds including offerings, textile bundles with human remains, and other idiosyncratic artifacts. The Total Station was also used to record elevations for each nivel. We also hand-drew maps on paper forms to point-plot samples and finds. We did not map bulk items, for instance, most textiles and ceramic sherds. A photogrammetric strategy was deployed to document niveles and associated rasgos within each unit. At the start or end of each nivel, we placed GCP's across the area of interest, recorded the coordinates of GCP's with the total station, and photographed the area of interest from multiple angles. A Canon G10 camera was placed on a photo boom arm to take overhead photos of areas of interest. This strategy was followed to gather data for producing georeferenced 3D models and orthomosaics of our niveles.

We employed a full-collection approach at Sector B. All excavated soil was sifted using a 2 mm mesh. We placed all human remains and grave inclusions encountered in our excavations in plastic geological sample bags. Some human remains required special attention—for example, a group of articulated and semi-articulated adult lower leg bones were carefully lifted out of their mortuary context, wrapped in plastic wrapping, placed in a Tupperware container, and safely transported back to the lab. Radiocarbon samples were all placed in aluminum foil. All finds received unit, nivel, locus, and optionally a rasgo designation. All finds were transported to the Museo Regional de Ica "Adolfo Bermúdez Jenkins."

Laboratory Analyses

Bioarchaeological Analyses

Bioarchaeological analyses were performed on commingled human remains collected through fieldwork. Jackson and Seidensticker installed a digital application known as OsteoSurvey, developed by Austin (2014), on an Android tablet and used it to examine human remains collected from the surface collection of UC-008 Tomb 1. OsteoSurvey is "a series of bioarchaeological data collection forms for mobile devices" (Austin, 2014, p. 14). These forms—traditionally recorded on paper—follow the techniques and observations outlined in Buikstra and Ubelaker (1994) for inventorying remains and assessing attributes including age, sex, pathologies, hereditary traits, and taphonomy. Austin (2014) compares data collected with OsteoSurvey and paper forms and finds that OsteoSurvey provides "faster data collection and more consistent observations." For these reasons, we selected this digital interface to analyze these human remains during the 2014 and 2015 field seasons.

Human remains were closely examined, and bioarchaeological data on age, sex, health, trauma, and cultural treatment were recorded and coded into the OsteoSurvey database in the lab. For the purposes of this study, I present results on anatomical group representation, age and sex distribution, and cultural treatment, and I briefly discuss preliminary results on trauma. Non-destructive instruments including an osteometric table, digital calipers, dental explorer, and a magnifying glass were used. Each bone or fragment was observed and analyzed to establish the group to which it belonged (Table 4.1). Then the bone itself was identified and the laterality (e.g. left, right, midline, unknown) and percentage of completeness were specified (e.g. < 25%, 25% - 49%, 50% - 75%, > 75%).

Table 4.1: Anatomical group categories

Group
Cranial
Ears and Throat
Thorax and Vertebrae
Upper Limb
Hands
Pelvis
Lower Limb
Feet
Miscellaneous

Each bone or fragment was evaluated and classified into one age group, either adult (> 20 years old) or juvenile (< 20 years old) and, where possible, more specific categories were used (Table 4.2). All criteria described here for determining age were considered and assessed *when possible*. Criteria for estimating age include: the morphology of the pubic symphysis (Brooks and Suchey, 1990), the morphology of the atrial surface (Buckberry and Chamberlain, 2002; Schmitt, 2005), the characteristics of the acetabulum (Calce, 2012), the sternal edge of the ribs (DiGangi et al., 2009; Iscan and Loth, 1989), and other elements such as the fusion of the S1-S2 segment of the sacrum, the fusion of the sternal end of the clavicle and the obliteration of cranial sutures (Lovejoy et al., 1985; Mann et al., 1991). To determine the age in individuals who had not yet completed the obliteration process of the secondary ossification centers, we sought to assess: the fusion times of the long bone epiphyses, the formation of the vertebral rings, the fusion of vertebrae of the sacrum (Schaefer et al., 2009), and dental development (Ubelaker, 1999). Criteria for estimating the age of subadults include: the sequence of dental eruption and formation (Moorrees et al., 1963; Ubelaker, 1999), union of primary centers of ossification in the skull, vertebrae and pelvis, and fusion of the epiphysis in the case of juvenile individuals

(Schaefer et al., 2009; Scheuer and Black, 2000). Some age estimates were also based on the diaphysis lengths of the long bones (Schaefer et al., 2009).

Table 4.2: Age categories

Age
Fetal
0 - 3 years old
3 - 6 years old
6 - 12 years old
12 - 20 years old
20 - 35 years old
35 - 50 years old
50 + years old

Sex determination was made considering only the morphological characteristics of the skull and pelvis of the adult individuals using the main criteria proposed in Buikstra & Ubelaker (1994). The mastoid process, the supraorbital rim, the glabella, and the mental eminence were evaluated in the skull. In the pelvis, the ventral arch, the subpubic concavity, and the ischiopical branch were observed. Additionally, the presence of the pre-auricular sulcus and the degree of opening of the greater sciatic notch were recorded in the pelvis. For subadult individuals, sex was not estimated because the characteristics of sexual dimorphism are not clearly defined in the morphology of immature skeletons (Milner and Boldsen, 2012). The sex assignment was made from the following categories (Table 4.3).

Table 4.3: Sex categories

Sex
Definitely Female
Possibly Female
Possibly Male
Definitely Male

Human remains were also examined for cultural treatments. Indicators of antemortem cultural modifications, such as the intentional modification of the skull (MIC), were documented. Evidence of postmortem cultural manipulations such as the application of pigments, cuts and marks in the bone (excarnation, disarticulation, skinning, scraping, fractures and contusions), and exposure to fire, were also recorded.

The minimum number of individuals (MNI) was calculated. The following human remains were excluded, with some exceptions: ribs (except the first rib), vertebrae (except the atlas and axis), metacarpals, metatarsals, and phalanges (except the M1C and MT1). In the cranium, the main bones were differentiated and the basilar portion was counted independently of the occipital bone. Loose or isolated teeth were counted separately. Subsequently, a count was made of the number of bones according to the laterality that had more than 50% preservation, avoiding accounting for epiphyses or fragments that could overestimate the number of individuals present.

Mejía and Pizarro performed bioarchaeological analyses on human remains recovered from the Sector B excavations. This analysis was carried out in the facilities of the Museo Regional de Ica “Adolfo Bermúdez Jenkins” during the 2017 field season. All instruments and

methods described above were employed in this work except OsteoSurvey. This application was not used because of practical constraints. All data were recorded in an Excel spreadsheet.

Analyses of the posts with vertebrae and crania with red pigment were also conducted. Regarding the crania, Seidensticker, Jackson, and Mejía collected data on age, sex, trauma, and cultural treatment. O'Shea photographed these remains and closely examined the application of red pigment. For the posts with vertebrae, several attributes were documented in the lab, including age, degree of anatomical order, number of vertebrae, vertebrae type, and post length.

Chemical Analyses

All red pigment samples were transported to UCLA for chemical analyses. Muros used a Bruker Tracer III-V and a Rgaku R-Axis Spyder to perform XRF and XRD analyses of these samples respectively and gain insights into their chemical composition. Barnard used a Thermo Q Exactive Hybrid Quadrupole-Orbitrap to run GCMS analysis on one of the samples to evaluate whether it contained a binder.

Radiocarbon Analyses

I submitted 25 radiocarbon samples of varying type (e.g., reed, maize, human hair, and human vertebrae) from 12 *chullpas* and 6 cists to the W.M. Keck Carbon Cycle AMS laboratory at the University of California, Irvine. It was necessary to use absolute dating methods for several reasons. First, Menzel's (1966) ceramic seriation for the Chincha Valley remains insufficient for evaluating diachronic developments in mid-valley mortuary practices because it is based on only 123 ceramics recovered from 3 lower valley cemeteries excavated by Uhle (1924). Ceramic seriations employ static stylistic-temporal categories that do not capture

dynamic cultural processes as accurately as AMS radiocarbon dating (Quinn, 2015). Second, recent archaeological studies demonstrate that rigorous radiocarbon dating of mortuary contexts, even disturbed ones, can generate dynamic views of social and political transformations (Cadwallader et al., 2015; Chapman, 2005; Quinn, 2015; Scarre, 2010). Third, considering that the Inca likely controlled the Chincha Valley for a short time (between 56 and 132 years), large sample sizes of radiocarbon dates and dated graves are necessary to facilitate Bayesian modeling and the production of chronologies fine-grained enough to allow differentiation between LIP and Late Horizon mortuary practices.

Indeed, I employed Bayesian statistical modeling in OxCal 4.3 to analyze radiocarbon data. I selected different types of samples from select graves for dating because different samples have "different use-lives in any social context" (Levine and Stanish, 2014), and they also yield different kinds of information. For instance, human hair and maize can date grave use, while reeds collected from grave roofs can date when the roof was placed on the grave. I used the SHCal13 atmospheric curve to calibrate the dates.

Bayesian modeling provides a framework for combining prior archaeological information with calibrated radiocarbon dates to produce more precise chronologies (Bayliss, 2015, 2009; Buck et al., 1991; Ramsey, 2009). Bayesian models typically produce more bounded temporal ranges, or posterior density estimates, for all radiocarbon dates. If the Bayesian model displays an A_{model} index of 60% or more in OxCal 4.3, it is generally accepted (Ramsey, 2009). For this study, I employed Bayesian modeling and kernel-density estimation (KDE) to 1) estimate and compare the start and end dates for *chullpa* use and cist use based on our available radiocarbon data and 2) assess periods of grave use for *chullpas* and cists. KDE models are non-parametric

ways of estimating the probability distribution of radiocarbon dates that can be integrated into Bayesian modeling (Ramsey, 2017). Three different Bayesian models were produced to fulfill these objectives.

In one model, *all chullpas* and *all* cists were treated as distinct, overlapping, and uniformly distributed phases of activity marked by starting and ending boundaries (Bayliss, 2009, p. 131). That is, dates from different *chullpas* are combined to constitute a single-uniform, typological phase of activity, and dates from different cists are similarly combined to constitute a separate single-uniform phase of activity. KDE plots were generated within *chullpa* and cist single-uniform phases. This approach, therefore, has been described as a "mixture of Bayesian and frequentist methods" that better reflects starting and ending boundaries than unmodelled KDE plots (Ramsey, 2017, pp. 1817–1818). This model assumes that the *chullpa* phase of use is independent of the cist phase of use. This model evaluates Hypotheses 1a and 1b, which center on how local groups treated their preexisting mortuary traditions after Inca arrival.

In the second model, *chullpas* and cists were treated as distinct, overlapping, and non-uniformly distributed phases of activity marked by starting and ending boundaries. Here, I used the trapezoidal model (Lee and Ramsey, 2012) to assess starting and ending boundaries for *chullpa* and cist use and evaluate Hypotheses 1a and 1b. Although the single-uniform model (described above) assumes an abrupt change in the use of distinct tomb types, the trapezoidal model does not make this assumption. Instead, trapezoidal models are non-uniform distributions that assume that typological phases are split into 3 parts: 1) slow increase in use, 2) constant period of use, and 3) slow decline in use (Lee and Ramsey, 2012). Such models allow for gradual changes in the use of archaeological types and may better represent periods of tomb use in the

mid-Chincha Valley. Moreover, trapezoidal models are arguably more appropriate for modeling typological phases because, as Brainerd (1951, p. 304) makes clear, "each type originates at a given time in a given place, is made gradually in increasing numbers as time goes on, then decreases in popularity until it becomes forgotten, never to reoccur in an identical form."

In the third model, *individual chullpas* and *individual* cists are treated as independent phases. These phases are nested within two broader, single-uniform phases with starting and ending boundaries that pertain to each grave type. In other words, *chullpa* dates are organized into individual *chullpa* phases that are subsequently placed in a broader *chullpa* type phase, and cist dates are arranged into individual cist phases that are in turn, placed into a broader cist type phase. The "Date" functions were used to specify 95% probability distributions for the start and end dates of each individual *chullpa* and cist phase. This model assumes that 1) individual *chullpa* phases and individual cist phases are independent amongst each other and that 2) *chullpa* phase of use is independent of the cist phase of use.

Additional analyses were conducted within the second model to evaluate Hypotheses 2a and 2b, which concern the period of use for individual mid-valley graves. To test these hypotheses, I need to determine the span of use for graves with multiple radiocarbon dates. I employed the "Difference" function in OxCal 4.3 to generate a 95% probability distribution for the difference between the modeled start and end dates for each of these graves. If the start and end date ranges do not overlap and the probability distribution for the difference does not include zero, this indicates that the dates are not contemporaneous. If the start and end date ranges overlap, then there is no evidence to reject the proposal that the dates are contemporaneous. Even if the probability distribution of the difference does not include zero (i.e., it contains only

positive numbers) in this second case, this does not reject the hypothesis that the dates are contemporaneous.

In addition to examining the associations between Bayesian modeled dates and grave type, I also evaluate associations between these dates and evidence of red pigment application. To be clear, this is not to say that modeled radiocarbon dates are *directly* dating this practice. This examination is exploratory in nature—it is meant to look beyond the broad *chullpa* and cist categories and explore *associations* between available dates and treatment of the dead that can provide further insights into synchronic and diachronic trends in mortuary practice.

Wood Analysis

All wooden samples were exported to UCLA for analysis. Arbuckle prepared slides for each of the samples and took cross-section, tangential section, and radial section photos. These photos were sent to Hastorf and Beresford-Jones for wood identification. These photos allowed for identification to the genus level with a high level of confidence, and identification to the species level with a lower level of confidence.

Production of Digital Site Plans

I performed three main tasks to produce detailed site plans for mid-valley cemeteries. First, I imported all geospatial data into a GIS. Second, I processed aerial photos with Agisoft Photoscan Professional to produce orthomosaics, digital elevation models (DEM's), and 3D models for each mortuary site of interest. Third, I imported the orthomosaics and DEM's into the GIS and overlaid them with the geospatial data, thereby producing a digital site plan. For clarity, I show the orthomosaics and corresponding geospatial data separately in this study. This work

produces a record of these endangered cemeteries from multiple perspectives and in high resolution, thereby "digitally preserving" these sites and allowing for their secure archival online.

Data Visualization and Analyses

I primarily employed the R statistical environment (R Core Team, 2015) to conduct exploratory and descriptive statistical analyses and data visualization of attribute data on mortuary architecture and treatment of the dead. For instance, in R, I generated 95% confidence intervals to evaluate whether the mean areas (m^2) of graves with and without evidence of roofing were likely to be statistically significantly different (chapter 6). Visualizations of data on mortuary architecture and treatment of the dead (e.g., bar graphs, scatterplots, boxplots) are found in chapters 6 and 7.

Summary

In this chapter, I outlined the research questions, research design, and methods for this study. I derived research questions and hypotheses from mortuary theory, written sources, and previous archaeological research. They explore topics of interest for this investigation, including mortuary variation, change and continuity in mortuary practice, and grave use. A multi-year research design was developed to employ interdisciplinary, cutting-edge methods for gathering mortuary data in the mid-Chincha Valley at varying scales. Regional fieldwork encompassing full-coverage survey, sample collection, mapping, architectural documentation, and aerial photography was performed. Targeted fieldwork involving intensive surface collection and excavation of mortuary contexts was conducted. I produced digital site plans, conducted statistical and data analysis of mortuary attributes, and worked alongside several specialists to carry out bioarchaeological analyses of human remains and chemical analyses of pigment

samples. Integration of these data acquired through these methods provides a rich picture of mid-Chincha Valley mortuary practice, a picture that I begin to unveil in the next chapter.

CHAPTER 5

THE ARCHAEOLOGICAL LANDSCAPE OF THE MID-CHINCHA VALLEY: SPATIAL, RADIOCARBON, MATERIAL, AND SKELETAL DATA

Introduction

In this chapter, I describe the archaeological landscape of the mid-Chincha Valley. To do so, I focus on data collected through regional and targeted fieldwork and laboratory analyses. First, I discuss Late Horizon Andean mortuary activities described in the written record, emphasizing provincial (i.e., non-Inca) coastal patterns. Then, I present site distribution patterns, site types and grave typology, radiocarbon dates in relation to grave type, documented artifact types, and osteological and material indicators of violence. In subsequent sections, results of the surface collection at UC-008 Tomb 1 (*chullpa*), mortuary excavations at Sector B, and bioarchaeological analyses of human remains recovered from graves at both sites are discussed. I draw attention to material finds (e.g., grave inclusions) and skeletal data (e.g., element representation, MNI, etc.). I conclude with a discussion that compares all these data to written descriptions of Andean mortuary practices and underlines the contributions of this work towards understanding 1) *when* and for *how long* these graves were used, 2) *who* was deposited in them, and 3) *whether* primary or secondary depositions of human remains were placed in graves. I also briefly touch upon the presence of violent conflict in the study area.

Provincial Andean Mortuary Customs in the Written and Archaeological Records

Here, I note the diversity of provincial mortuary customs documented in colonial-era documents. Descriptions of mortuary activity (e.g., offerings), grave population, and the

placement of graves will be emphasized[57]. I refer to works by several chroniclers. These include Felipe Guaman Poma de Ayala's[58] (2009 [1615]) *El Primer Nueva Corónica y Buen Gobierno*, Bernabé Cobo's (1990 [1653]) *Inca Religion and Custom, The Incas of Cieza de León* (1959 [1553]), and Pablo Joseph de Arriaga's[59] (1968 [1621]) *Extirpación de la Idolatría en el Perú*. These sources offer rich documentation of Andean mortuary customs. Whenever possible, I supplement these descriptions with archaeological evidence that supports, or challenges, these statements.

Guaman Poma provides a detailed discussion of regional differences in provincial Andean mortuary customs that date to the Inca period (2009 [1615], pp. 226–233). In *Chinchaysuyo*, the northern province supposedly named after the Chincha Valley, local groups made offerings of food and drink to the deceased, washed and dressed the corpse in textiles, feathers, and precious metals, and placed the body on a litter for processions (Guamán Poma de Ayala, 2009 [1615], pp. 227–228). These "ceremonies of the dead" occurred over two years, and during this time, the dead body was repeatedly brought out of the tomb for processions. This suggests that accessible tombs were used in *Chinchaysuyo*, and indeed, Poma illustrates an

[57] I do not discuss colonial-era written descriptions on mortuary architecture and postmortem treatment of the dead at length in this chapter. They are presented in chapters 6 and 7 respectively.

[58] Felipe Guaman Poma de Ayala was born sometime in the middle of the 16th century in Huamanga, Ayacucho (Guamán Poma de Ayala, 2009 [1615], p. xiii). He was the descendant of Inca nobility and allegedly a native speaker of Quechua and Aymara who later became fluent in Spanish (Guamán Poma de Ayala, 2009 [1615], p. xiii). He served as a Quechua interpreter for Spanish priests during the colonial-era campaigns to "extirpate idolatry." His disillusionment with the treatment of local Andean groups by the Spanish invaders likely inspired him to write *El primer nueva corónica y buen gobierno*, the text I refer to in this section (Guamán Poma de Ayala, 2009 [1615], p. xiii).

[59] Father Pablo Joseph de Arriaga was a Jesuit who was born in Vergara, Spain in 1564 (Arriaga, 1968 [1621], p. xvii). While in Peru during the 16th and 17th centuries, Arriaga preached to Andeans and carried out investigations into their local religion (Arriaga, 1968 [1621], pp. xvii–xviii). He wrote about these investigations and "visits of idolatry" that took place in the Archbishopric of Lima in *Extirpación de la idolatría en el Perú*. Arriaga's bias is clear: he viewed local Andean culture as inferior to that of Spain (Arriaga, 1968 [1621], p. xiii).

above-ground, accessible tomb (labeled as *pucullo*) in his work (Figure 5.1). Local groups in *Collasuyo* (southern province of the Inca Empire) reportedly also built accessible graves (labeled as *ayan otapa*) but used them differently compared to *Chinchaysuyo* groups (Guamán Poma de Ayala, 2009 [1615], pp. 230–231). They placed these graves away from residences and permanently put the dead in them. They did not bring the dead out for processions or ceremonies, but rather visited them to make offerings, such as "food, *chicha*, water, gold, silver, dinner, garments, and other things" (Guamán Poma de Ayala, 2009 [1615], p. 230). These offerings were then burned, which enabled the deceased to receive the offerings. Whether the deceased is also burned in this process is unclear.

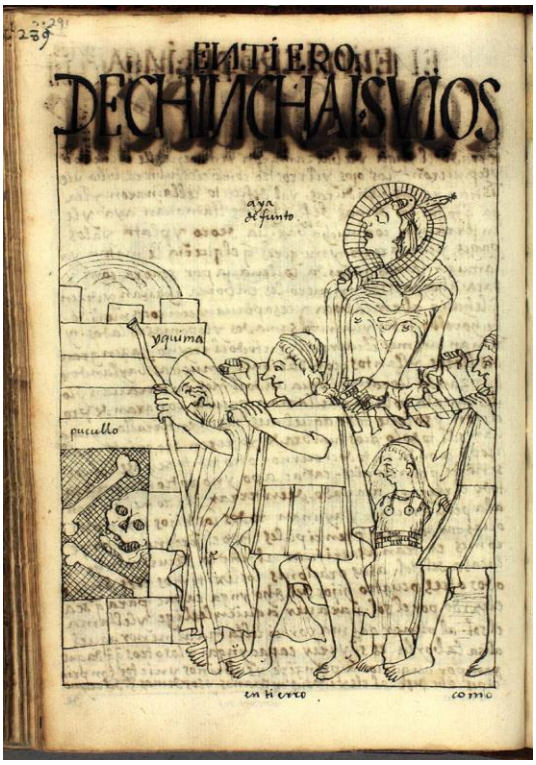

Figure 5.1: Illustration of a mortuary procession in *Chinchaysuyo* (Guamán Poma de Ayala, 2009 [1615], p. 227)

Guaman Poma describes the Inca period mortuary traditions of additional areas. Mortuary customs in the southwestern area of the Inca Empire, known as *Condesuyo*, entailed the killing of llamas, the placement of the deceased in caves and stone graves, which were frequently arranged into clusters and painted, and the placement of precious metals in the mouths of the deceased (Guamán Poma de Ayala, 2009 [1615], pp. 232–233; Isbell, 1997, p. 44). In *Antisuyo*, the eastern area of the Inca empire, local groups dressed the deceased, ate their flesh, and placed their bones in a tree that they would never visit again (Guamán Poma de Ayala, 2009 [1615], pp. 228–229). Lastly, Guaman Poma reports on the mortuary customs of the *yuncas*, the local groups that resided in the coastal plains up to modern-day Ecuador and Colombia (Guamán Poma de Ayala, 2009 [1615], pp. 232–234). These people removed the flesh of the deceased, wrapped them in textiles that are bound with agave bindings (*toclla*), painted these bundles, and then placed them in seated positions in tombs alongside other relatives and members of the *ayllu*. This description suggests that *yunca* graves contained multiple individuals and that they included members of the same descent group. The local groups that conducted mid-Chincha Valley mortuary practice may have been associated with *Chinchaysuyo* and/or the *yuncas*. Although Guaman Poma writes about and illustrates diverse Andean mortuary customs across multiple regions, it is important to consider the likely variations of these customs, especially regarding offerings and other activities performed for the deceased, *within* these regions.

Pedro Cieza de León (1959 [1553], pp. 274, 311–312) also comments on the diversity of Andean mortuary customs, but for this study, I bring his discussion of coastal mortuary activity and grave population into focus. In the Chincha Valley, he finds that locals “bury them lying on platforms or beds made of reeds” (Cieza de León, 1959 [1553], p. 312). In unspecified coastal valleys, he remarks that “hollows and cavities, each with its door” were constructed for the dead

in several coastal valleys, and that "it was custom to bury with the dead his wealth and the things he most prized, and many women and servants of those who were closest to the lord (Cieza de León, 1959 [1553], p. 312). For deceased elites, offerings such as garments and jewels were burned (Cieza de León, 1959 [1553], p. 313). He also notes that "one sees a vast number of skeletons and their clothing, rotted and corroded through time" and states "it was the custom in olden times to open the tombs and renew the clothing and food that had been buried in them" (Cieza de León, 1959 [1553], p. 312). These descriptions provide comparative baselines for mortuary behavior in Chincha and across the coast that carry several implications. First, Cieza's observations, like those of Guaman Poma, imply the use of accessible graves with multiple individuals on the coast. Second, they imply that local Chincha groups likely placed primary depositions of dead bodies on reed platforms, which may have functioned as litters. Lastly, they suggest practices of grave reentry to make additional offerings and presumably rewrap textile bundles of the deceased. Whether the dead were also removed from the grave (i.e., secondary deposition) after reentry is unclear.

As Cieza and Guaman Poma demonstrate, making material offerings to the deceased was an important and widely shared aspect of mortuary custom. Arriaga provides additional observations of this activity. Regarding offerings placed in *machays*, he says that they included utensils used during their lifetime, spindles and skeins of spun cotton for women, hoes (*tacllas*) for men to work the fields, or weapons used in war (Arriaga, 1968 [1621], pp. 27–28). The belief systems of several Andean groups viewed the deceased as requiring service and companionship in the afterlife (Ramos, 2010, p. 11). Material offerings of various types were given to the deceased to fulfill these requirements and sustain their well-being, but also for the purposes of veneration and appeasement (Dillehay, 1995a; Ramos, 2010, p. 11).

The selection of a place for a mortuary site is significant (Ashmore and Geller, 2005; Bongers et al., 2012; Pearson, 1993; Silverman and Small, 2002). Bernabé Cobo (1990 [1653], p. 246) writes about the variety of locations that local Andean groups placed their graves. He finds that they were constructed in "in the countryside, some in the fields and others in the uninhabited pasturelands where livestock grazed, and in some provinces in their own houses" (Cobo, 1990 [1653], p. 246). Archaeological research in the Andes shows that mortuary sites are found near administrative or religious centers (e.g., Pachacamac, Huaca La Centinela) and irrigation canals (Cornejo Guerrero, 2004), and sometimes within domestic areas (Isbell, 2004; Quilter, 1989). Several factors may have contributed to the selection of a place for grave construction, such as high visibility (Bongers et al., 2012), low visibility (Menzel, 1976), control over territories and resources (Buikstra, 1995), local preferences, topography, availability of construction materials, and proximity to water resources and/or landforms deemed religiously significant (e.g., *huacas*) (Lau, 2015, p. 217). These works alongside Cobo's (1990 [1653], p. 246) statement imply varying distances between mortuary and domestic sites, an important variable explored in some studies (Pearson, 1993) and this chapter.

Some archaeological research supports these written claims about Andean mortuary traditions. Available data gathered through mortuary excavations and bioarchaeological analysis indicate that accessible graves ranging from *chullpas* to *machays* with several individuals and offerings were in use during the LIP and Late Horizon in the highlands (Kurin, 2016; Nielsen, 2016; Stanish, 2012; Tantaleán, 2006; Velasco, 2016). Early excavations of *chullpas* in the Titicaca Basin yielded the remains of multiple individuals, sometimes totaling as many as 200 individuals (Aldunate and Castro, 1981; Arrendo, 1942; Rydén, 1947). Charles Stanish's (2012, p. 216) excavations of *chullpas* in the Otora Valley yielded a "full suite of grave goods including

wooden spoons, baskets, cuy remains, camelid phalanges, pottery, combs, and textiles." Danielle Kurin's (2016, p. 85) investigation of *machays* in Andahuaylas revealed miniature vessels, stone and metal weapons, and llama talismans (*conopas*). These data align with colonial-era observations concerning Andean grave population and material offerings.

Other archaeological research challenges some of these observations. For example, Takigami et al. (2014) conducted radiocarbon analyses of wrapping materials and soft tissues associated with textile bundles found at Pachacamac. They carried out this work to test written statements made by chroniclers such as Cieza (1959 [1553], p. 312) that suggest coastal groups periodically rewrapped the deceased with new textiles. Results demonstrate that these bundles were not rewrapped. These results do not, however, rule out grave reentry. Takigami et al. (2014, p. 340) suggest that these bundles may have been moved around to make space for additional ones, but they also note that several years can separate bundle preparation and deposition.

Recent archaeological research in the mid-Chincha Valley builds upon, supports, and nuances previous scholarship on LIP and Late Horizon Andean mortuary traditions.

Archaeological Sites in the Mid-Chincha Valley

We surveyed a 40 km^2 area in the mid-Chincha Valley and found 80 archaeological sites (Figure 5.2). Ceramics stylistically dating to the Early Horizon (900 BC – AD 200), Early Intermediate Period (AD 200 – 600), Middle Horizon, LIP, and Late Horizon were documented. Sites are located on or near valley edges, hillsides, bedrock slopes, and sediment plateaus. A copper and iron oxide source, described in more detail in chapter 7, was recorded in the northeastern part of the survey zone. The rest of the sites fall into four non-mutually exclusive

categories, each of which will be described below: domestic, public, defensive, and mortuary (Figure 5.2).

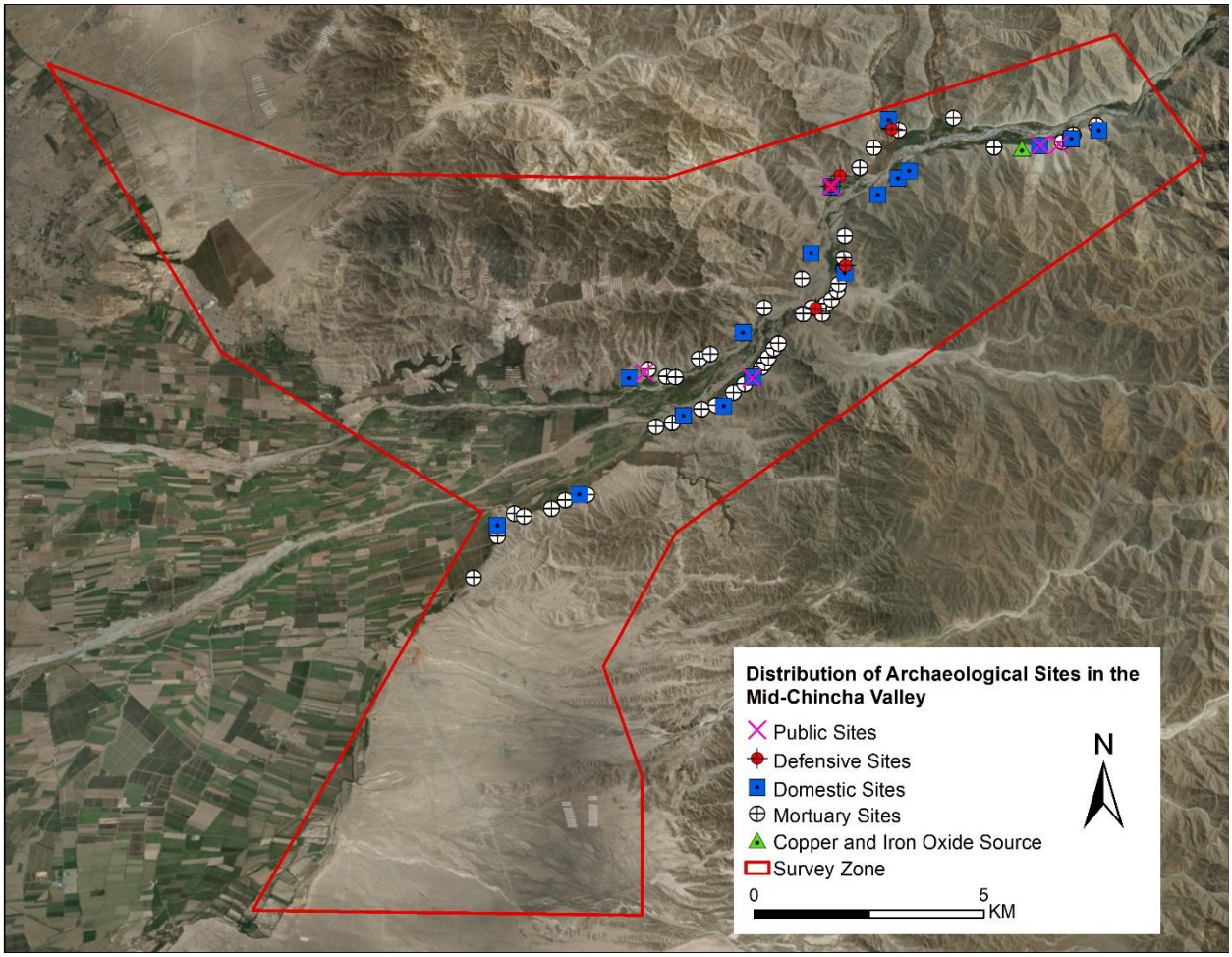

Figure 5.2: Archaeological sites in the Mid-Chincha Valley

Domestic sites are mostly agglutinations of hillside terraces constructed with irregular fieldstones that have LIP/Late Horizon[60] utilitarian ceramics. They are widely distributed in the

[60] Given Menzel's (1966) insufficient ceramic seriation for the Chincha Valley and Sandweiss's (1992) excavations that revealed the coexistence of early and late Late Horizon pottery and the persistence of Chincha-style pottery into the Late Horizon, it remains difficult to distinguish between LIP and Late Horizon ceramics in Chincha. We assigned a preliminary "LIP/Late Horizon" label to ceramics recovered on survey that are stylistically associated with either of those periods.

survey zone. We recorded 17 domestic sites that average 1.93 ha in site size. Their location on hillsides may suggest consideration of defense. The domestic site located near the Casagrande complex (UC-046) is 7.4 ha, representing the largest LIP/Late Horizon settlement in the survey zone. It has a density of terraces covering the southern slopes of a hill situated near arable land. An abundance of LIP/Late Horizon decorated and utilitarian ceramics, including serving wares and cooking and storage vessels of large size, were recovered from the site.

Figure 5.3: Aerial view of the domestic terraces of UC-046, facing west

Public sites feature standing fieldstone architecture, open-air spaces, and internal divisions. There are only a few (5) of these sites, but they are found across the survey zone on the northern and southern sides of the valley. These sites may have served administrative and/or public ceremonial functions. For example, Casagrande (UC-046, see Figures 7-8 in chapter 3),

characterized as an administrative complex for monitoring hydrological systems and agricultural production by Canziani (2009, pp. 397–400), is considered a 0.64 ha public site. Another public site known as UC-076 (Figure 5.4) stands at 0.2 ha and has multiple open-air spaces, internal subdivisions, and compounds. LIP/Late Horizon ceramics were recovered at the site. It is in the northeastern part of the study area near copper mines. This site may have been built to monitor copper mining production, but more research is required to evaluate this claim.

Figure 5.4: View of UC-076, facing north

Defensive sites are positioned in highly defensible locations (e.g., visible hilltop) and frequently contain evidence of fortification walls and/or weapons. There is a concentration of five such sites in the northeastern area of the survey zone (Figure 5.2), which may have acted as a defensive buffer zone. At least one hilltop fort or refuge (known as a *pukara* in Quechua and

Aymara) was identified in this area. This 1.87 ha *pukara*, recorded as UC-043, is a settlement built on a hilltop with a commanding 360-degree view, sling stones, a stone axe head, transverse walls, and utilitarian and fine LIP/Late Horizon wares, especially large storage vessels. Fortification walls were recorded at UC-058, UC-059, UC-067, and UC-036 (Figure 5.5).

Figure 5.5: Defensive sites in the mid-Chincha Valley: a) view of a defensive wall (UC-058), facing east b) aerial view of a defensive wall (UC-066), facing west c) view of a *pukara* (UC-043), facing south, and d) an aerial view of a defensive wall (UC-036), facing northeast

Mortuary sites are the predominant site type in the mid-Chincha Valley. We documented 44 mortuary sites (43 of which are cemeteries) of varying layout in the study area, averaging 0.24 ha in size and 15 graves total. The average distance between mortuary sites is 355.93 meters, and they are commonly visible from each other (Bongers, 2014). Two grave types were recorded in these sites: *chullpas* (Figure 5.6) and cists (Figure 5.7). The following definitions for these grave types align with the purposes of this investigation; their application to graves of similar form found in other parts of the Andes is arbitrary. At their core, *chullpas* are above-ground or subterranean tombs with evidence of accessible openings, and cists are subterranean, fieldstone-lined tombs. *Chullpas* are substantially larger and more elaborately constructed than cists[61]. There are at least 656 graves in the mid-Chincha Valley: 555 *chullpas*, 31 cists, and 70 unclear graves.

Figure 5.6: A fieldstone *chullpa* with an accessible opening

[61] Mortuary architecture and cemetery layouts in the mid-Chincha Valley will be further discussed in the next chapter.

Figure 5.7: A fieldstone cist with a lintel

Distances between mortuary sites and domestic sites were analyzed to explore their spatial relationship. Doyle (1988, p. 112) observes that during the Colonial Period, mortuary sites were located between two and nine km away from their associated living communities. According to Lau (2015, p. 218), this distance appears to have been shorter before the Spanish arrived in Peru. I evaluated this claim for the mid-Chincha Valley by examining distances between mortuary sites and their closest domestic sites. I used an R function titled "plotJenks" to implement Jenks' natural breaks method, break a dataset down into a user-defined number of breaks, and plot the results (Alberti, n.d.). I decided to employ Jenks' natural breaks method because it is well-suited to data with high variance, and it minimizes variation within classes while maximizing variation between them, thereby identifying classes that can effectively represent trends in the data. I grouped these data into four classes because it was the lowest number of breaks with a goodness of fit value higher than 0.9 (Figure 5.8). Results show that none of the distances are higher than two km, thereby supporting Lau's observation. Several

criteria may have influenced the placement of mortuary sites in relation to domestic sites. Relationships with other groups, territorial control over resources, and visibility are possible factors. This decision may also relate to the possible "polluting" nature of the deceased, a desire to facilitate ongoing interactions between the living and the dead, or perhaps an aversion to bad smells (Lau, 2015, p. 218).

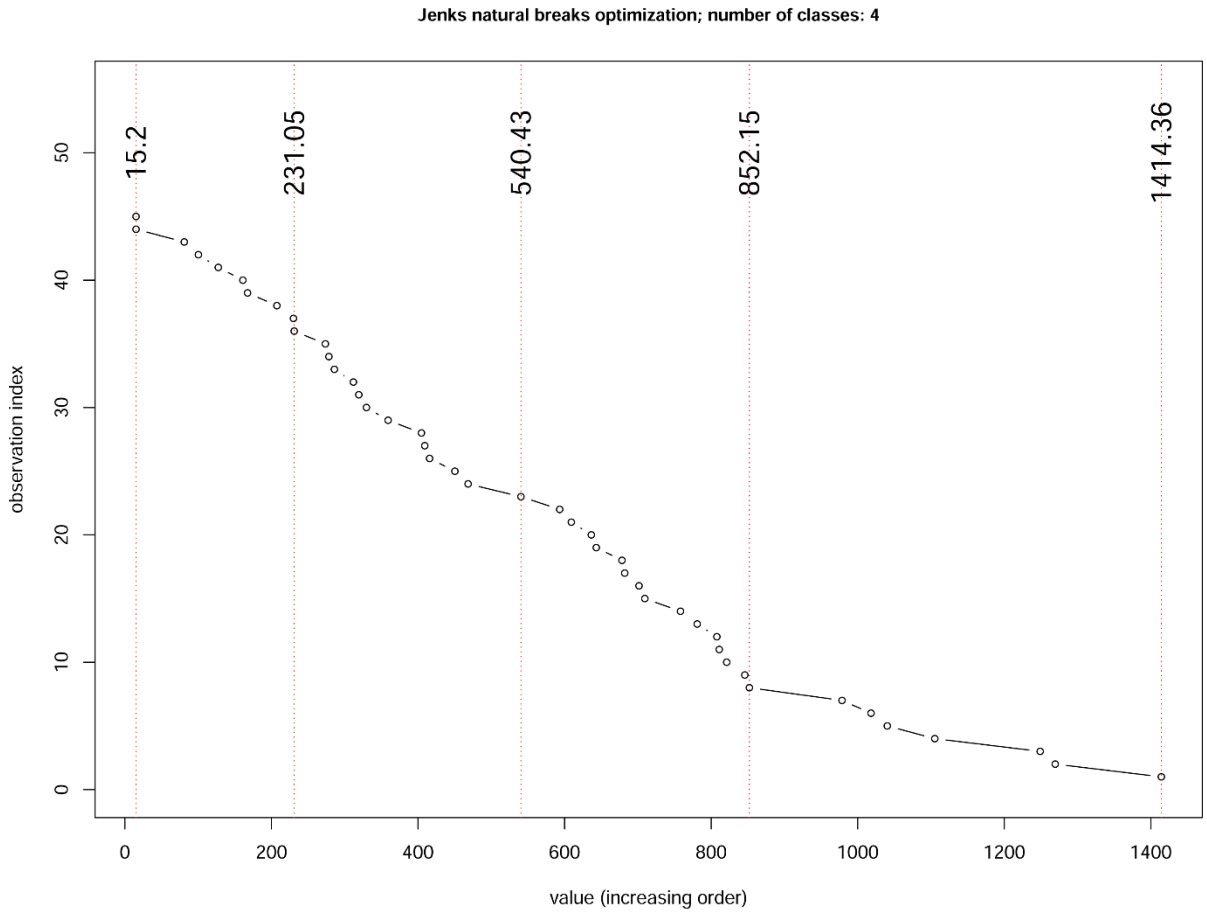

Figure 5.8: Chart displaying the distribution of distances (values) in meters between mortuary and domestic sites, and their associated classes and counts (observation index). The four classes correspond to distinct ranges of distance: class 1 (15.20 – 231.05 m), class 2 (231.05 – 540.43

m), class 3 (540.43 – 852.15 m), and class 4 (852.15 – 1414.36 m). The goodness of fit value is 0.9276.

Radiocarbon Data from Cemeteries

In this section, I present radiocarbon data associated with *chullpas* and cists and construct two Bayesian models for these dates to estimate when the *chullpa* phase and the cist phase started and ended and how long individual graves were in use. So far, AMS radiocarbon analysis has been conducted on 25 samples—maize, human bone, human hair, and reed— collected from 12 *chullpas* and 6 cists (Table 5 and Table A.1). Several patterns can be gleaned from these data. Broadly, the 2σ calibrated date ranges indicate that local groups used *chullpas* from the 13th century to possibly as late as the 17th century, whereas cists were only used from the 13th century to the 14th century. In other words, *chullpas* are associated with the LIP, Late Horizon, and possibly the early colonial period[62], and cists are exclusively associated with the LIP. This finding shows that the *chullpa* mortuary tradition was more enduring than the cist one. Moreover, these data also demonstrate the contemporaneous use of *chullpas* and cists at some sites. For example, at Sector B, both grave types share 14th century (LIP) dates, and at UC-018, they share 13th century (LIP) dates.

Based on our available radiocarbon data, when did the *chullpa* and cist traditions begin and end in relation to the arrival of the Inca and what is the chronological relationship between these traditions? To address these questions, which constitute Research Question #1 (outlined in chapter 4), I performed three tasks. First, I constructed a model that treated *chullpa* dates and cist

[62] Based on our radiocarbon dates, it remains plausible that *chullpas* were used in early colonial period. No colonial-era artifacts, however, were recovered during survey, surface collection, and excavation. Therefore, I note that *chullpas* were *possibly* used during this period.

dates as constitutive of distinct, single-uniform phases of activity with starting and ending boundaries (Figure 5.9). The boundaries represent posterior probability distributions for the modeled start and end dates of the *chullpa* and cist phases (Figure 5.10). Kernel-Density estimation plots were also generated within each of these phases for this model. Second, I constructed a trapezoidal model that treated *chullpa* and cist dates as distinct, non-uniformly distributed phases of activity marked by starting and ending boundaries. The critical difference between the single-uniform and trapezoidal models is that the latter assumes an abrupt change in the use of *chullpas* and cists while the latter assumes a more gradual change in the use of such tomb types. Third, I used an R function called "prob.phases.relat" to calculate the posterior probabilities for different chronological relationships between single-uniform cist and *chullpa* phases that lack KDE plots (Alberti, n.d.) (Figure 5.11).

Table 5.1: Radiocarbon (AMS) dates for graves used in this study (rows highlighted gray contain LIP dates)

Site	Tomb	Tomb Type	Sample Designation	Material	^{14}C (yrs. BP)	Calibrated ^{14}C (2σ cal AD)
Sector B	U5-7	Chullpa	Lote 10069	Botanical	625±15	AD 1320 -1420
Sector B	U5-7	Chullpa	Lote 9454	Hair	760±15	AD 1270 - 1300
UC-044	1	Chullpa	Lote 10161	Botanical	395±15	AD 1459 - 1624
UC-044	1	Chullpa	Lote 10231	Botanical	475±15	AD 1434 - 1464
UC-073	5	Chullpa	Lote 10212	Hair	545±20	AD 1405 - 1444
UC-018	17	Chullpa	Lote 10246	Hair	810±15	AD 1225 - 1280
UC-079	3	Chullpa	Lote 10217	Botanical	645±15	AD 1315 - 1400
UC-079	3	Chullpa	Lote 10218	Botanical	665±15	AD 1300 - 1395
UC-008	1	Chullpa	Lote 10229	Bone	460±15	AD 1433 - 1460
UC-008	1	Chullpa	Lote 7016	Botanical	350±15	AD 1502 - 1638
UC-008	1	Chullpa	Lote 10230	Bone	465±15	AD 1440 - 1480
UC-008	1	Chullpa	Lote 7015	Botanical	385±15	AD 1463 - 1625
UC-002	6	Chullpa	MCV-202	Botanical	360±15	AD 1500 - 1630
UC-025	7	Chullpa	MCV-207	Botanical	370±15	AD 1495 - 1630
UC-008	15	Chullpa	MCV-216	Botanical	390±15	AD 1460 - 1625
UC-037	7	Chullpa	MCV-217	Botanical	485±15	AD 1430 - 1455
UC-012	53	Chullpa	MCV-286	Botanical	390±15	AD 1460 - 1626
UC-012	25	Chullpa	MCV-288	Botanical	360±15	AD 1500 - 1630
UC-018	24	Cist	Lote 10182	Hair	805±15	AD 1227 - 1282
UC-018	21	Cist	Lote 10241	Hair	725±15	AD 1281 - 1382
UC-065A	3	Cist	Lote 10186	Hair	720±15	AD 1284 - 1382
UC-065A	7	Cist	Lote 10220	Hair	785±15	AD 1229 - 1291
UC-065A	4	Cist	Lote 10219	Hair	805±15	AD 1230 - 1280
Sector B	U1	Cist	Lote 10134	Botanical	665±15	AD 1300 - 1395
Sector B	U1	Cist	Lote 7014	Botanical	675±15	AD 1300 - 1392

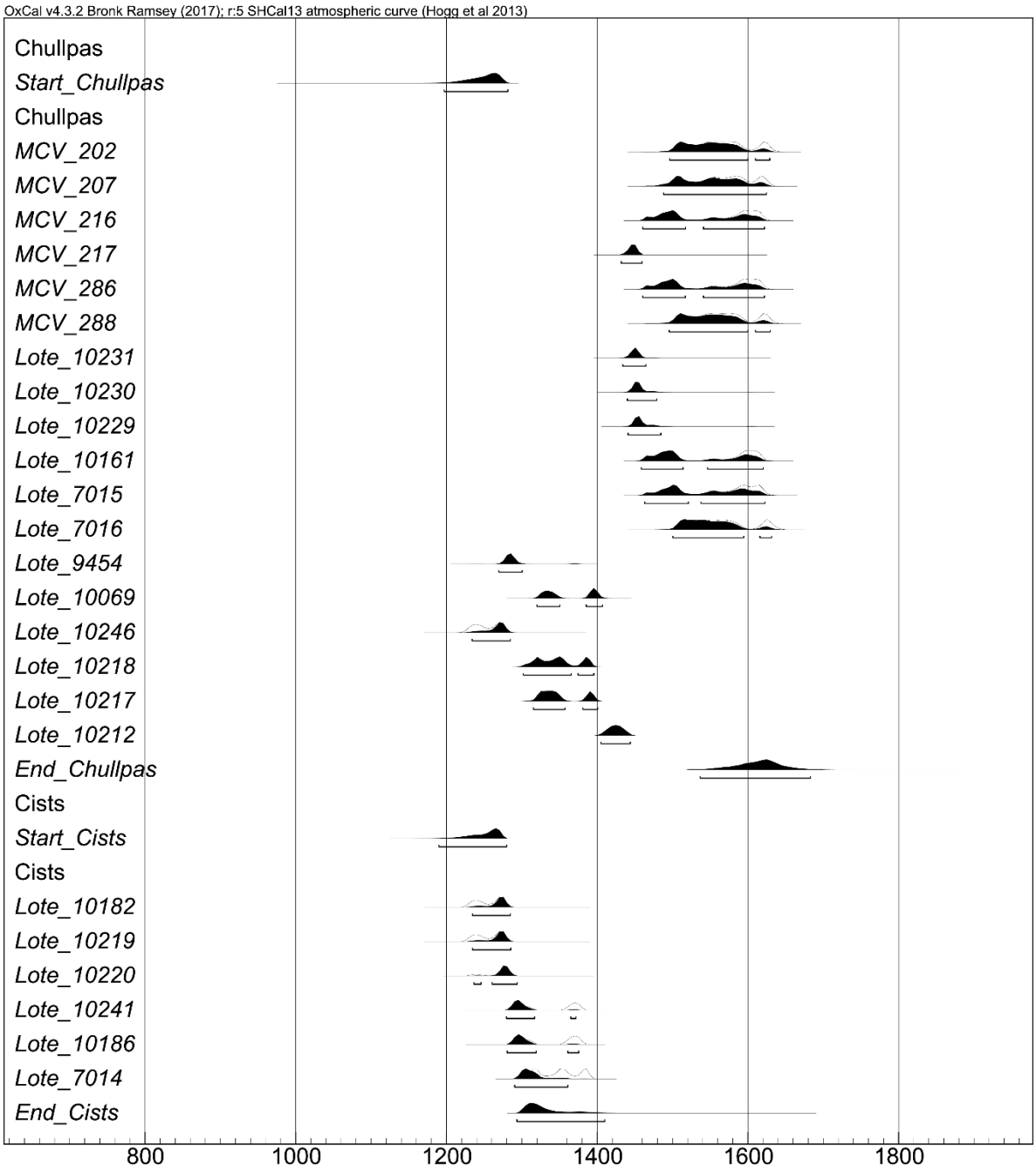

Figure 5.9: Overlapping, single-uniform model for *chullpa* and cist modelled dates (AD)

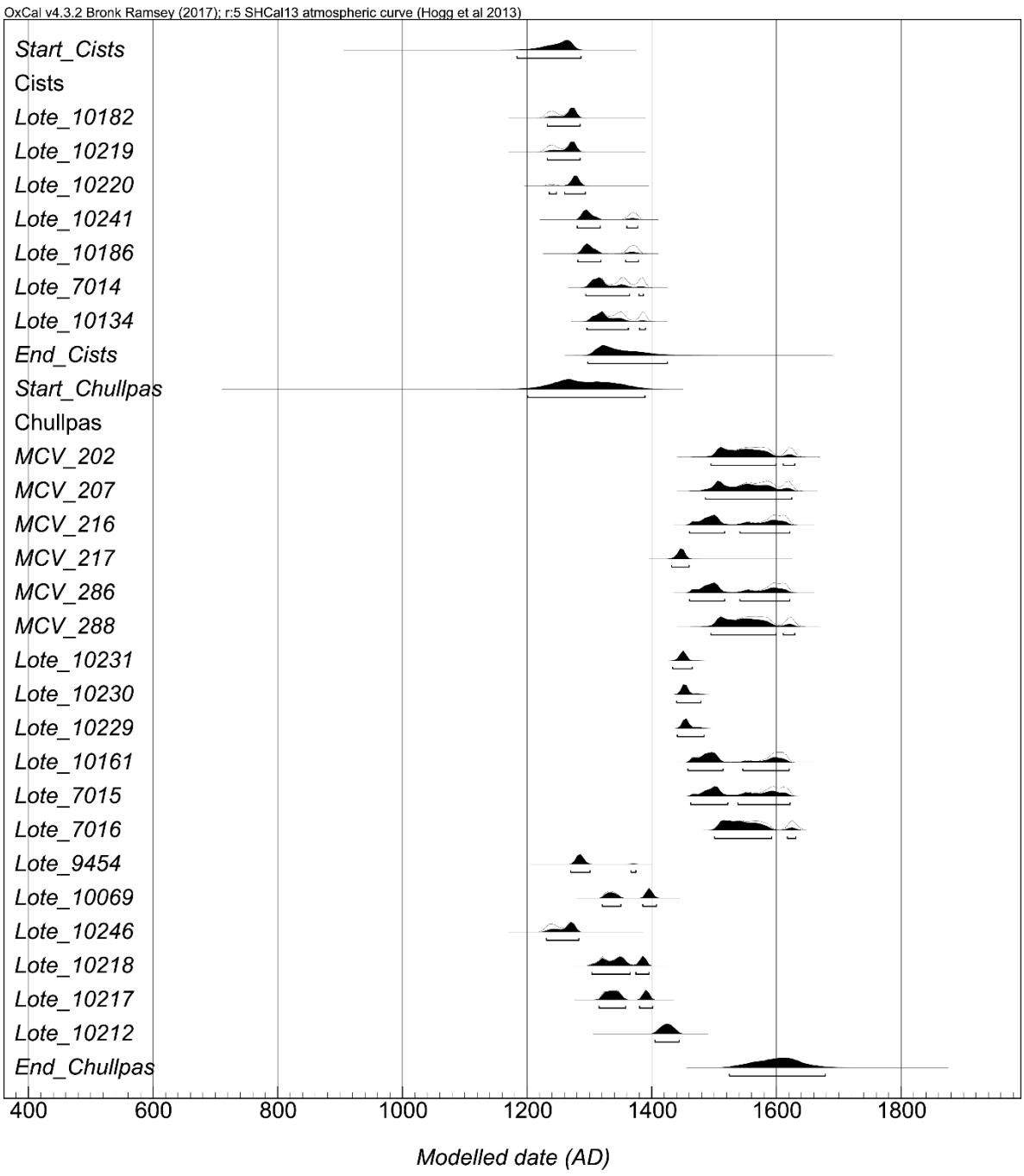

Figure 5.10: Overlapping, trapezoidal model for *chullpa* and cist dates

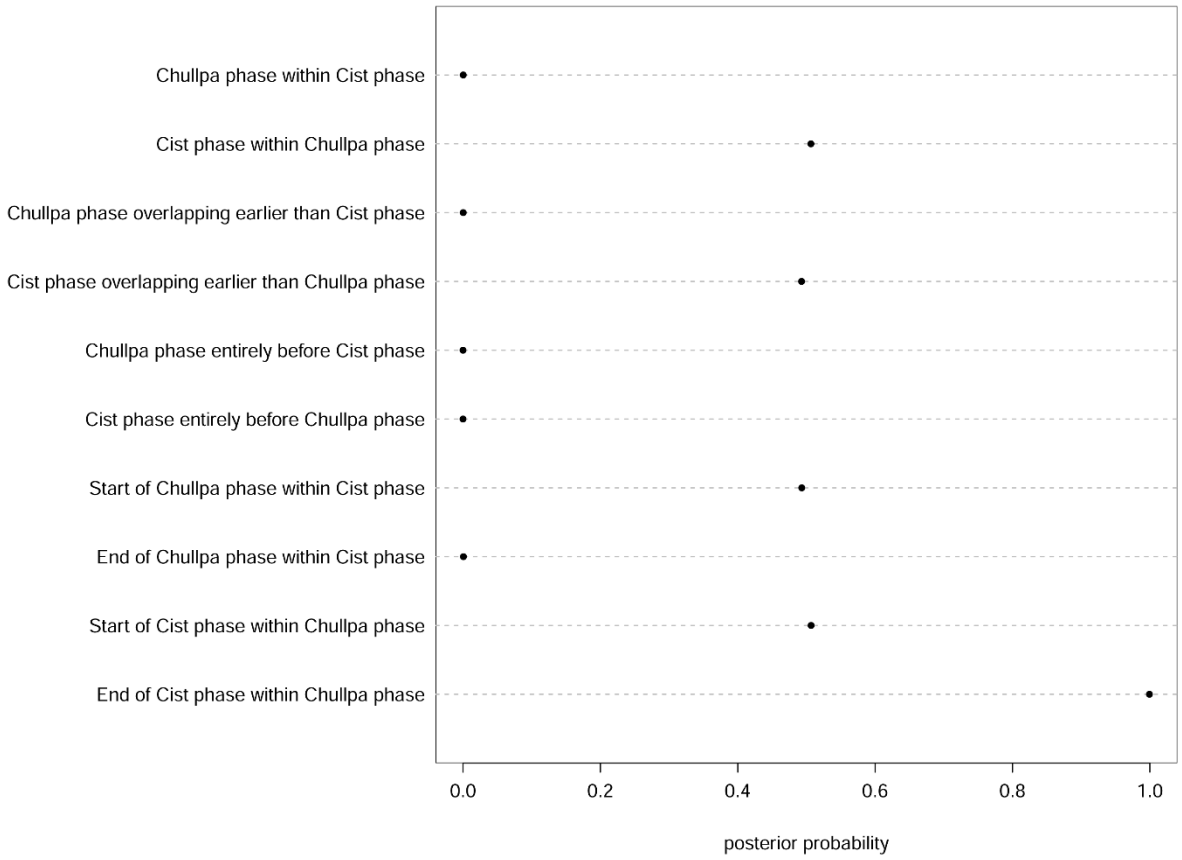

Figure 5.11: Posterior probabilities for different chronological relationships between the chullpa and cist phases

These analyses yield important insights into the development of mortuary practice in the mid-Chincha Valley through time. In the single-uniform model, the probability distributions for the starting boundaries of the *chullpa* and cist phases are similar. There is a 95% probability that the *chullpa* tradition started sometime between AD 1197 and 1281 and that the cist tradition started between AD 1190 and 1280. As for the ending boundaries, there is a clear difference between both grave types. In this model, there is a 95% probability that *chullpa* use ended from AD 1536 to 1683, and that cists ended from AD 1293 to 1410.

Critically, the estimated starting and ending boundaries for *chullpas* and cists in the trapezoidal model are mostly consistent with the boundaries in the single-uniform model. In the trapezoidal model, there is a 95% probability that the cist tradition started between AD 1184 and 1286, and that the *chullpa* tradition started between AD 1201 and 1389. Additionally, there is a 95% probability that cist use ended between AD 1297 and 1425, and that *chullpa* use ended from AD 1524 and 1678. Therefore, both models support the following claims: 1) both mortuary traditions began in the LIP, 2) the end of the *chullpas* is consistent with the arrival of the Spaniards, and 3) the end of the cists is consistent with the arrival of the Inca.

Additional dates will surely change both models, but as it currently stands, it appears that a transformation of mid-valley mortuary practice—a possible abandonment of cists in favor of *chullpas*—is coincident with the beginning of the Late Horizon. It is also possible that this change in mortuary custom occurred sometime between the 14th and 15th centuries.

The posterior probabilities of different chronological relationships between both single-uniform phases reinforce this argument (Figure 5.11). Probabilities for some relationships were higher than the probabilities of alternative ones. These relationships have comparatively higher probabilities: “Cist phase within *chullpa* phase” (0.51), “Cist phase overlapping and earlier than *chullpa* phase” (0.49), “Start of *chullpa* phase within cist phase” (0.49), and “End of cist phase within *chullpa* phase” (0.99). These findings make it clear that these phases overlapped, *chullpas* were in use for a longer period than cists, and the end of cist use is chronologically situated within the broader *chullpa* phase.

Another model was created to evaluate how long individual graves of each type were used (Research Question #3). This model treats individual *chullpas* and cists with dates as

independent phases *within* their respective, broader, and single-uniform grave type phases. Even if a grave has only one date, it is treated as an independent phase. Here, however, my interest is not in graves with single dates, but rather graves with multiple dates. These graves allow for their dates to be assessed for their contemporaneity. To assess contemporaneity, probability distributions for modeled starting and ending dates were calculated and compared to evaluate whether they overlap. Probability distributions for differences between these starting and ending dates were also determined. If probability distributions for starting and ending dates do not overlap, and the distribution for difference does not contain zero, the grave was in use for multiple years (long-term use). If the starting and ending distributions overlap, then it cannot be ruled out that the grave was used for a short period (episodic use). To be clear, this test is preliminary because there are only five graves with multiple dates, and of these, four only have two dates (Table 5.2).

Nevertheless, results demonstrate that at least three *chullpas* were used over the long term and at least one *chullpa* and one cist may have been used episodically (Table 5.2). Considering the high numbers of textiles and bones collected through the surface collection at UC-008 Tomb 1, discussed later in this chapter, it is perhaps unsurprising that this *chullpa* was used for at least 116 years (Table 5.2). On top of that, the small cist from Unit 1 at Sector B and its relatively low numbers of human remains and material objects, also discussed later in this chapter, align with the finding that it may have been used episodically. Therefore, evidence suggests that graves were used over varying lengths of time in the study area.

Table 5.2: Bayesian modeled start and end dates and time differences for graves with multiple AMS dates[a]

Site	Tomb	Tomb Type	No. of Dates	Modelled Start (95.4 % probability)	Modelled End (95.4 % probability)	Modelled Time Difference (95.4 % probability)
Sector B	U5-7	Chullpa	2	AD 1166 - 1299	AD 1335 - 1679	70 - 448 years
UC-044	1	Chullpa	2	AD 1207 - 1453	AD 1477 - 1704	70 - 445 years
UC-079	3	Chullpa	2	AD 1182 - 1352	AD 1346 - 1682	47 - 436 years
UC-008	1	Chullpa	4	AD 1208 - 1454	AD 1520 - 1711	116 - 457 years
Sector B	U1	Cist	2	AD 1199 - 1330	AD 1300 - 1409	3 - 173 years

[a] Rows highlighted in gray contain modelled start and end probability distributions that overlap, thereby suggesting, but not necessarily confirming, episodic usage.

Archaeological Finds from Survey

Through survey, many material objects and botanical remains were discovered in the mid-Chincha Valley. The following types of finds will be discussed in this section: ceramics, textiles and weaving tools, figurines, worked and burnt bones, botanical remains, osteological and material indicators of violence, and other finds. Although emphasis will be placed on artifacts found in mortuary contexts, I also write about finds made at domestic sites. These objects and botanical remains, especially ones found in graves, likely served as offerings to the dead. Contrary to Uhle's (Kroeber and Strong, 1924, p. 9) discoveries, no colonial-era objects of any kind were found. Other types of artifacts that Uhle recovered in his excavations, however, were found in the study area.

Of the 44 mortuary sites recorded through survey, 31 (70%) of them have ceramics identified as LIP/Late Horizon. These results provide support for the LIP and Late Horizon dates presented above. Our preliminary study of these artifacts finds a broad range of ceramics and decorations that are similar to those first described by Uhle (Kroeber and Strong, 1924) and Menzel (1966). We noted ovoid jars, globular vessels, bowls, and face-neck vessels displaying varying decorative features, including white, light cream slips (Figure 5.12) and asymmetrical arrangements of stepped and un-stepped diamond, triangle, and saddle-like wedge motifs. One motif, which bears a resemblance to a fish (Figure 5.13), has been observed on ceramics and textiles (Figure 5.29). Redware and blackware vessels, some of which are miniature in size, were also documented.

Figure 5.12: A vessel with white, light cream slip

Figure 5.13: Ceramic sherd with a fish-like motif

A variety of textiles and weaving tools were documented across the entire study area, attesting to the significance of textile production in Chincha. Painted and unpainted spindles with and without ceramic whorls and string were discovered. A small gourd vessel with three balls of yarn, similar to the "yarn vessels" recovered by Uhle (Kroeber and Strong, 1924), was found in a cemetery. We discovered a twill plaited weaving basket (Figure 5.14) in which reeds are inserted as passive twined elements every other row. The lid was woven as part of the structure. The plaiting elements measure 0.1 – 0.3 cm wide, and the passive reed elements measure 1 – 1.3 cm wide. Although we found nothing in the weaving basket, Kroeber and Strong (1924, p. 31) note that these baskets typically contain spindles and yarn.

Figure 5.14: Twill plaited weaving basket

There is an abundance of textiles in the study area because they served as wrappings[63] and offerings for the dead. Textile types include, but are not limited to, bags, belts, pouches, and loincloths. Many of these feature plain weave structures with paired warps[64], which have also been documented in the lower Chincha Valley (Fattorini, 1984; Garaventa, 1979; O'Neale et al., 1949). Mid-valley textiles exhibit cotton and camelid yarns that are dyed and undyed. Camelid yarns were dyed to add different colors (e.g., red, purple, yellow) to the textile. Dyed and undyed yarns were arranged in various ways to create geometric and figural motifs. For example, a textile recovered from the UC-025 cemetery displays a row of purple bird figures (Figure 5.15). Another textile, found at the UC-037 cemetery, exhibits checkered squares that alternate between brown and dark brown undyed cotton yarns (Figure 5.16). This pattern may be emblematic of a localized, Inca-style (oral communication, Elena Phipps).

[63] We encountered an apparently complete textile bundle, likely containing human remains, during a reconnaissance survey conducted in the mid-Chincha Valley in 2012. Unfortunately, this bundle was removed from its grave before our 2013 survey of the study area.

[64] The reasons behind the predominance of the plain weave structure with paired warps in Chincha are debated. It may be emblematic of a local custom. This structure, however, has also been connected to the north coast Chimú textile style (Rowe and O'Neill, 1984, p. 24). This raises the possibility that north coast colonists (*mitmaq*) have settled in Chincha. These textiles may have also been obtained through trade.

Figure 5.15: Textile displaying a row of bird figures

Figure 5.16: Textile with checkered squares

Botanical remains are found throughout the survey zone. Gourds used as vessels and maize are commonly found in graves. Maize may have been deposited in graves as food for the deceased. Some gourd vessels are pyro-engraved, and one such vessel displays catfish motifs. As stated before in chapter 3, these types of vessels were highly valued in the Lake Titicaca basin (Lizárraga, 1946 [1605]) and may have functioned as important objects of trade for Chincha merchants (Lumbreras, 2001, p. 14). Paleoethnobotanical analyses would likely reveal even more botanical remains in mid-valley graves.

We discovered a few worked and burned bones in the study area. For instance, a burnt and hollowed bone that was painted and wrapped in yarn was found in the UC-048 cemetery. Red pigment was applied to the bone, and two strands of wool yarn were wrapped together around the bone in a diagonal pattern. The yarns are undyed and black. A white pigment was applied on top of the red pigment and the fiber. Whether the bone is animal or human is unclear. In addition, a cleanly cut "cranium bowl" (Figure 5.17) was found at the UC-012 cemetery by Charles Stanish. Cranium bowls are among several types of war trophies that the Inca allegedly produced (Guamán Poma de Ayala, 2009 [1615], pp. 126, 248–249, 266; Ogburn, 2007, pp. 511–512; Verano, 1995, p. 192). Close examination of cut marks observed on this object suggests that they may have been caused by an iron saw (Colleen O'Shea, oral communication). Iron tools would not have been available in the Andes prior to AD 1532. Although it is plausible that this object was produced during the Late Horizon, we cannot rule out that it postdates the Spanish arrival.

Figure 5.17: A “cranium bowl” found at the UC-012 cemetery

A partially burned balance fragment was recovered outside of a *chullpa* at UC-026 (Figure 5.18). This artifact is made of bone and displays groups of circles. Balance fragments and an entire balance were recovered by Uhle (Kroeber and Strong, 1924, pp. 38–39) in his excavations. The significance of this type of artifact is a subject of debate. Lumbreras (2001, p. 14) holds that they are markers of Chincha merchants. Morris and Santillana (2007, p. 157) state that they may have been used in production activities requiring the precise measurement of precious metals. Menzel (1966, p. 124) associates balance scales with local Chincha individuals engaged in agriculture and metalworking. Several balance fragments have been found at Las Huacas (Jordan Dalton, oral communication), a site that is hypothesized to have been an agricultural center before the arrival of the Spanish (Lumbreras, 2001, p. 52). Indeed, research to date shows that balance artifacts are predominantly found in non-administrative contexts (e.g.,

cemeteries and a potential agricultural center), a finding that may offer support for a local Chincha domestic market system (Sandweiss and Reid, 2015, p. 318).

Figure 5.18: A partially burned balance fragment made of bone

Ceramic figurines, which have been interpreted as “objects of veneration” (DeLeonardis and Lau, 2004, p. 112), were documented in the mid-Chincha Valley. Four fired, orange-red figurines have been documented. All were found in cemeteries, but only one was found in a *chullpa*. At least two of these are female, and one bears traces of hematite. Two exhibit separated legs and traces of white slip, characteristic features of LIP, Chincha-style figurines according to Menzel (1967, pp. 23, 27). Radiocarbon data provide some support for this assertion and Menzel’s figurine typology. Four dates from UC-018, one of the cemeteries in which a white colored figurine (Figure 5.19) was found, indicate that the site was in use during the LIP.

Figure 5.19: White colored figurine found at the UC-018 cemetery

Osteological and material indicators of violent conflict are widespread in the study area[65] (Figure 5.20). In addition to the cluster of defensive walls in the northeastern area of the survey zone, we discovered cranial trauma and weapons associated with *chullpas* in several cemeteries and a *pukara* (UC-043). Research to date finds at least 13 crania from 8 cemeteries with fractures and injuries that are consistent with perimortem and antemortem trauma (Table 5.3, Figures 5.20 – 5.22). We found possible evidence of trepanation, a form of surgical treatment that has been documented in other parts of the Andes during the LIP and Late Horizon (Andrushko and Verano, 2008; Kurin, 2016), in one cranium found at UC-030 and another at UC-048. Regarding weapons, a *bola* was recovered from a *chullpa* dated to the Late Horizon and early colonial period (UC-025 Tomb 7) (Figure 5.23). Thus, the UC-025 cemetery is the only cemetery where weapons and cranial trauma were recorded. Additionally, a stone axe head and sling stones were

[65] I only focus on evidence of violent conflict recorded on archaeological survey in this section. Additional indicators of violence were also documented through bioarchaeological analysis of human remains recovered from UC-008 Tomb 1 and the Sector B *chullpa*. These data are discussed in the next section.

discovered at the UC-048 *pukara*. Although it is possible that these weapons were used in hunting, it is also likely that they were used in hand-to-hand combat (Tung, 2007, p. 944). For instance, *bolas*, maces, and slings are examples of armaments that the Inca (and presumably pre-Inca societies) employed in warfare (D'Altroy, 2015; Rowe, 1957).

Table 5.3: Crania from the mid-Chincha Valley with markers of trauma

ID	Site	Sex	Age	Trauma Type	Trauma Description
724-17-1	UC-025 Tomb 8 (Chullpa)	Male	Adult	Antemortem	Two healed depressed cranial fractures are on the frontal bone.
724-17-4	UC-026 Tomb 2 (Chullpa)	Male	Adult	Antemortem	Three healed depressed cranial fractures are on the right parietal bone. One healed depressed cranial fracture is on the left parietal bone. Two unhealed fractures are on the left parietal bone.
724-17-13	UC-037 Tomb 9 (Chullpa)	Male	Adult	Antemortem	A healed fracture is on the nasal bone
81-17-4	UC-079 Tomb 2 (Chullpa)	Male	Adult	Perimortem	Injuries are on the cranium base and the posterior surface.
724-17-10	UC-026	Possible Female	Uncertain	Antemortem	Depressed, healed fracture is on right parietal bone.
UC-030-C1	UC-030	Possible Male	Adult	Antemortem	Incomplete depressed fracture on the frontal bone.
UC-030-C2	UC-030	Possible Male	Adult	Antemortem	Two lesions in the frontal bone that may have represented complete fractures. Trepanation may have been conducted to remove bone fragments.
UC-048-C1	UC-048	Uncertain	Adult	Antemortem	Oval defect with scar edges on the posterior surface. Trepanation may have been conducted.
UC-049-C1	UC-049	Uncertain	Adult	Antemortem	Depressed, circular fracture on the left parietal bone.
UC-075-C1	UC-075	Possible Female	Adult	Antemortem	Incomplete, circular, depressed scar edges from fractures on the left parietal bone and occipital bone.
UC-025-C1	UC-025	Uncertain	Adult	Perimortem	Incomplete fracture on the right parietal bone and frontal bone.
UC-025-C2	UC-025	Uncertain	Adult	Antemortem	Full, depressed, and healed fracture on the right parietal bone.
UC-025-C3	UC-025	Male	Adult	Perimortem	Irregularly shaped bone loss on the posterior surface that radiates in several directions

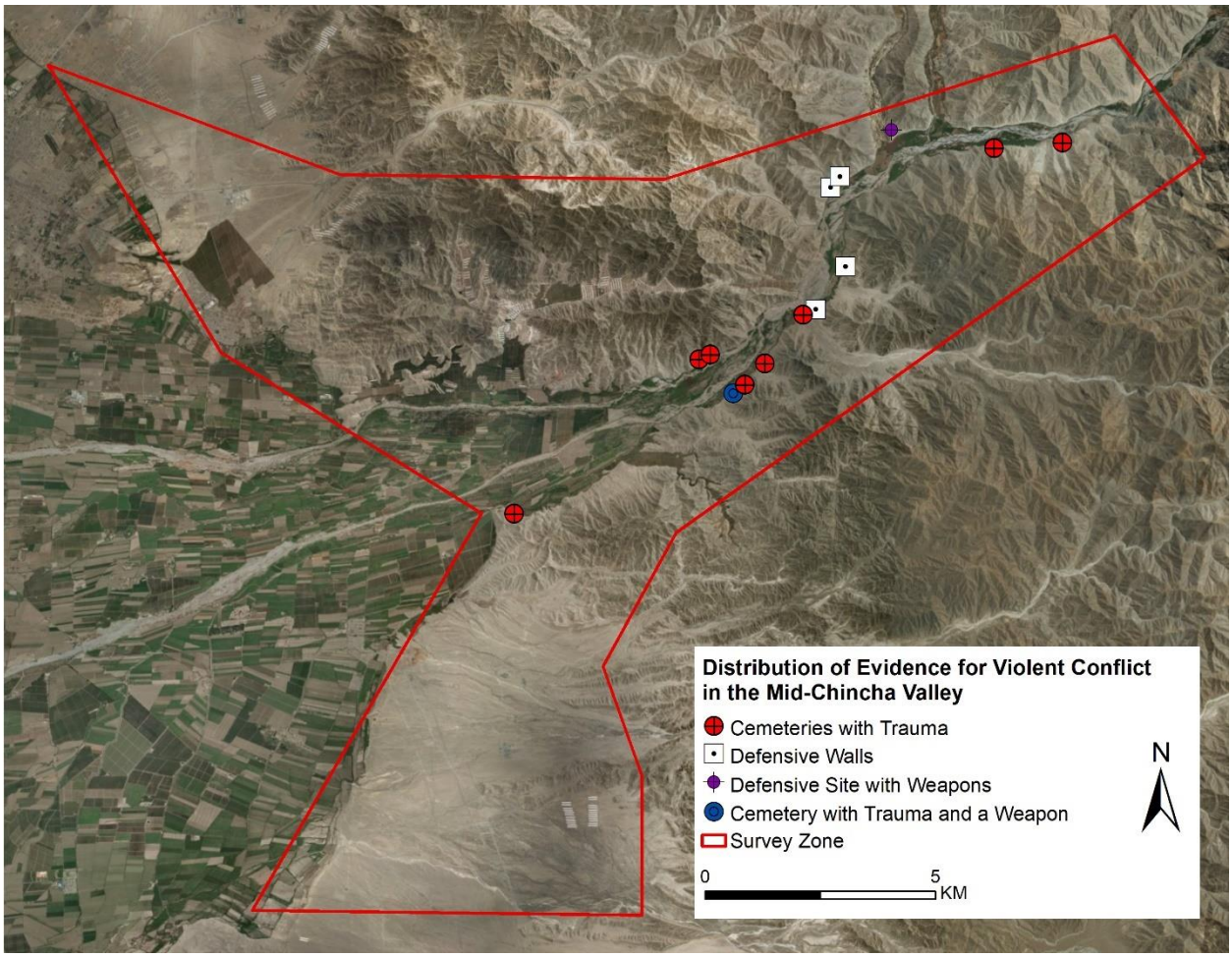

Figure 5.20: Distribution of evidence for violent conflict in the study area

Figure 5.21: Cranium with perimortem trauma from the UC-025 cemetery

Figure 5.22: Cranium with antemortem trauma from the UC-075 cemetery

Figure 5.23: A *bola* found in UC-025 Tomb 7

These data suggest that violent conflict, commonly associated with the LIP in Andean studies, occurred in the mid-Chincha Valley. Depressed cranial fractures, like the ones observed in our sample, may correspond to maces, clubs, or projectile weapons such as sling stones (Torres-Rouff and Costa Junqueira, 2006; Tung, 2008a, p. 109). Maces and clubs may have also caused observed cases of blunt force trauma.

Many other types of finds were recorded on the archaeological survey. Wooden implements, similar in form to those found by Uhle (Kroeber and Strong, 1924, pp. 34–35) were documented at three cemeteries: UC-012, UC-027, and UC-037. These artifacts are hypothesized to have been used as digging sticks associated with agricultural activities (Kvietok, 1987). Outside of one of the *chullpas* at UC-025, we discovered a gourd vessel packed with soil that

contains a juvenile right maxilla and an adult metatarsal (Figure 5.24). Based on the available dentition, the maxilla belonged to a five-year-old juvenile (Juliana Gómez Mejía, oral communication). Pupal insect casings were also found within the vessel. This suggests that these human remains contained flesh when they were placed in the gourd and that they were exposed long enough to permit insects to consume the flesh. Later, the gourd became filled with dirt. I hypothesize that this gourd contained offerings of human remains.

Figure 5.24: Gourd bowl with human remains

Lastly, burned human bones, artifacts, and botanical remains were encountered in at least 8 cemeteries (UC-025, UC-026, UC-027, UC-028, UC-031, UC-032, UC-048, and UC-064). We observed and photographed various burned human bones (e.g., crania, vertebrae) (Figure 5.25), textiles, gourd vessels, reeds, and maize (Figure 5.25). Even one of the fieldstones in a *chullpa* showed signs of burning. It is possible that these fires were started during or after the Spanish

invaded Peru. It remains plausible, however, that these fires predate the Spanish arrival. Colonial sources describe the significance of fire in local Andean mortuary customs, and archaeological evidence of burning events in mortuary contexts has been documented. Francisco Pizarro (1921 [1571], pp. 251–252) writes that "for the dead they [Andeans] made fires before them…[T]hey burned here everything which they had placed before the dead in order that he might eat the things which they eat." Pizarro is apparently describing a form of veneration in which a local Andean group burns food offerings to provide nourishment to the dead. Burning may have also been employed to serve another end: erasing the memory of the deceased. As stated in chapter 2, there is archaeological evidence suggesting that the Inca destroyed above-ground tombs and burned human remains and offerings in Quebrada de Humahuaca (Argentina) (Nielsen, 2008, pp. 227–228). Indeed, if the burning of offerings and human remains in the mid-Chincha Valley predates the Spanish arrival, it may have represented efforts to venerate, or destroy, the dead.

Figure 5.25: Assemblage of burned human remains and textiles found in a *chullpa* (UC-031 Tomb 8)

A Closer Look at the Graves: Results from Mortuary Excavations, Surface Collection, and Bioarchaeological Analysis (UC-008 and Sector B)

In this section, I provide the results from our surface collection of UC-008 Tomb 1 (*chullpa*) and our mortuary excavations of two cists and a *chullpa* at Sector B. First, I briefly describe UC-008 Tomb 1, highlight the dates associated with this grave, and then draw attention to important grave inclusions. Next, I describe the excavation contexts of Unit 1 (two cists) and Units 5-9 (single *chullpa*) at Sector B[66]. I describe skeletal and material finds discovered in the graves. Lastly, I present the results of our bioarchaeological analyses conducted on human remains recovered from the Sector B graves.

[66] I focus on these excavation units in this section because they are the only ones that encompass graves.

Archaeological Context, Artifacts, and Skeletal Finds

UC-008 Tomb 1

UC-008 Tomb 1 appears to be a semi-subterranean or subterranean rectangular *chullpa*. It measures 3.09 x 2.35 meters, and it is constructed out of fieldstones that are presumably local. Random rubble masonry with high levels of mortar is observed in the interior of the grave. No evidence for a roof, interior bench, or niches was found. This grave has an opening that faces 0 degrees north. It has a minimum depth of 0.96 meters, but this is most certainly an underestimate considering that this *chullpa* was not excavated and contained evidence of textiles and human remains below the surface. Four radiocarbon dates from two reeds and two vertebrae placed on those reeds indicate that UC-008 Tomb 1 was used from the Late Horizon to possibly as late as the early colonial period (Table 5).

As stated in chapter 4, we collected finds from two collection units at UC-008 Tomb 1 (Figure 13). Several types of finds were recovered from this grave. Eight reeds with vertebrae were found. We found at least 29 gourd bowls, one of which contains fragments of maize (Figure 5.26). Research to date in the mid-Chincha Valley demonstrates that gourd vessels contained maize, balls of yarn, and human remains. These findings indicate that offerings were placed in gourd bowls, which were in turn, deposited in UC-008 Tomb 1 and elsewhere as possible provisions for the dead. Moreover, a camelid phalange with cut marks was recovered. Stanish (2012, p. 216) found camelid phalanges in his excavations of *chullpas* in the Otora Valley, Peru, and Kurin (2012, pp. 72–73) discovered butchered camelid remains in *machays*, suggesting possible feasting events in these graves. Pupal insect casings were sporadically encountered, suggesting that human remains retained flesh when they were deposited and may have been

exposed for some time within the grave. In addition, a spondylus bead and another shell bead were discovered (Figure 5.27). Although only a single spondylus bead was found, the association between spondylus and Late Horizon dates at UC-008 Tomb 1 offers some support for the notion of a Late Horizon Chincha spondylus trade franchise. Very limited ceramics were found.

Figure 5.26: Gourd bowl with maize

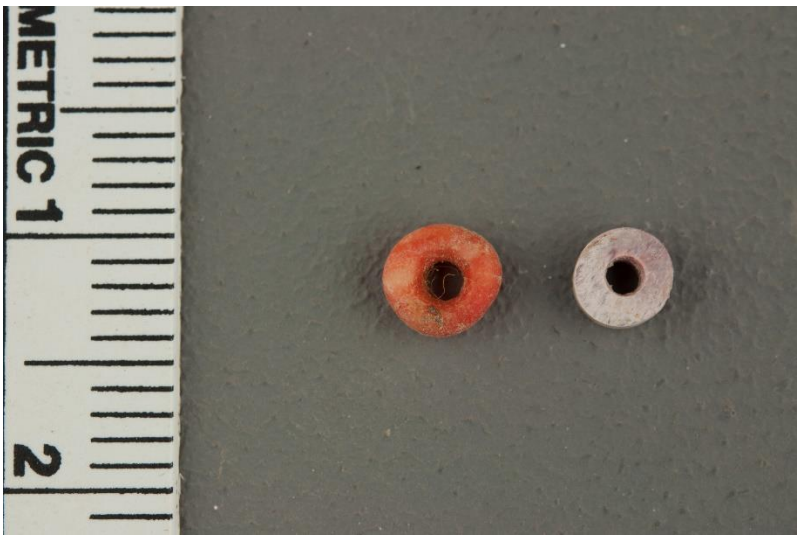

Figure 5.27: Spondylus bead and another shell bead

At least 470 textiles were recovered. Some are patterned (121), while the majority are plain (349). The identification of body fluid stains on several textiles suggests their use as bundles for holding human remains. Indeed, at least 1 textile bundle with juvenile remains was recovered (Figure 5.28). We conducted an analysis of a 30% sample (141 textiles) from the textile assemblage (Bongers et al., 2018). We documented mantas, tunics, and loincloths. One patterned textile (Figure 37) exhibits the same "fish-like" motif observed on a ceramic sherd (Figure 15) found on the survey. Many of the textiles display stains, suggesting that they were used to wrap the dead. Our analysis reveals six groups of textiles, collectively accounting for most of the assemblage (71%), each displaying consistent associations among yarn production (e.g., spinning and plying) and weaving techniques (Bongers et al., 2018). This suggests that multiple communities, or perhaps households, of weavers produced most textiles in the sample from UC-008 Tomb 1 (Bongers et al., 2018).

Figure 5.28: Textile bundle with juvenile remains

Figure 5.29: Textile with dyed red “fish-like” motif

An object tentatively labeled as a “bird pendant” was also discovered at the southern end of UC-008 Tomb 1. This object is made of the skinned body of a bird with light peach, light gray, and light brown feathers present (O’Shea and Bongers, 2015) (Figure 5.30). The bird lacks a head, and no bones were recovered from the object, suggesting that once skinned, the body was wetted and folded to form its oval shape (O’Shea and Bongers, 2015). The object exhibits “down” feathers that are fluffy, warm, and high-drag, suggesting that the bird was young when it was processed (Tom Wake, oral communication). The bird could be the burrowing owl (*Athene cunicularia*) that is commonly encountered in the Chincha Valley (Tom Wake, oral communication). A light brown, Z-spun, and S-plied cord was threaded through the feathers. A slight hollow in the object raises the possibility that it once served as a container. XRF analysis of a sample of red-orange granules found on the object characterized it as mostly iron.

Figure 5.30: The “bird pendant”

Sector B – Unit 1

We excavated a total of six units featuring graves at Sector B (Figure 5.31). Unit 1 (2 x 2 m) encompasses two cists. The westernmost cist (1.47 x 0.45 m with a depth of 0.25 m) and the easternmost one (1.58 x 0.48 m with a depth of 0.3 m) are both disturbed graves. Both graves are oriented north-south. There will be much discussion of the better-preserved easternmost cist, however, because it contained more finds than the poorly preserved western-most cist. Two reed samples in the easternmost cist, one derived from a post that may have constituted a litter, and another found on the surface, date to the LIP (Table 5). The excavation context of Unit 1 (2 x 2 m) is described below.

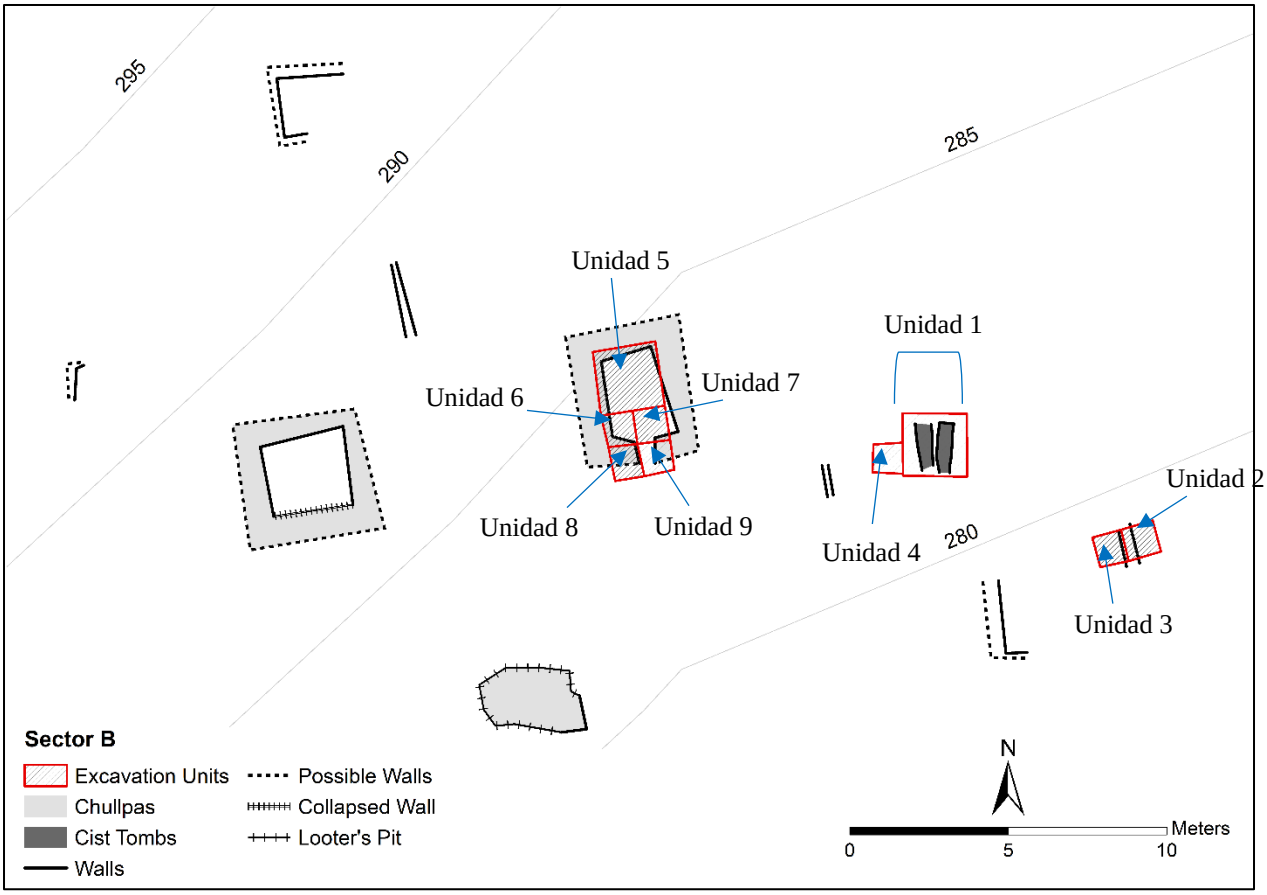

Figure 5.31: Detailed map of Sector B

I focus on several loci associated with Unit 1. Locus 1 represents the Superficial Level of Unit 1, including the skeletal and cultural materials (e.g., textiles) located on the surface of a disturbed grave (Figure 5.32). Artifacts and human remains are generally deteriorated and bleached by the sun. Locus 2 encompasses the human remains, textiles, reeds, maize, and ceramics that were displaced by the looters. They were positioned within a meter around Unit 1 in all cardinal directions. The looter's pit in the Superficial Level of Unit 1 is labeled as Locus 3 and Feature (*Rasgo*) 1 (Figure 5.32). Human remains, including three crania, were found in this pit. We assigned Locus 4 and Level (*Nivel*) 1 to the presumed end of the most disturbed surface level around the grave (Figure 5.33). Areas of compact soil were encountered in this locus,

including inclusions of stones of varying sizes. Various finds were made, including ceramics, textiles, maize, and a possible sling stone.

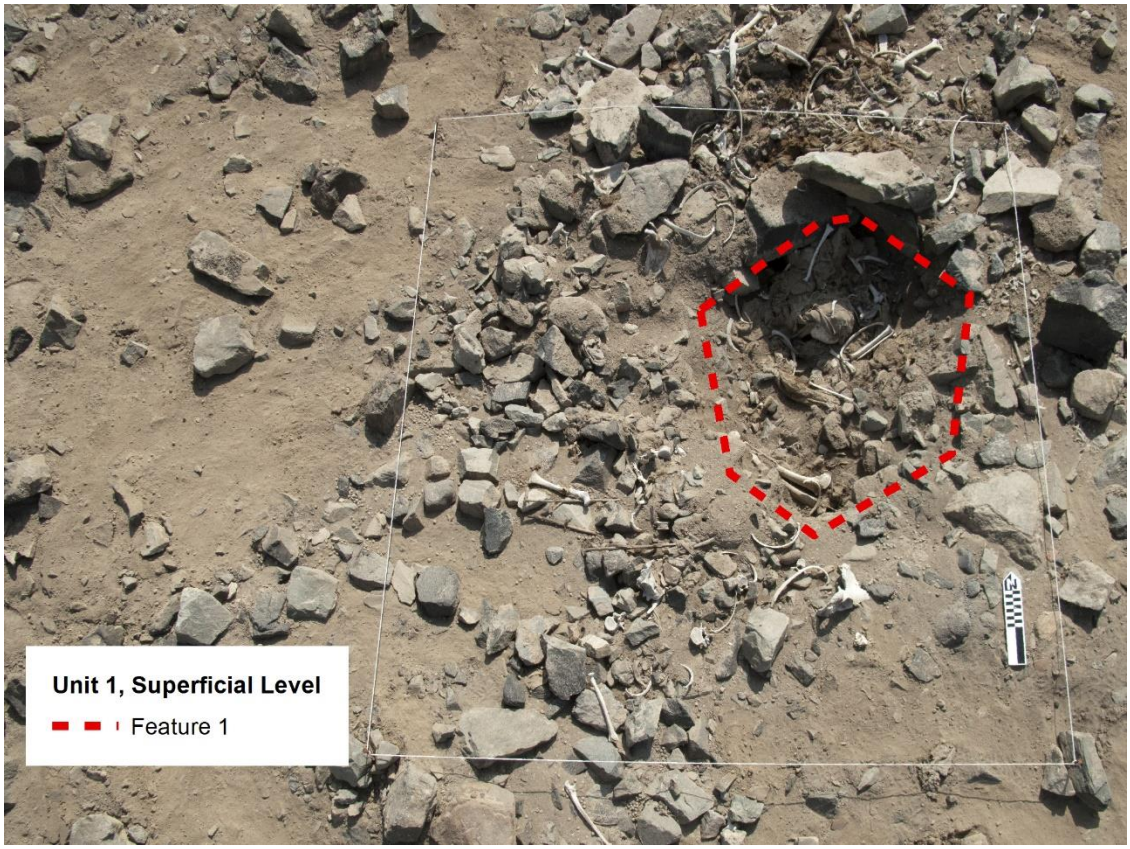

Figure 5.32: View of Unit 1, Superficial Level with Feature 1 marked

Figure 5.33: View of Unit 1, Level 1

Locus 5 (Level 2) refers to a layer of bone fragments associated with areas of more light colored compact earth found especially in the northwest corner of Unit 1, but also in the rest of the unit (Figure 5.34). The soil is broken by the presence of large rubble in the southwest and southeast areas of the unit. Excavations in the southern end of Unit 1 revealed three tibias placed near three overlying fragments of reeds that may have once constituted a detachable covering (Figure 5.34 and 5.35). These tibias and reeds are positioned within two rows of stones that mark the presence of a cist. Feature 4 (Level 2, Locus 12) encapsulates compact earth interrupted by stones of different sizes and eroded human remains. Cranial and femoral fragments and charcoal were recovered in the western part of the feature. The degraded, fragmentary remains possibly belonged to a single adult individual. Two rows of stones on the eastern and western sides

suggest that this feature was also a cist. The surface of this cist appears to have collapsed wall materials, likely related to a past looting event.

Figure 5.34: View of Unit 1, Level 2 with Feature 4 marked by gray dashed lines. The red arrow points to where three tibias and three reeds were uncovered (Figure 5.35).

Figure 5.35: Three tibias and three reeds uncovered in Unit 1, Level 2

We observed a continuation of Feature 1 (the looter's pit) in Level 2 (Figure 5.36) and labeled it as Locus 13. A textile bundle with juvenile remains was found in the northern part of Unit 1. A right radius, right ulna, a sacrum, and a right fused os coxae, all of which were associated with textiles, were also uncovered. Several adult and juvenile bones, showing evidence of modern disturbance, were also present.

Figure 5.36: Unit 1, Level 2 with Feature 2 marked. Locus 13 is located north of Feature 2 between the eastern cist's walls

Two additional features were identified in Level 2 that are relevant for this discussion. Feature 2 refers to an undisturbed portion of the easternmost cist that contains the remains of two groups of leg bones that correspond to two adults. These remains, which included the three tibias described above, were found *in situ*. The human remains are wrapped in textiles, placed on top of each other, and situated on three underlying posts that mark the bottom of the cist (Figure 5.37). The top group, placed in bag (*bolsa*) 9297 (Figure 5.38), contains a pair of right and left fibulas, a pair of right and left tibias, and several feet bones like the ones mentioned above. A fiber cord was found in association with these human remains (Figure 5.38). This may have been used to tie

them to the three posts. Thus, these reeds may have constituted a litter used to carry the dead to the grave. The bottom group appeared to be in articulation (Figure 5.39). These human remains, placed in bag 9298, include a pair of right and left fibulas, a left tibia, and multiple feet bones (e.g., metatarsals, talus, navicular, etc.). At this stage of the excavation, it became clear that these groups of leg bones were associated with the right fused os coxae, sacrum, radius, and ulna recovered in Locus 5 (described above) because all these human remains are situated in correct anatomical positions in relation to each other. These two adult individuals were placed on top of each other in supine positions based on leg orientation. Isolated juvenile elements (e.g., vertebrae, mandible) were discovered between the two groups of leg bones, suggesting that these two adults may have been deposited at different times.

Figure 5.37: Two groups (top and bottom) of lower leg bones wrapped in textiles and placed on top of three reed posts

Figure 5.38: The top group of leg bones with a fiber cord marked by the red arrow

Figure 5.39: Bottom group of leg bones that appears to be in articulation

Feature 5 (Locus 17) begins in Level 2 and ends in Level 3. It is also within the confines of the undisturbed part of the easternmost cist in Unit 1. It is situated, however, below the upper

and lower groups of leg bones and at the level of the three reed posts. Within this feature, we found a left radius, left ulna, and various hand bones (e.g., metacarpals, lunate, etc.). placed on the reed posts.

Locus 28 is Level 3, the final level of Unit 1 (Figure 5.40). At this level, the western and eastern cists, and the three reed posts in the eastern cist, are fully revealed. The three reed posts each measure 1.59 m in length. The eastern cist features an enclosed, stone-lined space at its northern end with a lintel (Figure 5.41). Additional textiles, some ceramic sherds, human remains, charcoal, and botanical remains were found in this locus. Feature 10 (Locus 46), associated with Level 3, represents an area beneath the three reed posts in the eastern cist and the other cultural deposits of the grave. Here, we found a thin layer of sand on compact earth.

Figure 5.40: View of Unit 1, Level 3

Figure 5.41: View of the enclosed, stone-lined space at the north end of the eastern cist

Sector B – Units 5-9

Units 5-9 encompass one of the *chullpas* in Sector B (Figure 15). Unit 5 (2 x 2 m) was placed represent the interior space of the *chullpa* and Units 6-9 (each 1 x 1 m) were placed south of this unit to expose the rest of the grave architecture, including the south-facing opening. The *chullpa* measures out to 3.67 x 1.85 m and has a depth of 0.7 m. It exhibits random rubble masonry and high levels of mortar. No evidence of a roof was found. Radiocarbon dates from a hair sample and a maize sample recovered from this *chullpa* demonstrate LIP use (Table 5). Collectively, radiocarbon data from Sector B show that the easternmost cist (Unit 1) and the *chullpa* were in use during the LIP, which contrasts with the Late Horizon and possible early colonial period dates from UC-008 Tomb 1. The excavation contexts for Units 5-9 are described below.

I draw attention to multiple loci associated with Units 5-9. Locus 23 encompasses the cultural materials and human remains placed outside of the *chullpa* by looters. Human remains, textiles, botanical materials, and some ceramics were found. Within Unit 5, Locus 24 and 26 constitute the Superficial Level (Figure 5.42). More specifically, Locus 24 represents the surface layer, and Locus 26 refers to a layer below the surface with sediment, rocks, degraded human remains, and low levels of cultural material. Some ceramic fragments found in Locus 26 feature LIP/Late Horizon decorations. Locus 29 marks the end of the Superficial Level and the beginning of Level 1 in Unit 5 (Figure 5.43). Very fragmentary and degraded human remains were recovered, suggesting that they may have been part of a less recently disturbed area of the *chullpa*. A miniature[67] blackware vessel was found in this layer (Figure 5.44). Feature 6 (Locus 30, Level 1) contains human remains, textiles, ceramics, and botanical remains. Compared to Locus 26, this feature displays less degraded human remains and looser soil. Therefore, we suggest that Feature 6 represents a more recent fill deposited by looters.

[67] Miniature objects, particularly human and camelid figurines discovered in elaborate Inca offerings (*capacocha*), have been noted by Bernabé Cobo (Cobo, 1990 [1653], p. 154) and discussed by several scholars (Bray, 2009; Reinhard, 2005; Sillar, 2016).

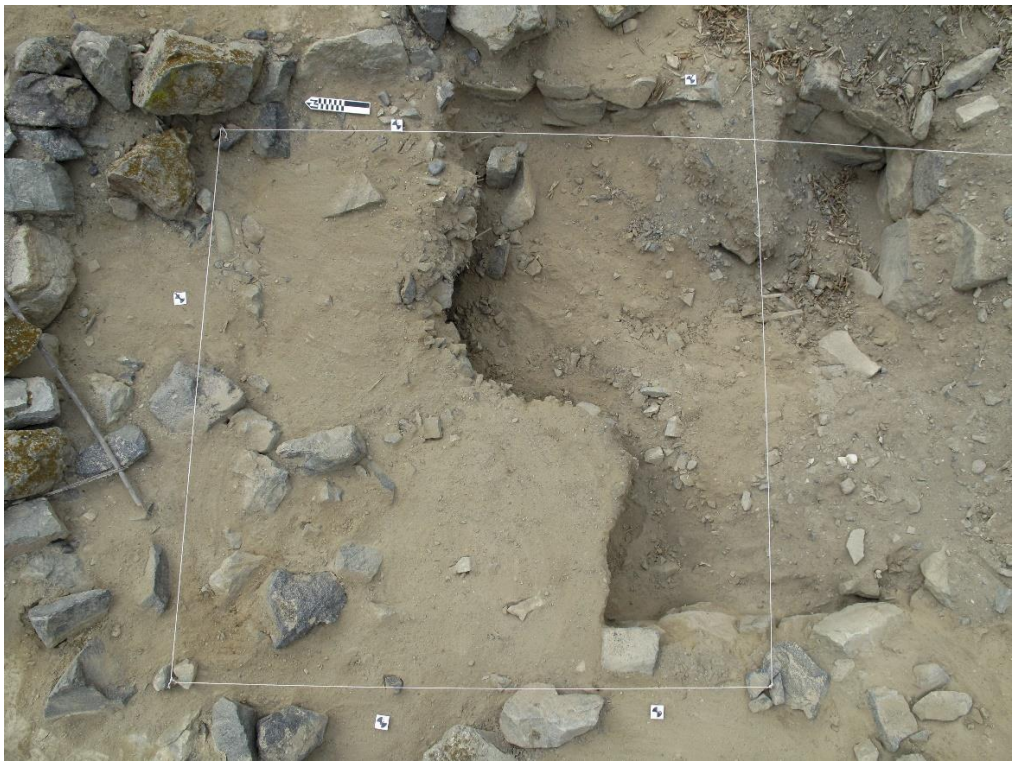

Figure 5.42: Unit 5, Superficial Level

Figure 5.43: Unit 5, Level 1

Figure 5.44: Miniature blackware vessel found in Unit 5, Level 1

We labeled Level 2 of Unit 5 as Locus 37. This layer has a mixture of loose sand and silt with lots of small rocks and small fragments of human bone exhibiting different states of weathering. For instance, whole phalanges and vertebrae were discovered in this locus. The general soil matrix and composition of Locus 37 are similar to that of Level 1 (Unit 5, Locus 29). Furthermore, we continued to recover smaller, highly degraded, and fragmentary human remains in this locus. Based on these findings, it appears that Level 2 was disturbed less recently than the Superficial Level and Level 1 of Unit 5.

Feature 7 (Locus 40) is observed within Level 2. This feature primarily comprises 1) ribs associated with textiles deposited along the western wall of the *chullpa*, 2) other textile fragments and slingstones, and 3) dark soil covered by more compact soil and situated next to sandy areas (Figure 5.45). A metal tweezer, similar to the tweezers Uhle found in the lower Chincha Valley (Kroeber and Strong, 1924, pp. 40–41), was collected in Feature 7. We interpret Feature 7 as an area that, at the least, was not disturbed or exposed to the natural elements in the same ways as the superficial level and Level 1 of Unit 5.

Figure 5.45: Units 5-7, Level 2 with Feature 7, slingstones, and areas with pupal insect casings marked. The red arrow points to the remains of a possible textile bundle with human bones, while the blue arrow points to the south-facing opening of the *chullpa*.

Loci 41, 42, and 43 correspond to Level 3 for Units 5, 6, and 7, respectively. Level 3 represents the hard, compact earthen layer of the *chullpa* that is situated below Feature 7 (Figure 5.46). Thin layers of sand were observed on top of some areas of this layer. We hypothesized that Level 3 represents the earthen floor of the *chullpa*. To test this hypothesis and evaluate the

depth of the *chullpa* walls, we excavated a designated 2 x 1 m area placed at the northern end of Unit 5 Figure 5.46). This area is known as Locus 45 (Feature 9). Excavation of this area uncovered the bottom of the wall and a sterile layer with very limited finds, thereby offering support for the notion that Level 3 is the floor of the *chullpa*.

Figure 5.46: Units 5-7, Level 3 with Feature 9 marked

Regarding Unit 6, it is positioned towards the southwest corner of the *chullpa*. Locus 31 refers to the Superficial Level of Unit 6, composed of loose sediment, varying stone sizes, and dense amounts of minimally degraded human remains. This locus is characterized as part of a more recent looter's fill. Textiles, animal remains, ceramics, human hair, and shell were recovered. Locus 38 is Level 2 of Unit 6. It has silty earth, small rocks, and highly weathered human remains. A miniature double jar, similar in form to the "double jarlets" that Uhle found in his excavations (Kroeber and Strong, 1924, p. 24), was recovered in the southwest area of Locus 38 (Figure 5.47). We found pupal insect casings (Figure 5.44), animal bones, textiles, and ceramics in addition to botanical materials. The casings reveal that human remains with, and perhaps without, flesh may have been placed in textile bundles before being deposited and exposed in the *chullpa*. This pattern is also observed in UC-008 Tomb 1. Level 2 is likely associated with the less disturbed area of the *chullpa*.

Figure 5.47: "Double jarlet" found in Unit 6, Level 2

Unit 7 occupies an area east of Unit 6, yet not quite reaching the southeast corner of the *chullpa*. The Superficial Level of Unit 7 is known as Locus 32. It was filled with loose, silty earth with several human remains and medium-sized rocks. The first phalanx of a llama with cut marks on the distal and proximal ends was collected. The cut marks were likely caused by a metal tool, revealing an effort to disarticulate the first phalanx (Thomas Wake, oral communication). The deposition of llama toe remains in graves, presumably as offerings, has also been observed elsewhere in Peru. For example, Stanish (2012, p. 216) recovered llama phalanges from an intact *chullpa* in the Otora Valley. Excavation of this locus revealed a hole between the southernmost wall that we hypothesized, at the time, to be the opening of the *chullpa*. The contents of this locus appear to also be part of the more recently disturbed layer of the *chullpa*.

Locus 44 represents Level 1 for Units 7 and 9. Feature 8, associated with Locus 44, refers to the opening of *chullpa*, confirming our previous hypothesis (Figure 5.48). Whether the opening was naturally filled or artificially sealed with soil is unclear. A lintel may have been placed across the opening. Our excavations exposed a horizontal stone slab placed at the bottom of the opening, which served as a step into the *chullpa* (Figure 5.48). Ceramic sherds, gourd, textile, and human remains were found within Feature 44 and associated with the less recent disturbance event.

Figure 5.48: The south-facing opening and step of the *chullpa*

Level 2 of Unit 7 is known as Locus 39. This locus features a layer of silt, small fragments of weathered and unweathered human bones, and a thin lens of sand overlying compact earth, which we also find in the northern area of Locus 37 (Unit 5, Level 2). Botanical remains, human bones, animal bones, pupal insect casings, and textiles were recovered.

Unit 8 is placed south of Unit 6, mostly encompassing an area located southwest of the *chullpa* opening. Locus 33 is the Superficial Level of Unit 8 that also has very loose, silty earth alongside a high density of minimally degraded human remains. This level ends at a layer composed of dry earth, believed to be the original surface of the terrain before the recent looting event. Below this stands Locus 35, or Level 1 of Unit 8. Smaller stones are found in the northern area of the layer, while softer, less compact soils are encountered in the southern area. This layer

likely represents the ground surface of the most recent looting event, containing finds (e.g., ceramics, botanical materials, and animal bones) deposited by looters.

Unit 9 is positioned east of Unit 8, mostly encapsulating a space located southeast of the *chullpa* opening. Locus 34 encompasses the Superficial Level of Unit 9. It is similar in composition to Level 1 in Unit 5 and the superficial levels in Units 8, 7, and 6. That is, it features loose soil interrupted by several rocks and mildly degraded human remains, thereby suggesting a recently disturbed layer. Locus 36 is Level 1 of Unit 9, and it contains textiles, ceramics, and human remains associated with the *chullpa*.

Overall, our excavation revealed a fieldstone, mortared *chullpa* with a step and an opening oriented south (Figure 5.49). Bioarchaeological data from this *chullpa* and the other graves selected for excavation and surface collection are discussed in the next section.

Figure 5.49: View of the chullpa at the end of excavation

Bioarchaeological Data

Bioarchaeological analyses were conducted on thousands of human remains recovered from UC-008 Tomb 1 (*chullpa*) and two excavated graves in Sector B: the easternmost cist (Unit 1) and one of the *chullpas* (Units 5-9). We examined 5821 elements from UC-008 Tomb 1, 2642 elements from the Sector B *chullpa*, and 707 elements from the Sector B cist. Elements from several types of anatomical groups[68] were documented in all graves (Table 5.4). The thorax and

[68] Observed elements in the cranial group include the cranium, ethmoid, frontal, inferior nasal concha, mandible, maxilla, nasal, occipital, palatine, parietal, sphenoid, temporal, vomer, and zygomatic bones. Observed elements in the thorax and vertebrae group comprise the atlas, axis, cervical vertebra, lumbar vertebra, rib, sacrum, sternum, and thoracic vertebra bones. The clavicle, humerus, radius, scapula, and ulna bones were placed in the upper limb category. The capitate, distal phalanx, hamate, intermediate phalanx, lunate, metacarpal 1-5, pisiform, proximal phalanx, scaphoid, trapezium, trapezoid, triquetral, and triquetrum bones were put in the hand category. Observed elements in the pelvis group include the coccyx, fused os coxae, illium, pubis, and sacrum bones. Observed elements in the lower limb group include the femur, fibula, patella, and tibia bones. The calcaneus, cuboid, distal phalanx,

vertebrae group is the highest represented group for each of the graves, while the ears and throat group is the lowest represented, perhaps because it includes fairly small elements that are easily lost (Table 5.4). Human remains were also categorized as persistent and labile elements[69]. Relatively high counts of small, labile elements were recorded for all graves (Table 5.5). In this study, all elements that are considered labile, such as the patella, hyoid, and cervical vertebra, are marked in Figure 5.50 (Knüsel, 2014, p. 33).

Table 5.4: Counts of elements from different anatomical groups for each grave. Conditional relative percentages for columns are noted in each cell.

	Element Count		
Anatomical Group	UC-008 Tomb 1 (*chullpa)* (n=5821)	Sector B (*chullpa*) (n=2642)	Sector B (cist) (n=707)
Cranial	311 (5%)	133 (5%)	35 (5%)
Ears and Throat	0 (0%)	1 (0%)	4 (1%)
Thorax and Vertebrae	2774 (48%)	827 (31%)	237 (34%)
Upper Limb	743 (13%)	225 (9%)	50 (7%)
Hands	373 (6%)	618 (23%)	174 (25%)
Pelvis	333 (6%)	84 (3%)	24 (3%)
Lower Limb	634 (11%)	131 (5%)	46 (7%)
Feet	456 (8%)	623 (24%)	130 (18%)
Miscellaneous	197 (3%)	0 (0%)	5 (1%)

intermediate cuneiform, intermediate phalanx, lateral cuneiform, medial cuneiform, metatarsal 1-5, talus, navicular, and proximal phalanx were placed in the feet category. Cortical fragments were put in the miscellaneous category.

[69] Observed labile elements include the atlas, axis, capitate, cervical vertebra, cuboid, distal phalanx (hands and feet), rib, hamate, hyoid, intermediate cuneiform, intermediate phalanx (hands and feet), lateral cuneiform, lunate, metacarpal 1-5, medial cuneiform, metatarsal 1-5, navicular, patella, pisiform, proximal phalanx (hands and feet), scaphoid, sternum, trapezium, trapezoid, triquetral, and triquetrum bones. Observed persistent elements include the calcaneus, clavicle, coccyx, cortical fragment, cranium, ethmoid, femur, fibula, frontal, fused os coxae, humerus, illium, inferior nasal concha, ischium, lumbar vertebra, malleus, mandible, maxilla, nasal, occipital, palatine, parietal, pubis, radius, sacrum, scapula, sphenoid, talus, temporal, thoracic vertebra, tibia, trabecular fragment, ulna, vomer, and zygomatic bones.

Table 5.5: Counts of labile, persistent, and unknown element types for each grave. Conditional relative percentages for columns are noted in each cell.

	Element Count		
Element Type	UC-008 Tomb 1 (*chullpa)* (n=5821)	Sector B (*chullpa*) (n=2642)	Sector B (cist) (n=707)
Labile	2642 (45%)	1628 (62%)	434 (62%)
Persistent	3022 (52%)	1013 (38%)	265 (38%)
Unknown	157 (3%)	0 (0%)	6 (1%)

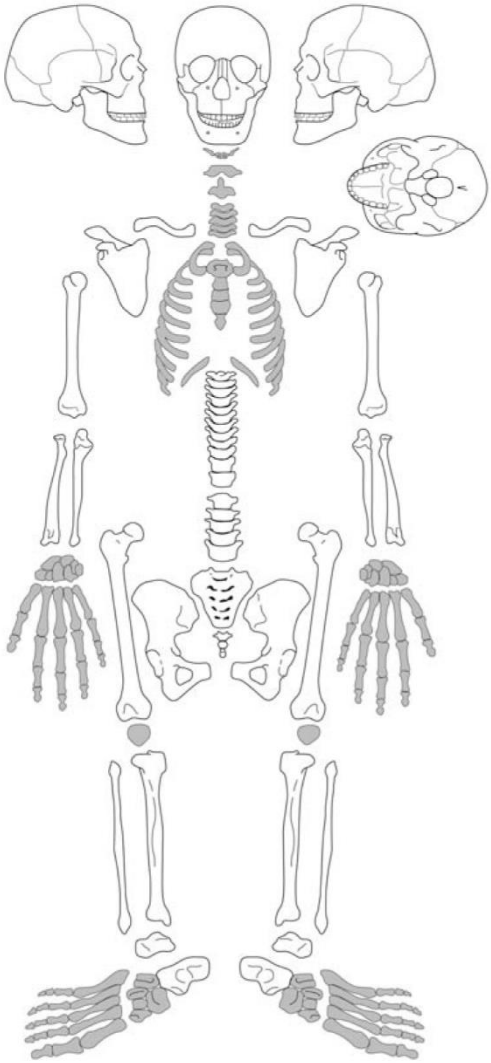

Figure 5.50: Image displaying labile elements in gray and persistent elements in white. This figure is adapted from Knüsel (2014, p. 33).

The MNI counts for the two *chullpas* and the single cist indicate that they are multiple graves (Table 5.6). The differences between MNI counts among these graves are likely due to grave function (i.e., *chullpas* were designed to contain more individuals than cists), differential preservation, and varying degrees of looting. At least 117 individuals were deposited in UC-008 Tomb 1. This number is based on the presence of 70 adult right fused ossa coxae plus 47 juvenile

right tibias. The highest represented aged and sided elements from the Sector B *chullpa* are adult left tali (24), adult left first metatarsals (24), juvenile right femurs (13), and juvenile right scapulae (13). Therefore, the MNI for this *chullpa* is 37. Lastly, the MNI for the cist is only based on elements that could be sided. Epiphyses and fragments were excluded in this calculation. In this case, the MNI for the cist is five. This count was recorded for several sided element types (e.g., mandible, humerus, radius, ulna, femur, and tibia).

Table 5.6: MNI counts for graves

Grave	***MNI***
UC-008 Tomb 1 (*chullpa*)	117
Sector B (*chullpa*)	37
Sector B (cist)	5

Various ages (broad and specific) and sex categories were documented in each of the graves. For example, elements associated with adults and juveniles, considered here to be broad age categories, were deposited in both *chullpas* and the cist (Figure 5.51). Furthermore, elements from different specific age categories (e.g., 0-3 years, 3-6 years) were observed in the two *chullpas* (Figure 5.52). The highest proportion of elements (0.34) in the Sector B *chullpa* fall in the 0-3 years old category, while the highest proportion of elements (0.90) in the UC-008 Tomb 1 *chullpa* fall in the 35-50 years old category (Figure 5.52). Males and females were also identified in both *chullpas* and the cist (Figure 5.53). Our analyses show that more definite females (19) were deposited in UC-008 Tomb 1 than definitive males (13). Four definite females and four definite males were identified in the Sector B *chullpa*. The age and sex categories for each of the five individuals placed in the cist were identified. They included a perinatal individual, a 1-3-year-old, a 3-6-year-old, a 35-50-year-old male, and a 40-60-year-old female.

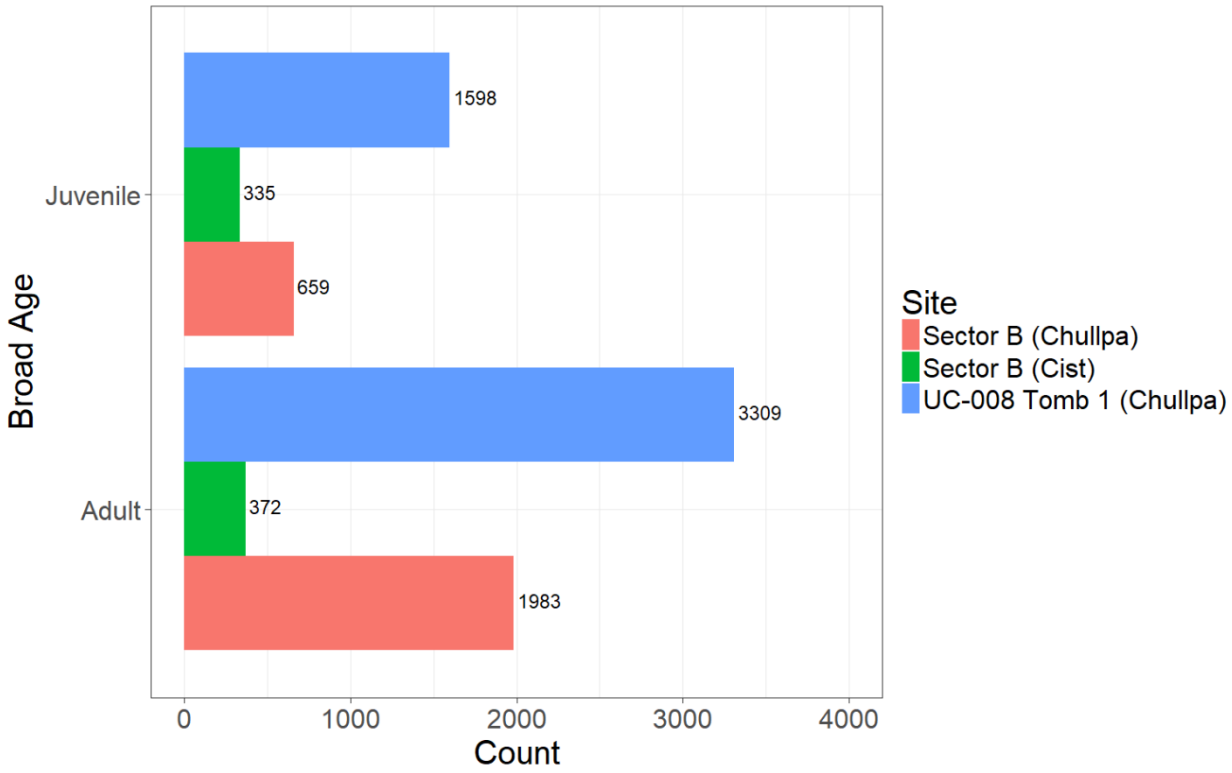

Figure 5.51: Counts of elements associated with adults and juveniles for each grave

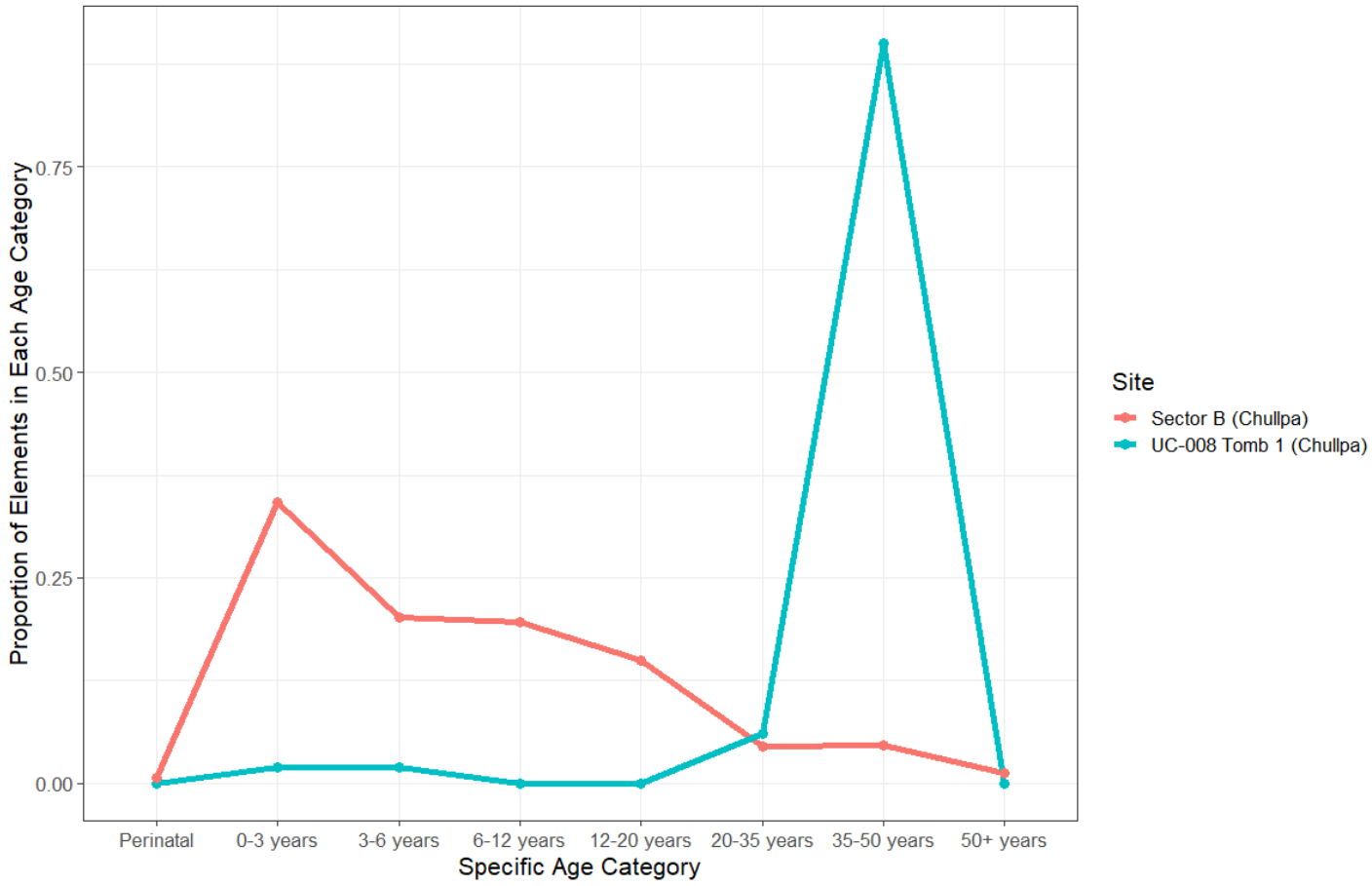

Figure 5.52: Proportions of elements in each specific age category for the Sector B chullpa (n=470 elements with age data) and the UC-008 Tomb 1 chullpa (n=919 elements with age data)

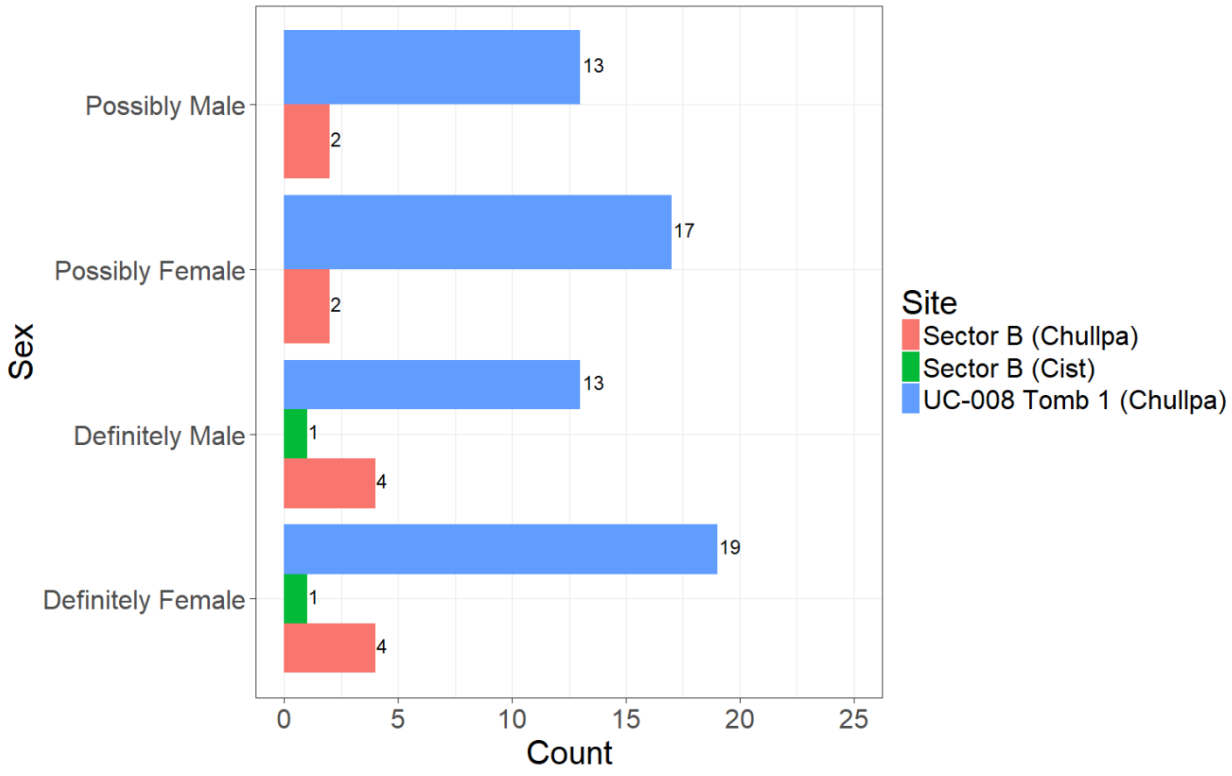

Figure 5.53: Distribution of sex categories for the graves. Counts represent the minimum number of individuals associated with each sex category.

Evidence of cut marks was identified on human remains from UC-008 Tomb 1 and the Sector B *chullpa*, but not from the Sector B cist. In UC-008 Tomb 1, cut marks were documented on the distal end of an adult femur (Figure 5.54). These marks suggest efforts to cut through ligaments connecting the tibia and fibula, thereby separating these elements, which may have been done to prepare the body for placement in a textile bundle (Danielle Kurin, oral communication). Additional cut marks were observed on 3 late child/juvenile ribs (Figures 5.55 – 5.56) that may have been from the same individual, an adolescent rib, and an adolescent/young adult rib. These ribs have multiple cut marks found in a variety of areas (e.g., ventral surface, dorsal surface, inferior vertebral end, and sternal end), and they are consistent with sharp force

trauma (Juliana Gómez Mejía, oral communication). At least two ribs of indeterminate age and one adult rib from the Sector B *chullpa* have cut marks that may point to postmortem processing. One of the ribs (Figure 5.57) exhibits cuts that were likely made on fleshed human remains (Thomas Wake, oral communication).

Figure 5.54: Cut marks on the distal end of a femur (UC-008 Tomb 1)

Figure 5.55: Cut marks along the inferior edge of a late child/juvenile rib (UC-008 Tomb 1)

Figure 5.56: Multiple cut marks along the edge of a juvenile/late child rib (UC-008 Tomb 1)

Figure 5.57: Cut marks on a rib (Sector B *chullpa*)

In the Sector B *chullpa*, we observed a cervical vertebra with a Y-shaped puncture which may have been caused by an arrow or a spear point (Thomas Wake, oral communication) (Figure 5.58). If this argument is correct, the location of the puncture suggests that it was inflicted from behind, perhaps as the person was running away from attack (Thomas Wake, oral communication). Cut marks were recorded on three ribs in the Sector B *chullpa*, but it remains unclear whether they indicate postmortem processing and/or animal gnawing (Juliana Gómez Mejía, oral communication). Lastly, chopping fractures showing fresh bone breaks were identified on many bones in the Sector B *chullpa* (John Verano, oral communication). It is suspected that these fractures were caused by excavation tools wielded by looters during or after the Colonial Period.

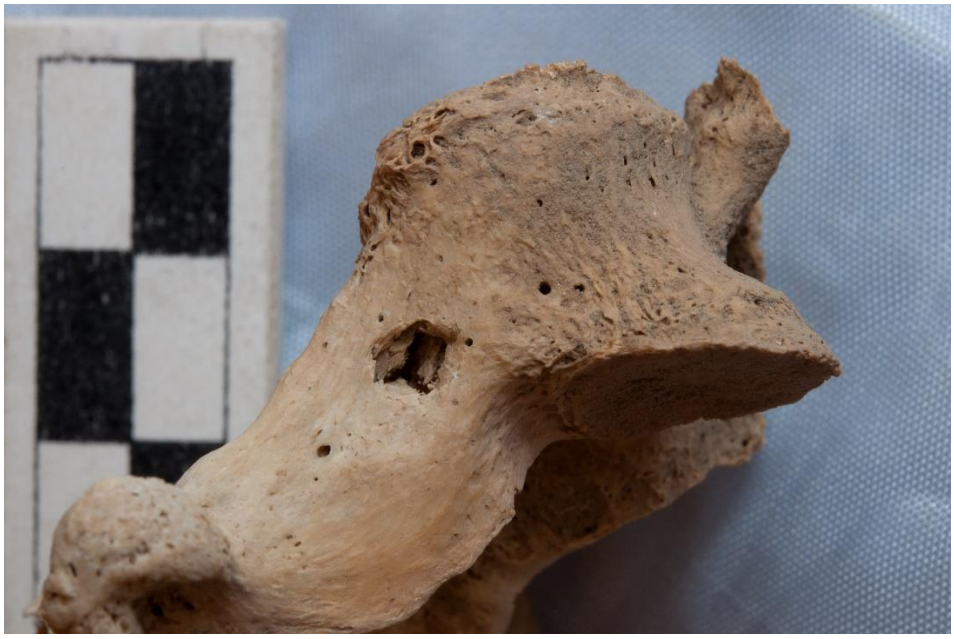

Figure 5.58: Cervical vertebra with a Y-shaped puncture (Sector B *chullpa*)

Discussion and Conclusion

I provided an overview of the mid-Chincha Valley archaeological landscape in this chapter, discussing the spatial, radiocarbon, material, and skeletal data collected over the course of multiple field seasons. The mid-Chincha Valley contains different types of sites—domestic, public, defensive, and mortuary— that date from the Early Horizon to the Late Horizon, based on a preliminary analysis of ceramics recovered from the 2013 survey. For the purposes of this study, considerable attention was paid to the graves in the study area.

Radiocarbon data show that *chullpas* and cists, two of the primary grave types documented in the study area, date broadly from the 13th century (LIP) until the 17th century (early colonial period). The single-uniform and trapezoidal models reveal 1) that *chullpas* and cists were initially used contemporaneously in the LIP, 2) that the 95% probability distribution for the end of the cist phase incorporates the beginning of the Late Horizon, and 3) that the 95%

end of the *chullpa* phase incorporates the beginning of the Colonial Period. The *chullpa* tradition endures longer than that of the cist. The end of the cist tradition coincides with the proposed arrival of the Incas in the Chincha Valley, and the end of the *chullpa* tradition aligns with the proposed arrival of the Spaniards.

Bayesian analyses also grant insights into periods of individual grave use in the mid-Chincha Valley. Based on the results, it cannot be ruled out that at least one *chullpa* and one cist were used episodically. For three *chullpas*, Bayesian modeled dates show that they were used over the long term. Although this test is preliminary, it grants support to Hypothesis 2a, which states that mid-valley graves were used over the long term, and Hypothesis 2b, which states that mid-valley graves were used episodically.

Another notable finding is the presence of violent conflict in the study area. The data are clear, abundant, and widespread: defensive walls, a *pukara*, various weapons (e.g., slingstones, stone axe head, *bola*), injuries signaling antemortem and perimortem trauma, cut marks consistent with sharp force trauma, and a puncture in a cervical vertebra that can plausibly be attributed to an arrow or spear point. Evidence of arrows or spear points was not recovered from the mid-valley. The discovery of sharp force trauma associated with juvenile ribs in UC-008 Tomb 1 is striking because evidence for violence-related trauma against children is rare in the pre-AD 1532 Andes (Tung et al., 2016, p. 195). These ribs have cut marks that suggest a stabbing weapon was thrust in and out of juvenile chests multiple times. These attacks were not hasty or isolated, but rather forceful, deliberate, and repetitive. Indeed, it appears that the perpetrators intended to kill these juveniles, perhaps during a raid on a community or during a sacrifice. Considering the broad dates for UC-008 Tomb 1, these attacks may have also occurred

in the early colonial period. Evidence for violence against children dated to this period has been collected at the post-contact site of Puruchuco-Huaquerones. Gaither and Murphy (2012) connect this violence to the escalation of the conflict that took place in the early years after the Spanish arrival in Peru. A similar course of events may have resulted in violence against juveniles in the mid-Chincha Valley.

Results from radiocarbon dating, mortuary excavations, surface collection, and bioarchaeological analyses permit a diachronic perspective into how local groups used a LIP *chullpa* (Sector B), a LIP cist (Sector B), and an Inca period *chullpa* (UC-008 Tomb 1). The demographic profiles of the dead (Research Question #4), and the ways in which they were deposited in these graves (Research Question #3) were revealed. We recorded multiple adults and juveniles in UC-008 Tomb 1 (117) and the Sector B *chullpa* (37), ranging in age from the perinatal stage to 50+ years old. Males and females were found in both *chullpas*. Elements from different anatomical groups and relatively high counts of labile elements were observed. These findings, coupled with the offerings (e.g., maize, textiles, spindles, etc.) recovered in these graves, 1) likely attest to the presence of at least some primary depositions of relatively complete bodies in these *chullpas* and 2) suggest that descent groups may have been placed in these graves. These findings support Hypothesis 3a (i.e., local groups placed primary depositions and few, if any, secondary depositions in graves) and Hypothesis 4c (i.e., locals placed descent groups in graves). Textile bundles with human remains were found in both *chullpas*. All these similarities imply continuities in demographic profiles and types of deposition among a LIP *chullpa* and an Inca period one.

Data from the easternmost cist provide a similar and different picture. Multiple individuals were also documented in the cist, but the MNI is much lower (5) compared to the two *chullpas*. An adult male, adult female, and three juveniles of varying age classes were identified. Therefore, the age and sex distributions for the two *chullpas* and cist suggest that these graves were not restricted to members of certain age classes. Nevertheless, it appears that neither a descent group nor a single individual, as Canziani (2009, p. 398) hypothesized, was put in the cist. It remains more plausible that the cist population was a *wasifamilia*, but ancient DNA analyses, which are planned, are necessary to test this hypothesis. Whatever the relations are between these individuals, the social structure "projected" by this LIP cist is clearly different from both the LIP *chullpa* and the Inca period *chullpa*. Differences and similarities were observed in the types of depositions. Although the adults were also wrapped in textiles, they were stacked on top of each other and placed on three underlying reed posts, a pattern not found in the *chullpas*. Given the high levels of labile elements recorded and the observations of elements in correct anatomical positions (e.g., right radius, right ulna, a sacrum, etc.), the cist also contained primary depositions of the dead, thereby supporting Hypothesis 3a (stated above). In this case, at least the adults were deposited in a primary fashion. Textile bundles with juveniles were found in the cist and the Inca period *chullpa*.

The data presented so far demonstrate several parallels between provincial, Inca period Andean mortuary customs attested in the colonial-era written record, discussed early on this chapter, and mid-Chincha Valley mortuary practice. First, the above-ground or subterranean graves with openings (*chullpas*) in the study area resemble the accessible tombs that Guaman Poma (2009 [1615], pp. 227–228, 230–231) illustrates and describes for *Chinchaysuyo* and *Collasuyo* populations, and that Cieza (1959 [1553], pp. 312–313) describes for coastal

populations. Second, mortuary sites tend to be built away from domestic sites, which aligns with Guaman Poma's observations for *Chinchaysuyo* locals. Third, many grave inclusions recovered through fieldwork, including maize, a *bola*, textiles, and spindles, fall under the categories of offerings (e.g., food, weapons, garments, and weaving tools) stated in the written record (Arriaga, 1968 [1621]; Cieza de León, 1959 [1553]; Guamán Poma de Ayala, 2009 [1615]). Some of these materials, in addition to human remains, were burned, presumably sometime before the arrival of the Spanish, which supports observations made by Pizarro (1921 [1571], pp. 251–252). Fourth, bioarchaeological analyses and observations made on the survey indicate that multiple bodies were deposited in *chullpas* and at least one cist. This finding coincides with Cieza's (1959 [1553], p. 312) note that coastal graves contained "a vast number" of decomposing human remains. Lastly, the three reeds documented at the base of the easternmost cist in Sector B may constitute one of the "platforms or beds made of reeds" that, according to Cieza (1959 [1553], p. 312), Chincha Valley populations placed their dead on. These reeds, and the fiber cord that appears to have tied two adults to them, may have also formed part of a litter, described as an important device in provincial Andean mortuary processions in early colonial writings (Guamán Poma de Ayala, 2009 [1615]).

These similarities provide some corroboration for written claims on mortuary customs and suggest that mortuary practice in the study area resembles coastal and highland traditions in some ways. In the next chapter, I will broaden our understanding of mid-Chincha Valley mortuary practice by focusing on mortuary architecture.

CHAPTER 6

MORTUARY ARCHITECTURE

Introduction

While chapter 5, in part, concerns the broader built environment of the mid-Chincha Valley, the focus of this chapter is on a subset of the built environment that represents the second dimension of mortuary practice of interest for this dissertation: mortuary architecture. I refer to mortuary architecture as built forms and settings characterized by cues that help guide activities (i.e., rituals) of mortuary practice. Graves are a type of built environment whose design and construction features (e.g., opening, interior bench) and spatial organization can cue ritual behavior, materialize relationships within and between groups, and broadcast sociopolitical messages. These functions are important in social life, and perhaps for this reason, mortuary architecture is also subject to manipulation and change: as societies transform, their mortuary architecture frequently transforms as well. Changes in design and construction features, as well as spatial practices, can fundamentally transform the meaning and use of graves and cemeteries. In cases of imperial conquest, mortuary sites can become targets of contention for expansionist states and local populations. Patterned variation in ritual architecture (e.g., mortuary architecture), especially within contexts incorporated into empires, can provide insights into power relationships (Agnew, 1987; Lawrence and Low, 1990, p. 475; Lefebvre, 1974; Moore, 2005, 1996; Richardson, 1980, p. 217; Smith, 2011, p. 174). These points raise the following questions: How varied is mortuary architecture within the mid-Chincha Valley, and what do these patterns suggest about the kinds of activities conducted in the area and the relationships *among* local groups and *between* these groups and the Inca Empire?

This chapter is organized to address these questions. First, I discuss provincial mortuary architecture described in the 16th and 17th century written record. Next, I present data on design and construction patterns in the mid-Chincha Valley, drawing attention to layout, features (interior and exterior), masonry (materials and construction), and roofing. Inca architecture influences and practices (e.g., rectangular niches, molded adobes) and their distribution are reported on. Then, I summarize two key design choices (open spaces such as forecourts and plazas and the spatial relationship between *chullpas* and cists) made in the organization of mortuary space. I conclude with a discussion that compares these architectural data with written, colonial period descriptions and explores how these patterns develop understandings of the mortuary activities performed in the mid-valley and sociopolitical relations among mid-valley groups and between these groups and the Inca.

In this chapter, I suggest that widely distributed architectural features (such as grave openings and fieldstone construction) imply broadly shared building practices arising from inheritance and/or close interaction and information exchange among local groups. Only a few *chullpas* have rectangular niches and adobe construction, which are connected to the Inca (Gasparini and Margolies, 1980; Moorehead, 1978; Nair, 2007; Protzen, 2008; Protzen and Batson, 1993; Wallace, 1998, 1971). Thus, use of these features may indicate light Inca presence/influence in the area, or perhaps that only select local groups had the privilege to materialize affiliations with the Inca. Alternatively, use of Inca architectural practices (e.g., niches and molded adobe construction), settlement patterns, and open spaces (e.g. plazas) in the mid-valley can also demonstrate a more negotiated relationship between the Inca and local peoples (Gasparini and Margolies, 1980; Hyslop, 1990; Morris and Thompson, 1985; Nair, 2015; Niles, 1999; Protzen and Batson, 1993; Wernke, 2006, 2007a, 2013). I argue that open spaces

and varying distances between *chullpas* and cists, both of which are evident in cemetery site plans, were critical design choices that expressed social inclusion and/or exclusion in space. Statistically significant associations between open spaces, grave openings, interior benches and above-ground construction among *chullpas* are argued to be indicative of the important relationship between ceremonial activity and *conspicuous* access to, and display of, the dead. Such open spaces where these ceremonies would have taken place may have been co-opted by the Inca to facilitate their integration into mid-Chincha Valley sociopolitical orders.

Provincial Andean Mortuary Architecture in the Written and Archaeological Records

Late Horizon provincial mortuary architecture is noted in the 16th and 17th century written record. Chroniclers detail a remarkable diversity of Andean grave forms that has been mostly corroborated by archaeological research in the southern Andean Altiplano (González-Rodríguez, 2018; Morales et al., 2013; Nielsen, 2008; Rossi et al., 2002; Stanish, 2012). This diversity likely attests to the degree of political fragmentation in the Late Horizon, to the varying attitudes Andean societies maintained towards their dead, and to the different ways Andean societies materialized notions of sociopolitical order through grave construction and placement.

Bernabé Cobo (1990 [1653]) provides one of the most comprehensive overviews of mortuary architecture. Cobo (1990 [1653], p. 246) highlights the significance of grave construction for many Andean societies, who "took great care in building and adorning the tombs where they were to be buried, as if all of their happiness resided there." A critical distinction is made between subterranean and above-ground graves (Cobo, 1990 [1653], p. 246), both of which were 1) likened to vaults whose size and elaborateness conveyed the status of the deceased and 2) constructed in the highlands and the coast. In general, subterranean graves

displayed square shapes, stone walls, large and deep interior spaces, and covering stone slabs (Cobo, 1990 [1653], p. 246). Coastal subterranean graves are described as vaults, whose depth and interior finish varied according to the rank of the deceased (Ramos, 2010, p. 12). Highland subterranean graves were frequently constructed within structures (Isbell, 1997).

Cobo (1990 [1653], p. 246) makes a distinction between highland and coastal above-ground graves and notes that this grave type was more common than the subterranean one because every Andean society "sought a new style of making them." Coastal above-ground graves exhibited a variety of styles that Cobo tied to competition and emulation. For example, some of these appeared in the form of "medium-sized hills" (or mounds), while others were built with "thick high earthen walls" (perhaps *tapia*), displaying square plans with several rooms and divisions (Cobo, 1990 [1653], pp. 246–247). Highland societies such as the Colla built scores of above-ground graves "in the form of small towers" (Cobo, 1990 [1653], p. 248). Many of these were built in the shape of squares and made with earth, and circular above-ground grave forms were rare in the highlands. Circular, elliptic, and rectangular *chullpas* have been observed in the Lípez region (Bolivia) of the southern Altiplano (Morales et al., 2013, p. 2394). Other above-ground graves of the same form and size were made with stone, displaying ashlar masonry and irregular stonework (Cobo, 1990 [1653], p. 249). The Colla reportedly arranged these graves into tight rows.

Pedro Cieza de León also offers descriptions of coastal and highland mortuary architecture that coincide with Cobo's writings. Cieza (1959 [1553], pp. 274, 311) remarks that the Colla built "four-sided towers, some of stone only, some of stone and earth, some wide, others narrow, according to the means or taste," arranged them "in rows," and constructed grave

roofs either with straw or stone slabs. These descriptions match Cobo's report on the Colla and archaeological research on above-ground graves in the Titicaca basin (Stanish, 2012) and the Bolivian Altiplano (Rossi et al., 2002). Moreover, for the Colla and perhaps other Andean societies, variation in construction material and form appears to be in accordance with "personal preference."

Turning to the middle and upper coastal valleys, Cieza (1959 [1553], p. 312) observes "walls and divisions where each family has its allotted place to bury its dead, and for this purpose they have dug great hollows and cavities." Cieza's observation is important for understanding *who* used mortuary places (families), *what* these families used to differentiate mortuary places (walls and divisions), *what* kinds of graves they constructed (cavities), and *how* they constructed them (digging). Although "place" and "divisions" in this statement are vague, it is perhaps reasonable to assume that these mortuary places refer to clusters of graves (i.e., cemeteries) that were walled and/or built apart from each other to emphasize distinctions among families. As demonstrated in chapter 5, the study area, which falls in the middle/upper coastal valley category, exemplifies this pattern: the average distance between mortuary sites is 355.93 meters, and 43 of the 44 mortuary sites are cemeteries. Whether these cemeteries were used by families or descent groups remains unclear, yet entirely plausible.

One of the most critical construction features of above-ground and subterranean graves (particularly *chullpas*) noted in early colonial writings is the *puerta*[70] or grave doorway. Cobo (1990 [1653], p. 246) describes these grave doors as narrow openings that are covered with a

[70] Several chroniclers (e.g., Cobo and Cieza) describe *puertas* as grave openings that were reportedly constructed to facilitate access to the dead. As I will demonstrate in this chapter, mid-Chincha valley *chullpas* commonly have this feature. While it is likely that these *chullpa* openings functioned as doorways, it cannot be assumed *a priori* that they were all used in this way. Therefore, I conservatively describe these features as "openings" in this study.

single stone slab (likely a lintel) that is sometimes placed above a second slab. Some of them, particularly ones in the highlands, are so small and narrow that it seems "impossible to enter them without touching your chest to the ground" (Cobo, 1990 [1653], p. 248). It remains plausible that they were designed intentionally to compel individuals to prostrate on the floor for entry and perhaps in reverence to the deceased. Colonial writers tend to note that highland *chullpa* doors tend to face east. Cieza (1959 [1553], p. 274) recalls that the doors of *chullpas* in the Colla area of the Titicaca basin "faced the rising sun" and Cobo (1990 [1653], p. 248), also describing highland grave openings, states that they all "face east." Although archaeological research conducted on *chullpas* in the Bolivian regions of Lípez and Huachacalla (Nielsen, 2016; Rossi et al., 2002) finds that their openings tend to face east, investigations of *chullpas* in northern Chile (González-Rodríguez, 2018; Isbell, 1997, p. 155) show that their openings frequently face other directions (e.g., north, south, or west) as well. The dimensions of *chullpa* openings in the Lípez region are generally 0.4 x 0.4 m, which is "just enough to allow the passage of an adult" (Morales et al., 2013; Nielsen, 2008).

The selection of *chullpa* opening orientation may have had practical and ideological significance. Some have hypothesized that east-facing openings produce microclimates within *chullpa* interiors that are conducive to the mummification of bodies (Bustamante, 1997). East-facing openings may have been oriented towards the rising sun to symbolize "rebirth and the continuation of life in past times" (Rossi et al., 2002, p. 641). Lau (2016, p. 175) suggests that *chullpa* thresholds of the Recuay cultural tradition (AD 1 – 700) are oriented towards resource-rich lands, key geographical features, and open spaces, especially within the North Highlands of the Andes. *Chullpas* at Chinchawas and Pueblo Viejo (near Caraz) face agricultural lands (Lau, 2010), and those at Ichik Wilkawaín and Sahuan Puncu open into enclosed patio areas (Bennett,

1944; Paredes, 2007). The matter that *chullpa* openings were oriented towards—arable land, open spaces, or sacred mountain peaks (*apus*)—likely varied from mortuary site to mortuary site. In this chapter, I present data on mid-Chincha Valley *chullpa* openings to test the observations and claims made by Lau, Cobo, and Cieza.

Above-ground and subterranean graves in the Andes (e.g., *machays*, *chullpas*) are sometimes associated with a walled, open space that served as a gathering place for worshipping the dead (Doyle, 1988, p. 111; Hastorf, 2003, p. 306; Moore, 1996, pp. 125–126). Known in Quechua as a *cayan* (Arriaga, 1968 [1621]), it was "a flat area often formed by terracing, where individuals or groups could gather to carry out activities related to the *malqui*[71] or other individuals buried" (Doyle, 1988, p. 111). *Cayans* were positioned in front of graves (Doyle, 1988, p. 111). The sizes of *cayans* and by extension the number of people who may have gathered in them is unclear, but the archaeologist Jerry Moore (1996, p. 126) argues that they were likely "small, unroofed open areas" that "reflect the need to restrict, but not prevent – access to the *malquis* and, the gathering together of small social groups." Furthermore, Moore (2004, p. 112) characterizes them as "spaces for ritual encounters, where ancestors were offered *chicha*, food, and cloth, honored by dance and prayers, and asked to intercede with the gods." At their core, *cayans* enabled the living to assemble, venerate their dead, and conduct rituals of *communitas* (Turner, 1969) that may have reinforced social relationships in the face of death. *Chullpas* have been found in association with open spaces (e.g., plazas, enclosed patios, etc.) in

[71] *Malquis* refer to sacred ancestors or progenitors (Doyle, 1988, p. 95). They were also conceived as "young plants for planting" and "fruit trees" in Quechua (Gonçález Holguín, 1989, p. 224; Lau, 2008, p. 1031; Sherbondy, 1988).

the southern Altiplano (Nielsen, 2008, p. 2014), North Highlands (Bennett, 1944; Paredes, 2007), and in the study area. These mortuary spaces will be reported on in this chapter.

Based on 16th and 17th century written records, Andean mortuary sites were strongly connected to economic and social life, serving as indicators of control over territories and resources, local hierarchies, and relations among neighboring groups (Arriaga, 1968 [1621]; Cieza de León, 1959 [1553]; Cobo, 1990 [1653]; Guamán Poma de Ayala, 2009 [1615]). Despite the considerable mortuary architectural diversity recorded in the written record, one may assume that one group only employed a single characteristic mortuary architectural tradition. Several archaeological investigations in the central and southern Andean highlands, however, have challenged this assumption, demonstrating that different grave types were used simultaneously (Andrushko, 2007; Parsons et al., 2000). This study contributes similar findings for the Peruvian southern coast: *chullpas* and cists were used contemporaneously in the mid-Chincha Valley during the LIP. Architectural data pertaining to these distinct grave types are presented below.

Construction and Design Patterns

The main objective of this section is to detail the nature, variation, distribution, and co-occurrence of grave construction and design attributes in the study area, namely 1) relationship to landscape[72] and size, 2) exterior features (e.g., openings, facings), 3) interior features (e.g., wooden posts, interior benches), 4) walls (e.g., construction materials, wall thickness, etc.) and 5) roofing. To do so, I focus on 3 units of analysis: graves (*chullpas,* cists, unclear graves), mortuary sites, and spatial units. As stated in chapter 5, we have documented 656 graves (555

[72] Here, I use "relationship to landscape" as an attribute that describes whether a grave is above-ground or subterranean.

chullpas, 31 cists, and 70 unclear graves) that constitute 44 mortuary sites (43 of which are cemeteries) in the mid-Chincha Valley. To facilitate explanations of the spatial distributions of construction and design attributes, I arbitrarily divided all documented mortuary sites into 7 spatial units situated on both the northern and southern sides of the mid-valley (Figure 6.1). *Chullpas* are found in all 7 spatial units, and cists are built in 5 spatial units (North Side 1, South Side 1, 2, 3, and 4). Whenever it is appropriate, I will note the number and percentage of each of the 3 units of analysis—graves, mortuary sites, and spatial units—that have certain construction and design attributes. At times, I will discuss dates associated with some architectural attributes and infer any continuities and changes in construction from these data. Lastly, I employ an R package called "cooccur" to examine co-occurrence patterns among pairs of *chullpa* architectural attributes. Considering that most mid-Chincha Valley graves are *chullpas* and that these graves are more elaborately constructed than cists, the following section mainly concerns *chullpas*. Since I was only able to record certain attributes for certain graves,[73] I clarify the sample size of graves and the dataset(s) (2013, 2016, or both) that the attributes are derived from. The 2013 dataset (n=664 total graves) includes mortuary sites from all spatial units, while the 2016 dataset (n=294 total graves) only includes mortuary sites from 5 spatial units (North Side 1, South Side 1, South Side 2, South Side 3, and South Side 4).

[73] I discuss this point in the Research Design and Methods section.

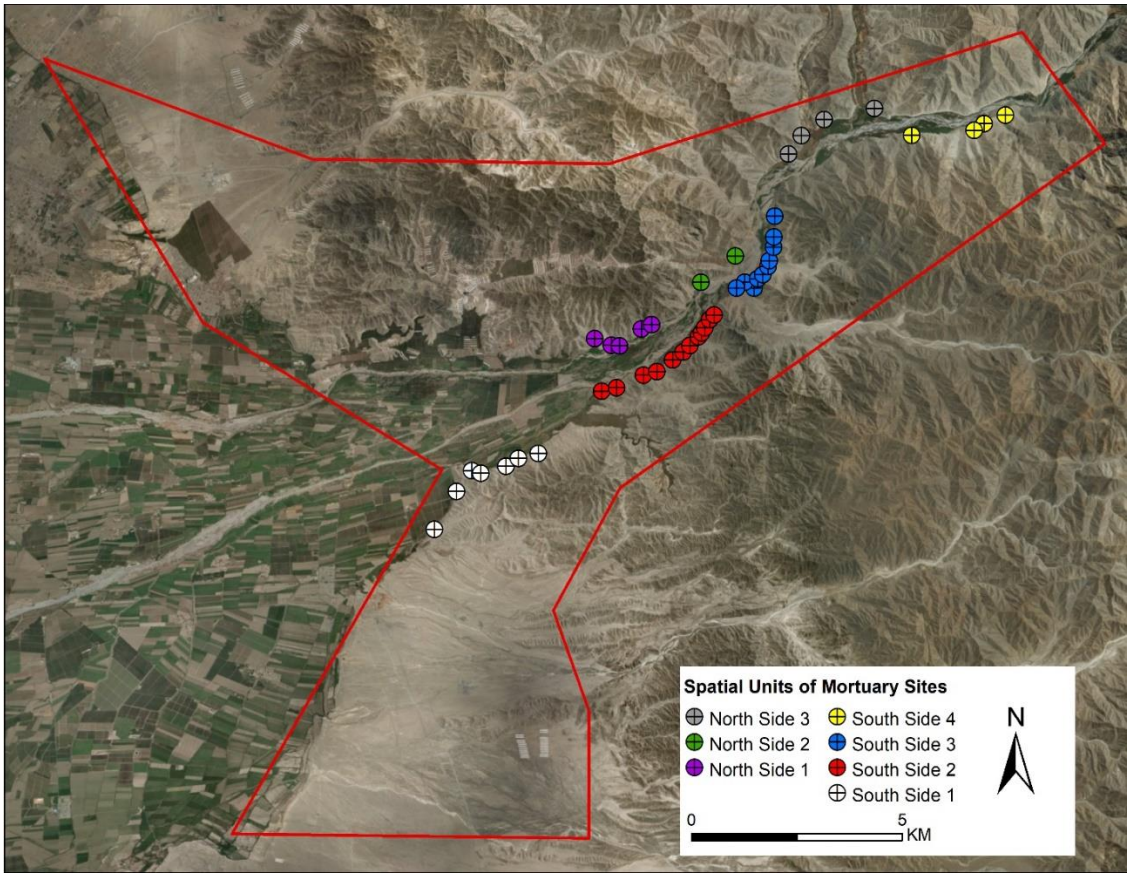

Figure 6.1: Distribution of spatial units in the mid-Chincha Valley. Each mortuary site has been labeled as a member of a spatial unit.

Relationship to Landscape and Size

Above-ground and subterranean graves were observed in the mid-valley, which accords well with Cobo's (1990 [1653], p. 246) grave typology. I recorded the "relationship to landscape" attribute for 294 graves (2016 dataset) as either "above-ground," "subterranean," or "unclear." Graves with evidence of a wall foundation at ground level were characterized as above-ground. Graves with evidence of a wall foundation below ground level were labeled as subterranean. In total, there are at least 146 subterranean graves, 130 above-ground ones, and 18 unclear ones. While *chullpas* are either above-ground (127) or subterranean (93), cists are

exclusively subterranean (24) (Table 6.1). Graves with these construction styles are found in most cemeteries across all 5 spatial units of the 2016 dataset (Table 6.1). LIP and Late Horizon/early colonial period dates are associated with both above-ground and subterranean graves.

Table 6.1: Counts of graves, mortuary sites, and spatial units with above-ground, subterranean, and unclear relationships to the landscape. Conditional relative percentages for rows are noted in each cell. Since mortuary sites and spatial units can have combinations of graves of varying relationships to the landscape, sums of percentages from these categories do not amount to 100%.

	Relationship to Landscape		
Unit of Analysis	Above-Ground	Subterranean	Unclear
Chullpas (n=233)	127 (55%)	93 (40%)	13 (5%)
Cists (n=24)	0 (0%)	24 (100%)	0 (0%)
Unclear Graves (n=37)	3 (8%)	29 (78%)	5 (14%)
Mortuary Sites (n=19)	15 (79%)	17 (89%)	8 (42%)
Spatial Units (n=5)	5 (100%)	5 (100%)	5 (100%)

Graves of varying sizes were built in the study area. I collected data on interior width (m), interior length (m), and interior area (m^2) from 221 *chullpas*, cists, and unclear graves with complete dimensions. Depth[74], measured as the distance from the top of the wall to the current ground level of the grave, was recorded for 269 *chullpas,* cists, and unclear graves. These data are derived from the 2016 dataset. Depth ranges for *Chullpas,* cists, and unclear graves are 0.24 –

[74] Since the current ground level for the graves in the sample may not reflect the actual floor level, depth values are likely underestimated. The depths for the fully excavated Sector B *chullpa* (0.7 m) and the eastern cist (0.25 m) are accurate.

1.93 m, 0.23 – 0.63 m, and 0.17 – 1.07 m respectively. The scatterplot and boxplot featured in Figure 6.2 demonstrate the clear differences in width, length, and area between *chullpas* and cists. The mean interior area for *chullpas* (8.30 m^2) is larger than that for cists (1.09 m^2) and unclear graves (3.51 m^2). The range of *chullpa* interior width (0.88 – 4.42 m) and the mean width of cists (0.58 m) are consistent with the following data reported from the Huachacalla region of the Bolivian altiplano: *chullpa* interior width range (1 – 4.3 m) and cist width (0.5 m) (Rossi et al., 2002, p. 643).

Chullpas, likely due to their much larger sample size, display more variation in size compared to the other graves. The variance in their area (13.08) is much larger than cists (0.19) and unclear graves (5.18). Although *chullpa* interior areas range from 1.54 to 27.23 m^2, cist areas range from 0.48 to 1.96 m^2, and unclear grave areas range from 0.48 to 6.53 m^2. Given the large sample size and size variation of *chullpas*, I decided to use the R function "plotJenks" to implement Jenks' natural breaks method[75] and generate distinct classes for the areas of 199 *chullpas* with complete dimensions (i.e., complete length and width) for further analysis (Alberti, n.d.). I generated five classes because it was the lowest number of breaks with a goodness of fit value higher than 0.9 (Figure 6.3). Most *chullpas* (78%) fall into size classes 2-4, and these specific graves are found in many of the 19 mortuary sites from the 2016 dataset (Table 6.2). *Chullpas* of all size classes are documented in at least 4 (80%) of the spatial units. For instance, even though the smallest and largest *chullpas* (size class 1 and 5) are built in 8 (42%) and 7 (37%) mortuary sites respectively, both types are found in 4 of the 5 spatial units. In short, these

[75] I used this method to produce different classes of distances between mortuary sites and domestic sites in chapter 5. My justification for employing this method is in the same chapter.

patterns do not suggest that groups in specific places are building *chullpas* of specific sizes. Rather, *chullpas* of varying sizes are being built across the entire survey zone.

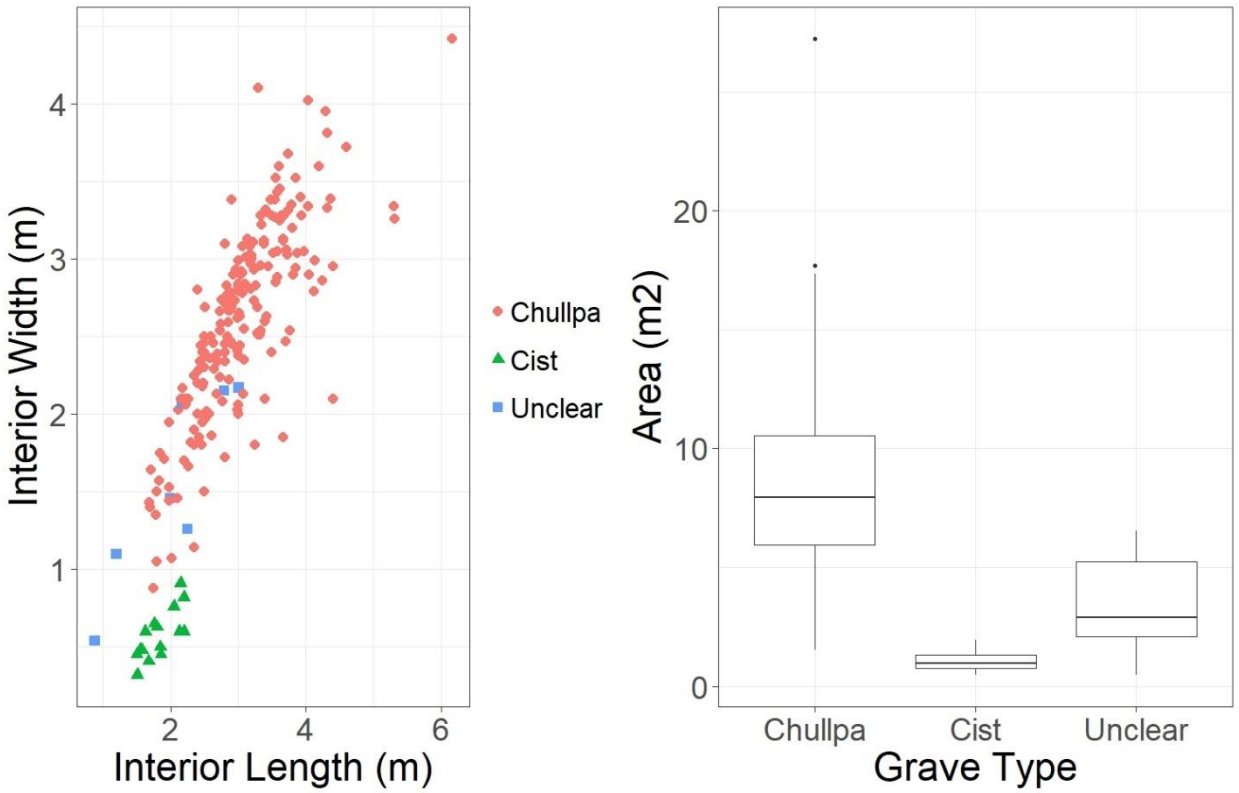

Figure 6.2: Scatterplot displaying the distribution of interior length and width values for grave types (left) and a boxplot showing the distribution of area for grave types (right)

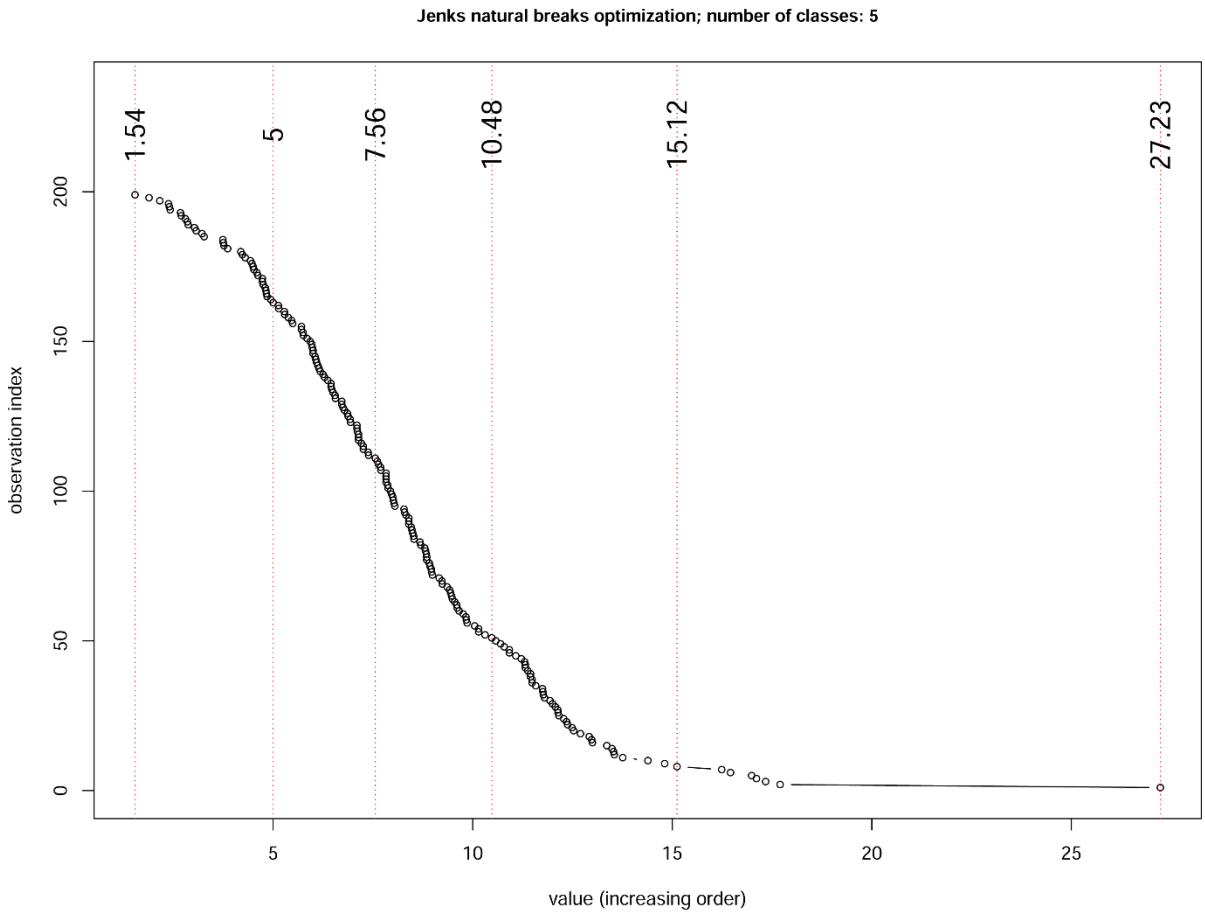

Figure 6.3: Chart displaying the distribution of chullpa areas (values) in m^2 and their associated classes and counts (observation index). The five classes correspond to distinct ranges of areas: size class 1 (1.54 - 5 m^2), size class 2 (5 – 7.56 m^2), size class 3 (7.56 – 10.48 m^2), size class class 4 (10.48 – 15.12 m^2), and size class 5 (15.12 – 27.23 m^2). The goodness of fit value is 0.9084.

Table 6.2: Counts of chullpas, mortuary sites, and spatial units associated with different *chullpa* size classes. Specific spatial units are identified: "NS" refers to the north side, and "SS" refers to the south side. Conditional relative percentages for rows are noted in each cell.

	Chullpa Size Class				
Unit of Analysis	1	2	3	4	5
Chullpas (n=199)	37 (19%)	52 (26%)	60 (30%)	43 (22%)	7 (3%)
Mortuary Sites (n=19)	8 (42%)	12 (63%)	14 (74%)	15 (79%)	7 (37%)
Spatial Units (n=5)	4 (80%) (NS 1, SS 1-3)	5 (100%)	4 (80%) (SS 1-4)	5 (100%)	4 (80%) (SS 1-4)

Exterior Features

The following features will be discussed in this section: *chullpa* openings, cist orientations[76], *chullpa* earthen (i.e., adobe or *tapia*) facings, and (briefly) *chullpa* wall pigment. At least 266 mid-Chincha Valley *chullpas* have openings, and nearly all of them have fieldstone lintels (Figure 6.4, also see Figure 5.49). All openings appear to have their thresholds positioned at ground level. Data on opening width (m) and height[77] (m) derive from the 2016 dataset and information on orientation comes from the 2013 and 2016 datasets. I recorded opening widths from 132 *chullpas* (opening group 1), opening heights from 66 *chullpas* (opening group 2), opening widths *and* heights from 65 *chullpas* (opening group 3), and opening orientations from 266 *chullpas* (opening group 4). Based on these data (Figure 6.5), it appears that mid-valley

[76] Cists do not technically have any exterior features. Cist orientation data are included in this section as a comparison to *chullpa* opening orientation data.
[77] Since most *chullpa* openings were not fully excavated and exposed, their height values are likely underestimated. These circumstances do not affect opening width values; they are more reliable. The opening height value from the fully excavated Sector B *chullpa* (0.75 m) is accurate.

chullpas have openings that tend to be larger than 0.4 x 0.4 m, which are the dimensions reported for *chullpa* openings in the Lípez region and described as just enough to permit entry for adults (Morales et al. 2013: 2394). This is because 1) 49% of graves in opening group 3 have opening dimensions that are more than 0.4 x 0.4 m, 2) the mean height for opening group 2 is 0.46 m, which is most likely underestimated, and 3) the mean width for opening group 1 is 0.56 m. Therefore, adults and individuals of younger ages, perhaps adopting prostrate positions, could have entered these tombs through these openings. Moreover, these openings are oriented in all cardinal directions. Contrary to the observations of highland *chullpas* made by Cobo and Cieza, east-facing openings are the least represented in the mid-Chincha Valley; most of them face north (Figure 6.5). The diversity of orientations coincides with research performed on *chullpas* in northern Chile (González-Rodríguez, 2018; Isbell, 1997, p. 155), and may suggest that these graves were oriented towards distinct features such as *apus*, origin places, or, as I note later, open spaces.

Figure 6.4: *Chullpa* with an opening facing west

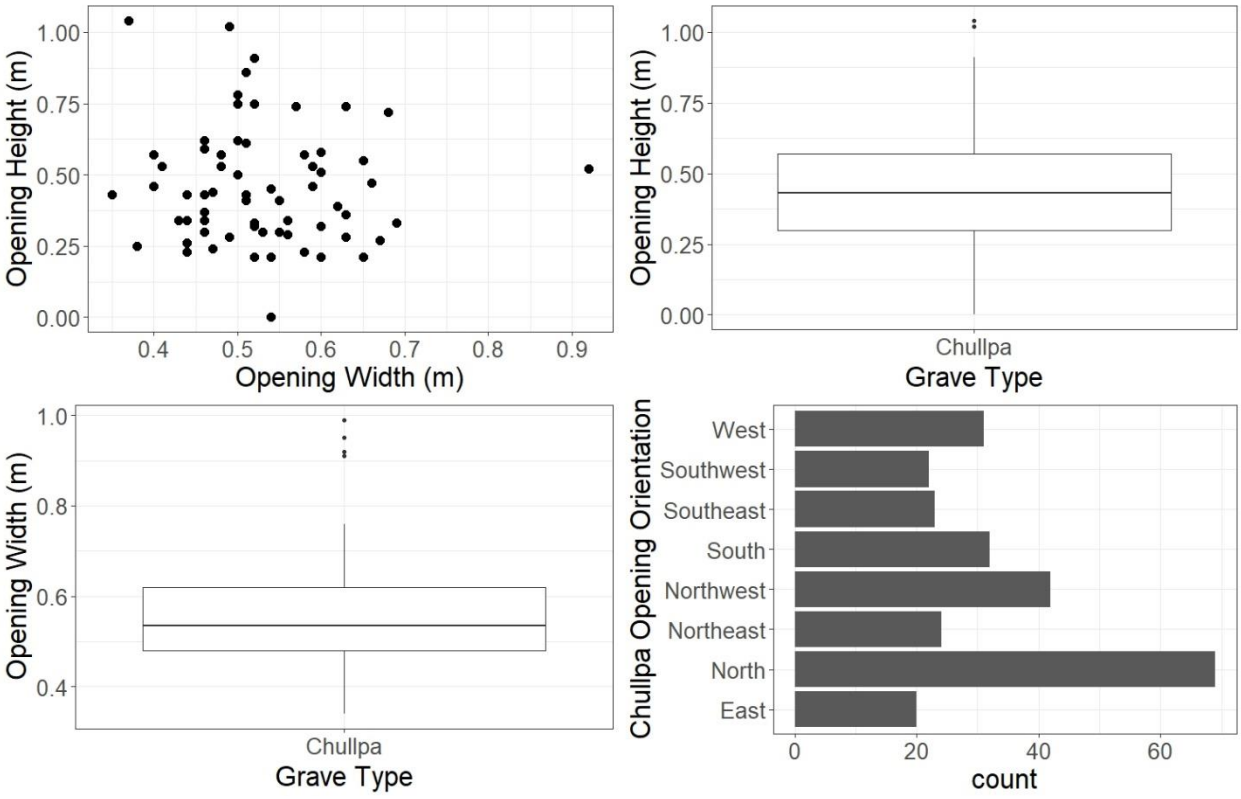

Figure 6.5: Multiple plots with *chullpa* opening data: a scatterplot showing distributions of opening width and height values for opening group 3 (top left), boxplot showing opening height values for opening group 2 (top right), boxplot displaying the distributions of opening width values for opening group 1 (bottom left), and a bar graph illustrating counts of *chullpas* with specific opening orientations.

What potential factors contributed to the selection of opening orientation? To address this question, I test the following two models derived from Lau (2016, p. 175) that are not necessarily mutually exclusive: 1) local groups oriented *chullpa* openings towards arable lands and 2) local groups directed openings towards open spaces. Another model states that these tombs were directed towards sacred mountain peaks, but this will not be tested because it is not known whether any mountain peaks in the study area served as *apus*. I test the second model when I

discuss open spaces in a later section. Some assumptions for the first model need to be made. First, I assume that the valley between the foothills and where the Chico, Matagente, and San Juan rivers run through contained tracts of agricultural land that were irrigated and cultivated during the LIP and Late Horizon. The mid-Chincha Valley was, and is, an agriculturally productive *chaupiyunga*. At least avocados and oranges are currently being cultivated. Maize has been found throughout the entire study area, dating as early as the LIP. Minimal rainfall in the area would have promoted the use of irrigation for agricultural production. Therefore, it is likely that the bulk of agricultural land during the LIP and Late Horizon was situated on the valley bottom of the survey zone.

Regarding the first model, if local groups directed *chullpa* openings towards the agricultural land on the valley bottom, then I would expect *chullpas* on the southern hillsides of the study area to be oriented northward (N, NE, or NW) and those on the northern hillsides to be oriented southward (S, SE, or SW). That is, I would anticipate that northward orientations are positively associated with the southern valley side and that southward orientations are positively associated with the northern valley side. I evaluate this claim by first conducting a Pearson's Chi-squared test of independence with simulated p-value (based on 2000 replicates) to determine whether the valley side that *chullpas* are built on and their opening orientation are independent, and then examining Pearson's residuals to interpret the associations between different opening orientations and their valley sides. The null hypothesis for the chi-squared test is that valley side and *chullpa* opening orientation are independent, and the alternative hypothesis is that these attributes are not independent. I use a 0.05 statistical threshold for this test. The contingency table for this analysis is below (Table 6.3).

Table 6.3: Contingency table that displays the counts of *chullpas* with specific opening orientations for each valley side

	Chullpa Opening Orientation							
Valley Side	NW	N	NE	E	SE	S	SW	W
North Side	3	2	5	7	10	15	5	12
South Side	39	68	19	13	15	17	17	19

Results of the Chi-squared test ($\chi^2 = 43.12$, df = NA, p-value = 0.0005) allow for the null hypothesis to be rejected, suggesting that valley side and *chullpa* orientation are not independent. Cramer's V, a measure of both the effect size for Chi-square tests and the strength of association between variables, was calculated by using the R function "chi.perm" (Alberti, n.d.). The value is 0.403, which suggests a "medium" effect size (Cohen, 2009) and a moderately strong and meaningful association between valley side and opening orientation. Furthermore, I generated a plot to visualize the standardized Pearson's residuals for each cell in the contingency table (Figure 6.6). This plot demonstrates significantly greater than expected positive associations between the south side of the valley and the northwest and north orientations and between the north side and the south and southeastern orientations. Significantly less than expected negative associations are observed between the south side and the south and southeast orientations and between the north side and the northern and northwestern orientations. These data provide support for the claim that local groups directed *chullpas* towards arable land across the study area.

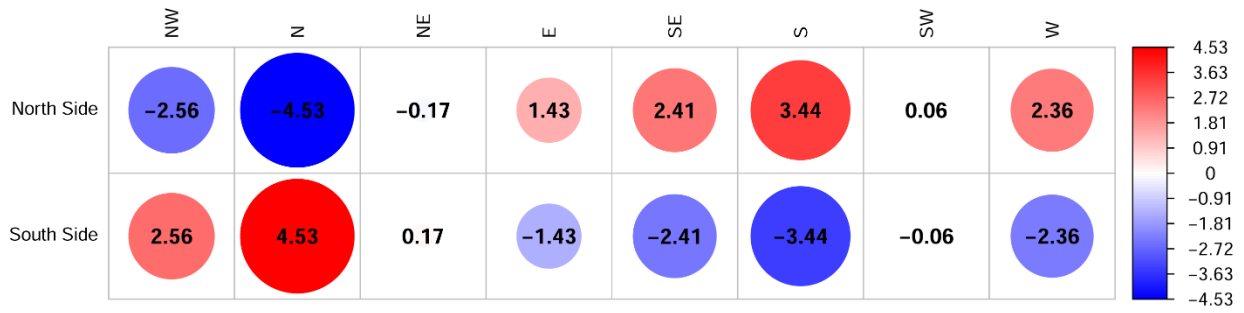

Figure 6.6: Plot that visualizes and notes the standardized Pearson's residuals for each cell in chullpa orientation-valley side contingency table. Positive residuals are shown in red, indicating a positive association between column and row variables. Negative residuals are shown in blue, indicating a negative association between column and row variables. Standardized residuals greater than 2 indicate observed frequencies that are greater than expected values if the null hypothesis were true with a significance level of .05. Those that are less than -2 indicate observed frequencies that are less than expected values under the same conditions. The size of the circle is proportional to the amount the cell contributes to the Chi-square score.

Since cists do not have openings, cist orientation differs from that of *chullpas*. I define it as the direction of the long side of the cist. I recorded this attribute at 32 cists, 30 of which are located on the south side of the study area (south side 1-3). The remaining 2 are found in the north side 1 unit. The data (derived from the 2016 dataset) indicate that north-south cists predominate in the study area (17, 53%), followed by east-west (9, 28%), northwest-southeast (6, 18%), and northeast-southwest (2, 1%) cists. These patterns suggest that, like *chullpas*, several cists may have also been directed towards agricultural land.

Returning to *chullpas*, facings constitute one of the most popular modifications of this tomb type in the mid-Chincha Valley. A total of 21 *chullpas* from 8 mortuary sites located in

south sides 1-4 show evidence of an earthen (i.e., either *tapia* or adobe) facing (2016 dataset) (Figure 6.7). Most of these facings (19) are made of *tapia* (the remaining 2 of which are made of adobe), and all of them are positioned in front of *chullpas* (i.e., they become the new façade); they are not found on the other sides of these graves. Clearly, these facings were built after the construction of the *chullpa*, but *how long* after this construction remains unknown. They reveal efforts to modify *chullpas* in a visible way that visitors would have been able to recognize and respond to. They may have been built to strengthen the stabilities of *chullpas*, or perhaps to express status because of its front and center location. The relatively low number (21) of *chullpas* with *tapia* or adobe[78] facings may suggest that only a few local groups had enough good quality soil to produce such modifications. Moreover, these facings may serve as an additional indicator of the long-term usage of these graves (Stella Nair, oral communication). It is possible that mid-valley peoples were only concerned with (and perhaps only capable of) modifying and maintaining the appearance of certain *chullpas*. These *chullpas* were likely used for longer periods of time compared to others that lack evidence of building modification and maintenance.

[78] Later in the chapter, I present data to indicate that the majority of *chullpas* in the study area are made of fieldstone. Since very few of them exhibit *tapia* or adobe, these construction materials may have expressed a distinct social status in the mid-valley.

Figure 6.7: A *chullpa* (UC-012 Tomb 10) with a *tapia* facing

The façades of at least 3 *chullpas* show signs of red pigment. The nature of this pigment, and whether it is like that commonly found on human remains and materials deposited in mid-valley graves, are unclear. This pigment is found on the exteriors of one of the most elaborately constructed *chullpas* in the mid-valley ("the tomb of the king," UC-007-A Tomb 21) (Canziani, 2009, p. 399), the only *chullpa* almost exclusively constructed with molded adobe materials (UC-079 Tomb 2), and a *chullpa* with a *tapia* facing (UC-073 Tomb 2). The application of red pigment to *chullpa* façades relates to the "technology of essences" concept, which explains that the essence must be inherent to a structure or object for it to be realized and rendered visible on the surface (Dean, 2006; Lechtman, 1984). The ideology behind this notion, however, can be manipulated (Helms, 1981) to "empower" certain materials—that are *not* inherent—to confer essential qualities onto structures, objects, or beings. In this case, red pigment may have been applied to adobe and *tapia* walls of *chullpas* to confer a certain quality, essence, or status to these tombs.

Interior Features

I will report on the interior features of *chullpas* (interior benches, wooden posts, and niches) and cists (lintels) in this section. Data on interior benches (Figure 6.8) are derived from the 2013 and 2016 datasets. They have been found in at least 25 *chullpas* from 12 mortuary sites situated in south sides 1-3. Our available data on their construction materials, the number of walls they were built against, and their sizes are mostly from *chullpas* that were not fully excavated, so they may not be completely accurate. Nevertheless, they provide a glimpse into these architectural features. Benches are made of fieldstone and earthen materials and built against either a single interior wall or multiple ones. One of the *chullpas* that appears to have been fully looted exhibits a low bench that runs along each of the four interior walls. Bench widths range from 0.31 to 1.08 m. They may have been used to display bodies and/or offerings.

Figure 6.8: Two *chullpas* with interior benches (marked by the red arrows)

Wooden posts (Figure 6.9) are critical construction elements of graves that relate to structural engineering concerns. These posts were placed in at least 7 graves from 6 mortuary sites in south sides 1-3. They are always placed in or near the center of the grave. Identification of the wood has yet to be determined. These findings raise questions concerning the construction decision-making in this area: Why were wooden posts placed in *chullpas*? Were they installed because of a lack of access to wooden beams that spanned the grave, or because the weight of the roof demanded further support? I take steps towards addressing these questions by examining whether there is an association between wooden posts, evidence of roofing, and grave size in the section on roofing. Future analyses will assess the load carrying capacity of grave roofs.

Rectangular niches (Figure 6.10) were only observed in UC-008 Tomb 2 (Figure 6.10) and UC-007-A Tomb 21 ("tomb of the king"). There has been much discussion on the construction, function, and significance of trapezoidal and rectangular niches in Inca buildings (Gasparini and Margolies, 1980; Hyslop, 1990, pp. 5–10; Nair, 2015, 2007; Niles, 1999, 1987; Protzen, 2008, 2000; Protzen and Batson, 1993; Wallace, 1998). Jean-Pierre Protzen (2008, p. 230) describes the rectangular niches of Tambo Colorado and speculates that they are of coastal influence. This idea may apply to the rectangular niches found in the mid-valley. Moreover, archaeological studies have established connections between niches, offerings, and rituals involving the dead (Hastorf, 2003; Mantha, 2009; McEwan, 1998). It remains plausible that *chullpa* niches in the mid-Chincha Valley held offerings for the deceased.

Figure 6.9: *Chullpa* (UC-026 Tomb 2) with a wooden post

Figure 6.10: *Chullpa* (UC-008 Tomb 2) with niches

Lintels are the only readily distinguished interior architectural feature still observable in cists (see Figure 5.41). They are only visible in 4 cists built in the north side 1 and south side 2-3 units. Based on our excavation of the eastern-most cist at Sector B, the lintel in this context appears to have been instrumental in creating a small, stone-lined, protective space for where the heads of the two adults would have been positioned. This model may apply to other cists with lintels in the study area.

Masonry

This section concerns the masonry of *chullpas* and cists. Before discussing the more architecturally variable *chullpas*, I report on cist masonry data from the 2016 dataset. All cists with construction material data (n=24) are made of irregularly shaped, uncoursed fieldstones

(i.e., a random rubble masonry style). Wall thickness was only recorded at 3 cists, and it ranges between 0.07 and 0.1 m. One cist displays high levels of mortar, while the other displays low levels. None of the recorded cists have plaster. These patterns indicate that cists required lower levels of labor investment than *chullpas*.

I focus on the following masonry attributes for *chullpa* interior and exterior walls: construction material, wall thickness, masonry style[79] (e.g., random rubble, semi-coursed rubble, and coursed, etc.), mortar, and plaster, all of which were recorded as part of the 2016 dataset. Considering exterior and interior wall materials, most of the 233 *chullpas* in this dataset exclusively have fieldstone, with relatively few *chullpas* made of fieldstone and *tapia* ("FT"), fieldstone and molded adobe ("FA"), and *tapia* (Table 6.4). Adobe and *tapia* are materials and practices (see chapter 1). They are both composed of earth. To reiterate, *tapia*-making practices entail constructing large molds of wall sections, mixing clay and water, and finally pouring and pounding mud into movable frames (which are removed and reused at another wall section, once this *tapia* section has dried). Adobe-making practices encompass air- or sun-drying clays and shaping them by hand or with molds. Identifying whether adobes were hand-shaped or molded is important for clarifying chronologies (Protzen, 2008, p. 232). For instance, hand-shaped adobes have been recovered in Paracas and Topará occupations at the site of Chongos in the Pisco Valley of Peru (Peters, 1987, p. 32), while molded adobes with fingerprints have been observed at the Inca site of Tambo Colorado (also in the Pisco Valley) (Protzen, 2008, p. 223).

[79] Distinct masonry styles are defined and visualized in Ching (1997).

Turning back to the mid-Chincha Valley, a fieldstone and adobe *chullpa*, a *tapia chullpa*, and a fieldstone and *tapia chullpa* are Late Horizon/early colonial period in date. Dates from all these periods are associated with fieldstone *chullpas*. *Tapia* is typically characterized as a local, LIP construction style in Chincha, but its use during the Inca period cannot be ruled out in this region.

Table 6.4: Counts of chullpas with different construction materials across the 3 units of analysis. Conditional relative percentages for rows are noted in each cell. Since mortuary sites and spatial units can have combinations of *chullpas* with different types of construction materials, sums of percentages from these categories do not amount to 100%.

	Construction Materials			
Units of Analysis	Fieldstone	FT	FA	*Tapia*
Chullpas (n=233)	195 (84%)	26 (11%)	6 (2%)	5 (2%)
Mortuary Sites (n=19)	18 (95%)	8 (42%)	5 (26%)	3 (16%)
Spatial Units (n=5)	5 (100%)	4 (80%) (SS 1-4)	4 (80%) (NS 1, SS 1,2,4)	2 (40%) (SS 1-2)

The sizes of *chullpas* with complete dimensions (n=199) and different materials vary (Figure 6.12). Although the sample size of those with fieldstone and adobe (Figure 6.11) in this subset (n=4) is small, these graves have the largest mean area (m^2) compared to the other types (Figure 6.11). Some molded adobes show signs of handprints like the ones shown in Protzen (2008, p. 223). Some associate molded adobes with the Inca period in the Chincha Valley (Wallace, 1998, 1971) and our radiocarbon dates, described above, support this alleged association. The use of adobe in the mid-valley, especially in *chullpas* located near key sites such as Casagrande (UC-044 Tomb 1) and in south side 4, an area with copper mines, may have marked the presence and/or influence of the Inca in certain parts of the study area. In light of

these patterns, the relatively large size of *chullpas* with adobe materials may have expressed high status, as Cobo (1990 [1653], p. 246) mentions.

Figure 6.11: *Chullpa* (UC-079 Tomb 2) with adobe and fieldstone materials

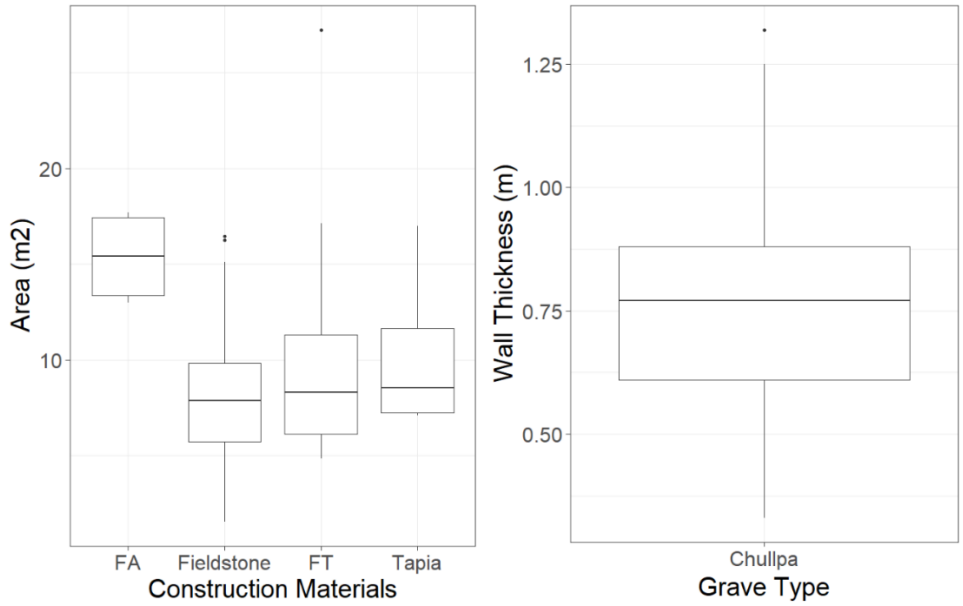

Figure 6.12: Boxplots displaying distributions of area (m^2) for *chullpas* with different construction materials (left) and distributions of *chullpa* wall thickness (m) values (right)

Wall thickness was recorded on 125 *chullpas* and masonry style for interiors and exteriors was recorded on 233 *chullpas*. Wall thickness for these graves ranges between 0.33 to 1.32 m. Interior masonry styles are typically random rubble (215, 92%, all spatial units), with only a few examples of semi-coursed rubble (6, 3%, north side 1, south sides 1-3) and coursed types (1, south side 4). The interior masonry styles of the remaining 11 *chullpas* are inconclusive. Exterior masonry styles follow the same pattern: most exhibit random rubble (105, 45%, all spatial units), while others display semi-coursed (2, south sides 1-2), coursed (1, south side 4), and inconclusive types (44). Mortar was documented in 189 *chullpas* from all 19 mortuary sites (2016 dataset) in all spatial units, and plaster was documented in 50 *chullpas* from 15 mortuary sites located in south sides 1-4. Concerning plaster application, evidence suggests it involved the use of hands and possibly brushes. For instance, the plastered interior walls of at

least two *chullpas* at UC-026 display handprints (Figure 6.13) and long, slender markings that appear consistent with brushstrokes.

Figure 6.13: Handprint on interior *chullpa* wall plaster

Roofing

In the Andes and elsewhere, roofs were (and are) one of the most important elements in structures whose construction, use, and display played critical roles in social life (Arnold, 1991; Gose, 1991; Leinaweaver, 2009; Nair et al., 2018). Despite being severely understudied for many reasons (Nair et al., 2018, p. 224), Andean roofs dating to before AD 1532 (Gasparini and Margolies, 1980; Lee, 1988) and during the Colonial Period can prove significantly insightful. One can consider Andean thatched roofs as an example. They can be made of materials from various ecological zones, and their short lifespans demand periodic maintenance and renewal practices. Studies of these roofs can, therefore, potentially broaden understandings of a

community's construction practices, design preferences, and environmental knowledge (Nair et al., 2018, p. 225).

The relatively few studies of Andean roofing have tended to focus on domestic examples, but in this section, I focus attention on mortuary roofing. The environmental conditions of the mid-Chincha Valley facilitated the preservation of grave roofing materials, most of which are found in *chullpas*. Several incomplete and flat mats—both *in situ* (Figure 6.14) and detached (Figure 6.15)—have been documented in the study area. One reed extracted from a roof mat in UC-079 Tomb 3 dates to the LIP, and a hair sample from a *chullpa* with evidence of roofing dates to the LIP. Here, I fulfill several objectives. I discuss the observations made from the examination of these materials. Findings not only developed understandings of roof construction practices that date to the LIP and may have continued into subsequent periods, but also allowed general identifications of the constituent elements of grave roofs to be made. Not every grave had a roof and likely not every roof was constructed in the same way, but these identifications permitted me to evaluate whether the graves I visited in 2016 contained evidence for roofing as understood by our available data. The distribution of graves with evidence of roofing will be demonstrated. More rigorous identifications of 5 samples of wood from distinct tension beams in 5 *chullpas* (3 mortuary sites) will be briefly stated. Lastly, I will evaluate hypothesized associations between interior wooden posts, roofing, and size for *chullpas*. This work constitutes an initial study of Chincha mortuary roofing that establishes the foundation for further analyses.

Figure 6.14: Photos of in situ grave roofing: a) UC-026 Tomb 18 (above-ground *chullpa*), b) UC-066 Tomb 2 (subterranean grave with a wooden post marked by the red arrow), c) UC-075 Tomb 4 (above-ground *chullpa)*, and d) the interior of UC-075 Tomb 4

Figure 6.15: Photos of detached grave roof mats recovered from various mortuary sites: a) UC-037, b) UC-066, c) UC-037, d) UC-012. Photos a) and b) illustrate the alleged mat tops, while photos c) and d) display the alleged mat bottoms.

Examination of these well-preserved *in situ* and detached roof mats (illustrated above) reveals that they consisted of the following five components: tension beams, rafters, purlins, twines, and outer layers. Tension beams are large wooden beams that run across the interior spaces of graves, supported by opposite walls. Analyses of cross-section, tangential section, and radial section photos of the 5 wood samples from distinct *chullpa* tension beams indicate that

they are all most likely congruent with Fabaceae cf. *Prosopis limensis*, otherwise known as the *huarango* tree, commonly found on the Peruvian south coast (David Beresford-Jones and Christine Hastorf, oral communication). Rafters and purlins appear to be *caña hueca* (*Phragmites* sp.) or *caña brava* (*Gynerium* sp.). Rafters and purlins were tied together with twine and rope, which may have been made from cattails (*Typha* cf. *angustifolia*), bulrushes (e.g., *Scirpus* cf. *californicus*), or another plant type. Outer layers (also known as roofing), placed above and between rafters and purlins, can block rain and wind from entering the grave and retain heat (Nair et al., 2018, p. 229). They were found in a few *chullpas*. In these cases, the outer layers appeared to contain bulrushes, cattails, and soil. While more work needs to be done to evaluate some of these identifications, initial findings and observations suggest a well-informed understanding of readily available materials from the local environment and how to combine them into durable roofs that would have protected the deceased from the elements.

Analysis of roof mats found in six distinct mortuary sites (south sides 1-4) also yielded insights into their construction patterns. Such mats are found in subterranean graves (UC-066, Figure 6.14) that may or may not have functioned as *chullpas* as defined in this study, and above-ground *chullpas*. Regardless of the construction style (e.g., above-ground or subterranean) they were associated with, mats are consistently constructed across the study area. Closely spaced rafters constitute the base of each mat, which would have been placed directly on the wooden tension beams, presumably covering the entire interior space of the grave. More widely spaced[80] purlins are situated above the rafters. Rafters run perpendicular to the beams and purlins run parallel to them in 2 *chullpas* (UC-075 Tomb 4 and UC-026 Tomb 18). In a third *chullpa*

[80] The purlins found in the UC-026 Tomb 18 (*chullpa*) roof mat (Figure 6.14) are spaced 5 – 8 cm apart.

(UC-079 Tomb 3), the opposite is found: rafters run parallel to the beams and purlins run perpendicular to them. Twine in the UC-026 Tomb 18 roof consists of S-spun cords that are plied in the Z direction, whereas in the UC-075 Tomb 4 mat, twine consists of Z-spun cords plied in the S direction. In all observed cases, twine is looped over and under purlins and rafters, thereby tieing them together. On the undersides of mats, pairs of parallel rows of twine mark the positions of purlins (Figure 6.15). Outer layers of plants and soil were interspersed between the rafters and purlins. The consistency in roof mat construction suggests broadly shared roofing knowledge among mid-valley groups.

During the 2016 field season, I evaluated whether the graves I visited and mapped contained evidence of roof components. I make the following assumption: wooden tension beams and *multiple* types of other, non-beam roof evidence represent strong lines of evidence of a roof. Therefore, if I could determine the presence of wooden tension beams and/or examples of at least two different types of the following materials (purlin/rafter, twine, outer layers) in a grave, I characterized it as having evidence of roof construction[81]. Results demonstrate that 78 *chullpas* (33% of the 233 *chullpas* in the 2016 dataset), 2 subterranean cists, and 6 unclear graves have evidence of roofing. Of these *chullpas,* 49 are above-ground, 26 are subterranean, and 3 display an unclear construction style. Roofed graves are found in 16 mortuary sites belonging to 5 of the 6 spatial units: south sides 1-4 and north side 1. Even if we discount graves with only non-beam evidence for roofing, a total of 42 *chullpas* (18% of *chullpas* in the 2016 dataset) and

[81] To be clear, a grave that doesn't have any of these lines of evidence may have been roofed, but for the purposes of this study, I consider them as inconclusive. Although a grave that does not have wooden beams yet does contain non-beam evidence may have only contained artifacts with similar materials (e.g., baskets, plant-based coverings for the dead), I still, albeit tentatively, characterize them as having evidence of a roof. I hold that wooden tension beams represent the most reliable evidence for roofing.

3 unclear graves built in 13 mortuary sites across the same spatial units have wooden tension beams.

I address the following two questions. How do graves with conclusive and inconclusive evidence of roofing compare in terms of size? What is the relationship between wooden posts (described in the interior features section) graves with evidence of roofing, and grave size? Graves of different construction styles and with and without roofing evidence exhibit varying interior lengths (m) and widths (m), with above-ground, likely roofed graves display generally larger length and width values compared to the other types (Figure 6.16). To compare the sizes of graves with conclusive and inconclusive evidence of roofing, I generated box plots displaying distributions of interior area (m^2) values and calculated the 95% confidence intervals for the mean interior areas of these grave types (Figure 6.16). Since these confidence intervals do not overlap, the mean interior areas of these grave types are highly likely to be significantly different. The mean interior area for graves with evidence of roofing (7.29 m^2) is larger than those with inconclusive evidence (5.28 m^2). Concerning the wooden posts, although only a few graves (7) have them, all but 1 of them have evidence of roofing. The sizes of graves with complete dimensions, wooden posts, *and* evidence of roofing (n=6) are wide-ranging: interior area (m^2) size categories for this grave type include 2-5.

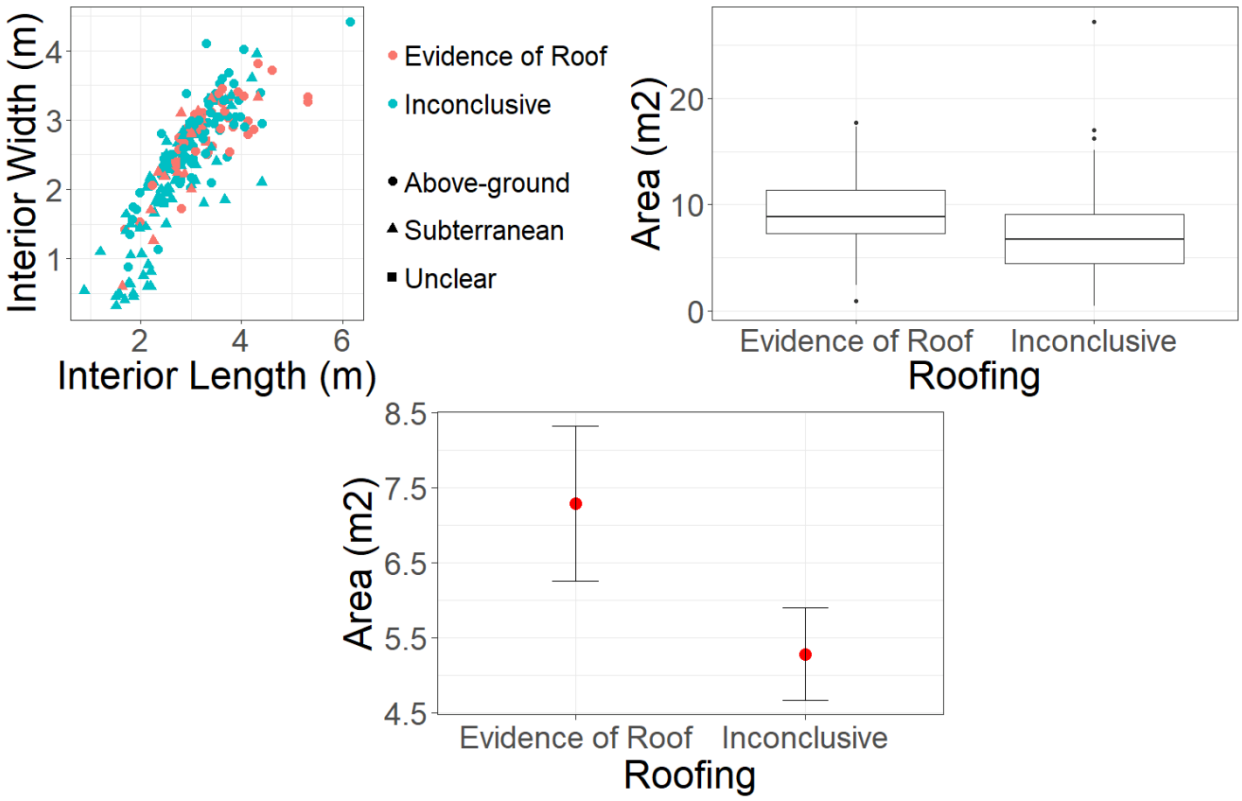

Figure 6.16: Multiple plots with roofing data: (top left) scatterplot displaying distributions of interior length (m) and interior width (m) values for *chullpas* of different construction styles with and without evidence of roofing, (top right) boxplot showing distribution of area (m^2) values for *chullpas* with and without evidence of roofing, (bottom) 95% confidence intervals for area values pertaining to *chullpas* with and without evidence of roofing

In short, several implications can be drawn from these patterns, which will be further explored in the Discussion and Conclusion section of this chapter: 1) above-ground and subterranean graves had roofs, 2) a tentative distinction can be made between graves with and without evidence of roofing, whose interior areas were likely to be significantly different, and 3) wooden posts likely served as roof support for graves of varying sizes.

Pairwise Co-occurrence Analysis of Chullpa Architecture

So far, I have mostly examined construction features of mid-valley graves individually, focusing on their nature and distribution across the study area. In this section, I build upon this examination by exploring the associations between the two predominant *chullpa* construction styles—above-ground and subterranean, a distinction that Cobo (1990 [1653], p. 246) writes about—and other architectural attributes, described below. The following question is of interest: what architectural attributes are above-ground and subterranean *chullpas* associated (and not associated) with, and what do these patterns suggest about how these grave types were constructed? I address this question by conducting a pairwise co-occurrence analysis to identify which attributes are positively, negatively, and randomly associated with each other.

I use the R package "cooccur" (Griffith et al., 2016) to conduct this analysis, which is based on the model of probabilistic species co-occurrence published by Veech (2013) for ecological investigations. Using combinatorics, this model enables one to calculate the probability that two species co-occur at a frequency less than (or greater than) the expected frequency of co-occurrence by chance if the two species were distributed randomly (independently) of one another among a set of sites (see Veech, 2013, p. 252 for the relevant formula). For species co-occurrence, the conditions underlying the "cooccur" package contrast slightly with Veech's original model. The package calculates the probability for selecting a site given that it has one of the species. For instance, given a set of sites and two species (species #1 and species #2), the package enables one to calculate the probability of selecting a site that has species #1 given that it *already has* species #2 (see Griffith et al. 2016: 2 for the relevant

formula). For the purposes of this analysis, I treat a "species" as an architectural attribute and "sampling sites" as individual *chullpas* recorded as part of the 2016 dataset.

I selected the "cooccur" package for two reasons. First, it allows users to calculate the probability that the observed frequency of co-occurrence is significantly large and greater than expected (positive association), significantly small and less than expected (negative association), or not significantly different and approximately equal to the expected value (random association) (Griffith et al., 2016, p. 2; Veech, 2013, p. 254). That is, these probabilities can be employed to characterize associations between architectural attributes as positive, negative, or random. Second, the pairwise co-occurrence analysis conducted with this package is statistically powerful and "metric-free, distribution-free, and randomization-free," thereby limiting Type 1 and 2 errors[82] (Griffith et al., 2016, p. 1). This is to say that one of the sources of such errors—"violations of assumptions about the distribution of the test statistic" (Veech, 2013, p. 255)—is eliminated because there is no simulated or randomized distribution of a test statistic.

I selected the following architectural attributes, derived from the 2016 dataset, for this analysis: mortar, plaster, roof, opening, interior bench, earthen facing, above-ground, subterranean, and open space[83]. Since most *chullpas* feature fieldstone materials and few of them contain wooden posts, the construction material and wooden post attributes were excluded. A binary, presence-absence ("1" marks the presence of an attribute in a *chullpa*, "0" marks absence) dataset where columns represent distinct *chullpas* and rows represent distinct attributes was generated. Given that above-ground (n=123 *chullpas*) and subterranean (n=93 *chullpas*)

[82] A Type I error (i.e. false positive) is rejecting the null hypothesis when it is in fact true. A Type II error is a failure to reject the null when it is false.
[83] I will elaborate on open spaces in the next section but suffice it to say that I define such spaces as flat, unroofed areas demarcated by graves and/or walls on at least three sides.

construction styles are mutually exclusive attributes, two datasets were created containing either one of these attributes. In both datasets, each cell in the above-ground and subterranean rows representing a *chullpa* with an "unclear" construction style (13) was given a "0". Each cell representing an attribute recorded as "unclear" or "inconclusive" was given a "0." Any pairs of attributes expected to share less than one *chullpa* were filtered out. Some results of this analysis such as the probability that two attributes would co-occur at a frequency less than (P_{lt}) or greater than (P_{gt}) the expected number of *chullpas* by chance can be reported as a p-value without reference to a test statistic (Griffith et al., 2016, p. 7; Veech, 2013, p. 254). For instance, if P_{lt} = 0.02, then the two attributes can be interpreted as negatively associated at the statistical level (alpha) of 0.05. In other words, if the two attributes are distributed randomly, then there is only a 2% chance that the two attributes would co-occur at the observed number of *chullpas* or fewer. A statistical level (alpha) of 0.05 is selected for this analysis.

Results of the pairwise co-occurrence analysis are summarized with heatmaps (Figure 6.17) that show positive, negative, and random associations among the architectural attributes. There are 28 possible attribute pairings for the above-ground and subterranean datasets. For both datasets, most of the possible attribute pairings are randomly associated, but not all. The heatmaps (Figure 6.17) demonstrate that above-ground construction is positively associated with the open space, earthen facing, opening, interior bench, and roof attributes, whereas subterranean construction is not positively associated with any attributes. It is only negatively associated with the earthen facing, mortar, and open space attributes. These nonrandom patterns provide support for a clear distinction between above-ground and subterranean *chullpas*: they were constructed (and perhaps used) differently and differentially placed in association with open spaces.

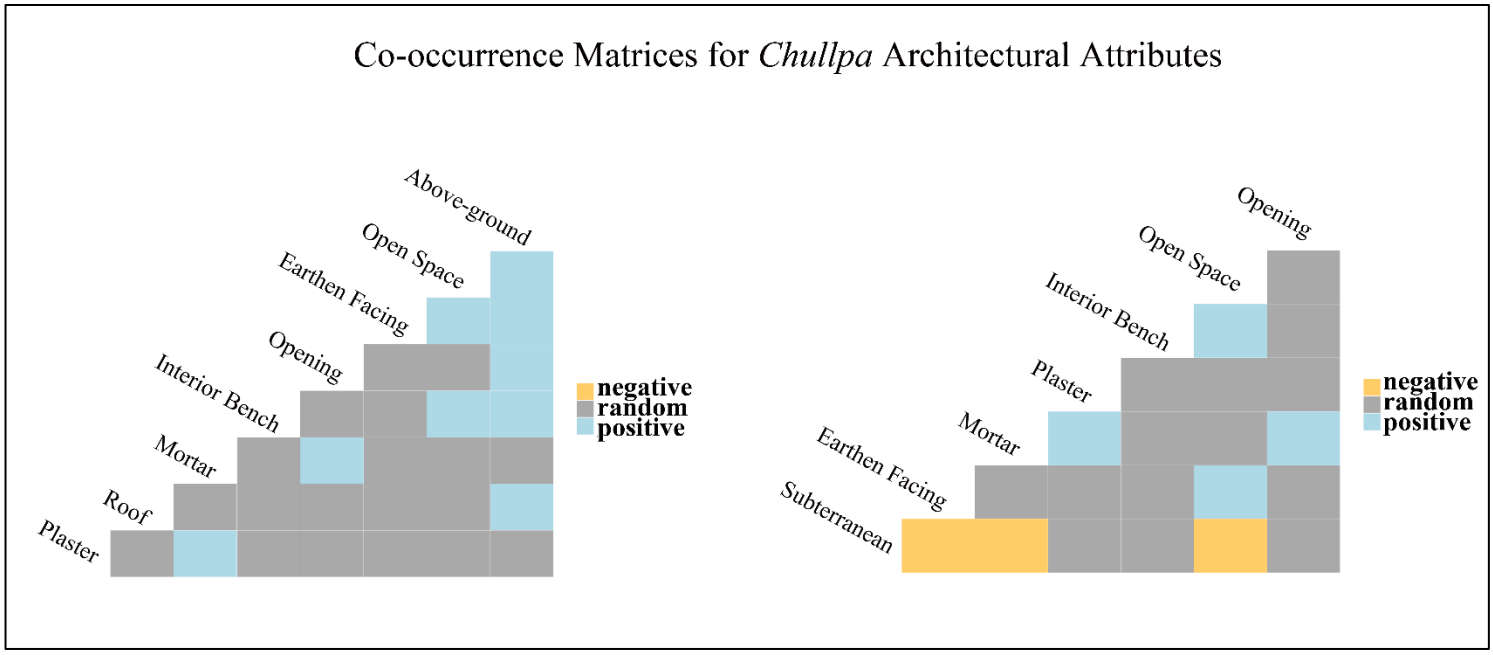

Figure 6.17: Co-occurrence matrices for *chullpa* architectural attributes: (left) matrix that includes the above-ground attribute, and (right) matrix that includes the subterranean attribute

Mortuary Space

The site plans of mid-valley cemeteries exhibit considerable variation (see Appendix C). Differences in cemetery layouts illustrate different design choices in the spatial arrangement of graves that can relate to group affiliation, identity, status, wealth, and power (Smith, 2011, p. 174), and/or to types of social organization (Goldstein, 1981, 1976; Hillier and Hanson, 1984; Lawrence and Low, 1990, p. 471; Saxe, 1970) and mortuary ritual (Moore, 2004; Rugg, 2000, p. 260). Below, I discuss open spaces and the spatial relationship between *chullpas* and cists as two critical design choices documented throughout the study area. Site plans and photos from select cemeteries are displayed to visualize examples of these choices and considerations.

Open spaces represent one of the most significant and pervasive aspects of cemetery layout in the study area. I define open spaces as flat, unroofed areas formed by graves and/or walls positioned on at least three sides. They are associated with 124 *chullpas* built in 18 cemeteries across all 6 spatial units. Two categories of open spaces have been identified in the mid-valley: forecourt and plaza[84]. The chief distinguishing characteristic of these types is the number of sides bordered by graves. Forecourts are bordered on 1-2 sides by graves, and plazas are bordered on at least three sides by graves. Both types can feature other walls (e.g., retaining walls). Although I distinguish between plazas and forecourts, both spaces can be considered *cayans*, and as such, likely served as loci for gatherings, corporate rituals, and/or ceremonial activities of varying scale (Doyle, 1988, p. 111; Lau, 2016, p. 175). Moreover, plazas and forecourts also differ in size (Figure 6.18), which likely relates to the number of people that presumably gathered in such spaces. Following this logic, forecourts may have been designed for more private gatherings among small groups, while plazas may have functioned as stages for integrative, community-wide events. Nevertheless, forecourts and plazas demonstrate that *chullpas*—not cists—were sometimes organized as architectural complexes "adapted to the celebration of public ceremonies" (Ramos, 2010, p. 18).

[84] This typology is tentative; it represents an effort to differentiate spaces that may have facilitated gatherings of varying scale. It is difficult to determine whether these categories were meaningful for local mid-valley groups.

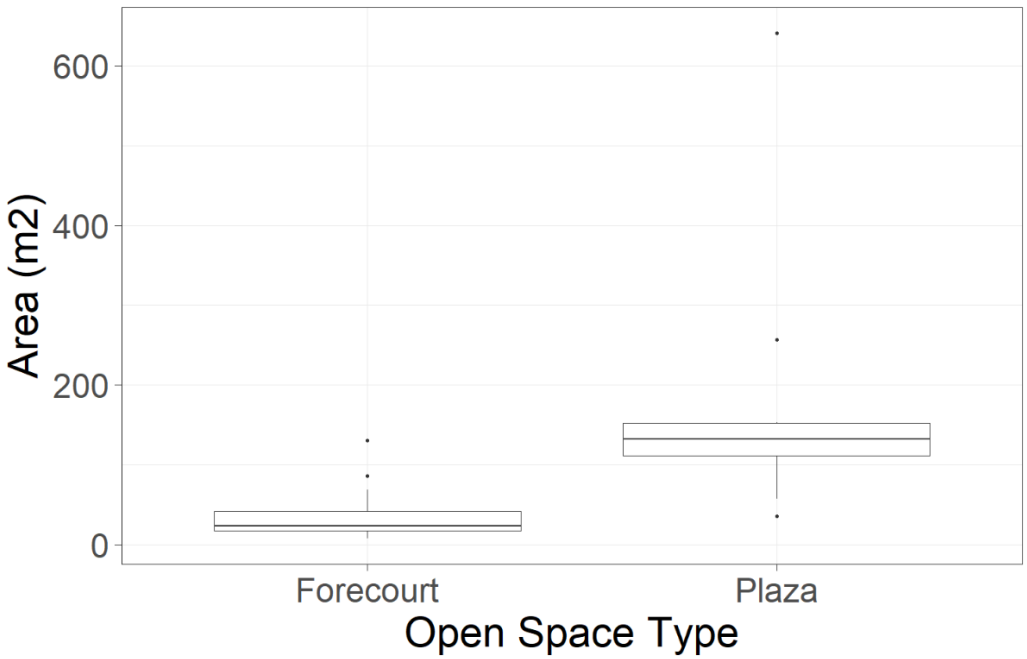

Figure 6.18: Boxplot showing distribution of area (m^2) values for plazas (n=11) and forecourts (n=25)

Were *chullpas* oriented toward open spaces, perhaps to facilitate ceremonial activity? Indeed, Lau (2016, p. 175) found that *chullpas* in the North Highlands of the Andes did so. I test this claim with data on *chullpa* openings and open spaces from the study area. These data indicate that many *chullpa* thresholds are oriented towards open spaces. Of the 71 *chullpas* that border open spaces and have recorded openings, 65 (92%) of these graves' thresholds face these spaces. *Chullpas* facing open spaces are in all but 2 of the units. Furthermore, of these thresholds with recorded widths and heights (34), 16 (48%) have dimensions greater than 0.4 x 0.4 m that would have permitted entry for adults. These results suggest that local groups oriented these graves towards open spaces where they likely assembled to perform ceremonial activities and directly access the deceased.

These points recall Morris and Santillana's (2007) argument that the expansion and modification of open space at Huaca La Centinela was a strategy designed to integrate the Inca into the local hierarchical structure. If the Inca adopted this approach in the mid-valley, I would expect open spaces to be associated with Late Horizon dates and Inca material culture. Of the 7 dated *chullpas* bordering open spaces, 6 of them date to the Late Horizon (the remaining one dates to the LIP), and an apparently localized, Inca-style textile was recovered near one of these Late Horizon *chullpas* at UC-037 (see Figure 5.16). Admittedly, this is a preliminary test and more data (e.g., construction dates for open spaces) beyond associated dates are required to evaluate whether the Inca played a critical role in the construction, modification, and/or expansion of local ceremonial space in the mid-valley. Nevertheless, these data demonstrate that *chullpas* situated alongside open spaces date from the LIP to the Late Horizon, thereby providing preliminary support for the notion that such spaces were used by mid-valley groups and perhaps co-opted by the Inca to incorporate themselves into local social life.

The UC-027 and UC-037 cemeteries feature examples of forecourts and plazas. UC-027 is a small 0.02 ha cemetery situated at the base of a hillside with at least one *chullpa*, four unclear graves, and another type of open space that is not bordered by graves. One of the nearby hilltops was artificially flattened. Bulldozing activity has unfortunately destroyed at least two graves (likely *chullpas*) evidenced by their profiles. Despite the damage, this site contains one of the clearest forecourts documented in the mid-valley (Figure 6.19). This 5 x 4.6 m forecourt stands in front of a subterranean, fieldstone *chullpa* (UC-027 Tomb 2). The opening of the *chullpa* is oriented southwest towards this space.

Figure 6.19: Georeferenced aerial photo of UC-027 Tomb 2 (*chullpa*) and its forecourt

UC-037 (Figures 6.20 and 6.21) features two side-by-side plazas surrounded by *chullpas*, one of which dates to the Late Horizon (UC-037 Tomb 7). This 0.13 ha site is built on a flat alluvial floodplain with 17 *chullpas*. Six *chullpas* surround the southwesternmost (SW) plaza, and 11 *chullpas* surround the northeasternmost (NE) plaza. The SW plaza is bordered by fieldstone *chullpas* on 3 sides and a fieldstone wall, and an opening on the northwest corner may have served as the entrance to the space. The NE plaza is bordered by fieldstone *chullpas* on 4 sides. A textile bundle of human remains was found in one of these graves in 2012. At least 3 of these *chullpas* exhibit *tapia* materials. A row of *tapia* blocks rising at least a meter above ground

is found near the southeastern end of this plaza, demarcating what may have been a raised platform. Thus, the plazas are not entirely similar: the NE plaza appears to be more elaborately constructed than the SW plaza. At least one other cemetery (UC-028) features two nearby plazas surrounded by *chullpas*. This particular layout—two plazas surrounded by *chullpas* and situated only 35 meters apart—can be considered an example of "paired construction" (i.e., a pair of similarly organized and constructed spaces) (Moore, 1995, p. 168). As Moore (1995, p. 168) points out, this pattern is often interpreted as a materialization of dual organization, which, in Andean studies, is frequently described as featuring moieties, symmetrical (or asymmetrical) power relationships, and shared rule. The political organization in the Chincha Valley during Inca times is similarly described as a system of "dual rule" in which Inca and Chincha elites maintained political power.

Figure 6.20: Orthomosaic of UC-037 cemetery

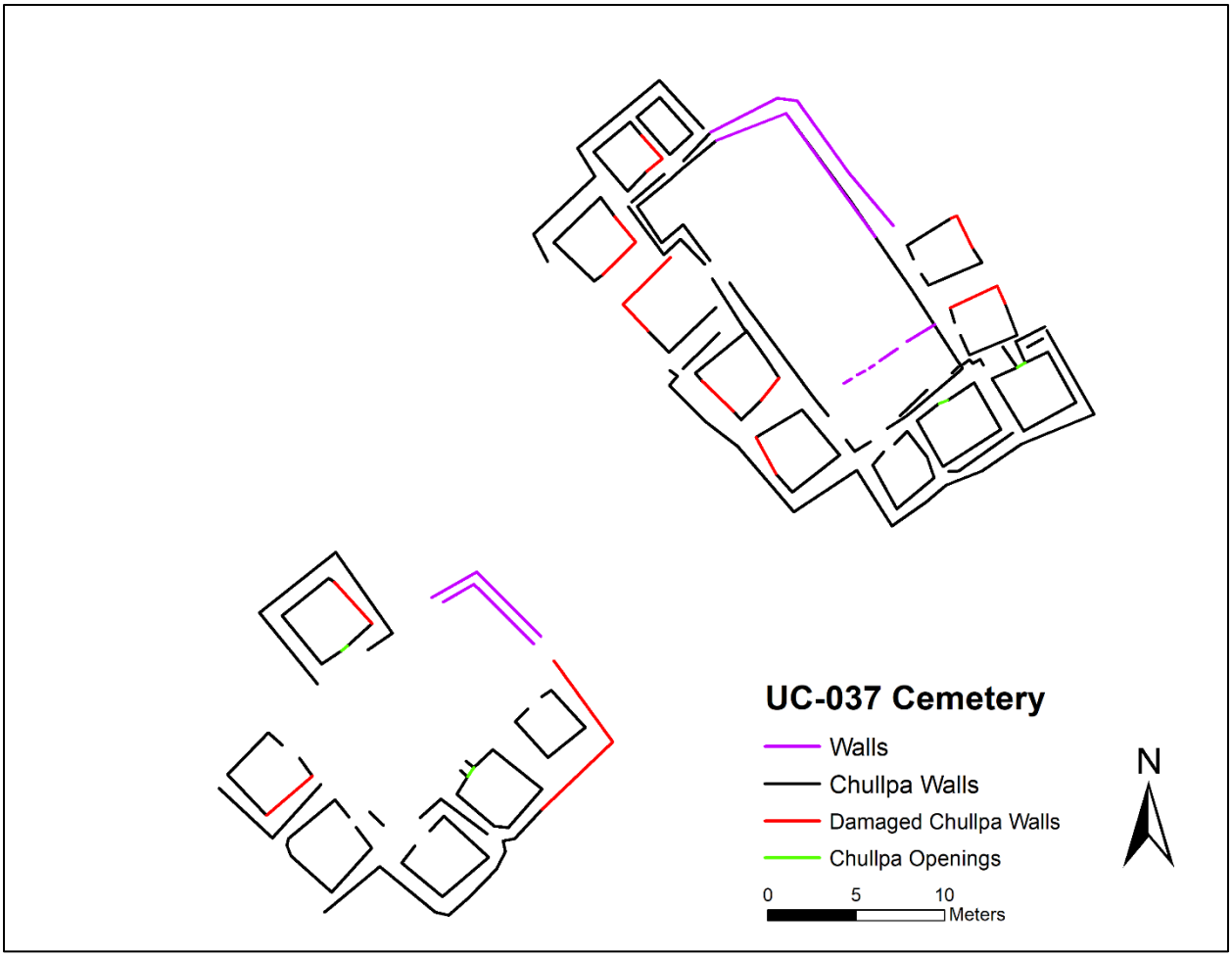

Figure 6.21: Site plan of the UC-037 cemetery (elevation range is 321 – 329 m)

UC-037 appears to be an example of what Dulanto (2002, pp. 98–99) calls a "ceremonial center" that housed the remains of the dead and accommodated large numbers of people gathering there to "venerate their ancestors—not only during mortuary rituals but also during rituals of ancestor enshrinement and cyclical rituals of ancestor veneration." Salomon (1995: 321) explains that the plazas of these centers, referred to as *cayans*, were bordered by chambers that contained preserved bodies and that within these open spaces, the "village's *ayllu(s)* jointly feted their 'founders.'" The plazas documented in the mid-valley align with these descriptions. UC-037 features differently constructed plazas that may have been a locus for large-scale

ceremonial activities, perhaps conducted by moieties/*ayllus* of distinct social standing and affiliated with different domestic sites. For this reason, it would have also been a target for imperial intervention.

Another important design choice for mid-valley mortuary space was the spatial relationship between cists and *chullpas*. Clearly, decisions revolving around which grave type to build and use and where to place it (Ashmore and Geller, 2005; Bongers et al., 2012; Pearson, 1993; Silverman and Small, 2002) would have been significant, depending, in part, on the sociopolitical and economic resources of the interested parties. These decisions are reflected in the cemetery site plans. While most cemeteries exclusively feature *chullpas*, some (2) exclusively have cists and others (6) contain *chullpas* and cists positioned at varying distances from each other. For example, UC-065A (Figure 6.22) is one of the few cemeteries that only has cists. It is a heavily looted and very small (0.01 ha) site positioned on a sediment plateau. It has at least 5 cists (3 of which date to the LIP) and 8 unclear graves that are not *chullpas*. Given the abundance and pervasiveness of *chullpas* in the mid-Chincha Valley, the lack of such graves at this site is striking.

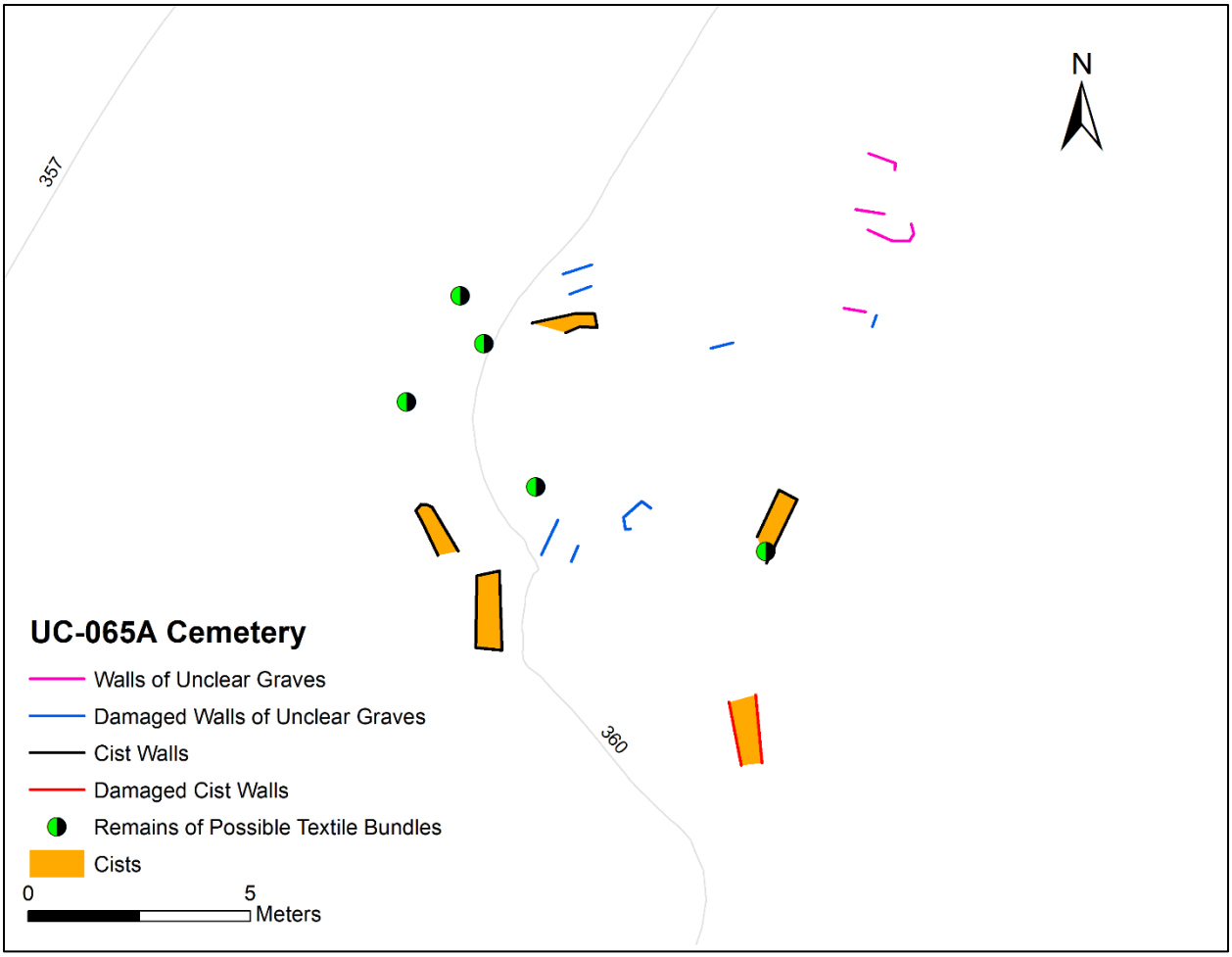

Figure 6.22: Site plan of the UC-065A cemetery

UC-018 (Figure 6.23 and 6.24) is one of the cemeteries that contains *chullpas* and cists located relatively apart from each other. This 0.31 ha site has 18 *chullpas*, 6 cists, and 3 unclear graves. One *chullpa* (UC-018 Tomb 17) and 2 cists (UC-018 Tombs 21 and 24) date to the LIP. On the one hand, all but one of the *chullpas* are positioned at the base of hillslopes, 136 meters away from one of the mid-valley tributaries. Two forecourts are recorded in this zone. On the other, all cists are built along a hillslope in the eastern part of the site, seemingly "overlooking" the lower-positioned *chullpas*. A small, lone *chullpa* is constructed on this hillslope near a few cists. UC-018 displays what appears to be a "spatial segregation" between *chullpas* and cists.

Existing radiocarbon data indicate that at least 1 *chullpa* and 2 cists are contemporaneous at this site, suggesting that the separation may not have been a product of time. This spatial organization is not unique to UC-018: UC-025, located 1.49 kilometers away, also demonstrates a similar spatial separation in which all cists (but one) are built on a hillslope above a cluster of *chullpas*. For other cemeteries that have both grave types, including Sector B, UC-012, and UC-065B, *chullpas* and cists are not as separated (i.e., both grave types are built on the same landform and closer together).

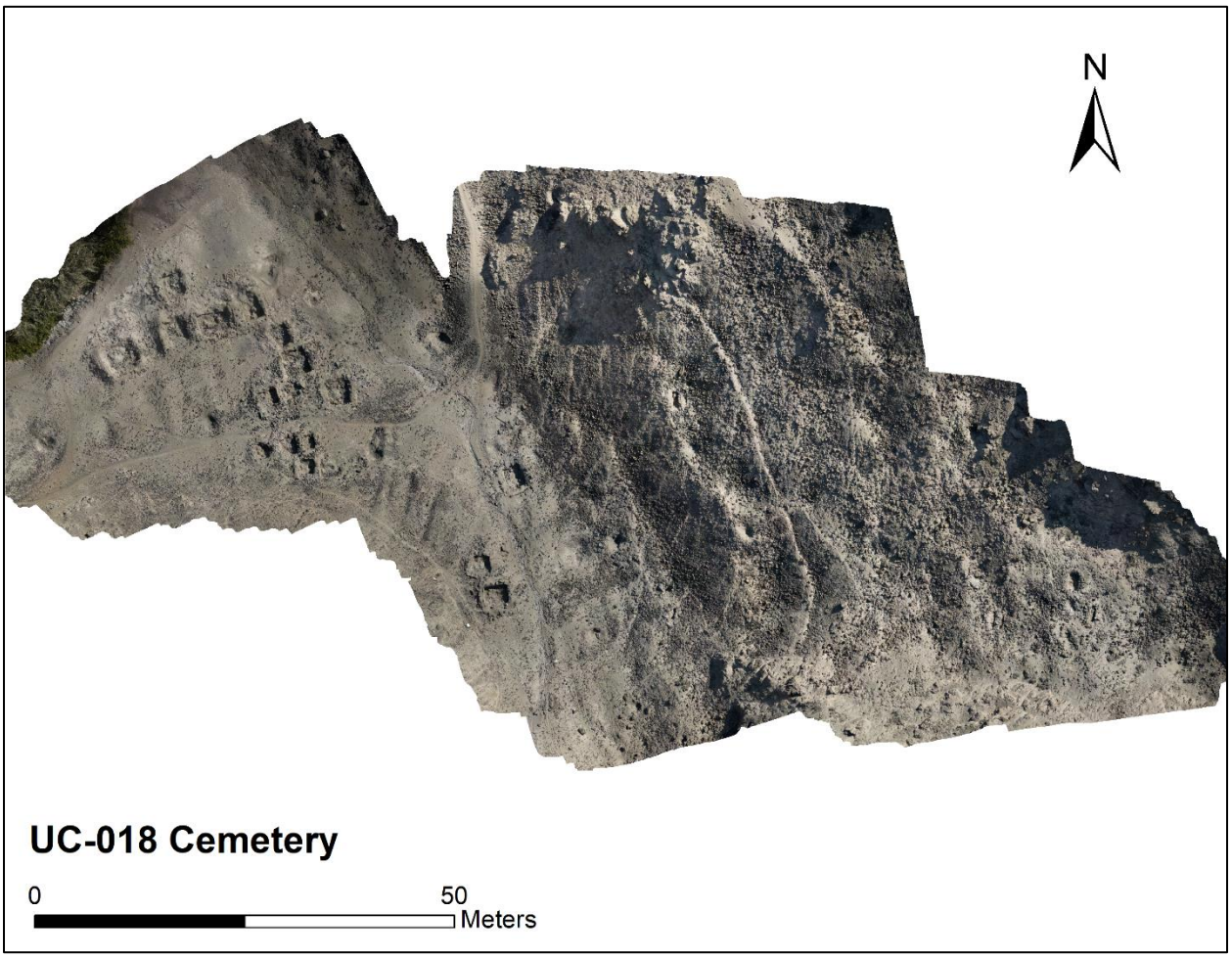

Figure 6.23: Orthomosaic of the UC-018 cemetery

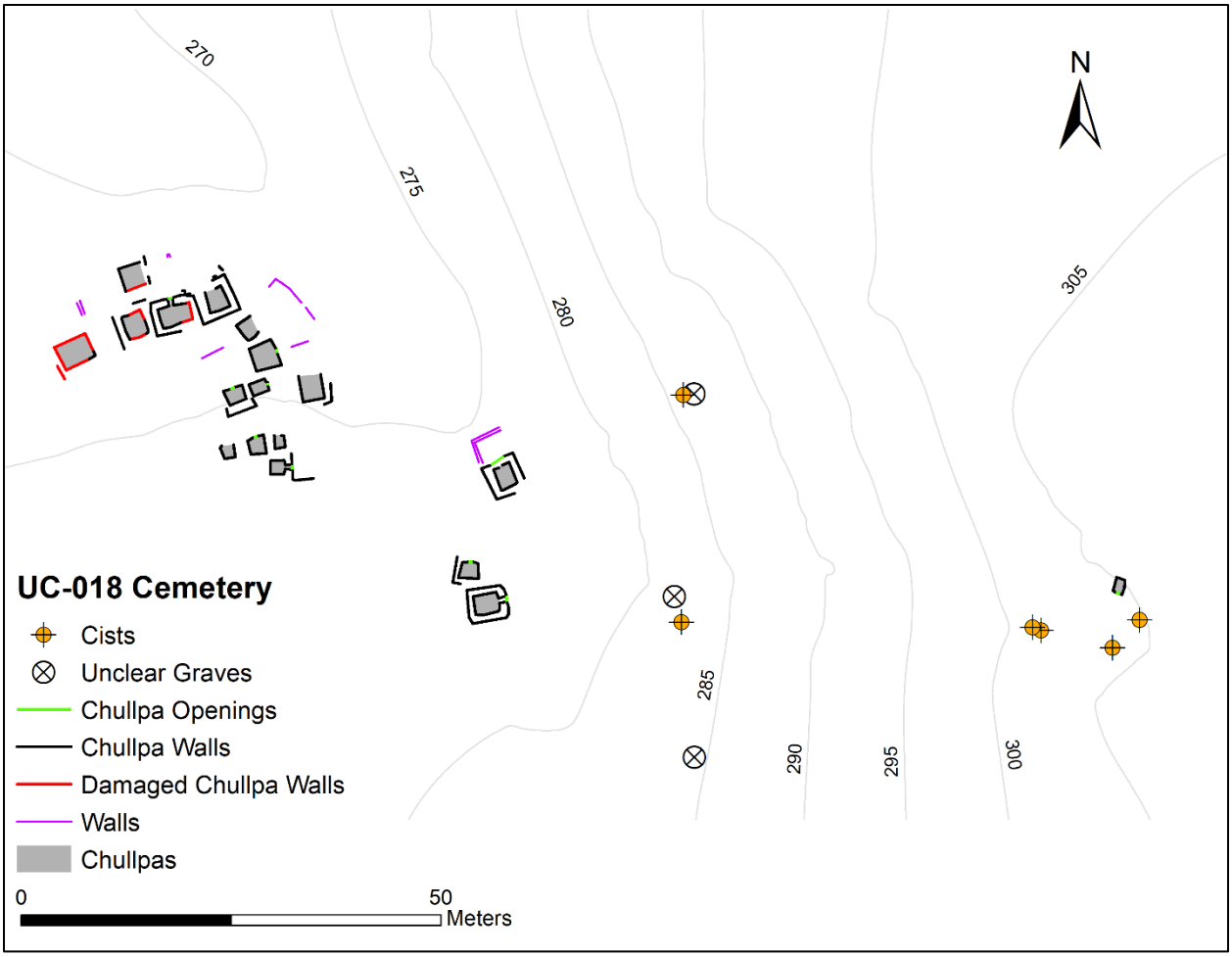

Figure 6.24: Site plan of the UC-018 cemetery

I argue that on one level, these spatial relationships between cist and *chullpas* and open spaces are connected to a concept Lau (2016, pp. 169–170) terms the "descent-scape." This is defined as a "local symbolic order that recognized aspects of the lived world as having basis in ancestral persons, their activities and social relations" (Lau, 2016, p. 169). Genealogies and sociopolitical orders were mapped onto descent-scapes through mortuary activities and the placement, construction, and use of graves. Importantly, descent-scapes were organized hierarchically, revealing social divisions within and between groups. It follows that the organization of mortuary space, including the arrangement of different grave types and the

production of open spaces, can be held to be a strategy for establishing and developing a heterotopic descent-scape which in turn, can spatially express (and potentially challenge and transform) sociopolitical order. In line with these points, I suggest that these design choices represent different strategies for encoding social distinction into space.

Discussion and Conclusion

The built environment of the mid-Chincha Valley includes a dense landscape of graves with well-preserved architecture. These conditions facilitated the production and analysis of a rich mortuary architectural dataset that illuminated several patterns. Such patterns, associated with a landscape that was incorporated into the Inca Empire, can reveal information on local and state-local political relations. In this chapter, I first reviewed 16th and 17th century written sources that describe mortuary architecture in provincial areas before reporting data on the construction practices and organization of mortuary spaces in the study area. Here, I discuss the similarities and differences between these sources and the mid-valley architectural data, highlight and summarize key results of my mortuary architectural analysis, and delve into the implications that these results carry. Namely, I talk about the implications for understanding the kind of activities conducted in mortuary sites and sociopolitical relations among mid-valley groups and between such groups and the Inca Empire.

In many ways, *chullpa* construction patterns align with the written sources. Cobo describes a distinction between above-ground and subterranean graves on the coast (and the highlands), and this analysis finds support for this typology. This support comes in the form of distinct, nonrandom (positive or negative) associations between above-ground and subterranean construction styles and other construction features (i.e., architectural attributes, such as roof,

opening, and earthen facing) as revealed through pairwise co-occurrence analysis of *chullpas* in the 2016 dataset. Specifically, there are positive associations between above-ground construction, accessibility and movement (openings), possible display of the dead (interior benches), modification and possible long-term usage (earthen facings), gatherings (open spaces), and coverings (roofs). These associations show that mid-valley mortuary architecture emphasized an important relationship between ceremony and the conspicuous accessibility and display of the dead. In addition, these associations suggest that above-ground and subterranean graves were constructed differently because they tend to exhibit different construction features.

Additionally, subterranean graves do display many characteristics noted by Cobo: square shapes, stone walls, and variations in the interior finish (e.g., mortar, plaster) that may symbolize social distinctions. The earthen walls (likely *tapia*) and square plans as reported by Cobo are found in the study area. Lastly, openings and open spaces, critical mortuary architectural features documented in the written record (Doyle, 1988), were built by mid-valley groups.

There are also some differences between the written record and mortuary architectural record. Although Pedro de Cieza de León only describes roofs of highland graves, evidence for roofing is abundant in the mid-valley. Grave mounds were not documented. The openings of highland *chullpas* are described as facing east, but in the mid-valley, *chullpa* openings are oriented in many cardinal directions with east being the least common.

The mortuary architectural analysis reinforces the distinction between *chullpas* and cists, reveals widely distributed construction practices across the survey zone, and provides insights into relations between mid-valley groups and their local environment. *Chullpas* are more elaborately constructed (i.e., they contain more construction features). They exhibit more

variation in size and require higher levels of labor investment than cists. Some of the most pervasive *chullpa* construction features (i.e., features found in at least 3 spatial units) include openings, earthen facings, interior benches, fieldstone masonry, and roofs. Analysis of wood samples gathered from roof beams shows that they are derived from locally available *huarango* trees. Commonly used fieldstone construction materials were also likely gathered locally. These patterns demonstrate broadly shared, consistent construction practices that exploited the local environment, and likely attest to high levels of interaction and information exchange among mid-valley groups.

Construction of *chullpas* whose openings are directed towards agricultural lands and open spaces is also widespread within the survey zone (Figure 6.6). In fact, mortuary sites have varying numbers of *chullpas* oriented towards these features (Figure 6.25). For instance, UC-012 (n=55 graves), located in South Side 1, has the relatively highest numbers of openings facing farmland (n=23) and facing open spaces (n=12). UC-028 (n=25) (South Side 2) and UC-067 (n=13) (South Side 3) have higher numbers of *chullpas* oriented towards open spaces than agricultural land. UC-073 (n=8) (South Side 4) only has *chullpas* facing open spaces (n=5). Certainly, these orientation data are impacted by factors such as looting and levels of preservation among openings. Nevertheless, these patterns may also hint at varying investments of labor among local groups into connecting *chullpas* and the deceased they housed with productive activities—agriculture and ceremony—both of which can be characterized as instrumental "paths to economic success" (Lau, 2016, p. 175). The association between open spaces and openings, specifically, also lends credence to Lau's (2015, p. 227) claim that performing "activities under the gaze of ancestors and crucial others legitimized statuses and power relations." Indeed, findings indicating that several *chullpa* openings are oriented towards

open spaces and that most open spaces are bordered by graves underscore clear efforts to involve visibly the dead into gatherings and ceremonies of various scales.

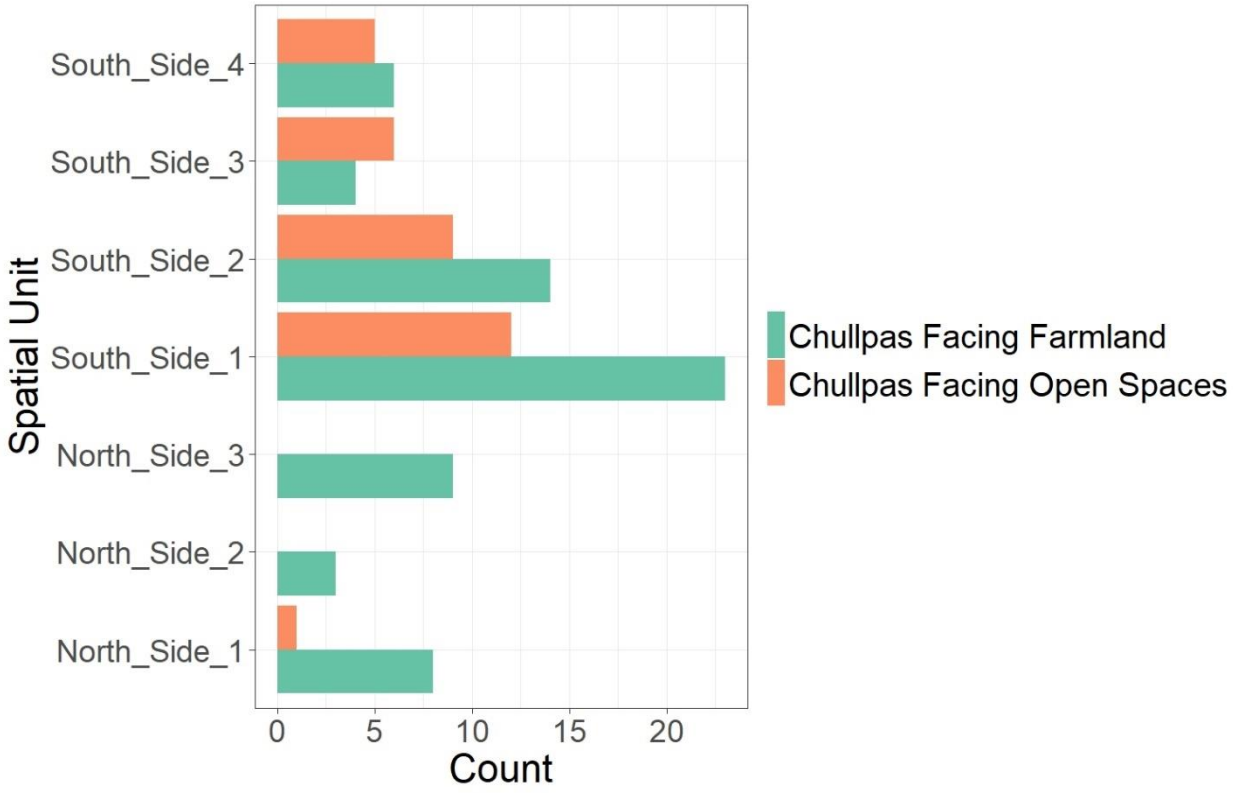

Figure 6.25: Bar graph that displays counts of *chullpas* facing farmland and facing open spaces for each spatial unit

Construction features commonly connected with the Inca such as niches and adobe construction materials are recorded in only a few graves. Niches are only found in 2 graves from 2 cemeteries in spatial unit 1, and adobe materials are only documented in 6 graves from 5 cemeteries in 4 spatial units. *Chullpas* made with molded adobe blocks are some of the largest in the survey zone, which may be indicative of the status (or number of) the deceased deposited therein. At least one *chullpa* made with adobe is Inca in date. If these features are assumed to be demonstrative of the Inca in some way, then these results may suggest that, from an architectural

perspective, Inca presence and/or influence may have been light. Alternatively, perhaps only a few local groups had access to these features to signal their affiliation with the Inca Empire. The combination of fieldstone and adobe (there are no graves with only adobe) can be viewed as an integration of local and nonlocal construction materials. Perhaps this pattern, in a sense, embodies an aspect of the relationship between the Inca and mid-valley groups.

Cemetery layouts exemplify the organization of mortuary space and yield additional insights into political relationships. If these cemeteries are assumed to have been used by "families" or descent groups, as Cieza (1959 [1553], p. 312) writes, the design choices that undergird site plans can be conceived as strategies for mapping sociopolitical orders involving these groups in space. Cemeteries, in short, are examples of descent-scapes (Lau, 2016, p. 169).

Open spaces, as well as the arrangement of *chullpas* and cists, are key design choices that give rise to descent-scapes. Open spaces lie at the heart of the spatial organization of several cemeteries. They come in the form of forecourts and plazas that vary in size, likely serving as loci for the private and public gatherings of small groups and larger communities. Available radiocarbon data from 7 *chullpas* associated with open spaces indicate that only one of these *chullpas* dates to the LIP; the rest date to the Late Horizon. Open spaces were probably first constructed and used by local groups in the LIP (or earlier) for sociopolitical and ideological purposes and may have been co-opted by the Inca as they gained control over the study area. This imperial strategy appears to have been adopted at Huaca La Centinela. The varying spatial relationships between *chullpas* and cists evident in many cemetery site plans, however, are likely more related to degrees of social inclusion and exclusion among and between local groups. This

notion depends on the extent to which these grave types were used by socially distinct groups, a belief that requires more data to evaluate.

Mid-Chincha Valley mortuary architecture was not a passive "stage" that rituals were merely conducted *on*; it was a collection of built forms and spaces that directly enabled and facilitated the performance of certain kinds of ritual activities involving the dead. Treatment of the dead is one such activity, and it is the subject of the next chapter.

CHAPTER 7

TREATMENT OF THE DEAD

Introduction

Postmortem manipulation of dead bodies reflects, on one level, recognition of dead bodies as highly visible, influential, and malleable remains that can be manipulated and appropriated by groups to convey sociopolitical, religious, and ontological information. Transformations and transitions for both the living and the dead can be materialized through the medium of the corpse. Following my theoretical discussion in chapter 2, I approach postmortem manipulation as a critical ritualized activity within broader mortuary processes that serve to transform the statuses of the deceased and the living. Moreover, I suggest that this activity produces dead *persons*, or what Salomon (2015: 337) conceptualizes as "differently dead folk," in religious and social life that carry varying relationships with the living and with other members of the dead. Such culturally modified dead persons may be differentially integrated into sociopolitical and religious affairs (i.e., either removed from or incorporated into society), but fundamentally, they become indexes of connections involving the living, the dead, and perhaps even cosmological forces. Whether dead persons exhibit post-mortem agency is an important, much larger, if also contested issue that is beyond the confines of the current study. Rather, the chief aim of this chapter is to present data on postmortem manipulation in the mid-Chincha Valley and tease out ways in which these empirical patterns contribute to understandings of how local groups materially produced and expressed dead persons and living-dead relationships in the Andes.

The first section of this chapter provides an overview of death, treatment of the dead, and personhood in the written and archaeological records of the Andes. In the following two sections, I present data on two forms of postmortem manipulation documented in the mid-Chincha Valley: the application of red pigment to human remains and the placement of human vertebrae on posts. These treatments are overwhelmingly associated with *chullpas*. Results of co-occurrence analysis of *chullpa* architectural attributes and treatments of the dead are shown in the fourth section. I conclude with a model for an extended mortuary process[85] that incorporates painting the dead and placing posts with vertebrae, and a discussion of interpretations that align well with the data. These data do not allow me to reconstruct a singular mortuary process for all treated individuals fully, but they do suggest some possibilities and choices that I weave into a plausible model.

One of the overarching questions that I attempt to tackle in this chapter is stated by Isbell (2004, p. 4): "Was any disturbance a result of looting, or had mortuary practices been a prolonged process involving reopening a grave several times?" Explaining this mortuary behavior is challenging, considering that all graves encountered in the study area have been disturbed[86] before, during, and/or after the arrival of the Spanish. To address this question, contextually and data-driven models regarding how and why postmortem manipulation of the dead was conducted in Chincha are detailed here. The strength of any argument rests on the data that support it, especially in this case.

[85] Extended mortuary practices/processes are defined as prolonged, multi-stage interactions between the living and the dead.

[86] As discussed in chapter 3, the Spanish looted gold and silver objects in mid-Chincha Valley graves (Cieza de León, 1959 [1553], p. 347; Rostworowski de Diez Canseco, 1970, pp. 171–172; Sandweiss and Reid, 2015, p. 4). Whether grave disturbance was conducted as part of the Spanish extirpation of Andean mortuary practices cannot be ruled out.

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Treatment of the Dead and Personhood in the Written and Archaeological Records of the Andes

Here, I refer to written and archaeological records to explain notions of death and personhood and describe postmortem treatment of the dead. Before doing so, it is critical to return to the Huarochirí manuscript and explain general ideas of Andean cosmology to provide context. According to this text, local Huarochirí populations conceived of their cosmological world as a web of interdependent relationships of symmetry and asymmetry that link entities occupying different social categories (Salomon, 1998, p. 16). The dead are only an example of a broad array of interconnected human, nonhuman, and supernatural entities arranged within a hierarchical order and thought to possess a vitality (*camaquen*) that permeated the entire world (D'Altroy, 2016, p. 409). The position of entities within this cosmological world (i.e., personhood) was derived, in part, from their state of permanence. Entities with the highest standing, whose actions could shape conditions of existence and provide a basis for new, transient entities to emerge, are described as composed of hardened and permanent materials (i.e., stone) (Salomon, 1998, p. 11). Mountain peaks (*apus*) were considered entities that embodied supernatural essences (*huacas*), and as such, they maintained prominent positions within the cosmic order.

The important point is that living people, the deceased, *huacas*, and other vital entities in the Andes were generally thought to be kindred with the capacity to interact with each other. The circulating interrelationships between these beings of varying standing were constructed, renewed, and transformed through rituals to ensure the well-being of all (Salomon, 1998, p. 11). These rituals enabled persons to interact with others and their environments through various

media (i.e., materials, dead bodies). For these reasons, I suggest that all these entities, especially the dead, can be considered persons who were produced through their relationships and ritual engagements with each other.

My focus, however, is on Andean relations between death, personhood, partibility, and treatment of the dead. Andean societies, both past and present, viewed life and death as complementary processes that constitute a self-renewing cycle (Allen, 2015, p. 310). The "death continuum," or gradient encompassing distinct stages of corporeality (*huañuc*, *aya*, and *mallqui*), is worth returning to. Since *huañuc* brackets those soon to die and those recently deceased, it explicitly demonstrates the vision of life and death as interconnected. I argue that all these stages represent different forms of personhood because each entails a distinct status and materiality for the deceased that elicits a specific living-dead relationship. On the one hand, the decomposing, transient *huañuc* and *aya*, and their spirits, are described as polluting, dangerous forces that necessitated mourning activities and aid from the living. On the other, those who were designated as *mallquis* were durable, more prominent ancestors also capable of existing in, and impacting, the affairs of the living and requiring certain practices of veneration.[87] Death was a critical and necessary transition from one state to another to provide the basis for further life (Allen, 2015, p. 310; Bloch and Parry, 1982; Salomon, 1998, 1995), a notion supported by Colonial Period testimonies describing the afterworld (*Uma Pacha*) as "a farm where spirits, like seeds, flourish back towards fleshy life" and the fact that *mallqui* also translates to seed, sapling, or young plant (Duviols, 1979, p. 22; Salomon, 1995, p. 328). Furthermore, death did not result

[87] Ancestor veneration is an exhaustively investigated topic in mortuary studies. Later, I explicitly define "ancestor" and "ancestor veneration" and explore these subjects broadly and within Andean contexts.

in the loss of vitality or the capacity to interact with and exert influence on the living (D'Altroy, 2016, p. 404).

How did Andeans in the past and present consider parts, wholes, and boundaries in relation to dead bodies and personhood? Insights into this question can be derived from ethnographic and written sources. Bastien's (1987, 1978) ethnography of Kallawayan healers in Bolivia demonstrates a conception of the human body as not having boundaries along biological lines and as integrated into the social, cosmological, and natural worlds. Bastien describes metaphorical connections between mountains and human bodies— mountain peak as the head, central slopes as the trunk, and the lower slopes as the legs—and explains that for the Kallawayan, the body maintains an organic unity in which the psyche and body are integrated as one whole entity. The mountain metaphor is described in the Huarochirí manuscript, suggesting some time depth for this belief (Bastien, 1987, p. 73).

Additionally, local Andean elites and commoners in the Late Horizon and Colonial Period expressed a preoccupation with bodily integrity and wholeness in mortuary practice. During the well-known Inca *capacocha* ceremonies, young children were killed through strangling, head blows, or live burial, presumably to maintain the integrity of the body (Ceruti, 2004, p. 115). Indeed, according to one of the Spanish chroniclers (Murúa, 1946 [1590], pp. 263–264), the impetus behind these sacrificial techniques was said to be the belief that nothing "incomplete" should be offered to the sun. In addition, Atahuallpa is reported to have converted to Christianity before he was killed to protect his bodily integrity and avoid death by burning (Buikstra and Nystrom, 2015, p. 254). The remains of a Chachapoya chief known as Chuquimis were allegedly taken from a cave and buried by the Inca as punishment because he was accused

of poisoning Huayna Capac, a prominent Inca ruler (Schjellerup, 1997). Buikstra and Nystrom (2015, p. 255) argue that the act of burial itself desecrated the Chuquimis and his lineage, rather than an inferred association with commoner graves. That burial in the Colonial Period would destroy the integrity of the body has been cited as a rationale for removing corpses from Christian cemeteries to local graves (Buikstra and Nystrom, 2015, p. 254; Gose, 2008). Some witnesses stated that when the dead were buried underground in the extended position, the earth on top prevented them from "breathing and moving," resting, and making their way to the afterworld (Doyle, 1988, p. 205). The dead were "heard" complaining about the earth and requested to be placed in local Andean graves with their "grandfathers and *mallquis*," or else they would rot in the church grave and curse their relatives (Doyle, 1988, p. 205).[88] These examples reveal strong aversions to burial and concerted efforts to preserve the wholeness of bodies after death during the Late Horizon and Colonial Period.

Andean understandings of bodily wholeness also imply recognition of integral body parts. It is useful to refer to Allen's (2015) discussion of *raki*, a Quechua root of words that broadly denote the separation and division of whole entities, to gain a better understanding of parts and how they relate to death in the pre-AD 1532 and colonial-era Andes. Entries for this root in Gonzalez Holguín's early colonial dictionary (1989) underscore several meanings that presumably originated before the Colonial Period, namely, a bad omen, a clay tub or jug, a fern, and actions intending to apportion or to separate one thing from another. In Gary Urton's (1997,

[88] A critical implication here is that *machays* and *chullpas* (types of collective graves) were ideally designed and used as open-air, accessible graves in which bodies were deposited, yet not immediately buried. Doing so would facilitate the desiccation and preservation of the bodies and allow the living to interact with their dead (Lau, 2016, 2015; Ramos, 2010, p. 26; Sillar, 1996). Sillar (1996, p. 269) goes so far as to compare the process of making chuñu (dried potatoes) to the process of desiccating the dead in open-air graves. Burial may have taken place later, presumably at the end of the use life of a grave. These ideas are further explored for the *chullpas* documented in the mid-Chincha Valley.

p. 166) study of Quechua arithmetical concepts, he treats the word as *rak'iy*, and compares it to the separation of yarns on a plied thread: "In this case 'division' refers to the 'separation' of the component parts (the individual spun yarns) of the thread. In *rak'iy*, a complex whole is 'decomposed' into its constituent parts." Allen (2015, p. 307) indicates that, at its core, *raki* highlights a process of separation and partition, and argues for understanding Andean material culture as possible expressions of *raki*.

Colonial and ethnographic sources, however, suggest that Andean treatment of the dead and perspectives on death may also serve as manifestations of *raki*. For Andean societies, death results in the disaggregation of society and the body. It tears previously held connections among human and nonhuman persons, producing sociopolitical crises that some scholars argue are managed, in part, through mortuary practice to ensure the collective well-being of the society (Bloch and Parry, 1982; Hertz, 1960 [1907]; Metcalf and Huntington, 1979). In life, individuals maintain a body and a spirit. Following death, once-whole bodies become corpses that decompose and disarticulate into bones as spirits separate themselves from the decaying bodies to undergo perilous journeys either to the society's place of origin or to the afterworld. The use of body parts and even material parts of idols by local Andean commoners is well-documented in records pertaining to the Spanish campaigns against idolatry, in which Spanish priests and government officials destroyed mummy bundles and cult objects. Spanish priests observed local Andean groups salvaging hair, nails, and ashes from the remains of desecrated dead to create new effigies or to use them as replacement cult objects (Lau, 2016, p. 181). Chips and splinters of stone and wooden idols would be sought after and hair was curated and venerated with offerings during ceremonies (Lau, 2016, p. 181; Polia Meconi, 1999, p. 431). MacCormack (1991, pp. 408–409) finds that for Colonial Period highland Lima cults, and presumably others,

"identity could be conceptualized as continuous even when its expression or representation changed." That said, whether parts of nonroyal dead bodies and other sacred idols were held to *be* the persons they were derived from, as opposed to representing them, is debated. The relationship between body parts and dead bodies might be one of representation, as MacCormack states, in which the dead person is signified by something with which it is associated or contiguous, or it can be one of identity, where any components are understood to be part of the same whole (Wilkinson, 2013, p. 422). These notions are not mutually exclusive; the relationship between body parts and dead bodies can alternatively be characterized as both. Nevertheless, it appears that the essences of the dead could be transferred to its parts, perhaps making them akin to sacred relics.

Since, to my knowledge, there is no explicit use of *raki* in the context of death, these connections are established with caution. I am not implying that cases in which dead bodies are intentionally partitioned into body parts that are subsequently appropriated for use in social and religious contexts are explicit examples of *raki* in action. Rather, I am pointing out that a conceptualization of parts and partibility (*raki*) existed at least in the Andes before AD 1532, and that these cases of postmortem manipulation *can* be explained with reference to *raki*.

Postmortem manipulation of the dead can also be explained with reference to ancestor veneration, one of the most thoroughly researched, and yet elusive, topics in mortuary studies. Ancestor veneration generally concerns religious practices dealing with specific kin. Several definitions of ancestor have been put forth. A minimal definition of ancestors, according to Whitley (2002), is that they are people who procreated and died, yet have descendants who remember them. Fortes (1976, p. 4) states that ancestors are recognized insofar as their

descendants exist, while Bloch (1996, p. 43) simply suggests that ancestors are "forebears who are remembered." They are usually connected to generations through descent and extended rituals that feature prolonged interactions between the living and the dead and emphasize lineal continuity, even if not through a genealogy of named individuals. Additionally, death does not automatically confer "ancestorhood," as it is a status to be achieved by one's behavior and longevity in life that elicits efforts, oftentimes public in nature, on behalf of the ancestor's descendants to remember (DeLeonardis and Lau, 2004, p. 80). Thus, ancestors are most times *specific* members of the dead whom later generations regard as important, and who counts as an ancestor in any society will vary according to patterns of kinship and property holding (Whitley, 2002). They can be seen to be part of a collective (i.e., an ancestral lineage) (Sahlins, 1961). Sub-adults are frequently not considered ancestors because they do not have descendants. Various forms of ancestor veneration have been identified in numerous past societies around the world, and it appears that these practices are compatible with sociopolitical systems of varying scale and centralization. It remains critically incumbent upon scholars to distinguish ancestors within any context, as opposed to assuming all deceased are all ancestors, to understand better the various kinds of relationships that the living maintained with their dead. Describing all preserved members of the dead as ancestors, characterizing those that are dissembled as not possessing "ancestorhood", and relying on genealogical and inheritance models to explain mortuary patterns are not necessarily incorrect interpretive strategies, but they may only be telling a portion of the story (Salomon, 2015, p. 337).

Following Gluckman (1937) and Fortes (1965, p. 128), Morris (1991, p. 150) distinguishes between ancestor veneration and mortuary ritual. Even though both practices involve individual or group administered rites that commonly entail offerings of food and drink,

ceremonial processions and dances, and secondary mortuary practice (DeLeonardis and Lau, 2004; Lau, 2002), ancestor veneration produced and recognized ancestors and provided "continued access to the dead in the afterworld" (Morris, 1991, p. 150). These practices generally resulted in the transition from mourned dead to revered ancestor. Mortuary rituals tend to focus on separating the dead from the world of the living and arguably, in some cases, must precede practices of ancestor veneration (Fortes, 1965). Salomon's (1995, p. 326) description of the "double transition" for Andean mortuary practice aligns well with this idea: the transition from life to death through mortuary ritual and the transition from death to ancestorhood through secondary mortuary practice and enshrinement. Once the dead are removed from society and ancestorhood has been conferred, ancestor veneration can then occur.

Here, I bring Andean ancestor veneration into greater focus. The minimal element of this practice is the veneration of at least one ancestor as the source of entitlement among a group who shared rights or some form of identity (Salomon, 1995, pp. 320–321). In the Andes, ancestors could be human or superhuman persons, possessing the capacity to bear influence over the living in various ways. They are frequently believed to have made significant achievements revolving around irrigation, the formation of entire groups, and the introduction of specific crops (DeLeonardis and Lau, 2004, p. 79; Salomon et al., 1991). At least two types of ancestors may have existed that appear to correspond to different levels of social integration. First, kin-based, cooperative social units (*ayllus*) identified its immediate ancestors with the *recent*, mummified bodies of the dead (*mallquis*) and may have conceived them in a generic sense as part of a collective (Dulanto, 2002). Allen (2015, p. 317), in reference to MacCormack (1991, p. 95), remarks that for rural commoners who deposited their dead in agricultural fields, caves, and crevices, the deceased transitioned into the generalized category of original ancestors quickly.

The production of generalized, perhaps "anonymous" ancestors, depending on their temporal and genealogical distance, may have subsumed individuality as a strategy of representing the social order as eternal and immutable (Bloch and Parry, 1982, p. 15). Second, higher levels of social integration (i.e., communities) identified prominent landscape features such as snow-capped mountain peaks (*apus*) as powerful founder ancestors. These different types of ancestors were part of a complex network of nested genealogies that reckoned group membership and legitimized transmission of goods at different levels of social integration (Dulanto, 2002; Salomon, 1995).

Bloch and Parry's (1982) argument that customs of the dead are shaped by the functional imperative to reassign the deceased's roles and interests can apply here. Graves of ancestors tended to be above-ground, durable, and accessible, symbolizing a commitment to a program of social organization through inheritance and to a desire to maintain enduring relationships with the dead (Salomon, 1995). The efforts made to preserve the dead, house them in accessible, above-ground tombs, and venerate them repeatedly can produce sociopolitical relationships that transmit economic claims (i.e., land and irrigation rights) across generations. Indeed, written documents report that ancestor cults legitimated the transmission of goods and usufruct rights along genealogical lines (Cobo, 1990 [1653]; Doyle, 1988; Isbell, 1997). Clearly, ancestor cults fluctuated through time in terms of status; they were not a byproduct of descent but rather a strategy designed to reconcile inherited interests, expressed through sociopolitical relationships, with unpredictable circumstances.

Ancestor veneration was, and is, one of the most important components of group rituals in the Andes. The three major material dimensions of ancestor worship are: 1) a landscape

comprised of natural features that serve as the origins for the ancestors, 2) public spaces (i.e., open spaces) where communities gathered periodically to display their dead or honor them with offerings, ritual objects, and effigies (i.e., figurines), and 3) mummified bodies of the dead (*mallquis*) which were intentionally preserved and frequently manipulated postmortem (Dulanto, 2002; Salomon, 1995). This last point is most relevant for this section.

One of the most pervasive Andean treatments of the dead that has been connected to ancestor worship is putting the deceased in a flexed position and wrapping him or her with several layers of textiles to produce a mummy bundle, all of which commonly occurred during the mortuary ritual before deposition in the grave (Dulanto, 2002, p. 99; Ramos, 2010, p. 23; Salomon, 1995, p. 333). For instance, we discovered mummified remains alongside textiles with body fluid stains in UC-008 Tomb 1, suggesting that mid-valley groups wrapped their dead quickly after death. Wrapping the dead[89] with highly absorbent materials such as textiles represents, in general, an effort to protect, desiccate, and thereby mummify the corpse[90]. This is not to say that all textile bundles always contained the remains of complete, mummified bodies. On the contrary, some bundles contained only human limbs (Vreeland, 1978, p. 212), while others only featured the dry, disarticulated remains of an individual (Andrushko et al., 2006, pp. 88–92). The quality and quantity of textile layers can be interpreted as an indication of the status

[89] Wrapping the dead with textiles is most frequently tied to ritual practice, but it can also play more functional roles. For instance, bundling the dead either with textiles or another material is an effective means of transportating the dead. Some scholars (Hogue, 2006; Johnson et al., 1994; Rhodes et al., 2016) have noted that in cases of warfare or death away from domestic sites, bundling the deceased (perhaps a fallen warrior or an unlucky person who perished away from home) can facilitate transportation of their remains to another location (e.g., grave).

[90] Practices designed to alter artificially the decomposition process and preserve dead bodies were conducted by the Chinchorro in the dry coastal environments of Peru and Chile as early as the sixth millennium BC (Guillén, 2005, p. 142).

of the deceased. Bodies (mummified or not) wrapped in textiles frequently experienced prolonged treatment after deposition to preserve or modify their physical appearance; they were cleaned, refilled, rewrapped, redressed, and painted, and whether these treatments and transformations expressed changes in genealogical position, status, or group membership is unclear (Dulanto, 2002, p. 99). They do underscore, however, that local Andean groups did not always make efforts to simulate (or maintain) the appearance of a living, fleshed body, which the Inca are described to have done (Guamán Poma de Ayala [1615] 1980).

There are difficulties, however, in distinguishing practices aimed at venerating ancestors and other members of the dead from those intended to violate them. Duncan (2005, p. 207) defines veneration as an act that helps the soul find a resting place and/or honors the dead memory of the deceased. Violation refers to activities that deny the deceased—especially ones that acted in culturally inappropriate ways or died in culturally unfavorable ways—a resting place and destroys the soul of the deceased (Duncan, 2005, p. 207). Violation and veneration are contextually contingent, but they may involve similar acts that produce similar material remains (Duncan, 2005, pp. 207–208), and, according to Bloch's (1992) model of ritual, they are variants of the same ritual structure. In this model, funerals are attempts to replace notions of death with continual life, veneration helps the dead achieve "victory" over death, and violation denies such a victory. Patterns in postmortem manipulation of human remains can clearly reveal veneration, as discussed above, but they can also demonstrate violation. For example, Moche captives' postmortem treatment is consistent with violation. Verano (2014, p. 288) explains that Moche captives were denied proper burial, left exposed to flies, beetles, and likely vultures, decapitated and buried with severed body parts, dismembered, and defleshed. Bearing the distinction

between veneration and violation in mind is key for interpreting treatment of the dead in this study.

Regardless of whether it was conducted to violate or venerate the deceased, reentering graves to manipulate human remains was a pervasive practice conducted along the Andean coast and highlands prior to AD 1532. Archaeological evidence across the Peruvian northern coast reported by Millaire (2004) and Nelson (1998) reveals that the Moche curated human remains as part of extended mortuary rituals and reentered mortuary contexts for a variety of purposes, including removing skeletal parts (e.g., feet, clavicles, cranial fragments) and depositing them (e.g., hands) as offerings elsewhere. Cordy-Collins (1997, p. 288) argues that the Moche exhumed human remains from a reopened grave, placed them in a room at Pacatnamú, and subsequently burned them as part of a ritual. Isbell (2004, p. 13) examines an unlooted bedrock cavity grave at the Wari site of Conchopata and finds that an articulated woman was placed in alongside partially articulated remains which had likely been deposited first, and that some of the skeletons were incomplete. Based on these data, Isbell (2004, p. 13) argues that the Wari reopened this grave to deposit additional deceased and remove body parts. There is a possibility that removed body parts "could have been objects of display in public landscapes of death" (Isbell, 2004, p. 28). Menzel (1976) writes about another case of grave reentry. She analyzes subterranean tombs stylistically dated to the Inca period in the Ica Valley. She (Menzel, 1976, p. 225) argues that people reentered these tombs once tissues had decomposed to apply red pigment to bones and then placed these remains in urns alongside other ornaments. Some painted bones, especially crania, were then removed and placed over other graves presumably as "watchful protectors" of the deceased.

These examples build upon the earlier discussion of Andean partibility (*rakiy*) in the written record to illustrate that grave reentry for removing, culturally manipulating, and/or using body parts, is also apparent in the archaeological record predating the Spanish arrival. Numerous implications for understanding living-dead interaction and possible conceptualizations of the dead can be gleaned from these patterns. Not only do these data suggest that some ancient Andean societies curated human remains in conditions that permitted the disaggregation of the body, but also that such disaggregation was *intentional*. This may correspond "to a different understanding of what occurred not only to the body but also to the concept of the person, once the deceased had crossed a certain temporal and spatial threshold delineated by secondary funerary rituals" (Ramos, 2010, p. 31). For these societies, the transformation of fleshed remains into defleshed, dry, hardened, and disarticulated bones after a certain amount of time may have visibly marked the transition of the deceased into a new status, role, and form of personhood[91]. These remains appear to have been considered useful enough to encourage grave reopening and/or reentry. They may have been considered protective ancestors[92], providers of life, sources of energy and vitality that may have granted power to their possessors, relatives, and other community members, whether alive or dead (Ramos, 2010, pp. 31–32). Sociopolitical relationships among the living and the dead can potentially be symbolized by skeletonized body

[91] This model is further exemplified by the Molino-Chilacachi funerary cave in Puno. De la Vega (2002) discovers human remains in varying states of preservation placed on three levels. On the lower two levels, disarticulated human remains were found, but on the uppermost level, individuals with desiccated soft tissue (i.e. mummies) positioned in baskets were identified. Since these varying treatments of the dead correspond to different levels of deposition, these dead may have been considered distinct persons.

[92] Indeed, in the modern Andean ethnographic record, skeletonized remains are viewed as caring protectors, whose hardness is likened to that of seeds and stones and characterized as an altered state of animation (Allen, 2002; Nystrom et al., 2010, pp. 477–478).

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parts (Chapman, 2000). These relationships can also be affirmed (or challenged) through the display of skeletonized remains during planned ceremonies performed months or even years after the death of an individual or group (Chesson, 1999, p. 142).

These ideas and the others I previously discussed in this section inform my approach towards two pervasive forms of postmortem manipulation of the dead in Chincha: application of red pigment and placement of vertebrae on posts. Data pertaining to these practices are presented below.

The Application of Red Pigment to Human Remains

Red Pigment in the Archaeological and Written Records of the Andes

Before delving into the data on red pigment (aka red paint) in Chincha mortuary contexts, it is useful to provide first a brief overview of the documentation of hematite and cinnabar in the Andean archaeological and written records. Much research has been conducted on this material, so only points considered relevant for my later discussion of red pigment analysis are noted here.

Red pigment has a considerably long history of cultural use in South America. It was primarily derived from cinnabar or hematite and applied to numerous "media," including structures, artifacts, and the deceased. Early contexts with this substance include Paijanese (ca. 10,000 BC) and Chinchorro (ca. 9000 – 3400 ^{14}C yr BP) graves (Allison et al., 1984; Lynch, 1980) and the Preceramic village of La Paloma (5800 – 2800 BC) on the Peruvian central coast. Brushes of human hair used in the application of red paint to other materials were recovered from the Late Preceramic (35000 – 2000/1800 BC) site of Salinas de Chao (Prieto et al., 2016, p. 42). Many Initial Period (2000/1800 – 800 BC) sites show evidence of increased production and

use of red paint (see Prieto et al. (2016) for a comprehensive overview). Shell containers with red paint and cobbles likely employed in the grinding of this material have been discovered at Las Aldas, Huaca Herederos Chica (Caballo Muerto Complex), and Pampa de las Llamas-Moxeke (Pozorski and Pozorski, 1986; Pozorski, 1976, p. 110; Prieto et al., 2016, p. 46). Presumed grinding cobbles found at the Initial Period site of Gramalote exhibit a marked concentration of red pigment at one edge[93]. Clearly, the production of red paint required a multi-stage process.

Prieto et al. (2016, p. 57) summarize the process. Hematite or cinnabar was first acquired through exchange or direct procurement, brought to a site for preparation, and then ground into a powder using stone implements such as grinding cobbles and flat stones (*batanes*). The powder was then mixed with water and possibly a sticky element (e.g., animal grease or a plant-based substance) to produce the pigment. The mixing process likely took place in the shell containers. Prieto et al. (2016, p. 57) observe fingerprints in the shells, suggesting not only that the red paint was applied using hands, but also that it may have been employed as body paint. Cotton swabs were also used as implements for red pigment application.

Although both cinnabar and hematite were instrumental in the production of red pigment, cinnabar was highly valued by ancient societies for many reasons. The red and scarlet hues of vermilion pigment, derived from cinnabar, are more vivid than red ochre (i.e., hematite) and would have been especially appreciated by ancient Andean societies (Burger and Leikin, 2018, p. 730). Cinnabar is rarer in the geological record than hematite, which is, by comparison, much more common. Nonlocal materials requiring long-distance travel for direct procurement are oftentimes held as having supernatural powers or qualities, and cinnabar qualifies as such

[93] A stone with red pigment identified at its edge was recovered from UC-018.

(Burger and Leikin, 2018, p. 731; Helms, 1993). Additionally, it functions as an effective pesticide that can prevent insect infestation of corpses, and it appears capable of preserving human flesh[94] (Prieto et al., 2016, p. 58; Scherer, 2015, p. 79).

Cinnabar is featured in 16th and 17th century written documents (see Burger and Leikin (2018) for a comprehensive review of these sources). It was known under the Quechua term *llimpi* or *limpi* (Cobo, 1990 [1653], p. 179; De Acosta[95], 2002 [1590], p. 186; Guamán Poma de Ayala, 2009 [1615], p. 74). Murúa likened the Quechua term known as *ychma*, which refers to red pigment, to *limpi* (Burger and Leikin, 2018, p. 731). It is unclear, however, whether any of these terms referred to hematite. The chroniclers note that the cinnabar mines of Huancavelica, one of the foremost sources for the material, were exploited by ancient Andean societies. The previously described process of grinding cinnabar and mixing it with liquid is in accord with a 1586 document published by Jimenez de Espada in the *Relaciones Geográficas* (Jimenez de Espada, 1965 [1586], p. 304).

[94] As Scherer (2015, p. 79) states, however, the presence of red pigment, presumably derived from either hematite or cinnabar, on skeletonized remains does not mean it was directly applied. Pigment applied to flesh can transfer "to the bone as a dilute solution of human putrefaction" (Scherer, 2015, p. 79). This point is also noted by Burger and Leikin (2018, p. 732) for cinnabar. It is critical to examine the location and appearance of the paint to evaluate whether it was directly applied to skeletonized remains. Certain kinds of evidence such as a "wet" appearance of the paint, drip marks, patterns that indicated hand-based application, and location of the paint inside crania are all suggestive of direct application to the bones. These examples have been documented in the study area and will be discussed later in the chapter.

[95] José de Acosta was born in 1540 in Spain. His book *Historia Natural y Moral de las Indias* was based on the fifteen years he spent in the Americas. From 1573-1574, he traveled to several highland regions in Peru including Cusco, Arequipa, and La Paz (Marzal, 2008, p. 11). He was a Spanish Jesuit who was trained in history, philosophy, and theology. He taught theology at the Universidad de San Marcos (Marzal, 2008, p. 11).

Colonial-era sources detail the use of cinnabar for both Inca and non-Inca groups. Acosta (2002 [1590], p. 186) writes a detailed description of how non-Inca groups, which he referred to as "Indians," and the Incas employed it:

> They [the Incas and non-Inca groups] prized it greatly for the same reason that Pliny tells us the Romans and Ethiopians did, which was to paint or dye their faces and bodies and those of their idols with it. The Indians used it a great deal, especially when they went to war, and today they use it when they hold certain festivals or dances, and they call it 'smearing themselves,' because they thought that faces painted in this way caused terror, and nowadays they believe that it is very ornamental.

Apparently, it was during festivals and wartime that local, non-Inca groups used cinnabar as body and face paint and applied it to objects of worship (*ídolos*). It is likely that these objects of worship also included certain members of the deceased. Cinnabar is also described as being utilized in religious practices (Murúa, 2001 [1616], p. 411). The sight of soldiers wearing red warpaint as a form of "psychological warfare" would have been striking. Garcilaso de la Vega[96] (1966 [1609], pp. 537–538) also reports on how some "savage and primitive tribes" wore cinnabar during wartime and feasts. Concerning the Inca, he (Garcilaso de la Vega, 1966 [1609], pp. 537–538) observes that they prohibited cinnabar use among commoners, reserving it for only

[96] Garcilaso de la Vega was born in Cusco in 1539 and was one of the first authors to bear a Peruvian cultural identity (Mazzotti, 2008, p. 229). He is considered a critical 17th century chronicler (Mazzotti, 2008, p. 229). It is worth noting that he tended to exalt the virtues of Inca rule while vilifying non-Inca cultures (Burger and Leikin, 2018, p. 731; Mazzotti, 2008, p. 229).

royal women. Inca men and older women allegedly did not wear it. For the Inca, it appears that cinnabar was a marker of social status, gender, and age.

These sources show that red pigment was applied to living bodies, and the health hazards associated with cinnabar were not sufficiently severe to preclude this activity (Burger and Leikin, 2018). But what about dead bodies? Given the abundance of red pigment found in Andean mortuary contexts of different periods, it is remarkable that none of the colonial-era documents refer to its use in mortuary ceremonies (Burger and Leikin, 2018, p. 732). Data are presented below to demonstrate that red pigment played a critical role in mid-Chincha Valley mortuary practices.

Red Pigment in the Mid-Chincha Valley

Red pigment was documented in mortuary contexts across the entire study area. Of the 44 mortuary sites, 28 (64%) contain human remains with pigment (Figure 88 and 89). These remains were recorded in 108 *chullpas*. Although nearly all such painted remains are found in *chullpas*, a hair fragment with pigment was recovered from the eastern cist[97] in Sector B, and a juvenile cranium with pigment was documented near a group of cists at the site of UC-065B. This substance was not only found on human remains. Red paint was recovered from the soil matrix of the excavated Sector B *chullpa*, and it was also found on textiles, shell containers, a figurine, on the edge of a likely grinding stone, and the "bird pendant" recovered from UC-008 Tomb 1 (*chullpa*). A maize sample, 2 vertebrae, and 6 reeds from 6 *chullpas* containing bones

[97] None of the bones in this cist, however, exhibited signs of red paint. The pigment on the hair was identified as cinnabar. As I state further below, remains with cinnabar were recovered from the nearby Sector B excavated *chullpa*. These findings raise the possibility that the hair fragment may have come from the *chullpa*, but this point is difficult to prove.

with pigment were dated (Figure 7.3). These dates suggest that red pigment application is associated with the LIP, Inca period, and possibly the early colonial period.

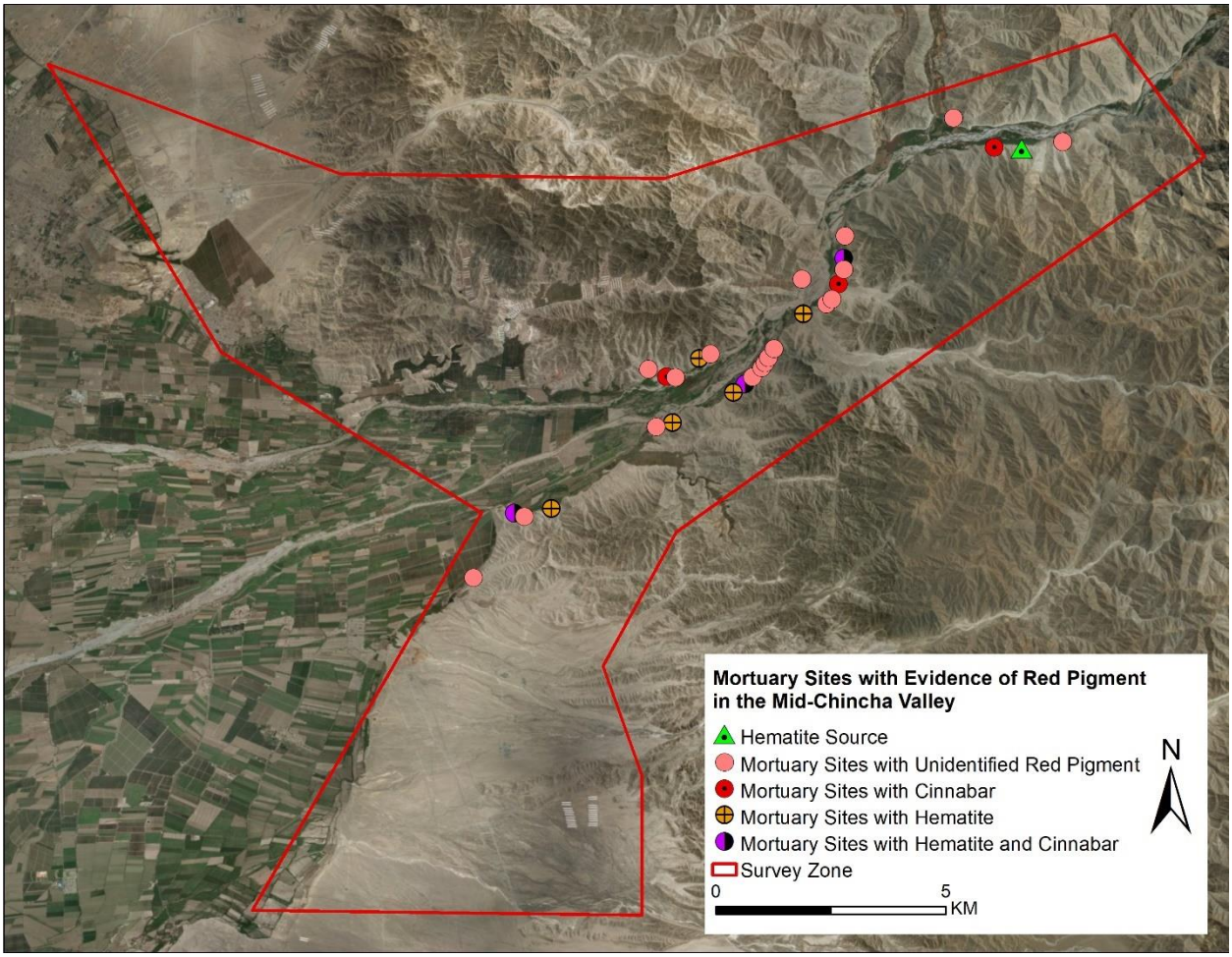

Figure 7.1: Distribution of mortuary sites with red pigment

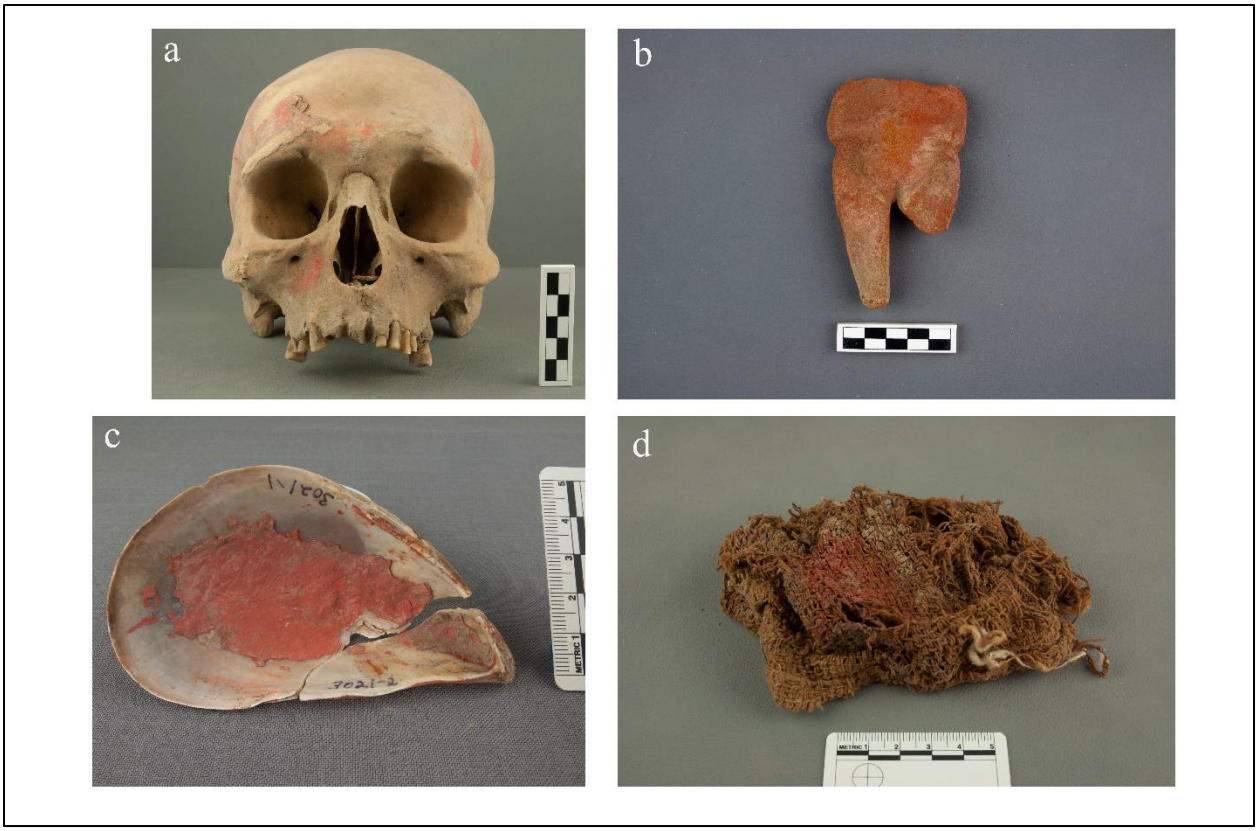

Figure 7.2: Red pigment on various media: a) a male cranium from UC-008 Tomb 1, b) a figurine recovered from UC-048, c) shell containers from UC-012, d) a textile from UC-008 Tomb 1

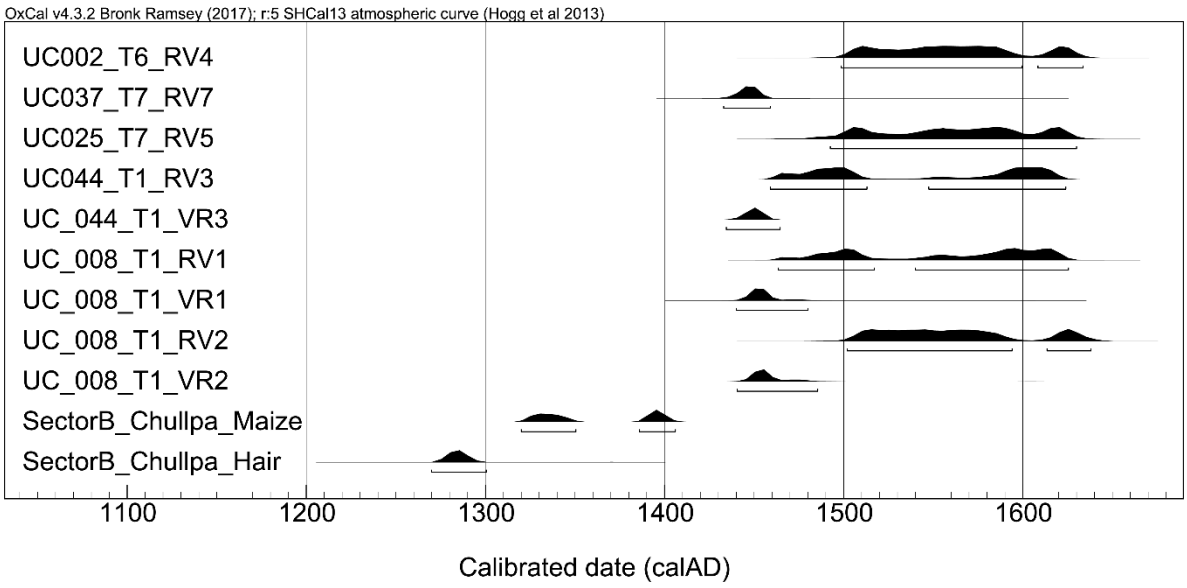

Figure 7.3: Unmodelled radiocarbon dates associated with *chullpas* that have red pigment. "RV" and "VR" denote "reed with vertebrae" and "vertebra on reed" respectively. Site names and tomb numbers are also provided.

XRF and XRD analyses were performed to identify 35 samples of this material recovered throughout the study area. These samples were collected from various "media" (e.g., human remains, textiles, a figurine, etc.) within 19 *chullpas*, 1 cist, and a copper and iron oxide source (Figure 7.4). Five of these samples were collected on remains discovered outside of *chullpas* and cists. Results of these analyses are shown in Appendix B. A summary of the data is presented here. Twenty-one samples have hematite, and fifteen samples have cinnabar (one sample has both hematite and cinnabar). Five mortuary sites have hematite, 3 have cinnabar, and 3 have cinnabar and hematite (Figure 88). Of the 27 crania and cranial fragments with identified red pigments, 17 have hematite and 10 have cinnabar. In UC-008 Tomb 1, one textile contains hematite and cinnabar, another textile has cinnabar, and the "bird pendant" has hematite. A figurine from the UC-048 cemetery has hematite. The sample from the copper and iron oxide

source has hematite, which confirms that this material was locally available to mid-valley groups. This may help explain why there are a higher number of samples with hematite than cinnabar.

Figure 7.4: Hematite and copper source in the study area

Bioarchaeological analysis of human remains from UC-008 Tomb 1 and the Sector B *chullpa* (U5-9) provides information on the distribution of pigment across anatomical groups and age and sex categories at the grave level. The MNI with red paint in UC-008 Tomb 1 (17) is much larger than that of the Sector B *chullpa* (3) (Figure 7.5). In UC-008 Tomb 1, four crania have cinnabar and one cranium has hematite. Only 12 elements (mostly cranial fragments) from

this Sector B grave show traces of red paint[98], one of which has cinnabar. In both graves, adults, juveniles, and several anatomical groups were painted (Figures 7.5 and 7.6). A relatively high percentage (31%) of cranial bones feature pigment. In terms of sex, both males and females exhibit traces of pigment in UC-008 Tomb 1 (Figure 7.6). At least one possible male with paint can be identified from the Sector B *chullpa*. These data suggest that different body parts, and perhaps entire bodies, may have been painted, and that red pigment application was not confined to any specific age or sex.

[98] This low sample size contrasts strongly with the higher number of remains with paint from UC-008 Tomb 1. This can be explained in a few ways. The fact that the grave is heavily disturbed is likely a contributing factor. Given that the grave dates to the LIP, another reason may be that red pigment usage was not predominant during this period.

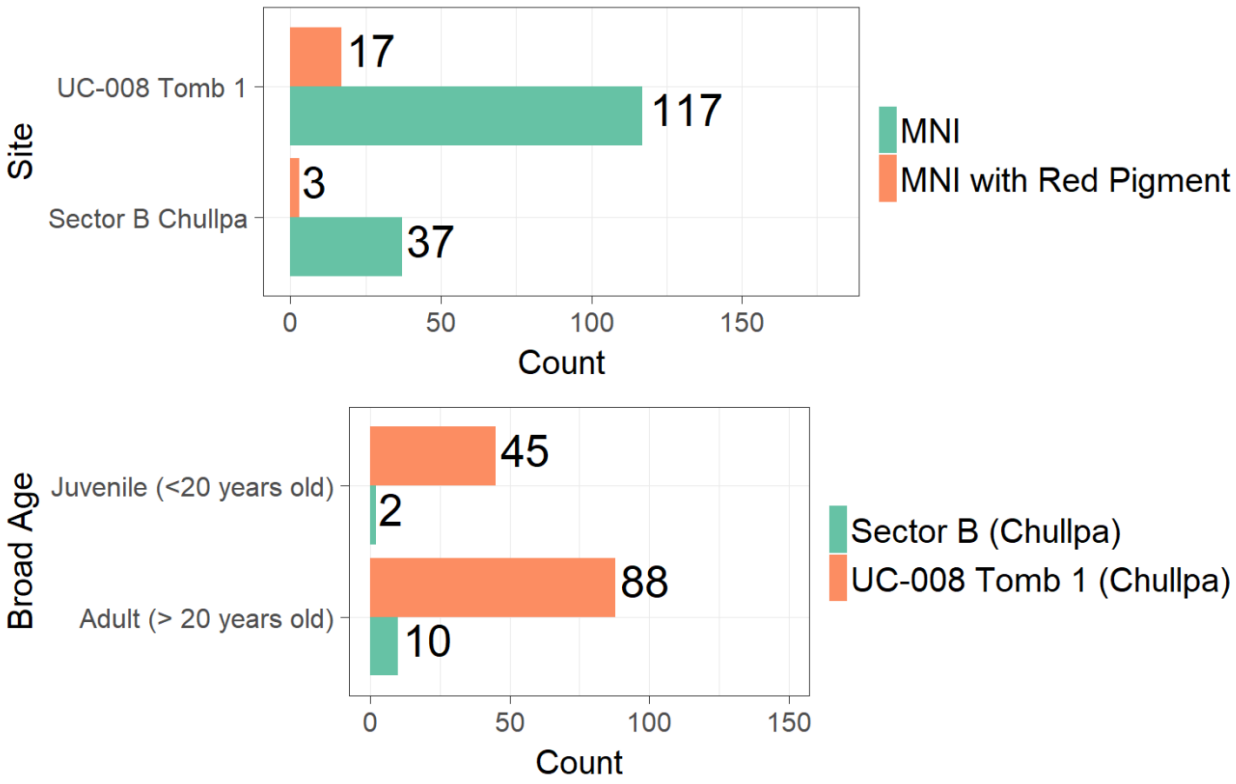

Figure 7.5: Two plots: one displaying counts of MNI and MNI with red pigment from both chullpas (above), and another displaying broad age categories and counts of elements with red pigment

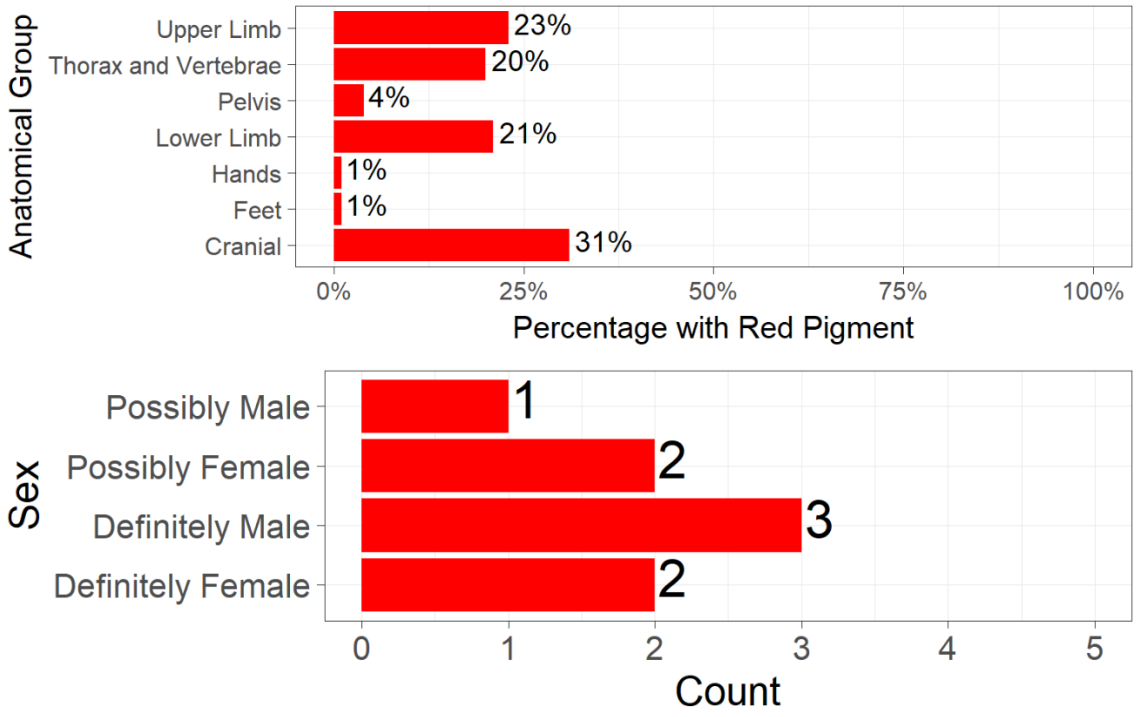

Figure 7.6: Two plots: one showing anatomical groups with red pigment from both targeted chullpas (n=136 elements) (above), and another displaying sex categories associated with red pigment from UC-008 Tomb 1 (below). Anatomical group data from both graves were combined because of the low sample size of remains with pigment from Sector B. Only sex data from UC-008 Tomb 1 is shown here for the same reason.

Bioarchaeological analysis of 27 elements (crania, cranial fragments, and a mandible) with identified minerals was conducted. These elements were found within and outside 18 *chullpas* (including UC-008 Tomb 1) across the mid-valley, and they were selected because they had clear traces of pigment. This analysis permits further exploration into the relationship between age, sex, and pigment in the study area. Results demonstrate that in the mid-valley, elements from adults, juveniles, males, and females were painted with hematite- and cinnabar-based pigments (Figure 7.7). Juveniles fall into 4 specific age categories (0-3 years, 4-7 years, 3-

6 years, and 12-20 years) and adults fall into 4 categories (20-35 years, 35-50 years, 35-50+ years, 20-50 years). Red pigment, however, was predominantly found on the remains of adult males[99]. Remarkably, 5 male crania and 1 possibly female cranium evidence of violent trauma were painted (Figure 7.8). Hematite was identified on 4 male crania and cinnabar was identified on the possibly female cranium. It is possible that some of these individuals were fighters, but whether they were local or nonlocal in origin requires further isotopic and ancient DNA (aDNA) analyses. These data recall written descriptions made by José de Acosta and Garcilaso de la Vega of red pigment being used by Andeans as warpaint. It cannot be confirmed whether this activity took place in the mid-valley, but these data raise the possibility that deceased individuals who may have once served as warriors were painted after death.

[99] This pattern may be a result of sample bias.

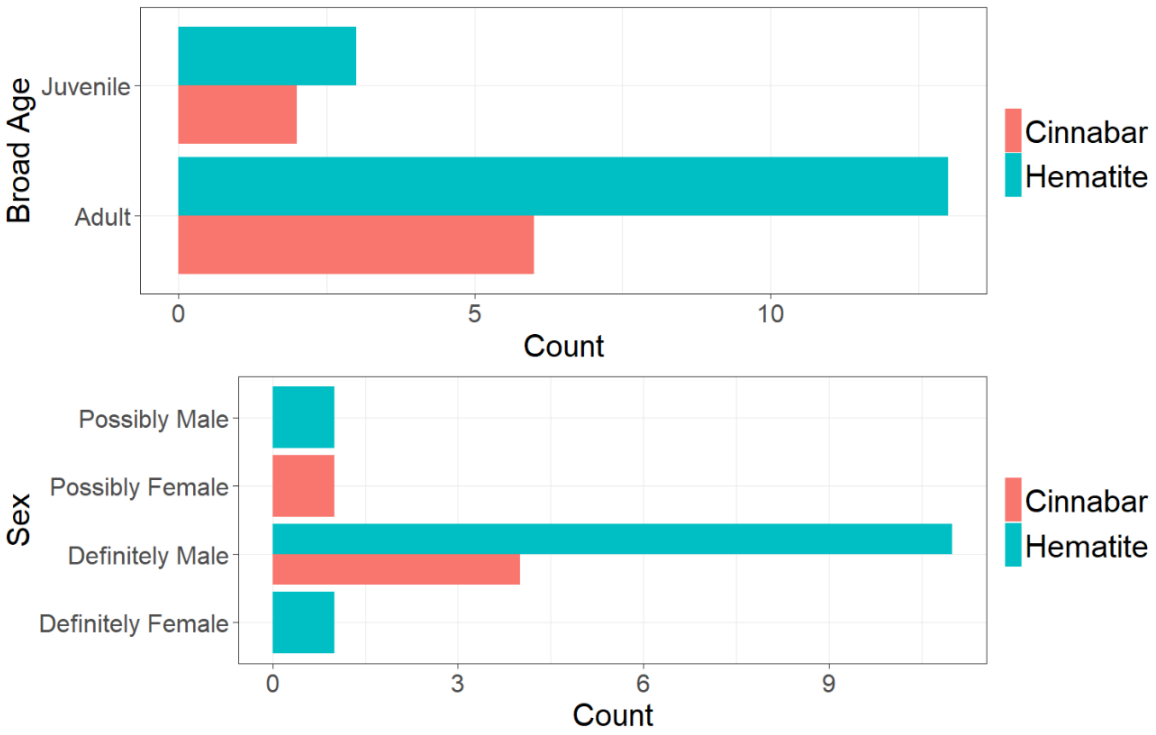

Figure 7.7: Plots showing broad age (above) and sex (below) categories associated with cinnabar and hematite. Twenty-four elements have broad age data, and eighteen elements have sex data.

Figure 7.8: Male cranium with red pigment and cranial fractures

Close examination of painted human remains revealed notable patterns. On at least 4 crania, the pigment has a “wet” appearance. The cinnabar observed in the shell containers also exhibits a wet and oily appearance (Figure 7.2). Some lines of paint are wide, and others are narrow and tapered. Drip marks were encountered on 2 crania (Figure 7.9). Traces of paint were observed on the inside surfaces of a cranium, in eye sockets (Figure 7.9), and at the base of the occipital bone. On one cranium, a textile was applied on top of the pigment, and the remaining pigment displays the negative impression of the textile (Figure 7.10). Many painted crania with traces of attached textiles were documented. Among our entire sample of painted bones from UC-008 Tomb 1 (130), 92% of these elements lack soft tissue. None of the painted crania from outside UC-008 Tomb 1 exhibit soft tissue. Lastly, none of the painted samples have cut marks.

Figure 7.9: A male cranium (724-17-13) with traces of red pigment in his eye sockets (above) and drip marks of pigment on the right zygomatic bone (bottom). Traces of pigment in the eye sockets are caused either by a liquid dripping or from red-pigmented fingers handling the cranium.

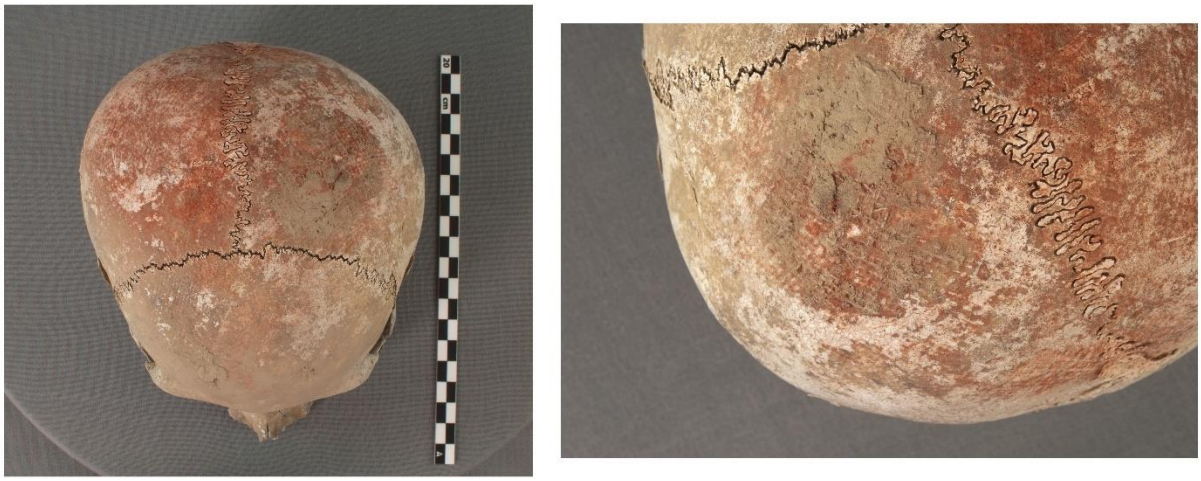

Figure 7.10: A cranium with red pigment and a negative impression of a textile

These data provide clues into *how* and *when* the pigment was applied. They suggest that it was applied in liquid form. To produce this liquid substance, some mid-valley groups likely followed the process described by Prieto et al. (2016, p. 57) and mentioned in a 16th century document (Jimenez de Espada, 1965 [1586], p. 304). Namely, they likely ground the minerals into powders with grinding stones (one of which was found at the UC-018 cemetery) and mixed them presumably with water in shell containers (two of which were recovered from the UC-012 cemetery). Other substances (perhaps plant- or animal-derived)[100] may have added to the mixture. In some cases, the pigment was wet enough to enable the textile to stick to the cranium (Figure 7.10). This implies that some painted crania were wrapped soon after pigment application.

[100]GC-MS analysis of a red pigment from the shell containers was conducted to see if any molecules associated with binders or other substances was present. The annotated chromatogram (Appendix B.63) does not show any molecules that can be from binders. Several peaks related to two molecules (methyl-glutaric acid and hydroxy-bufatrienolide) that are most likely from plants were observed.

Pigment markings indicate that pigment was applied with fingers, or perhaps wads of textile. They also show that crania were handled with pigmented fingers. The location of pigment on surfaces where it would not transfer to bone through the decomposition process (e.g., inner surface of the cranium) reveals that the paint was applied directly to the bone. The general lack of soft tissue on painted remains suggests they were kept in conditions that facilitated the decomposition process. That is, they may have been exposed for some time or not wrapped until after skeletonization. They likely naturally defleshed because no cut marks were encountered. These findings, however, do not rule out that pigment was applied to soft tissue. Indeed, a fleshed cranium with red paint was recovered from Las Huacas (Jordan Dalton, oral communication). It is possible that some human remains were painted *repeatedly* throughout the decomposition process. Menzel's (1976) model stating that individuals reentered graves in Ica to paint naturally defleshed bones can explain the red pigment data in the mid-Chincha Valley.

The Placement of Human Vertebrae on Posts

The most striking and peculiar form of postmortem manipulation in the mid-Chincha Valley is the placement of human vertebrae on reed and wooden posts (Figure 7.11). Initially, crewmembers and I believed that these composite artifacts were crafted by looters. Others may share this belief. To my knowledge, this specific practice has not been mentioned in previous reports published on Chincha Valley archaeology. These artifacts were found in association with disturbed graves. It is reasonable to be skeptical of these artifacts. One of the goals of this section is to make the following argument: it is *highly unlikely* that this practice was conducted by recent looters. The other is to lay the empirical foundation for models that can explain this behavior.

Consideration of the data discussed below suggests that the placement of vertebrae on posts was a legitimate, ancient mortuary practice performed by local mid-valley groups.

Figure 7.11: Reed posts with vertebrae from the study area

So far, 188 posts with vertebrae have been documented in the study area. They are found within and outside 88 *chullpas* built in 22 (50%) of the mortuary sites (Figure 7.12). These artifacts appear to be exclusively connected to *chullpas*; none were discovered in any of the cists. Nearly all the posts are reed (likely *Phragmites* sp.) with only one being wooden. On the survey, we encountered two wrapped in textiles and another two in association with disturbed textile bundles within a *chullpa* constructed in the UC-012 cemetery (Figure 7.13).

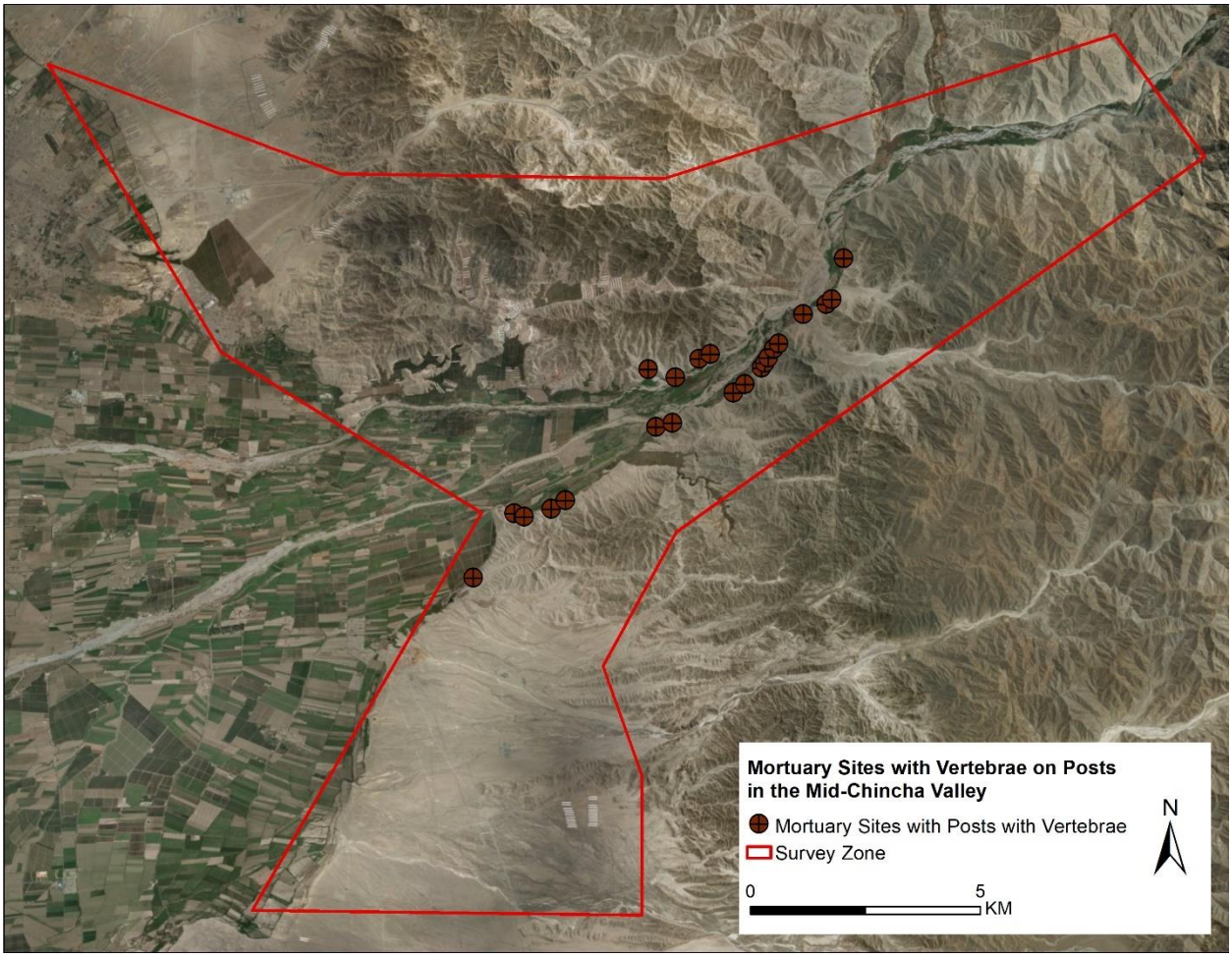

Figure 7.12: Distribution of mortuary sites with vertebrae on posts

Figure 7.13: Post with vertebrae in a disturbed textile bundle

Two sets of these artifacts were dated to glean insights into their chronology: the first set is composed of three vertebrae and the three reeds they were placed on from two *chullpas* (UC-008 Tomb 1 and UC-044 Tomb 1), and the second set is composed of six reeds from six different *chullpas* (UC-002 Tomb 6, UC-025 Tomb 7, UC-008 Tomb 15, UC-037 Tomb 7, UC-012 Tomb 53, UC-012 Tomb 25). In total, 12 dates were determined. Single-uniform and trapezoidal models[101] in Oxcal 4.3 were produced to analyze such dates. In the single-uniform model (Figure 7.14), these dates were integrated into a single-uniform phase of activity with starting and ending boundaries (Bayliss, 2009, p. 131). A KDE plot was incorporated into this phase. In the

[101] These models were also used to analyze dates from *chullpas* and cists.

trapezoidal model (Figure 7.15), dates from reeds with vertebrae were treated as a non-uniform (i.e., trapezoidal) phase of activity (Lee and Ramsey, 2012) with starting and ending boundaries.

Various important points can be made based on the results of this analysis. First, both sets of unmodelled ^{14}C dates collectively indicate that this practice is associated with the Inca Period and possibly the early colonial period. Second, the starting and ending boundaries of both models are mostly consistent with each other. The single-uniform model for reeds with vertebrae demonstrates that there is a 95% probability that this practice started between AD 1401 and 1455, and that this practice ended between AD 1508 and 1647. In the trapezoidal model, however, there is a 95% probability that this practice started between AD 1391 and 1474, and that it ended between AD 1505 and 1693. Furthermore, none of the *chullpas* dated to the LIP has evidence of posts with vertebrae. These findings strengthen the claim that this practice originated in the Inca Period and possibly continued into the early colonial period. They also raise the possibility that a new form of postmortem treatment of the dead emerged after the arrival of the Inca, signaling a major transformation in local mortuary practice coincident with imperial conquest.

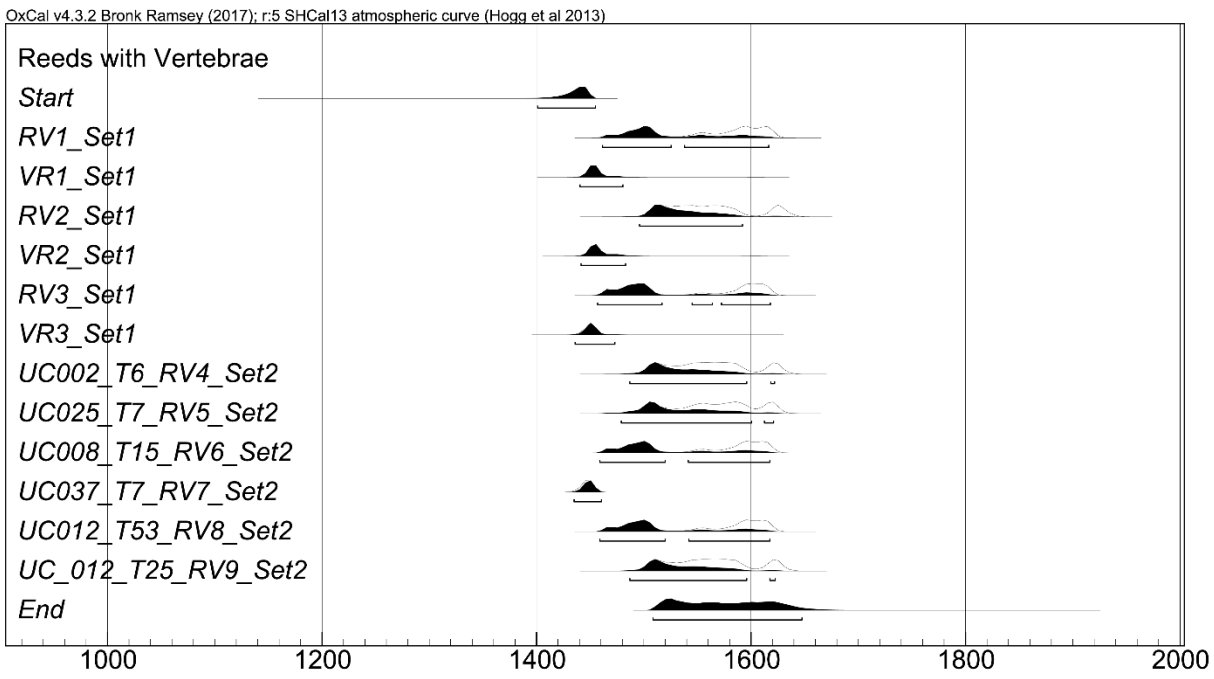

Figure 7.14: Single-uniform model of modeled dates (AD) associated with reeds with vertebrae. "RV" and "VR" denote "reed with vertebrae" and "vertebra on reed" respectively. Site names, tomb numbers, and set numbers are also provided.

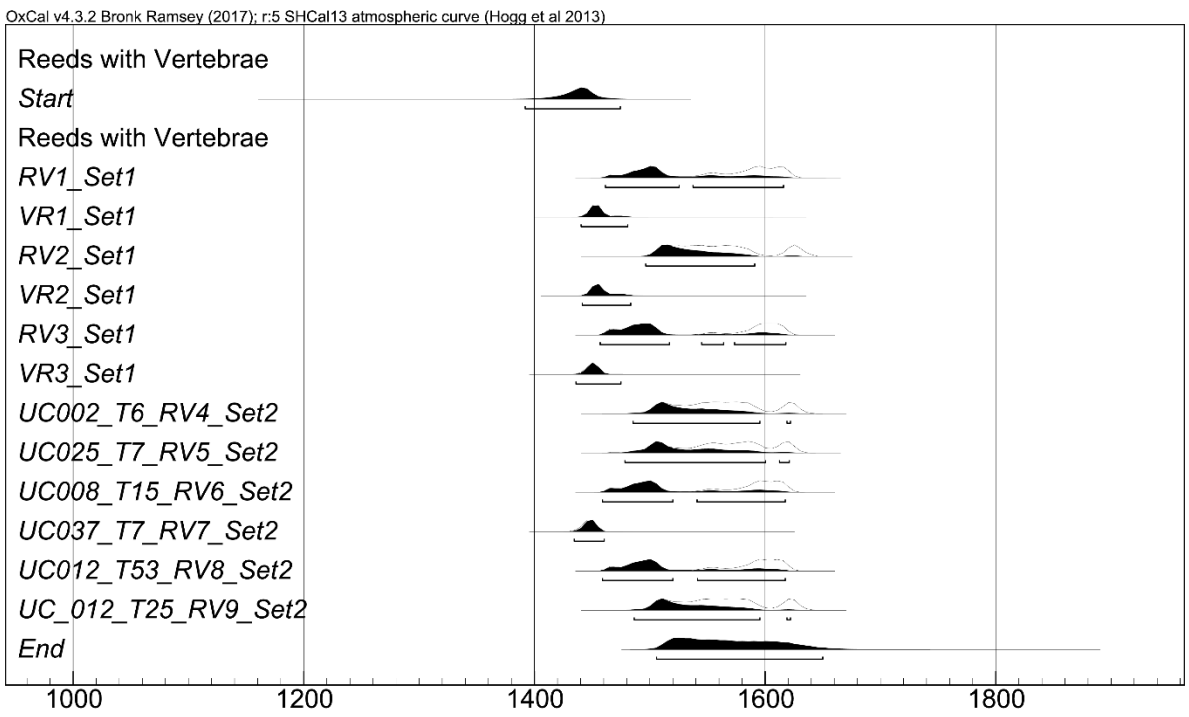

Figure 7.15: Trapezoidal model of modeled dates (AD) associated with reeds with vertebrae. "RV" and "VR" denote "reed with vertebrae" and "vertebra on reed" respectively. Site names, tomb numbers, and set numbers are also provided.

In addition, time differences between the reed and vertebrae dates of the first set were calculated using the "Difference" function in OxCal. This work provides an indication as to when these three vertebrae may have been placed on their respective reeds. It shows that reeds date multiple years later than the vertebrae: minimum time differences range from 3 to 24 years (Figure 7.16). Thus, it is plausible that these vertebrae were not immediately placed on the reed posts. It is assumed that the other undated vertebrae on the post would have been placed at the same time, but this needs to be tested.

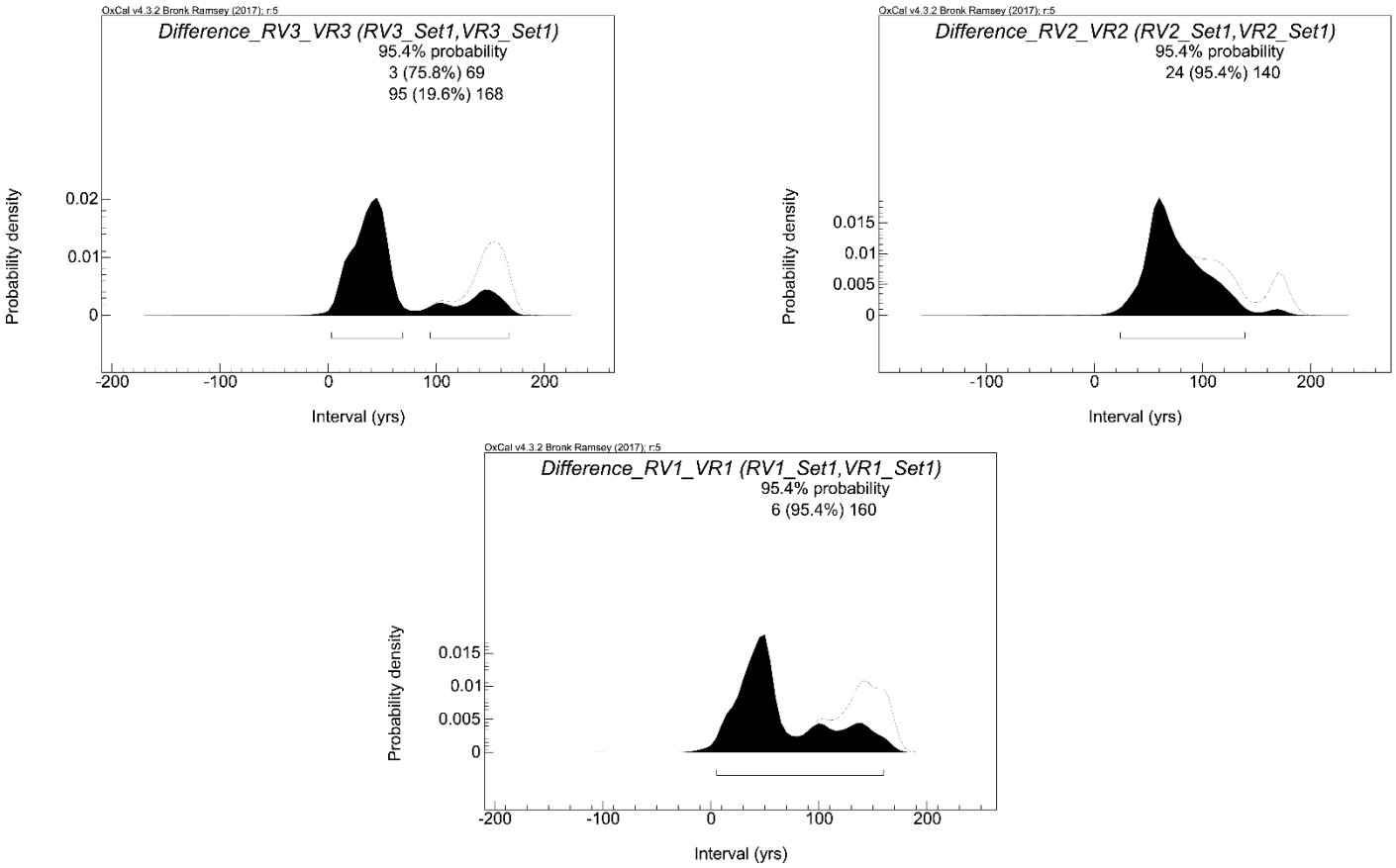

Figure 7.16: 95% confidence intervals for time differences between reed and vertebrae dates associated with 3 distinct posts

A total of 79 posts with vertebrae from across the study area were closely examined. Data on several attributes such as age, MNI, anatomical order, and articulation were gathered. Post length values (n=74) range from 10 to 50.50 cm, and the number of vertebrae on posts (n=79) range from 1 to 16. The correlation between post length and vertebrae count was assessed in R using Pearson's correlation coefficient with a statistical level (alpha) set to 0.05 (Figure 7.17). Although the results of this test (t = 3.57, df = 72, p-value = 0.00063) permit me to reject the null hypothesis (true correlation is equal to zero) and suggest that there is a correlation between vertebrae count and reed length, the Pearson's R value is 0.39. This low value means that the correlation is weak.

Moving forward, in our sample (n=79), most of these objects (34, 43%) have thoracic and lumbar vertebrae (i.e., thoracic/lumbar), and a few (18, 23%) have cervical vertebrae (Figure 100). The MNI is 1 for nearly all posts, with only one of them having an MNI of 2 (described further below). Data on anatomical order were collected from 67 posts, and they reveal that most (57) are either partially in anatomical order (i.e., at least 2 or more vertebrae are in order, but not all of them) or not in anatomical order at all (Figure 7.17). Vertebrae from several adult and juvenile age categories were placed on posts (Figure 7.17). Furthermore, nearly all artifacts have bones of similar—not mixed—age categories. Only the post with an MNI of 2 has vertebrae in three age categories (16-20/20-29/30+) and thus distinct levels of development, indicating that these remains came from at least an adult and a juvenile. Lastly, observations show that 1) 76 (96%) posts have disarticulated vertebrae, 2) 75 (95%) of them lack soft tissue, and 3) none of them have cut marks.

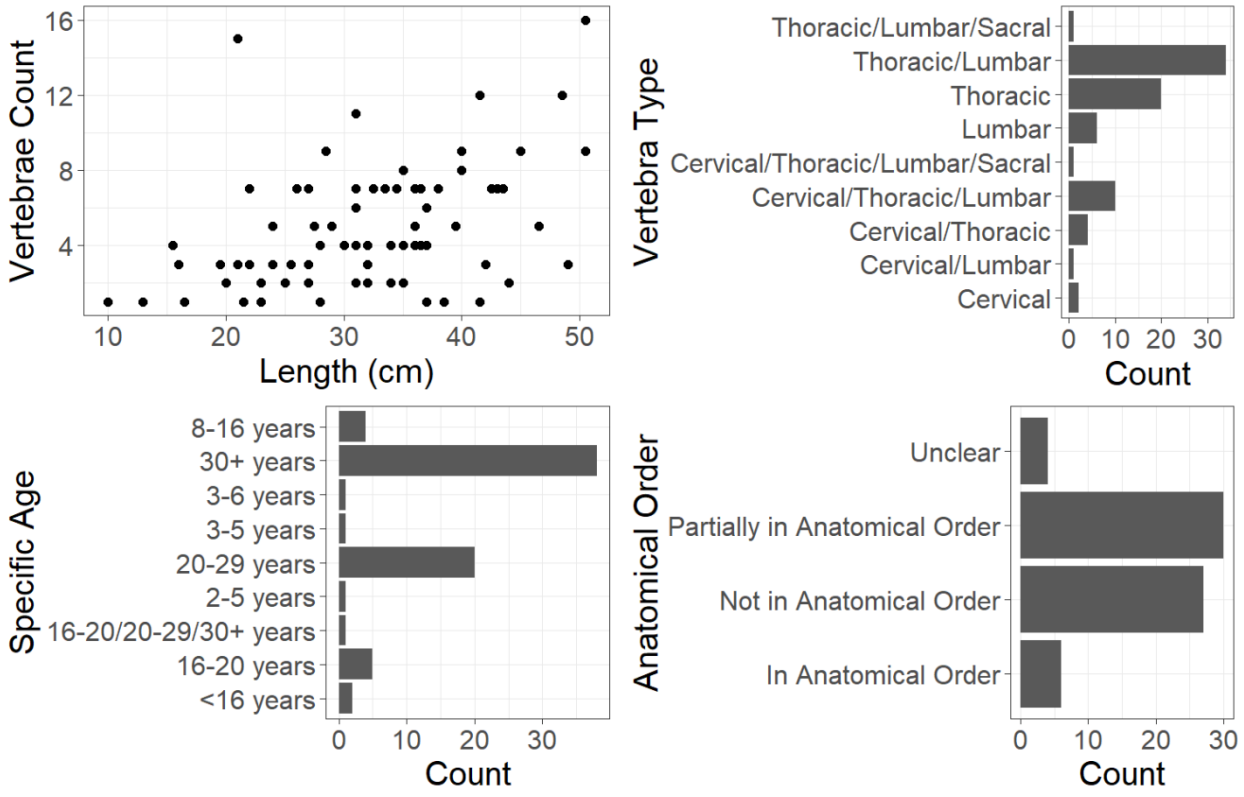

Figure 7.17: Plots with data associated with vertebrae on posts: distribution of vertebrae count and post length (cm) (n=74) (top left), b) vertebrae types and combinations on posts (n=79) (top right), c) specific age ranges observed on posts with vertebrae (n=73) (bottom left), d) categories of anatomical order observed on posts with vertebrae (n=67) (bottom right)

Before proceeding to start explaining these artifacts, I want to reaffirm my argument that it is highly unlikely that looters produced them. I make this argument for several reasons. First, the probability that looters put human vertebrae on reed and wooden posts across the entire survey zone is quite low. There is no evidence that looters arranged human remains in this way. Second, discovering that some of these artifacts were wrapped in textiles or found amid disturbed textile bundles indicates that they were incorporated into Chincha mortuary practices. Third, while ^{14}C dates may not be indicative of precisely when vertebrae were put on posts, the

fact that 12 such dates fall into the Inca Period and early colonial period strongly suggest this practice was not done recently. Fourth, this practice seems to have been somewhat systematic and ritualized in that vertebrae were selected, in part, based on age (i.e., most posts contain vertebrae of consistent ages). Lastly, this practice is not *entirely* without precedent. It bears a strong resemblance to a Chinchorro mortuary practice: maintaining the rigidity of a mummy's trunk by "threading the vertebrae on a wooden stick via the spinal canal (or placing the stick adjacent to the aligned vertebrae)" (Aufderheide et al., 1993, p. 191). Part of the stick functioned as an "anchor" for the head (Aufderheide et al., 1993, p. 191). Furthermore, the authors also discover that the vertebrae are not always in anatomical order and argue that because of this, perhaps the external form and appearance was more important than "anatomical precision" (Aufderheide et al., 1993, p. 191). While thousands of years separate these practices of placing vertebrae on posts, the similarities between them are striking. For all these reasons, I find it difficult to argue that this peculiar practice was done by looters. I proceed along with the understanding that this was a legitimate mortuary activity that originated in the Late Horizon.

The data reported so far clarify some potential explanations for *who* was selected for this practice and *how* this practice was conducted. These explanations pertain to general trends. Since vertebrae of consistent age categories from adults and juveniles were selected to be strung on posts, it is likely that these remains were collected from biological individuals. Selected adults and juveniles exhibit varying ages, demonstrating that, like the red pigment, this practice was not limited to any specific age. Given that 1) reeds date multiple years, at minimum, after the vertebrae and that 2) vertebrae tend to be disarticulated, not in any anatomical order, and lacking in soft tissue and cut marks, it appears that these remains were placed on posts at an advanced stage of decomposition. It follows then that remains treated in this way were likely kept in a

place that encouraged the disarticulation process to run its course. It is known that the vertebral column "is one of the last [body parts] to break up because of the strong costovertebral and intervertebral ligaments" (Pinheiro, 2006, p. 111). Cervical vertebrae, however, are considered labile elements that are typically left behind or lost during transportation of the deceased. The presence of these vertebrae alongside others on posts may imply that some of these remains were collected from primary depositions.

Mortuary Architecture and Treatment of the Dead

One of the questions at the core of this section is the following: what is the relationship between *chullpa* architecture (architecture for the dead) and treatment of the deposited human remains (dead bodies)? As demonstrated in chapter 6, mid-valley *chullpas* exhibit distinctive construction features, including interior benches, roofs, and openings. They were designed to be accessible, allowing individuals to enter and reenter these graves to deposit more and more deceased bodies and offerings. Some of these graves are arranged around, near, or in front of open spaces that would have been loci for gatherings. How can we characterize the types of associations (e.g., positive, negative, or random) between mid-Chincha Valley *chullpa* architectural attributes and forms of postmortem manipulation?

I selected (again) Pairwise co-occur analysis to address this question. I conducted three co-occur analyses of *chullpa* attribute data derived from two datasets: 2013 (n=554 *chullpas*) and 2016 (n=233 *chullpas*). In the first test, I evaluated the associations between the following attributes collected from *chullpas* in the 2013 dataset: opening, bench, open space, red pigment, and post with vertebrae. For the second test, I evaluated associations between attributes collected from *chullpas* in the 2016 dataset: plaster, roof, mortar, earthen facing, above-ground, red

pigment, and posts with vertebrae. In the third test, I assessed associations between the attributes listed in the second test but replaced “above-ground” with “subterranean.” The protocol previously outlined for this analysis in chapter 6 is followed here.

Results are displayed in three heatmaps (Figures 7.18 - 7.20)**,** each corresponding to a test (i.e., the first heatmap pertains to the first test, the second heatmap pertains to the second, etc.). The first heatmap demonstrates mostly positive associations between treatment of the dead and *chullpa* architectural attributes. Red pigment is positively associated with interior bench and open space and randomly associated with opening, while post with vertebrae is positively associated with all these attributes. In the second heatmap, both forms of postmortem manipulation are randomly associated with above-ground, earthen facing, roof, plaster, and mortar. The third heatmap indicates that post with vertebrae is negatively associated with subterranean, yet randomly associated with the other architectural attributes. Red pigment is randomly associated with all architectural attributes.

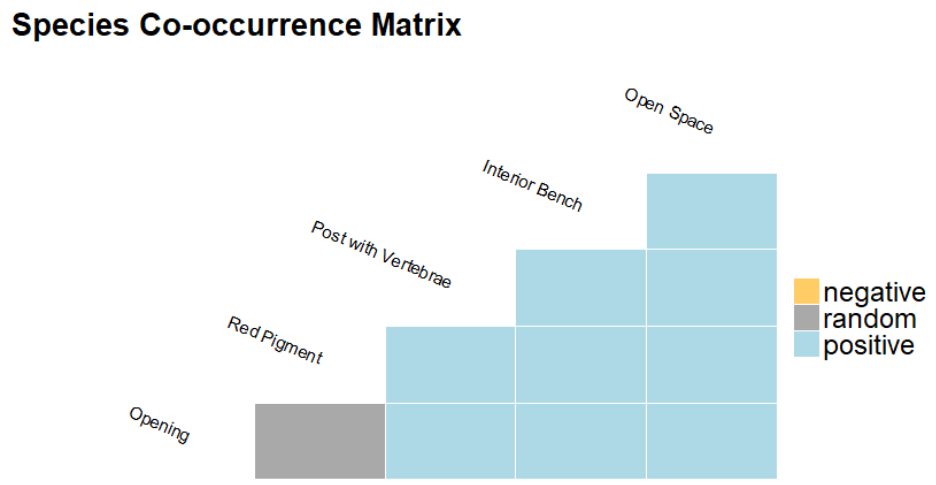

Figure 7.18: Co-occurrence matrices for *chullpa* treatment of the dead and architectural attributes (2013 dataset) (n=554 *chullpas*)

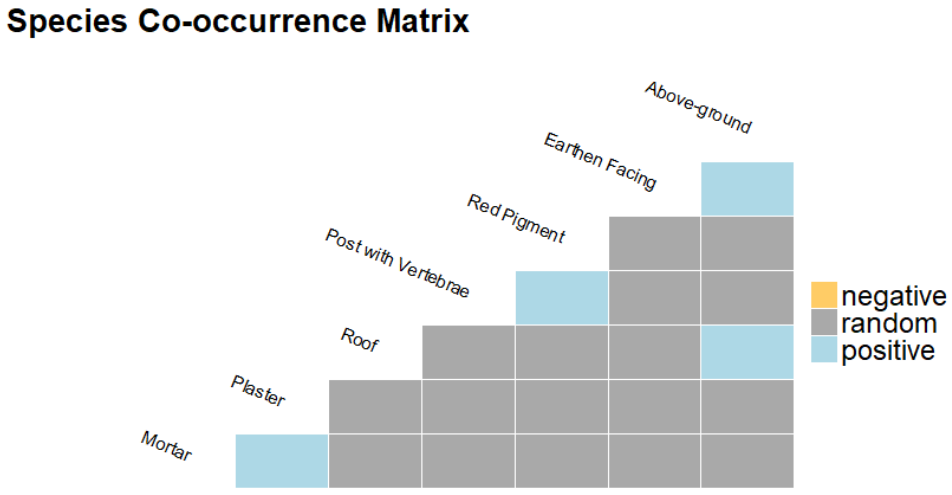

Figure 7.19: Co-occurrence matrices for chullpa treatment of the dead and architectural attributes (including the above-ground attribute) (n=233 *chullpas*) (2016 dataset)

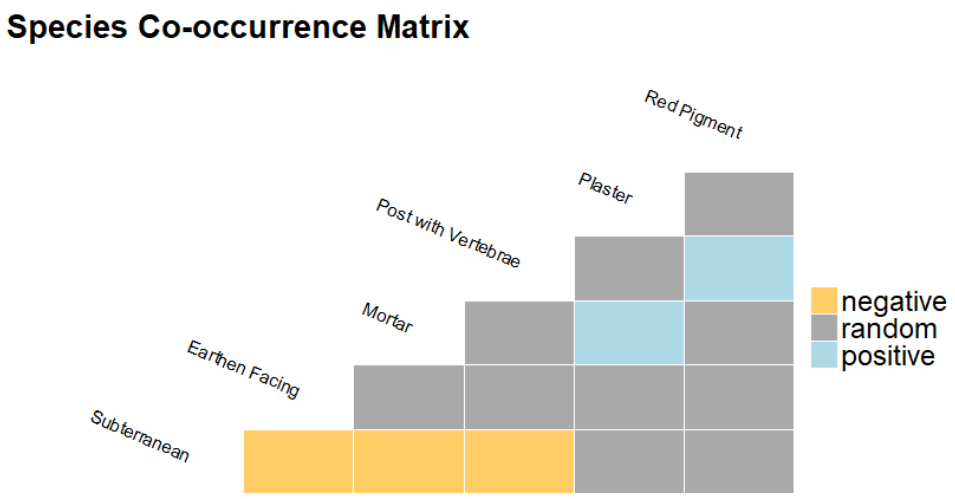

Figure 7.20: Co-occurrence matrices for *chullpa* treatment of the dead and architectural attributes (including the subterranean attribute) (n=233 *chullpas*) (2016 dataset)

These patterns develop understandings of the interplay between mortuary architecture and treatment of the dead in the study area. These data suggest that interior benches and open spaces may have been loci for treated human remains. Perhaps interior benches were not only used to display pigmented bones and vertebrae on posts, but also to prepare these remains. This same model applies to open spaces. Openings are only positively associated with posts with vertebrae, but not with red pigment. These results provide some support for models stating that individuals or groups stored posts with vertebrae in accessible *chullpas* which would, in turn, permit reentry to create, modify, and/or reuse these objects. The lack of a positive association between red pigment and opening does not necessarily invalidate notions that mid-valley people deposited painted remains in accessible *chullpas* or reentered them to paint their deceased. This is because the number of *chullpa* openings documented is certainly underestimated (i.e., *chullpas*

recorded as not having openings likely had them, but severe grave damage made visual confirmation of opening presence difficult). Additionally, the negative association between posts with vertebrae and the subterranean construction style is insightful. It demonstrates an underrepresentation of these objects in subterranean *chullpas,* which may be the result of a preference for placing them in above-ground *chullpas*. The association between the above-ground and post with vertebrae attributes, however, is random, which does not automatically refute the previous model.

The positive associations between open space and postmortem manipulations of the dead in the mid-Chincha Valley prompted further analysis. Among 9 mortuary sites in the study area, I assessed correlations between 1) total open space size (ha) and number posts with vertebrae (test 1) and 2) total open space size (ha) and MNI with red pigment (test 2) (Figure 7.21). The statistical level (alpha) was set to 0.05. Positive, relatively strong correlations were found in both tests. The Pearson's R values for test 1 ($t = 2.59$, $df = 7$, p-value = 0.036) and test 2 ($t = 2.41$, $df = 7$, p-value = 0.047) are 0.70 and 0.67 respectively. Although the sample size is low (n=9 cemeteries), these results are tantalizing, suggesting a possible relationship between open space size, number of posts with vertebrae, and MNI with red pigment. That is, cemeteries with larger total sizes of open spaces tend to have higher numbers of posts with vertebrae and higher numbers of individuals with red pigment, and vice versa.

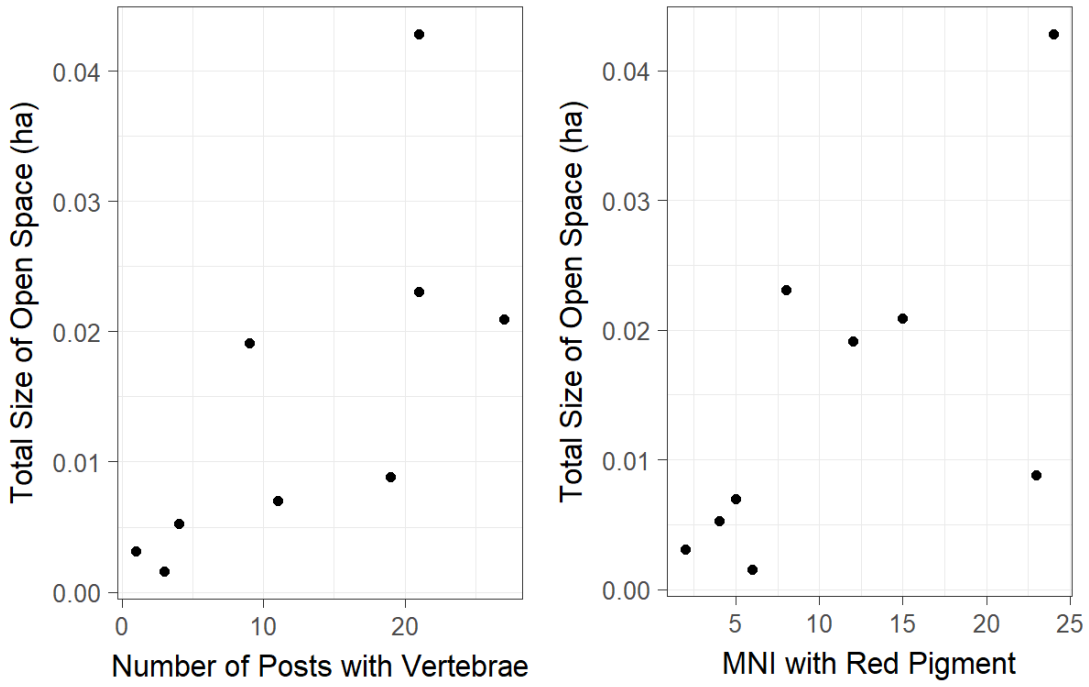

Figure 7.21: Two scatterplots: one displaying distributions of total size of open space (ha) values and number of posts with vertebrae (left), and the other showing distributions of total size of open space values and MNI with red pigment (right)

Modeling and Interpreting Mid-Chincha Valley Treatment of the Dead

I close this chapter with a model (Figure 7.22) of extended mortuary practice that incorporates red pigment application and the placement of vertebrae on posts, and a discussion of various other interpretations for these treatments of the dead. As stated before, data related to both predominant manipulations of the dead suggest that these practices, in general, occurred during advanced stages of the decomposition process (i.e., during or after skeletonization). This raises a critical question: where were the dead deposited during decomposition? One of the arguments that the model of extended practice, described below, rests on is the following: *chullpas* served as 1) "staging areas" where dead bodies were initially deposited (i.e., curated)

for excarnation before being subjected to postmortem manipulation and 2) places of final deposition for treated remains.

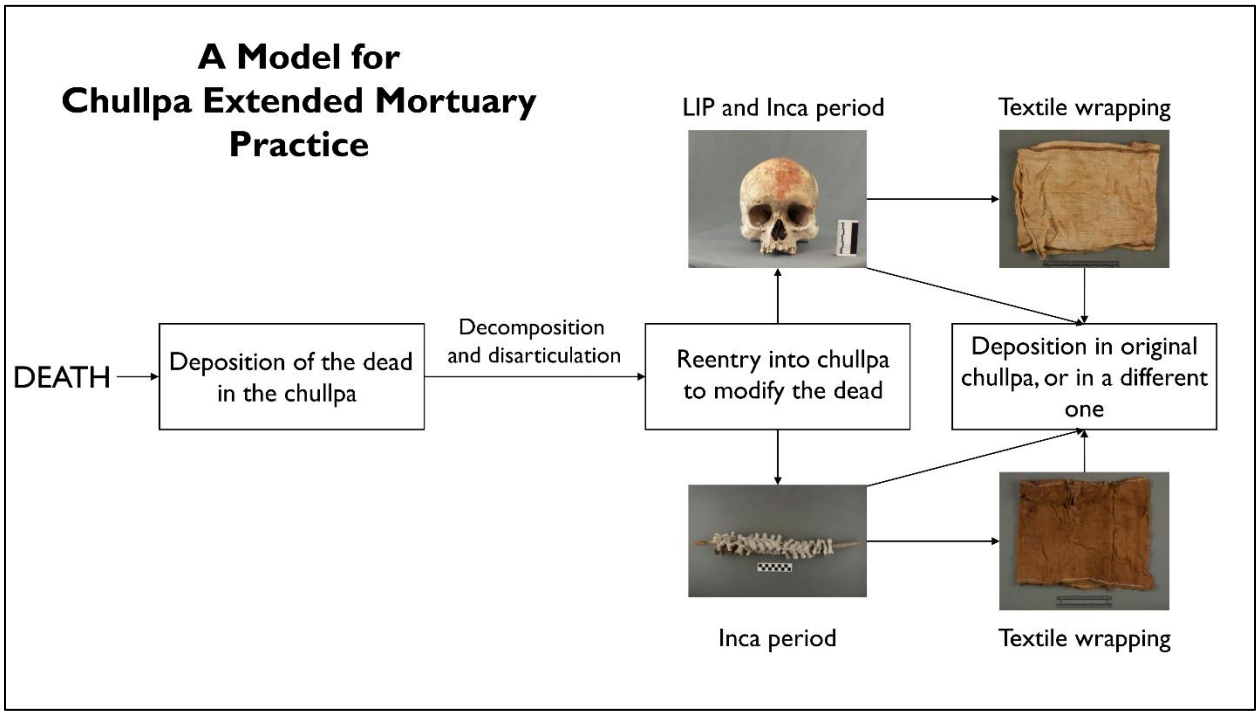

Figure 7.22: A model for *chullpa* extended mortuary practice

I make this argument for a few reasons. High numbers of labile bones were found in UC-008 Tomb 1, the Sector B *chullpa*, and the *chullpa* in the UC-012 cemetery selected for a previous analysis (Weinberg et al., 2016, p. 140), signaling that these *chullpas* (and perhaps others in the study area) contained at least some primary depositions of the dead. Pupal casings have been recorded alongside human remains in several *chullpas*, which reflects that some bodies and/or body parts were "exposed for some time" (Verano, 1995, p. 195). The interior benches and openings in *chullpas* indicate that some of the dead were likely arranged, exposed, and accessible in these tombs, *and* likely not immediately buried. It cannot be ruled out that the dead were temporarily stored in another structure (e.g., a charnel house) that facilitated

skeletonization (or mummification) (Nelson, 1998, p. 207) before being moved to a *chullpa*, but research to date has not identified such a structure in the mid-Chincha Valley. Whether groups deposited human remains within a grave for decomposition or stored them elsewhere and subsequently moved them the grave after decomposition, it is important to point out that treated and untreated remains were still being deposited in *chullpas*, ensuring that they would be accessible to the living.

In the following model, I argue that *chullpas* were built for extended mortuary practices that featured tomb reentry and postmortem treatments of the dead. Some—not all—of the dead were chosen for this process. First, locals deposited the dead body in a *chullpa* for excarnation. Red pigment may (or may not) have been applied to the soft tissue. Near the end of, or after, skeletonization and disarticulation[102], they reentered the *chullpa* to modify the dead. Our data show that local groups applied red pigment to bones, which may not have been the first layer of pigment. During this stage, they placed vertebrae on reeds Modified dead were then wrapped in textiles, or not, and they were either left in the *chullpa*, taken to an open space for a ceremony, or deposited in a separate *chullpa*. Although different choices could have been made and alternative models cannot be ruled out, I argue that this model strongly coincides with our available data.

There are several possible models that explain how and why mid-valley groups painted their dead and placed vertebrae on posts. Hematite and posts (reed and wooden) were acquired locally in the study area while nonlocal cinnabar, likely from the Huancavelica mines, was likely acquired through exchange. It appears that these treatments, part of extended mortuary practices

[102] For environments comparable to the Chincha Valley, skeletonization can occur as little as one week after death, or, more generally, a few weeks to months (Nelson, 1998, p. 204).

occurring over time, marked a transition from one status to another for select—certainly not all—members of the deceased. The disaggregation of certain deceased may have been intentionally encouraged to facilitate this transition. Since some deceased were painted with and without soft tissue, this status may have only been reached and recognized immediately after death or considerable time after. Most vertebrae were strung on posts after they naturally skeletonized and disarticulated, and radiocarbon data[103] indicate that this activity may have taken place as many as 24 years after the time of death.

This new status likely coincided with a distinct, interactive relationship that the living entered with these deceased. This relationship was materialized by painting the dead and placing vertebrae on posts, and in so doing, I argue that the living produced new deceased persons, or as Lau (2015, p. 202) states, "person-objects." Moreover, these manipulated remains can be viewed as modified forms of material culture and symbols that may be associated with sociopolitical hierarchy, belief systems, group membership, or powerful values and concepts (Chesson, 1999; Hertz, 1960 [1907]; Martínez et al., 2012). For instance, red color is tied frequently to blood, fertility, abundance, and social continuity, concepts shared by many past societies (Duarte, 2014; Prieto et al., 2016, pp. 58–59; Quilter, 2014). The meanings behind vertebrae, however, are elusive. One may leap to characterize both treatments as forms of ancestor veneration, but this model does not fully explain such practices because they were not reserved for any specific age or sex (i.e., the remains of juveniles who were more likely to not ancestors were painted and put on posts).

[103] I make two assumptions here: 1) ^{14}C dates of the vertebrae indicate an approximate time of death and 2) ^{14}C dates of reeds approximate when it was cut for use.

It is also likely that the dead were manipulated as part of ceremonies that took place in open spaces. As my analysis demonstrates, open spaces are positively associated with *chullpas* that contain painted remains and posts with vertebrae, and direct correlations exist between 1) total open space size (ha) and MNI with red pigment and 2) total open space size and posts with vertebrae. Andean societies, specifically ones in *Chinchaysuyu,* have been described as repeatedly bringing out their mummies for processions and ceremonies (Guamán Poma de Ayala, 2009 [1615], pp. 227–228). Mummies have been recorded in some graves (e.g., UC-008 Tomb 1), raising the possibility that they were brought out for special events in the study area. And yet the image of the Inca Period mummy is "excessively powerful in Andean archaeology, becoming an untested assumption for interpreting earlier mortuary remains" (Isbell, 2004, p. 28). Not every member of the deceased was mummified in the study area, and it is not likely that the processions and ceremonies involving mummies were the norms in the study area. Other explanatory models need to be explored.

Consideration of data on mid-valley postmortem manipulation suggests that modified remains were employed as naturally defleshed and disarticulated (i.e., not mummified) objects of display for ceremonies held in forecourts and plazas. Chesson (1999, p. 142) offers a theoretical description of what some of these ceremonies would have been like that echoes the description of a *Chinchaysuyu* mortuary procession (Guamán Poma de Ayala, 2009 [1615], pp. 227–228). These events would have required planning, coordination, and cooperation among large numbers of people from within and outside the community, involving, at times, "the transport or modification of the remains of the deceased" (Chesson, 1999, p. 142). Wooden and reed posts would have facilitated the transportation of the vertebrae to open spaces. Painted remains may have been placed on reed litters and brought to the site of ceremonial activity. Moving forward,

these events would have also entailed “moments of spectacular visual communication” (Weiner, 1976, p. 61) in which participants would be able to reproduce sociopolitical relationships “in the context of reasserting the structures and worldview of the living community” (Chesson, 1999, p. 142). Indeed, the sight of a group of people displaying posts with vertebrae and painted bones in a forecourt or plaza would have been visually provocative. I suggest that mid-valley people coordinated to manipulate the deceased for ceremonies of varying scale (e.g., private, family-oriented affairs in forecourts and public, community-wide events in plazas) that would have in turn, reasserted sociopolitical relationships among and between groups.

Notions of Andean partibility (*rakiy*) (Allen, 2015) and the partible deceased person (Salomon, 2015) may relate to mid-valley postmortem manipulation of the dead, specifically the posts with vertebrae. *Rakiy* denotes the idea of a “division of a whole,” and if applied as an explanatory concept, in this case, it can embody how local groups may have conceived of their dead: as partible beings (like plants) whose parts (e.g., vertebrae) would have needed to be managed and cultivated (Salomon, 2015, p. 340). As some dead bodies decompose and disarticulate, whether intentionally or unintentionally, would these developments limit their “use” in the affairs of the living? Did these bodies require manipulation to ensure access to the afterlife, or perhaps to render them “useful” in ritualized and ceremonial activity? These forms of postmortem manipulation underscore a distinction between biological and social death: the deceased may have been biologically dead and disintegrated, but they, or at least a few of them, continued to live social lives, possibly exerting a powerful influence over economic productivity and group integrity. This postmortem status of the dead may have required monitoring and treatment on behalf of the living. Faced with disaggregated members of the deceased, local groups may have painted them and strung their vertebrae on posts as forms of what Salomon

(2015, p. 343) describes as "metonymic gestures." In this view, painted crania (and other remains) and vertebrae strung on posts may have been *pars pro toto* for entire bodies of influential deceased and thus powerful objects of display during ceremonies. When the manipulated remains reached social death, they were wrapped in textiles and deposited in *chullpas*.

There are alternative, although not necessarily mutually exclusive, models for explaining the placement of vertebrae on posts. I suggest that mid-valley groups conducted this practice to bring back socially significant remains (i.e., vertebrae) of individuals who died away from their communities for deposition and (perhaps subsequent burial) in *chullpas*. In this model[104], local groups would have traveled to the place of death, strung already decomposed and disarticulated vertebrae of the deceased on a post, and either carried the artifact to the selected *chullpa* or placed it in a textile bundle alongside other remains before transporting the bundle to the *chullpa*. This model recalls mortuary practices conducted in Europe during the Middle Ages[105]. In cases of warfare or death, some scholars (Hogue, 2006; Johnson et al., 1994; Rhodes et al., 2016) argue that bundling the deceased can facilitate transportation of their remains to another location. Indeed, evidence of widespread violent conflict (e.g., cranial trauma, weapons, fortification

[104] This model is influenced by a recent hypothesis proposed by Lozada et al. (2018) that explains the function of culturally modified heads—affiliated with the La Ramada tradition—recovered from the Vitor Valley of Peru. They hypothesize that these culturally modified heads were from male fighters who died away from home, and that they were brought back for subsequent curation and burial.

[105] Estella Weiss-Krejci (2005) explains that during the Middle Ages, relics of royal dead (e.g., teeth, hair, and bones) were exhumed and taken by individuals. Some royal corpses became canonized and later exhumed in "rituals of translation" in which certain relics were distributed (Finucane, 1981, pp. 52–53). For instance, after the corpse of French King Louis IX was canonized, the upper part of the head was given to Saint-Chapelle, a rib was given to Notre-Dame, and the chin, teeth, and mandible were left at Saint-Denis (Weiss-Krejci, 2005, p. 170). In fact, Philip IV, grandson of King Louis IX, even presented one of Louis' finger joints to the king of Norway (Weiss-Krejci, 2005, p. 170). These examples illustrate the role disarticulated human remains can play in structuring sociopolitical relations.

walls) has been recovered in the mid-Chincha Valley, and posts with vertebrae have been observed in association with disturbed textile bundles (Figure 7.13). If vertebrae on posts came from fallen combatants who presumably died away from home, we would expect these remains to be from adult males. Although we do not have sex data associated with vertebrae, these remains are predominantly adult. It remains plausible that posts with vertebrae served a more practical function: facilitating the transportation of the dead to *chullpas*.

I also propose that mid-valley peoples may have placed vertebrae on posts to "reconstruct" the dead as a response to Spanish looting. It is critical to point out that most unmodeled probability distributions of radiocarbon dates of reed posts include the early colonial period, and a reed post with a vertebra and a colonial-era bead were recovered from a grave at the site of Jahuay (Jo Osborn, oral communication). Since there are clear associations between the early colonial period and posts with vertebrae, how can these connections shape our interpretation of this practice? During this period, Cieza de León (1959 [1553], p. 347) reports that "there was an enormous number of graves in this valley in the hills and wastelands. Many of them were opened by the Spaniards, and they removed large sums of gold." Given that the mid-Chincha Valley is an area bracketed by foothills that features a high density of graves, it may represent the "hills" mentioned by Cieza. I assume that the Spanish participated in the looting of mid-valley graves. When the Spanish eradicated Andean mortuary practices by looting Andean graves and destroying mummified ancestors, some local groups reconstituted new cult images by covertly salvaging body parts (e.g., hair, nails) (Lau, 2015, pp. 231–232). This "resourceful redefinition of the ancestral (e.g., conopas, mallquis, huacas, and mountains) was part of the drastic post-conquest upheaval in local ritual systems and cosmologies" (Lau, 2015, pp. 231–232).

In this vein, I argue that Spanish looting of mid-valley graves likely prompted local groups to reenter *chullpas* to restore and reconstitute their dead by placing vertebrae on posts. Such efforts may indicate that mid-valley peoples valued articulated and intact bodies and/or textile bundles containing most, if not all an individual's body parts. From this perspective, looting may have physically disaggregated the remains of the dead and disturbed their potency. I suggest that the placement of vertebrae on posts was part of a multi-community, valley-wide, and perhaps coordinated effort to restore the potency of dead in response to Spanish incursion. These actions would have reconstituted and transformed the dead *as well as* living-dead relations, providing a political opportunity for some to redefine social structures in their interest.

Strikingly, similar "reconstructions" of the dead interpreted as responses to grave disturbance have been observed outside of the Andes. For example, Aufderheide et al. (1999) and Aufderheide et al. (2004) report on the discovery of Late Ptolemaic and Roman Period mummies from cemeteries at Ismant el-Kharab in Egypt's Dakhleh Oasis. These mummies were deposited in roughly 2 x 3 m chambers cut into sandstone terraces. Like *chullpas*, these graves feature openings formed by upright stones and a stone lintel (Aufderheide et al., 2004, 1999). They observed torn wrappings, disarticulated heads, fragmented bodies, and commingled bones that testify to extensive looting in antiquity (Aufderheide et al., 2004, p. 64). They found that wooden sticks, resin, linen, and combinations of body parts from more than one mummy were used to reconstruct previously disturbed bodies, presumably following grave reentry (Aufderheide et al., 2004). Reconstructions involved the splinting of body parts with palm-leaf ribs, which were frequently inserted into spinal columns (Aufderheide et al., 2004, 1999). This practice recalls the mid-Chincha Valley reed posts with vertebrae. Body integrity appears to have been crucial at Ismant el-Kharab: "The presence of an intact body presented in an appropriately-

wrapped bundle must have had profound meaning to those carrying out these reconstructions" (Aufderheide et al., 2004, p. 72). Although I exercise caution in drawing cross-cultural connections between the mid-Chincha Valley and Ismant el-Kharab, the similarities in grave architecture, circumstances (e.g., looting), and mortuary practices (e.g., grave reentry, manipulation of disturbed human remains) from both contexts are notable, raising the possibility that indigenous groups in these areas valued body integrity.

There are certainly other ways to explain the cultural modification of the deceased in the mid-Chincha Valley, but I argue that the above interpretations accord well with the data and what is known about Andean cultural contexts and mortuary practice.

CHAPTER 8

SUMMARY AND CONCLUSIONS

The overarching question driving this study is not *whether* there is a relationship between mortuary practice and profound sociopolitical change. On the one hand, mortuary behavior—considered here as a materialization of "religion at work"—represents one of the most predominant forms of cultural practice in human society. On the other, profound sociopolitical change, which can be precipitated by several processes, including conquest, migration, and environmental catastrophe, can significantly impact cultural practices. Social science research demonstrates that mortuary practice can certainly be an indicator of dramatic cultural transformations (M. Aldenderfer, 1993), but in some societies, especially ones where the world of the deceased serves as the basis for the world of the living, it can be constitutive of them. The broad question of interest is how the recursive interplay between mortuary practice and sociopolitical change manifests in ancient societies of varying complexity across time and space. Although this study does not fully answer this question, it contributes to a comparative ethnology to do so. It provides an Andean case study of how local groups in the mid-Chincha Valley conducted and developed their mortuary practices before and during Inca imperial conquest of the area in the 15th century.

In closing, I summarize salient findings, evaluate the hypotheses, highlight key contributions, and detail some future directions that the study can take.

Evaluation of Hypotheses and Summary of Salient Finds

For this investigation, a multi-year, multi-scalar, and interdisciplinary research design was developed to approach a well-preserved mortuary landscape. Results from regional and targeted fieldwork as well as laboratory analyses, conducted over the course of five seasons (2013-2017), enabled me to fulfill my research goals, address my research questions, and evaluate my hypotheses. Only salient findings that relate to these goals and hypotheses are summarized here.

Research Question #1**:** *How did local groups in the mid-Chincha Valley treat their preexisting mortuary practices after the Inca arrived in the early 15th century?*

Hypothesis #1a**:** *Local groups maintained preexisting forms of mortuary practice after the Inca arrived in Chincha*

Hypothesis #1b**:** *Local groups transformed preexisting forms of mortuary practice after the Inca arrived in Chincha*

Radiocarbon data from *chullpas* and cists indicate patterns of continuity, change, and innovation in local mortuary practices (Figure 8.1). Use of both grave types spans from the 13th century (LIP) until the 17th century (early colonial period). Single-uniform and trapezoidal models of 25 dates from *chullpas* and cists illustrate several patterns and permit estimates as to when *chullpa* and cist traditions may have started and ended. Both grave types were used during the LIP. The end of the cist phase coincides with the beginning of the Late Horizon. The *chullpa* phase endured longer than the cists. It continued from the LIP to the Late Horizon, ending sometime within the early colonial period. Moreover, red pigment application was shared by

several mid-valley groups and maintained from the LIP through the early colonial period. It does not seem to have been significantly impacted by the Inca conquest. Single-uniform and

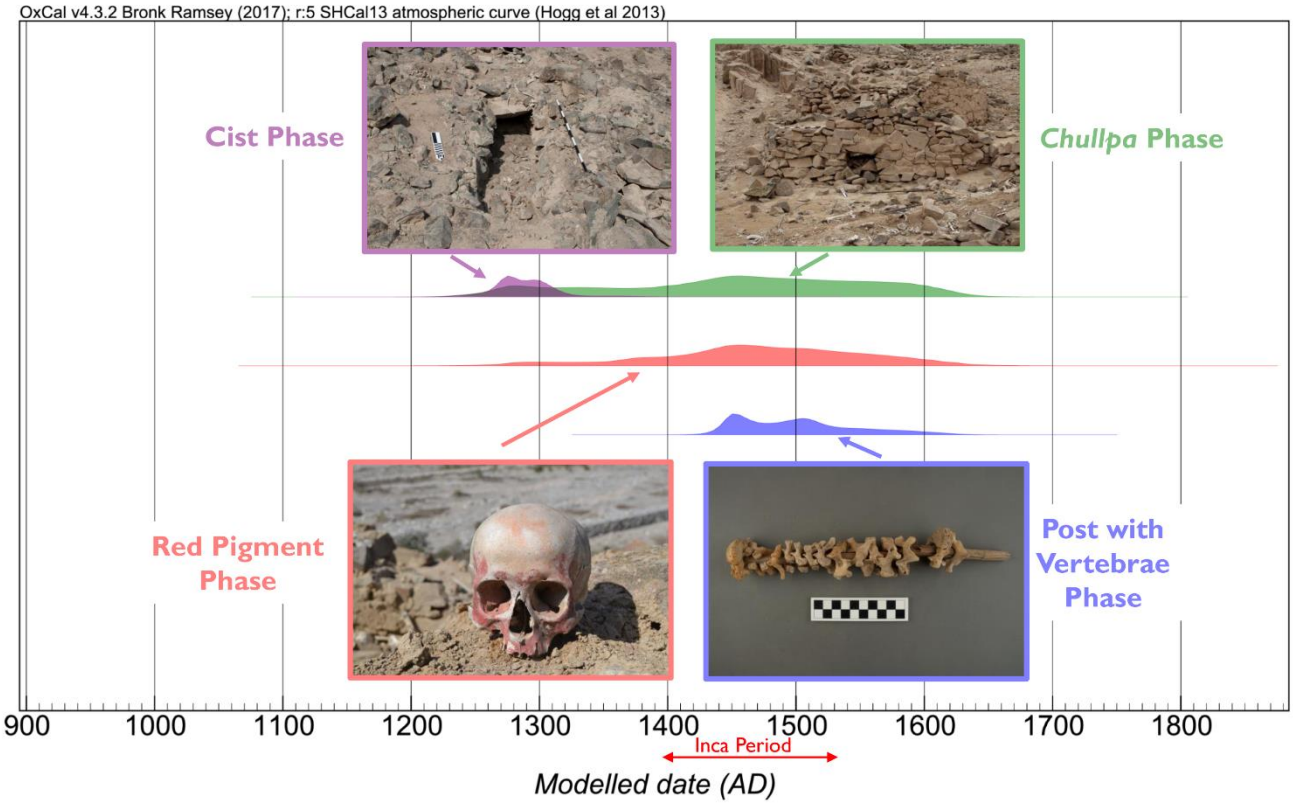

Figure 8.1: Kernel-Density Estimation (KDE) plots of 4 typological phases of interest for this study. These plots summarize the distributions of dates for these phases.

trapezoidal models of ^{14}C dates from reeds with vertebrae, however, indicate that this practice originated in the 15th century and possibly continued into the early colonial period. Available data suggest that it did not take place during the LIP.

These results offer support for neither Hypothesis 1a nor Hypothesis 1b. Rather, they suggest continuity, change, and innovation in local mortuary practices. Continuity in the use of *chullpas* from the LIP to the Late Horizon. Change, perhaps abandonment, in the use of cists

coincident with Inca conquest. Lastly, these results demonstrate innovation in postmortem manipulation of the dead through the placement of vertebrae on posts.

These findings, broadly, raise the possibility that Inca conquest significantly impacted the development of mortuary practice in the mid-Chincha Valley. From the perspective of dynamic nominalism, categories of persons and sociopolitical relations can transform as cultural transformation takes place. It is during these periods of transformation and transition that dead bodies can become important and targeted (Verdery, 1999). Sociopolitical structures, mortuary practices, and conceptions of personhood can develop as local societies are reconstituted. Relationships between the living and the dead can become materialized in new ways. For instance, mortuary practices can become "the domain for display and innovation," in which several groups bring living-dead interactions to the forefront (Lau, 2015, p. 215).

I recognize that several factors, including migration and environmental change, may have contributed to the development of mid-Chincha Valley mortuary practices from the LIP to the Inca period. For the purposes of this study, however, I argue that Inca conquest and its dynamic with Chincha peoples were predominant factors that influenced the diachronic mortuary patterns revealed by this study. Therefore, I suggest that such patterns should be interpreted in the context of Inca-Chincha political dynamics. To what extent were these mortuary developments imperially imposed by the Inca Empire and/or locally instigated by mid-valley Chincha peoples?

The Inca were certainly capable of issuing mandates for local mortuary practices. For instance, Guaman Poma de Ayala (2009 [1615]) describes the Inca allowing their subjects to continue their mortuary customs and prohibiting kin from retaining their dead in their houses. From a "top-down" perspective, therefore, the Inca may have ordered local groups to abandon

the cist tradition and exclusively adopt the *chullpa* tradition. They may have co-opted previously conducted ceremonial activities involving red pigment. These efforts may have been imperial tactics that "socially engineered" new communities for administrative purposes and ritually incorporated the Inca into social life.

The placement of vertebrae on posts, however, is a mortuary innovation that originated in the Late Horizon. What is the relationship between this practice and the Inca? There exists a clear relationship between expansionist states in the Andes and extended, postmortem manipulation of human remains. While the Inca produced war trophies such as "severed heads, drums made from flayed human skins, and drinking cups made from skulls" (Ogburn, 2007, p. 509), the Wari modified human heads and displayed body parts (Tung, 2008b). Indeed, a "cranium bowl" (Figure 5.17) that may have served as a drinking cup was recovered from the UC-012 cemetery. Manipulating local human remains may have produced a "culture of fear" during times of Inca and Wari expansion (Lozada et al., 2018, p. 190; Tung, 2008b). Following this line of thought, the Inca may have promoted practices of stringing vertebrae on posts to strike fear among mid-valley groups and facilitate conquest of the area.

From a "bottom-up" perspective, mid-valley peoples may have shifted from cists to more elaborate and visually dominant *chullpas* to establish and expand new bases of authority and reinforce territorial claims. Some had the resources to build and use adobe *chullpas* (Figure 6.11), perhaps to show ties to the Inca. Mid-valley peoples may have coordinated with each other to not only continue painting their dead, but also to interact with their dead in a new way by placing vertebrae on posts. These posts may reflect conceptions of certain dead as "partible persons" whose component body parts, namely vertebrae, held significant meaning and needed

to be kept together. Painting the dead and stringing vertebrae on posts may have been performed for ceremonies of varying scale to change the status of the dead and/or "reconstruct" them into new beings. In doing so, mid-valley Chincha peoples restructured their relationships with the dead, thereby transforming their sociopolitical landscape under Inca rule.

Wernke's (2013) model of "improvisational order" can also explain these data. He states that interactions between expansionist states and complex polities can create new, contested social orders. Such orders operated through community organization, landscape, and, as I suggest here, mortuary practice. Following this, the observed continuity, change, and innovation in mortuary practices were the result of neither "top-down" Inca imperial impositions nor "bottom-up" local efforts. Rather, they were products of dynamic, two-way interactions among mid-valley groups and between such groups and the Inca. From this view, I suggest that mortuary practice was an interface through which Inca-Chincha interactions occurred.

Research Question #2: *How long did local groups use individual graves?*

Hypothesis #2a: *Local groups used graves over the long term*

Hypothesis #2b: *Local groups used graves episodically*

Bayesian-modeled dates illustrate that 1) at least 1 *chullpa* and 1 cist were used episodically and 2) at least 3 *chullpas* were used over the long term. Modeled time differences (95% probability) for the episodically used *chullpa* (UC-079 Tomb 3) and cist (Sector B, Unit 1, eastern cist) is 47 - 436 years and 3 – 173 years respectively. Modeled time differences for the 3 *chullpas* (Sector B *chullpa*, UC-044 Tomb 1, and UC-008 Tomb 1) used over the long term are 70 – 448 years, 70 – 445 years, and 116 – 457 years respectively. These *chullpas* appear to have

been used over multiple generations. These results lend support to Hypothesis 2a and Hypothesis 2b, but more ^{14}C dates from both grave types would strengthen this test.

Research Question #3: *How did local groups deposit human remains in these graves?*

Hypothesis #3a: *Local groups placed primary depositions and few, if any, secondary depositions in graves*

Hypothesis #3b: *Local groups placed secondary depositions and few, if any, primary depositions in graves*

Data acquired through bioarchaeological analyses of human remains recovered through fieldwork can be used to address research questions #3 and #4. High counts of labile elements were observed in each of the graves selected for surface collection and excavation. In the UC-008 Tomb 1 (*chullpa*), 45% of the analyzed elements (n=5821) are categorized as labile. Of the 2642 analyzed elements in the Sector B *chullpa,* 62% are labile. Lastly, in the Sector B eastern cist, 62% of the analyzed elements (n=707) are labile. These findings reveal that these graves contained at least some primary depositions of relatively complete bodies. I cannot rule out that these graves also contained secondary depositions. Therefore, these data offer more support for Hypothesis 3a. This pattern was also discovered in the UC-012 *chullpa* that was examined previously (Weinberg et al., 2016).

Research Question #4: Who was deposited in these graves?

Hypothesis #4a: *Local groups deposited war casualties in graves*

Hypothesis #4b: *Locals deposited ancestors and/or prominent leaders of groups in graves*

Hypothesis #4c: *Locals placed descent groups in graves*

Bioarchaeological and mortuary data provide insights into who was deposited in *chullpas* and cists. Several adults and juveniles were documented in UC-008 Tomb 1 (MNI = 117) and the Sector B *chullpa* (MNI = 37). Males and females were identified in both *chullpas,* and offerings including maize, textiles, and spindles were recovered. These findings suggest that descent groups were likely deposited in at least these two *chullpas* (Hypothesis 4c). Given the pervasive evidence of violent conflict in the mid-Chincha Valley (e.g., cut marks on ribs found in UC-008 Tomb 1), I cannot rule out that *chullpas* may have contained war dead. Data from the Sector B eastern cist indicate that a distinct type of group was put in the grave. Three juveniles, an adult male, and an adult female were found in the eastern cist of Sector B, raising the possibility that a *wasifamilia* was placed therein.

Mortuary Architecture

Chullpas and cists vary in their design, construction, and materials. *Chullpas* are either above-ground or subterranean and made from either fieldstone, *tapia*, or adobe. In the Chincha Valley, the use of adobe is often connected to the Inca period (Wallace 1971). Indeed, 2 dates from an adobe *chullpa* (UC-044 Tomb 1) (Table 5.1) fall in the Inca period. Several *chullpas* have openings, which are oriented in all cardinal directions, although most of them face north. Such openings were directed towards arable land on the valley floor and open spaces (e.g.,

forecourts and plazas), presumably to mark connections among the dead, agriculture, and ceremony. Presumably, *chullpas* could have been entered through these spaces. In some cases, *chullpas* were arranged to form architectural complexes with forecourts and plazas, signaling an intention to incorporate the dead into ceremonial activity. I hypothesize that forecourts may have been used for private gatherings of small groups to venerate the dead and that plazas were loci for public, community-wide ceremonial events. Many *chullpas* have evidence of roofing. Roof mats consist of reed purlins and rafters that are tied together with twine. In some cases, these mats are supported by wooden tension beams. Fieldstone and *tapia* interior benches have been found in *chullpas*. Although their function is unclear, I hypothesize that they may have been used to display bodies and/or offerings. Overall, these architectural data indicate that *chullpas*—despite their variation in construction—were fundamentally designed to facilitate 1) access to the dead, 2) extended mortuary practices (described below), and the 3) deposition of multiple bodies. These reasons may explain the "popularity" of *chullpas* in the mid-valley

In comparison, cists are less elaborately constructed. They exhibit less variation in size and require lower levels of labor investment than *chullpas*. Cists lack interior benches, evidence of roofing, and openings. They are all subterranean and made of fieldstone, and some of them feature lintels. Cists are significantly smaller in size compared to *chullpas*. Like *chullpas*, many of them are oriented north-south towards arable land. Unlike *chullpas*, however, cists were not arranged to form architectural complexes with open-air spaces such as forecourts or plazas. There are only a few mortuary sites that exclusively have cists (i.e., cist cemeteries). Based on these data, I suggest that cists were designed for short-term mortuary use. It does not appear that they were designed to facilitate living-dead interactions, protracted mortuary practices, and the deposition of several bodies.

Treatment of the Dead and *Chullpa* Mortuary Process

Chullpas and cists also differ in treatment of the dead. We documented red pigment on human bones in the mid-Chincha Valley. Painted human bones are only found in *chullpas*. Our data show that red pigment samples contain either cinnabar or hematite, although most contain hematite. Our work also finds that multiple anatomical groups display pigment, suggesting that different body parts, and perhaps entire bodies, may have been painted. Data from UC-008 Tomb 1 and the Sector B *chullpa* also show that individuals of different age and sex categories have pigment. This practice was not confined to a specific age or sex. Human remains with red pigment were recovered from several *chullpas* with forecourts and mortuary sites with plazas. This suggests that individual human remains may have been painted as part of ceremonial activity. Among our entire sample of painted bones, a significantly high proportion lack soft tissue. None of the samples have cut marks. These finds suggest that the dead were painted sometime after soft tissues naturally decomposed.

The other pervasive form of treatment of the dead in the mid-Chincha Valley is the placement of vertebrae on reed and wooden posts. At least 188 of these grouped body parts have been documented in *chullpas*. A few of them were wrapped in textiles or placed near disturbed textile bundles, indicating that these human vertebrae collections were incorporated into local mortuary practices. Posts with vertebrae are commonly found in mortuary sites with plazas and forecourts, suggesting that these vertebrae collections may have played key roles in ceremonies occurring in open spaces. We observe adult and juvenile vertebrae placed on these posts. Nearly all these posts have bones of similar—not mixed—age categories and MNI counts of one. We find that vertebrae tend to be disarticulated and not placed in anatomical order. Furthermore,

most of them lack soft tissue, and none of them have cut marks. I hypothesize that mid-valley peoples placed vertebrae on posts near the end of, or after, the decomposition process was complete.

Data from the cists paint a very different picture. The Sector B cist has a much lower MNI compared to the UC-008 Tomb 1 *chullpa* and the Sector B *chullpa*. An adult male, adult female, and three juveniles were identified. It appears that juveniles were placed in textile bundles and deposited in the cist. The two adults were wrapped in textiles and stacked on each other in extended positions. They were deposited on top of three underlying reed posts that mark the bottom of the cist. A fiber cord found with adult lower leg bones may have been used to tie the adults to the three posts. Thus, these reed posts may have constituted a litter. Evidence for this type of deposition was not found in any of the *chullpas* in the survey zone. We also find that none of the cists in the survey zone contain human bones with red pigment or posts with vertebrae.

I explored several models to explain the application of red pigment on human remains and the placement of vertebrae on posts. Fundamentally, I argue that these practices were mortuary rituals that materialized transformations and transitions in the status and personhood of the dead that paralleled concurrent changes in relations among the living, the dead, and the cosmos. These rituals illustrate such relations in a highly visual way, relations that served as the foundation for political authority, economic prosperity, and social structure in the mid-Chincha Valley. Furthermore, these practices changed the dead into person-objects of display for ceremonial activities that were held in open spaces (e.g., plazas and forecourts). The pervasiveness of these treatments and the contemporaneous radiocarbon dates associated with

reeds with vertebrae from spatially distinct mortuary sites beg explanation. These data inform my suggestion that mid-valley communities worked together to manipulate the dead for private and public ceremonies of varying scale that would have reified sociopolitical relationships among and between groups. Considering notions of Andean partibility (*rakiy*), painted crania (and other remains) and vertebrae strung on posts may have represented entire bodies of potent dead during these ceremonies. Concerning the posts with vertebrae, these artifacts may have also 1) functioned as devices for transporting the remains of those who perished away from home, or 2) represented efforts aimed at reconstructing members of the dead who were subjected to Spanish looting and disturbance. They may have even served as rattles that would have produced noises during ceremonies (Danielle Kurin, oral communication).

I argue that *chullpas* were built for extended mortuary practices that entailed tomb reentry and postmortem treatment of the dead. Our data collectively demonstrate that red pigment application and the placement of vertebrae likely did not occur immediately after death and that they are connected to ceremonial spaces. I argue that *chullpas* served as staging areas where the dead were initially deposited for excarnation. Insect pupal casings, interior benches, and openings have been found in *chullpas*. These data demonstrate that some of the dead were likely not immediately buried. Rather, they were arranged, exposed, and accessible in these tombs.

Violent Conflict

Research to date finds several indicators of violent conflict in the study area. Several defensive walls and a *pukara* were documented. Various weapons ranging from slingstones to a *bola* were found. Bioarchaeological analyses of crania with and without pigment revealed

markings of antemortem and perimortem trauma. Juvenile ribs with cut marks that appear to be consistent with sharp force trauma were documented in UC-008 Tomb 1. Given the remaining high number of unanalyzed human remains in the study area, it is highly likely that our data on violence are underestimated. As Tung (2016, p. 195) aptly notes, warfare "entails violence, but evidence for violence does not mean that warfare occurred." It remains difficult to estimate the scale of violent conflict in the mid-Chincha Valley, determine the parties involved, and evaluate the relationship between violence, local mortuary practice, and the arrival of the Inca. Currently, I hypothesize that these data correspond to raiding and small-scale skirmishes among mid-valley groups during the LIP and Late Horizon. More bioarchaeological analyses of human remains and radiocarbon dating are necessary to test such a claim.

Key Contributions

I make several contributions in this study. First, I demonstrate that scientifically useable data can be gained from disturbed archaeological sites. Throughout Peru, widespread modern looting is rapidly destroying ancient sites, and the mid-Chincha Valley is no exception. This work develops a robust chronology—derived from disturbed graves—to highlight the cultural and scientific value of disturbed sites and to encourage archaeologists and cultural stakeholders to incorporate these contexts into their research designs and preservation initiatives before more data are lost and additional damage is inflicted. The cutting-edge research design outlined in this study integrates conservation and documentation of endangered cemeteries.

Second, I provide useful data to debates surrounding how past societies conduct mortuary practices in the face of profound structural and organizational change. I broaden the scope of imperialism studies that traditionally focus on the imperial transformations of local economies

and political organizations to include a mortuary perspective on how interactions between complex states and invasive empires shape local cultural practices. In doing so, this study develops understandings of imperial encounters and their material effects on local populations through time, potentially establishing the foundation for new theoretical models of local mortuary practice under imperial conquest.

Third, I contribute to Andean archaeology in two primary ways: broadening knowledge of the diversity of past Andean mortuary practices and building upon previous fieldwork conducted in the Chincha Valley to develop understandings of the Chincha Kingdom and the cultural practices of their affiliated groups. Although considerable research has centered on past *chullpas* built in the south-central Andean highlands, few investigations have *rigorously* (i.e., using ^{14}C data as opposed to relying on ceramic typologies) examined these graves through time and their relation to other grave types on the Peruvian coast. *Chullpa* mortuary processes are rarely reconstructed because of looting. Considering that mortuary practices and their development over time is an important topic in archaeological and anthropological research for understanding sociopolitical transformations over time (Cadwallader et al., 2015; Chapman, 2005; Jiménez et al., 2017; Quinn, 2015; Scarre, 2010), this project takes a ^{14}C-focused, diachronic approach to investigate the development of mortuary practice through time in the mid-Chincha Valley. Moreover, data from regional and targeted fieldwork are synthesized to create a detailed model of *chullpa* extended mortuary practice that is rarely observed in Andean archaeological literature.

Future Directions

Looking ahead, this project can take many directions. The results reported in this study are promising. They lay the empirical foundation for further scientific analyses that can address several questions. Who was deposited in *chullpas* and cists, and how were they related to each other? What social principles structured grave inclusion? Were those deposited in *chullpas* and cists local or nonlocal in origin? Did they maintain different diets, perhaps predicated on social differences? Considering the associations between *chullpas* and the highlands, did groups from this region migrate into the mid-Chincha Valley and build and use these graves? Did the Inca forcibly migrate nonlocal groups into the mid-valley and if so, did this development contribute to the significant transformations in local mortuary practice—coincident with Inca conquest—documented in this study? Research designs involving ancient DNA (aDNA) and stable isotope analysis are planned to build upon this study, help address these questions, and further develop models for explaining local mortuary practice in the mid-Chincha Valley.

APPENDICES

Appendix A: Radiocarbon Dates

A total of 25 radiocarbon samples of varying type (e.g., reed, maize, human hair, and human vertebrae) were sent to the W.M. Keck Carbon Cycle AMS laboratory at the University of California, Irvine for analysis. These samples are from 12 *chullpas* and 6 cists. All reeds selected for dating are likely *Phragmites*. Calibration of the ^{14}C age for each measurement utilized SHCal 13 and was conducted in the OxCal 4.3 program. Calibrated values are reported at the 2σ range. One of the bone samples (Lote #10229) was decalcified, gelatinized at 60°C and pH 2, and ultrafiltered to select a high molecular weight fraction (>30kDa). Since a previous aliquot gave a high C:N ratio, this sample was sonicated in solvents to remove contaminants prior to decalcification: 2:1 chloroform/methanol (2 x 1 hr), methanol (.5 hr), MQ water (.5 hr). While the C:N ratio for this sample is high, suggesting that exogenous carbon may be present, it is within the accepted range of 2.9-3.6 provided by DeNiro (1985). Although $\delta^{15}N$ values for some bone and hair samples can be considered elevated, suggesting possible marine consumption, other factors may have also contributed to these values. For example, aridity and fertilizer can raise $\delta^{15}N$ values in plants (Ambrose, 1991). Local faunal isotopic data are needed to act as a baseline when making interpretations (Carmichael et al., 2014), and currently, we do not have these data for the Chincha Valley. The $\delta^{13}C$ and $\delta^{15}N$ values were measured to a precision of <0.1‰ and <0.2‰, respectively, on aliquots of ultrafiltered collagen, using a Fisons NA1500NC elemental analyzer/Finnigan Delta Plus isotope ratio mass spectrometer.

Table A. 1: Radiocarbon measurements on samples from graves in the middle Chincha Valley, Department of Ica, Province of Chincha, Peru

Site	Tomb	Tomb Type	Lab No.	Sample No.	Sample Material	14C (yrs. BP)	Calibrated 14C (2σ cal AD)	$\delta^{13}C$ (‰)	$\delta^{15}N$ (‰)	C:N Ratio (atomic)	>30kDa yield (%)
Sector B	U5-7	*Chullpa*	UCIAMS-180316	Lote 10069	Maize	625±15	AD 1320-1420	-11			
Sector B	U5-7	*Chullpa*	UCIAMS-183267	Lote 9454	Hair	760±15	AD 1270 - 1300	-10.6	14.1	3.6	
UC-044	1	*Chullpa*	UCIAMS-180311	Lote 10161	Reed with vertebrae	395±15	AD 1459 - 1624				
UC-044	1	*Chullpa*	UCIAMS-180618	Lote 10231	Vertebra on reed	475±15	AD 1434 - 1464	-12.9	15.7	3.5	13.2
UC-073	5	*Chullpa*	UCIAMS-180318	Lote 10212	Hair	545±20	AD 1405-1444	-12.3	15.4	3.9	
UC-018	17	*Chullpa*	UCIAMS-180315	Lote 10246	Hair	810±15	AD 1225-1280	-9.6	12.5	3.6	
UC-079	3	*Chullpa*	UCIAMS-183269	Lote 10217	Reed in roof	645±15	AD 1315-1400				
UC-079	3	*Chullpa*	UCIAMS-183270	Lote 10218	Maize	665±15	AD 1300-1395	-9.7			
UC-008	1	*Chullpa*	UCIAMS-183465	Lote 10229	Vertebra on reed	460±15	AD 1433-1460	-12	15.4	3.6	12
UC-008	1	*Chullpa*	UCIAMS-155764	Lote 7016	Reed with vertebrae	350±15	AD 1502-1638				
UC-008	1	*Chullpa*	UCIAMS-180617	Lote 10230	Vertebra on reed	465±15	AD 1440-1480	-10.9	14.9	3.2	14.5
UC-008	1	*Chullpa*	UCIAMS-155763	Lote 7015	Reed with vertebrae	385±15	AD 1463-1625				
UC-002	6	*Chullpa*	UCIAMS-184544	MCV-202	Reed with vertebrae	360±15	AD 1500-1630				
UC-025	7	*Chullpa*	UCIAMS-184545	MCV-207	Reed with vertebrae	370±15	AD 1495-1630				
UC-008	15	*Chullpa*	UCIAMS-184546	MCV-216	Reed with vertebrae	390±15	AD 1460-1625				

UC-037	7	*Chullpa*	UCIAMS-184547	MCV-217	Reed with vertebrae	485±15	AD 1430-1455				
UC-012	53	*Chullpa*	UCIAMS-184548	MCV-286	Reed with vertebrae	390±15	AD 1460-1626				
UC-012	25	*Chullpa*	UCIAMS-184549	MCV-288	Reed with vertebrae	360±15	AD 1500-1630				
UC-018	24	Cist	UCIAMS-180312	Lote 10182	Hair	805±15	AD 1227-1282	-12.8	11.6	3.9	
UC-018	21	Cist	UCIAMS-180314	Lote 10241	Hair	725±15	AD 1281-1382	-13.4	10.1	3.9	
UC-065A	3	Cist	UCIAMS-180317	Lote 10186	Hair	720±15	AD 1284-1382	-11.7	9.7	3.8	
UC-065A	7	Cist	UCIAMS-180313	Lote 10220	Hair	785±15	AD 1229-1291	-11.8	11.9	3.9	
UC-065A	4	Cist	UCIAMS-183271	Lote 10219	Hair	805±15	AD 1230-1280	-12	10.7	3.5	
Sector B	U1	Cist	UCIAMS-183268	Lote 10134	Reed found at the base of cist	665±15	AD 1300-1395				
Sector B	U1	Cist	UCIAMS-155762	Lote 7014	Reed found on surface	675±15	AD 1300-1392				

Appendix B: XRF, XRD, and GC-MS Data on Red Pigment Samples

A total of 35 samples of red pigment were collected from 19 *chullpas*, 1 cist, and a copper and iron oxide source in the study area. They were extracted from various "media," including human remains, textiles, and figurines. Available photos of these media are shown in this appendix. Red pigment samples were exported to UCLA for XRF, XRD, and GC-MS analysis. For XRF analysis, Vanessa Muros used a Bruker Tracer III-V instrument. For XRD analysis, Muros utilized a Rgaku R-Axis Spyder. XRF *and* XRD data are only shown for samples with ambiguous results (i.e., 8165, 717-17-4, and 82-1). Since these data demonstrate that these samples do not contain mercury, we suggest that they are derived from a red, iron-based pigment (i.e., hematite). Only XRD data are shown for the other samples, which yielded clearer results. Hans Barnard used a Thermo Q Exactive Hybrid Quadrupole-Orbitrap to perform GC-MS analysis on one red pigment sample (3021) from a shell container.

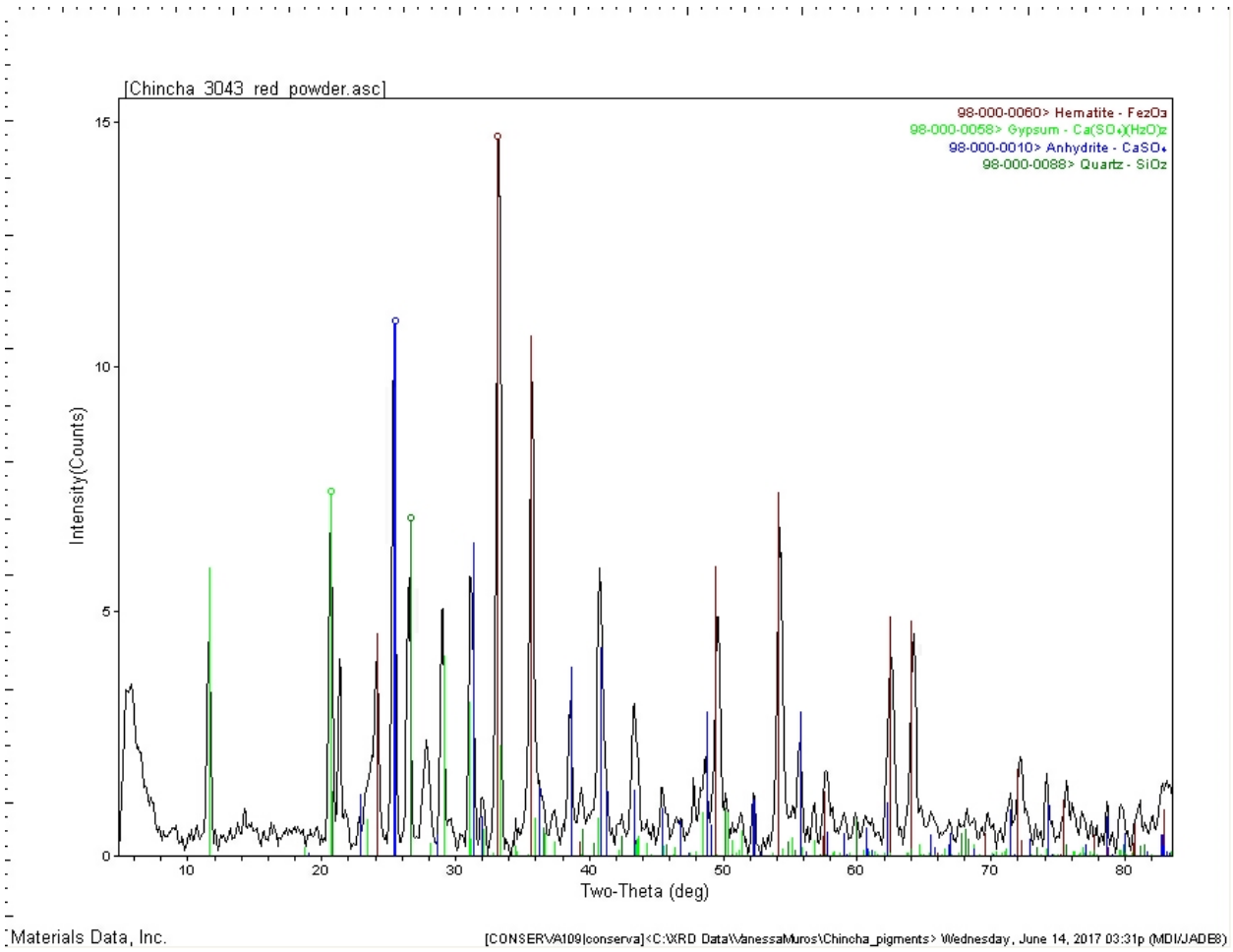

Figure B.1: XRD analysis of a red pigment sample (3043) collected from a cranium in UC-008 Tomb 1 (*chullpa*)

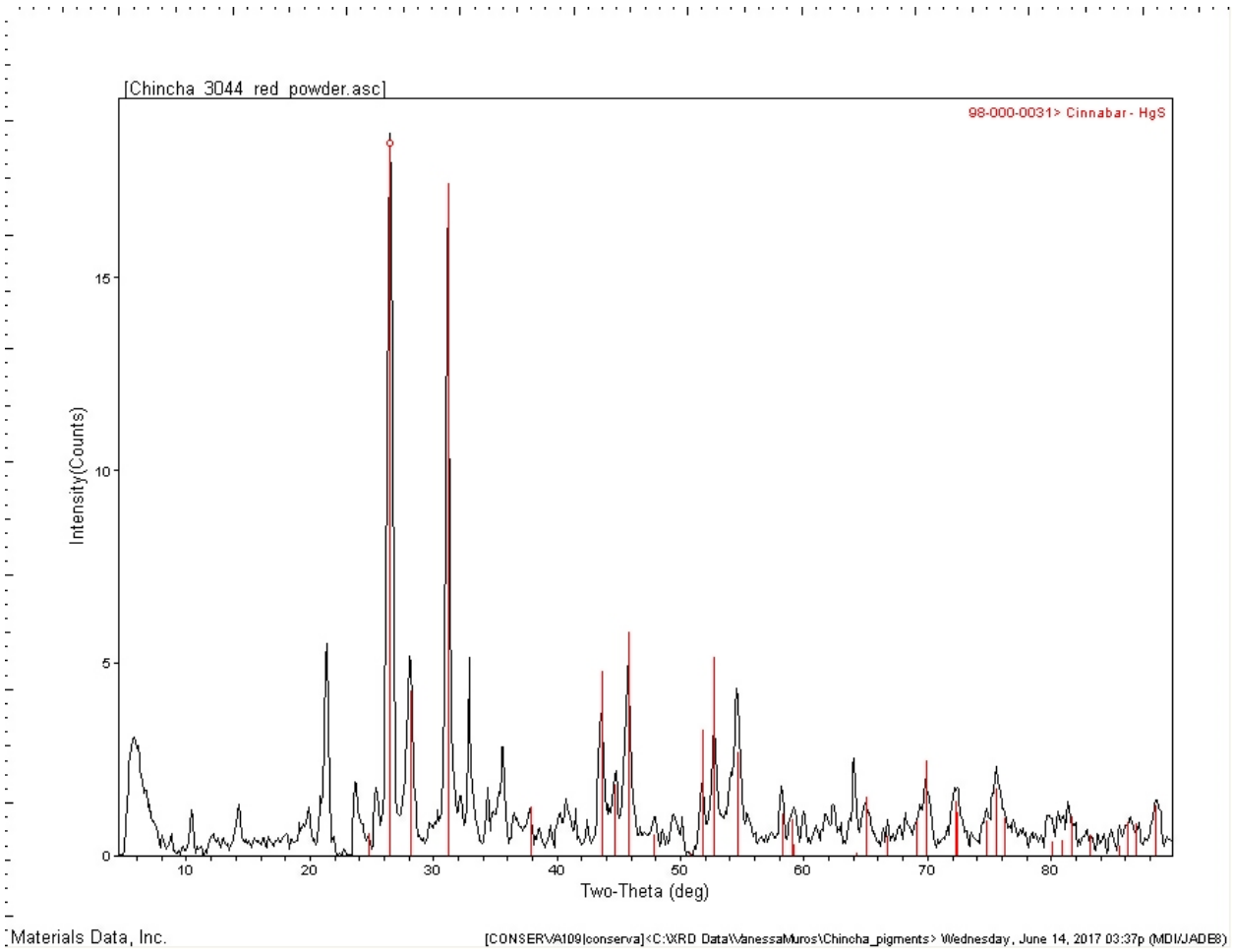

Figure B.2: XRD analysis of a red pigment sample (3044) collected from a cranium in UC-008 Tomb 1 (*chullpa*)

Figure B.3: Adult, male cranium, found in UC-025 Tomb 8 (*chullpa*), from which a red pigment sample (724-17-1) was extracted

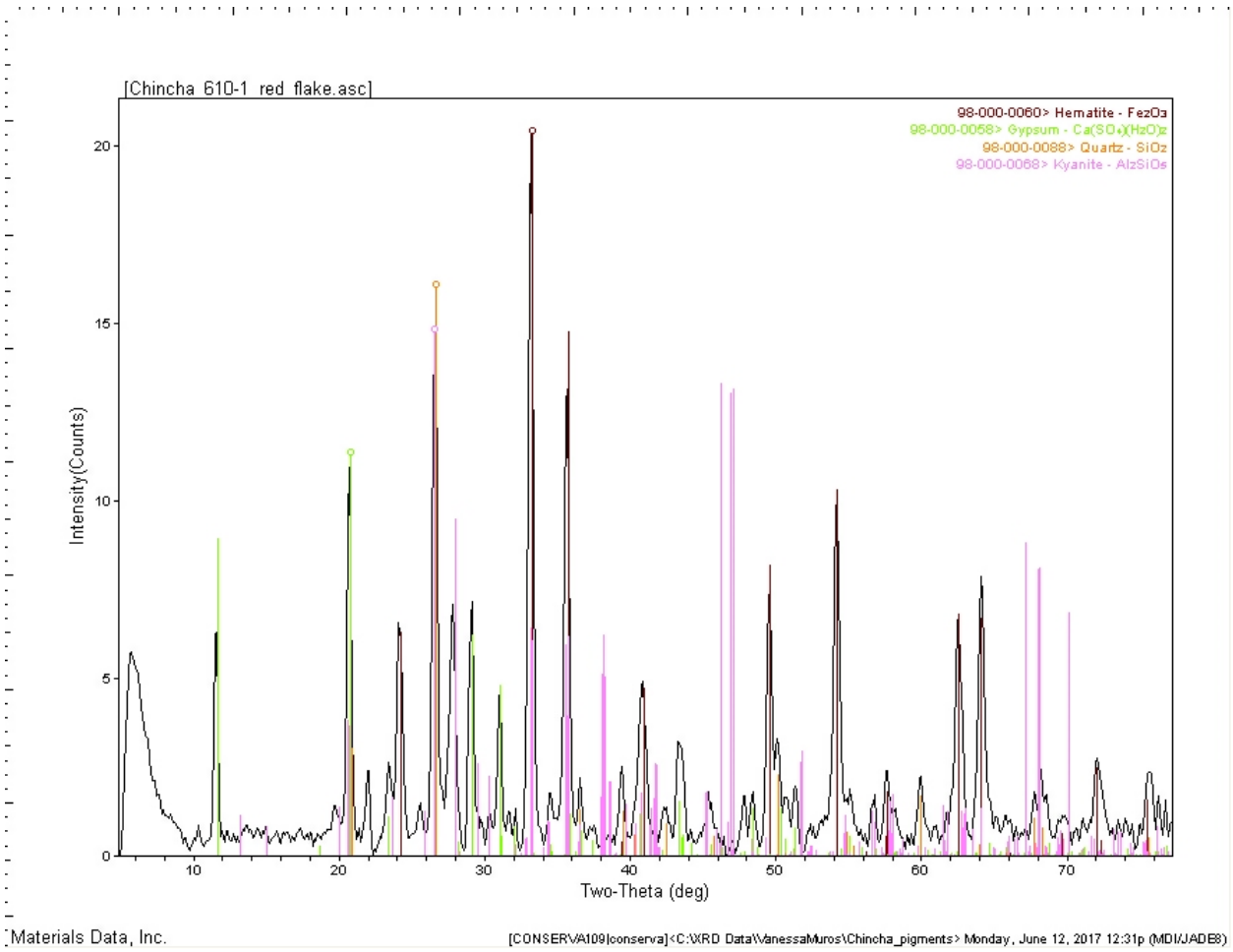

Figure B.4: XRD analysis of 724-17-1

Figure B.5: Juvenile, possibly male cranium, found near UC-026 Tomb 21 (*chullpa*), from which a red pigment sample (724-17-8) was extracted

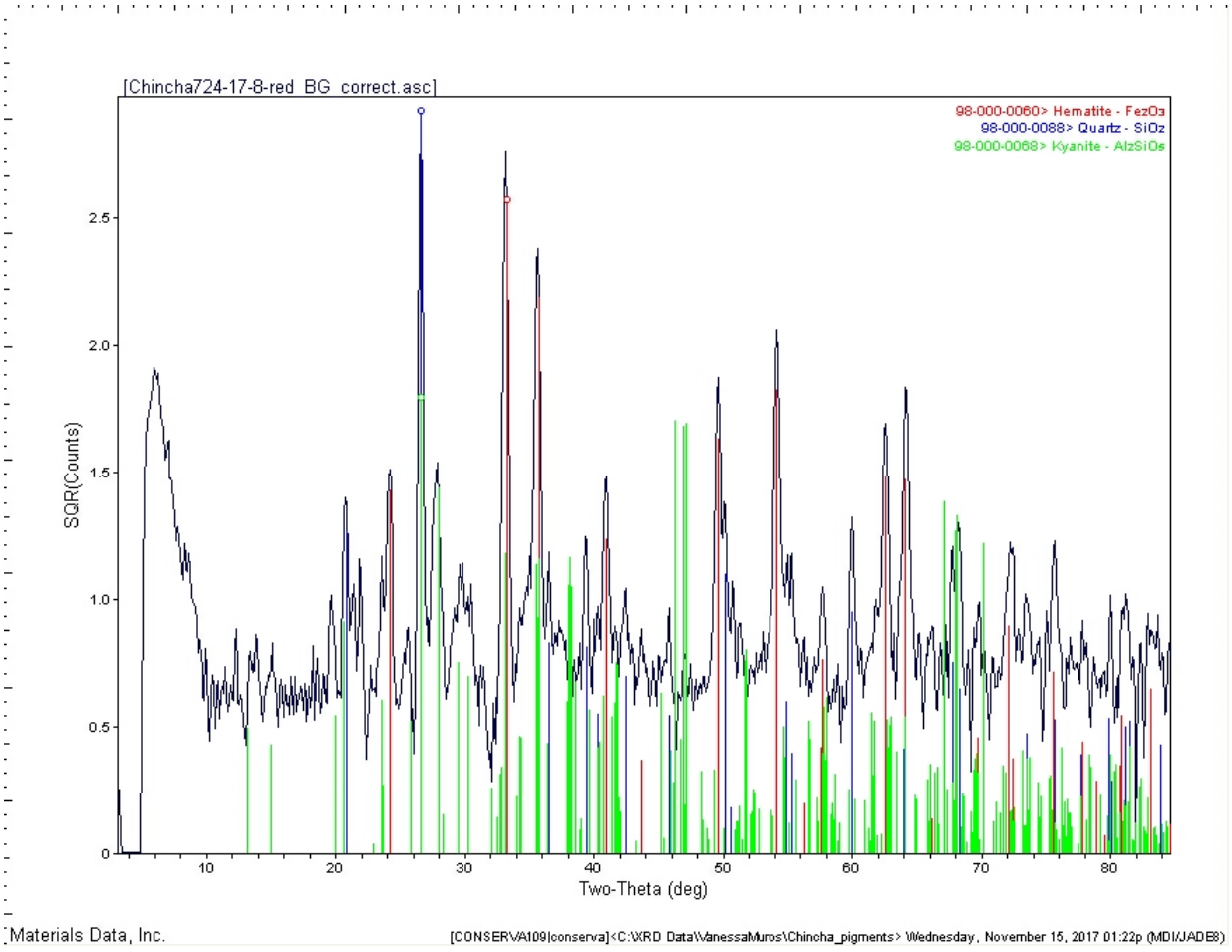

Figure B.6: XRD analysis of 724-17-8

Figure B.7: Adult, male cranium, found in UC-037 Tomb 9 (chullpa), from which a red pigment sample (622-3) was extracted

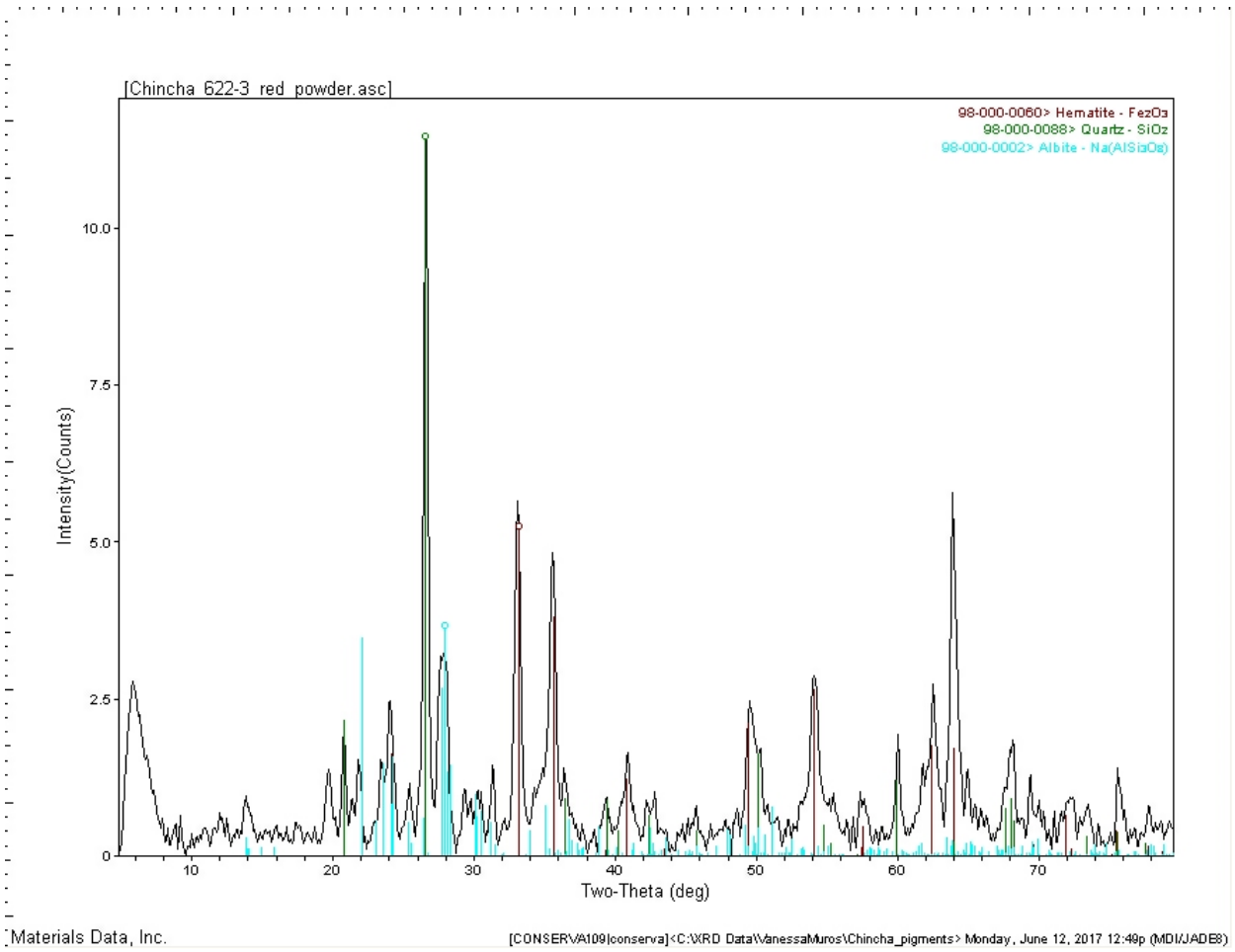

Figure B.8: XRD analysis of 622-3

Figure B.9: Adult, male cranium, found in UC-037 Tomb 7 (*chullpa*), from which a red pigment sample (622-4) was extracted

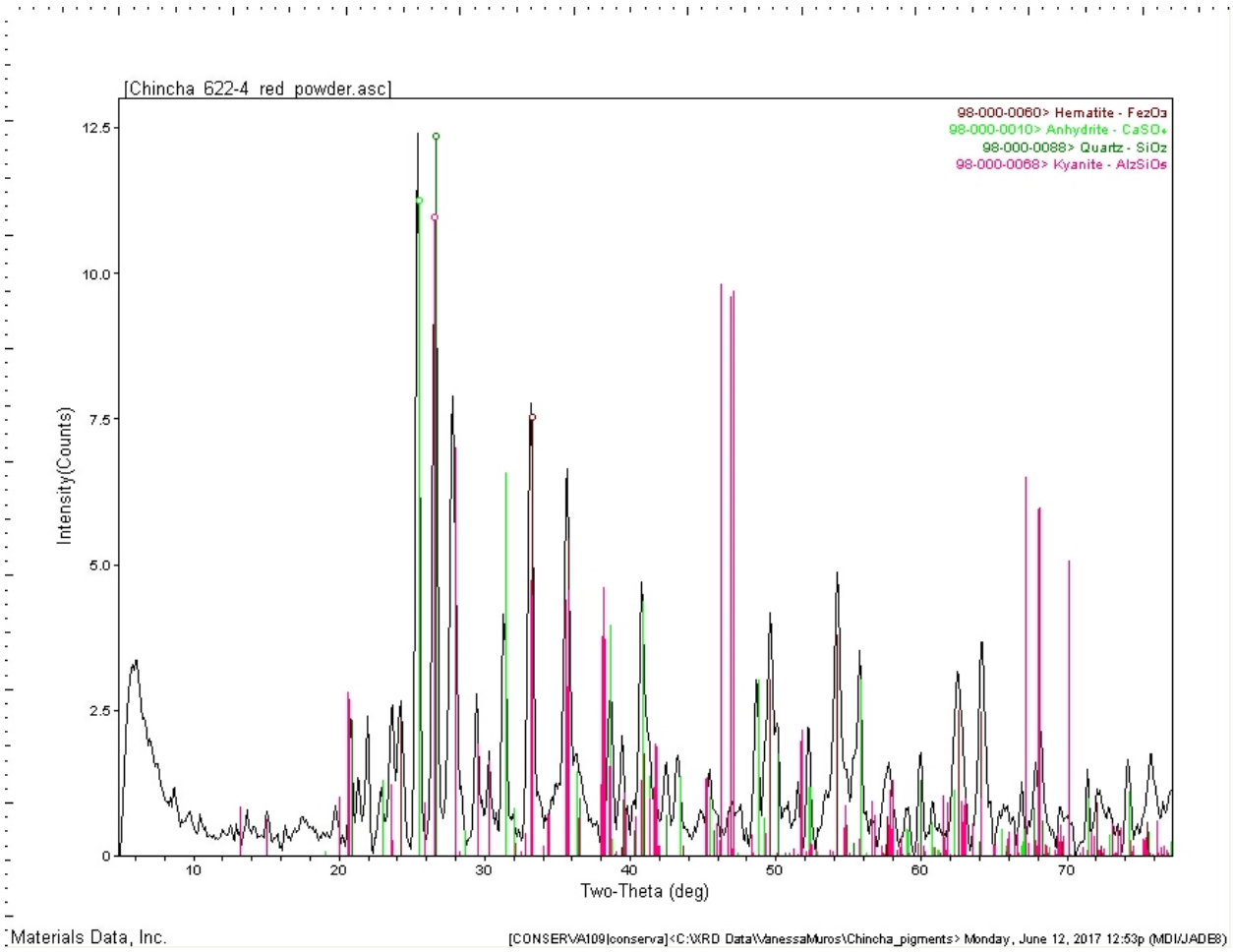

Figure B.10: XRD analysis of 622-4

Figure B.11: Adult, male cranium, found in UC-067 Tomb 5 (*chullpa*), from which a red pigment sample (630-3) was extracted

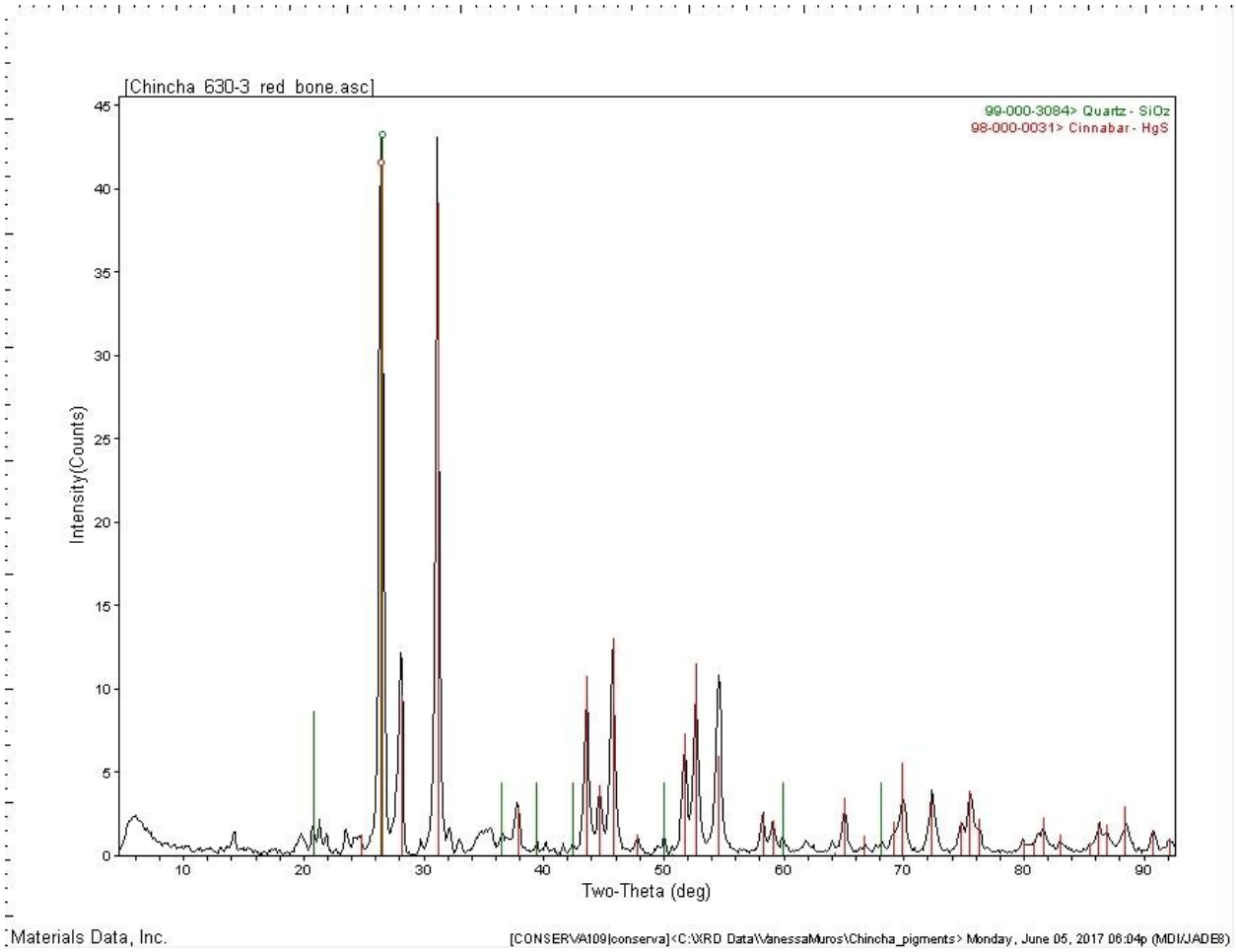

Figure B.12: XRD analysis of 630-3

Figure B.13: Adult, male cranium, found in UC-067 Tomb 5 (*chullpa*), from which a red pigment sample (630-4) was extracted

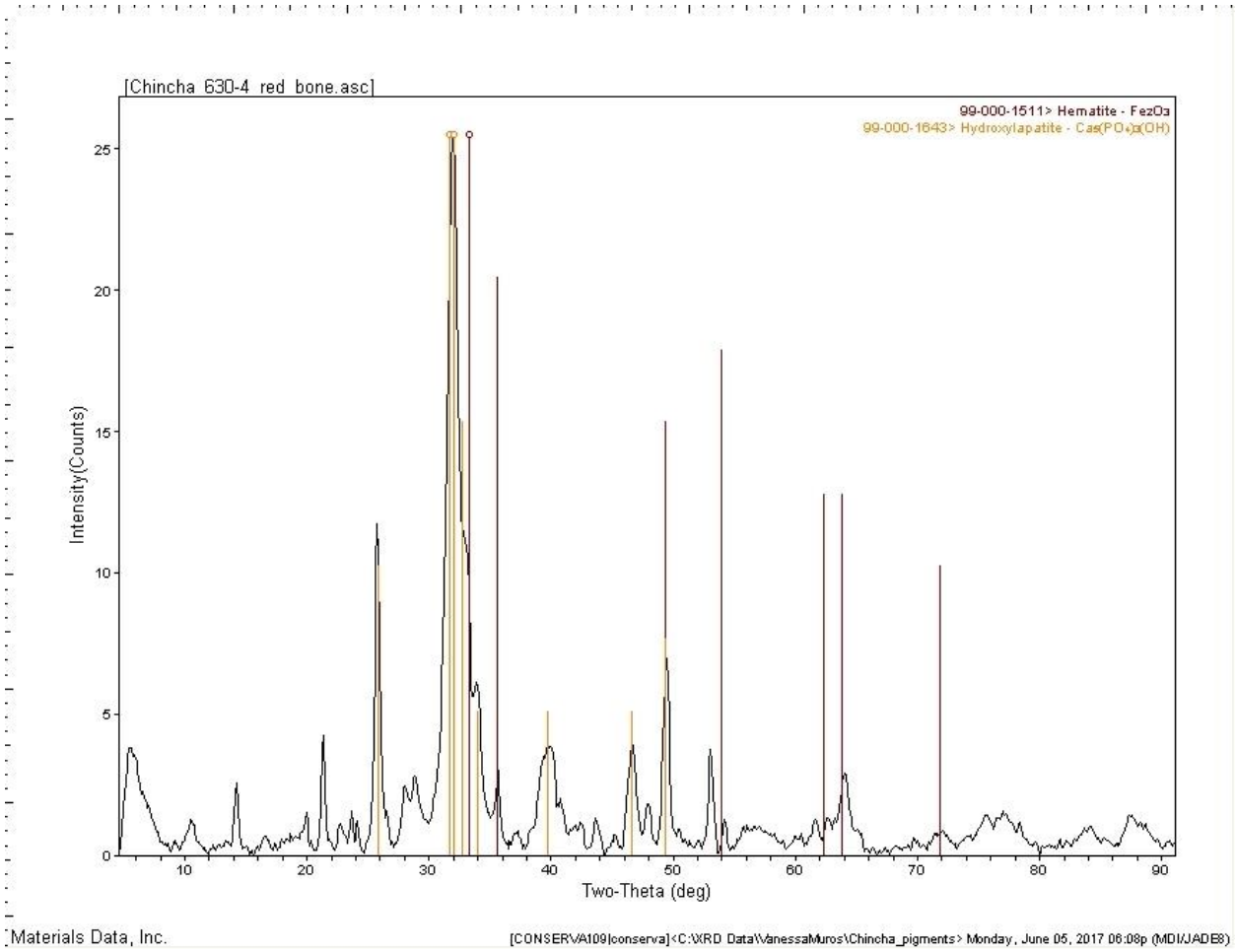

Figure B.14: XRD analysis of 630-4

Figure B.15: Juvenile cranium, found at the UC-065B mortuary site, from which a red pigment sample (814-14) was extracted

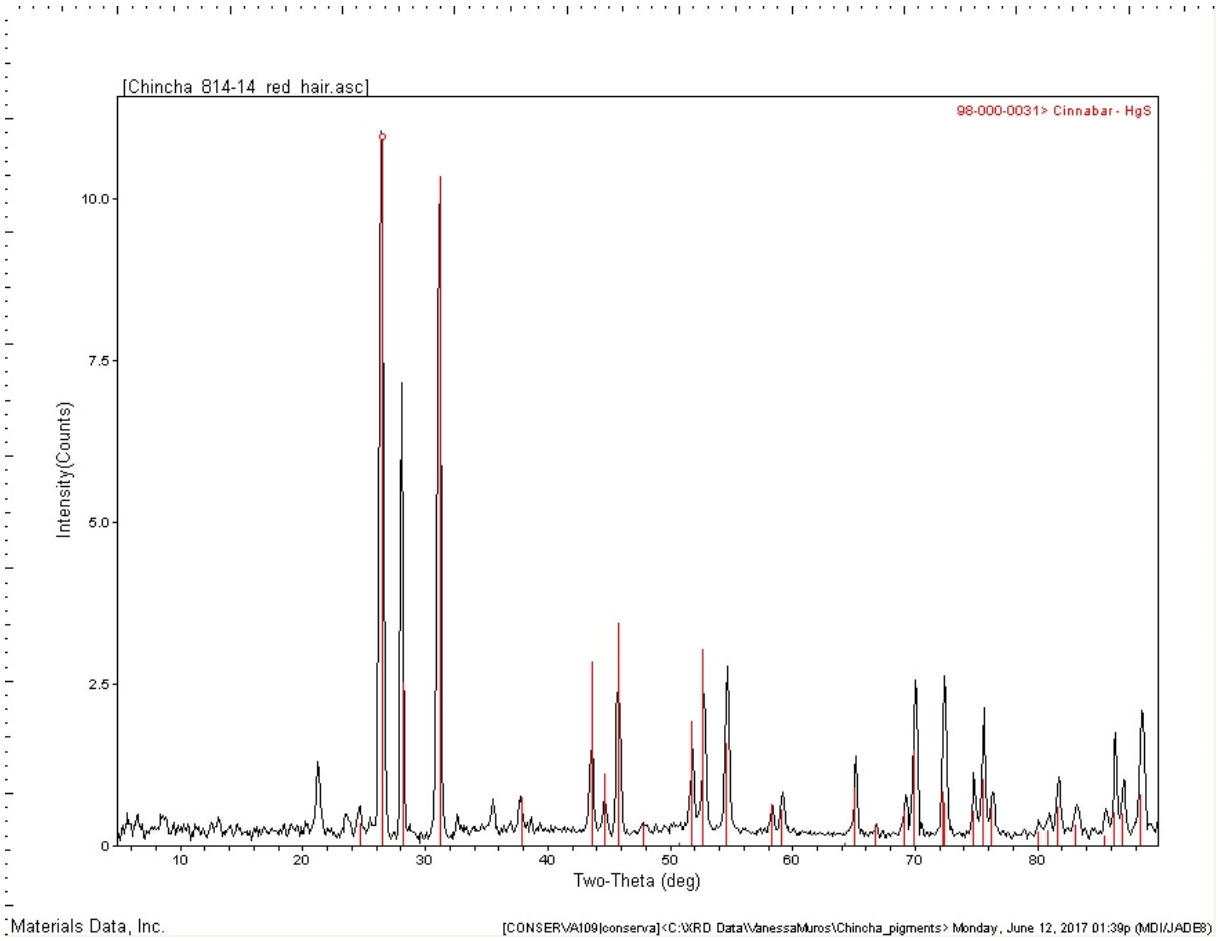

Figure B.16: XRD analysis of 814-14

Figure B. 17: Adult, female cranium, found in UC-008 Tomb 1 (*chullpa*), from which a red pigment sample (8165) was extracted

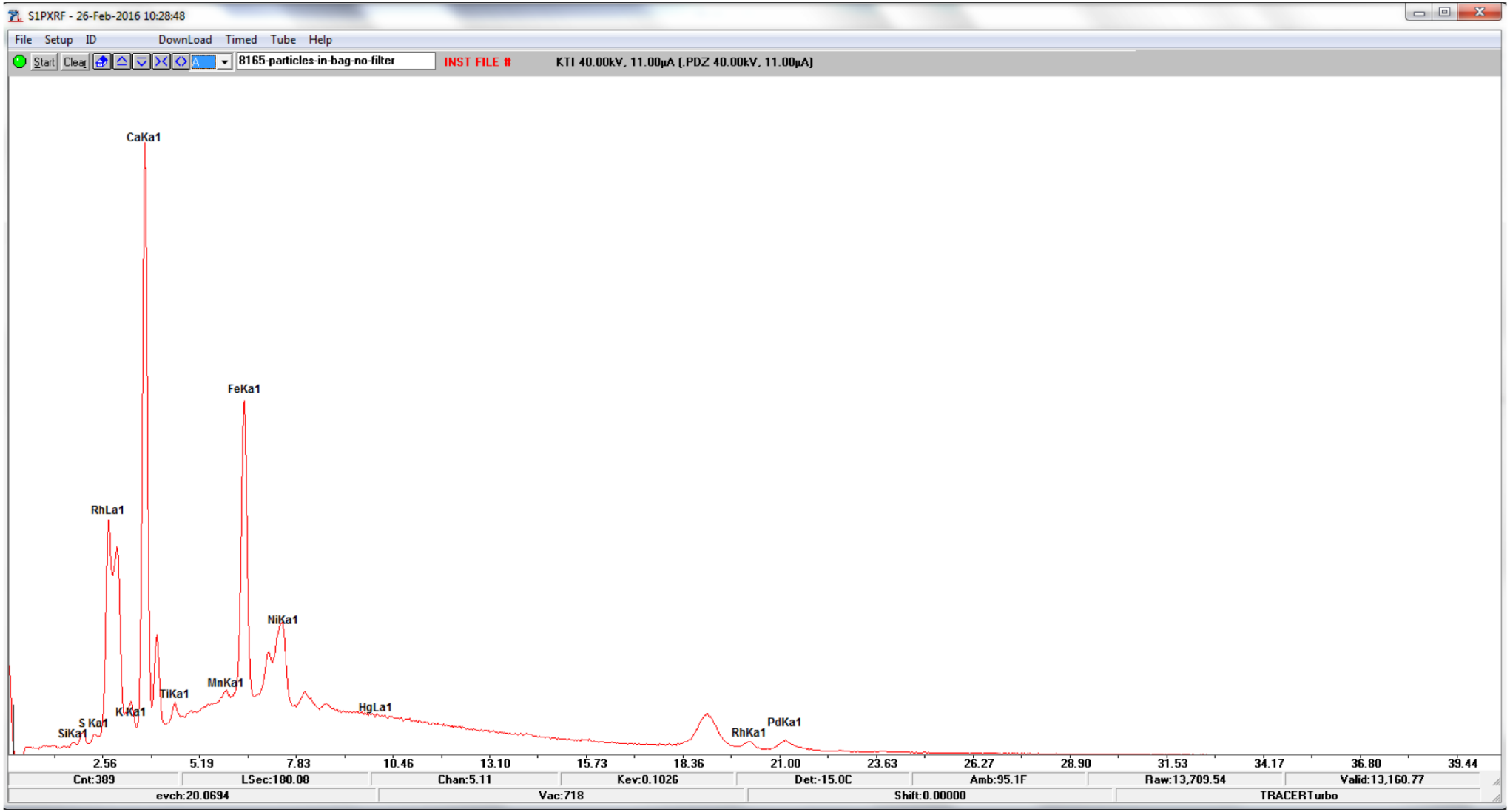

Figure B.18: XRF analysis of 8165

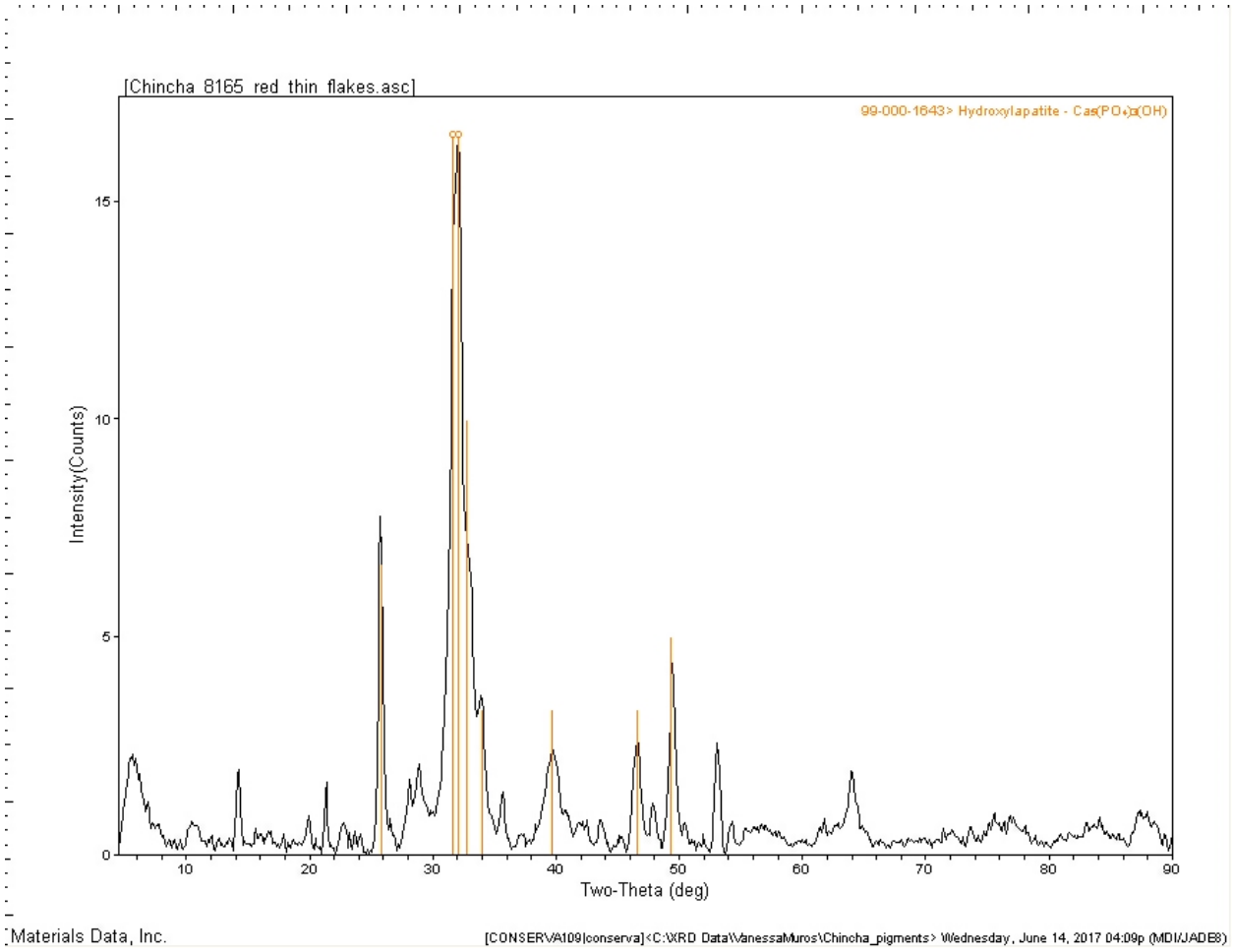

Figure B.19: XRD analysis of 8165

Figure B.20: Juvenile cranium, found in UC-008 Tomb 1 (*chullpa*), from which a red pigment sample (8167) was extracted

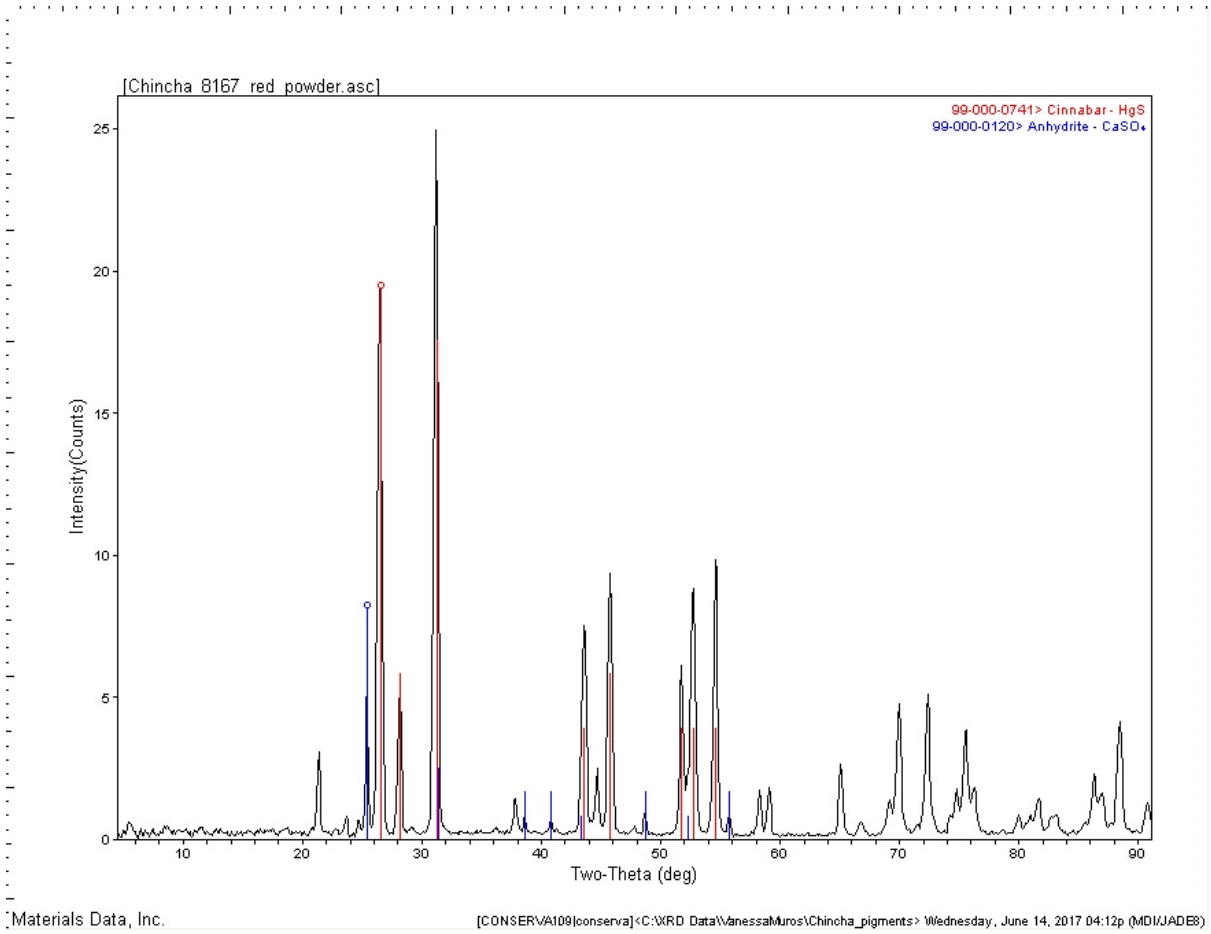

Figure B.21: XRD analysis of 8167

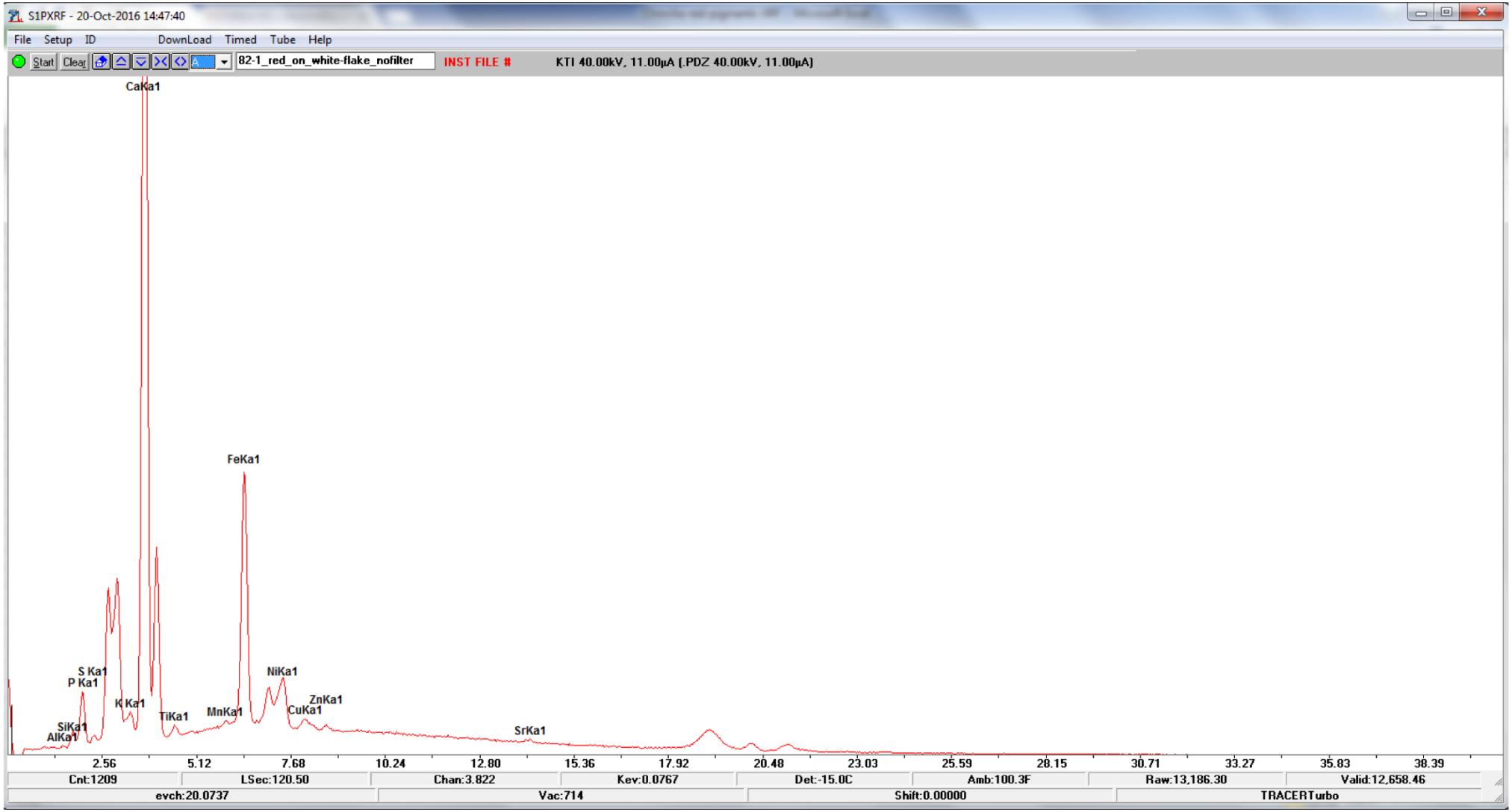

Figure B.22: XRF analysis of 82-1

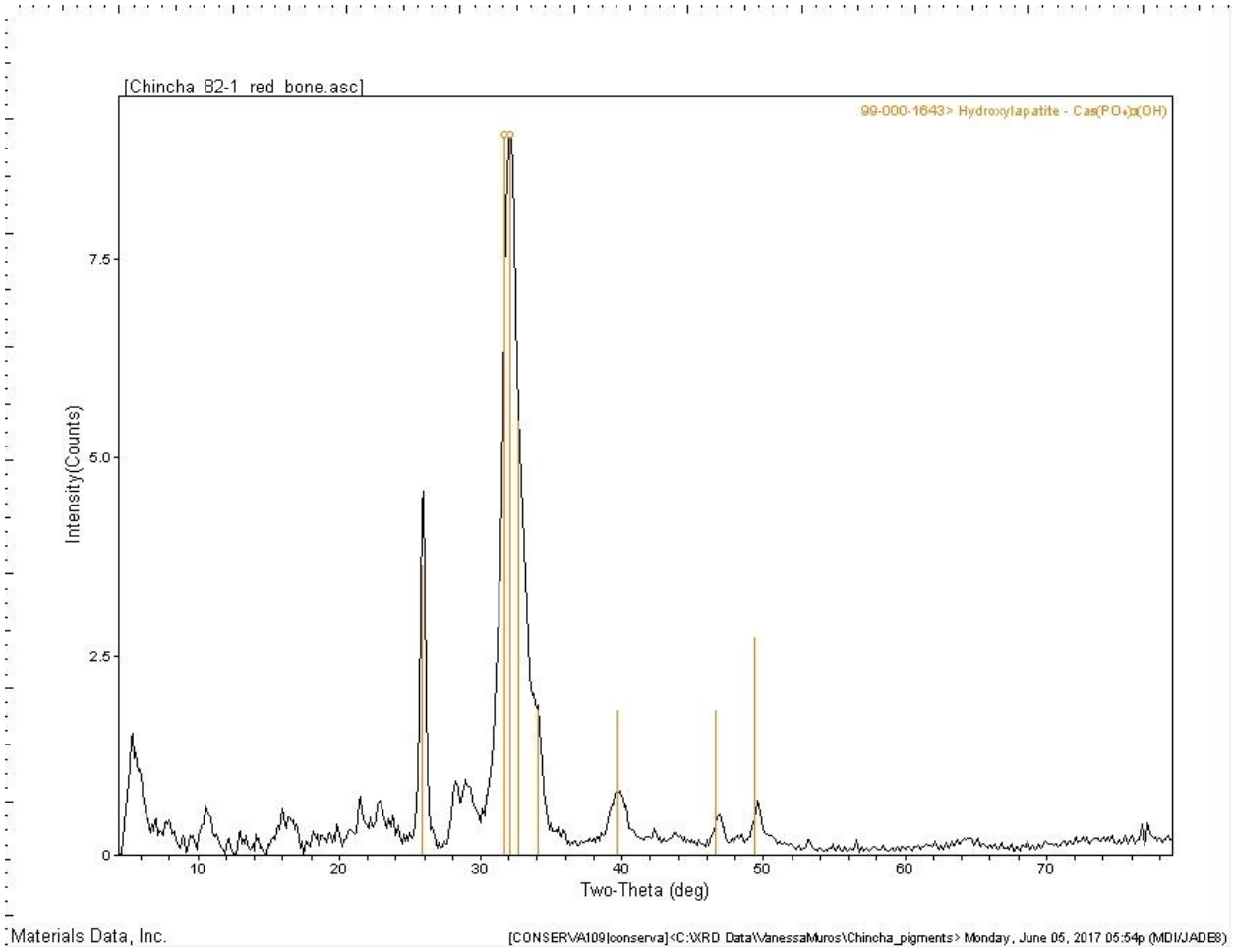

Figure B.23: XRD analysis of 82-1

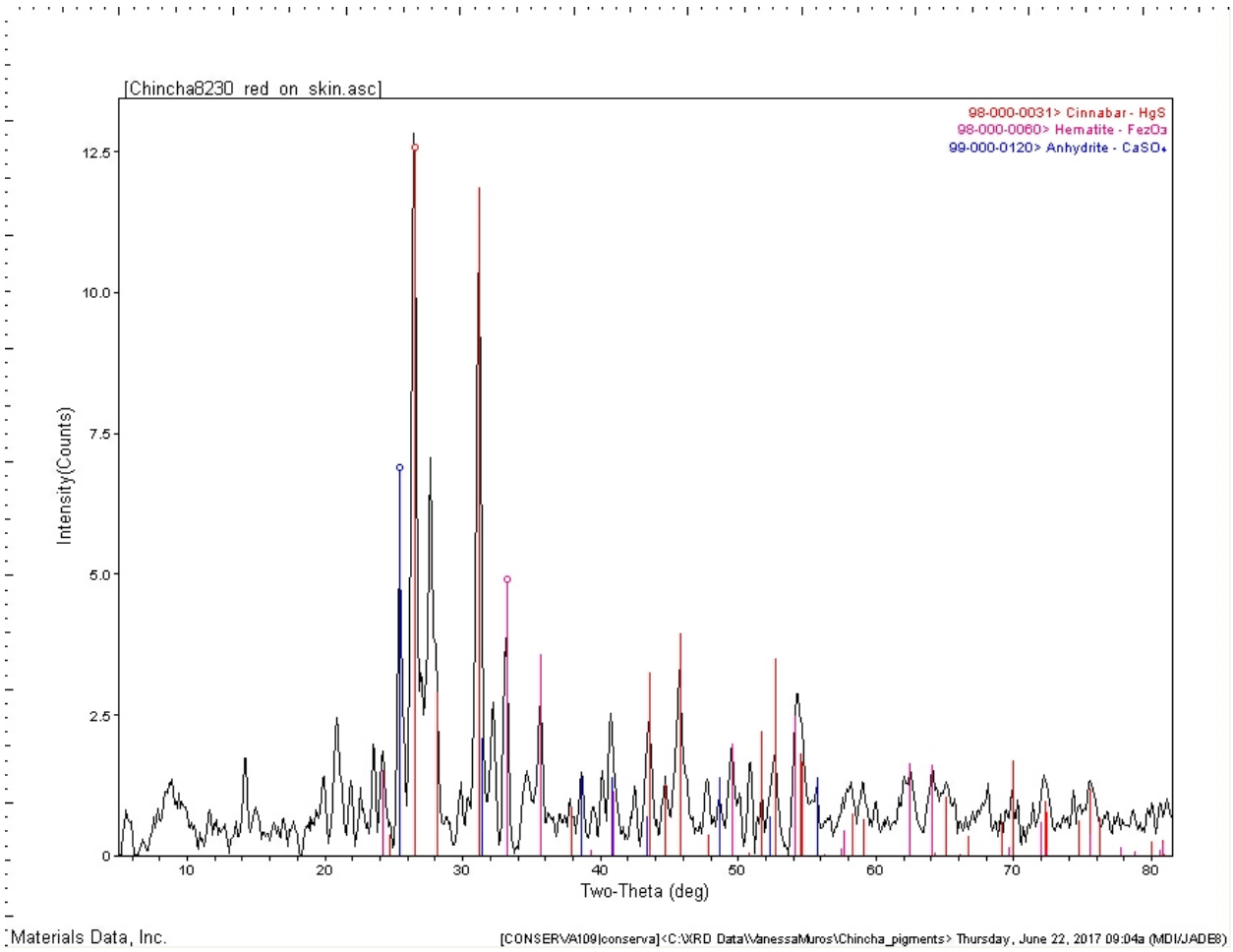

Figure B.24: XRD analysis of a red pigment sample (8230) extracted from a textile found in UC-008 Tomb 1 (*chullpa*)

Figure B.25: Adult, male cranium, found in UC-008 Tomb 1 (*chullpa*), from which a red pigment sample (8236) was extracted

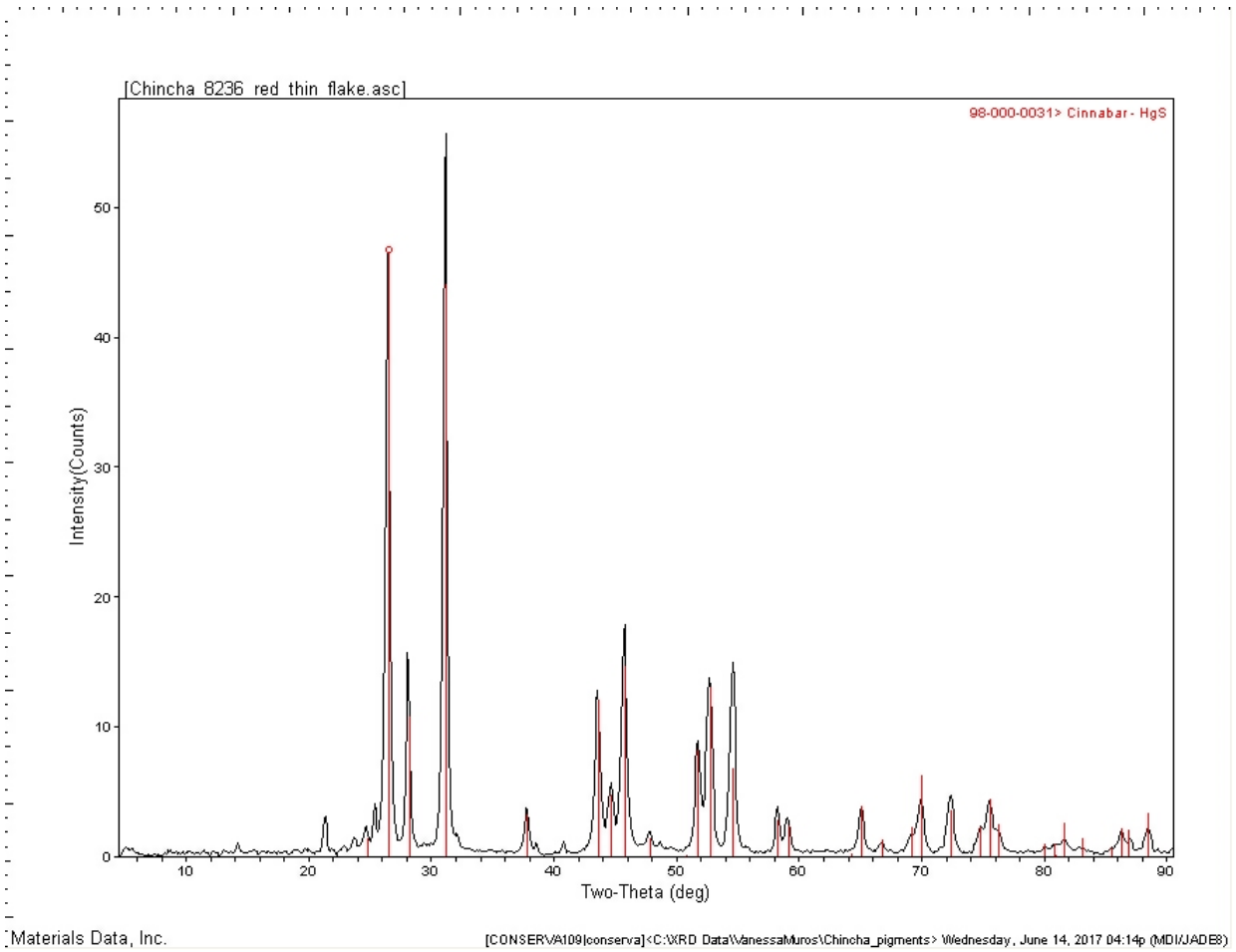

Figure B.26: XRD analysis of 8236

Figure B.27: Figurine, found in the UC-048 mortuary site, from which a red pigment sample (83-1) was extracted

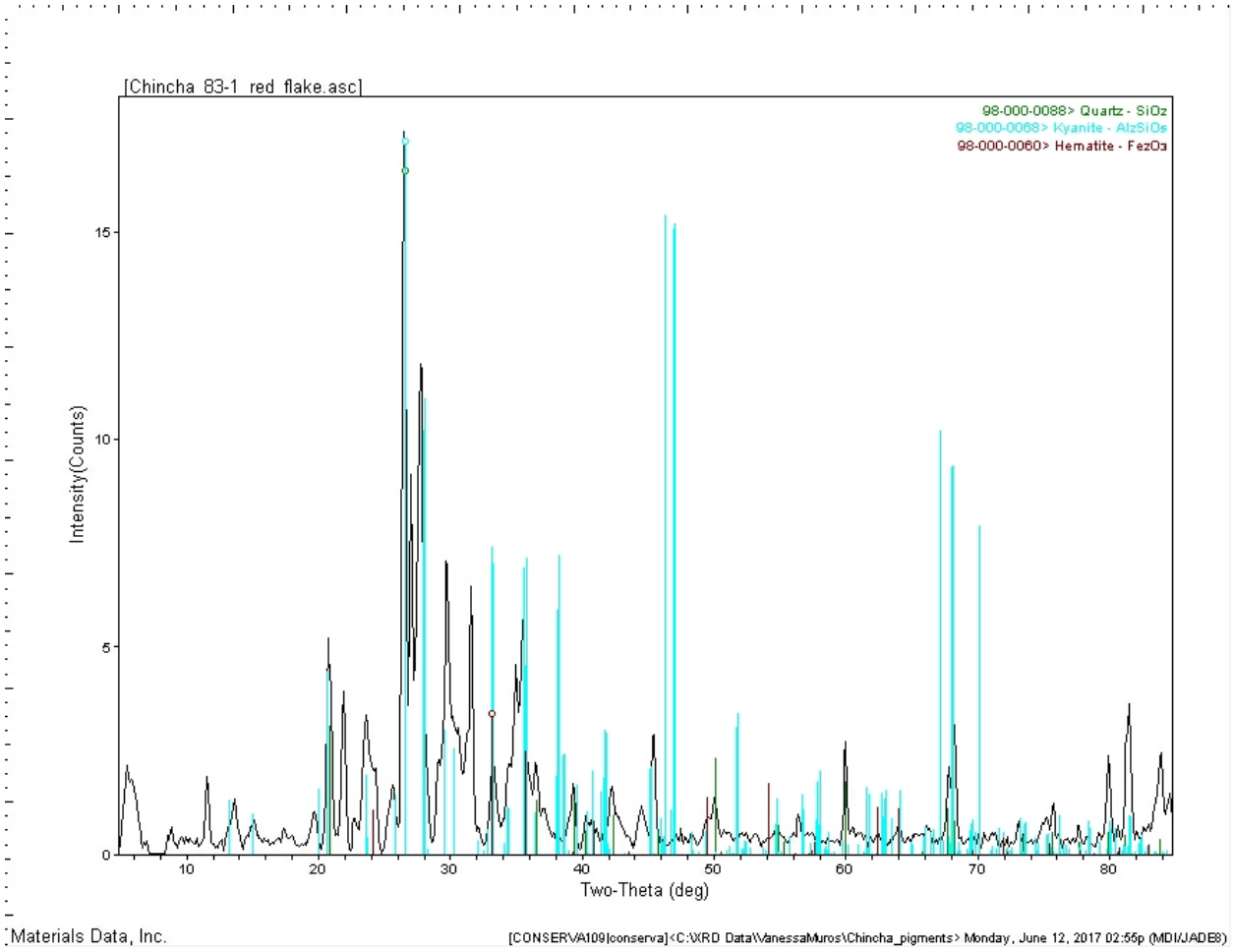

Figure B.28: XRD analysis of 83-1

Figure B.29: Textile, found in UC-008 Tomb 1 (*chullpa*), from which a red pigment sample (8425) was extracted

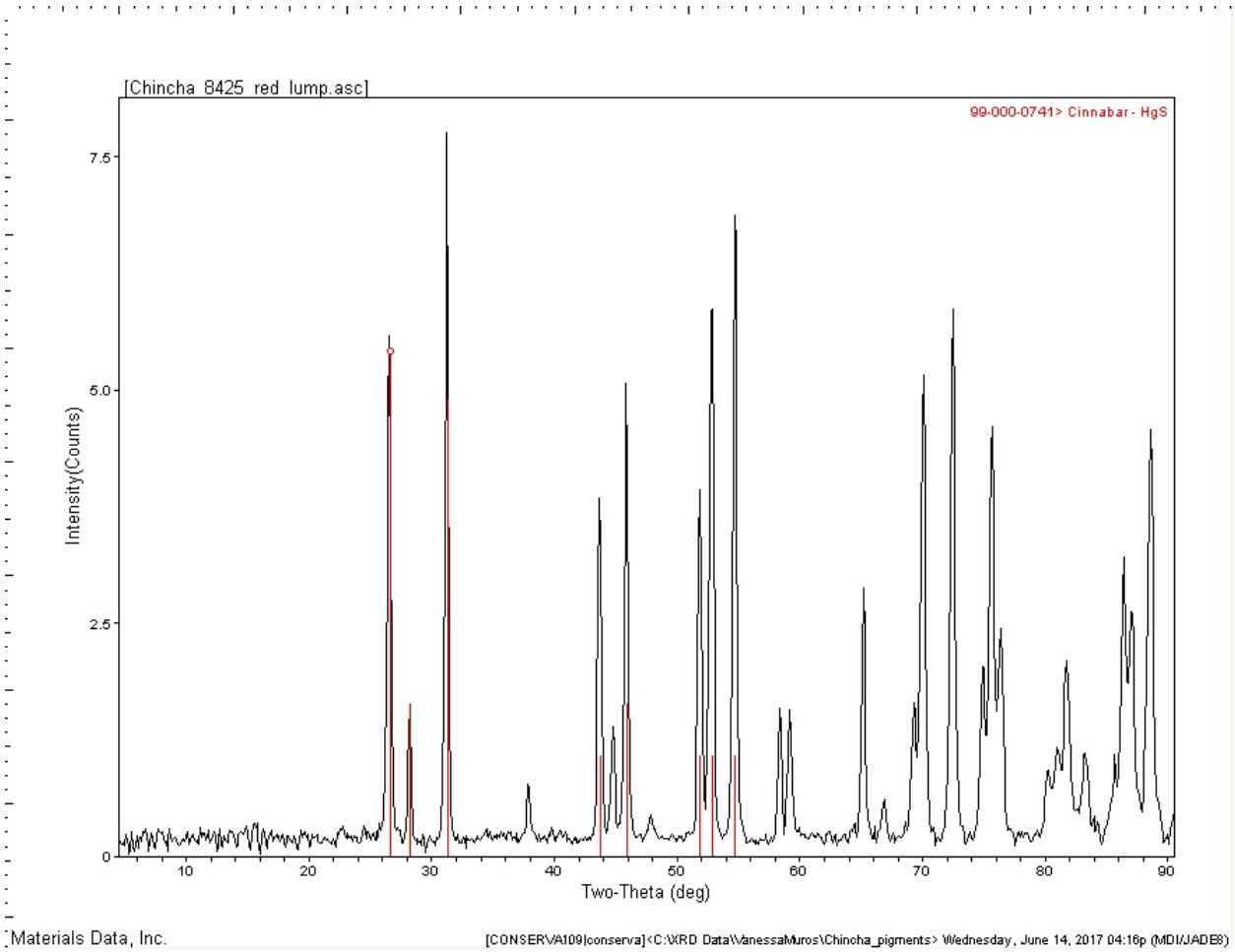

Figure B.30: XRD analysis of 8425

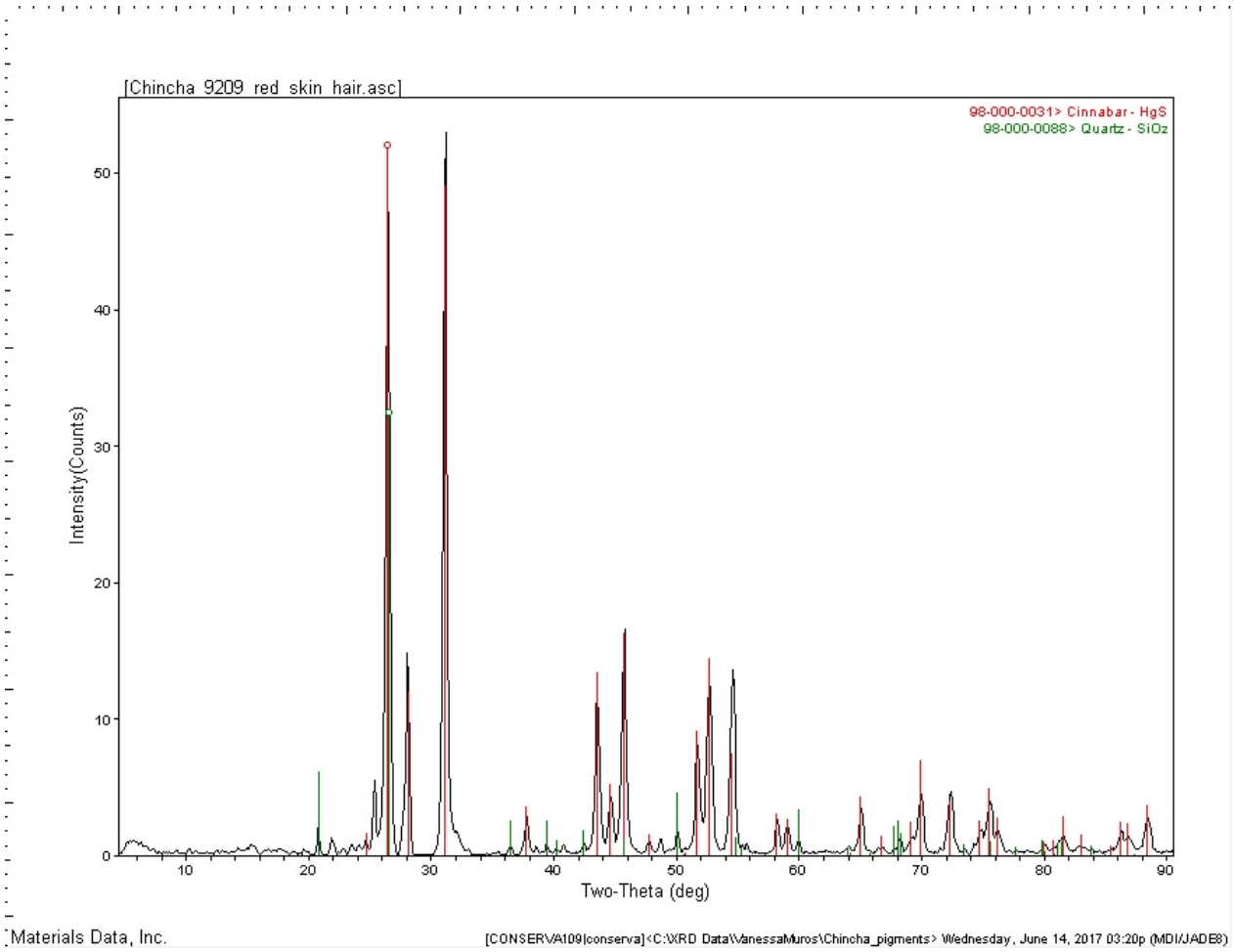

Figure B.31: XRD analysis of red pigment sample (9209) extracted from hair found in the Sector B, Unit 1 eastern cist

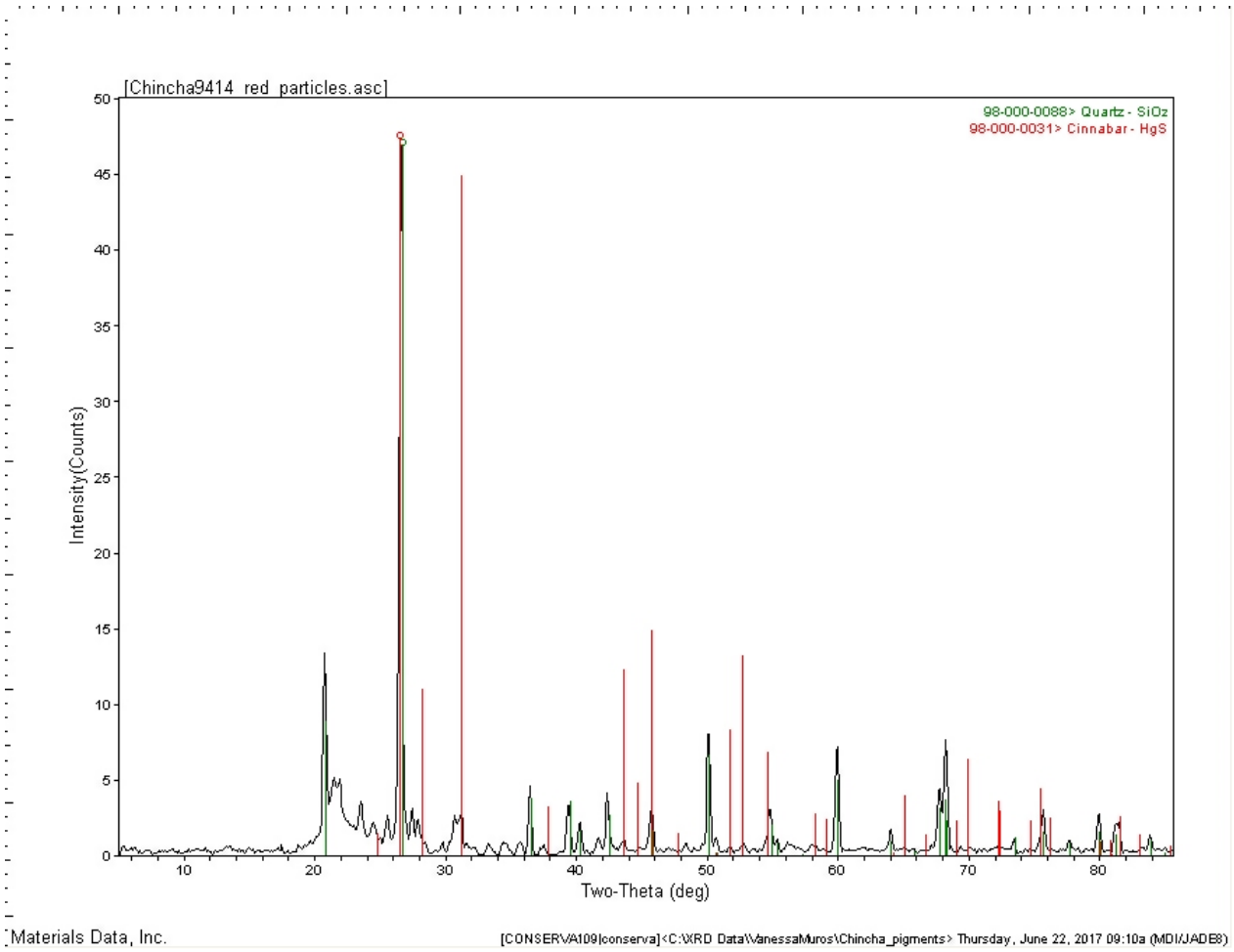

Figure B.32: XRD analysis of red pigment sample (9414) extracted from bone found in the Sector B *chullpa*

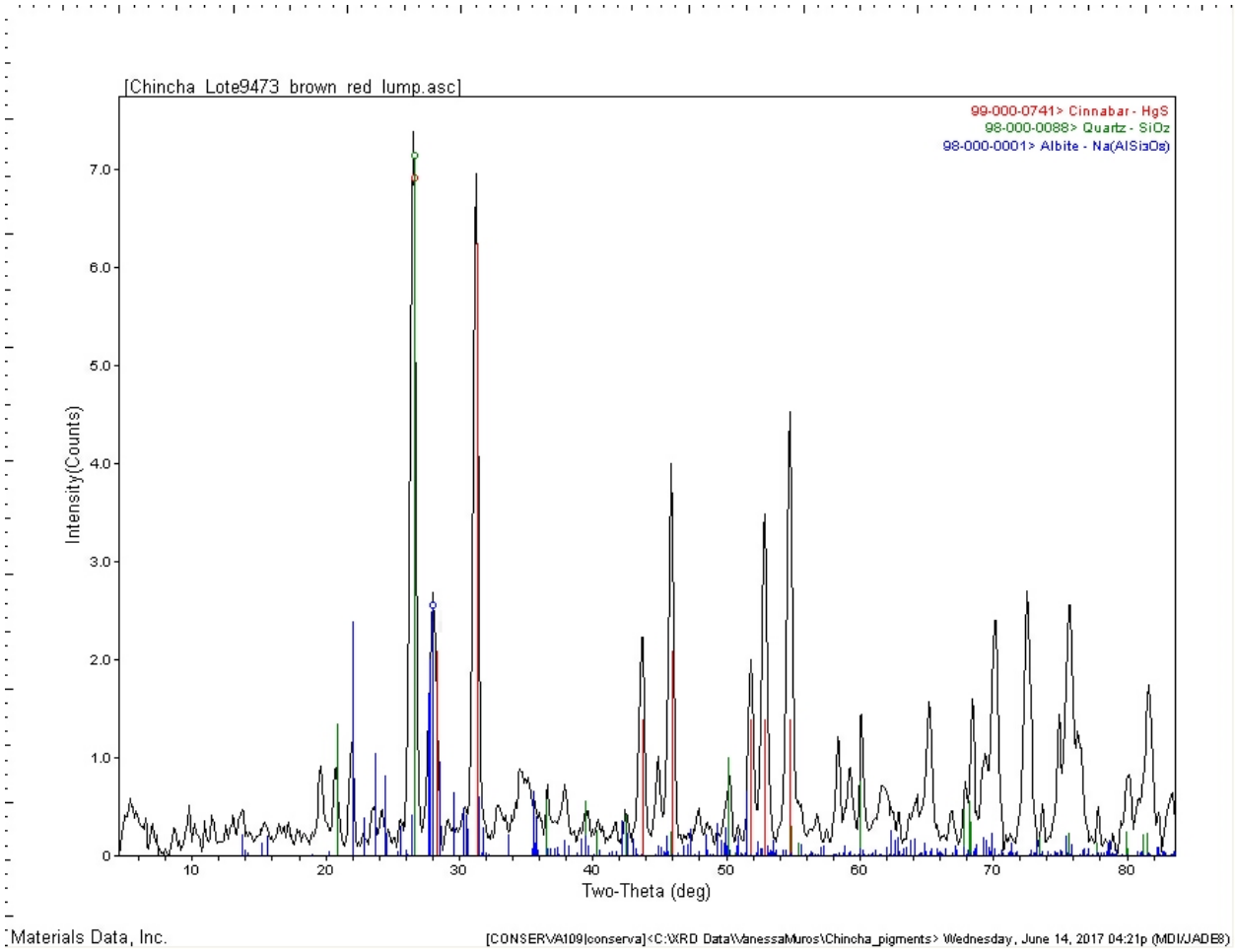

Figure B.33: XRD analysis of red pigment sample (9473) extracted from the soil matrix in the Sector B *chullpa*

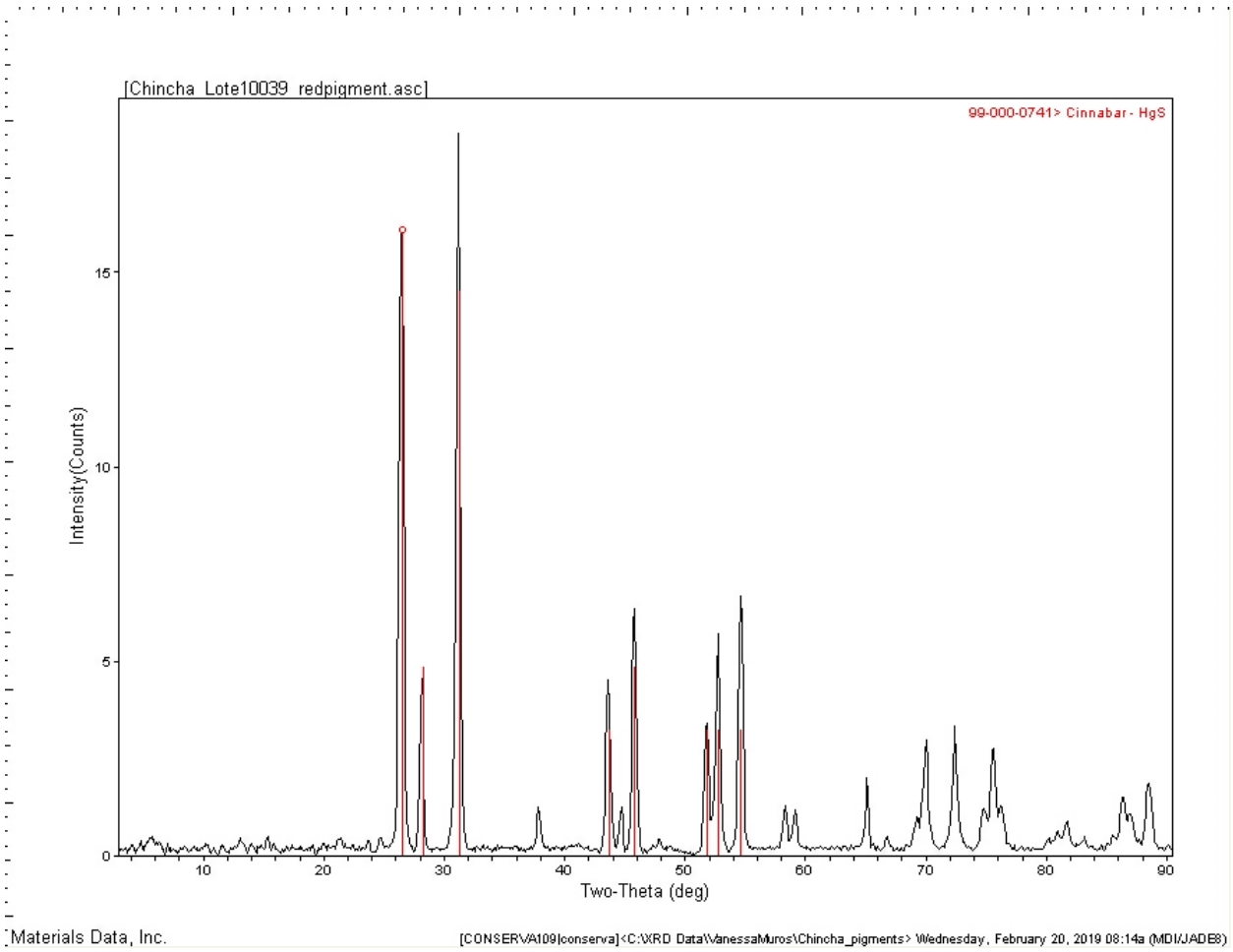

Figure B.34: XRD analysis of 10039

Figure B.35: Adult, likely male jaw bone, found in UC-018 Tomb 9 (*chullpa*), from which a red pigment sample (717-17-4) was extracted

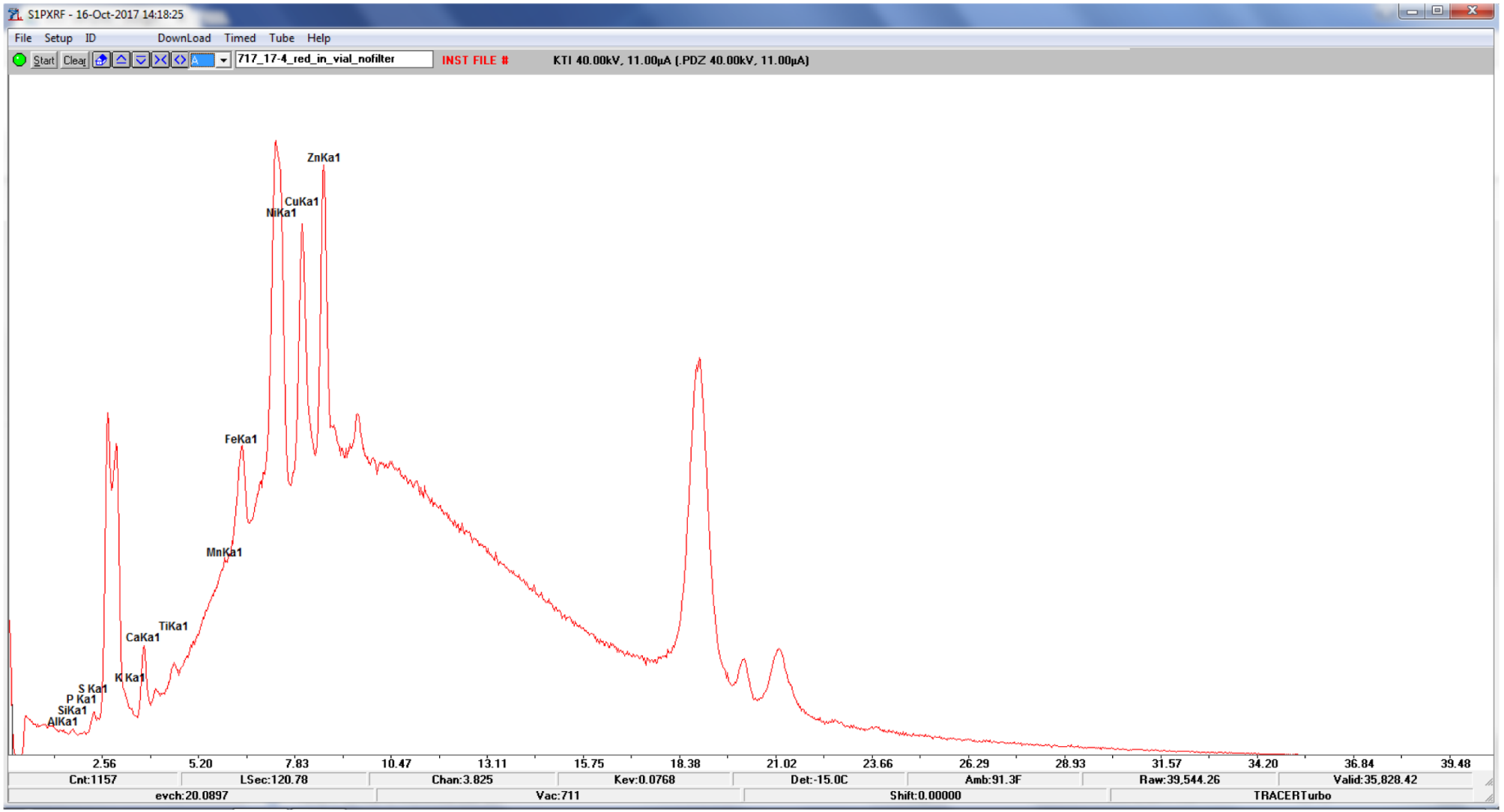

Figure B.36: XRF analysis of 717-17-4

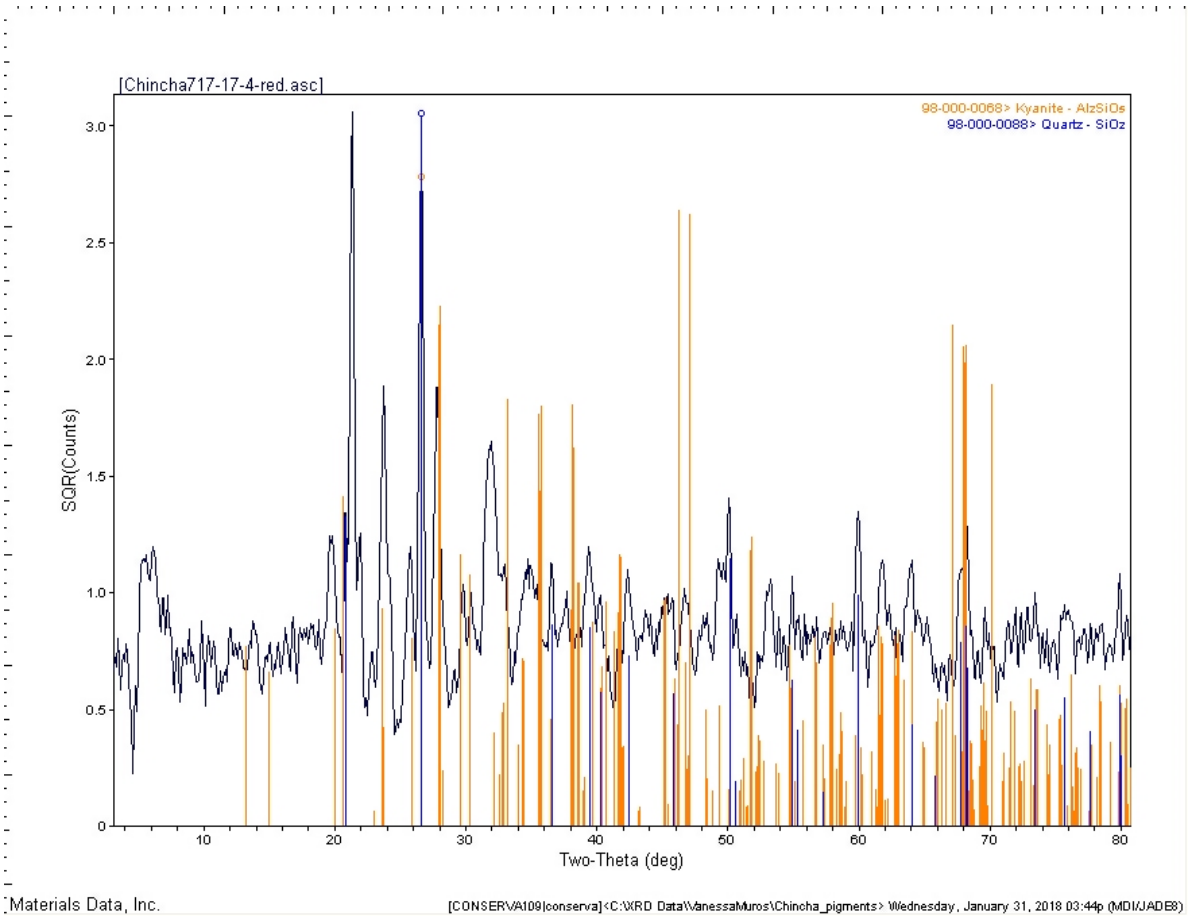

Figure B.37: XRD analysis of 717-17-4

Figure B. 38: Juvenile cranial fragment, found in UC-025 Tomb 5 (*chullpa*), from which a red pigment sample (724-17-2) was extracted

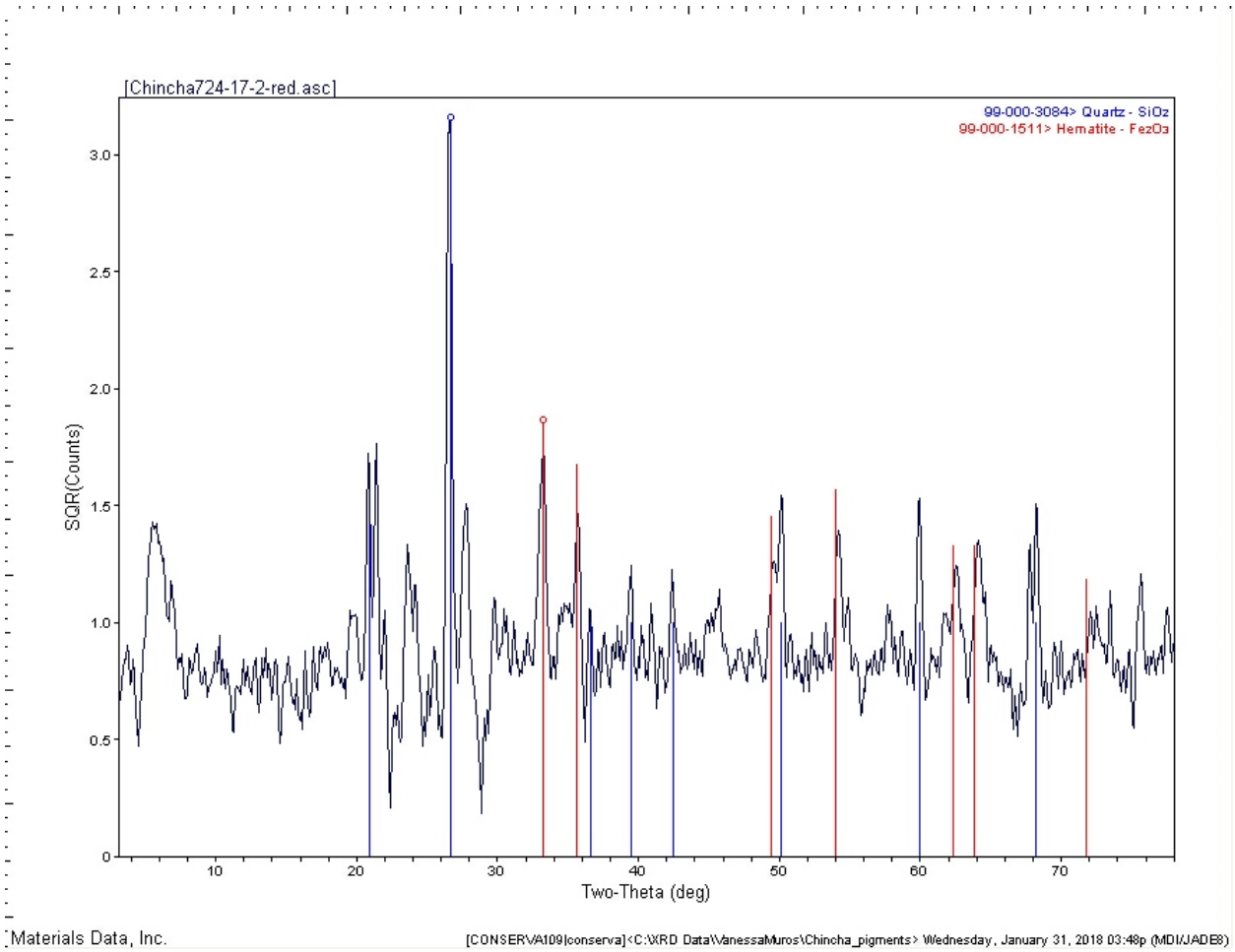

Figure B.39: XRD analysis of 724-17-2

Figure B. 40: Adult cranium, found in UC-025 Tomb 7 (*chullpa*), from which a red pigment sample (724-17-3) was extracted

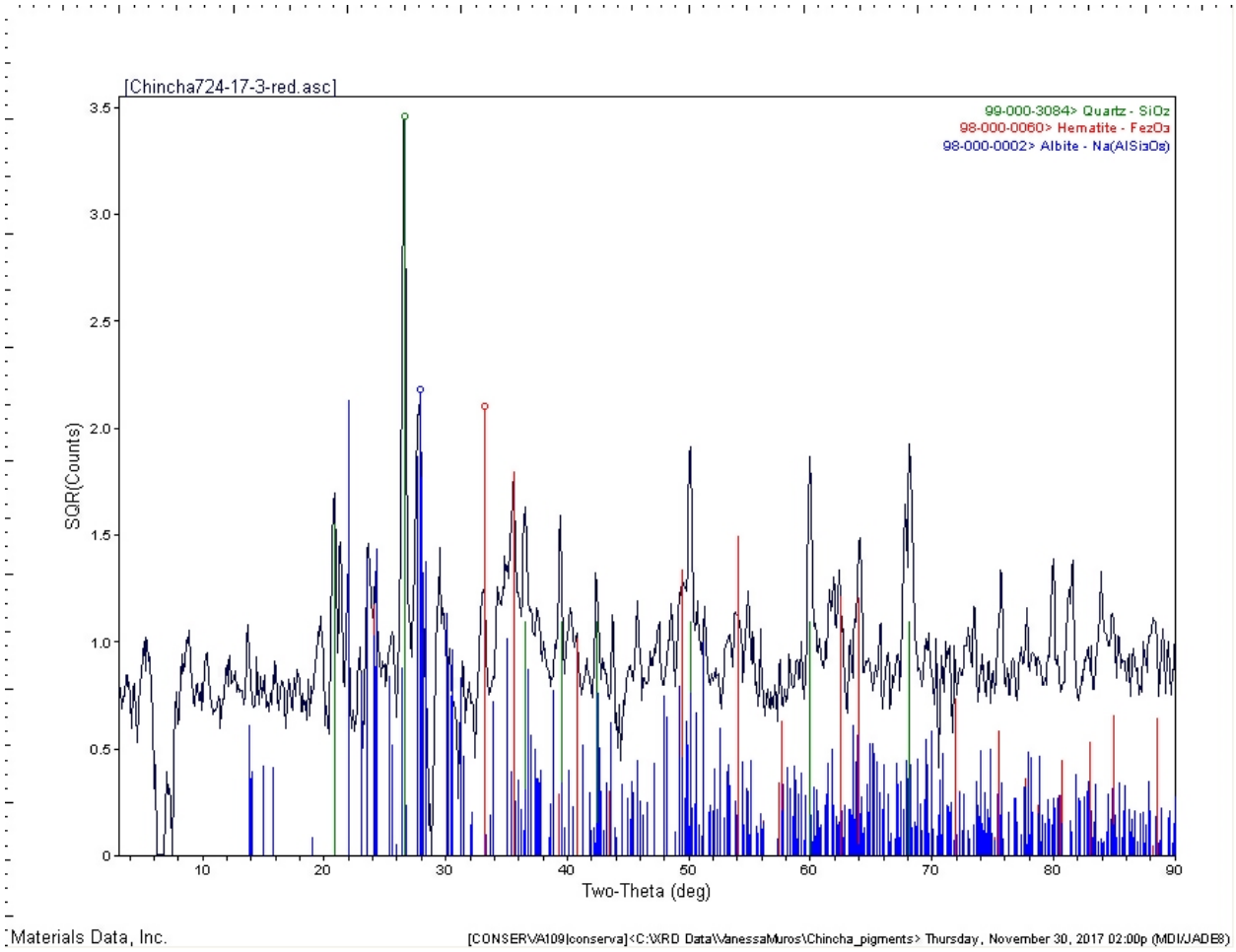

Figure B.41: XRD analysis of 724-17-3

Figure B.42: Adult, male cranium, found in UC-026 Tomb 2 (*chullpa*), from which a red pigment sample (724-17-4) was extracted

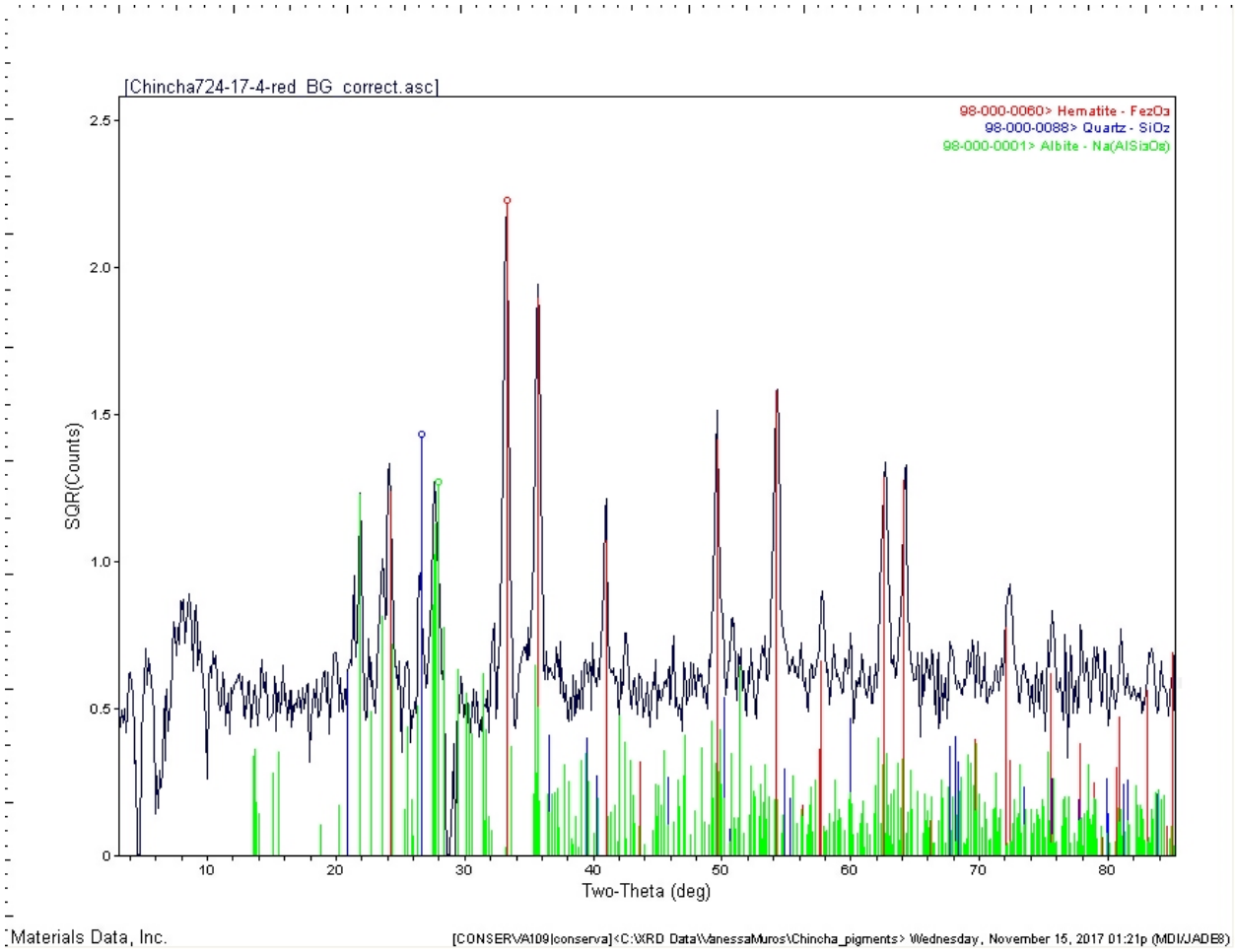

Figure B.43: XRD analysis of 724-17-4

Figure B.44: Adult, male cranium, found in UC-026 Tomb 21 (*chullpa*), from which a red pigment sample (724-17-5) was extracted

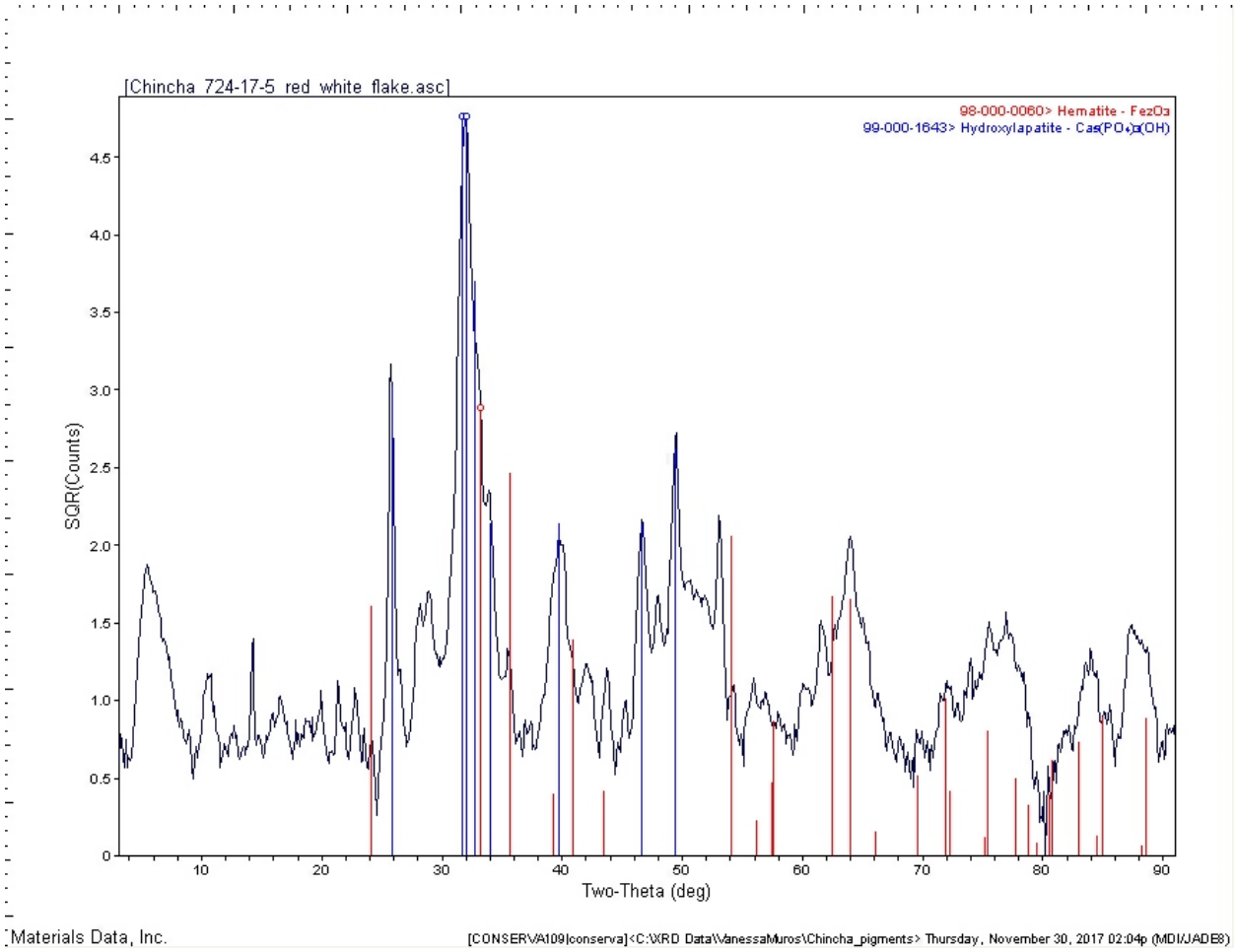

Figure B.45: XRD analysis of 724-17-5

Figure B. 46: Juvenile cranium, found in UC-026 Tomb 13 (*chullpa*), from which a red pigment sample (724-17-7) was extracted

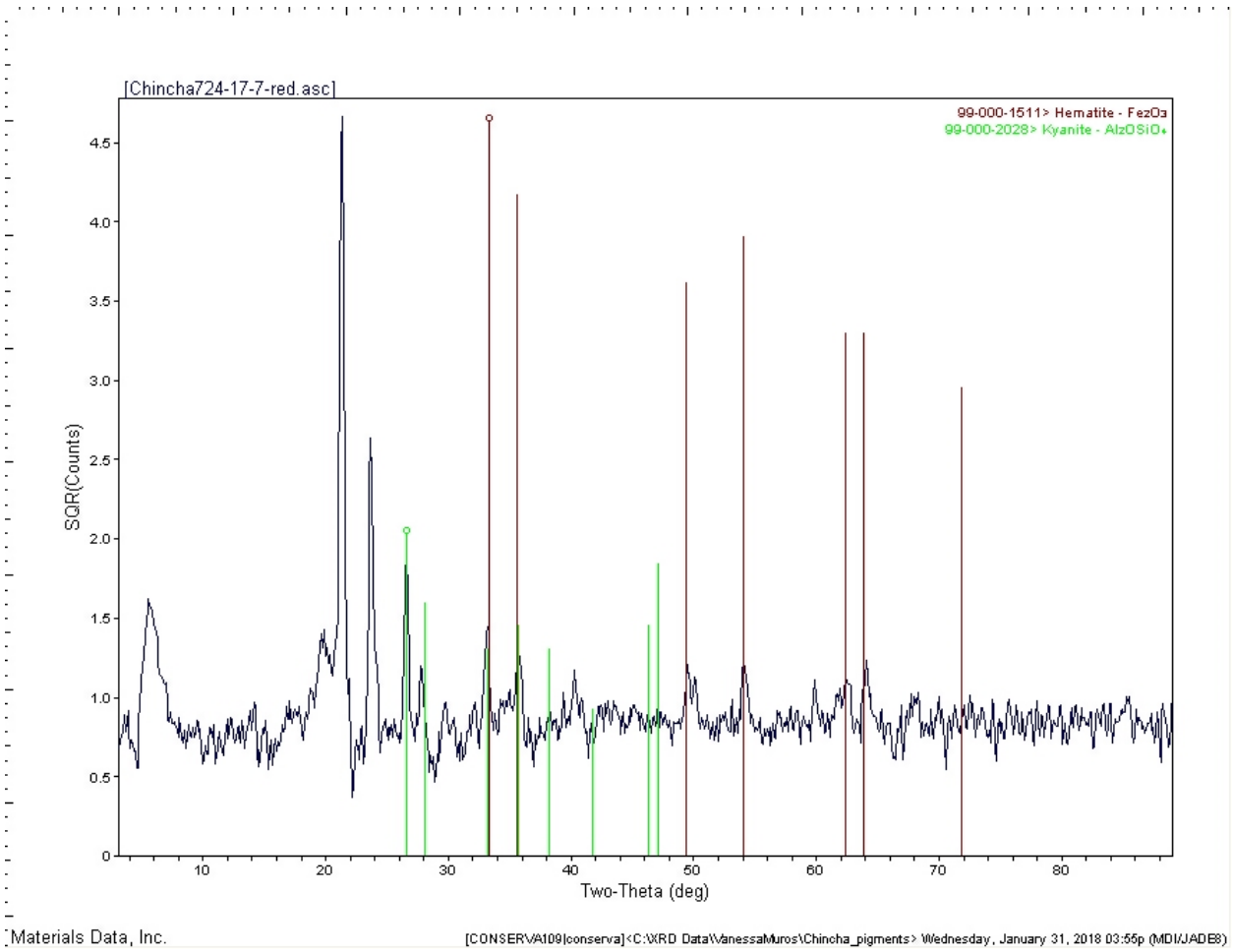

Figure B.47: XRD analysis of 724-17-7

Figure B.48: Adult, male cranium, found in the UC-026 mortuary site, from which a red pigment sample (724-17-9) was extracted

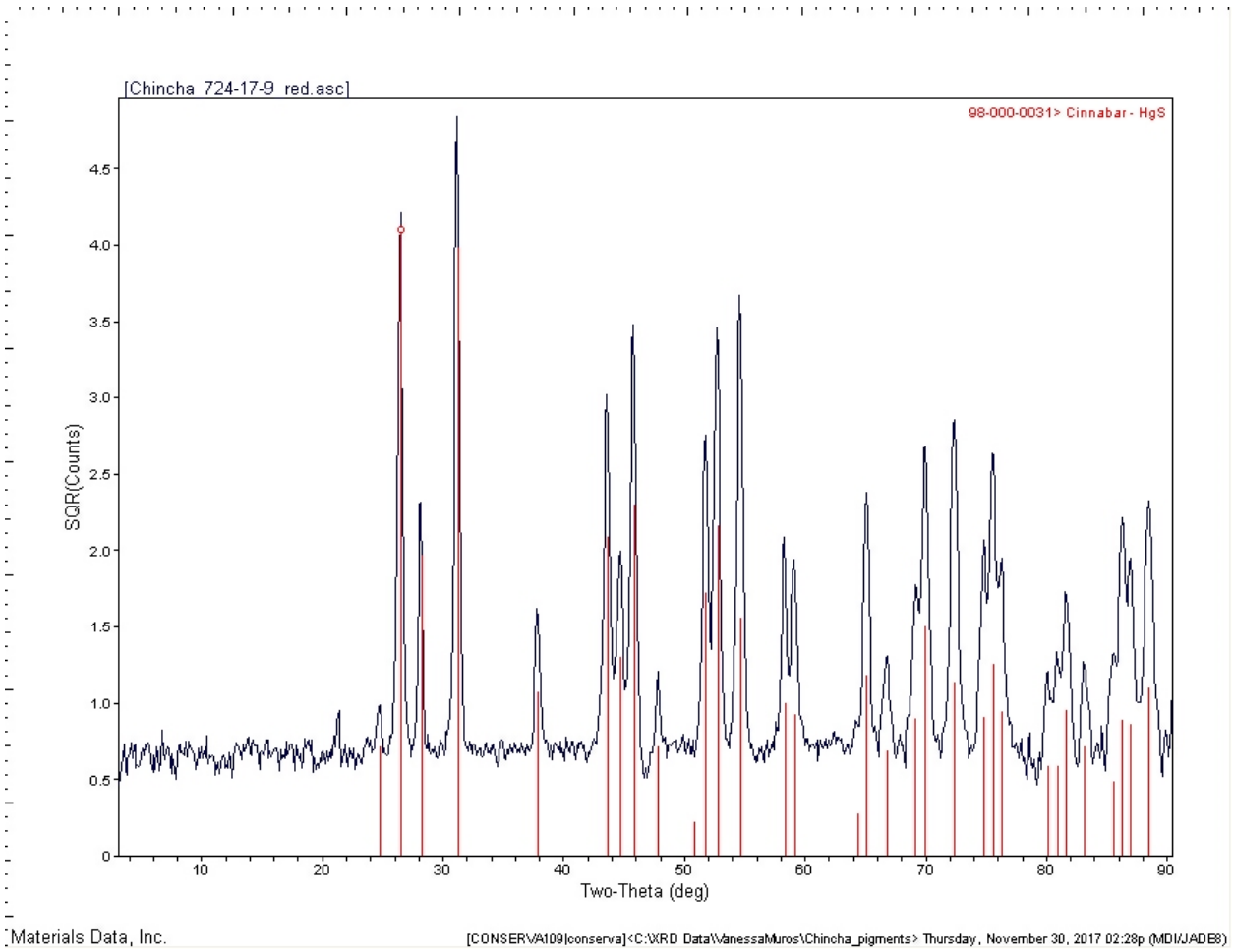

Figure B.49: XRD analysis of 724-17-9

Figure B.50: Adult, possibly female cranium, found in the UC-026 mortuary site, from which a red pigment sample (724-17-10) was extracted

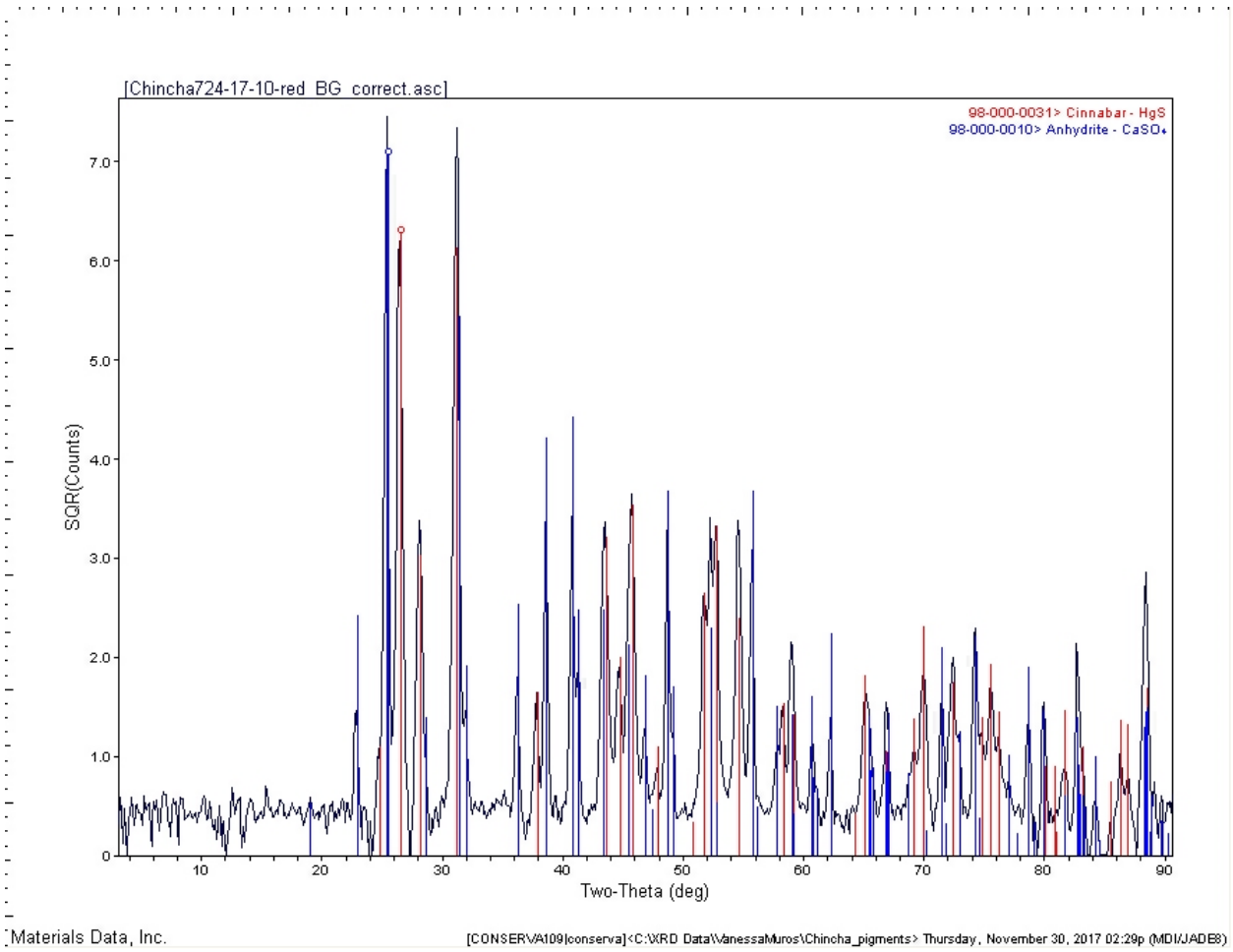

Figure B.51: XRD analysis of 724-17-10

Figure B.52: Adult, male cranium, found in the UC-037 mortuary site, from which a red pigment sample (724-17-11) was extracted

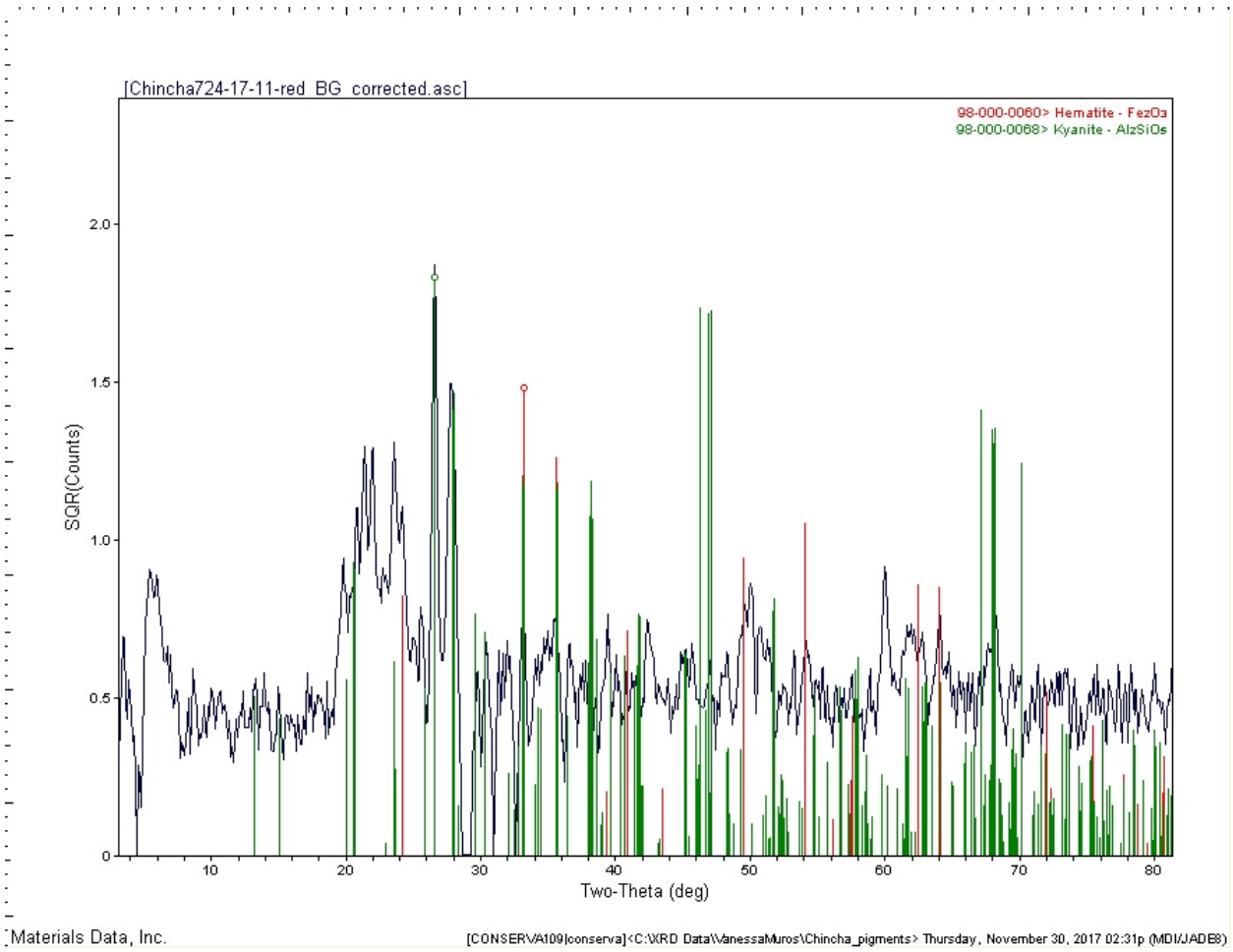

Figure B.53: XRD analysis of 724-17-11

Figure B. 54: Adult, male cranium, found in UC-037 Tomb 16 (*chullpa*), from which a red pigment sample (724-17-12) was extracted

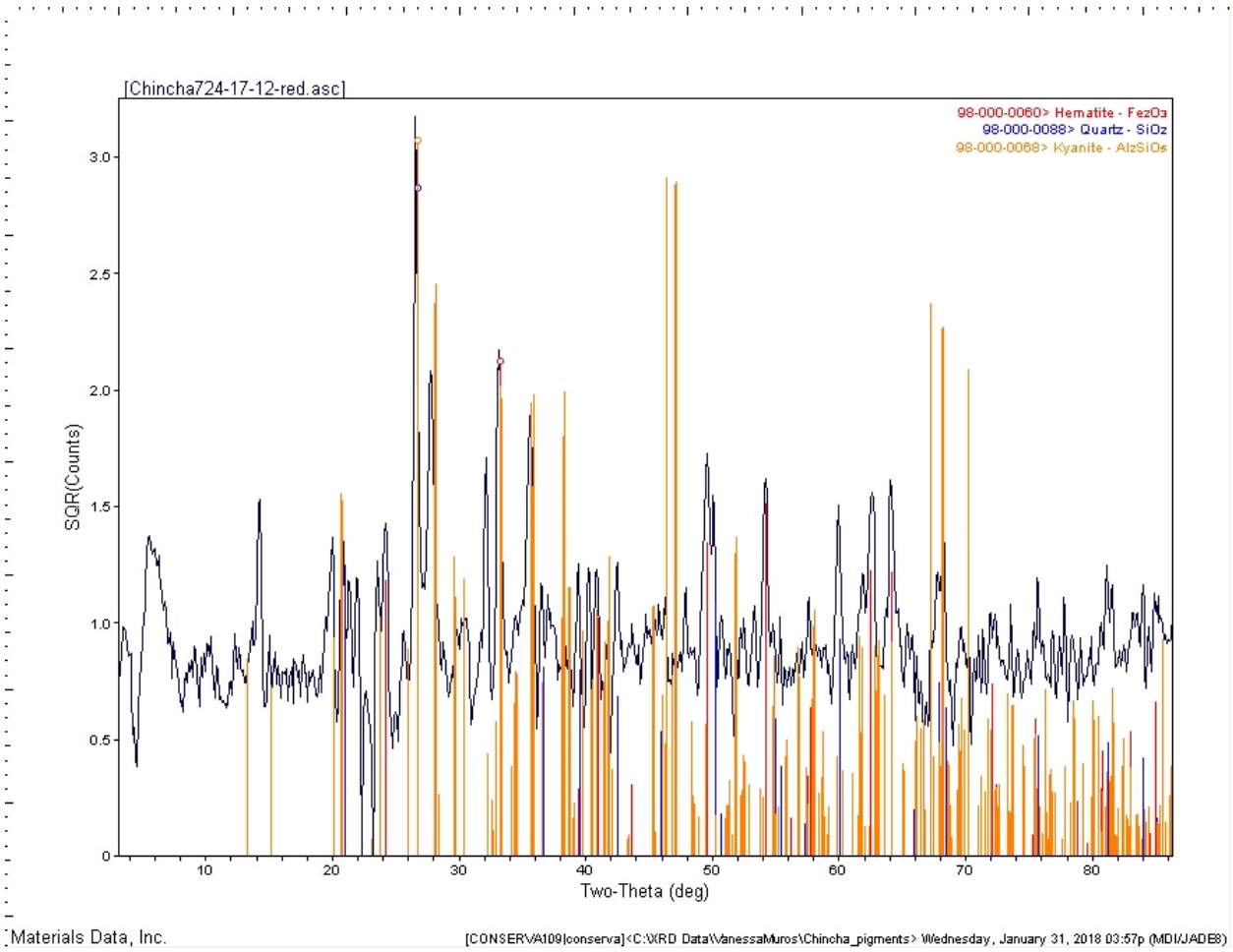

Figure B.55: XRD analysis of 724-17-12

Figure B. 56: Adult, male cranium, found in UC-037 Tomb 9 (*chullpa*), from which a red pigment sample (724-17-13) was extracted

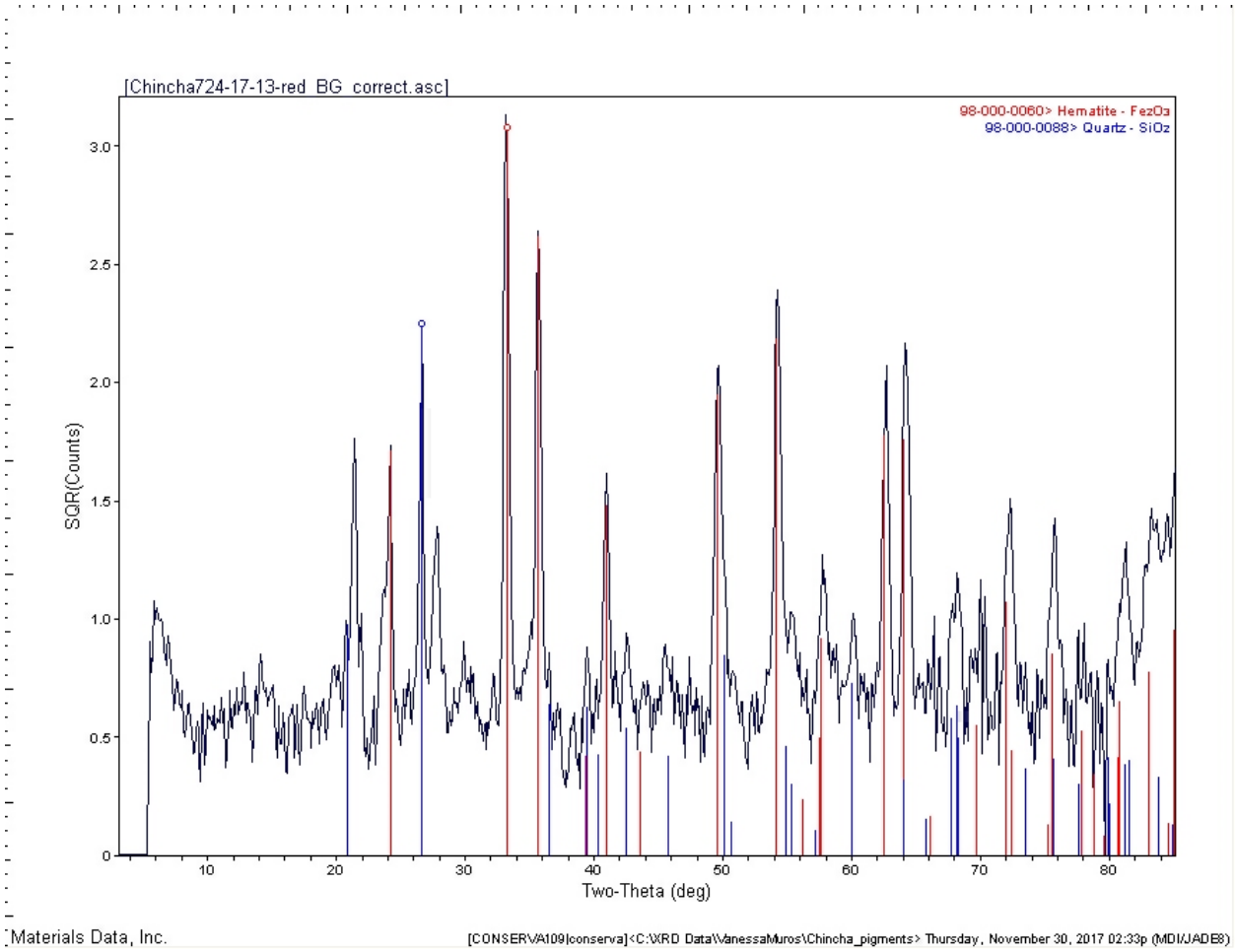

Figure B.57: XRD analysis of 724-17-13

Figure B. 58: Adult, male cranium, found near UC-079 Tomb 3 (*chullpa*), from which a red pigment sample (81-17-4) was extracted

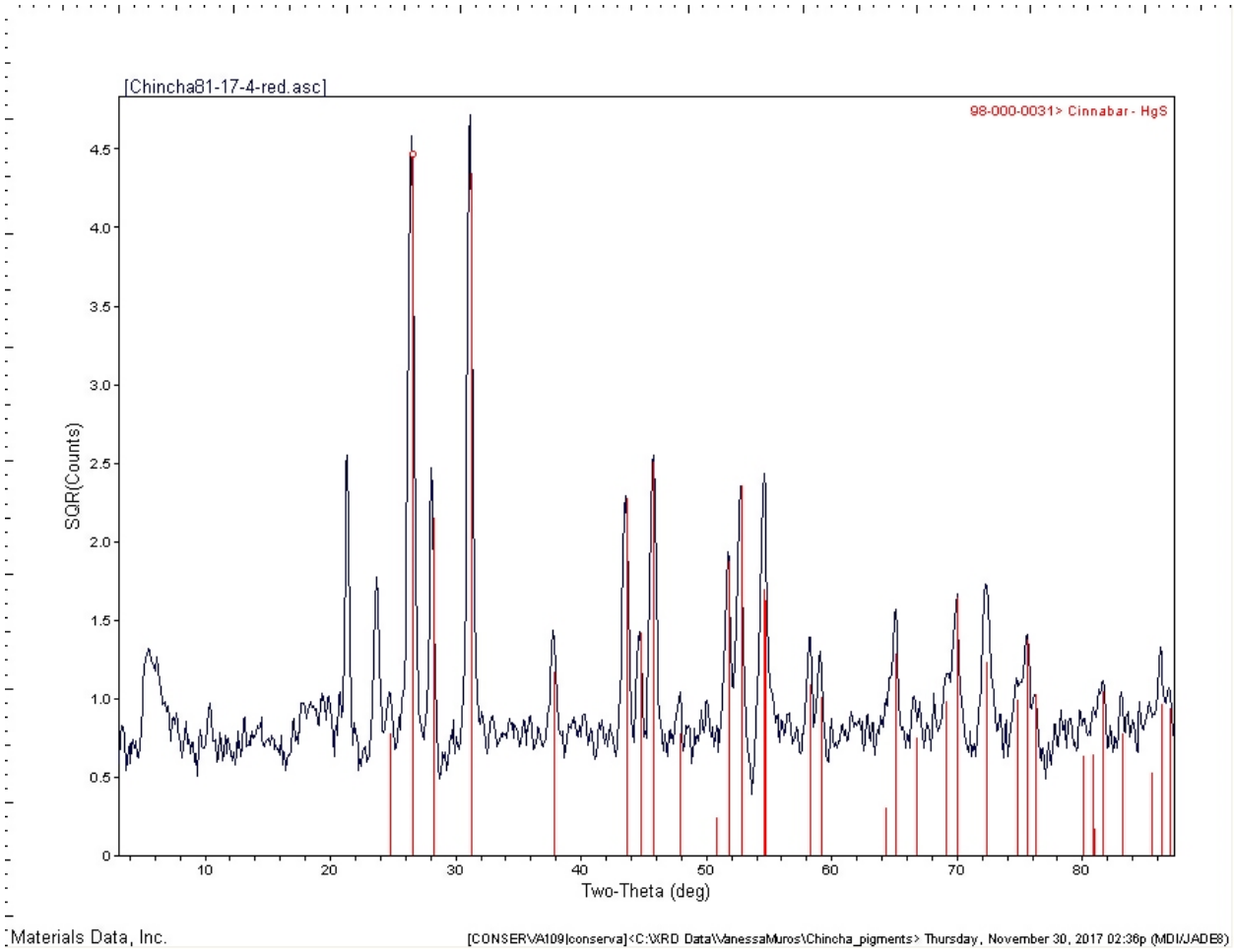

Figure B.59: XRD analysis of 81-17-4

Figure B.60: Iron oxide samples (81-17-2) from copper and iron oxide source located in the northeastern area of the study area

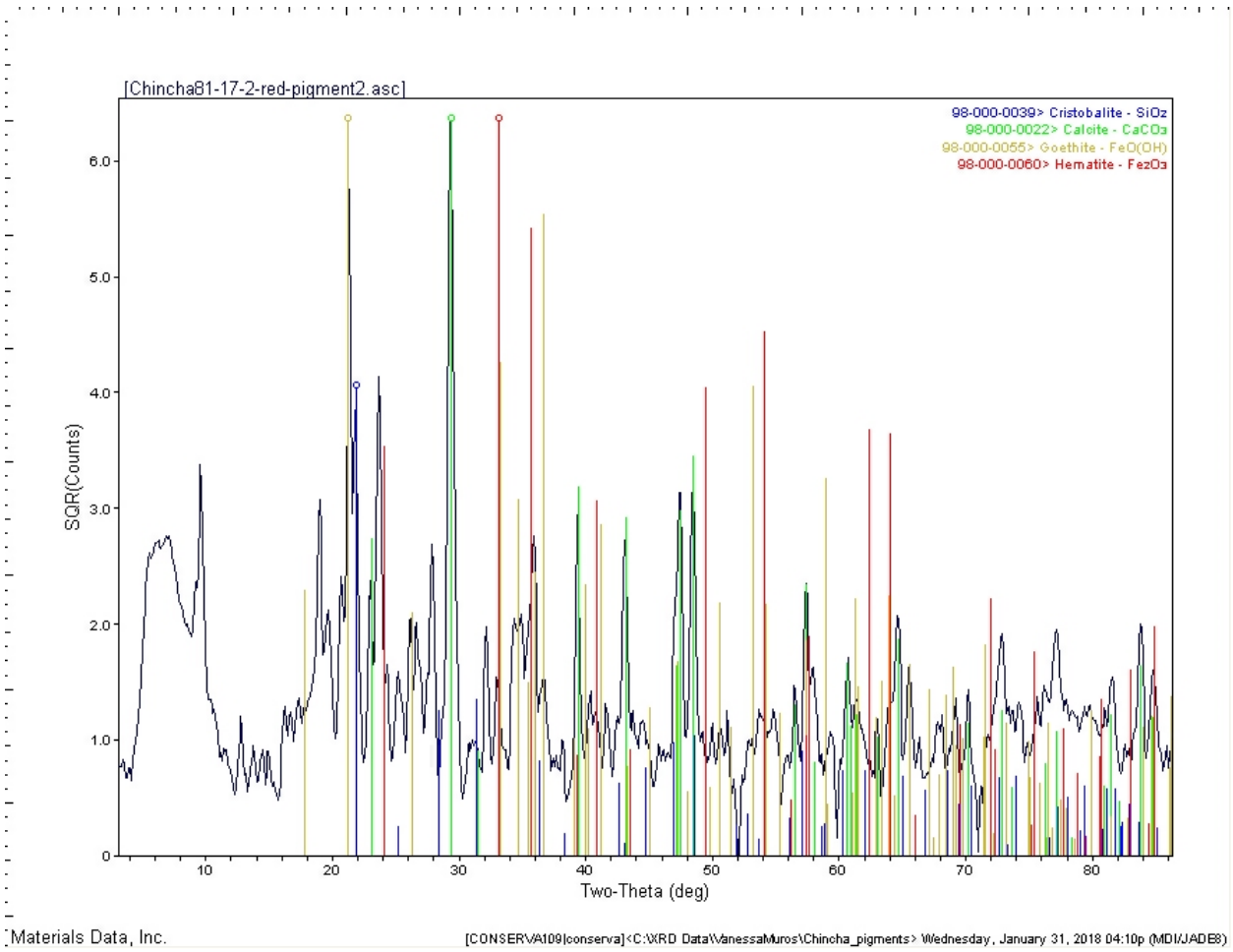

Figure B.61: XRD analyses of 81-17-2

Figure B.62: Shell container, found in the UC-012 mortuary site, from which a red pigment sample (3021) was extracted

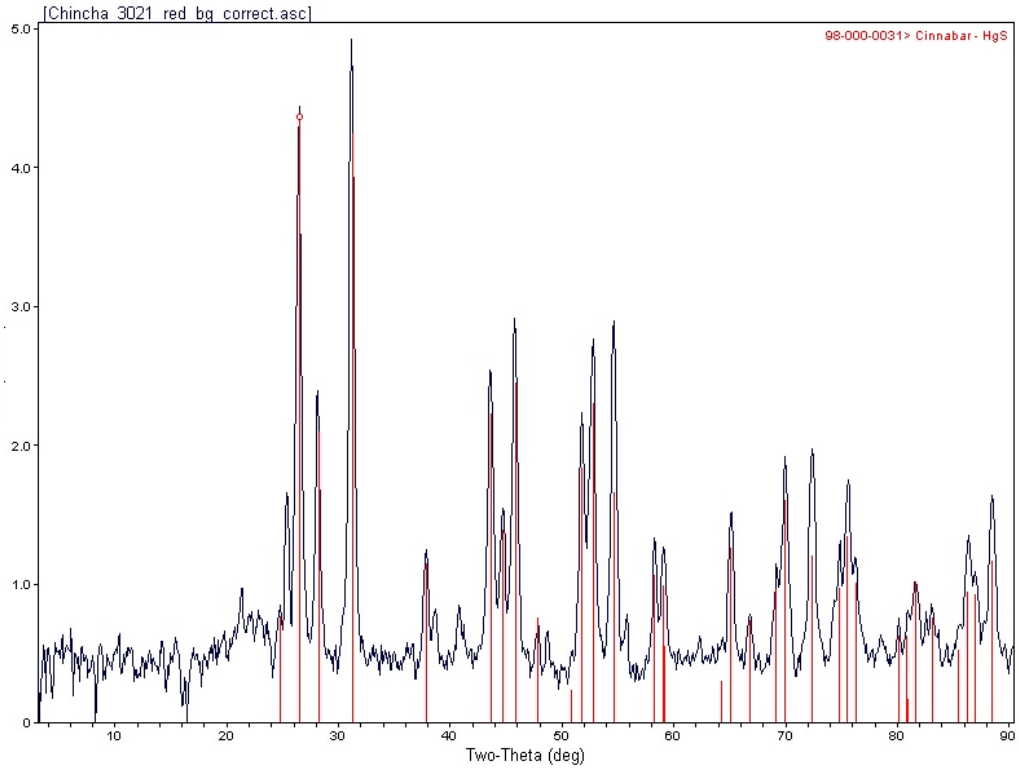

Figure B.63: XRD analyses of 3021

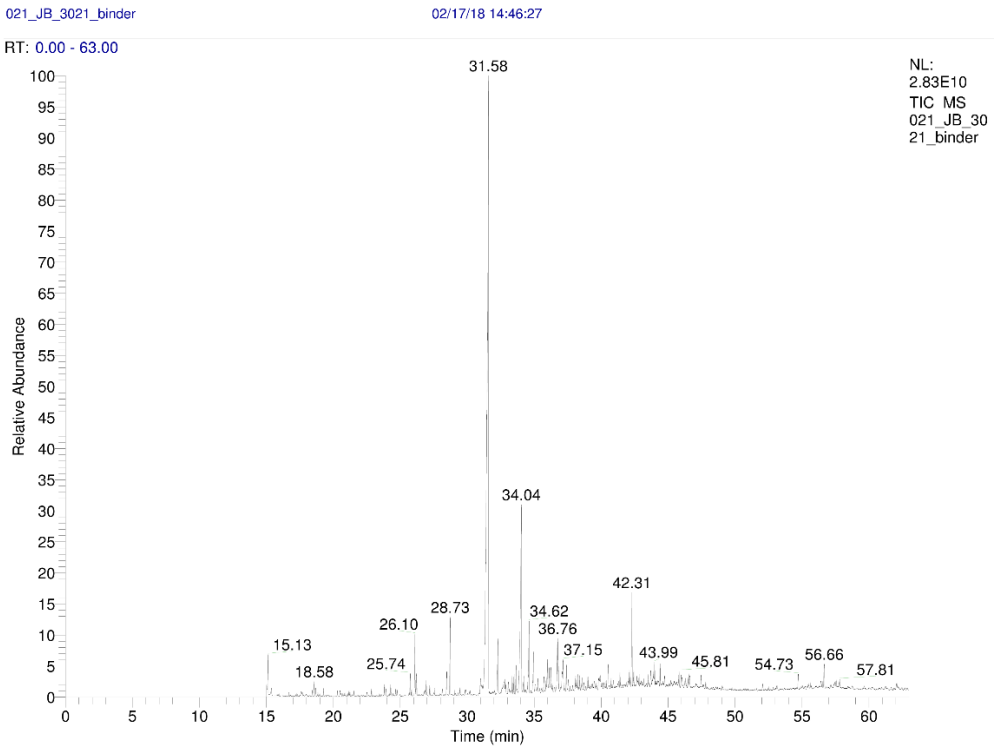

Figure B.64: GC-MS chromatogram for 3021

Figure B. 65: The “bird pendant,” found in UC-008 Tomb 1 (*chullpa*), from which a red pigment sample (8258) was extracted

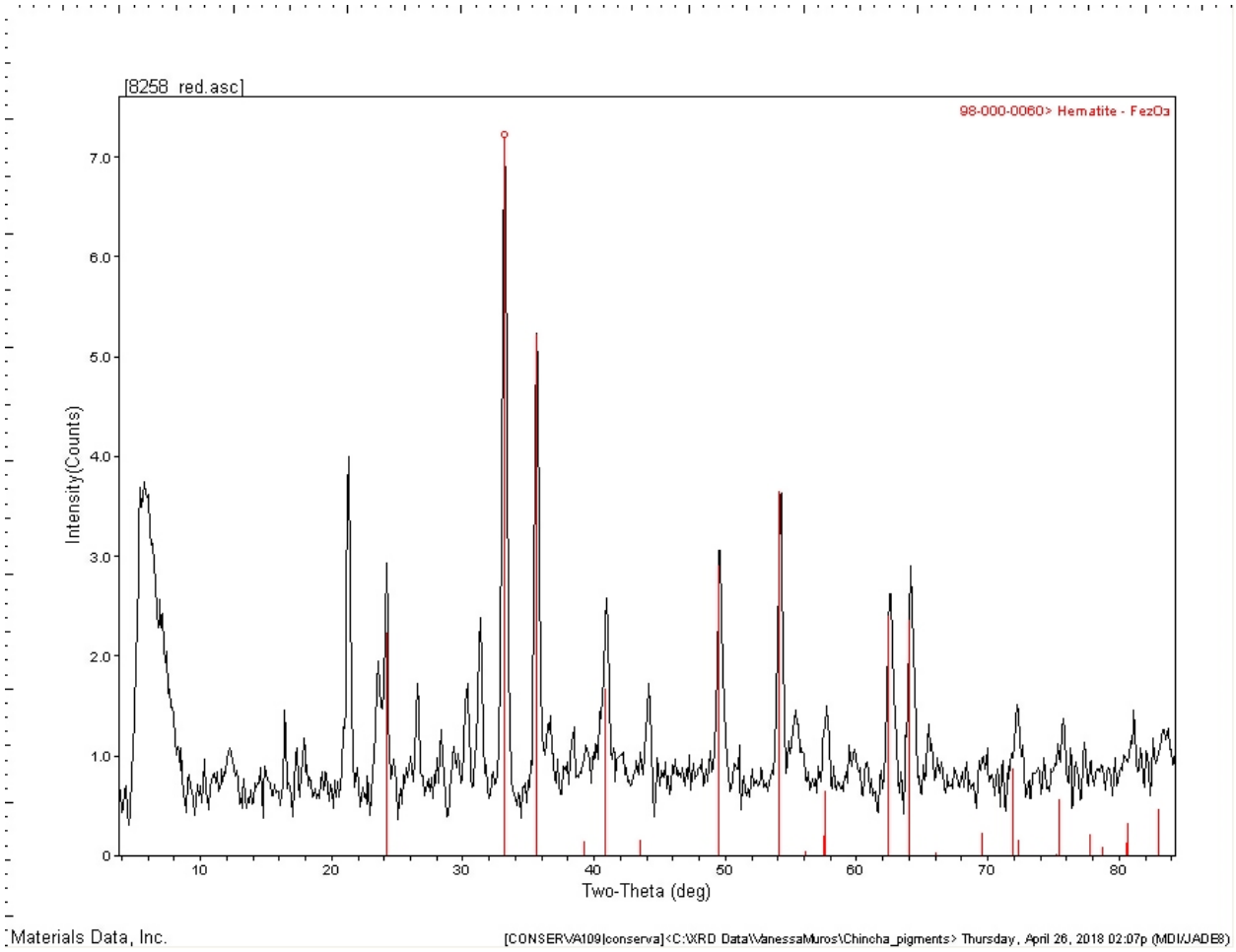

Figure B.66: XRD analysis of 8258

Appendix C: Orthomosaics, Maps, and Digital Elevation Models of Mortuary Sites

I produced orthomosaics, maps, and digital elevation models (DEMs) of 18 mortuary sites in the study area. Orthomosaics and DEMs are derived from aerial photos of these sites, which were captured using a DJI Mavic Pro drone. I used a Trimble R2 GPS with 4 cm accuracy to map these sites. Some of these data are shown in chapter 6 (for example, see Figures 4.3 – 4.7 and Figures 6.19 – 6.24). Here, I present orthomosaics, maps, and DEMs for the following sites: UC-002, UC-012, UC-025, UC-028, UC-026 (Group 3), UC-079, and UC-073. These sites were selected to demonstrate the variation of mortuary spatial organization in the study area.

Figure C.1: Orthomosaic of the UC-002 cemetery

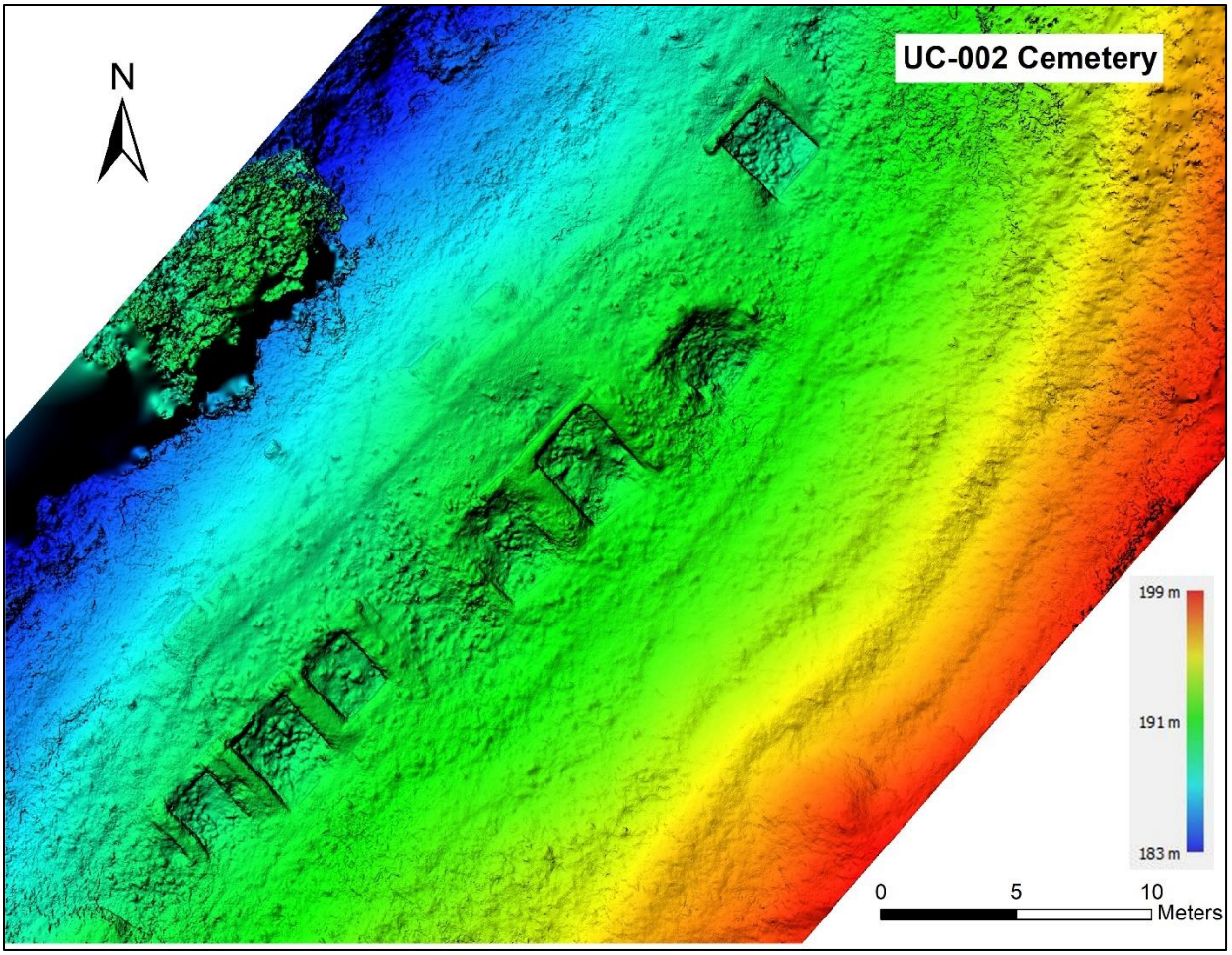

Figure C.2: DEM of UC-002

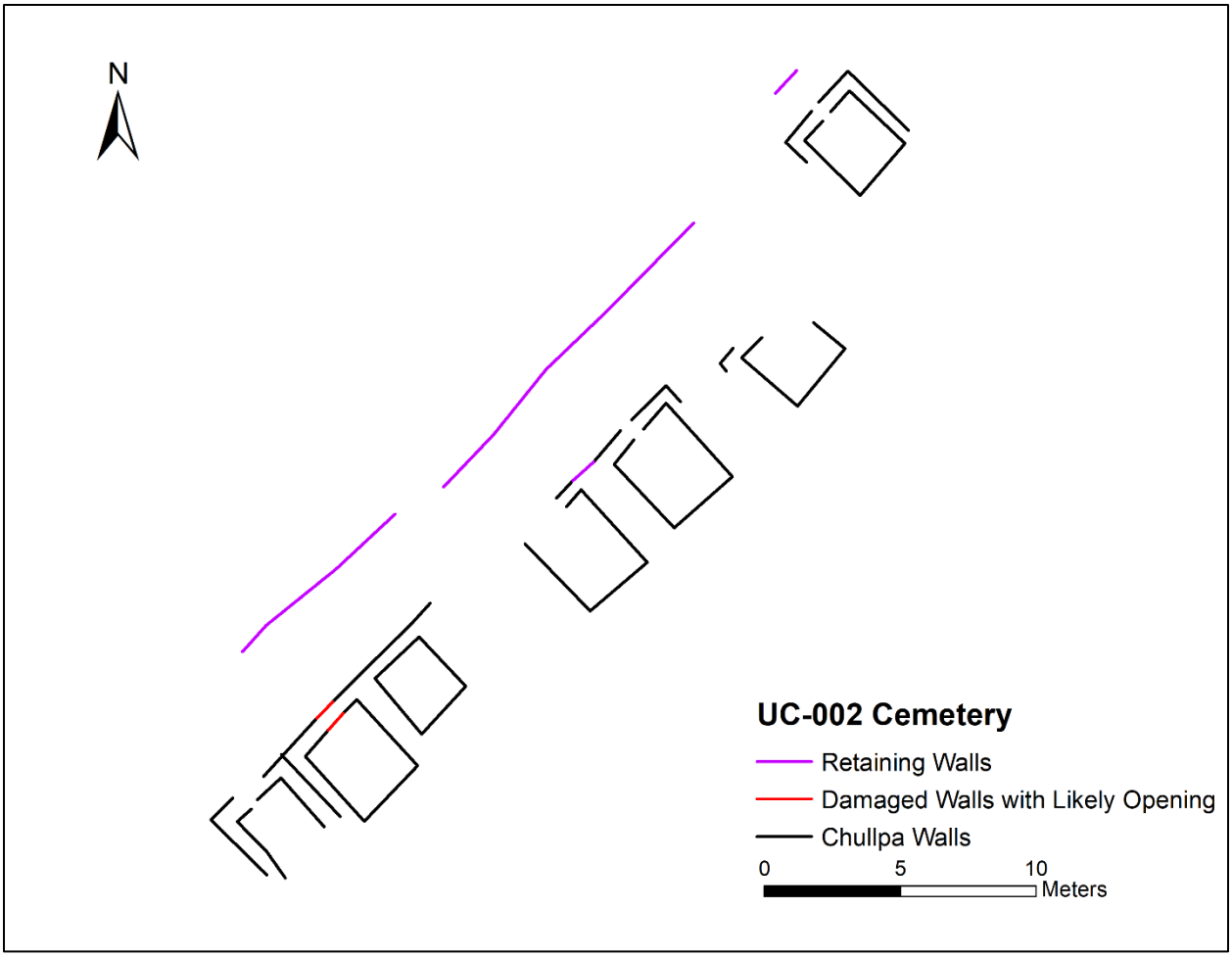

Figure C.3: Map of UC-002

Figure C.4: Orthomosaic of the central area of the UC-012 cemetery

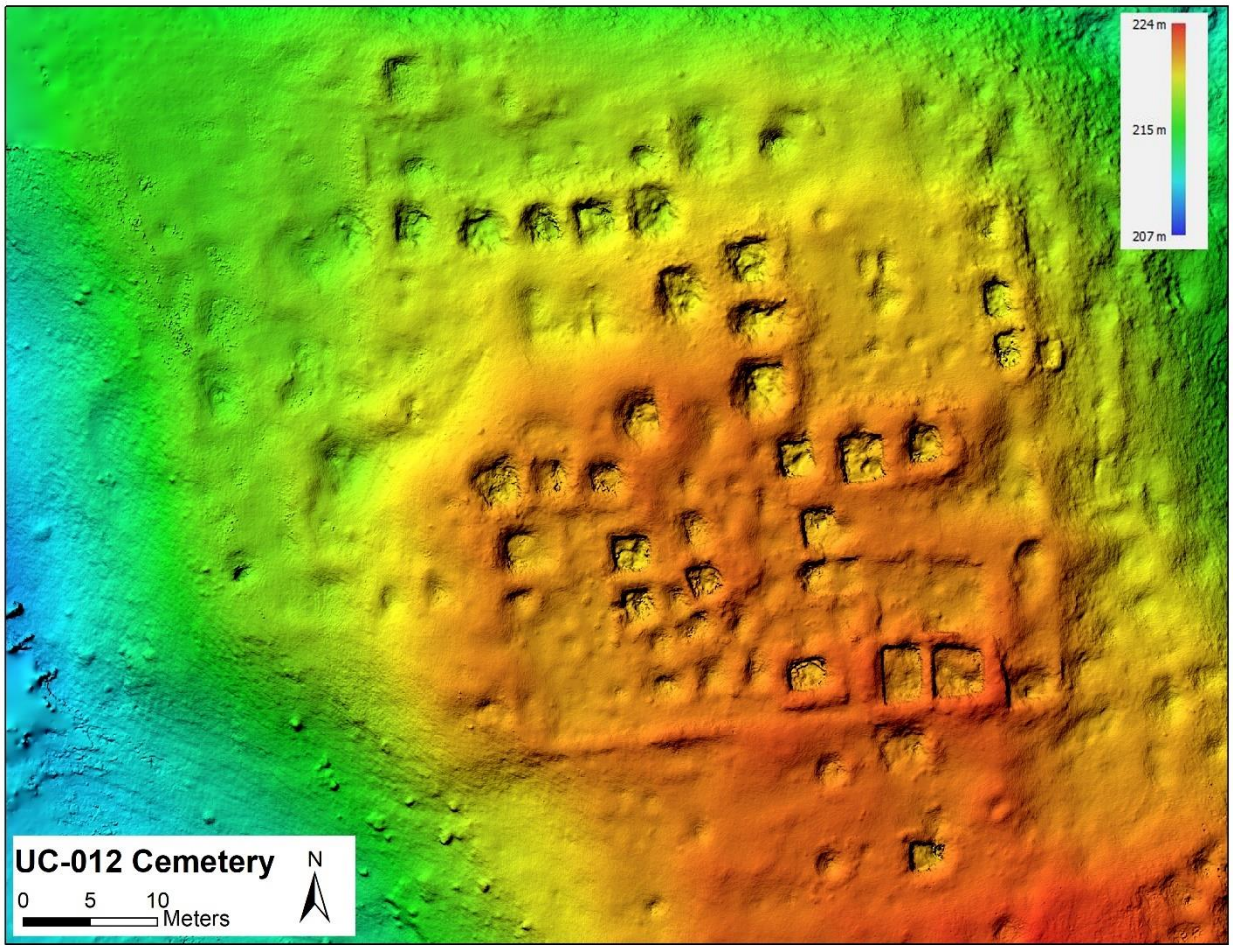

Figure C.5: DEM of the central area of UC-012

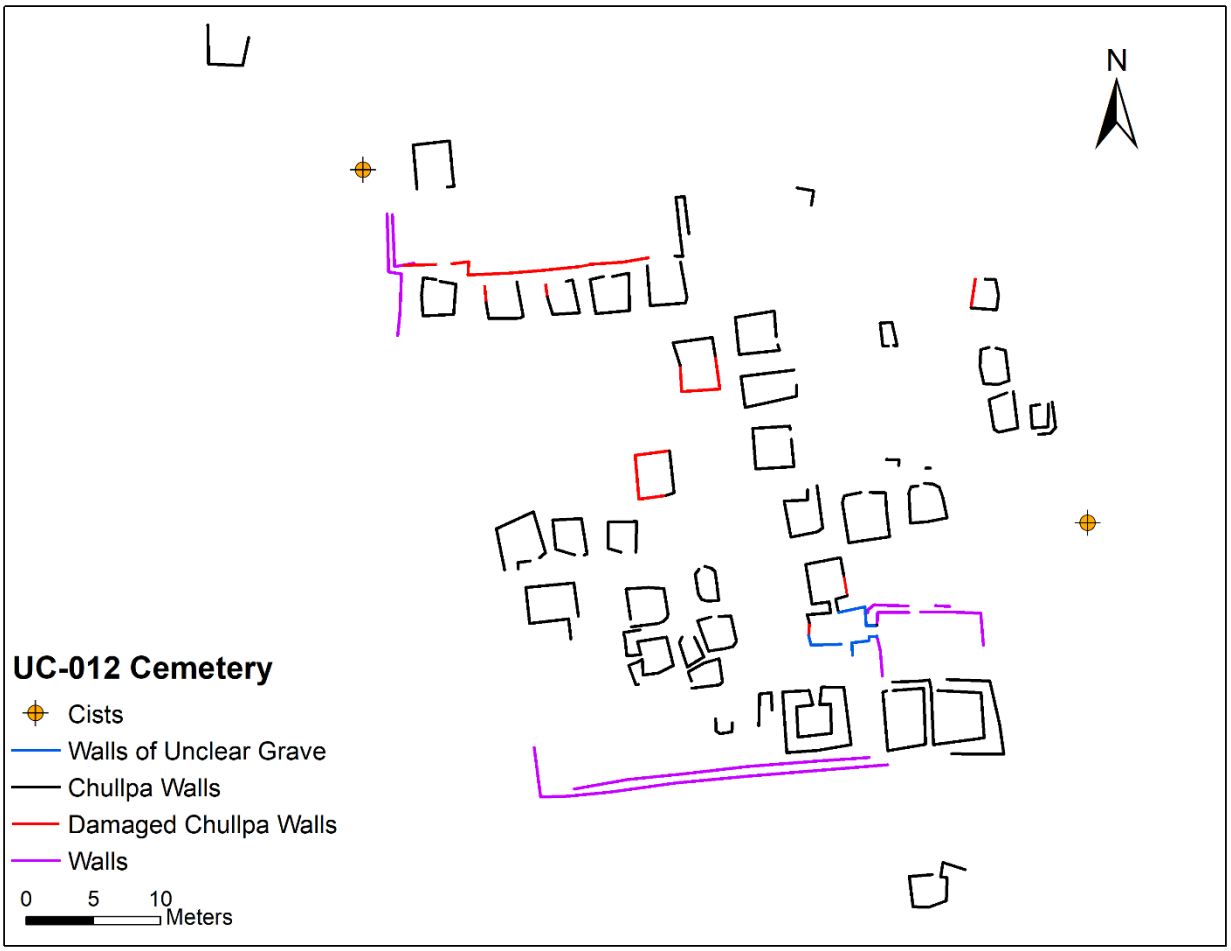

Figure C.6: Map of the central area of UC-012

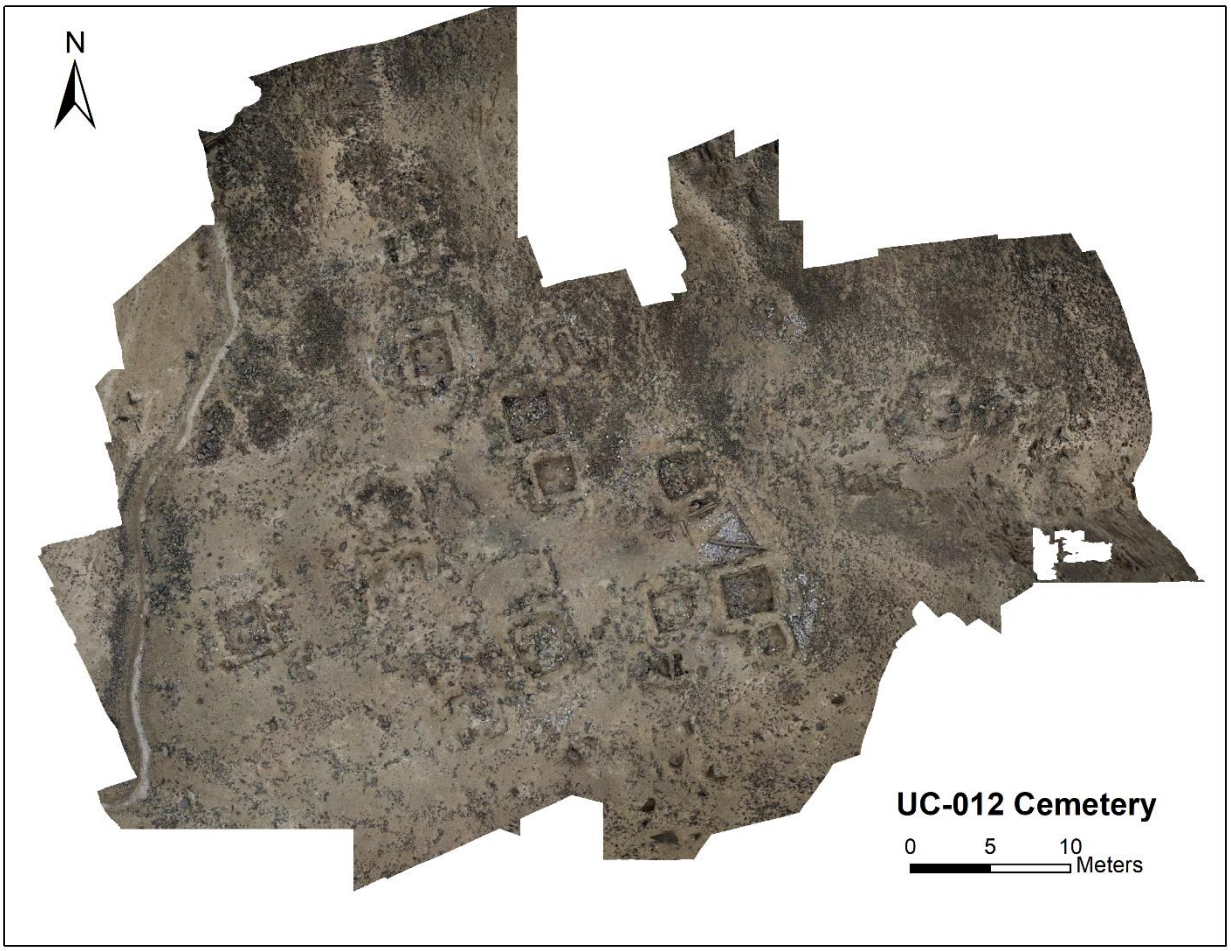

Figure C.7: Orthomosaic of the UC-025 cemetery

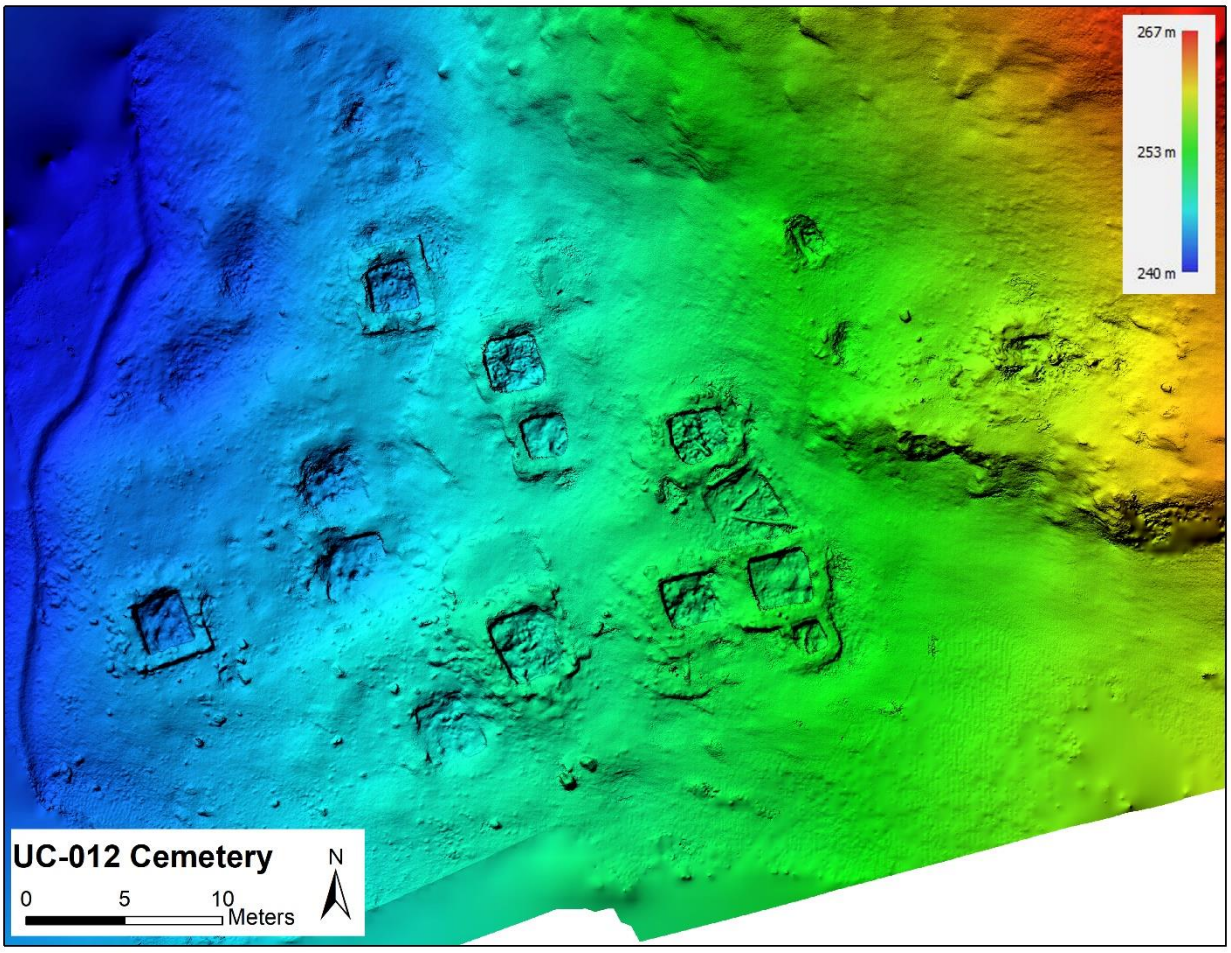

Figure C.8: DEM of UC-025

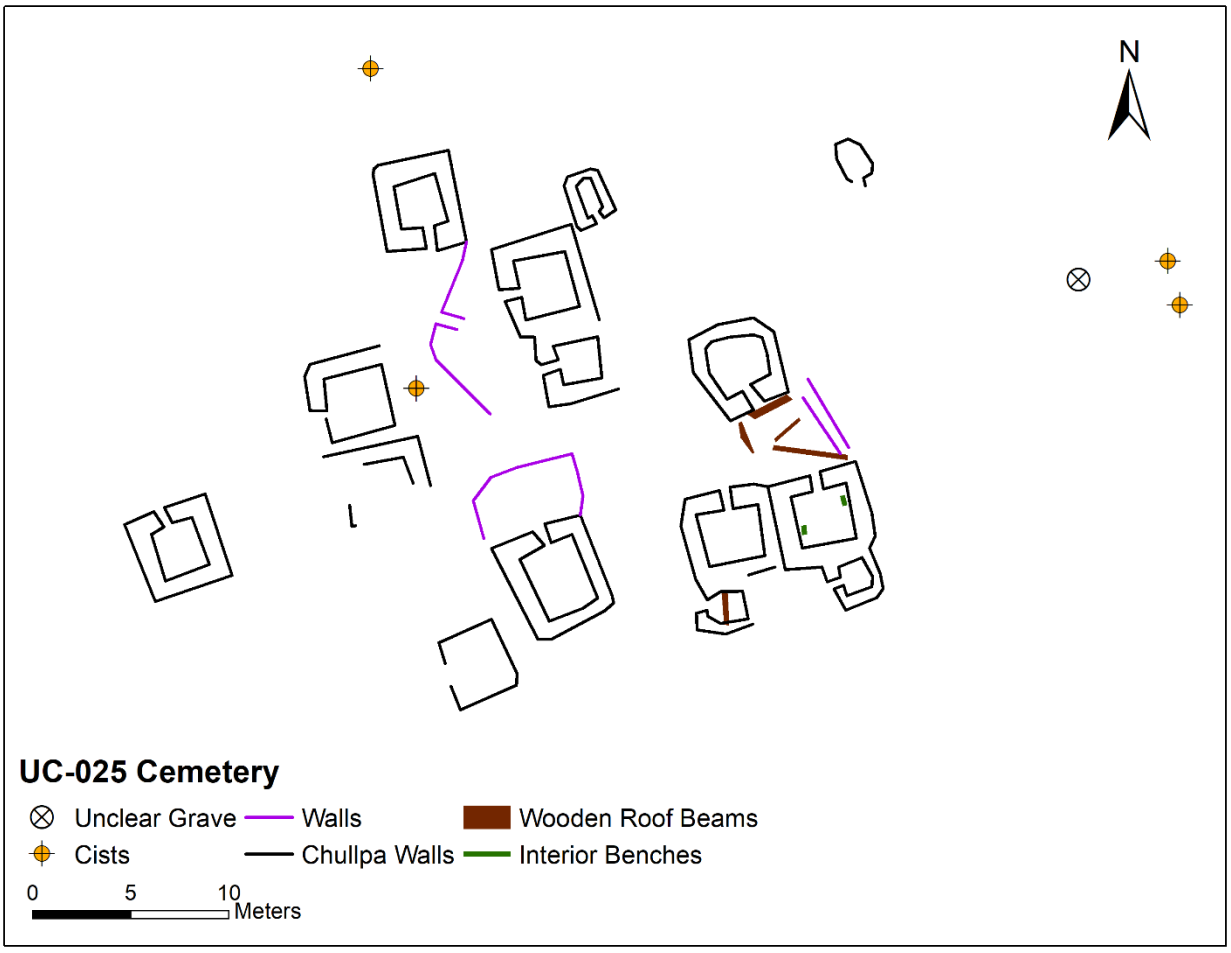

Figure C.9: Map of UC-025

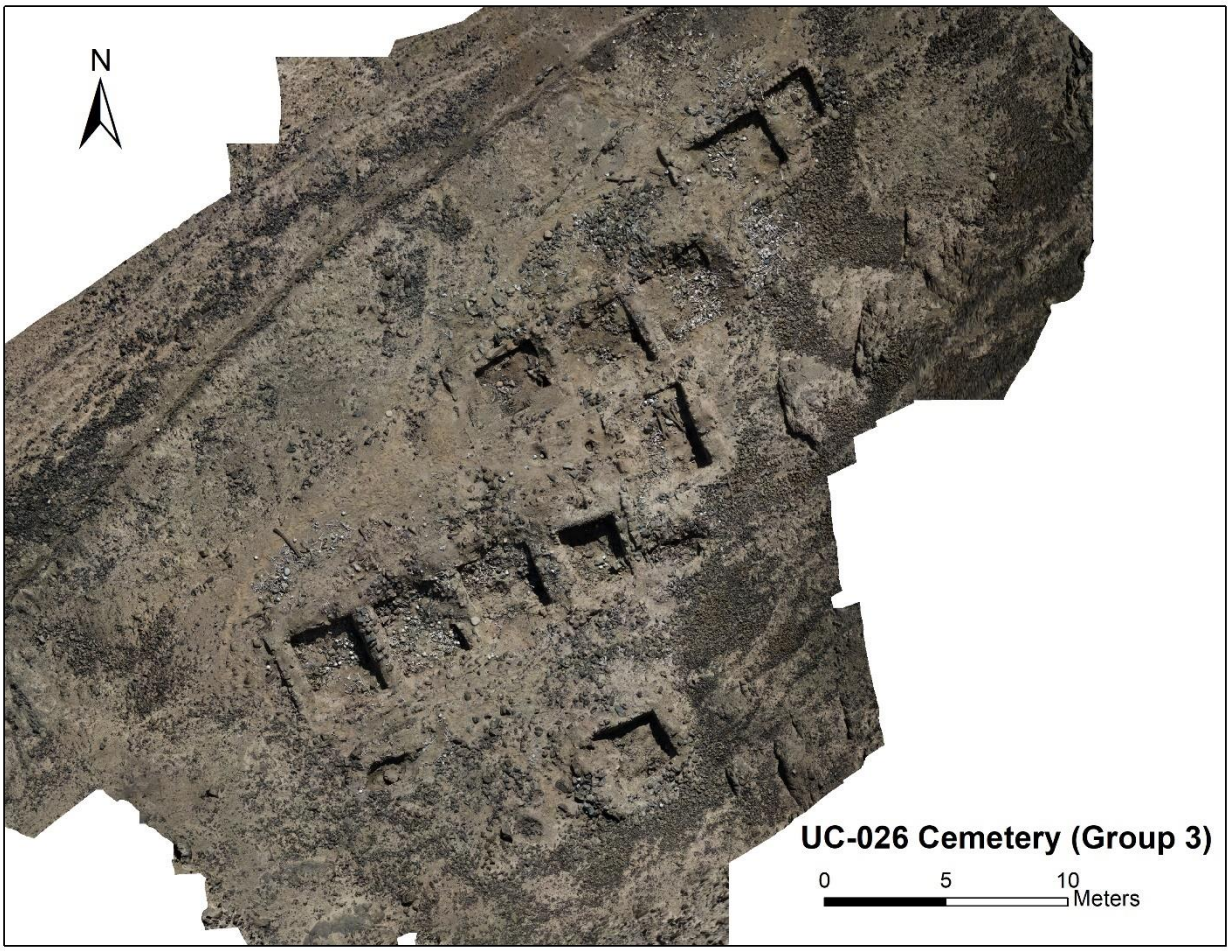

Figure C. 10: Orthomosaic of Group 3 of the UC-026 cemetery. Group 3 consists of UC-026 Tombs 11-22 and 29.

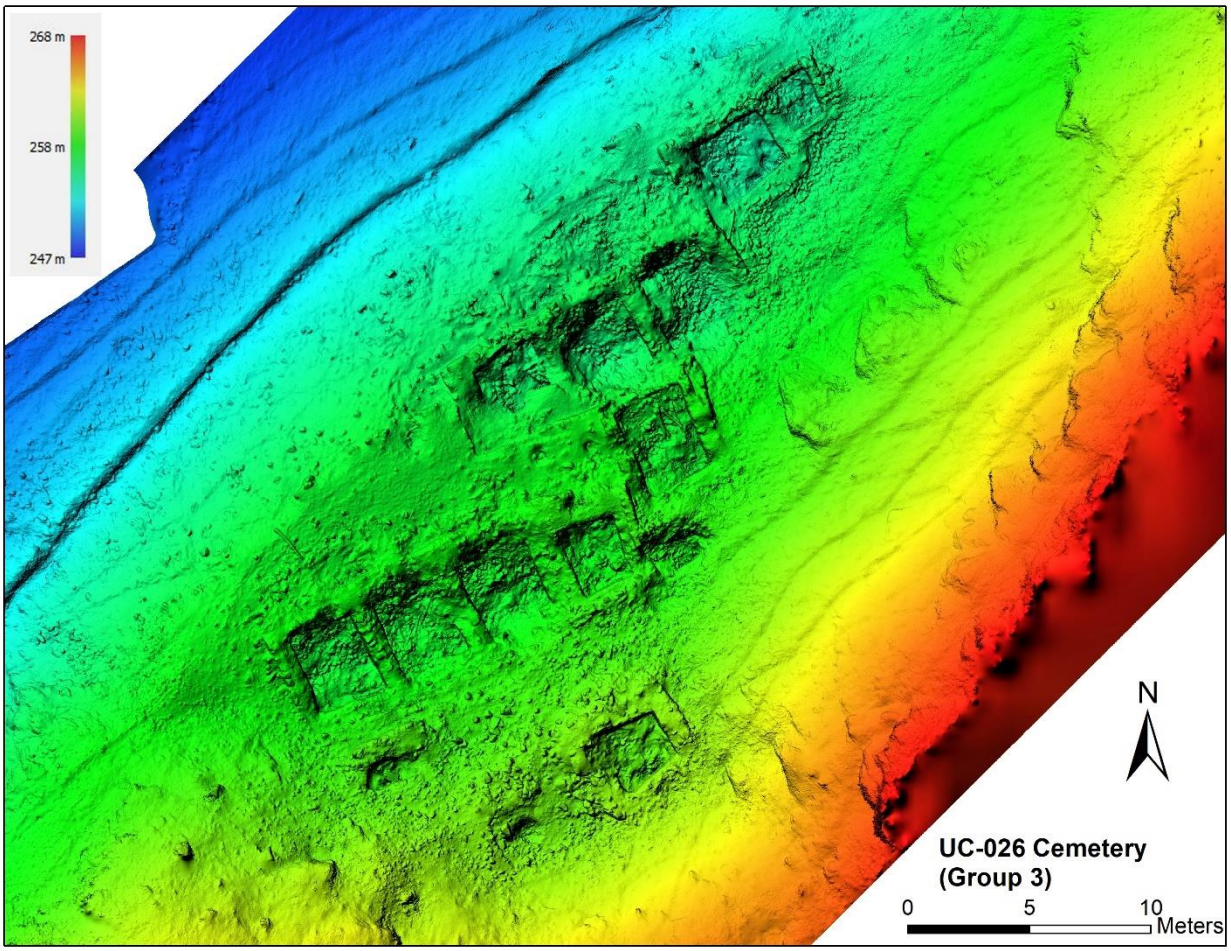

Figure C.11: DEM of UC-026 Group 3

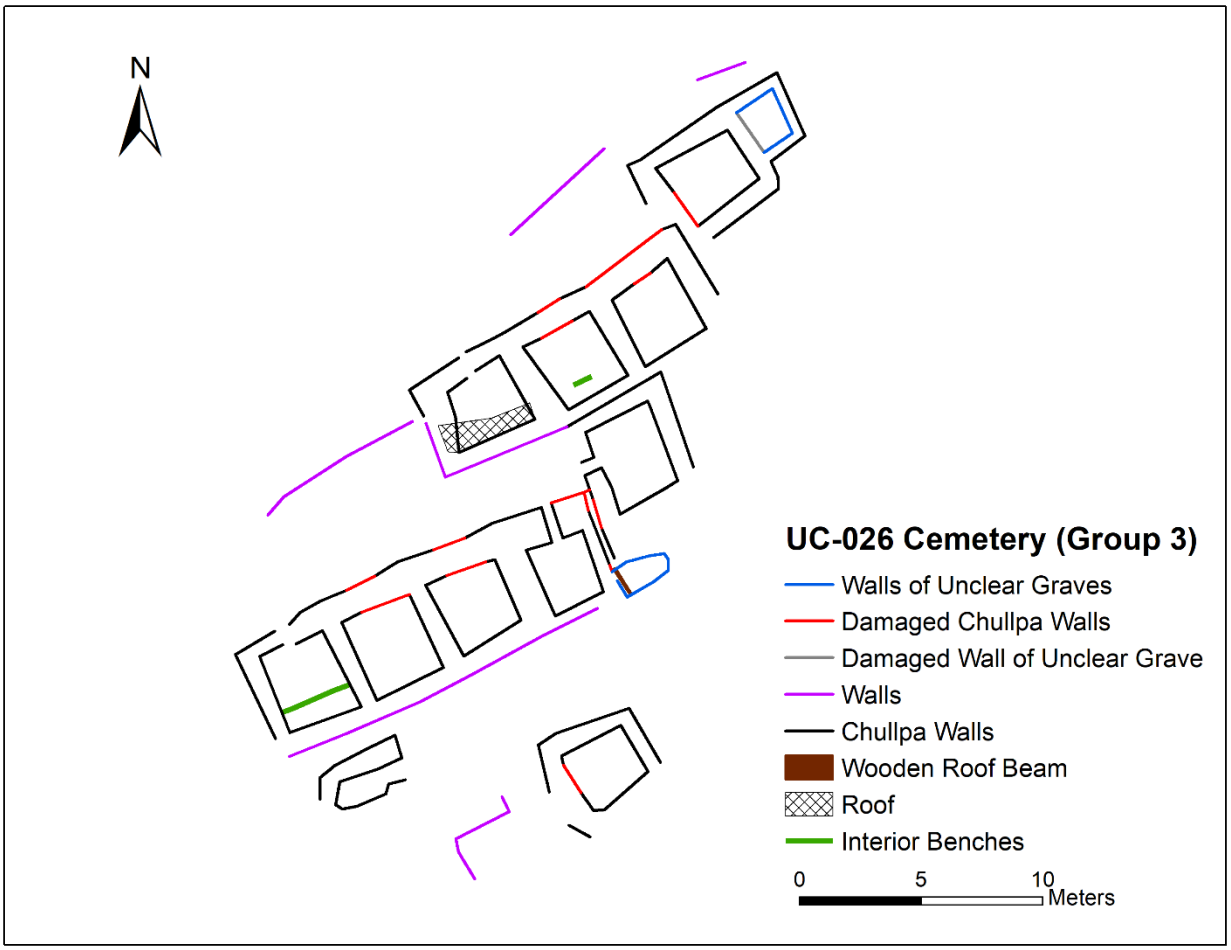

Figure C.12: Map of UC-026 Group 3

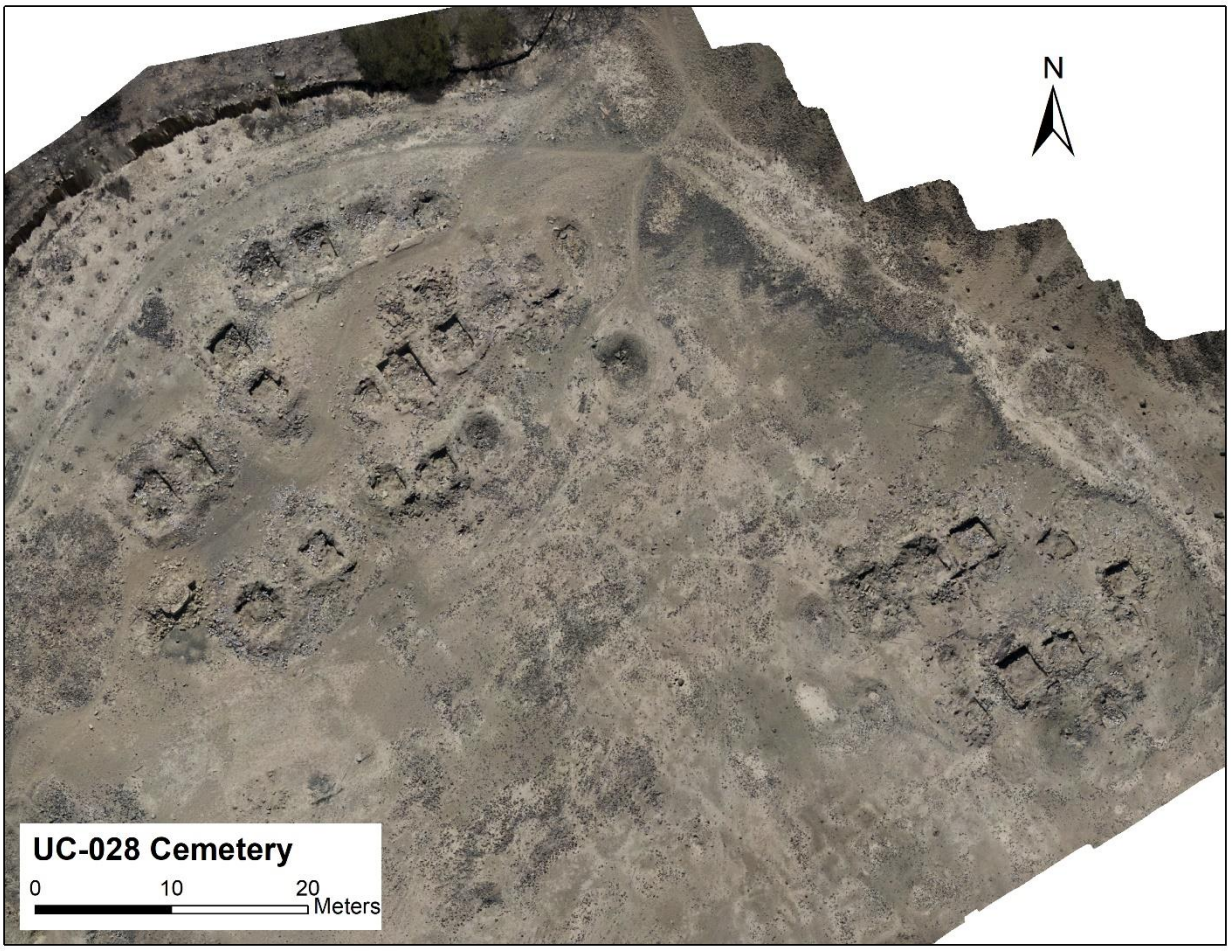

Figure C.13: Orthomosaic of the UC-028 cemetery

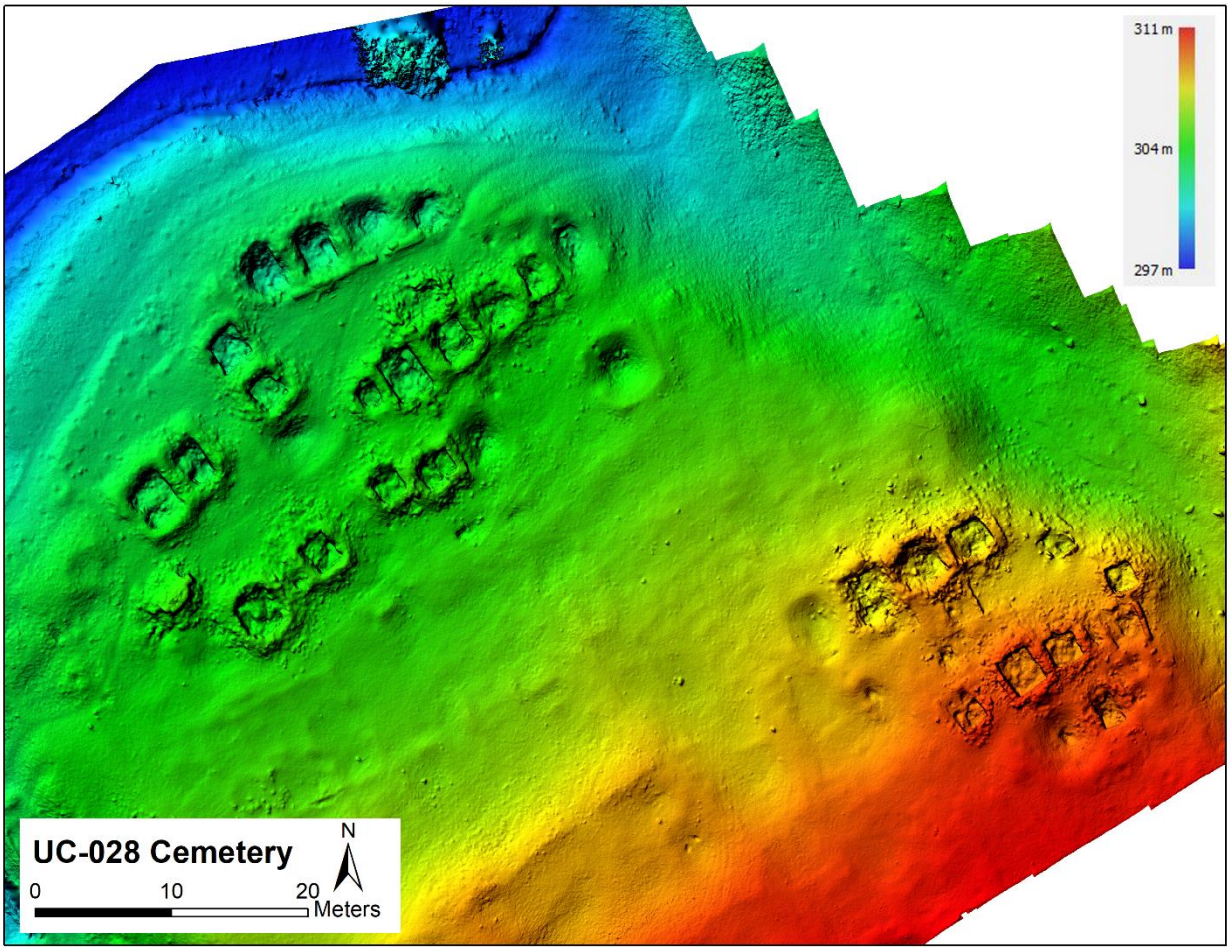

Figure C.14: DEM of UC-028

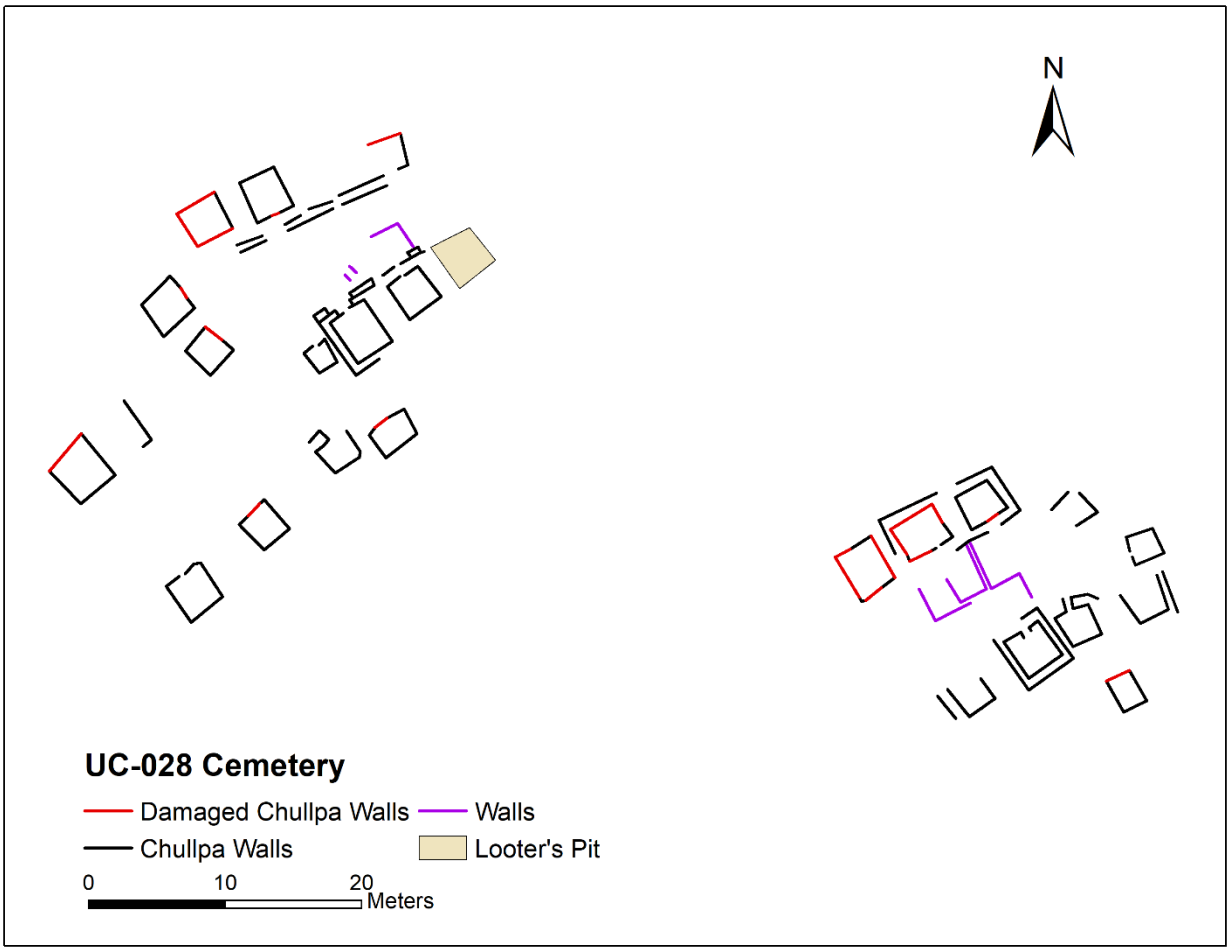

Figure C.15: Map of UC-028

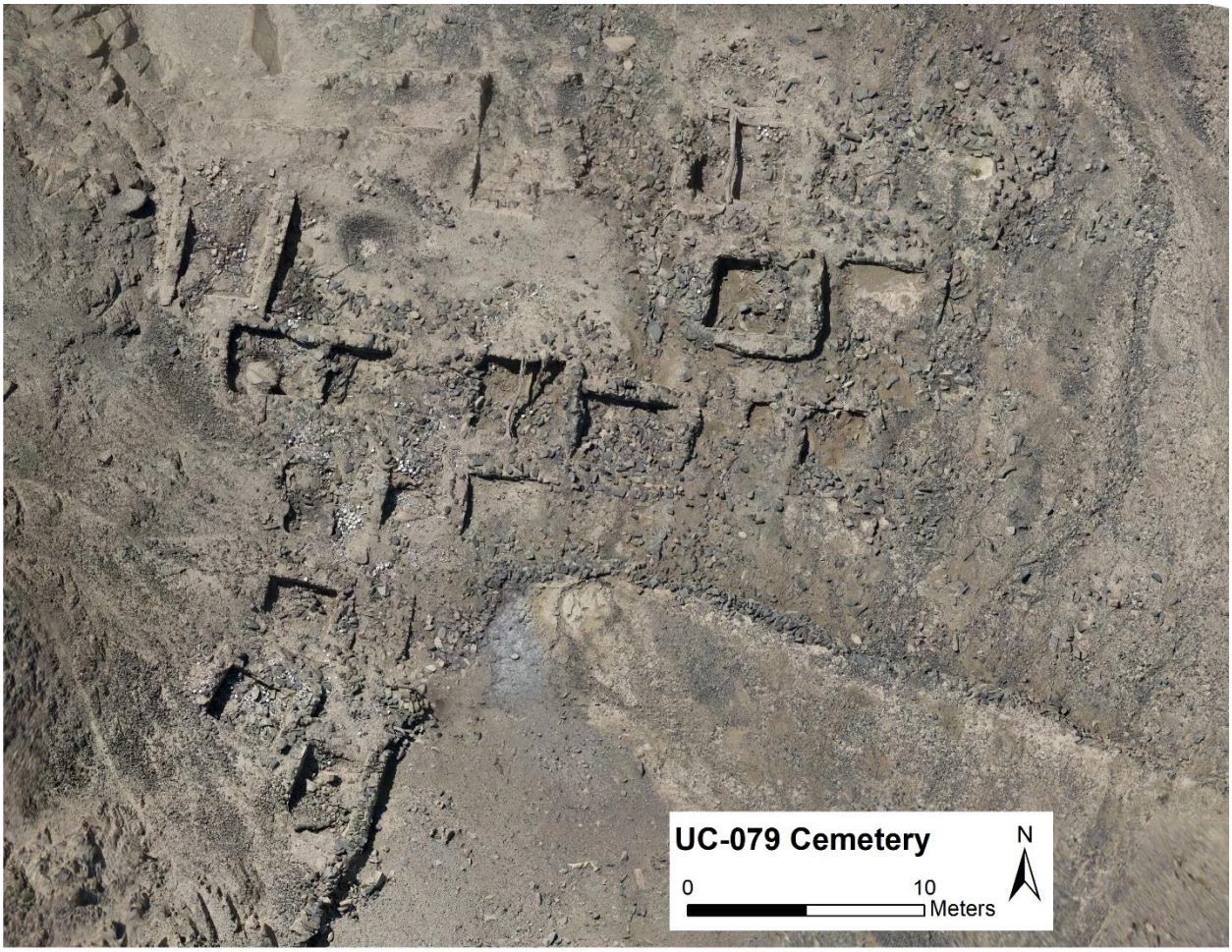

Figure C.16: Map of the UC-079 cemetery

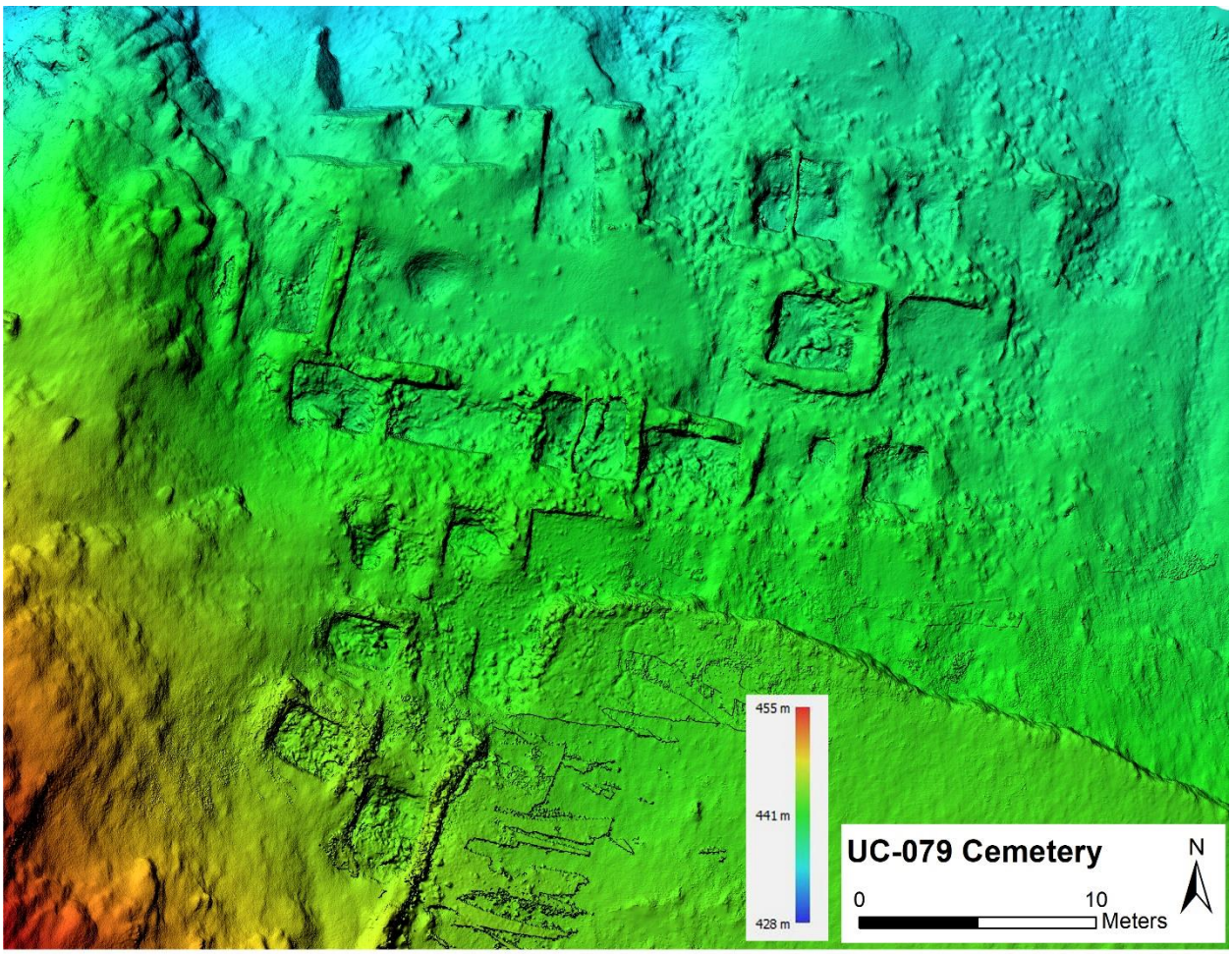

Figure C.17: DEM of UC-079

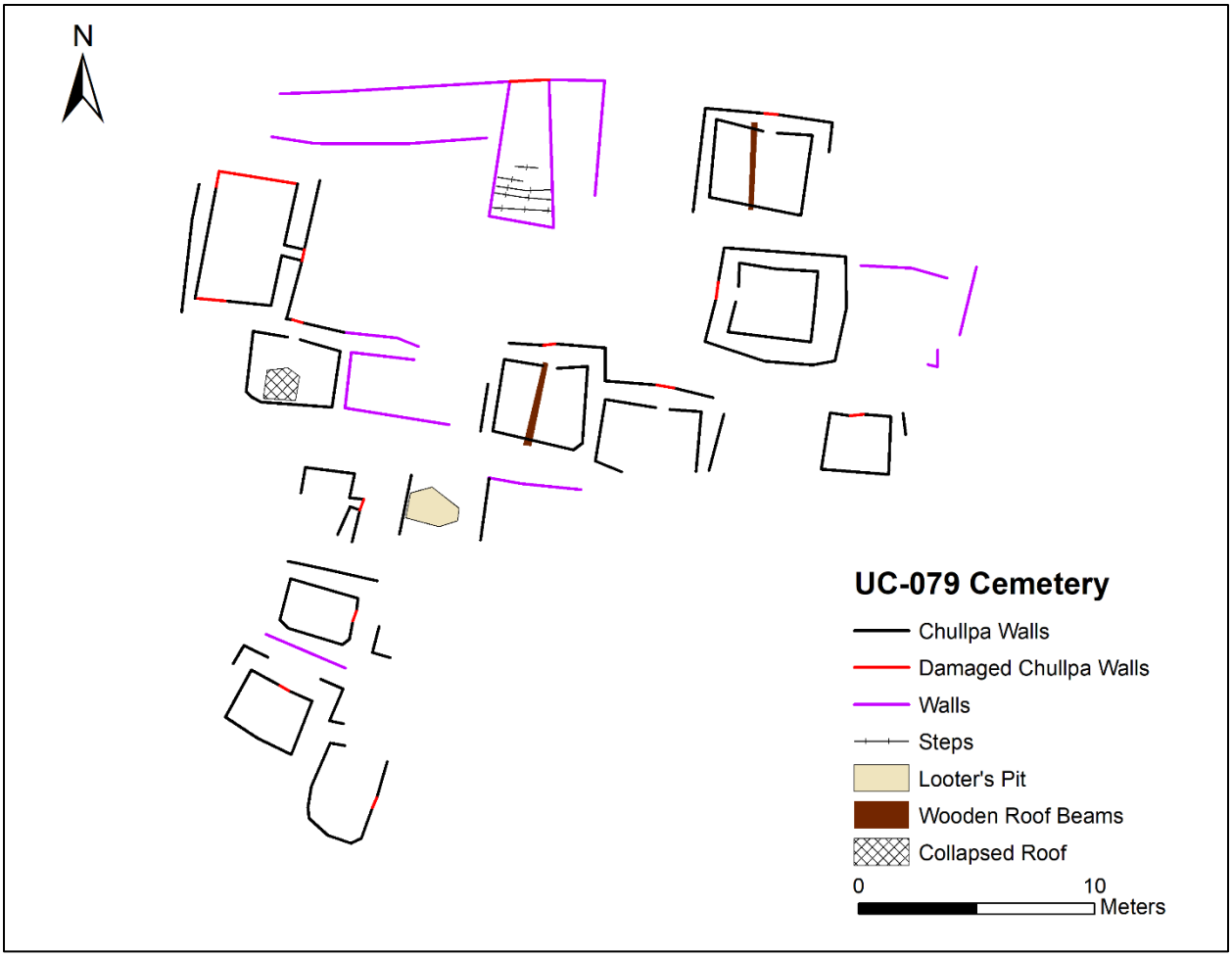

Figure C.18: Map of UC-079

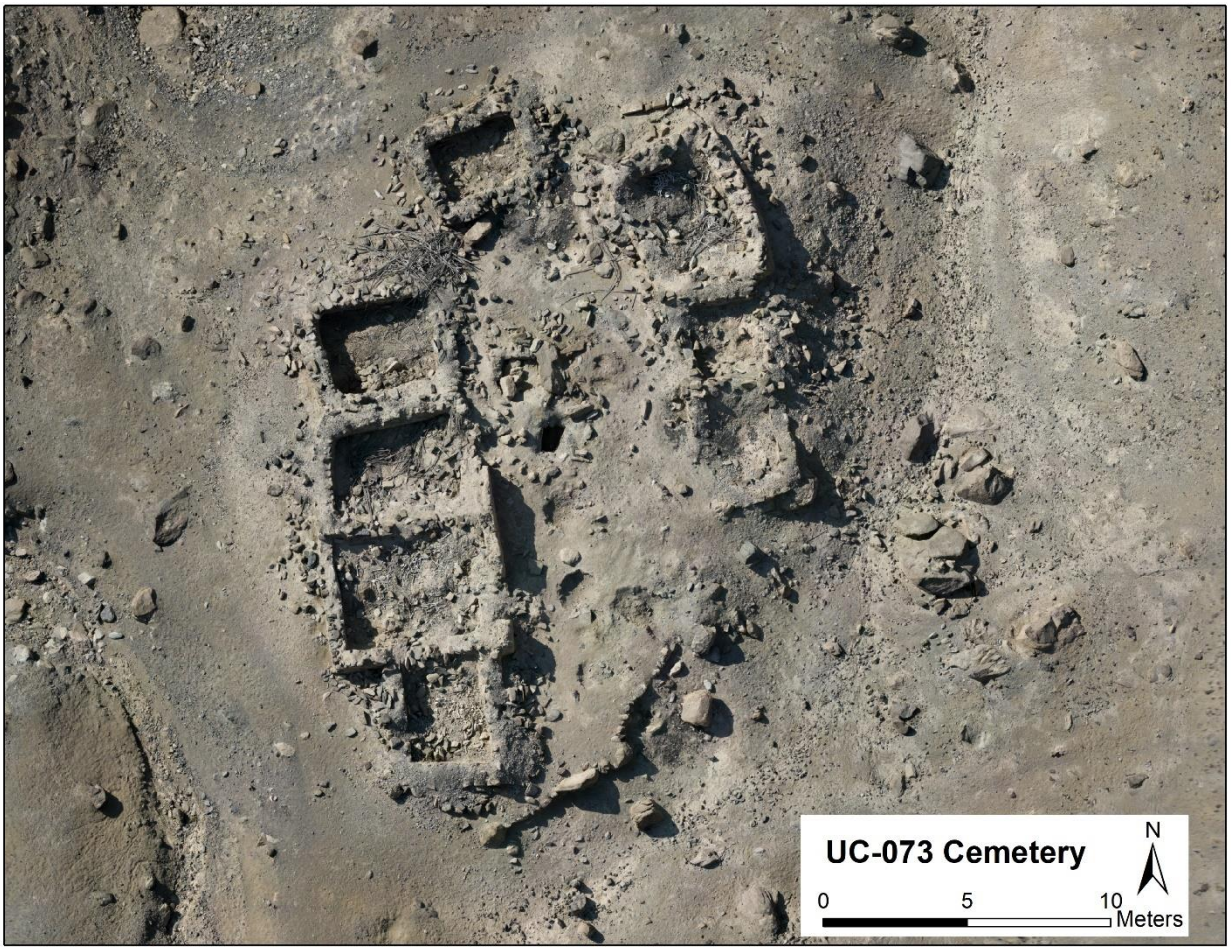

Figure C.19: Orthomosaic of the UC-073 cemetery

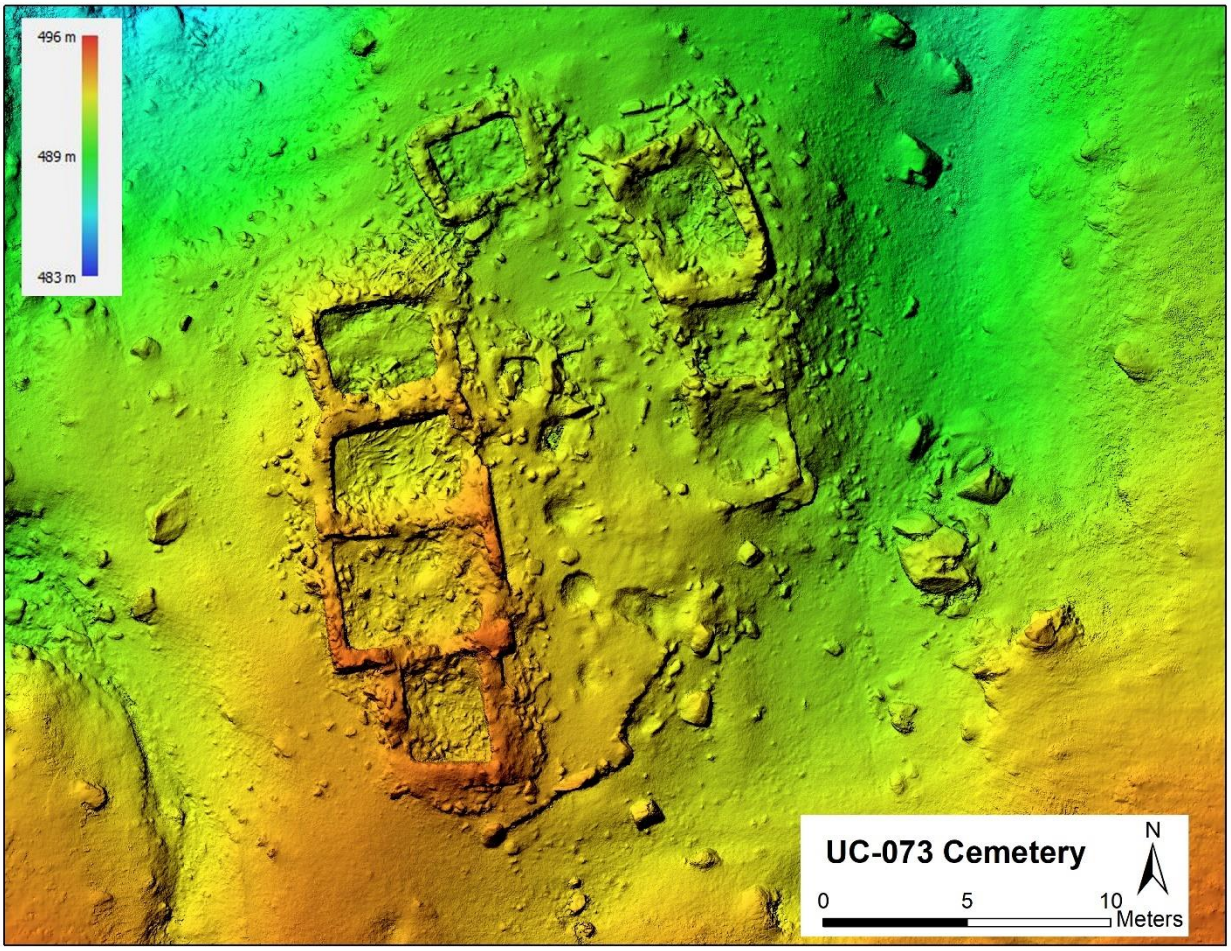

Figure C. 20: DEM of UC-073

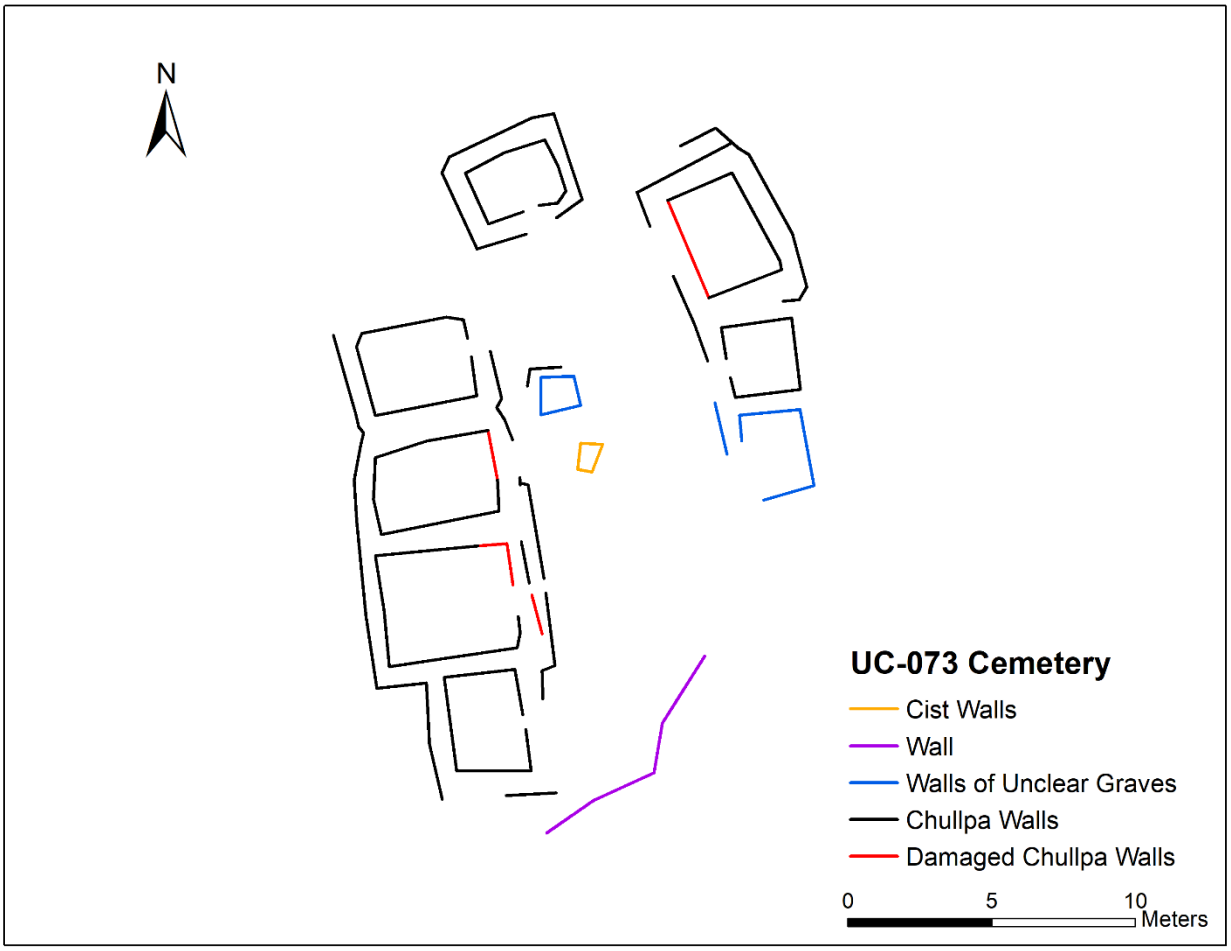

Figure C.21: Map of UC-073

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