UNIVERSITY OF CALIFORNIA, SAN DIEGO

Chimú and Inca Frontier Interactions: A Local Study of the Moche Valley *chaupiyunga*, north coast of Perú.

A dissertation submitted in partial satisfaction of the requirements for the degree Doctor of Philosophy

in

Anthropology

by

Alicia Marie Boswell

Committee in charge:

Professor Paul S. Goldstein, Chair
Professor Guillermo Algaze
Professor Geoffrey E. Braswell
Professor Christine Hunefeldt
Professor Jerry D. Moore
Professor Brian R. Billman

2016

The Dissertation of Alicia Marie Boswell is approved, and it is acceptable in quality and form for publication on microfilm and electronically:

_____

_____

_____

_____

_____

_____

Chair

University of California, San Diego
2016

Dedication

To my mother, Janice Christensen Boswell, whose unwavering support gave me the courage to pursue this research.

Table of Contents

List of Abbreviations

AD	Anno Domini
AMS	Accelerator Mass Spectrometry Dating
EIP	Early Intermediate Period
ENSO	El Niño Southern Oscillation
LH	Late Horizon Period
LIP	Late Intermediate Period
m	meter
m^2	square meter
m^3	cubic meter
MH	Middle Horizon Period
masl	Meters above sea level
MNV	Minimum Number of Vessels
MOP/PACO	Moche Origins Project/Proyecto Arqueológico Cerro Oreja
PD	Provenience Designation

List of Supplementary Files

PD_Codes
PD_Form.pdf
2012DiagAttributesList_Appendix
Clasificacion de Artifactos
PDLog_Appendix
SC_Units
FeatureExcavated
Sinsicapsites_appendix
SurfaceCollection_Appendix
Diagsfinal_appendix
NonDiag_Appendix
Artifact_Appendix
Faunal_Appendix
HumanRemains_report.rtf
HumanRemains_appendix.xlsx
Metal Notes
Correlates_2016

List of Figures

List of Tables

Acknowledgements

When they say, “it takes a village to write a dissertation” in my case it took most of the estimated population of the Chimú Empire’s capital Chan Chan to complete this project. While I put in the labor, there are a large number of individuals (think craft specialists, retainers, etc) and institutions that made it possible.

Thank you to my dissertation committee members, Paul Goldstein, Guillermo Algaze, Geoffrey Braswell, Christine Hunefeldt, Jerry Moore and Brian Billman for their support of this research over the years. This project was shaped by many years of discussions with my committee members in and outside of the classroom. I am grateful to Paul Goldstein, my committee chair for taking me under his wing as a student many years ago, for supporting my fieldwork experiences in the Moquegua Valley, and his continued support of my research when I decided to pursue a dissertation on the north coast. He has always been a fervent supporter of this project. Guillermo Algaze and Geoffrey Braswell played instrumental roles in my early coursework at UCSD. I benefitted from Christine Hunefeldt’s extensive knowledge of Peruvian history and her enthusiasm for research, which is wonderfully contagious. I am also indebted to UCSD Anthropology department administrators, and particularly Nicole Gee, the department graduate program coordinator, who graciously made sure all my paperwork was in order as I was living in New York City at the time of my filing.

I am especially grateful to two of my outside committee members, Brian Billman and Jerry Moore for their support and interest in my work. In 2004 as an undergraduate student at the University of Michigan I participated in Brian Billman’s

UNC field school. That program and subsequent conversations with Joyce Marcus and Kent Flannery led me to pursue a PhD in Andean archaeology. Brian I am grateful for being part of your and Dr. Jesus Briceño's research program, the Moche Origins Project/Proyecto Arqueologico de Cerro Oreja. Over the last 10+ years I have had the opportunity to work on many excavations and cultural heritage preservation projects in the Moche Valley. Thank you for your collaboration, constructive criticism, and confidence in my research. I am inspired by your dedication to site preservation efforts in the Moche Valley. Without MOP/PACO's support this project would not have been possible and MOP/PACO's model has served as a model for my work in Collambay.

Jerry Moore has been as an instrumental figure throughout this project. At different low points throughout the project I have found myself in Long Beach, CA living not far from Jerry. He has served as a sounding board and helped me find my way. This was key early in the project when I despaired I would never receive funding and in 2016 during the big push to complete the document. I have benefitted greatly from his extensive knowledge in north coast prehistory and I am grateful for our open dialogue about academia, archaeological fieldwork, Andean households, and local craft beer. I am also grateful for him connecting me with several of his former undergraduate students who joined my excavations in 2012, they were a fantastic group.

Another key supporter of this project was Jesus Briceño. As the project co-director he coordinated our excavation permit with the Ministry of Culture (No. 367-2012). Throughout excavations he shared his archaeological expertise and extensive regional knowledge. This project would not have been possible without his efforts and

enthusiasm. I also must thank him for his willingness to hike up to Cerro Huancha every day during excavations, that was no easy feat.

Thank you to the Comunidad Emilia Orbegoso de Collambay for giving me permission to work in your community and the participation of many community members in the project. I am honored to have been able to work with such wonderful people and document a small part of the rich history of the region. A part of this project not described in the dissertation is the collaboration of Collambay community members and MOCHE, Inc, a nonprofit organization I initiated. Together MOCHE, Inc and Collambay have collaborated on several projects over the years to protect archaeological sites in the region and improve community living conditions.

This project extended over many years. I first visited the region in 2006 and knew then it was a special place I wanted to return to again and again. Mapping at Cerro Ramon MV 1000 in 2006 with Chris Jochem, Barker Fariss and Juliana Quist, as part of the MOP/PACO project, was a tremendous experience that drew me back to the Moche Valley *chaupiyunga* in 2009 to seek out my own project. I thank Chris for sharing his data with me from Ramon for this project. I thank Barker for exposing me to mapping, hiking expertise, and technical advice on driving in Peru.

In 2009, Camila Capriata, Caitlin and Matt Lackett, and Andrew Somerville spent several weeks with me in Collambay to help develop this project. With them, I got my feet wet in project logistics and community relations. I am grateful for their assistance during those few weeks which introduced me to a community who was apprehensive about a group of mostly young foreigners determined to rent a house in town and walk through their mountains (and not through their fields!). That experience

and the relationships it initiated laid the groundwork for this project. Collambay's president at the time, Osvaldo Rafael and his family have been important supporters and friends throughout the project.

In 2010 my initial plans were to begin a community development project and continue pedestrian survey in Collambay. The community work was a resounding success thanks to the enthusiasm of Rebecca Filbrandt, Fox Boswell, Jordan Sandoval, Ehwa Kim, and Zoe Romm. Following the community project, pedestrian survey was planned, however the discovery of quarrying (yes, literally quarrying) of the site of Cerro La Virgen in Huanchaco, we were drawn back to the coast where under an emergency permit we carried out salvage excavation to document what we could of the site. I am grateful for the support Dana Bardolph and Andrew Bruck provided during that field school.

In 2011 I returned to Collambay with funding from the UCSD Anthropology department. Surface collection at Cerro Huancha was carried out with the help of Loren Teetelli, Caitlin Lackett, Elizabeth Olson. With the help of Melissa Barber, a Peace Corps volunteer in Simbal, we rented the community's "Club de Madres" who let me transform the building into living and lab space, I continued to use that space through the duration of the project in 2013. As my project got underway and Melissa's finished, we kept each other sane. Without Melissa's introduction to a tight knit Simbal community, project logistics would have been much more stressful and complicated. I am especially grateful to the Salinas Castillo and Mostacero Lazaro families who kept me and my volunteers fed and watched out for us and continue to do so. I have also benefitted from other Peace Corp volunteers stationed in the area, Jonah Brill and Ian

Arzeni who collaborated on community projects, and kept the laughs coming over the years.

A National Science Foundation Doctoral Dissertation Grant #1228150 funded excavations and labwork in 2012-2013. Without Jesus Briceño's help and an enthusiastic field crew, Kimberly Hinson, Diana Ochoa, Kassie Sugimoto, Diane Scullin, Patrick Mullins, Tomas de Leon, the 2012 MOCHE Inc/UNC field school and Collambay community members this dataset would not exist. Simultaneously during excavations Rebecca Filbrandt directed a community project in Collambay, building *cocina mejoradas*. It was a crazy time – but amazing research and community projects were completed. Perhaps the most important take away for all future project directors, besides making sure you have a functional spare tire, - if you make everyone smoothies in the morning no one oversleeps.

For analysis, I setup a lab in Huanchaco. Colin Thomas was a temporary housemate and I don't think I could have launched this phase of the project without his feedback and support. I might still be sitting on the porch drinking Pilsen Trujillo. Conveniently, when Colin returned to the US, Jennifer Ringberg arrived to carryout analysis in Huanchaco. I benefitted tremendously having Jen as a roommate throughout the final months of my lab analysis, both for her meticulousness ceramic analysis skillset and camaraderie as we found time for dinner on our patio watching the sunset over Huanchaco beach. She graciously shared her ceramic analysis methodology with me and patiently answered my questions. Over the years I have benefited from her archaeological expertise as she first was one of my field school instructors and later collaborator and great friend.

Analysis in Huanchaco would not have been possible without an all-star team of young Trujillo archaeologists, several of whom I met through Gabriel Prieto. Thank you for your help Lorenzo Risco, Ernesto Zavaleta, Roy Lezama, and Aldo Pulache for putting in countless lab hours with me analyzing ceramics, shell and photographing the collections. Aldo Watanabe also graciously examined a ceramic sherd with residue for me.

Other colleagues have been gracious collaborators on this project. Analysis of human remains was carried out by Celeste Gagnon and the 2015 MOCHE Bioarchaeology Field School. Fauna analysis was carried out by Elizabeth Olson in 2012 and by Arqueobios in Trujillo in 2014. Colin Thomas provided preliminary analysis on metal artifacts. Luis Tandaipan coordinated mapping of Cerro Huancha MV 900. Dana Bardolph transported my radiocarbon samples to the US. Thank you all for your help. Fellow MOP/PACO collaborators over the years have been supportive colleagues and fun to work with, Jennifer Ringberg, Celeste Gagnon, Evan Surridge, Dana Bardolph, Kevin Kohler, Patrick Mullins, Julio Rucabado, Jean Hudson, and Roberta Boczkiewicz.

In January 2016 I visited the Phoebe A. Hearst museum and spent several days studying ceramics from the Max Uhle and Theodore McCown collections from the Huamachuco area. Thank you to the museum for permission to view the collection and to Leslie Freund for her help throughout the visit. It could not have gone more smoothly!

In Lima, Barbara Carbajal and David Oshige Adams have been fantastic supporters and constant companions over the last 10+ years(!), providing a place to

crash and sharing meals, optimism, and expertise as I have made my way to and from the US and north coast. Camila Capriata has also been a steadfast supporter throughout this project from the beginning. In Huanchaco, Kate, Borghy, Jeremy, and baby Rebecca Reyes of Sabes have provided much comic relief over the years. Knowing I had good company, Sabes pizza, and a strong beverage on weekends served as great motivation throughout the challenges of fieldwork. Alejandro Camino and his family, helped facilitate project transportation, tirelessly helped me deal with mechanical issues on our project vehicle and coordinated a fantastic vacation when my family arrived to visit from the US. Thank you for your good humor and adoption of Beya, me, and the mini beastia. The Piminchumo Valderama family and Jose and Rosa Melendez have played an integral role in MOP/PACO, thank you Julia, Robby, and Mateo for your willingness to help me over the years! Finally, to Belsy Gutierrez thank you for all your work that enables ICPAC and MOCHE to work together and for enthusiasm in our collaboration!

Luckily for me Huanchaco is a place where many researchers pass through. I have benefitted remarkably from conversations with Michele Koons, Lisa Trever, Gabriel Prieto Howard Tsai, Enrique Zavaleta, Jorge Gamboa, Eric Rodriguez Rodriguez, Doug Sharon, Mike McColm, and Tom Love over the years.

In 2014-2015 I had the opportunity to be part of the intellectual and inspirational setting of Dumbarton Oaks as a Junior Fellow. This provided a stimulating environment for me as I struggled through data analysis and writing of initial chapters. Thank you Colin McEwan and my fellow fellows, Caitlin Earley, Sarah Baitzel, Gary Urton, Tim Knowlton, Jorge Ramos, Jessica Herlich, Michael Mauss, and an amazing Dumbarton

Oaks staff, Kelly McKenna, Bridget Gazzo, Deborah Stewart for creating an environment of intellectual discourse with lots of laughter.

At UC San Diego, I have had benefitted tremendously from supportive department colleagues and fellow graduate students. Without these friendships, graduate school would have involved a lot less pleasantries and (perhaps) a lot less beer! Tara Carter, Alex Piel, Ulli Green, Sonja Schwake, Beth Peterson, and other senior graduate students set excellent examples for a young impressionable graduate student. I am grateful for the camaraderie and conversations over the years with Sarah Baitzel, Kyle Knabb, Michael Lettieri, Beth Plunger, Andrew Somerville, Ben Volta, Ian Jones, Liz Mikos, Kedar Kulkarni, Cat Condliffe Lettieri, Sowparnika Balaswaminathan, Kiri Haggerman, Kathleen Bennellack, Matt Sitek, Nancy Peniche May, Misha Miller-Sisson, Lauren Hahn Bussiere, and Megan Pitcavage.

I also must thank my colleagues at Bard Graduate Center and the Metropolitan Museum of Art for their support as I carried out my final revisions. Thank you Joanne Pillsbury, James Doyle, Caitlin Earley, Jessica Walthew, and Urmila Mohan.

To my family, who have tolerated my physical absence for summer after summer for many years and mental absence as this project became all-consuming through the writeup stage – thank you. Thank you for your support of me throughout an experience during which I am sure that I occasionally sounded insane. I don't say it enough – your support means the world to me and I could not have done this without it. My dog, Beya, from Huanchaco, experienced the majority of this dissertation research and was a steadfast companion and persistent mountain climber throughout the adventure. Finally, this complete dissertation would not be possible without the support

of my partner Aaron Gidding, who also created the maps in this dissertation. While I did the work, his enduring support pushed me through.

VITA

2005	Bachelor of Arts, University of Michigan, Ann Arbor
2008	Master of Arts, University of California, San Diego
2016	Doctor of Philosophy, University of California, San Diego

Fellowships and Grants

2016-2017	Andrew W. Mellon "Cultures of Conservation" Postdoctoral Fellow Bard Graduate Center and Metropolitan Museum of Art
2014-2015	Dumbarton Oaks Research Library and Collections Junior Fellow
2012	National Science Foundation, Doctoral Dissertation Improvement Grant
2011	F.G. Bailey Fellowship, Department of Anthropology, University of California, San Diego
2011	Dean of Social Sciences Travel Grant University of California, San Diego
2008	Center for Iberian and Latin American Studies Pre-Dissertation Travel Grant, University of California San Diego
2007	Dean of Social Sciences Travel Grant, University of California, San Diego

Appointments

2016	Adjunct Instructor, Department of Anthropology, California State University, Dominguez Hills
2013-2014	Graduate Research Assistant, Center for Global Justice, University of California, San Diego
2006-2013	Teaching Assistant, University of California, San Diego

Publications

Boswell, Alicia

2016 Book Review *Relics of the Past* by Stefanie Gänger, *Journal of Field Archaeology* 41(3): 386-388.

Boswell, Alicia and Paul Goldstein

2011 "Social Identity in the Frontier: A Case Study from Moquegua, Peru" in *Ethnicity from Various Angles and Various Lenses*, Vol. 2 Christine Hunefeldt and Leon Zamosc, eds, pp. 45-57. Sussex Press.

ABSTRACT OF THE DISSERTATION

Chimú and Inca Frontier Interactions: A Local Study of the Moche Valley *chaupiyunga*, north coast of Perú.

by

Alicia Marie Boswell

Doctor of Philosophy in Anthropology

University of California, San Diego, 2016

Professor Paul S. Goldstein, Chair

On the north coast of Perú in the foothills of the Andes the polity of Collambay lived in a frontier zone between the Pacific coast and the highlands. On the eastern frontier of the coastal Chimú empire, in the Moche Valley, Collambay occupied a unique ecological niche, known for its production of coca, a prestige resource in the Andes. Andean strategies of political economy indicate this coca producing zone would be one that empires would want to access however, few studies have occurred in the

chaupiyunga. My doctoral dissertation examines the relationships between the local community, Collambay and two successive empires, the Chimú (AD 900-1470) and the Inca (1470-1532). Prior to my investigation no archaeological excavations had been carried out in the Collambay area. My multi-dimensional study examines Collambay's occupational history through settlement patterns and excavations at two sites, Cerro Huancha MV 900 and Cerro Ramon MV 1000. My excavations document the occupational history of the region and focuses on Collambay's local economy and group identity, examining changes and continuities in the region throughout the duration of the Chimú and Inca Empires. My study indicates that Collambay maintained exchange relationships with the Chimú empire that developed into a political alliance, benefiting both parties. As a result of this relationship Collambay gained political power in the region. Upon the Chimú fall to the Inca, Collambay underwent another significant shift, undergoing reorganization to maintain an Inca state storehouse. Throughout these interactions with imperial powers Collambay maintained local traditions and material culture reflecting a unique, hybrid identity. This study contributes to a growing field of case studies that priorities understanding local populations in local-imperial interaction. It also is one of the few case studies to occur in the north coast chaupiyunga, a region whose sociopolitical history is significant for understanding experiences of populations on the political margins.

1 Introduction to Project

This dissertation examines relations between two Andean empires—the coastal Chimú (AD 900–1470) and the highland Inca (AD 1470–1532)—and Collambay, a small polity located in the *chaupiyunga* zone in the Sinsicap Valley of Peru. Collambay is located in the Sinsicap Valley a tributary of the Moche Valley on the north coast of Peru in the modern day department of La Libertad near the city of Trujillo (Figure 1.1). The *chaupiyunga* zone is an ecological niche located between the coast and highlands in the foothills of the Andes. Few archaeological studies have occurred in the *chaupiyunga* of the north coast of Peru; however, the dynamics of this zone make it a unique place. A politically marginal zone between coastal river valleys and the highlands, it is a frontier where interregional interaction between local, coastal, and highland groups occurred throughout prehistory. Lau (2004, 179) highlights three principal characteristics of the *chaupiyunga* zone:

- It was a contact zone for coast and highland peoples (Proulx 1982; Topic and Topic 1983 and 1985)
- It is an area where intake canals for coastal irrigation systems is located (Moseley and Deeds 1982; Shimada 1994)
- It has the ideal climate for cultivating desirable crops, such as fruits, chili peppers, and coca plants (Dillehay 1979; Marcus and Silva 1988).

Ethnohistoric documents indicate the *chaupiyunga* was a contested political zone throughout prehistory and in the early Colonial period (Rostworowski 2004).

Archaeological research in the *chaupiyunga* on the central coast of Peru has documented the presence of coastal, local, and highland groups occupying the *chaupiyunga* zone throughout prehistory (Dillehay 1979; Szremski 2015). A political frontier, throughout prehistory the *chaupiyunga* was under the jurisdiction of coastal or highland polities, and occasionally members of these different groups lived peacefully side-by-side in the zone, along with local groups.

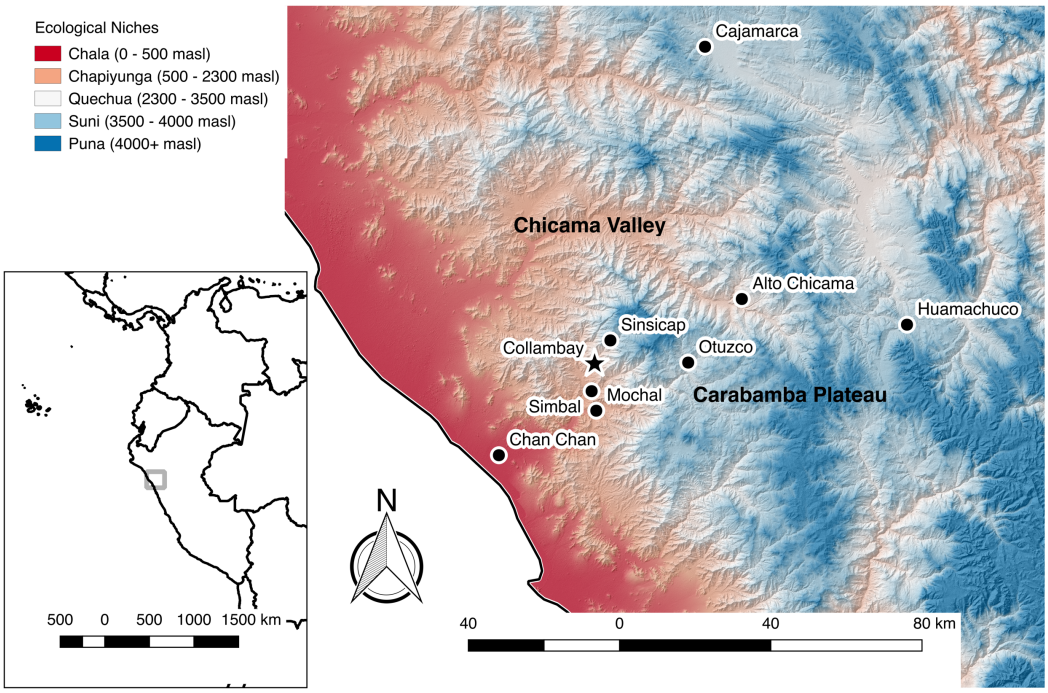


Figure 1.1: Collambay, Moche Valley, Peru (with other locations mentioned in text)

- Collambay

The Moche Drainage has three principal tributaries from north to south, the Sinsicap, Cuesta, and Upper Moche rivers (Figure 1.2). These are fairly narrow river

valleys, and in the Sinsicap Valley, the largest area of irrigable bottomland is adjacent and south of the modern town of Collambay, between Collambay and the town of Simbal. Up valley from Collambay, the valley continues to narrow, much land is not irrigable due to the extreme slope, and much of the upper Sinsicap Valley today is not under cultivation. The limited areas that are under modern cultivation are irrigated by springs. Rainfall agriculture may provide one harvest per year. The modern population in the Sinsicap Valley is concentrated just above the valley, around the town of San Ignacio or in the Collambay basin region.

Collambay was a Colonial Hacienda established early in the sixteenth century, with origins as an important area of coca cultivation dating back to the prehispanic periods. Today, this entire region, from the town of Simbal located at the confluence of the Sinsicap and Cuesta tributaries, to the town of Sinsicap is part of the territory of the Comunidad Campesina de Emilia Gonzalez Obregoso de Collambay, which was established during Peru's Land Reforms of the 1970s (Figure 1.2). Collambay is mentioned in early Colonial documents, therefore I assume this has been the name of the region since the time of the Inca (Archivo de la Nación, hereafter referred to as ANP, Aguas 3.3.10.68, ff 86–132). I refer to Collambay as both a region, and the name of the local group of people who lived in Sinsicap Valley/Collambay region during the prehispanic period although it is likely the region had another name prior to the Inca period.

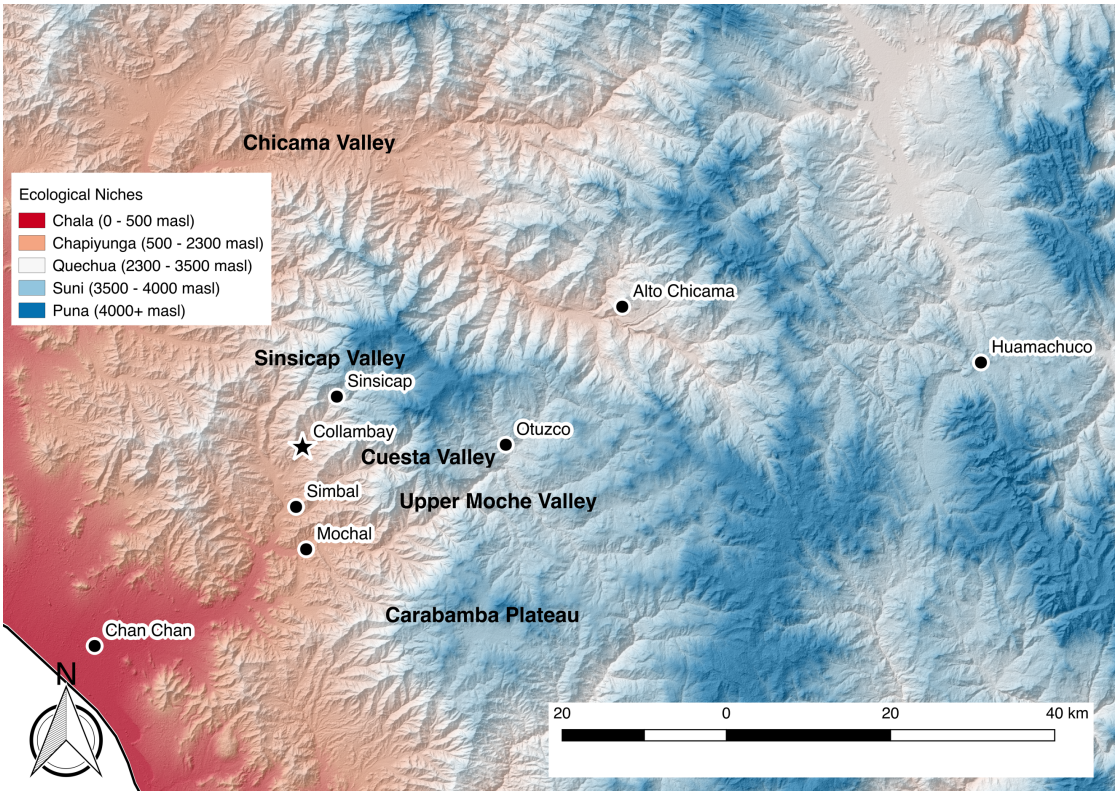


Figure 1.2: Collambay in Moche Drainage (with other sites mentioned in text)

Colonial documents provide information about Collambay that has implications for Chimú and Inca relations with Collambay. A Colonial document lists Collambay as the location of an Inca *tambo*, or state facility with storage facilities to supply state administrators and the Inca army, (Biblioteca Nacional, Madrid, hereafter BNM, M.S. 3035, Rostworowski 1987). Another document reports that an Inca king and his mother had coca fields in Collambay (Netherly 1977; Rostworowski 1988 and 2004). Therefore, it appears that under the Inca, the Collambay polity was responsible for maintaining a state storehouse and growing coca for the Inca king and his mother. Coca is a plant that only grows in specific ecological niches, and is a prestige commodity in the Andes, and the variety that grows on the western slopes, *Erythroxylum*

novogranatense var. truxillense, or sweet coca was highly valued. Coca is still grown in Collambay today (Figure 1.3)

Figure 1.3: Modern Coca Plants in Collambay in background of photo

Prior to Inca expansion in the northern coast and highlands of Peru in the 1460s, the north coast was under the control of the Chimú Empire (AD 1000–1470). The Chimú capital, Chan Chan, is located in the lower Moche Valley, only 40 kilometers from Collambay. The Chimú had extended their control north and south of the Moche Valley, consolidating the north coast for the first time under one rule. Little is understood about Chimú eastward expansion and Chimú relations with populations on the eastern front of their empire. However, Chimú sherds are found at sites with highland sherds in the upper tributaries of the Moche Valley in the *chaupiyunga* zone (Billman 1996; Topic and Topic 1982 and 1985).

Coca played an important role in both Andean rituals and daily life (Allen 2002). As an important growing region for prestige crops and the evidence that the coca fields had belonged to an Inca king in the following period, it is suggested that Chimú elites would have also had or wanted access to Collambay's coca fields. Therefore, this project investigates Chimú-Collambay relations, providing insight into Chimú imperial strategies on its eastern front and interactions with populations outside the coast, as well as Chimú interests in management of prestige resources, i.e., coca.

The Inca defeated the Chimú and incorporated the north coast into their empire, Tawantinsuyu, in 1470, controlling the region until their fall to the Spanish in 1533. The north coast formed part of Chinchasuyu, one of the four quarters of the Inca Empire. While it is well documented that the Inca overtook the north coast and northern highlands of Peru, their administration of the north coast is only beginning to be understood. This investigation is an opportunity to better understand Inca administration on the north coast and the impact that the Inca empire had on local communities. Colonial documents indicate that the Inca established state infrastructure in Collambay (Rostworowski 1987), and Collambay residents produced coca for the Inca (Netherly 1977). Does the archaeological record corroborate this? Did the establishment of Inca state infrastructure in Collambay result in reorganization of Collambay residents? Did the regional economy change?

This project provides a rare opportunity to examine the relationships between one community and two Andean empires, the Chimú and the Inca. It also documents a polity living within an understudied ecological niche whose culture history has implications for understanding regional dynamics between the coast and highlands.

Another theoretical issue relevant to this study is the examination of imperial interaction with local groups, to understand imperial strategies and local agency. The *chaupiyunga* is a political, cultural, and ecological frontier—a place where groups from different ecological zones resided contemporaneously. The interregional dynamics between groups will provide information about *chaupiyunga* zone residents and their society. This study contributes to a better understanding of the interregional interaction in a frontier zone.

I present settlement patterns and the results of excavations in the Sinsicap Valley. Between 2009 and 2013, I carried out the archaeological research presented in this dissertation, conducting pedestrian survey in the Sinsicap Valley and excavations at two sites, Cerro Huancha MV 900 and Cerro Ramon MV 1000. I build upon pedestrian survey carried out by Billman (1996) and Briceño and Billman (2009). My excavations are the first in the Sinsicap Valley. In addition to the recovered archaeological data, I also consider ethnohistoric, linguistic, and ethnographic information to inform my study. Previous research by John and Theresa Topic in the upper Moche Valley and the work of their students, in addition to other studies of imperial expansion and imperial-local interaction, helped me to formulate the four models to understand Chimú-Collambay and Inca-Collambay interactions. The models are dynamic and flexible, a variety of scenarios are considered for each model, and each model has several testable hypotheses. I provide a brief overview of the four below, and in Section 2.4 I elaborate on these models and provide archaeological correlates that will be used to examine these hypotheses.

- **Exchange-Alliance**: Local populations in the Sinsicap Valley maintained exchange relations with the Chimú that may have evolved into a political alliance and patron-client relationship during certain time periods. This model is not plausible for a Collambay-Inca relationship, as Collambay was definitively part of the Inca Empire. Exchange and a patron-client relationship may have been formulated over imperial economic interests in the region. While Andean polities are not known for having market economies, exchange systems are embodied in Andean political and social relations (Murra 1982 and 1985). A patron-client scenario implies that both participating parties benefitted from the relationship.
- **Tributary Province**: The Chimú and/or Inca polities established a tributary province. This model assumes residents in the region were subjects of the state, and the state had economic interests in the region and required subjects to pay tribute. This could have occurred under various scenarios, including bringing non-local groups into the region.
- **Defensive Outpost**: The Chimú and/or Inca may have established defensive settlements in the Sinsicap Valley in their own interests. Defensive outposts were established to protect the Chimú eastern front of the empire or the Collambay residents allied with highlanders in the La Libertad highlands with the Inca.
- **No Interaction**: A final fourth model is that no influence or interaction between Collambay and the Chimú or Inca state occurred, and the polities did not directly impact Collambay.

1.1 Significance of Study

This case study is one of the first investigations of north coast *chaupiyunga* groups. Previous research on the north coast has considered coastal-highland relations (Lau 2012; T. Topic and J. Topic 1982 and 1985; Masuda, Shimada, and Morris 1982). Yet few studies have occurred in zones in between the coast and highlands (e.g., Tsai 2012), an optimal area to understand interregional interaction between coastal and highland groups as well as local residents in the *chaupiyunga*. This project documents local *chaupiyunga* residents' production and cultural traditions. It also documents coastal and highland group interactions in the *chaupiyunga* groups. Collambay's close proximity to the Chimú Empire provides an opportunity to understand Chimú imperial strategies with non-coastal groups on its eastern front. Also, given the Colonial documentation of Collambay's service to the Inca Empire, the coca fields, and a state storehouse, this case study provides an opportunity to contribute to understanding Inca administration of the north coast. Previously only one case study has reported on Chimú and Inca interaction with local groups (Sapp 2002); therefore, this project also enables comparison of Chimú and Inca interaction with the same polity and may provide insight into both empires' management of imperial resources.

1.2 Outline of the Dissertation

My dissertation is structured in twelve chapters. The first four chapters provide context for the following seven chapters which describes methods, fieldwork, analysis of recovered material culture and interpretations of fieldwork findings. Following this introduction, Chapter 2 situates the reader in the theoretical grounding of the study,

which focuses on imperial strategies and expansion, interregional interaction between groups, frontier dynamics, and a local, bottom-up perspective of these dynamics. It also introduces my four models for understanding Chimú and Inca interaction with Collambay residents. Chapter 3 introduces the environment and geopolitics of the case study. While I review what is known about the Moche Valley *chaupiyunga* and Collambay I also highlight the environment and culture history of the Moche Drainage and La Libertad highlands. This is especially important to this study as Collambay lies between these two zones and residents from these regions also interacted with Collambay residents and may have lived in the *chaupiyunga* at points throughout prehistory. In Chapter 4, I highlight the "outside" imperial players in this case study, the Chimú and Inca Empires. I review Chimú and Inca interactions with local groups from other case studies to better understand what might occur in Collambay.

Chapters 5-11 introduce my research program. Chapter 5 reviews methods used throughout the study from fieldwork to ceramic analysis. Chapter 6 describes settlement patterns documented during pedestrian survey of the Sinsicap Valley. Chapter 7 describes the archaeological site of Cerro Huancha MV 900's site sectors and surface collection. Cerro Huancha MV 900 is where the majority of excavations during the project occurred. Chapter 8 describes excavations at Cerro Huancha MV 900. Chapter 9 describes excavations at Cerro Ramon MV 1000 the other site tested during this project. Chapter 10 focuses on the ceramics recovered at Cerro Huancha MV 900 and Cerro Ramon MV 1000 and Chapter 11 presents the findings from other artifact classes that were analyzed. Chapter 12 includes a discussion of the data in reference to the models

presented in Chapter 2. I describe the project findings and conclude with suggestions for further research and the contributions of this study.

2 Imperial Expansion, Frontiers, and a Bottom-Up Approach

This dissertation engages with several themes that are relevant to anthropological archaeology and the social sciences more broadly. It investigates the context of relationships and interactions between different groups. These interactions occurred in a frontier context, a scenario known to result in unique sociopolitical, economic, and cultural relationships. The parties engaged in the Collambay frontier include imperial powers and local populations. While the pretexts of and types of interactions between Collambay and the Chimú and Inca empires remain unclear this chapter develops a theoretical framework for understanding empires, mechanisms of imperial expansion, frontiers, approaches to the study of the local-imperial interaction and describes four models to consider in examining Collambay's relationship with the Chimú and Inca.

2.1 Empires and Imperial Expansion

Empires are defined as "geographically and politically expansive polities" (Sinopoli 1994, 159). Made up of a diverse group of communities and ethnic groups that are unified, in the sense that they operate under the same political system, however they have different cultural traditions and speak different languages, amongst other differences. Attempts to understand the mechanisms by which empires form, expand, consolidate, and collapse have a long history within archaeology and the social sciences (Alcock et al 2001; Carneiro 1970; Fried 1967; Service 1975; Wittfogel 1957).

A defining feature of an empire is expansion beyond a core area. Empires are strategic when selecting areas for expansion, and many factors are considered, including the perceived needs of the empire, available resources, political significance, and local political conditions. Scholars have posited numerous motives for imperial expansion focusing on processes at the center, periphery or relations between the two (Doyle 1988). Others hypothesize that defense is the main motive for expansion (Hassig 1992), and that a polity expands to eliminate outside threats to borderland areas of the polity or state ideology (Conrad and Demarest 1984; Demarest and Conrad 1992). Other primary motives suggested are economic, including acquisition of more resources, like both staple resources and prestige goods, or protecting resources (e.g. Algaze 1993; D'Altroy and Earle 1985; Earle and D'Altroy 1989; Ekholm and Friedman 1979). Models such as Wallerstein's World Systems Theory (1974), which examines core-periphery relationships, and the emergence of capitalism in the sixteenth century have played an important role in how scholars conceptualize imperial access to resources (e.g. Algaze 1993; Chase-Dunn and Hall 1991; Doyle 1988; Ekholm and Friedman 1979).

Imperial strategies are tactics implemented by an empire to enable expansion and the strategies used to maintain control over groups in the empire. These tactics involve actions that affect political, economic, social, or cultural aspects of the local group. Regardless of motivation, expansion occurs through force and military conquest or diplomatic negotiation (Hassig 1998; Luttwak 1976; Mann 1986). In other words, force may be overt or covert (Schreiber 1992). Different methods are implemented to enable successful incorporation of groups or regions into the empire and maintain control over them.

A model that is appealing to understand imperial strategies is D'Altroy's (1992), territorial-hegemonic model which he describes for the Inca empire. This model considers relationships between an expansive polity and subject territories to be flexible. A ruling polity may employ varying degrees of control over subject polities rather than assuming that a ruling polity would employ the same tactics with every territory it incorporates into the empire. One end of the spectrum is the hegemonic (or indirect) system which requires a "core polity (usually a state) and client polities that are responsible, with varying degrees of autonomy, for implementing imperial policy, extracting resources for imperial consumption, and providing security out of their own resources," (D'Altroy 1992, 19). On the other side of the spectrum, territorial control (or direct control) involves more hands-on governing and occupation of subject territories. The core polity is accountable for administration. Hegemonic and territorial strategies may be used in varying ways in different parts of an empire, depending on circumstances including the central polity's organization, organization of subjects, spatial distribution of resources, and imperial goods (1992, 19). An examination of the type of relationship between economic, military, and political modes of power enables recognition of hegemonic or territorial strategies.

The investigation of imperial strategies employed by empires plays an important role in understanding complex societies and interactions between the empire and subservient local group. However, consideration of local groups' agency, actions and interests are also essential to understanding imperial-local interaction. In Sections 4.2 and 4.3 I review case studies of Chimú and Inca imperial expansion and interaction with

other groups elaborating on this further and in specific reference to what is known about Chimú and Inca imperial tendencies.

2.2 Frontiers

The American historian Frederick Jackson Turner (1893) presented the idea of frontier studies based on his study of colonial relations in Wisconsin during the period of American western expansion. Turner (1921) argued that 19th century America was a product of its frontier experience, rather than an extension of Western European civilization. Turner's work emphasized that American character was represented in white frontiersmen self-reliance and freedom, experiences driven by the economic incentives of the fur trade. There have been varied reactions to Turner's work, like criticisms of its ethnocentric perspective. However, the concept of frontiers and implications of the diverse phenomena they produce which impacted groups in and outside of the frontier demonstrates the importance of studying frontier dynamics to understand past societies. Frontier studies have evolved from Turner's initial publication of 1893, which viewed a frontier as a geographic space devoid of institutionalized authority in opposition to a core, to one that is not limited to a geographic region and space where unique interactions occur.

Today, frontiers are studied across space, time, and academic disciplines (Rodseth and Parker 2005, 3; Eaton 1993; Donnan and Wilson 1994 and 1999; Guy and Sheridan 1998; Parker 2006). Frontier studies present the opportunity to understand varieties of interactions between different groups – whether they are between states and non-state societies, or different ethnic groups (Cusick 1998; Green and Perlman1985;

Lightfoot and Martinez 1995; Rodseth and Parker 2005; Stein 2005). Scholars have recognized that the phenomena that occurs in frontiers inform studies of archaeological frontiers and hinterlands. Populations in frontiers experience transformation, and these transformations impact societies outside of frontiers, there is no typical or normal pattern (Rodseth and Parker 2005, 4).

I define frontier as a liminal space where local agency drives interaction between groups as opposed to top-down political forces. While the participating parties interacting in a frontier zone may not live within the frontier, the social, cultural, political, and economic interactions between groups are not under direct control of complex polities. A zone of unique circumstances where resources and cultural influences are funneled and unique hybrid identities are often created, frontiers are pivotal to understand the dynamics of intergroup relations, interregional interaction and also imperial systems (Cusick 1998; Lightfoot and Martinez 1995; Rodseth and Parker 2005; Stein 2002).

Frontiers are not necessarily limited to a geographic region, although they are found in politically autonomous geographical areas. They may be located on political fringes or at the interstices of competing polities. However, it is a politically marginal, liminal zone that enables an environment of "socially charged places where innovative cultural constructs are created and transformed" (Lightfoot and Martinez 1995, 472). Colonies and diasporas may be located within a frontier and frontier contexts may be referred to as peripheries, borders, and borderlands. Another aspect that may, but not necessarily, play a role in creation of a frontier zone is the geography and different ecological zones (Hall 2000, 250). For example, James Scott's (2009) work in

Southeast Asia demonstrates that geographical location and landscape plays an important role in establishing a frontier setting. This is worth noting as the Andes region, topography impacts subsistence practices and available resources in each ecological niche (see Chapter 3 for further discussion).

A final characteristic of frontiers comes from World Systems theory, which recognizes both external and internal frontiers (Hall 2000; Mikesell 1960). The internal or external label refers to whether the frontier is geographically located within or on the exterior of a world-system. An internal frontier is geographically located within an expanding system (Hall 2000, 251-252). It is also plausible for frontier zones to be enveloped within an empire. Liminal zones may be within the territory of an empire, however, this does not imply that the zone is no longer a frontier, in scenarios where an empire may manage indirectly, from a distance, the processes which occurred prior to becoming incorporated into an expanding polity may not impact local dynamics. An external frontier indicates that the frontier is on the periphery of the world system, to clarify it is not a periphery within the system. Therefore, consideration of dynamics in frontiers over the *longue durée* may demonstrate that a frontier may become enveloped and at a later time could become an external frontier due to sociopolitical dynamics that may have occurred within the frontier or dynamics outside the frontier.

This understanding of frontier is influenced by world systems theory but more so by social theory, "alternative" histories, and postcolonial studies which investigate the experiences of populations living in political margins (see Rodseth and Parker 2005 for a review of these studies). In archaeology, this has resulted in prioritizing local actors and the adoption of cross-disciplinary, comparative frameworks (Lightfoot 2005;

Parker 2006; Stein 2005). More recent progressive perspectives applied to study marginal groups include economically driven models, studies of cultural diffusion, acculturation, and ethnic identity in the patterns of material culture (Cusick 1998). While previous studies have been criticized because of their focus on the inequality of power relations between indigenous and colonizing groups in frontier areas (Rodseth and Parker 2005), these works are a step forward in prioritizing indigenous groups as actors and drivers in relationships with outside groups. Of course, as frontiers have no predictable model, cultural acculturation and diffusion may not occur in frontier scenarios. Barth's (1969) work highlights that interactions with other groups may reinforce group ethnic identity and practices in frontier scenarios despite being exposed to different ideas and practices. Goldstein (2005) has identified these processes in a Tiwanaku diaspora in the Moquegua Valley of southern Peru.

Culture contact studies are well suited to evaluate theoretical and methodological approaches to culture change in archaeology (Lightfoot, Martinez, and Schiff 1998). Historically speaking, within frontier studies and in local-imperial studies, local groups are often overshadowed by their more powerful neighbors due, in part, to a more well-documented archaeological record, which may overshadow strategies implemented by local groups in response to interactions with outside groups. Identifying local level cultural phenomena and strategies of resistance, acculturation, or a combination of both is essential to understanding interaction between groups, especially between local populations and imperial powers (Lightfoot 2005; Morrison 2001; Smith 2001). Researchers are attempting to address this issue, for example, prioritizing bottom-up approaches (Rodseth and Parker 2005; Stein 2002) and

examining coping strategies of intermediate elites (Elson and Convoy 2006; Marcone and Lopez-Hurtado 2015). Frontiers are a dynamic zone and interactions between non-local and non-local groups within this zone often result in unique phenomena. The processes within this zone are best understood by consideration of the processes of participating parties, including mechanisms and motivations.

2.3 Bottom-Up Approach: Prioritizing a Local Perspective

Incorporated provinces and communities were active in shaping imperial strategies by impacting the core region in ways that go well beyond providing them with economic commodities. Within imperial-local interaction, there are multiple social groups, each with different goals (Brumfiel 1992 and 1996; Dietler 2005; Gasco 2005; Yoffee 2005). Approaching these relationships with a bottom-up study highlights the transformations that may occur in local groups as a result of their interaction with empires by providing a more detailed account of the inherent agency in local processes (Alcock et al. 2001). Agency-centered models combine elements of processual and post-processual theory to apply a multi-scalar framework that focuses on the historical trajectory of subject populations, viewing them as active agents in imperial interactions (Bermann 1994; Jennings 2010; Sinopoli 2001; Stein 2002). An agency-centered approach is exemplified in culture contact, as well as frontier, hybridity, and "bottom-up" colonial studies (e.g., Alcock et al. 2001; Cusick 1998; Deagan 1996, 2001; Dietler 1998; Mattingly 1997; Parker 2006; Rice 1998; Rodseth and Parker 2005; Schortman and Urban 1992; Stein 2005).

The social and historical context of a community must be examined before attempting to explain regional or global phenomena especially in the case of imperial interaction with populations in frontiers (Morrison 2001; Rodseth and Parker 2005, 120; Sahlins 1989; Wolf 1982). To identify imperial-local interaction, prioritizing a local perspective in the archaeological record, I conducted excavations within the local group's territory. To gather information on groups living in frontier zones over time, I propose a multi-scalar model, documenting local levels of production and cultural traditions over time, through consideration of changes and continuity in public and household architecture styles and varieties, and the makeup of the material culture assemblage, subsistence trends, and mortuary traditions.

Consideration of all of these aspects of local communities will provide sufficient data to understand local identity and traditions as well as the changes that the community may undergo as a result of their relationship with imperial powers. Households in particular are a desirable locale for examining interregional processes. A continually active, dynamic space the household unit provides insight into both the public and private domain (Blanton 1994; Kent 1990). Material culture from domestic contexts provides information about habitus or daily practices and activities, social reproduction, and societal power relations (Bourdieu 1977). In the Andes the household is the basic unit of society reflecting social identity and traditions. Households are active members of communities and provide insight into community dynamics (Aldenderfer and Stanish 1993). Activities that are identified in a household unit correlate with community experiences, linking to larger societal, economic, political, and cultural processes. In the Andes domestic economies of household units are the

economic basis of society. Changes in production and consumption in the household economy are tied to larger political processes (Hastorf and D'Altroy 2001). Examining material culture and identifying changes and continuity in domestic economies over time provides an understanding of local household experiences and their reaction to external stimuli (Bermann 1994; Hastorf and D'Altroy 2001; Stanish 1989; Wilk and Rathje 1982). Tracking changes in production and cultural traditions within households over time will highlight the various ways local groups interacted with empires on frontiers. Without understanding activities prior to interaction with outside groups understanding of changes or continuity is unclear. In fact, especially in this case study, which examines a period of 500 years and involves multiple polities a *longue durée* approach is essential (Ames 1991, Braudel 1980).

2.4 Models and Hypotheses

Four models and hypotheses have been formulated to understand interregional interaction in Collambay between the local population and Chimú and Inca Empires. Previously, no archaeological excavations have occurred in the zone, therefore there are many questions which remain open including the type and timing of interaction between local and non-local groups is not clear. One unknown is if there are groups living in the Collambay area prior to the Chimú era (Late Intermediate Period, hereafter LIP) during the Middle Horizon (MH). Another unknown factor is if relationships between local and non-local groups change throughout the Chimú and Inca empires' eras (Late Intermediate Period/Late Horizon or LIP/LH), a period of several hundred years. A variety of scenarios are considered to understand interregional interaction in the

Sinsicap Valley between local groups during the MH and LH. Four models are proposed for the Chimú-local relations, and three models with slight modifications are proposed for Inca-local relations.

Three of the four models examine the dynamics of large-scale imperial expansion into frontier areas and also consider the history, culture, and domestic production of the local population prior to, during, and after their contact with imperial societies. These models are dynamic and flexible. Analytical flexibility is crucial because it is plausible that aspects of each of these models will be reflected throughout the LIP/LH in the Sinsicap Valley, as more than one non-local group may be present in the Sinsicap during different time periods. Additionally, each non-local group may have a different set of motivations for interacting with/or settling in the region. These models differ by the variables considered.

Each of the four models has its own set of corresponding archaeological correlates, see the following sections and Appendix E. In my research, I test these models as multiple temporal and spatial scales and rely on settlement patterns and data recovered from excavations in architectural compounds. The categories of archaeological correlates that I consider in this project include site location, public and domestic architecture, domestic production and subsistence patterns, and mortuary practices, all considering the cultural material assemblage and artifact classes as proxies for understanding behavioral patterns in the Collambay area.

In the following sections, I describe each model by presenting testable hypotheses to the research question generated by each. I then provide the archaeological

correlates that will be used to examine these hypotheses and offer predictions as to what may be encountered in the archaeological record if a hypothesis is correct.

2.4.1 Exchange-Alliance

One plausible scenario is that local populations in the Sinsicap Valley maintained exchange relationships with the Chimú. These may have evolved into alliances or a patron-client relationship during certain time periods with the Chimú Empire as patron and Collambay the client. Exchange relationships may have intensified over time and developed into a political alliance between Collambay and outside groups. Collambay elites are expected to be the principal participants in this exchange relationship with the Chimú groups, which may have developed throughout the late MH and LH. The Chimú likely engaged primarily with Collambay elites; non-elites in the Sinsicap Valley would have had minimal to no interaction with Chimu representatives. The types of economic exchanges in this model include exchange and gift giving, in which both parties benefitted from the relationship, despite one being subservient to the other.

While formal exchange relationships can be a major part of an empire's economic strategy, like it was for the Aztec empire of Mexico (Smith and Berdan 1996), Andean polities like the Inca are not known for having market economies or entrepreneurial classes[1] (Murra 1980 [1955]; Stanish 1997). Inca and other Andean state trade systems are often described as embodied in Andean political or social relations

[1] Recently Andeanist scholars are reconsidering these notions (see Hirth and Pillsbury 2013). Also, ethnohistoric sources report that the Chincha of the south coast were in charge of a large maritime trading system from the south coast of Peru to Ecuador (Rostworowski 1970).

(Godelier 1977; Murra 1982 and 1985). A patron-client exchange relationship would have provided the imperial group access to the unique agricultural resources of the Sinsicap Valley and/or monitored trade through the *chaupiyunga* for the Chimú. Collambay elites received prestige items in return for monitoring trade and highly valued agricultural products. Collambay would benefit from this position and with an elevated political role in the region, ally of the Chimú. For the Chimú this is a low cost, indirect strategy.

Archaeological correlates that support this model all suggest local continuity. There would be no changes in local-style public architecture through time, indicating that if Chimú influence is present, it is limited. If storage is located in Collambay households, rather than associated with public or elite architecture, this would reflect a more decentralized local political organization than the redistributive economic organization of the Chimú or Inca polities, and absence of a political alliance. Chimú material culture is expected to be found in elite households in both scenarios, but only in limited quantities, likely as trade goods, prestige items.

Collambay household architecture will have little change in style from the MH/LH. Household assemblages will reflect local traditions, using local sources, and show minimal influence or presence of foreign traditions and material culture. Local fine and utilitarian wares will dominate the expected ceramic assemblage in households with a minimal presence of non-local fine wares and prestige goods in elite households. Chimú fine ware vessels are expected in elite mortuary contexts, as an exotic item. However, most vessel styles will remain consistent with minimal influence of non-local styles. Under an exchange scenario, local production levels may ramp up in response to

the trade economy. Artifacts and refuse reflecting food production, spinning and weaving, tool production and religious artifacts will reflect local tradition, and there will be minimal variation in this style over time. Chimú stylistic influence and imported artifacts from the Chimú groups may be limited to elite households and are attained through exchange.

Under a Chimú-Collambay patron-client relationship, elite and non-elite household styles remains the same, however, local production may increase as a result of Chimú demand. In Collambay, this may mean evidence of increased agricultural production such as an increased number of storage bins or storage vessels present in households. The amount of storage space and quantity of storage vessels is greater than local demand. Collambay craft production may also increase as a result of Chimú demand. This will be identified through remodeling or expansion of households dedicated to production activities, as well as increased areas of storage. In this scenario, Collambay subsistence patterns depend on primarily local resources, including camelid and guinea pig, however, marine resources/non-local resources are present in limited quantities in elite households as a result of trade relationships. See Appendix E for more details on archaeological correlates.

2.4.2 Tributary Province

This model posits that the primary motivation for imperial-local interactions was economic in nature. The Chimú and/or Inca incorporated Collambay into its empire, imposing tribute payments and potentially intensifying local production. Cerro Huancha MV 900 and Cerro Ramon MV 1000 served as locales for an imperial tributary

province during the Late Andean period, perhaps in order to establish enclaves in attitudinally defined zones as Murra (1972) has suggested for southern Andean polities. Both the Aztec and Inca empires established economic colonies as part of their imperial strategies (D'Altroy and Hastorf 2001; Hirth 2016). These strategies enabled a consistent supply of bulk and prestige commodities (Earle and D'Altroy 1989). The establishment of a tributary province in the Sinsicap Valley would result in two economic advantages: (1) direct access to and control of agricultural production in the Sinsicap, and (2) the ability to directly monitor and regulate traffic and goods that passed through the Sinsicap Valley between the highlands and the coast. It also would be able to support/provide resources for the dominant polity. One of the key differences between this model and the patron-client model is that Collambay is assumed to have intensified local production in response to obligatory tribute payments and received goods/products through the Inca redistribution network as part of the imperial system.

During the Inca Empire, Collambay had an Inca *tambo* (Rostworowski 1987), and Inca coca fields (Netherly 1977) which suggests Inca state infrastructure was present in Collambay. There are four plausible scenarios for the establishment of a Chimú and/or Inca tributary province in the Sinsicap: (1) local groups continued to occupy Cerro Huancha MV 900 and Cerro Ramon MV 1000 and worked directly for the Chimú or Inca; (2) non-local groups occupied Cerro Huancha MV 900 and Cerro Ramon MV 1000 and established households in separate site sectors from local populations to also work for the Inca; (3) non-local groups cohabited with local populations at Cerro Huancha MV 900 and Cerro Ramon MV 1000, assimilating with local groups over time; and (4) non-local groups occupied Cerro Huancha MV 900 and

Cerro Ramon MV 1000, and the local population was moved to another location under control of the empire.

While preliminary evidence from the Collambay region suggests that Collambay was occupied by the same group during the LIP and likely through the LH, case studies from other regions of the Inca empire indicate these other three scenarios are also worth consideration in this in this study. Non-local groups under the Chimú could be Chimú people or a *mitmaq* group. Under the Inca, the non-local group would be a *mitmaq* group. These groups may have only resided in the region during part of the year, during harvest time, following Julien's model for Inca coca plantations (1988), see Section 4.1.1. While this model has a variety of possible scenarios and different archaeological correlates for each; it suggests that residents of the Collambay region were required to support the Chimú or Inca through economic means.

The archaeological correlates linked to this model include significant remodeling of architecture at Cerro Huancha MV 900 and Cerro Ramon MV 1000 in relation to increased local production. This includes increased amount of storage in elite households and administrative sectors, likely including a location with centralized storage. This may include evidence of *mitmaq* colonies moving in and local groups moving out of the region, or the two groups working side by side. *Mitmaq* colonies were other groups within the empire who were moved strategically to increase economic production in a region or if a group was problematic may be resettled elsewhere (see Section 3.9 for more information).

This increased production may be detected on a household level as well as in specialized workshops, depending on the type of production. If Collambay people and a

mitmaq group occupied the site contemporaneously, site sectors associated with households of each group will be identified through differentiation in architectural style and artifact assemblage. Architectural styles of elites and administrative structures will provide insight into supervising tactics of the tributary province. Supervising elites may have been local or Chimú and/or Inca elites. If a tributary province was instituted by the Chimú, Chimú fineware and utilitarian ceramics would be expected in elite and administrator households, and the presence of Chimú administrative architecture, and an *audiencia* would be expected. If this tributary province was established by the Inca, Imperial Inca and Provincial Inca ceramics would be expected in elite and administrator households; and remodeling of administrative architecture would be expected. See Appendix E for more details on expected archaeological correlates.

2.4.3 Defensive Outpost Model

Cerro Huancha MV 900 and Cerro Ramon MV 1000 may have served as defensive outposts to protect the eastern front of the Chimú polity during the LIP or as the western front of highlanders allied with the Inca during the LH. In the Andes, "state settlement patterns are typically non-defensive except at frontiers or provincial colonies," (Arkush and Tung 2013, 334) indicating that Collambay may be a scenario where a defensive outpost may have been established. The Sinsicap Valley may have attractive to either or both of the Chimú and/or Inca for defensive purposes because of its strategic location between coastal and highland polities. Establishing imperial outposts in this frontier zone could have been carried out to protect local populations or

create a buffer zone. This was a strategy known to be employed by the Aztec empire (Smith and Berdan 1996).

Creating a buffer zone in the Sinsicap Valley may have been of interest to the Chimú to protect the eastern front of their territory or by the Inca in case of uprising by the Chimú. This may have occurred in two ways: (1) arranged through negotiations between Collambay elites and Chimú or Inca polities, or (2) occurring through force by the Chimú or Inca polities.

There are various scenarios in which a defensive outpost may have been realized.

1) Collambay was a defensive outpost maintained by local community members to defend Chimú or Inca interests.
2) At times a standing army may have occupied the region, living alongside locals. These soldiers may have lived separately from the local population or moved into local households, intermarrying with locals.

The presence of a Chimú army in the Sinsicap in preparation for the Inca arrival, or perhaps as a result of threats from highland polities.[2] While there are no ethnohistoric sources that present a Chimú description of the Chimú and Inca at war, Cieza reports that a "fierce battle in the valley of Chimor – the present-day Moche Valley – in which the Inca forces were almost defeated," did occur (1932, 195 in Netherly 1977, 311). Chimú outposts have been identified in the middle Moche Valley (Boswell, Billman, and Fariss 2009; Mullins 2012; T. Topic 1990; Topic and Topic 1987). It is possible

[2] There is no evidence to support this possibility.

that Cerro Huancha MV 900 and Cerro Ramon MV 1000 are associated with these outposts, but evaluating whether these Chimú outposts are linked to Huancha and Ramon is beyond the scope of this dissertation. The Chimú are defending their own front, but may have also established outposts to protect Collambay residents as well, Collambay residents may have provided coca or other resources in return for protection. I rely on material culture at Cerro Huancha MV 900 and Cerro Ramon MV 1000 to assess this scenario.

Another possible scenario is that the Inca may have established a defensive outpost as a result of continued Chimú rebellion after they were conquered (Rowe 1948). The extensive Chimú investment in fortifications that the Chimú would have been well prepared to fight the Inca. As a result, the Inca may have relied on Cerro Huancha MV 900 and Cerro Ramon MV 1000 to support troops, or maintained troops to be prepared to battle the Chimú or demonstrate their preparedness for a Chimú rebellion. If this were the case, material culture recovered may include material of a new non-local group who the Inca introduced to the region. For example, the Inca could have installed members of the Chanca of Andahuaylas or another group noted for their impressive fighting ability to subdue Chimú rebellions.

In either scenario, Collambay and a non-local army would have constructed defensive outposts to protect themselves from coastal or highland polities during the Late Andean period. Architecture and material culture from Cerro Huancha MV 900 and Cerro Ramon MV 1000 will indicate whether the sites served as defensive outposts for the Chimú and/or Inca.

If Cerro Huancha MV 900 and Cerro Ramon MV 1000 served as Chimú or Inca defensive outposts, it would be expected that non-local defensive architecture such as walls were constructed quickly and strategically to defend the site from attack. This defensive outpost may have not only been maintained by local groups if a standing army was present, barrack-like households may have served as housing for soldiers and may be in separate site sectors from local population, and stylistically differentiated from local households. A high percentage of local utilitarian wares would be present, much more so than local fine wares. Weapons such as piles of slingstones would be expected to be present in high quantities at opportune locations on site for defense. See Appendix E for more details on archaeological correlates.

2.4.4 No Influence/Interaction Model

A fourth model is a "No influence or interaction" model. This model assumes that neither the Chimú nor Inca polities directly interacted or affected Collambay during the LIP/LH. Local traditions would be expected to be maintained throughout the duration of both empires. If there is an absence of non-local wares in the region, as well as no evidence of change in local production, architecture, or local activities throughout the LIP/LH, neither the Chimú nor Inca empires greatly influenced the population in Collambay. While Collambay was incorporated into the Inca Empire, it is possible that nothing changed at a local level that is visible in the archaeological record. See Appendix E for more details on archaeological correlates.

2.5 Empires, Frontiers, and Models

This chapter provides a theoretical framework for the case study. The principal theoretical issues of the project ask about the relationship between imperial and local groups over time. An understanding of the mechanics of both parties through previous case studies and prioritizing a *longue durée* study is an approach that enables a bottom-up perspective and considers the dynamics of both groups as active players – something which has not always been prioritized in the past. The context of interregional interaction between Collambay and imperial powers is another theoretical issue that is also important to consider in this study as frontier zones are unique scenarios where sociopolitical dynamics and relationships are not easily predictable as they occur outside of more typical contexts. The four models provide archaeological correlates for four potential scenarios with consideration of potential variations in interregional dynamics. With this information in mind, Chapter 3 provides background information on the environment and regional history of the Moche Drainage to better understand the environmental setting and cultural history of the region.

Previously, there has been very little research in the upper Moche drainage, where Collambay is located. This, in addition to this study's investigation of interregional interaction in Collambay makes it necessary to provide background on the natural environment and culture history of adjacent coastal and highland regions. This chapter outlines the environment of the Moche Drainage and La Libertad highland regions. This includes a review of the natural environment, previous archaeological investigations in the Moche Drainage and La Libertad highlands, and current understanding of regional history. I also present ethnohistoric, ethnographic, and

linguistic information about the Collambay region that provides information about the area's late prehistory. I begin by defining the study zone and its ecological niches.

3 Study Area: Moche Valley and La Libertad Highlands

The Moche River is one of 13 rivers on the north coast of Peru between the Huarmey Valley and Lima. The drainage is 102 km long including the drainages of its three principal tributaries: Sinsicap, Cuesta, and Upper Moche rivers. The confluences of these tributaries are in the upper part of the middle Moche Valley. The watershed of the valley is 25 by 96 km with a total area of 2,708 square km (ONERN 1973, 32). It is not a large river compared to other north coast valleys like the Jequetepeque River, but the Moche watershed encompasses diverse ecological zones. The lower, middle, and upper valleys are compact, rising 4,200 meters in 55 km, especially in comparison to other north coast valleys (Boswell et al. 2011). While the Moche watershed is rarely higher than 4,000 masl, the terrain is rugged and geologic composition is varied. Mountains are actively forming, are very steep, and are rich in metals (ONERN 1973).

These diverse ecological zones in the Moche Drainage have different economic possibilities. At 1,600 masl and below, agriculture is limited to irrigation agriculture because of arid and semi-arid conditions. Warm weather year-round allows for the cultivation of at least two crops a year of a wide variety of cultigens. Above 1,600 masl, rainfall agriculture is possible but cultivation and the types of crops are limited by cold temperatures and extreme topography (Billman 1996, 27).

The Colonial city of Trujillo is located in the lower Moche Valley. Events of the last 50 years, such as terrorism, and economic development, have significantly increased the size of Trujillo. The expansion of new neighborhoods and slums, without

appropriate urban planning, has resulted in the destruction of hundreds of archaeological sites in the lower Moche Valley (Billman et al. in prep; Gamboa Velasquez 2015). Inland from Trujillo, in the middle Moche valley and the upper valley region, the compressed topography encompasses multiple ecological niches in the highlands of the department of La Libertad. The La Libertad highlands consist of diverse topography that includes steep river valleys, highland basins and valleys, and a large plateau, the Carabamba plateau.

Several regions of the La Libertad highlands have undergone archaeological investigation including the Otuzco/Upper Moche area[3] (J. Topic and T. Topic 1983 and 1985), the Carabamba Plateau (J. Topic and T. Topic 1979; Haley 1979), the Alto Chicama Valley, which is the main branch of the Chicama river, (Krzanowski 2006), and the Huamachuco Region (J. Topic 1986, 1998, 2009; T. Topic and J. Topic 1987, 1987; T. Topic 2009). All four of these areas are located in the department of La Libertad, a modern political jurisdiction, and I will refer to these regions as within the La Libertad highlands.

The Otuzco/Upper Moche area is the area around the town of Otuzco in the Upper Moche Valley which sits just above the Upper Moche Valley, at 2650 masl, on the principal highway to the city of Huamachuco today. South of the Otuzco/Upper Moche area is the Carabamba plateau, which looks down on the Moche and Virú valleys. The plateau is between the Moche River on the north and the Huacaapongo branch of the Virú River on the south; the Carabamba branch of the Virú divides the

[3] The Topics have also surveyed the lower part of the Upper Moche Valley. I review this work in Section 4.4.

plateau in half. Elevation on the Carabamba plateau is 3400 to over 4000 masl, and on its northwest, west, and south sides, it has an extreme descent to the coast.

The Alto Chicama Valley is northeast of the Carabamba plateau. It is the main branch of the Chicama River, and also feeds the Sinsicap River. The region around the city of Huamachuco has the most well-known prehistory in the La Libertad highlands. The Inca established Huamachuco as a provincial capital; today it is the largest city in the La Libertad highlands, at 3160 masl. It is between the eastern and western cordilleras, sitting at the southern end of the Condebamba-Cajamarca drainage basin. It is separated from the headwaters of rivers such as the Chicama, Moche, and Virú, which descend west to the Pacific Ocean. The Condebamba River flows north, joining the Cajamarca River. These two rivers flow east into the Crisnejas River and then the Marañon into the Amazon. My review of the natural environment and regional cultural history includes the Moche watershed as well as four regions in the La Libertad highlands, which have undergone some previous archaeological investigation (Figures 1.1 and 1.2): the Otuzco/Upper Moche Area, the Carabamba plateau, the Alto Chicama Valley, and the Huamachuco region.

3.1 Paleoclimate and El Niño Flooding

In the Andes, the Humboldt Current, which runs along the pacific coast of South America creates a rain shadow along the coast, creating a desert like environment. As a result of the rain shadow little precipitation falls on the coast and lower valley regions of the Central Andes. In the Moche Valley, temperature and precipitation averages 20° Celsius and 4 mm, respectively, near the ocean. The highlands at 3,700 masl in the

upper Moche watershed have a more extreme temperature range of temperatures. It is about 7° Centigrade and precipitation has a 4,000 mm annual mean (ONERN 1973, 65). Within the *quechua* zone in the Alto Chicama valley, precipitation is between 600 and 800 mm, with an annual average temperature of 12–16° Celsius (Krzanowski 2006, 20–23).

The Moche Valley is one of the smaller valleys on the north coast in terms of irrigable land, with 20,026 ha of irrigable land and a drainage area of 1,525 km^2. For comparison, the neighboring Chicama Valley is one of the largest, with 40,371 ha of irrigable land and a 3,004 km^2 drainage area. For populations living in the rain shadow of the Andes, seasonal rains from October to April in the highlands feed irrigation in the middle and lower valleys, enabling two planting seasons: December–May, which typically has river discharge sufficient to irrigate all fields, and June–November, during the dry period of the year, which is a time where low river levels do not permit all fields in the lower and middle valleys to be planted. In the Moche Valley in the modern day, only one-fifth of the lower valley fields are planted in this second season (Billman 1996, 41).

Irrigation agriculture requires coordination and cooperation among populations living in the upper through lower valley. Today in the Moche Valley, each community has a water committee, which delegates within the community how many hours each community members' fields will receive water every week. The water committee is also responsible for negotiating access to water with other communities. During the time I lived in the Moche Valley, the water committee of Collambay was the most active of all

local political committees, constantly traveling up valley to meet with other water communities to negotiate water access.

An environmental threat in the modern day and throughout the prehispanic era is El Niño Southern Oscillation (ENSO) or El Niño. During El Niño, the sea surface temperatures rise and, as a result, the normal rain shadow disappears, leading to intense rainfall on the coast. The rise in sea surface temperature results in pelagic species dying, affecting the maritime food chain. The torrential rains rush through coastal valleys, destroying crops, flooding dry quebradas, and causing landslides on the coast and drought in the highlands. El Niño events occur every 2–8.5 years (Rodbell et al. 1999). More extreme events occur every 15 years or so; the most recent severe El Niño events in the twentieth century occurred in 1982–83 and 1998–99, resulting in the displacement of many communities whose villages flooded.

El Niño flooding and anti-El Niño droughts are less severe in the Moche Valley that in the majority of other coastal valleys. A study by Waylen and Caviedes (1986) of 13 north coast valleys' (Ecuador border to Casma valley) annual volume of runoff in El Niño and anti-El Niño years showed minimal differences in volume, and had the smallest difference in runoff of the 13 valleys in the study. Waylen and Caviedes propose this is because the Moche Valley is less affected by El Niño events, because El Niño and anti-El Niño and precipitation and elevation are negatively correlated. El Niño rainfalls occurs in lower elevations, below 1,000 masl, in coastal river valleys. The larger the total area of a river's watershed below 1,000 masl, the greater the volume of flood runoff during an El Niño. Since the majority of the Moche Valley's watershed is above 1,000 masl, and 50% is above 3,000 masl, the impact of El Niños except for

extreme events is less than the impact in other coastal valleys with lower watersheds (Billman 1996, 26–27).

How El Niño events affected Andean societies continues to be debated by scholars. Based on responses from modern governments that have struggled with assisting displaced populations who have lost everything as a result of this environmental catastrophe, severe El Niño events did greatly affect prehispanic polities and populations (Moore 1991). While they certainly would have caused abandonment of some communities, they likely also played a role in the collapse of polities such as the Moche and Tiwanaku, which collapsed in the ninth century when a large El Niño event occurred (Kolata et al. 2000; Moseley et al. 2008) and affected Chimú imperial strategies (T. Pozorski and S. Pozorski 2006). Evidence of rituals associated with El Niño events have been documented in the archaeological record in the Moche Valley (Bourget 2001; Prieto et al. 2014).

3.2 Natural Regions of Moche Valley and La Libertad Highlands

The Andes is one of the most diverse ecological regions in the world. Generally, the Andes can be classified as "three natural regions": the coast, sierra, and jungle (or selva) (Rostworowski 2004, 17). However, there is incredible diversity within these three regions. A more detailed classificatory scheme such as the one proposed by Javier Pulgar Vidal, a Peruvian geographer, highlights the different ecological niches within the three regions. Vidal's system divides Peru into eight natural regions based on climate, altitude, and indigenous land use. Vidal realized many indigenous names were used for similar ecosystems throughout the Andes and adopts these terms for his

classification system (Montoya Zavaleta 2004, 159). Vidal's system is similar to the botanist and climatologist Leslie Holdridge's (1967) universal "life zones," which classify land use and make it comparable worldwide. Holdridge's model is intended to be universal, while Vidal's is specific for the Andes. Vidal's classification system is frequently used by researchers; in particular, it us utilized in indigenous agro biodiversity and geo-spatial ordering of cultural-environmental informatics (Zimmerer and Bell 2013).

Vidal's eight regions from Peru's Pacific coast eastward to the jungle are *chala* (0–500 masl), *yunga*/*chaupiyunga* (500–2,300), *quechua* (2,300–3,500 masl), *jalca*/*suni* (3,500–4,000 masl), puna (4,000–4,800 masl), and janca (4,800 masl to the highest point in the Andes) on the western side of the Andes. Descending on the eastern slopes is the rupa-rupa or ceja de selva—Spanish for "the eyebrow of the jungle" (400–1,000 masl)—and selva baja or amazon (400 masl and below) (Pulgar Vidal 1972; Sandweiss and Richardson 2008). Vidal's ecological zones within the Moche Valley watershed and La Libertad highlands include the *chala*, *yunga*/*chaupiyunga*, *quechua*, and *jalca*/*suni* zones.

3.2.1 *Chala* (0–500 masl)

The *chala* is characterized as a coastal desert found along the Pacific shore into lower river valleys. The zone extends from the coast and lower Moche Valley, nearly 30 km inland. Little rainfall occurs in this region, due to the rain shadow created from the high Andes and Humboldt Current. This zone is known for heavy cloud coverage. In

winter, this heavy fog covers the *chala* until at least mid-morning, providing moisture. The thick cloud stratum moves inland from the *chala* to the *yunga* zone covering quebradas and river valleys up to 800 masl (according to Vidal), but in the Collambay area it has been noted up to 1,000 masl (Figure 3.1). On the central coast of Peru, lomas—low coastal, mountain areas where heavy fog provides moisture for vegetation—are in the *chala* zone. Cultigens produced in the *chala* include cotton, squash, and maize, and maritime resources are available.

Figure 3.1: Fog ascending from the *chala* zone into the Collambay *chaupiyunga*, view from Cerro Huancha at 1000 masl (August 2012)

3.2.2 *Yunga*/*Chaupiyunga* (500–2300 masl)

Just inland from the *chala*, the *yunga maritima* or *chaupiyunga* is characterized by having a "brilliant sun" for the majority of the year (Vidal 1972, 31). In fact, *yunga*

means "warm land" in *Quechua*. Vidal describes the *chaupiyunga* as the same zone as *yunga*, elsewhere, the *yunga* is defined as the lower valley zone, the *chaupiyunga* is the middle zone between 600 and 2000 masl (Marcus and Silva 1988, 2). For this study I use Vidal's definition of the *chaupiyunga*'s elevation, 500-2300 masl[4].

Chaupi means "in between" or "middle" in *Quechua* (Marcus and Silva 1988). *Yungas* is a term also commonly found as part of place names in references to the eastern slopes of the Andes that are within the rupa-rupa or *yunga* fluvial. The *yunga maritima* (hereafter referred to as the *chaupiyunga*), has a different climate and topography from the *yunga* fluvial of the eastern slopes.

The *chaupiyunga* is an environment of constant sun and rain in the summer months, and has no risk of frost. Farmers use irrigation agriculture, relying on river water and underground springs. At higher elevations in the *chaupiyunga*, rainfall is also relied upon during the summer in addition to irrigation (Vidal 1972, 55–71). The *chaupiyunga* climate is ideal for growing many crops, including those that grow in the *chala* as well as highly sought after resources including fruit, ají peppers, and "sweet" coca or Erythroxylum novogranatense var. Truxillense, which is the most highly sought after variety of coca (Rostworowski 1988). "Sweet" coca also known as "Trujillo" coca can be grown between 200 and 1800 masl on the north coast (Marcus and Silva 1988, 7).

In the Moche Valley, the *chaupiyunga* begins in the middle valley and encompasses the remaining valley zones in the upper valley and tributaries—the

[4] Elsewhere I have used Marcus and Silva's (1988) elevation range to define the *chaupiyunga* zone (Boswell, Billman, Surridge 2011).

Sinsicap, Cuesta, and Upper Moche. The tributaries of the Moche Valley rise dramatically in elevation in the foothills of the Andes. While the Sinsicap Valley is a tributary of the Moche river, it is also in close proximity to the Upper Chicama Valley and Alto Chicama Valley (the tributary). The Cuesta and Upper Moche north-south communication routes are more direct to the Huamachuco region.

In the Sinsicap, Cuesta, and Upper Moche tributaries, the valley narrows and there is limited land for irrigation. Within the tributaries, it is commonplace to see agricultural terraces, which are used during the rainy season. Prehistoric agricultural terraces that would have been fed by irrigation are also present in the Collambay area, although they are not currently used. During the dry season, slopes that do not have constructed agricultural terraces are barren, with the only plant growth being several varieties of large cacti. In the area around Collambay, the valley floor and lower mountain slopes where crops are being grown ranges between 500 and 1000 masl. Further up valley, there is greater variation in elevation of crops grown as the topography becomes more extreme.

3.2.3 *Quechua* (2,300–3,500 masl)

The *quechua* zone is considered the lower sierra (Vidal 1972, 75) and is also considered part of the upper valley (Topic and Topic 1985, 2; Marcus and Silva 1988, 2). Considered by Vidal a "temperate and comfortable" climate, the *quechua* has clear differences in the temperature between the day and night due to elevation. Especially in the lower sierra, the topography is quite narrow. In the summer, the *quechua* region experiences much cloud coverage and rain. Populations living in this area rely on

irrigation and rain-fed agriculture. Some of the most important crops in this zone today are indigenous plants—potatoes, oca, olluco, maize, and squash—among other crops (Vidal 1972, 73–88). In the north coast, this zone often contains forests. Vegetation types include grasses, bush, and shrubs as well as trees (Krzanowski 2006, 20–30). In the Moche watershed and La Libertad highlands, the *quechua* zone includes parts of the upper Moche Valley and upper tributaries into the highland areas. It also includes parts of the Carabamba plateau, as well as the Alto Chicama Valley and Huamachuco region.

3.2.4 *Jalca*/*Suni* (3,500–4,000 masl)

The *jalca* or *suni* zone, both terms are used alternately to refer to a single zone, has a more severe climate than the previously described ecological niches. The *jalca* has a cold climate with thin air due to elevation. A few parts of the Carabamba plateau and Huamachuco region are within the *jalca* zone, but the majority is within the *quechua* zone. In the *jalca*, farmers rely on rainfall for their crops. The high elevation limits the type of resources that can be grown in this extreme environment primarily to tubers, potatoes, and quinoa (Vidal 1972, 91–102). In the *jalca* and *quechua* zones it is common in areas where the topography is steep to see agricultural fields that appear to be almost vertical. In this zone, basin areas are preferred zones for agriculture. Camelid herding is a common activity in this zone. Traditionally the janca zone, which is located above the puna zone, is the traditional pastureland for camelids.

The 500–1,600 masl zone is 1,184 km^2, or 17% of the three tributaries. However, irrigation agriculture is limited by severe topography, and only 2,160 ha or 0.3% of this zone is irrigable (ONERN 1973, 59–61). The 1,600–2,600 masl elevation

is 824 km^2, or 11.9% of the three valleys. Only 4,730 ha, or .6% of this zone, was under cultivation in the early 1970s. I suggest that less of it is under cultivation today. Between 2,600 and 3,700 masl in elevation, ONERN estimates there are 24,560 ha of arable land in the three valleys. This is an area that is greater than the 22,000 ha under irrigation in the *chala*. However, only 15% of this zone is suitable for farming. 23,100 ha are suitable for pasture land. Finally, the jacla (3,700–4,200 masl) covers 536km^2, or 7.7% of the three valleys (ONERN 1973, 63–66).

The Moche Drainage is one of the smaller drainages on the north coast in size. The valley is compact, rising 4,200 meters in 55 km, especially in comparison to other north coast valleys (Boswell et al. 2011). This puts the ecological niches described, especially the *chala*, *chaupiyunga*, and *quechua* in much closer proximity than other larger valleys. This issue is raised to consider that the natural environment itself and close proximity of ecological niches puts populations with different subsistence practices and different resources – irrigation farming to agricultural terraces to pastoralists in closer proximity to each other compared to other valleys. This close proximity to other ecological zones may naturally heighten the interaction between coastal, *chaupiyunga*, and highland groups compared to larger valleys.

3.3 Chronological Framework: Horizons and Periods

Andean archaeological cultures are separated temporally as phases referred to as periods or horizons. “Periods” refer to times of regional cultural trends in material culture such as ceramics, iconography, and architecture that is associated with regional and independent styles. “Horizons” are phases that refer to material culture trends that

are widespread in the central Andes and associated with cultural traditions that influenced these styles (Rowe 1962; Rowe and Menzel 1967). The Rowe-Menzel system has seven phases, which provides a general framework for the Andes; however, each region has a unique chronology (Table 3.1). The Peruvian archaeologist Luis Lumbreras (1974) offers an alternative framework. I rely on the Rowe-Menzel framework to discuss culture history for the Moche Valley and La Libertad highlands; I also discuss regional phases within the north coast and highlands, highlighting the regional differences in chronology between coast and highlands. In the next section, I review a brief history of research within the Moche Valley and La Libertad highlands, which have been areas of research for archaeologists dating back to the late nineteenth century.

Table 3.1: Andean Chronology (After Billman 1996 and 2002; Krzanowski 2006; Ringberg 2012; Rowe 1962; J. Topic 2009)

<table>
<tr><th>Year</th><th>Andean Chronology</th><th>North Coast Regional Phase</th><th>Moche Valley</th><th>Huamachuco</th><th>Alto Chicama</th></tr>
<tr><td></td><td rowspan="2">Late Horizon (1438-1532)</td><td rowspan="2">Inca</td><td rowspan="2">Chimú-Inca</td><td rowspan="2">Santa Barbara</td><td rowspan="6">Yuraccama (Yigueda)</td></tr>
<tr><td>1500</td></tr>
<tr><td></td><td rowspan="4">Late Intermediate Period (1100-1438)</td><td rowspan="3">Late Intermediate Period</td><td rowspan="4">Chimú (900-1470)</td><td rowspan="3">Tuscan</td></tr>
<tr><td></td></tr>
<tr><td></td></tr>
<tr><td></td></tr>
<tr><td>1000</td><td rowspan="4">Middle Horizon (600-1000)</td><td rowspan="2">Middle Horizon</td><td rowspan="2">Late Huamachuco</td></tr>
<tr><td></td><td rowspan="3">?</td></tr>
<tr><td></td><td rowspan="5">Early Intermediate Period</td><td rowspan="3">Moche</td><td>Amaru</td></tr>
<tr><td></td></tr>
<tr><td></td><td rowspan="5">Early Intermediate Period (1-600)</td><td>Early Huamachuco</td><td rowspan="16">Mollepata</td></tr>
<tr><td>500</td></tr>
<tr><td></td><td rowspan="3">Purpucala</td></tr>
<tr><td></td><td rowspan="2">Gallinazo</td></tr>
<tr><td>A.D.</td></tr>
<tr><td>0</td><td rowspan="3">Late Salinar</td></tr>
<tr><td>B.C.</td><td rowspan="6">Early Horizon (800 BC - 1 AD)</td></tr>
<tr><td></td></tr>
<tr><td></td><td>Early Salinar</td><td rowspan="3">Sausagocha</td></tr>
<tr><td></td><td rowspan="5">Early Horizon</td></tr>
<tr><td>500</td><td rowspan="6">Guañape 1800 - 400 BC</td></tr>
<tr><td></td></tr>
<tr><td></td></tr>
<tr><td></td><td rowspan="2">Totorapamba</td></tr>
<tr><td></td><td rowspan="6">Colpa (? - 900 BC)</td></tr>
<tr><td>1000</td><td rowspan="2">Pelón</td></tr>
<tr><td></td></tr>
<tr><td></td><td rowspan="6">Initial Period (1800 BC - 800 BC)</td><td rowspan="4">Initial Period</td></tr>
<tr><td></td><td rowspan="3">?</td></tr>
<tr><td></td></tr>
<tr><td>1500</td></tr>
<tr><td></td></tr>
</table>

3.4 History of Research

The Moche Valley and La Libertad highlands are two areas that were the focus of some of the earliest archaeological studies in the Andes and remain a hotbed of archaeological investigations. Initial documentation of archaeological sites in the region dates to the Colonial Period. Bishop Martinez de Compañon had paintings of Chan Chan completed to accompany the documentation of aspects of life in the Trujillo area in the mid-18th century—including plants, food, and landscape—that was sent to the King of Spain (Berquist 2013; Pillsbury and Trever 2008). Edward Squier visited the north coast in the 1860s, creating drawings of the Huacas de Moche in the Moche Valley as well as other sites (1877). Chan Chan, on the coast of the Moche Valley, and the largest monumental center, Marcahuamachuco, in the Huamachuco region, were visited by foreign travelers throughout the nineteenth century, many of whom published drawings and descriptions, including Wiener (1890) and Middledorf (1895).

With the professionalization of the field of archaeology in the early twentieth century, many of the founding fathers of Andean archaeology, Max Uhle, Julio Tello, Rafael Larco, Alfred Kroeber, and Wendell Bennett, conducted excavations at monumental centers such as Chan Chan, the Huacas de Moche, and Marcahuamachuco. The Virú Valley, the next valley south of the Moche, was home of the Virú Valley archaeological project led by Gordon Willey, William Duncan Strong, and Wendell Bennett, and included many significant archaeologists in the history of American archaeology (Collier 1955; Ford and Willey 1949; Strong and Evans 1952).

Following the groundbreaking collaborative Virú Valley project, the Harvard/ Chan Chan-Moche Valley project was the next large-scale project in the region,

directed by Michael Moseley and Carol Mackey. This was one of the largest research projects in the Andes, and project members mapped and excavated the Chimú capital of Chan Chan, and surveyed and conducted excavations at numerous sites in the lower Moche Valley. A number of dissertations and other publications from this project remain invaluable in both methodology and understanding of north coast prehistory (Bawden 1977; Day 1973; Keatinge 1973; Klymshyn 1976; Kolata 1978; Kus 1972; Moseley and Day 1982; Moseley and Cordy-Collins 1990; S. Pozorski 1976; T. Pozorski 1976; Ossa 1973; J. Topic 1977; T. Topic 1977).

Following the Harvard/Chan Chan project, Michael Moseley and Thomas and Sheila Pozorski carried out the "Programa Riego Antiguo," investigating the Moche Valley and other north coast canal systems (1976–1979). Survey and excavation of canals, fields, and associated structures in the Moche Valley and the south side of the Chicama Valley were carried out to create a sequence of canal construction and understand its relationship to archaeological sites in the area. This project documented evidence that El Niño events damaged Chimú irrigation systems and other systems on the north coast (T. Pozorski 1987; T. Pozorski and S. Pozorski 1982 and 2003).

The La Libertad highland area has not been subject to as much extensive research as the Moche Valley. Following participation in the Harvard/Chan Chan project, John and Theresa Topic initiated the Northern Peru Fortifications Project and Huamachuco Archaeological Project throughout the 1970s and 1980s. The Northern Peru Fortifications Project (1978–1980) included a survey of prehistoric fortifications focused primarily in the middle and upper Moche and Virú Valleys. This survey included about 4,000 km^2 in the Upper Moche and Upper Virú valleys (J. Topic and T.

Topic 1983, 237). This project provides the only available settlement data for the Upper Moche Drainage, the Otuzco/Upper Moche area, and Carabamba plateau (Coupland 1979; DeHetre 1979; Haley 1979; J. Topic and T. Topic 1978, 1982, 1983, and 1985). The Huamachuco Archaeological Project (1981–1989) builds on initial research by Max Uhle, with Julio Tello,[5] Theodore McCown (1945) and John Thatcher (1972, 1974, 1977, 1979a and 1979b) in the Huamachuco region, and provides the only available settlement patterns for these areas in the La Libertad highlands. The only other settlement pattern data for the La Libertad highlands comes from Andrzej Krzanowski's survey in the Alto Chicama in the late 1970s (1977, 1985, 1986, and 2006). Between 1973 and 1976, Andrzej Zaki also carried out survey and test excavations in the area of the Upper Moche, Otuzco/Upper Moche area, Alto Chicama, Quiruvilca, and Santiago de Chuco; however, he has not published a full cultural sequence or much information about his findings (Zaki 1983). The rest of this chapter is dedicated to reviewing current research and understandings of the prehistory of the Moche Valley and parts of the La Libertad highlands.

Research at Chan Chan continues under the Proyecto Especial Complejo Arqueológico Chan Chan, formed under the Executive Unit N°006 in Peru's Ministry of Culture.[6] Cristobal Campana directed the project between 2006 and 2011 and has several publications on Chan Chan architecture and ceremonies (2006, 2012a, 2012b). Little information has been available from this research, and only in the last few years has the project's research become more transparent and accessible to the public.

---

[5] Uhle's fieldnotes are in the Phoebe Hearst Museum at UC Berkeley. McCown presented Uhle and Tello's findings.

[6] Previously the project was under the Unidad Ejecutora N° 110 in Peru's Ministry of Education.

Several other long-term projects are currently being carried out in the Moche Valley: Proyecto Huacas de Moche, Moche Origins Project/Proyecto Arqueológico Cerro Oreja (MOP/PACO), and the Chan Chan Proyecto Especial Complejo Arqueológico. The Proyecto Huacas de Moche at the site of Moche is directed by Santiago Uceda and Ricardo Morales of the Universidad Nacional de Trujillo. This project began in the early 1990s, carrying out excavations at Huacas de Moche, the capital of the Moche polity in the Moche Valley. Over the last twenty years, this project has provided essential insight into a Moche center, documenting its monumental construction phases, religious traditions, and urban life. The project is a model research program that incorporates teaching and research, and is at the forefront of mural conservation and museum and public outreach (e.g. Uceda and Morales 2006, 2007, 2011).

Another long-term project in the Moche Valley is directed by Brian Billman and Jesus Briceño. Billman's dissertation (1996) combined the Harvard Chan Chan/Moche Valley project lower valley survey data with his own survey of the middle Moche Valley, which extended into the lower Sinsicap tributary to investigate the formation of the Southern Moche state. Billman and Briceño have continued this survey as part of MOP/PACO into the Moche Valley tributaries (Briceño and Billman 2009). MOP/PACO has many ongoing projects in the Moche Valley, with outstanding researchers (Dana Bardolph, Barker Fariss, Celeste Gagnon, Jean Hudson, Patrick Mullins, Jennifer Ringberg, Julio Rucabado) investigating the pre-ceramic through LH periods.

Several other important projects have been carried out in recent years in the Moche Valley, and their findings will be highlighted in the prehistory of the region in the next sections (Lockard 2009; Nesbitt 2012; Prieto et al. 2014). Additionally, various salvage projects directed by the previous National Institute of Culture have occurred over the years (i.e. Carcelén 1995). It is an exciting time to be working in the Moche Valley, with so many ongoing research projects. Collaborative efforts in the next few years could establish a Moche Valley ceramic seriation, to complement and expand on the Virú Valley project's Virú valley seriation, which has increasingly been called into question (Downey 2015) and its applicability to the Moche Valley doubted (Nesbitt 2012).

3.5 Early Intermediate Period and Middle Horizon in the Moche Valley

The EIP was a time of the rise of urbanism, expansionist polities, and regional traditions. In earlier periods, populations had become sedentary and constructed monumental architecture for religious practices and further significant social developments occurred during the EIP. For the first time, settlements were in defensive locations and fortifications appear. Technological innovations in pottery, metalwork, and water management occurred through the period, as did social complexity and social hierarchy. The EIP has also been characterized as a time of "insularity, describing both the balkanization of art styles and group territories" (Lau 2010, 6). In the Moche Valley and La Libertad highlands, the EIP was a time of significant political, ideological, and economic shifts, with the rise of new polities and an increase in population.

3.5.1 Early Intermediate Period

In the Moche Valley, the EIP consisted of the Salinar phase (200 BC–AD 200), Gallinazo phase (AD 100–400), and Moche period (AD 200–800). Each phase has distinct settlement patterns and material culture. There is limited information available about life in the Moche Valley during the Salinar and Gallinazo phases, which preceded the Southern Moche State (Billman 1999 and 2002; Brennan 1978 and 1980; Fariss 2012; Gagnon 2006 and 2008; Gagnon, Billman, Carcelen, and Reinhard 2013; Gagnon and Wiesen 2013; Millaire and Morlion 2009; S. Pozorski and T. Pozorski 1979; Ringberg 2012). During the Salinar period, religious and societal traditions shifted. Monumental centers, characteristic of the Initial period and Early Horizon, are abandoned, and the first large towns are established. Religious practices change from large public rituals in monumental architecture in the Initial period and Early Horizon to smaller-scale and more private settings in structures built for small groups. This change correlates with settlements moving to defensive positions and construction of fortifications, suggesting the Salinar phase was a time of conflict. There is also investment in valley irrigation systems (Billman 2002).

In the Moche Valley, settlement patterns suggest population aggregation and expansion of settlement in the lower valley, with a large percentage of the valley concentrated at Cerro Arena, a 200 ha site with one of the largest residential areas on the north coast (Brennan 1978, 1980; Briceño and Billman 2012; Mujica 1975). By the end of the Salinar phase, the Moche Valley's Salinar population moved from being concentrated at Cerro Arena to Cerro Oreja, located in the middle valley at the valley

neck, a key defensive location (Billman 2002). Neckless ollas, short-neck jars, and hemispheric bowls characterize Salinar ceramics. The exteriors of rims often have inscriptions or punctuation designs; see Billman (1996, 187–188) and Brennan (1978), and descriptions in Collier (1955) and Strong and Evans (1952).

A three-tiered settlement hierarchy of sites in the Moche Valley is established during the Gallinazo and early Moche phases with Cerro Oreja as the capital of the valley. Cerro Oreja has one of the longest occupations in the Moche Valley. It was initially occupied in the late Guañape (Initial period), has occupations from the Salinar phase through the Late Moche, and was reoccupied again in the Middle Chimú period (LIP). During the Gallinazo phase, coastal settlements are concentrated in a series of fortified settlements in the middle valley and this reorganization is thought to potentially be the result of the arrival of highland migrants in the middle Moche Valley. Highland settlements are identified in the middle Moche Valley for the first time (Billman 1996 and 2002) and are also reported in the adjacent Virú Valley (T. Topic and J. Topic 1982). In the Moche Valley, highland sites are clustered in three areas of the middle valley: the (lower) Sinsicap, Cruz Blanca, and Quebrada del León. Coastal sites are found interspersed among highland settlements (Billman 1996, 290). Highland and coastal settlements are distinguished by their ceramic assemblages, burial practices, and the layout and construction style of masonry household structures (Gagnon et al. 2013, 195; Ringberg 2012).

The two most well-known Gallinazo phase ceramic types are Castillo and Negative, although they are reported in different distributions. Castillo wares are frequently found throughout the north coast in association with Moche contexts, and are

found at both coastal and highland settlements in the Moche Valley. An unfurnished plainware with incised and appliqué designs, Gallinazo Negative or Virú Negative is limited to the Virú, Moche, and Chicama valleys (Kaulicke 1992; Bawden 2004; Millaire and Morlion 2009). Highland ceramics identified at Cerro Leon have different vessel forms and pastes, and are consistent with descriptions of ceramics from the Huamachuco region by the Topics (1982) and Thatcher (1972) (Ringberg 2012, Chapter Six).

Highland sites, however, were abandoned during the emergence of the Moche polity. Originally, settlement patterns seemed indicative that highlanders were forced out of the middle valley by warfare by the Moche polity (Billman 1996, 290). However, excavations directed by Billman in the Quebrada del Leon cluster at the site of Cerro Leon MV 225 between 1998 and 2007 demonstrate that highlanders from the Otuzco/Upper Moche area lived peacefully in the middle valley among coastal Gallinazo phase groups for two centuries. Cerro Leon's ceramic assemblage suggests that Cerro Leon was occupied in Moche Phase II but abandoned sometime in Moche Phase III (second century to fifth century AD) (Ringberg 2012, Table 5.7.1). Material culture and cultural traditions documented at Cerro Leon indicate that residents remained connected to the highlands. Highland settlement patterns in the middle Moche Valley, which initially were interpreted as defensive in nature, may not have been for defensive purposes; perhaps, rather, this was a time of irrigation expansion, which lessened competition between groups and supported a larger population (Fariss 2012).

Why did highlanders move into the middle Moche Valley? One suggestion is to pursue coca cultivation in the middle valley (Billman 1996 and 2001). During this era,

Cerro Oreja primarily has coastal affiliation and ceramics are predominantly of coastal styles (Billman 1996; Briceño et al. 2006; Carcelén 1995). Analyses of oral health (Gagnon 2006; Gagnon and Wiesen 2013) and stable isotopes (Lambert et al. 2012) from skeletal remains from the Cerro Oreja cemetery (Carcelen 1995; Gagnon 2006) suggest that maize production and consumption increased dramatically during the Gallinazo phase (Gagnon and Wiesen 2013). Oral health of individuals buried at the Cerro Oreja cemetery suggests more coca chewing occurred among males in the late Gallinazo phase than among males in the Salinar phase. Gagnon, Billman, Carcelen, and Reinhard (2013) suggest this may be tied to the highland groups' abandonment of the middle valley. This allowed males of the local Gallinazo phase population more direct access to coca than had existed previously when highlanders were living in the middle valley.

There is no evidence, however, of increased coca mastication among females during the Gallinazo phase (Gagnon et al. 2013). Dental wear patterns differentiate between sexes in the Cerro Oreja cemetery, suggesting that by the end of the Gallinazo period, males and females had distinct diets (Gagnon and Wiesen 2013). Therefore, the biological record suggests that distinct social hierarchies were emerging within coastal society tied to control of coca production by emerging Moche elites, which may be tied to the formation of political hierarchies in the Moche period (Billman 1996, 1999, and 2002). I highlight this scenario in the EIP as there may be similar dynamics at work in the Collambay region during the LIP.

3.5.2 Late Early Intermediate Period and Middle Horizon in the Moche Valley

The Moche culture emerged in the Late Early Intermediate Period between AD 100–200 in the Moche Valley and spread throughout the north coast, as far north as the Piura Valley and south to the Nepeña Valley. Moche society collapses at the end of the EIP but some material cultural traditions continue into the subsequent MH period. The MH is identified by the presence of Wari material culture, a polity from the central highlands that expanded throughout the Central Andes on the north coast and La Libertad highlands.

The Moche culture's hallmark characteristics include elaborate monumental architecture, large adobe pyramids, or huacas, with mural paintings, elaborate elite burials and ceramics whose fineline paintings and realism provide insight into Moche society from AD 200–900 (Bawden 1996; Castillo and Donnan 1994; Castillo and Uceda 2008; Pillsbury 2001; Shimada 1994). During the Moche phase, in the Moche Valley the primary center moved from Cerro Oreja to the site of Moche, a few km down valley. The site of Moche, or Huacas de Moche, has two large monumental architectural complexes made of adobe, Huaca del Sol and Huaca de la Luna, and an urban center that housed 6,000–9,000 people. The monumental temples were built in multiple phases; Huaca de La Luna was constructed in at least six phases, with each phase built over the previous, often reconfiguring platforms and resulting in wider and taller structures. Original interpretations were that the Huacas de Moche site was the capital of a centralized state, which collapsed around AD 600 (Larco Hoyle 2001; Stanish 2001).

Moche art depicted warriors and battles, and this iconography represented the reality of Moche society dominating the north coast. However, with a plethora of Moche studies occurring in the last twenty years, it appears that Moche material culture is not homogenous and there is greater variability in Moche material culture than previously thought (Quilter and Koons 2012). Therefore, it seems likely that Moche was made up of single valley or multi-valley polities who shared religious ideology and potentially political affiliation between AD 200 and 900, perhaps in a city-state type model.

There are two major Moche cultural regions, the northern and southern region. Working hypotheses suggest the northern region (north of the Paijan desert) was composed of independent polities, while the southern region was a unified polity (Bawden 1996; Castillo and Donnan 1994; Castillo and Uceda 2008; Donnan 2010; Pillsbury 2001; Quilter and Castillo 2010; Swenson 2004). The southern Moche state would have consisted of the Chicama, Moche, Virú, Chao, Santa, and Nepena valleys; this remains open to debate, as Koons' recent research at Licapa II in the Chicama Valley suggests the Chicama Valley's Moche population had more similarities to the independent polities of the Northern Moche region (2012 and 2015; Koons and Alex 2014; Quilter and Koons 2012).

Rafael Larco Hoyle established a five-phase sequence of Moche ceramics, based on changes in the shape of spouts on stirrup-spout bottles and changes in the form of the stirrup-spout vessel (1948). The sequence was based on his own excavations in the Chicama Valley, but he did not stratigraphically excavate the entire sequence. Researchers have correlated changes in iconography on vessels that correspond to

Larco's sequence (Donnan 1976; Donnan and McClelland 1999; McClelland et al. 2007).

In the Moche Valley, during the Middle Moche period, the volume of ceremonial architecture constructed is nearly twenty times that of the Gallinazo and Early Moche Phases (Billman 1996, 317–318 and 2002, 392). Billman's analysis of settlement survey in the Moche Valley characterizes Moche as a highly centralized hierarchically organized polity.[7] Economic power is demonstrated by the construction of public works, including temples, roads, and canals.

Moche society was hierarchical and violent. Religious rites included human sacrifice, depicted on ceramics and murals of temple complexes. This power also produced extensive quantities of wealth goods for leaders for households and burials. Craft specialists produced goods in unprecedented volumes in the Andes. Moche society was more stratified than any previous civilization in the Andes. Ideology emphasized public monuments for public display and rituals. Public display occurred on material culture and monumental centers with large public spaces for viewing of ceremonies. Investment in monumental architecture in the Moche Valley and neighboring valley such as the Chicama was massive.

Moche leaders' residences and burials contained wealth goods produced by craft specialists, including fineware ceramics and metal adornments in unprecedented quantities. In addition, laborers constructed elaborate residences for elites (Chapdelaine 2009; Uceda and Armas 1998; Van Gijseghem 2001). The urban sector at Moche is

---

[7] No Moche settlements have been identified in the Sinsicap Valley.

well organized, with streets, plazas, public buildings, and residential compounds that included workshops. Activities carried out by specialists included adobe production, ceramic production, metallurgy, weaving, lapidary workshops, beer brewing, and herding llamas. It is unclear if agriculturalists lived at Moche. However, the site is located close to small villages, including fishing villages. Agricultural and marine resources are assumed to be readily available to residents, and it is clear that Moche was not an urban center isolated from the rest of the valley's population. These goods appear to have been readily available for the urban class. The exchange system is unknown, but it likely occurred within plazas in the urban center between elites, specialists, and neighboring farmers and fishermen. Storage does not appear to be directly controlled by the state. Decentralized storage within the city might be a transitional stage in development of a more controlling state political economy (Chapdelaine 2001, 2006, and 2009). Excavations in the urban sector have been primarily limited to Moche Phase IV, and excavations have not uncovered foreigners or different ethnic group members. It may be that by Phase IV all ethnic groups that may have been incorporated into the Moche state had assimilated to Moche traditions. No ethnic markers were identified outside of Moche, while at other places, like in the Santa Valley highland, textiles have been documented (Chapdelaine 2001, 2006, and 2009).

Contemporary with the Middle Horizon, during Moche IV and V, a series of droughts and strong El Niño events occurred (Bawden 2001; Dillehay and Kolata 2004; Moseley and Deeds 1982; Moseley et al. 2008; Shimada 1994). Scholars have suggested these circumstances weakened the power and authority of the ruling class and caused major reorganization throughout parts of the north coast, as the population

abandoned the religious system that had previously enabled them to flourish (Bawden 1996; Shimada 1994). Pampa Grande, a large center in the Lambayeque Valley, was founded during this transition to Phase IV and V pottery in the sixth century (Shimada 1994). In the Moche Valley, Galindo, up valley from the Huacas de Moche, also developed into a major political center sometime after AD 600. The site grew dramatically from a rural settlement to a large center with civic/ceremonial architecture (Bawden 1977 and 1982; Lockard 2009). Initially it was thought that this became the center in the valley after the abandonment of the Huacas de Moche (Bawden 1996). However, radiocarbon dates suggest Galindo was expanded during Moche V, and then abandoned suddenly in the ninth century.

These radiocarbon dates indicate that Moche Phase V ceramics were being used at Galindo, and Phase IV ceramics continued to be produced at Huacas de Moche (Lockard 2009). This suggests that the Moche Valley was separated into two centers in the eighth century—one center at Galindo in the middle valley, producing Moche V ceramics, the other at the Huacas de Moche producing Phase IV ceramics. The social and political dynamics between Galindo and Huacas de Moche at the end of Moche society are not understood at this time (Lockard 2009).

Between AD 750 and 900, Moche culture disappears from the north coast. There is about a hundred-year gap between the abandonment of Galindo and the founding of Chan Chan in AD 900, the start of the LIP. It is likely that during this hundred-year gap in the Moche Valley, residents that abandoned Galindo and Moche were living with fellow kin groups, with no type of centralized political organization in place (Lockard 2009). During the gap in the history of the Moche Valley, two new regional traditions

on the north coast emerge. South of the Moche in the Casma and Santa Valleys, the Moche sites of Guadalupito and El Castillo de Santa are abandoned (Chapdelaine 2008), and a new regional tradition, Casma, emerges (Fung and Williams 1977; Mackey and Klymshyn 1990; Vogel 2011; Wilson 1988). North of the Moche Valley in the Lambayeque region, the Lambayeque culture[8] emerges around AD 900 at the sites of Batán Grande, Túcume, and Chotuna (Heyerdahl et al. 1995; Shimada 1995).

Moche culture characterized the north coast through the late EIP from Piura south to Nepeña. However, elsewhere in the Central Andes, expansive traditions of the MH coincide with this period. The MH is characterized by "interregional exchange and shared cultural influence" (Jennings 2010, 1). Two polities, the Wari, from the central highlands, and Tiwanaku, from the south-central highlands, emerged and expanded their influence throughout parts of the Andes. The types of encounters and interactions between Wari and Tiwanaku polities with polities and groups outside their homelands remains debated (e.g., Castillo and Jennings 2012; Isbell and McEwan 1991; Jennings 2010; Nash and Williams 2004; Schreiber 1992 and 2001; J. Topic and T. Topic 2010; Vranich and Stanish 2013). Archaeological evidence indicates that, of these two polities, the Wari was the only one to interact with northern Peru's coastal populations (Castillo, Fernandini, and Moro 2012).

The Wari were originally characterized as a hierarchical, militaristic society (Schreiber 1992). However, with further research throughout the Central Andes over the last twenty years, different perspectives are offered that counter the traditional model

---

[8] Referred to as Sican by Izumi Shimada.

(Castillo, Fernandini, and Moro 2010; Jennings 2010). Wari material culture has been reported in elite funerary contexts on the north coast in the Huarmey Valley, the Jequetepeque Valley, and Huaca de la Luna (Castillo, Fernandini, and Moro 2012; Giersz 2014; Rucabado and Castillo 2003; Shimada 1990; Uceda and Morales 2013). Several Wari style vessels were recovered from tombs in two platforms in the Urban Sector between Huaca del Sol and Huaca de la Luna (Uceda and Morales 2013). Previously Wari ceramics were reported by Uhle (1913). Uceda and Morales date the tombs in the Urban Sector to after Huacas de Moche was abandoned (2013, 352). These are the only Wari ceramics found in the Moche Drainage and Billman (1996) did not document any Wari ceramics during his survey of the middle and lower valleys. I did not encounter any Wari ceramics in my survey in the Sinsicap Valley. New data suggests the relationship between Wari and Moche was varied throughout the north coast, and the impact of each polity upon the other at this time is unclear (Castillo, Fernandini, and Moro 2012; Castillo and Jennings 2012).

3.5.3 Other Middle Horizon Groups

Following the Moche polity collapse, two new polities emerged during the Middle Horizon north and south of the Moche Valley, Lambayeque and Casma polities. While there is not evidence for either of these groups establishing communities in the Moche Valley, I briefly mention them as they are relevant players in north coast regional politics.

The Lambayeque, also known as Sicán, culture (800–1375) emerged in the Lambayeque region of the north coast and persisted through the LIP until it was conquered by the Chimú. Made up of four river valleys, Motupe, Zaña, Lambayeque, and La Leche, the region contains one-third of the irrigable land on the north coast (Kosok 1965). The Lambayeque region has more than fifty adobe huacas. (Heyerdahl et al. 1995). Research at the sites of Batán Grande, Túcume, and Chotuna (Heyerdahl et al. 1995; Shimada 1995) have provided significant insight into the Lambayeque tradition.

Originally most Lambayeque material culture was misidentified as Chimú; however, with investigations ongoing in the region for the last 30 years, Lambayeque material culture can be recognized as distinct from the Chimú. Lambayeque ceramic styles are similar to Chimú—they also have blackware vessels, but their iconographic representation of the "Sicán Deity" is distinct. Their paddle-stamping technique on ceramics was adopted in the Chimú region during the LIP.

Contemporaneous with Wari and Lambayeque polities, the Casma polity developed on the southern edge of the north coast. While Casma ceramic style and an urban center, El Purgatorio, in the Casma Valley, were documented in the mid-twentieth century (Tello 1956, Collier 1962), little is known about the Casma culture (Vogel 2011). There is regional variation in ceramic styles in the region, which has led Vogel to argue that uniformity in style and settlement patterns suggests a common cultural identity and that the Casma polity was a "heterarchical confederation of semi-autonomous regional elites united by common cultural practices" (2011, 206). Architecture in the Casma region includes rectangular compounds and agglutinated room complexes, a tradition that dates back to the EIP and continues through the LH

(Pillsbury and Leonard 2004). Fung and Williams (1977) characterized Casma architecture as walled compounds and terraced slopes with residential structures, with a spatial division between compounds and residential terraces. This tradition is also found at Cerro La Cruz, a small site on the Casma frontier in the Chao valley (Vogel 2003). At El Purgatorio, geometric friezes are found on some inner compound walls. Other shared architectural attributes between Chimú, Lambayeque, and Casma are construction styles, with a combination of adobe and uncut stone as well as case-and-fill technique.

Casma style ceramics include blackware and plainwares. Four decorated types have been identified: Casma incised, Casma molded, Black-white-red, and Serpentine applique (Collier 1955 and 1962; Daggett 1983; Kroeber 1944; Proulx 1973; Tello 1956; Vogel 2003, 2011 and 2012; Wilson 1988). While understanding of Casma polity and material culture continues to evolve, its architectural and material culture stylistic traditions follows common coastal traditions (Pacifico 2014; Vogel 2012).

3.6 Early Intermediate Period and Middle Horizon in the La Libertad Highlands

In the La Libertad highland region, archaeological research suggests the Huamachuco has the largest population and monumental architecture in the EIP and MH. The other areas of the La Libertad highland region that have undergone archaeological investigation suggest the region had smaller populations. The elevation of sites suggests groups practiced agropastoralism. These regions have had limited archaeological study and warrant further investigation.

3.6.1 Otuzco/Upper Moche Area

During the EIP (and also the LIP), populations moved into the Otuzco/Upper Moche area, on the western slope below the Huamachuco region. The Topics consider the Otuzco/Upper Moche area a buffer zone between coast and sierra. Ceramics found in this region are similar to those in the middle valley (Billman 1996; T. Topic and J. Topic 1982; Ringberg 2012); however, subsequent publications have emphasized the LIP occupation and paid little attention to the EIP and MH occupations (Coupland 1979; DeHetre 1979; J. Topic and T. Topic 1979a, 1979b, and 1982). In an early report of the Topics' Fortification project, they suggest early EIP sites in the Otuzco/Upper Moche area were watch stations, large walls, and ditches, and residents (likely herdsmen) were defending themselves against each other and from populations coming from the continental divide (1979b, 9–10). Later publications emphasize these sites as playing an important role in the prehistoric network between the highland and coastal regions during the early EIP (Topic and Topic 1983 and 1985). There is no commentary on Moche interaction with the Otuzco/Upper Moche area and there is a lack of evidence of Moche interaction with other regions in the La Libertad highlands. Several sites in the Otuzco/Upper Moche area date to the MH;[9] however, little has been reported on them (DeHetre 1979; J. Topic and T. Topic 1979a, Table 1).

[9] The Topics do not describe the ceramics they are using to date MH sites in their initial inventory of sites from their survey (J. and T. Topic 1979a, 1979b). In a later publication, they describe the Middle Horizon (Phase III) as the most poorly defined in the four-phase ceramic sequence developed during the Fortifications project and report an absence of Wari and Moche IV sherds in the survey area, encountering only a single Cajamarca sherd in an LIP context (J. Topic and T. Topic 1982, 15–16). Wari sherds found in the La Libertad area have only been reported in Huamachuco (J. Topic and T. Topic 2010; J. Topic 2009).

3.6.2 Carabamba Plateau

The limited survey in the Carabamba plateau reports at least three sites dating definitively to the EIP, and possibly two others (Haley 1979; J. Topic and T. Topic 1979a, Table 1). Haley suggests these are simple farming communities with an agropastoral subsistence economy, carrying out hillslope agriculture and herding. Several of the EIP sites are also occupied in the LIP. No MH ceramics (i.e., Wari) have been identified in the Carabamba plateau, although MH sites are listed in the Topics' initial survey (J. Topic and T. Topic 1979a, Table 1). Haley characterizes the region as an "economic and political backwater ignored by major powers through time" (1979, 244).

3.6.3 Alto Chicama

The reported Alto Chicama settlement pattern reflects a similar pattern to the Carabamba plateau. There are few sites in the Alto Chicama during the EIP or Mollepata phase (450 BC–AD 550). Only two small sites date to the Mollepata phase—AC-11 Mollepata, 2.2 ha, and AC-29, 3 ha. No architecture was identified at either site, and AC-29 has modern homes and corrals (Krzanowski 2006). The few sites in the Alto Chicama dating to the EIP suggest there is a very small population living in the Alto Chicama, especially in comparison to the Huamachuco region and Moche Valley. Ceramics from this phase are characterized by white on red negative, black on red, or kaolin ceramics from Cajamarca III. Rims are frequently ribbed, and neckless ollas and everted neck vessels are present. Colanders appear during this period in the Alto

Chicama (Krzanwoski 1986 and 2006). Krzanowski's research has not recovered any evidence of a MH presence in the Alto Chicama valley.

3.6.4 Huamachuco

In the La Libertad highlands the majority of information available about highland groups comes from Huamachuco. Settlement patterns in the upper Moche valley indicate a small population. The Carabamba plateau and Alto Chicama report a few sites potentially dating to the EIP (Haley 1979). In contrast in the Huamachuco region, the EIP is a time of heightened social complexity with the construction of multiple monumental sites and movement of populations during the Purpucala (200 BC–200 AD) and Early Huamachuco phases (AD 300–600). The MH consists of the Amaru phase (AD 600–800) and Late Huamachuco Phase (AD 800–1000).

The Purpucala phase is contemporaneous with the Salinar phase on the coast. Settlement patterns indicate that populations moved into and formed towns in new territories in Huamachuco, located near main routes towards Santiago de Chuco and the Callejon de Huaylas (J. Topic 2009, 218). The subsistence economy during this period is a mixed agropastoralism. Sites are found at three elevations—3200 masl, 3400 masl, and 3600 masl—to access both agricultural fields and camelid herds (220). Architecture dating to the EIP is typical Huamachuco-style characterized by circular, rectangular, and curvilinear buildings. This architectural style persisted through the LH (J. Topic 2009). Ceramic styles were influenced by the Recuay highland region south of Huamachuco and Cajamarca cultures.

During the Early Huamachuco phase, there was a dramatic increase in total site area occupied and the average size of sites, suggesting population growth in the region. Site clusters from the previous phase are abandoned, and population aggregation occurs around the modern town of Huamachuco, potentially related to changing subsistence strategies. Populations settle at 3400 masl (J. Topic 2010, Table 13.9a). Site locations are connected to roads, which are used through the LH. A local shrine, Catequil, was founded during the Early Huamachuco phase. It became a widely known oracle in the late Prehispanic period and worshiped into the Colonial period (Topic et al. 2002).

Marcahuamachuco is a monumental center about 8 kilometers northwest of the city of Huamachuco that eventually reached 240 ha in area. Located at 3500 masl, the earliest construction of the site dates to AD 400, construction continued through AD 1000. The majority of construction occurred at Marcahuamachuco during the MH, when new buildings were added. Construction culminated in the MH with the completion of the Castillo building in the center of the site. Originally, Marcahuamachuco was thought to be the capital of the Huamachuco polity (T. Topic and J. Topic 1986); however, further research by the Topics interpret the site to be a monumental center that brought all of the Huamachuco lineages together throughout the EIP and MH periods (T. Topic and J. Topic 1984, 1986, and 1987). They suggest that construction was a cooperative process that happened annually and was an important element of Huamachuco society, as the ritual cycle enabled reaffirmation of traditional ties between groups and individuals in Huamachuco society (T. Topic 2009, 252).

The Huamachuco polity in the EIP and MH is similar to a middle-range society without a strong centralized authority (T. Topic 2009, 244). Huamachuco society was

made up of ranked lineages that controlled land and resources in the southern Condebamba Basin. Rankings were based on size, power, resources controlled, and connection to ancestors (J. Topic 2009, 227). Each lineage likely had a gallery or designated space at Marcahuamachuco where their ancestors were interred. Domestic residences at Marcahuamachuco were in long, multistoried galleries, where many households lived under a common roof. The Topics propose Marcahuamachuco had a seasonal occupation with a maximum population of 6,000 people, as the arable land around Marcahuamachuco is insufficient to support a year-round population and water sources are also limited (T. Topic 2009, 243–244). Ninety-seven percent of ceramics excavated in EIP contexts at Marcahuamachuco were undecorated. Common vessel shapes include jars and ollas with short, straight, and flaring rims. Frequent decoration on vessels is a red band on the lip and neck-join. Bands are found on almost all wares. Negative resist painting black on red with red dots is frequently found. Face-neck jars with earspools are common. Caolin ring base bowls are present; they are assumed to be imported from Cajamarca (T. and J. Topic 1987, 23–24).

During the MH, Amaru, and Late Huamachuco Phases, Wari ceramics have been documented in the Huamachuco region at Viracochapampa and Cerro Amaru (J. Topic 2009). Originally thought be an intrusive Wari administrative center, Viracochapampa was constructed in the early MH. Viracochapampa is the only archaeological site in La Libertad with Wari-style architecture. Early researchers in the Huamachuco region, Uhle and McCown (1945), believed Viracochapampa was an Inca site based on its grid layout; however, Thatcher's work dated the site to the MH 1B and 2a (1972, 88 and 1974). The Topics' excavations at Viracochapampa suggest it was

constructed during the Cerro Amaru phase. Niched halls and rectangular galleries are common Viracochapampa architectural elements that are also found at Marcahuamachuco, while others consider these elements Wari-derived. The Topics argue that Viracochapampa's construction style is Wari influenced, but the plan also has types of buildings that are found in the Huamachuco area in the Early Huamachuco phase that are not present in Ayachuco (Wari Heartland) until Middle Horizon 1B (J. Topic 1986 and 1991; Topic and Topic 1986 and 2000).

The site of Cerro Amaru, which dates to the Early Huamachuco phase of the EIP, is a shrine where Wari ceramics have also been documented as well. Cerro Amaru began to decline in importance during the Amaru phase, as Marcahuamachuco grew in influence. J. Topic postulates, based on different burial practices between Cerro Amaru and Marcahuamachuco (Topic and Topic 1992), that local elites, perhaps from Cerro Sazon, another site in the region, may have initiated construction of Viracochapampa, in association with the Wari, in efforts to create a centralized chiefdom, competing with Marcahuamachuco; however, Marcahuamachuco won out (J. 2009, 227). Cerro Amaru contained a mausoleum with highly valued burial goods, while Marcahuamachuco had wall tombs with few grave goods. These differences in burial patterns seems to reflect that Cerro Amaru may have been an "individualizing chiefdom," while Marcahuamachuco's niched halls represent a "community-oriented" chiefdom, supporting their multiple lineage hypothesis (Topic and Topic 1984, 1992, and 2000; J. Topic 2009, 227). J. Topic concedes this model needs further testing (2009, 227).

During the Late Huamachuco phase, Marcahuamachuco was at its peak in terms of area occupied. The phase is characterized by the decline of Cerro Amaru and Cerro

Sazon, two middle range-size sites which begin to decline during this period (J. Topic 2009, 227). Community autonomy and ancestor veneration characterized by Marcahuamachuco ultimately won out at Huamachuco.

It is difficult to differentiate between Cerro Amaru phase ceramics and the Late Huamachuco phase. Wari ceramic influence may appear in small falling straight-sided bowls decorated with black lines, sloppily applied. In the collections available, it is difficult to tell what is local influence and what is Wari. Late Huamachuco ceramics are also very similar to Early Huamachuco ceramics. The same forms persist; however, there is a new range of appliqué lugs and ornaments on orange wares. Jar rims become more curved, and caolin bowls are now rare (T. Topic and J. Topic 1987, 24).

At the same time, as Huamachuco's lineages are building Marcahuamachuco in the Moche Valley, the Moche polity continues to evolve on the coast. It is notable that there is very limited direct evidence of Huamachuco-Moche interaction. Both were expanding during the same two hundred years and coexisted for several centuries (J. Topic and T. Topic 1985, 62).

3.7 Late Intermediate Period

The LIP is characterized by regional polities throughout the Central Andes, including the Chimú and Inca polities (Covey 2008). During the second half of the LIP, the Chimú became a dominant polity on the north coast, overtaking the Lambayeque and Casma polities, as the Inca began to consolidate the Cuzco region. In the La Libertad highlands, new polities appear in the western slope area of the Moche Drainage (J. Topic and T. Topic 1983 and 1985) and Carabamba plateau (Haley 1979),

as well as the Alto Chicama valley (Krzanowksi 1977 and 2006). Monumental construction in Huamachuco ceases (J. Topic 2009, T. Topic 2009). I also review previous LIP hypotheses and investigations in the Moche Valley *chaupiyunga* followed by known LIP history in the La Libertad highlands.

3.7.1 The Moche Valley and Chimú Empire

The Chimú were one of the longest lasting states in the New World and the second largest polity to develop in South America after the Inca (Mackey 2009; Moseley 1990). Emerging about one hundred years after the collapse of the Moche, the Chimú also called the Moche Valley home, establishing their capital, Chan Chan, in the lower Moche Valley around AD 900. The Chimú expanded north and south of the Moche valley, overtaking the Sican and Casma polities, bringing the north coast under one rule and establishing a four-tier settlement hierarchy above the village level (Mackey 2009). The Chimú controlled the north coast until 1470, when they were defeated by the Inca and incorporated into the Inca Empire.

Few Colonial sources discuss the Chimú Empire; the Anonymous History of 1604 (Vargas Ugarte 1936, 232–233), however, provides the most complete depiction of the Chimú (T. Topic 1990, 179). Taycanamo, a foreigner from the north who arrived in the Moche Valley via balsa raft with his retainers, allegedly founded the Chimor dynasty. Taycanamo took a local wife and founded Chan Chan (Rowe 1948). This founder's myth has several parallels to the founding myth of the Lambayeque dynasty (Netherly 1990; Rowe 1948; T. Topic 1990). Other myths suggest that the Chimú had a

strong, hierarchical class system (Calancha 1977 [1638]). The Chimú maintained distinct architectural, iconographic, and material culture that differed from Moche, although they retained similar themes of maritime iconography and motifs in monumental architecture and material culture that was commonly found among north coast societies (Jackson 2004; Pillsbury 1993).

Chimor was an economically specialized polity that was ruled by dual and quadripartite hierarchies of local lords. In the highlands and north coast, late Prehispanic sociopolitical units were ranked, kin-based subgroups referred to as *señorios* (Netherly 1977, 1990, and 1993; Ramirez 1985; Ramirez-Horton 1981; Rostworowski 1977). On the north coast, a subgroup of a *señorio* are is referred to as a *parcialidad*, a term meaning a part of a whole. *Parcialidades* were themselves divided into ranked moieties—often two moieties, although sometimes three.

Each *parcialidad* had its own leader, lord, or cacique. A second person (segunda persona) was in charge of the lower-ranking moiety in the *parcialidad*. The leader or cacique principal would be responsible for the entire polity and the highest ranked *parcialidad*. Under the cacique principal and segunda persona were a series of lower-level lords. Local lords facilitated exchange and redistribution of specialized products. In contrast, occupational specialist communities are not reported in the highlands. Examples of occupational specialist communities are potters, metalsmiths, fishermen, etc. Excavations at Chan Chan have found artisan specialist households and workshops adjacent to Chimú elites' monumental architecture (J. Topic 1977 and 1982).

Chan Chan occupies 20 km^2, with a 6-km^2 urban monumental core on the edge of the Moche Valley (Moore and Mackey 2008; Moseley and Day 1982). The most

populous site in the empire, it is estimated that 30,000–40,000 inhabitants lived at Chan Chan, more than at any other Chimú settlement (Moseley 1975; Topic and Moseley 1983). The city grew throughout the LIP (Conklin 1990; Kolata 1990; Moore 1996a), although it has been argued that the city was never fully occupied at one time (Tschauner 2006). As the center of the empire, the city contained palaces, storerooms, craft production workshops, and residences for elites, craftsmen, and retainers. Four classes of adobe architecture stand out in Chan Chan: (1) *Ciudadelas*, (2) elite architecture, (3) *audiencias*, and (4) SIARs or small, irregular, agglutinated rooms.

Ciudadelas, or palaces, are large rectangular walled compounds. Ten *ciuadadelas* make up the monumental core of Chan Chan (Topic and Moseley 1983). Each Chimú king allegedly built his own palace where he lived, ruled, and was buried upon death. Within the palace walls were multiple plazas, state administrative architecture, *audiencias*, storerooms, walk-in wells, and quarters for the royal family (Moore and Mackey 2008). The addition of burial platforms in *ciudadelas* where the king was interred transformed the *ciudadela* from a palace to a funerary complex (Ramirez 1996). *Ciudadelas* serve religious and administrative functions and are argued to represent a royal ruler (Pillsbury and Leonard 2004). *Ciudadelas* functioned as both administrative and religious centers; however, the complexity of *ciudadela* architecture indicates it was a place with highly controlled access and separate from the rest of Chan Chan (Day 1982, Moore 1992). Limited access implies very few members of Chimú society saw the interior of Chan Chan *ciudadelas*.

Elite architecture was smaller and less elaborate than *ciudadelas*. Walled compounds, these structures included audiences, ramps, benches, and storerooms. These

architectural units are interpreted as the residences of non-royal elites who oversaw administrative activities at the lower level (Klymyshyn 1976 and 1982; Moore and Mackey 2008).

Audiencias are three-sided niched structures that at Chan Chan are often found in *ciudadelas* and elite architecture. Their exact use is not understood, but they are thought to be administrative in nature (Day 1982; Keatinge and Conrad 1983; Klymshyn 1973 and 1974; Kolata 1990; Mackey 2009; Mackey and Klymshyn 1990; Moore 1992).

The majority of Chan Chan's residents lived in Small Irregular Agglutinated Rooms (SIAR). SIARs are found throughout the city between elite architecture and *ciudadelas*. They served as non-elite residences and specialists' workshops. SIARs' foundations are made of cobblestones, and residences and workshops are made of cane wattle and mud daub walls. Forming multi-room clusters, SIARs included kitchens, patio, and living areas in addition to workshops for copper metallurgy, textile production, woodworking, and other crafts. Craftsmen produced these products for the Chimú state elites (J. Topic 1977, 1982, and 1990).

Pottery production workshops at Chan Chan are noticeably absent (J. Topic 1982, 165); however, Colonial documents from the north coast provides a list of 24 specialized occupations present in north coast *parcialidades* in the sixteenth century in the Jequetepeque and Lambayeque region (Ramirez-Horton 1981, 291–292, and 1982, Table 1; Netherly 1977, 157, and 1984, 231; Rostorowski 1977 and 1989). This diversity of craft production reported in the ethnohistoric record indicates specialization and barter was commonplace in north coast societies, and division of labor was a

principal part of social organization (Rostworoski 1989, 273). These specialists, however, only make up 5–6% of a population that was primarily focused on agriculture (Ramirez 1982: 115). Ethnohistoric documents suggest that farmers' and lords' relationships were similarly conceived as a sort of sharecropping or rental agreement, with the permission to work specific fields in return for an exchange of the harvest to the local lord (Cock 1986; Rostworowski 1989, 34; Ramirez 1996, 51).

The timing and extent of control of the Chimú Empire remains under debate, as does the administrative model utilized by the imperial power. Various models based on both ethnohistoric and archaeological evidence have been proposed for Chimú expansion (see Moore and Mackey 2008, Table 39.1 for an overview of the models). The majority of Chimú expansion models focus on the extent and timing of northern and southern expansion of Chan Chan along the coast. This previous research has primarily focused on the culture history and interaction between Chimú and local groups in lower and middle valleys of north coast valleys. There has been little consideration of Chimú expansion along its presumed eastern border zone in upper valley regions and relations between Chimú leaders and residents in this zone (T. Topic 1990; J. Topic and T. Topic 1985 are exceptions to this).

Expansion of the Chimú polity has been identified through the presence of Chimú-style architecture. Chimú regional centers were identified in part by their large compounds similar to Chimú palaces and their architectural features as well as *audiencias* (Keatinge and Conrad 1983; Mackey 2009), while the timing and extent of control of the Chimú remains under debate, as does the Chimu's administrative and economic system. *Audiencias* are through to represent Chimú administration and are

found at all levels of settlement hierarchy of Chimú sites above the village level. *Audiencias* are found associated with storerooms, at Chimú regional centers, and at rural administrative centers (Keatinge 1973, 1974 and 1975; Keatinge and Day 1973). They have been proposed to have served administrative purposes (Moseley and Day 1982) and may have been structures that kept administrative records (J. Topic 2003). Moore opposes this idea, arguing, "there is no statistically significant spatial association between U-shaped rooms and storerooms" (1992, 108), suggesting the function and meaning of audiences be reconsidered. While this may be the case, it is still widely accepted that these structures represent Chimú administration.

All models of Chimú state expansion agree that the first stage of Chimú expansion was the consolidation of the Chimú heartland, the Virú, Moche, and Chicama valleys (Mackey and Klymyshyn 1990; Moore and Mackey 2008; Rowe 1948; T. Topic 1990). This occurred during AD 900–1200 (Moore and Mackey 2008). The Chimú used military conquest and alliance to extend their empire north and south, taking over other coastal polities, which retained some aspects of their cultural identity after Chimú takeover (Mackey 2011). Chimú initial expansion outside the heartland went north, overtaking the Lambayeque polity in the Jequetepeque Valley by 1320, reportedly through military force. They then expanded south of the Moche, overtaking the Casma Valley through alliance by 1350.

The Chimú then returned north, pushing beyond the Jequetepeque to the La Leche Valley through force sometime during 1360–1400 (Moore and Mackey 2008, Table 39.1). Within their acquired territory, regional centers were established in the Jequetepeque Valley at Farfan, Manchan in the Casma Valley, and Tucume in the

Lambayeque Valley. Ethnohistoric sources propose Chimú expansion extended south to the Chillon Valley (Rowe 1948), although this seems unlikely. Chimú ceramics are reported in this region, but there is no current evidence of Chimú administrative architecture (Mackey and Klymyshyn 1990). A similar situation is in Tumbes, close to the border of modern-day Ecuador, where spondylus princeps, a highly valued shell considered a prestige resource, originates. By 1450, the Chimú have influenced the Tumbes region; however, there is no evidence of Chimú infrastructure in the region (Moore et al. 1997; Moore and Mackey 2008).

In the rural Chimú heartland, initial interpretations of Chimú settlement patterns in the Moche Valley indicate the Chimú were a centralized state that heavily regulated subjects' economic activities. This is demonstrated through settlement patterns (Keatinge 1975), administered water access (Keatinge 1975), and labor investment in public works projects, as demonstrated through its extensive investment in canal construction (Ortloff et al. 1985; T. Pozorski and S. Pozorski 1982). Chimú sites in the Moche Valley fall into one of three categories: administrative, village, or fortification (Billman pers comm 2010; Keatinge 1974, 1975; Keatinge and Day 1973). Settlement patterns in the Moche Valley indicate the Chimú had centralized control over the rural economy. Administrative centers are located separately from habitation sites and close to canal intakes, suggesting they were principally focused on monitoring canal construction and water regulation (Keatinge 1975; Pozorksi and Pozorski 2006). While settlement patterns for the Chimú occupation of the Moche Valley have not yet been published, there are a series of Chimú forts in the middle valley in addition to administrative and domestic sites (Billman pers comm; Mullins 2012; T. Topic and J.

Topic 1982). Comparing Chimú ceramics from the surface of Fortaleza Quirihuac (MV 55), a Chimú fort in the middle Moche Valley, with those published by Keatinge (1973) and J. Topic and Moseley (1983), Mullins (2012) tentatively dates Fortaleza Quirihuac to 1100–1470, appearing in the time when the Chimú were consolidating their heartland.

Keatinge reports the presence of three rural administrative centers in the Moche Valley: El Milagro de San Jose, Quebrada del Oso, and Quebrada Katuay. Each varies in construction style and technique but is distinguished by the presence of *audiencias*, location close to canal intakes, and subsequently, in state fields, and isolation from other Chimú sites (Keatinge 1973, 1974; Keatinge and Day 1973). Several Chimú villages in the Moche Valley have been identified, although only one, Cerro La Virgen has undergone excavation (Billman, Keatinge 1975).

Canal construction carried out by the Chimú maximized the agricultural potential of the Moche Valley. They invested in the Three-Pampa area, developing it into a large zone of canals and fields that extends from modern cultivation to the ocean. They also built the Chicama-Moche Intervalley canal, an effort to divert water from the Chicama River 20 km north of the Moche and channel it to the Three-Pampa area (Pampa Esperanza, Pampa Río Seco, and Pampa Huanchaco), which is fed by two major canals north of the Moche River. Debate surrounds whether Chimú engineering was successful in bringing water to the Three-Pampa area (Kus 1972 and 1984; Moseley 1992; Ortloff; et al. 1982 and 1983; T. Pozorski and S. Pozorski 1982). A major El Niño event during 1300–1350 damaged the Moche-Chicama Intervalley canal. Excavations by the Programa Riego Antigua documented efforts to repair the canal;

however, they argue it was never functional again and may be one of the reasons the Chimú adopted alternative strategies. Rather than investing in their available labor in agriculture in a marginal environment, they invested in extracting tribute, especially artisan goods (T. Pozorski and S. Pozorski 2006, 179–181). The Pozorskis note that within 150 years of the El Niño flooding of AD 1300–1350, the Chimú had quadrupled the area they controlled.

In addition to canal construction, public works also focused on construction of long Chimú walls throughout the Moche Valley that do not necessarily appear connected to a site or have a clear function; they run along mountain ridges and cross floodplains. Suggestions for these walls' function include corrals for state herds of llamas, territorial boundaries, or symbolism of the state (Brian pers. comm 2010).

The rural village of Cerro La Virgen is located just north of Chan Chan on a Chimú road close to state agricultural fields in the Three-Pampa region. The community could not have been established without the state as there were no water resources available for irrigation without the irrigation canals built by the Chimú. Excavations by Keatinge (1973, 1973b, 1975) and Sheila Pozorski's analysis of Cerro La Virgen subsistence patterns (1976 and 1982) initially suggested Cerro La Virgen was an agricultural community, responsible for producing cotton and foodstuffs for Chan Chan. This model fit well with the idea of rural Chimú villages in the Moche Valley heavily regulated by the state. It is clear that the population of Chan Chan, which was made up of elites and specialists, had to be supported. Recent investigations, however, indicate that Cerro La Virgen households pursued a mixed strategy of farming, fishing, weaving, and perhaps limited herding. While these are not specialist households, it appears that

household members carried out multiple activities to sustain themselves. While they were likely paying tribute to Chan Chan, if they were a community that supplied Chan Chan with the necessary agricultural resources to sustain its population, their relationship is unclear (Billman et al. in press).

Various models of Chimú administration have been proposed. The principal models are a bureaucratic model and a *señorio* model. The bureaucratic model relies principally on information from Chan Chan and attempts to correlate archaeological evidence with state institutions described for the Inca in ethnohistoric documents (Day 1982; Keatinge and Day 1973). This model proposes the Chimú employed a top-down administration that operated through Chan Chan and its regional administrative centers. The model replicated the administration at Chan Chan through a network of administrative centers throughout the empire; the economy was managed by the state and controlled the flow of goods through "redistribution, production quotas, corvée labor, and surplus accumulation and dispersal" (Moore 1985, 144–145). Keatinge's research in the Chimú heartland and the results of the Moche Valley/Chan Chan Project support this model (Moseley and Day 1982; Keatinge 1973, 1974, and 1975; Keatinge and Day 1973).

In contrast, the *señorio* system is based on ethnohistoric sources about indigenous coastal political organization (Netherly 1977, 1984, and 1990; Rostworowski 2004 and 2005). This model argues for a more local level administrative political organization based on kinship rather than state control. While powerful kings characterize the political organization in this model, political authority is tied to individual position and economic base within a network of *parcialidades*. In the *señorio*

system, exchange dominates the flow of goods and local lords are responsible for redistribution and tribute. Labor is based on reciprocal obligations within this system.

These two models of Chimú administration are not mutually exclusive. Topic (2003) adopts aspects of both models, arguing that the bureaucratic system operated at Chan Chan and the *señorio* system was utilized in the provinces of the empire. Both models have been criticized—the bureaucratic model is based wholly on ethnohistoric sources of Inca institutions of highland Cuzco, and the north coast environment is very different from Cuzco, as was north coast social organization of *parcialidades*. Additionally, the bureaucratic model was developed when little was known about provincial Inca studies (D'Altroy 1992; Earle and D'Altroy 1989). A principal criticism of the *señorio* model is that it is not based on state organization; rather, it is based on the equivalent of Spanish *repartimientos*, part of the Colonial system. During the 90 years prior to the Colonial documents that are the models for the *señorio* system, coastal populations had undergone major social change under Inca rule and Spanish presence (Conrad 1977; Moore 1985, 149; Ramirez 1986). Finally, Murra's (1972) vertical archipelago has been posited as a model for understanding Chimú imperial administration. Also based on ethnohistoric documents that describe highland polities, this model suggests group members occupied different ecological niches, sharing the products and resources produced in each niche, emphasizing a redistributive system (Murra 1968 and 1972). This model contributed significantly to the current understanding of prehistoric subsistence and political economic patterns for highland polities such as Tiwanaku and Inca (Goldstein 2005; Murra 1980). It may be useful for understanding the Chimú presence outside of the *chala* ecological zone.

While these models provide a varied image of Chimú administration, each model implies that the Chimú were well organized and maintained a capable communication system. Tribute was acquired through subject *parcialidades*, either regulated by local lords or, in the Moche Valley, funneled through Chan Chan. Excavations at regional centers and rural sites in the last 15 years provide insight into Chimú administration. Three Chimú provincial centers, Farfan, Manchan, and Tucume (Mackey 2009; Moore and Mackey 2008), were all monumental centers for local polities prior to being part of the Chimú Empire. At all three of these centers, the type of Chimú architecture constructed and its location and relationship to local elite architecture has led to interpretations about Chimú administration of these regions.

The Chimú Empire reached its height in the fifteenth century, directly controlling about 600 km and influencing 1,000 km of the coast, overtaking other north coast polities and establishing a four-tier settlement hierarchy. They endured at least one large El Niño event in the first half of the fourteenth century (Moore 1988 and 1991; Moore and Mackey 2008), and craftsmen at Chan Chan produced some of the most highly desirable metal goods for elites (Lechtman and Moseley 1975; Shimada 1985; Topic 1977, 1982. The Chimú were more politically and economically complex than any other polity the Inca faced at that time. The Inca were attracted to the Chimú craft production system and artisans (Rostworowski 1999). In contrast, the Inca economy was primarily staple-based.

Sources regarding the Inca conquest of Chimor differ with regard to details of the campaign, its leaders, and Chimú response. When the Inca attacked Cajamarca around 1461, the Chimú ruler Minchançaman sent soldiers to aid Cajamarca (Rowe

1948, 43). When Cajamarca fell to the Inca, they had to face the Chimú to hold Cajamarca. The Chimú, in order to maintain their own empire, had to remove the Inca from Cajamarca. Calbello de Balboa's (1951[1586]) description of the conquest reports the Inca army went south from Cajamarca to Huamachuco then descended to the coast through the Moche River and entered Chimor, where a battle was fought and won by the Inca. Other Chroniclers provide similar accounts. It is generally accepted that the Chimú were not willing to submit to Inca rule. A Chimú revolt is reported after their fall to the Inca (Zárate 1983[1581], 50). The Inca retaliated by executing Chimú Capac and forbidding north coast people to carry weapons. In Spanish *Visitas*, the Colonial period government reports, informants told Spanish officials they did not provide labor service to the Inca armies because they were from the north coast (Rostworowski 1990). This highlights the animosity between the Chimú and Inca. I discuss what is known about Chimú's reorganization under the Inca in Section 3.9.1.

3.7.2 Moche Valley Tributaries

Previous archaeological research in the Moche Drainage *chaupiyunga* region has focused on the LIP period in the Upper Moche valley. Survey by the Topics and their project members including excavations at one site, Lomos Shingo, directed by Alfredo Melly (1983). Lomo Shingo is located on the north side of the Moche River in the Upper Moche Valley just west of and across the river from Poroto. Its location in the valley is similar to Cerro Huancha MV 900 in Collambay (see Section 6.2.1). A hilltop site with defensive features, Lomo Shingo also has extensive investment in

terracing. Today, on its lower slopes, pineapples are grown, but when walking through these fields, sherds are visible, and I imagine the lower areas were inhabited and/or potentially used as agricultural terraces. The Topics identified Lomo Shingo as a well-planned defensive site whose construction was initiated by the Chimú (1980, 6).

Melly's (1983) investigation led him to interpret that Lomo Shingo was a local population center with defensive features. He reports that 60% of the ceramic assemblage was Chimú, compared to 40% highland, interpreting this information as the site had two occupations. The first was an MH/LIP highland occupation, as ceramics he encountered were similar to LIP archaeological sites reported in the Otuzco area and Carabamba area on the western slopes (11–12). He proposes that Lomo Shingo's initial settlement was for coastal-highland trade. The second occupation at Lomo Shingo during the LIP took place when Chimú took over the site, incorporating it into the Chimú Empire and displaying defensive features. He reports evidence of Chimú ceramic production on site (Melly 1983). Billman's survey in the Moche middle valley and into the lower Sinsicap Valley and Cuesta Valleys recorded many sites with both Chimú and highland ceramics (personal comm 2009), as the Topics have also reported in the Upper Moche Valley (1982 and 1985). The Topics (1985, 63) argue that the Chimú wanted to control trade and therefore pursued control of inland trade routes into the highlands. Archaeological evidence of Chimú administration extends through the mid-Moche valley, and the Topics have reported a series of Chimú fortifications in the middle valley (See Section 3.8.1).

As previously stated, models considering Chimú eastern expansion are few; however, Theresa Topic proposes one option based on the Fortifications survey (1990).

Early consolidation, AD 900–1050, by the Chimú in the middle Moche Valley is represented by features such as Chimú walls and defensive features that also represented territorial limits and ethnic divisions (1990). Coastal ethnic groups on the west side of this defensive architecture, and *chaupiyunga* or highland groups on the eastern side of the wall up valley. In the next phase, 1130–1200, the Chimú pushed further up-valley and built fortresses and a settlement on Cerro Maria, and a lookout at Cerro Pedregal. This was just below the confluence of the Sinsicap/Cuesta and Upper Moche tributary.

Late Phase 2/Early Phase 3 is when the Chimú expanded north into the Jequetepeque Valley and south to Chao, and extended their control in the Moche Valley inland, pushing 10 km up-valley. T. Topic reports the presence of ring bases, indicating it may be late Phase 2 (187). Phase 3 dates from 1300–1400. This 10 km would include Collambay and the rest of the *chaupiyunga* zone. T. Topic characterizes this zone in the Upper Moche Valley as having remains of Chimú fortifications and fortified settlements on top of hills with evidence of considerable occupations. Sites have a mix of Chimú, highland, and local sherds (188). This up-valley push enabled the Chimú to have more direct control of roads into the highlands (187) and there is a "string of forts" in the Upper Moche tributary up-valley 1,600 masl and 4,000 masl between the Chicama and Moche Valleys (See also Section 3.8.2). Topic reports these sites are under local control, although Chimú sherds are present (188).

This final expansion phase permitted Chimú control of both coast and highland, eliminating the *chaupiyunga* middlemen from exchange networks. Phase 3 also permitted Chimú coastal lords control of coca fields (188). By Phase 3 the Chimú

controlled 40 km inland from the coast and made efforts to control coast-highland trade, yet there is no evidence for Chimú territorial control of this sierra (192).

T. Topic does mention the Sinsicap Valley and Collambay's Inca coca fields; however, she states that the Fortifications project did not survey the Sinsicap Drainage because its north-south communication route is not as direct as the other tributaries (188). Her model emphasizes militarism in Chimú expansion, but she believes the Chimú saw the highlands as so different from the coast that controlling the highland was likely never a goal. Rather, they Chimú used other means to access raw materials, goods and highland resources (192). T. Topic's model for the Upper Moche *chaupiyunga* fits implications of my exchange-alliance model and tributary province model, however a defensive outpost is not applicable during the Chimú era in T. Topic's view (see Section 2.4). The

3.7.3 Otuzco/Upper Moche Area

As previously described in Section 3.8.2, during the LIP, a series of fortified sites along a coastal-highland prehistoric road have been identified in the Upper Moche *chaupiyunga* and into the Otuzco/Upper Moche area. The survey work of the Topics' Fortifications project members presents evidence of a series of settlements in the western slope region dating to the LIP and evidence of some of these sites on coastal-highland routes interacting with the Chimú (Coupland 1979; DeHetre 1979; Mackenzie 1980; T. Topic and J. Topic 1982; J. Topic and T. Topic 1985).

Survey by Coupland (1979) in the *quechua* zone extended from 2600 masl to 3800 masl. Six fortified sites were identified, and a prehistoric road that has walls

remaining in certain areas connects the sites located along the ridge of the Upper Moche and Cuesta Valleys. Coupland interprets these LIP sites as part of a small polity situated to control trade between the coast and the highlands. Carpaico was the central administrative site and had both Chimú and Cajamarca III and IV designs present in addition to local style ceramics, making up less than 5% of the entire collection (1979, 125–126, 144).

No excavations have occurred at Carpaico. The presence of Chimú ceramics at the site is interpreted as the result of exchange. Carpaico is situated to take advantage of traders and gain wealth, serving as a toll-booth as coastal-highland trade appears to have become more heightened as a result of Chimú interests. Coupland (1979) assumes the role of monitoring coastal-highland trade-enabled Carpaico development into a local polity, as a result of redistribution of wealth from interregional exchange. Carpaico's local identity flourished with the "threat" of Chimú traders during this heightened period of militarism (144, 147). Mackenzie, who surveyed north of Coupland, considers Carpaico the capital of a small redistributive chiefdom about 210 km^2 in the north bank of the Moche River, including the north half of the Otuzco/Upper Moche area in areas of rainfall agriculture, extending to the La Cuesta Basin (1980, 111). She argues that this area is made up of seven or eight provincial regions, each with its own center (111–115). Coupland and Mackenzie do not have the data to substantiate these claims.

Vessel forms in the western slope region are fairly uniform. Three forms are common: large jars with flaring necks, jars with incurving necks and bowls with round colander cutouts, and incurving neck jars often with oval lugs on the lip. Everted jars are often found decorated with a single band on the interior of the lip. The band is often

a thick paint, unevenly applied, that is frequently red, occasionally orange, and rarely black and orange (T. Topic and J. Topic 1982, 16).

Ceramics noted at Carpaico are common for the highland region and include some small bowls, ollas, ring bases, and colanders—medium ware, often brown. Painted decoration was not common, but most frequently was a single broad line at the lip of the vessel, sloppily applied. Coupland does not specify if it is on the interior or exterior, or both sides of the rim. Color combinations include red on orange, orange on brown, and red on buff. Occasionally, white on red or brown, black on gray, red on black, red on black on buff, and red and white on buff are present. Rim sherds also occasionally had an incised line near the lip, as well as intentional roughness on the surface of sherds (Coupland 1979, 125). This research in the Otuzco/Upper Moche zone indicates that residents in this zone were likely working with those in the lower *chaupiyunga* region of the valley.

3.7.4 Carabamba Plateau

During the LIP, the Carabamba's population is much larger; the majority of sites identified in this region date to this period. The Topics refer to this as a "population explosion" (J. Topic and T. Topic 1979a, 14). They identified 88 sites in aerial photographs and visited 45 of them (J. Topic and T. Topic 1979a, 9). There are several site clusters, which they refer to as polities, Cuidista, Chamana, Cerro Sulcha, Mache-Julcan. Each polity is about the size of 150–200 km^2. The Topics define these polities based on surface collections at visited sites, site locations, and roadways.

All sites are located on hilltops, and the polities are made up of a series of habitation sites with some defensive features, as well as hilltop forts. Walled footpaths connect sites. No test excavations have been undertaken in the region. See Haley 1979 and T. Topic and J. Topic 1987 for settlement pattern maps of the region. Haley provides site descriptions for sites in the Sulcha polity, the polity located on the western ridge of the Carabamba, which has a clear communication route with the Virú Valley (T. Topic and J. Topic 1987, 13). There are more LIP sites reported in the Carabamba than in the Alto Chicama, Otuzco/Upper Moche area, and Huamachuco areas during the LIP. Limited surface ceramics were encountered during survey, which is likely the result of site formation processes. The relationship of the Carabamba to Otuzco/Upper Moche and lower valleys are unclear at this time.

3.7.5 Alto Chicama

During the LIP, a large new population moves into the Alto Chicama Valley. Fifty-four sites date to the Yuraccama phase (AD 900–1532). Prior to the LIP, all sites in the Alto Chicama were smaller than four ha in area. In the LIP, multiple sites are thirty ha or larger. Multiple sites are often found in close proximity to each other, forming site groups, with each site complex dedicated to independent groups (Krzanowski 2006, 37). Settlements tend to be located on ridge tops, and while this could be interpreted as defensive, Krzanowski interprets this location to enable a mixed-subsistence economy. The higher elevation is ideal for pastureland, and there is extensive investment in terrace construction for agriculture in the region (2006, 37).

Many of the Yuraccama phase sites could date to the LH as well, LH ceramic styles do not change from the LIP. Ollas from the Yuraccama phase have very flared, arched rims. The most frequent decoration is Huamachuco Impressed, impressed concentric circles on the neck and shoulder of the vessel. Sometimes in addition to the circles, lines in chevron form are found around vessel necks (T. Topic and J. Topic 1987, 24). Forms are similar to those reported by Thatcher (1972) from the Huamachuco region (Krzanowski 1986). In the early LIP/late MH, Cajamarca and Chimú black wares are reported, suggesting a connection between Alto Chicama and these regions (Krzanwoski 2006, 35).

3.7.6 Huamachuco

In Huamachuco, the LIP is known as the Tuscan phase (1000–1470) and is characterized by two changes: 1. there is no monumental construction at Marcahuamachuco, although part of the site is still occupied and 2. new ceramic styles appear in the Huamachuco region. During the LIP, the shrine of Catequil, an oracle, has regional importance. Settlement patterns have three site clusters. Within each cluster, one site has more elaborate architecture than the others, suggesting two-tier site hierarchy. These site clusters have site locations within three elevation zones, suggesting each site may have been economically specialized—high pastureland for herding and low elevation for agriculture (J. Topic 2009).

There appears to be a population increase in the Huamachuco region during this period; the site size grows between the previous Purpucala and Tuscan phases (J. Topic

2009, 230–231). Marcahuamachuco remains the largest site in the Huamachuco area; all other sites are significantly smaller, ranging from 3.2 to 6.4 ha, significantly smaller than those on the western slope area (J. Topic 1998, 119).

There are two distinct ceramic traditions in this phase, which may be tied to different ethnic groups in the Huamachuco region, Huamachuco Impressed and Huamachuco-on-white (T. Topic and J. Topic 1987, 24–25). Huamachuco Impressed, previously described in the Alto Chicama LIP section, is found in hard orange or grey pastes; often, vessels have an orange surface and gray core, which appears to come from the Alto Chicama Valley (T. Topic and J. Topic 1987, 24). These ceramics have been found in low quantities at Marcahuamachuco and in an unmixed assemblage south of Marcahuamachuco at Cerro Chico south (24).

Huamachuco-on-white is described as having a hard light paste and rocky temper. “Surfaces are slipped with streaky white slip, and over this are painted bold circles and net-like motifs in deep red and brown” (Topic and Topic 1987, 24). Wide strap handles are frequently found on large jars. Some jar and ollas forms continue from the Late Huamachuco phase (from the EIP). Tuscan styles continue through the Santa Barbara phase (LH).

Settlement patterns during the LIP in La Libertad suggest that overall the population has increased and are more dispersed throughout these different areas than reported in previous periods. The movement of populations into the Carabamba plateau, especially the Cuidista area, and in the Otuzco/Upper Moche Area suggests settlement patterns may be driven in part by exchange with coastal groups. J. Topic comments that there is a clear shift in economic focus toward the western slope. Sites are located close

to roads from the coast that emerge out of the *chaupiyunga* into *quechua* and zone of rainfall agriculture (1998, 119). The exception to this trend is in Huamachuco, where LIP sites are not near major roads.

Non-local ceramic styles, Chimú and Cajamarca ceramics, are reported in the Otuzco/Upper Moche area as well as the Alto Chicama Valley and Huamachuco. Chimú ceramics were recovered by Uhle at Marcahuamachuco in burials (McCown 1945). The Topics report much larger numbers of Chimú sherds in the Otuzco/Upper Moche area and upper valley coastal-highland route than in the Huamachuco region itself (J. Topic and T. Topic 1985). It is clear that during the LIP, the La Libertad highland population is engaged in interregional exchange.

3.8 Late Horizon: Chinchasuyu, Northwest Quarter of the Inca Empire

The Inca polity emerged in the LIP in the Cuzco Basin, however the Inca's arrival on the north coast in 1470 (Rowe 1948) is the onset of the Late Horizon period on the north coast. Research over the last 20 years has documented the archaeological record of the early Inca polity in the Cuzco Basin to understand Inca state formation and compare it with the ethnohistoric record (Bauer 1992; Bauer and Covey 2002; Covey 2003). Research in the provinces of the empire over the last decade also provides insight into Inca administration, interests, strategies, and relationships with local groups (D'Altroy 1992; Malpass and Alconini 2010; Malpass 1993). A complete account of Inca political dynamics and material culture is beyond the scope of this dissertation; however, a basic account of Inca institutions and political history provides the necessary

background to present researchers' current understanding of the Inca's impact and administration on the north coast and La Libertad highlands.

The capital of Tawantinsuyu was Cuzco, which is *quechua* for the "four quarters." *Quechua*, an indigenous Andean language, was the lingua franca of the empire. Divided into four quarters or suyus, Tawantinsuyu was composed of Antisuyu (east, the Amazon), Collasuyu (south), Cuntisuyu (west), and Chinchasuyu (north). The territory of the Chimú Empire, and the rest of the north coast, as well as the La Libertad highlands and the northern Andes, were part of Chinchasuyu, which was the most populous region of the empire.

The Inca Empire was extended by multiple leaders over several generations to encompass two million km^2 in an area including at least 86 different ethnic groups (Rowe 1946; Shimada 2015). Today, this area includes the modern nation-states of Bolivia, Argentina, Peru, and as far north as the Ecuador-Colombia border.

The Inca practiced split inheritance, meaning a ruler's successor obtained political power as king; however, the deceased ruler maintained control over the land he conquered during his life. The mummies of deceased Inca kings were kept in their palaces and retainers continued to care for them. These mummies continued to be consulted by Inca leaders and participated in state rituals. Split inheritance is one of the arguments for the initial expansion of the Inca Empire, as a new king is required to build his own palace and win land and wealth from new territories (D'Altroy 1992).

Such an expansive empire required a significant investment in infrastructure and well-organized administration. The Inca employed a decimal administrative system—based on the number 10. Each suyu was made up of multiple provinces, which was

based upon ranked divisions. Ideally these divisions consisted of one hunu or 10,000 people (males/taxpayers/head of households), which was subdivided in turn into smaller, ranked decimal units based on 5,000, 1,000, 500, 100, 50, and 10 (D'Altory 2002, 232–234; Julien 1988). Each level had a leader headed by a *curaca* or local lord. The Inca required tribute payments from subjects, which included grain, textiles, wares, etc. The Inca also relied upon a corvée labor tax, or mit'a, on public works projects. Male heads of households were required to spend a set number of days a year working for the state. These taxpayers built and maintained the Inca road system, or Qhapaq Nan, which also had state way stations or *tambos* that included facilities with storage and sleeping quarters for traveling administrators and the army. The Inca road system was 25,000 km, which enabled rapid communication throughout the empire and connected all four quarters of the empire with Cuzco (Hyslop 1984, 1990). Messengers, or *chasquis*, were stationed at *tambos* throughout the empire to relay messages quickly.

Various strategies regulated the empire's subjects in Inca interests. Ethnic groups within the Inca Empire were required to maintain groups' traditional dress and hairstyle. This strategy enabled clear identification of cultural affiliation and reinforced social hierarchy in the empire. The Inca also resettled groups throughout the empire. This tactic was used to control problematic groups, taking them outside their homelands and resettling them elsewhere in the empire. The Inca also brought loyal groups into provinces that were composed of problematic groups. Groups that were resettled by the Inca were called *mitmaq*. *Mitmaq* groups were also moved into some areas to intensify staple agricultural production throughout the empire. This included the Mantaro, Urubamba, Cochabamba, and Colca valleys (D'Altroy and Hastorf 2001; Wachtel

1982). Inca provincial policies were determined by the resources available, political complexity of the subject group, proximity to Cuzco and threat that that polity presented to the Inca (D'Altroy 1992, 217). One of the Inca hallmarks is Inca architecture, stone masonry cut precisely so no mortar is needed (Protzen 1983, 1993). While the highest quality of masonry is found in the Cuzco region, it is also found at provincial centers throughout the empire, although Inca masonry is absent in the Chimú heartland. Inca architecture identified at some provincial capitals include *ushnus* and *kallankas*. An *ushnu* is a sacred platform structure used for Inca ceremonies, serving as a type of stage where kings and leaders facilitated rituals demonstrating their religious and political authority. *Kallankas* are roofed buildings that served as spaces for public gatherings. They are often found adjacent to central plazas with multiple doors along one side opening up to the plaza. A locale for feasting events, *kallankas* could house large groups of people (Shimada 2015).

3.9 Moche Valley under the Inca Empire

The Inca took over the north coast and La Libertad highlands by 1470. Initially Inca rule on the north coast has been interpreted as indirect, as there is continuity in settlement patterns and material culture between the LIP and LH on the north coast, and an absence of imperial Inca masonry. Inca reorganization took advantage of the preexisting structure of the north coast. Inca consolidation of the Chimú Empire provided new challenges; however, evidence suggests they used similar methods of Inca administration in other conquered areas (D'Altory 1992; Rowe 1982; Schreiber 1992).

There is little archaeological evidence of new Inca-period settlements on the north coast. Excavations at Farfan and Tucumé suggest the Inca transformed regional centers, installed Inca bureaucrats, remodeled existing and constructed new buildings, and imposed Inca ideological traditions (Heyerdahl, Sandweiss, and Narvaez 1995; Mackey 2003). Farfan has a burial platform with *aclla*, or Inca-chosen women interred (Mackey 2003). Chosen women from elite families engaged in textile production and produced chicha beer for state-sponsored ceremonies and festivals. *Acllas* have been identified at Inca regional centers throughout the empire. However, there is an absence of Inca imperial architecture and extensive material culture in the Moche Valley.

The Chimú were a clear rival of the Inca. To maintain control over the north coast, the Inca reorganized Chimú top administration, but kept lower-level provincial administrators and local lords in their positions, removing the upper level of administrators (Conrad 1977; Mackey 2003; Netherly 1977; Ramirez 1990 and 1996; Tate 2006). Chan Chan rulers continued to maintain court life at Chan Chan (Vargas Urarte 1936, 232). The Inca kept Minchançaman's heirs as puppet rulers until the Spanish arrival (Moore and Mackey 2008). The Inca moved Chimú craftsmen to Cuzco and other provincial centers to produce sumptuary goods for Inca elite (Pease 1982; Rostworowski 1990). Some north coast people were relocated as *mitmaquna* throughout the empire.

This initial interpretation of Inca indirect rule is coming into question as more researchers have examined the Inca occupation throughout the north coast in the last two decades or so, enabling researchers to begin documenting the recognizable archaeological signatures of the Inca Empire on the north coast (Hayashida 2015;

Kremkau 2010, 2011; Mackey 2003; Tate 2006). Inca period ceramic manufacturing centers have been identified (Donnan 1997; Hayashida 1995, 1998 and 1999). In the Chaman drainage on the north side of the Jequetepeque Valley, Kremkau reports a number of small sites founded in the LH period. He argues that the Inca's choice of site location, size, and function was designed to try not to alter the preexisting social and political dynamics of the valley, however (2010 and 2011). Tate reports that in the Chicama Valley, despite the absence of Inca direct rule, local elites who remained in power under the Inca had new economic opportunities that were not available under the Chimú system (Tate 2006). These studies demonstrate that despite the absence of classic imperial Inca architecture and material culture in the north, there was still a significant impact on local communities, and should be considered in the Moche Valley, whose Inca period occupation is not clear.

With the Inca takeover, they placed the *chaupiyunga* zone under the control of Cajamarca and Huamachuco, down to 300 masl, giving highland polities jurisdiction over the middle valley region (Netherly 1977, 314–316, 1998, 94). Netherly highlights that canal intakes are located in this zone, although she notes that no Inca period sites are associated with these intakes (314). I extend this discussion in Chapter 4.

Chan Chan appears to have remained partially occupied; however, the Inca reorganized the organization of the north coast economic system. No Inca administrative center has been identified in the Moche Valley. Chiquitoy Viejo, an Inca administrative site, was built in the Chicama Valley. Chiquitoy Viejo is a speck of an administrative site in contrast to the size and immense monumental center and urban city of Chan Chan. The site is 1 km in size, and a small fraction of the site is occupied

by architecture. The main compound is 300 m x 250 m; a walled compound with internal subdivisions for retainers, an administrative area, and a burial platform makes up the site (Conrad 1977).

Chiquitoy Viejo is located along a walled access road that connects to the main Inca road. This coastal Inca road was the primary communication and transportation route to and from Chan Chan. Excavations by Conrad indicate it had a very short occupation, arguably the lifetime of one official, and was likely abandoned during the life of his successor due to the social and political disruption of the Spanish conquest (Conrad 1977, 15). Overall less than 10% of the ceramic assemblage is Inca-related. In the burial platform and administrative sector, varieties of LH ceramics make up 15.9% of the ceramic assemblage (Conrad 1977, 14).

Conrad argues that the lack of evidence of facilities for permanent storage and connection to the roadway indicates the site operated as a checkpoint location for high-status goods being transported from Chan Chan to Cuzco. Ethnohistoric sources state that goods from the Moche Valley to Cuzco were shipped via Cajamarca, which served as the indirect center for control of the north coast (Conrad 1977, 16). Therefore, while the Chimor dynasty continued to rule as local provincial administrators in the Moche Valley, goods produced and shipped were inspected at Chiquitoy Viejo within a few hours of leaving the Moche Valley, sending a message to Chimú elite from the Inca that was explicit, “we are your masters, we are here, and we are watching you very closely” (Conrad 1977, 17). The presence of Chiquitoy directly contradicts interpretations that the Inca adopted organizational principles of Chimor (17).

In the Moche Valley, twelve Chimu-Inca burials are described by Donnan and Mackey (1979). Multiple Chimu-Inca burials were encountered at Chan Chan during the Chan Chan/Moche Valley Project, as well as by the Colonial Church in Huanchaco excavated by Dr. Francisco Iriarte. Intrusive Chimú-Inca burials were also encountered at Huacas de Moche, and Cabello Muerto (Donnan and Mackey 1978, 356–376;[10] Menzel 1977). While Chimu-Inca burials have been encountered, no Inca period settlement had been excavated in the Moche Valley outside of Chan Chan until my excavations in Collambay. The reference to an Inca king's coca fields in Collambay and an Inca *tambo* in Collambay are the only other Colonial references to an Inca occupation in the valley (Netherly 1977; Rostworowski 1977). Netherly (1998: 96) reports that Michael Moseley has said there is a small Inca site on the north side of the Moche River. Billman, however, did not encounter Inca ceramics during his pedestrian survey of the Moche Valley (pers. comm 2010). There has been some speculation that an Inca period site is located underneath the Plaza de Armas of Trujillo.

3.9.1 Late Horizon in La Libertad Highlands: Huamachuco Province

Encomienda grants made by Francisco Pizarro in the early Colonial period provide insight into LH sociopolitical units in Huamachuco. These grants were made prior to the Spanish having any detailed information about the region, and relied on Inca informants (J. Topic 1998, 119). Therefore, the encomiendas were determined by Inca sociopolitical units, assigning native lords and their people to the *encomendero*, not the

[10] In April 2016 excavations by Gabriel O. Prieto adjacent to the Colonial Church in Huanchaco encountered additional Chimu-Inca burials.

territory. Huamachuco was given as a "single unit," which is the definition of the province of Huamachuco (119). The province of Huamachuco includes all of the different sectors of the La Libertad highlands that I have highlighted previously—the western slopes region, Otuzco/Upper Moche area, Carabamba, Alto Chicama, and the area around the town of Huamachuco itself.

The chronicles mention a town of Huamachuco as well as a province. Incorporated into the Inca Empire around the same time as Chimor, the town of Huamachuco was likely built under the control of the Inca ruler Huayna Capac (1483–1527), who is reported to have had houses in Huamachuco by Guaman Poma (1980, 1094–1103). It was during this time that the modern town, adjacent road system, and storehouses outside of town were likely constructed by *mitmaquna*. Descriptions of the town of Huamachuco by chroniclers (Cieza de Leon 1976, 235–236; Garcilaso de la Vega 1966, 342) led to expectations of finding a substantial Inca presence in the Huamachuco area. However, the Topics (1993) note that few archaeological remains of the Inca Empire are present in Huamachuco, providing little about Inca provincial organization. As the modern town of Huamachuco sits upon the original Inca capital, archaeological investigation has not been possible.

Huamachuco the modern town, is located on a key north-south road, its principal plaza is trapezoidal in shape, an Inca trait, and outside of town there are extensive Inca storage buildings, which would have supported the regional capital during the Inca period. Inca ceramics are found in the area, especially around the plaza (J. Topic and T. Topic 1993; Topic and Chiswell 1992). Based on the Topics' research, they believe Huamachuco was a medium-sized center with a large plaza, or ushnu, and likely had

two *kallanka*-type buildings, perhaps including a royal enclosure (1993; Topic and Chiswell 1992).

Colonial documents and modern toponyms and place-names enable some modeling for how the Huamachuco province under the Inca was organized. This can be compared to the settlement patterns documented by the Topics in the region (J. Topic 1998, 2009; J. Topic and T. Topic 1993; T. Topic and J. Topic 1982).

Colonial documents report that under the Inca the province of Huamachuco was given jurisdiction of the Virú and Moche valleys down the western slopes of the Andes to 300 masl (Netherly 1977 and 1998), which includes the *chaupiyunga* zone and all Moche Valley tributaries and the Collambay area. This is supported in another Colonial document written by Gregorio González de Cuenca in 1567 that reports that Collambay is an Inca *tambo* within the province of Huamachuco (BNM, M.S. 3035; Rostworowski 1987).

Under the Inca, Huamachuco became a "multi-ethnic mosaic" (J. Topic 1998, 120), the province was made up of seven *guarangas*, the Inca administrative unit of 1,000 heads of households or tribute payers. The seven *guarangas* are made up of four guarangas of local Huamachuco people, one *guaranga* of *mitmaq* from the coast, one guaranga of *mitmaq* from the highlands (not from the Huamachuco region), and one *guaranga* from the *chaupiyunga* (Espinoza Soriano 1974, 34). *Mitmaq* from Huamachuco were sent to Chimbo, Ecuador along with *mitmaq* from Cajamarca and Gumbos (Miguel de Cantos 1965[1581], 255 cited in J. Topic 1998, 120). Based on toponyms of huacas and landscape features in the Huamachuco province (including the *chaupiyunga* zone), J. Topic attempted to determine geographical boundaries of each

guaranga (J. Topic 1992; J. Topic 1998, Figure 1). Settlement patterns in the region have suggested that the organization of Huamachuco *guarangas* described did not actually live up to the Inca idea of 1,000 households, nor was it representative of the total population in the Huamachuco province (J. Topic ad T. Topic 1993, 19).

One of the four indigenous guarangas to Huamachuco, Llampa, is hypothesized to have been located in the Alto Chicama area (Espinoza Soriano 1974, 34). Unfortunately, the information available does not allow identification down to the *señorio* level. Settlement patterns and archaeological evidence of reorganization of the La Libertad population under the Inca are not very clear. Many sites occupied in the LIP are likely occupied through the LH. Material culture is very uniform between the LIP and LH (like the north coast), with the only Inca period material signatures being aryballoid shape vessels, animal head lugs, and occasionally distinctive paste (J. Topic and T. Topic 1993, 18). Tuscan phase ceramics are present during the LH.

During the LH in the Otuzco/Upper Moche area the local center, Carpaico is abandoned and the polity's new center is at Rogoday, 2 km north of Carpaico (Coupland 1979; J. Topic and T. Topic 1978). Rogoday is located within the boundaries of Llampa *guaranga* territory. Rogoday covers an area of about 5 km^2 and is a series of six small sites associated with agricultural terraces. There is some continuity between rooms and general tomb types with Carpaico tradition. The Topics argue that the Inca relocated Carpaico's elites, shifting their focus to agricultural production (J. Topic and T. Topic 1978, 618).

Krzanowski (2006) does not report any sites dating to the LH in the Alto Chicama region, and LH ceramics are absent, despite Colonial documents reporting

Alto Chicama is the *guaranga* Llampa of the province of Huamachuco (Espinoza Soriano 1962). Huamachuco incised pottery and Huamachuco masonry style is somewhat correlated with Llampa *guaranga* (J. Topic 1998). In the Huamachuco region extending to the Alto Chicama Valley J. Topic has identified a division in cultural material, which runs along the continental divide, areas with Chimu sherds and areas without. This division cuts across the boundaries of the Llampa and Guacapongo *guarangas* some areas within each *guaranga* have Chimú sherds, while others do not.

In Huamachuco the LH corresponds with the Santa Barbara phase (1470–1532). Archaeological evidence for reorganizing the population is not very clear, and few sites have been identified that may correspond to non-local *mitmaq* settlements. However, Inca colcas, storehouses, are found on the slopes surrounding the town of Huamachuco (Topic and Chiswell 1992). At one time there were probably 215 colcas, averaging 4 x 5 m. Other sites related to the Inca occupation are identified by LH sherds, and sites with LH sherds that correspond to places referred to in Colonial documents, like a *mitmaq* settlement, are reported at a place called San Marcos de Chuco, which is Topic's Site #179 (Marcochuco). The ceramics appear locally made and have heavy Inca influence. Place names have also been used to identify local sites, and many Tuscan phase sites continue to be occupied (Topic 2009: 231–233).

Santa Barbara phase sites are identified based on LH ceramics and Inca period architecture with "low, unchanged double-faced stone walls. Rooms are about three meters on a side [sic] arranged in conjoined rows and rows of rooms often bounded one or two sides of an open space," which is also typical of the organization of rooms in the Huamachuco area (J. Topic and T. Topic 1993, 34). Two sites may correspond to

mitmaq settlements: Cerro Cañaris and Alto Corazon. Topic does not explain why these sites are potentially *mitmaq* residences, presumably because of different architecture and new variety of material assemblage in the region.

Tuscan ceramic styles continue to be used in the LH. Jars in the Tuscan phase have animal head lugs at rim join, suggesting Inca influence. Inca aryballoids have been found at some sites in the region, and a variety of Inca forms are present in Huamachuco, including aryballoids, hemispherical bowls, everted lips, horizontal handles, and double-chambered pots.

Overall, it appears that in the Huamachuco province during the LH the modern-day town of Huamachuco was founded as the provincial capital. Extensive storage facilities outside of town present the largest capacity of storage close to the Moche Drainage besides Chan Chan. Ethnohistoric documents provide information about the organization of Huamachuco during the Inca period—seven guarangas, four of which are of populations indigenous to the Huamachuco region. In the archaeological record, however, settlement patterns and ceramics do not indicate many changes during this period. It is assumed that the majority of sites occupied in the LIP remain occupied in the LH, although the Topics' identification of Carpaico's population shift from monitoring coastal-highland traffic to agricultural producer suggests that perhaps populations on the western slope oriented towards trade were more frequently relocated than other population in the La Libertad highlands. On both the north coast and northern highlands, differentiating between LIP and LH material culture is challenging, as many forms and styles persisted through both periods. However, Inca rule on the north coast was just over 60 years, a very short period of time to detect in the archaeological record,

and the empire was already affected by the Europeans' arrival in the New World. A plague (likely smallpox or another European disease) killed the Inca ruler Huayna Capac around 1525. The Inca Empire would be thrust into civil war as Huayna Capac's sons, Huascar and Atahualpa, battled with their respective allies against each other to succeed their father. Atahualpa defeated Huascar on what essentially was the eve of the Spanish conquest.

3.10 Colonial Period: The Spanish Arrival in Peru

While the Spanish did not physically arrive in the Andes to overtake the Inca Empire until 1532, they arguably began their takeover of the Inca Empire several years earlier, potentially even decades. As Huayna Capac expanded the Inca Empire north into Ecuador and east to Chachapoyas, the Spanish established a base in Panama in 1513 and overtook the Aztecs in 1519. South American populations died by the hundreds of thousands as Spanish diseases were carried south. Pizarro took an initial expedition in 1524–25 and another in 1526–28, which provided him with the necessary information about the immense wealth of the Inca Empire. This information financed his expedition in 1531–1532.

The Inca Empire that Francisco Pizarro and his men encountered had been transformed prior to the Europeans' physical arrival in South America in the middle of a civil war, and the population was already suffering from Spanish diseases. Landing at the *Tambo* of Zaña, the Spanish headed towards the highlands. Ten days later the Spanish waged war on the Inca in Cajamarca, captured Atahualpa, holding him for ransom for a room full of gold. Pizarro would break his promise and execute Atahualpa

in July 1533. Pizarro's troops marched south to Cuzco, fighting battles along the way, and installed Manco Inca as their puppet emperor. Several decades of conflict would continue with rebellion by the Inca and conflicts between the Conquistadors. As part of their victory, many Conquistadors became *encomendero*s, individuals given right to extract tribute from subjects, and were granted huge land grants. However, the Spanish crown, King Charles V, was concerned about the indigenous population and the power wielded by the former Conquistadors, and looked for ways to control them, issuing new laws that established a ruling council and viceroyalty in Lima. The new laws were unpopular and the initial viceroy was killed.

Spanish diseases continued to plague the native population. It is difficult to determine the demographic impact of European diseases. Between 1570 and 1620, the north coast experienced a 71% loss of its tributary population (Cook 1981, 118, table 27). In the north coast, there was a high degree of variability in population decline due to disease transmission, social conflict, and internal migration. Calculating the cumulative demographic impact is difficult in part because estimates for prehispanic demographics vary; however, between three and 32 million people are estimated to have died (Cook 1981, 13).

In 1569, Francisco de Toledo, the fifth appointed viceroy of Peru, arrived with a mandate to bring the Andes region more strongly under control of the Spanish crown. Toledo's reforms of the sixteenth century included a general census or *Visita General*, and a plan to formalize a labor tax on native people and to reorder (reducer) all native peoples in the viceroyalty into identical villages. The implementation of the *Reducción* movement native people were moved into newly constructed towns or *reducción*es.

These town were on a gridded plan of streets centered on a plaza, a parish church, and civic institutions—a jail, an inn, and a house for the local cacique. These elements were believed to create public order and good government. How these elements, most of which were completely alien to the traditional Andean ways of life, actually affected indigenous peoples has only recently begun to be investigated by archaeologists (Wernke 2007 and 2011). VanValkenburgh's research on Colonial period settlements in the Zaña valley is beginning to inform us about what Colonial life on the north coast was like (VanValkenburgh 2012). Native people were relocated to Spanish *reducciónes* and, if they survived Spanish diseases, would be forced to work on an encomienda for a Spaniard or for the Catholic Church, which would become a significant landowner on the north coast. In the Moche Valley, the city of Trujillo was founded in 1535 by Pizarro, and it would become the principal urban center on the north coast. VanValkenburgh's research in the Zaña valley demonstrates that the *reducción* system resulted in settlement nucleation and indigenous population decline, affecting traditional Andean social organization (2012). In the Moche drainage, multiple *reducciónes* were founded, *chaupiyunga* residents were moved to the *reducción*, Simbal.

3.11 Collambay: ethnography, ethnohistory, and local toponyms

Ethnographic, ethnohistoric, and local toponyms in the Sinsicap Valley provide information about the prehispanic past in the region. See Section 3.8.2 for a review of previous archaeological investigations and hypotheses in the *chaupiyunga* zone of the Moche Drainage. Ethnographic studies document the *chaupiyunga* as a locale for the exchange of resources throughout history, in addition to being a coca-growing zone

(Gillin 1947; Prieto 2009). The town of Simbal, the Spanish *reducción,* where Moche Valley *chaupiyunga* groups were moved in the sixteenth century, remains occupied today, with Colonial period homes lining the streets around the Plaza de Armas. Simbal is located at the confluence of the Sinsicap and Cuesta Valleys, a few kilometers south of Collambay. Today, it remains a center of local government, as the capital of the municipal district, of the same name.

3.11.1 Ethnography and Ethnohistory

During the early 1940's, an American ethnographer, John Gillin, was living in the fishing community of Moche, south of Trujillo. He reported that members of Moche and Huanchaco, another fishing village just north of Chan Chan in the Moche Valley, would travel to Simbal for trade and intermarriage between coastal and highland communities. Gillin hypothesizes that this tradition of exchange and intermarriage between interregional communities was one that had been in place since "antiquity, undoubtedly previous even to the Chimú conquest of the region," (1947, 80). In fact, there are ethnohistoric documents that report exchange occurring in Simbal in the 16th century. In a court case from 1595, fisherman from the Moche Valley testified that they went to Simbal to exchange fish and other items (Hart 1988, 276–277), suggesting this was common, and likely was a tradition that extended back into prehistory.

Today this tradition of exchange continues, but only once a year and during a religious holiday. Members of coastal and highland communities come together in Simbal during the Simbal celebration of the patron saint, Señor de la Piedad, during the

month of January. Coastal products are exchanged for highland products. A woman from Huanchaco, Doña Maria Huamanchumo, who was interviewed by Gabriel Prieto about the tradition, reported it "was costumbre" (2009, 291). Gillin reports Moche fisherman exchanged coastal resources, including cotton textiles, for corn, potatoes, wheat, quinoa, and sheep (1947, 80). Both Gillin and Prieto report that coastal women are the vendors (Gillin 1947; Prieto 2009, 291). When I attended this festival in 2013, I witnessed the wife of a fisherman from Huanchaco exchanging totora reed mats for potatoes with a woman from the highlands on a street adjacent to the Plaza de Armas in Simbal. These two women did not know each other, but found each other at the festival.[11] This information places coastal, highland, and local groups in the *chaupiyunga* for exchange, confirming that through the twentieth century the *chaupiyunga* zone plays an important role in coastal-highland exchange networks. Gillin's account also documents that intermarriage between coastal and highland groups was occurring in the early twentieth century.

Traditionally, such exchanges would occur over multiple days of festivals, feasting, and drinking. These ethnographic examples highlight the role of the *chaupiyunga* as a place where exchange between different coastal and highland groups occurred during the year in the Precolumbian and Colonial eras. As a place of exchange between coastal, *chaupiyunga*, and highland groups in the *chaupiyunga*, I would expect evidence that Collambay people had access to resources from the coast and highlands.

[11] The women participating in the exchange were quite elderly and there was a clear absence of younger generations participating in this tradition.

Colonial documents also provide information about non-local polities' presence and interest in Collambay. Testimony in Colonial documents reports that the Inca had fields in Collambay. Local and provincial lords in 1562, 1565, and 1567 confirm that land titles to three enclosed fields in the Collambay region belonged to the *Encomendero* of Huamachuco, Juan de Sandoval (ANP Aguas 3.3.10.68, ff 86–132).[12] These three enclosed fields, Guancha, Yapón, and Arensa, located at 800 masl on terraces on the west side of the river and belonged previously to the Inca king and his mother. Coca and chili peppers were cultivated in the fields which Netherly claims are the "nucleus of the sixteenth century [Collambay] hacienda" and 36 hectares (90 acres) in area (1977, 316). Netherly comments that cultivators in the upper Sinsicap Valley must have not been permitted to draw water from the river for their fields during the era of Inca fields in the region and that all water must have been dedicated to the Inca fields.

Following the defeat of the Inca by the Spanish, Guancha, Yapón, and Arensa lay fallow for 30 years, until Sandoval's land claim. Netherly suggests that the post-conquest period had a shrinking population, and area residents were using other fields (1977, 318), likely the same ones used prior to the Inca arrival in the valley. However, as previously described during the Colonial period, it was often that different indigenous groups claimed lands and coca fields were especially widely sought after, especially with the movement of different ethnic groups that the Inca had displaced as part of their imperial strategies (Rostworoski 1988). In the case of the coca fields of

[12] Don Juan de Sandoval was a conquistador married to Doña Florencia de Mora, the niece of Francisco Pizarro. Both individuals were important figures in Colonial Trujillo.

Collambay, "the long idleness of the lands at Collambay suggests that none of the highland groups had a prior claim to them," perhaps because local groups did not attempt to claim them, while they may have been controlled by the Chimú state or a Chimú lord before the Inca (Netherly 1977, 318).

By the time of the Colonial period, the Chimú were likely unable to claim these fields previously held by their antecedents. This may have been because much of the population was decimated during the Post-Conquest era; additionally, during the Colonial period, Spanish courts reinforced the political boundaries that were established under the Inca, including the Inca's division of political units (Netherly 1977, 318). If Chimú lords had taken the case to court, they would not have been awarded title. During the proceedings for Don Juan Sandoval's land claim, all of the witnesses that testified on behalf of the *Encomendero* were from Huamachuco; it is unlikely they would have mentioned a coastal group ever having lands in the Collambay area (Netherly 1977, 319). This information does not directly indicate that the Chimú had coca fields in Collambay, but certainly the history of these fields suggests it is possible that prior to the Inca arrival on the north coast, the Chimú may have had fields in Collambay.

Today, coca growing remains a strong tradition in Collambay, despite the legal obligation to sell all coca leaves to the government's corporation, Empresa Nacional de la Coca S.A. (ENACO). Netherly postulated that the coca fields that belonged to the Inca were on the west side of the valley. Today no coca plants are grown in the town of Collambay because coca plants require shade and ample water. The majority of coca fields are located between the Sinsicap River and Cerro Huancha MV 900, just east of

Collambay and south of Cerro Huancha MV 900. Coca fields are also plentiful north of Cerro Huancha MV 900 and Collambay on the west and east banks of the river. The majority of current coca growers reside in a community less than a kilometer up valley from the pueblo of Collambay called La Travesia. La Travesia is the second largest concentration of residents in Collambay outside of the pueblo of Collambay[13]. Today the majority of coca fields in the region receive water through natural underground springs and limited irrigation river water. During the Inca period, the Moche and Virú Valley *chaupiyunga* was under the jurisdiction of Huamachuco. Colonial documents, myths, and modern toponyms reinforce a connection between populations of these two regions in the late Precolumbian period.

An origin myth for the Huamachuco region recorded by Augustinian priests (San Pedro 1992 [1560]) indicates that the *chaupiyunga* zone was part of Huamachuco social memory during the Colonial period (J. Topic 1998). In the myth, the "*Guachemin*" who lived in the Huamachuco region were chased out of Huamachuco by two brothers who are chosen by the supreme god. One becomes Huamachuco's famous oracle, Catequil (J. Topic 1998; Topic et al. 2002). Following the *Guachemin's* expulsion from the region, the people of Huamachuco are created. *Guachemin* is still a toponym for several hills and *quebradas* on the north and northeast front of Huamachuco, including the western slopes of the Andes in the *chaupiyunga* zone. This fits with a common mythological history in the highlands of chasing previous inhabitants down into the *chaupiyunga* or killing them (J. Topic 1992; Taylor 1987).

[13] La Travesia may have a larger number of full-time residents compared Collambay pueblo.

This myth emphasizes legitimacy to the right to an ecological zone as well as a community social identity and affiliation (J. Topic 1992 and 1998).

The term *Guachemin* is interpreted by J. Topic as an ethnic classification as well as an ecological zone associated with coastal groups. He argues that the Chronicler Guaman Poma refers to coastal fishermen as "*wachimis*" or "*wachime yunga*" (1998, 113). Previously, Alfredo Torero (1989, 228–229) associated *Guachemin* with *guaxme*, or fisherman of Domingo de Santo Tomás. The creation myth suggests that Huamachuco people defined their territory as sierra and themselves as *serranos*, contrasting themselves to people from other ecological zones (J. Topic 1998, 113).

This Huamachuco origin myth reinforces Huamachuco highlanders' social identity. And the myth may, in part, be in response to the Inca period when Huamachuco was made up of *guarangas* with local, coastal, non-local highland, and *chaupiyunga* groups, which I previously described the geographical location and archaeological correlates for in Section 3.9.2 A Colonial document attributed to Dr. Gregorio Gonzalez de Cuenca, a Spanish administrator, provides information about Inca presence in Collambay (BNM, M.S. 3035 340r–343v; Rostworowski 1987). The document dates to 1567, within the same decade as the origin myth recorded by the Augustinian priests. Gonzalez de Cuenca worked under Viceroy Francisco Alvarez de Toledo, an effective administrator who centralized the viceroyalty's government and laid the foundation for future administration in the 1560's and 1570's. He initiated Spanish royal dominance in the viceroyalty, instituting the reducción system as well as a number of other reforms to both control and force native peoples to adopt western tradition, and to disempower the *encomenderos*. A critical part of these reforms was

documenting the native population. Gonzalez de Cuenca was responsible for preparing *visitas*, or census reports, for the regions between Lima and Piura.

One document written he lists the *tambos* in the province of Huamachuco under the Inca (BNM M.S. 3035; Rostworowski 1987). For each of the nine *tambos*, it lists the *tambo* name, assumed to be the town that it is located in or near. It then also includes information about the responsible *guaranga* and *parcialidades* that were responsible for the *tambo*, listing the number of individuals assigned to each *tambo* and what pueblo they come from. The six *Guarangas* previously mentioned in Section 3.15.2 are listed. Gonzalez de Cuenca's list only includes one *tambo* for the *chaupiyunga guaranga*, "Collanbay." The document reports that ten "*chaupi yunga indios*" were responsible for maintaining the *tambo*: five indians from Collanbay, three indians from Pugueda, and two indians from San Salvador de Mochal (BNM, M.S. 3035 342v.; Rostworowski 1987, 30). It is unclear where Pugueda was located, perhaps in the Virú Valley *chaupiyunga*. Mochal is located near Poroto and Lomo Shingo in the Upper Moche tributary. The list of *tambos* is not a sequential list of *tambos* between Huamachuco and the coast, but it appears that *tambos* were located along different coastal-highland routes within the Huamachuco region.

Gonzalez de Cuenca's description indicates that under the Inca, no *guaranga mitmaq* populations moved into Collambay. Like J. Topic's (1998) description of the six *guarangas* in the Huamachuco zone, the *guaranga* of *chaupiyunga* is distinct from the four local Huamachuco *guarangas* and two *mitmaq guarangas*. The four *guarangas* made up of local populations, even the two that J. Topic believes the Inca reorganized, all have individual names listed; for example, Andamarca and Llucho. The other

guarangas in Huamachuco Province, *mitimae*, and *chaupiyunga guarangas* are referred to by the ecological zone in which these populations were from, as either *guaranga chaupiyunga*, guaranga de *mitimae serranos* or *guaranga* de *mitimaes yungas*. It is not unique to refer to a group by its native ecological zone; however, it reinforces how the ecological zone was part of group identity and socio-political boundaries.

Gonzalez de Cuenca's list of Inca *tambos* within the province of Huamachuco includes Collambay, reporting that under the Inca it was maintained by the *chaupiyunga* population. This is reasonable, as Collambay was administered by Huamachuco under the Inca. As political boundaries in the Spanish Colonial period generally followed Inca political boundaries, the area remained under the jurisdiction of the *Encomendero* Juan Sandoval. Both the Huamachuco Origin myth, and how *guarangas* are identified, distinguish divisions between occupants from adjacent ecological zones who also spoke different languages. For example, *Yunga* was spoken in Trujillo and Culle was spoken in the Huamachuco region (Silva Santesteban 1986; Torero 1989). It is unknown what language(s) were spoken in the *chaupiyunga* zone throughout prehistory; however, several modern toponyms in the Moche Valley *chaupiyunga* are Culle words.

3.11.2 Toponymns

Culle is an extinct Andean language that was spoken through the early twentieth century but unfortunately, not much of the language was recorded. Researchers such as Adelaar (1990), Torero (1989), and Zevallos (1948) have tied Culle to highland areas in northern and southern Peru and the departments of La Libertad, Ancash, San Marcos in

the department of Cajamarca, the Condebamba Valley, the Marañon River, and the southern part of the province of Bolivar, which borders the Amazon (Lujan 2009, 309).

An eighteenth-century list written by the Bishop of Trujillo, Baltazar Martinez de Compañon, includes Spanish words and these words' translation into eight other languages that were spoken in the Trujillo territory. Most Culle words that were recorded are place names, which may end in "ay," "on," "ot," "en," "al," "pe," "chacap," "an," "te," "uy," and "in," The prefix "kush" or "cush" is associated with Culle as well (Lujan 2009, 311–313). Toponyms of modern towns in the Sinsicap and Cuesta tributaries with Culle names are Rasday, Cascaday, Cumbray, and Simbal. While Simbal is a known Colonial period *reducción*, these other communities' with Culle names suggests they may have been occupied in the Prehispanic period. The presence of Culle place names in the Sinsicap Valley is not surprising, as Huamachuco oversaw the region under the Inca; however, the question remains whether these place names predate the LH period.

Culle speakers may have moved into the Moche drainage *chaupiyunga* prior to the LH and remained there under the Inca. Cuenca's list of *tambo*s refers to occupants of the Moche Valley *chaupiyunga* as *chaupiyungas* rather than *serranos* (BNM, M.S. 3035; Rostworowski 1987). However, if a highland group from the Huamachuco area or elsewhere had moved into Collambay prior to the Inca period, especially if it was during the early LIP period by the early Colonial period that group would have lived in Collambay potentially over five hundred years. It is likely at that point they would

consider themselves *chaupiyungas* and would likely be considered *chaupiyunga*, despite potentially still speaking Culle.[14]

These Colonial documents, myths, and toponyms indicate several characteristics of Collambay's residents and leave other scenarios unanswered. Collambay was part of the Huamachuco Province in the Inca period, and likely home to Inca coca fields and an Inca *tambo*. There are Culle toponyms in the region, suggesting highland influence that could date prior to the Inca period. However, in official Colonial documents, it is clear that *chaupiyunga* zone residents are considered distinct from the local Huamachuco highland population and they are not considered a colony group. The Huamachuco myth and Colonial documents, reinforces this notion, *chaupiyunga* people were considered distinct from highlanders despite potentially speaking the same language. Do Culle toponyms indicate that highlanders lived in the *chaupiyunga* zone? They could, but if so, it would seem that if these highlanders were from Huamachuco, there may not be official record of their residence in the *chaupiyunga*. The archaeological record will provide another line of evidence to understand Collambay interaction with highland groups in Collambay. Other possibilities have been documented in case studies in the *chaupiyunga* zones of other valleys, see Section 4.1.

[14] This is not always the case as social identity may be reinforced living outside of the homeland as Barth (1969) and Goldstein's (2005) works demonstrate.

3.12 Moche Drainage and La Libertad Highlands Environment and Culture History

This overview of the prehistory of the Moche Valley and La Libertad highlands provides an orientation of the environment and history of the Moche Drainage and associated region from 200 BC to the early Colonial period. The Moche Drainage is a geographically compact valley, with multiple ecological niches in close proximity to each other. The prehistory of the region suggests that coastal and highland polities emerged throughout prehistory, each maintaining respective cultural traditions. Interaction between the regions through migration and trade occurred intermittently throughout prehistory, but it is during the LIP and rise of the Chimú Empire that settlement patterns and material culture indicates a heightened interaction and the *chaupiyunga* zone of the Moche tributaries are the principal venue for this interaction (Section 3.8.2 and 3.8.3). The 73 years of Inca rule of Chinchasuyu has been portrayed as indirect, with highland polities empowered by the Inca. While the Inca did not leave an imperial imprint of Cuzco masonry buildings throughout Chinchasuyu and in the Moche Valley and Huamachuco province, the Inca impact was certainly felt. Regional political dynamics shifted as Huamachuco was put in charge of the *chaupiyunga* zone. The Chimú were limited to controlling the Moche Valley. The construction of Chiquitoy Viejo, just north of Chan Chan, as a checkpoint to inspect Moche Valley goods demonstrated that the Inca were keenly aware of regional activities. While the Inca were interested in controlling Chinchasuyu, they permitted the continued use of Chimú ideological canons in material culture, as Chimú press-mold and paddle-stamp wares and some vessel forms continued to be used through the Colonial period. Recent

research has demonstrated that the Inca impact was more heavily felt in north coast life than previously assumed (see Section 4.2.3).

Initial survey in the *chaupiyunga* zone of the Upper Moche Valley and Otuzco/Upper Moche valley suggests a series of fortified sites associated with coastal-highland roadways appears in the LIP. These sites have both Chimú and highland ceramics. Ethnographic, ethnohistoric, and local toponymns support the presence of highland population and influence in Collambay. During the Inca period Collambay maintained an Inca *tambo* and coca fields for an Inca King and his mother were also in the region. Modern day toponymns from the now extinct highland Culle language spoken in Collambay are also present in Collambay and *chaupiyunga* zone suggesting Culle speakers may have founded these communities initially, albeit when in the late Prehispanic period is unclear at this time. Finally, ethnographic research confirms that the *chaupiyunga* zone was a locale for trade from late prehistory until the modern day. This data confirms that the *chaupiyunga* is a frontier zone of interregional interaction.

4 Previous Case Studies

This chapter expands on the theoretical framework and models provided in Chapter 2 and regional background of the Moche Drainage and La Libertad highlands presented in Chapter 3 by describing previous research in the *chaupiyunga* zone and studies of Chimú and Inca imperial expansion. As noted in Chapter 3, there is limited information about *chaupiyunga* residents in the Moche Drainage, therefore I turn to previous studies of the *chaupiyunga* zone on the western slopes and in the *yunga* on the eastern slopes to provide insight into intergroup dynamics and relevant scenarios to consider in the Sinsicap Valley. These previously conducted case studies in the *chaupiyunga* zone were carried out on the central and north coasts of Peru and one case study from the *yunga* of the eastern slopes is also considered.

I also review previous studies of Chimú and Inca expansion and interaction with local groups. While none of these imperial-local case studies occurred in the *chaupiyunga* zone they provide examples of how researchers have interpreted Chimú and Inca interaction with local groups in the past. I draw on previous studies of Chimú interaction with two other north coast polities in the Casma and Jequetepeque valleys. For the Inca I review Inca expansion in the Upper Mantaro Valley in the Central Highlands and in the Yampara region on the edge of the Southeastern frontier of the Inca empire, west of the Bolivian Chaco region. My final case study is a rare scenario that examines settlement patterns in the lower Jequetepeque Valley, where populations became subject to the Chimú and then the Inca. There are few case studies that have

occurred that have examined populations subject to both the Chimú and Inca. The goal by reviewing these studies is to better understand previously documented sociopolitical relationships in the *chaupiyunga* zone as well as the interaction of Chimú and Inca empires with local groups in other parts of the empire. These case studies provide examples of potential scenarios that may have occurred in Collambay.

4.1 Chaupiyunga Zone

The *chaupiyunga* is a dynamic zone and groups from different ecological niches lived in the *chaupiyunga* throughout prehistory (Dillehay 1977). Colonial documents often use terms that refer to peoples from specific ecological niches. Terms such as "*yungas*," "*chaupiyunga*s," and "*quechua*" apply to both people and ecological zones. These terms are not referring to a specific ethnic group, but are used in a general way to distinguish general ethnic differences (Rostworowski 1990, 13; Topic 1998). For example, it is well documented that coastal and highland groups spoke different languages (Heggarty 2008; Rostworowski 1977 and 1999; Torero 1986 and 1989; Quilter et al. 2010; Zevallos 1941, 1946, 1948, 1993a, and 1993b), and had distinctly different subsistence patterns and social organization. As was already highlighted in Section 3.8.1, north coast social organization is distinct from highland social organizations. However, what about *chaupiyunga* groups? What do previous studies of this zone tell us about social traditions and political ties in this zone and with others to understand interregional interaction in Collambay? Colonial documents refer to people living in the *chaupiyunga*, as *yungas* or *chaupiyungas*, but they likely have historical connections to other zones, although they themselves are considered *yunga* by outside

groups. Also, another consideration, not elaborated here, however is that the geography of each valley has a direct impact upon residents' resources, their social organization, and the nature of interaction between non-local groups and *chaupiyunga* residents.

Chapter 1 began with three characteristics of the *chaupiyunga* zone highlighted by Lau (2004, 179):

- Contact zone for coastal and highland peoples (Proulx 1982; Topic and Topic 1983 and 1985).
- An area of intake canals for coastal irrigation systems, hence the *chaupiyunga* has first access to water before the coast due to their geopolitical position (Moseley and Deeds 1982; Shimada 1994).
- The ideal zone for cultivating desirable crops, such as fruits, chili peppers, and coca (Dillehay 1979; Marcus and Silva 1988).

The *chaupiyunga* is thus a zone of interregional interaction. Ethnohistoric and archaeological evidence report that throughout prehistory, especially later in the Precolumbian period, coastal and highland groups lived in this ecological niche in addition to local groups. Occasionally, there was conflict (Rostworowski 1988), but at other periods they appear to live peacefully, contemporaneously (Dillehay 1976 and 1979; Tsai 2012). Colonial documents also suggest that at times coastal or highland groups also held political authority over *chaupiyunga* groups (Rostworowski 1988, 2004). The *chaupiyunga* small circumscribed stretches of warm riverine valley with capabilities of producing coca, a prestige commodity in the Andes, was a contentious space between groups.

Lau's three points are reinforced by ~~i~~investigations of the ethnohistoric and archaeological records in the *chaupiyunga* in the Central Andes. To elaborate on Lau's first point, the *chaupiyunga* is located on the geographic fringe of traditionally conceived limits of coastal and highland Andean polities. The *chaupiyunga* ecological niche is seen as a fluid zone that at times was home to coastal, highland, and local populations contemporaneously (Dillehay 1977; Rostworowski 1988). A producer of coca, a prestige resource (Rostworowski 1988), it is also a dynamic frontier zone between the coast and highlands, through which coast-highland trade routes passed. While several of its characteristics are economically-minded they are also connected to political power. Finally, a frontier zone, especially the *chaupiyunga* could be an excellent buffer zone from which to defend your coastal or highland territory.

4.1.1 Previous Studies in the *Chaupiyunga*

Ethnohistoric and archaeological evidence from previous studies in the *chaupiyunga* on the central coast and north coast, and the *yunga* zone on the eastern slopes of the Andes provides useful information to consider the role of the *chaupiyunga* in the central Andes and in my investigation of interregional relationships in the Sinsicap Valley.

The *chaupiyunga* of the Chillon, Lurin, and Rimac valleys, of the central coast of Peru, have been subject to more investigations than any other *chaupiyunga* zone in the Andes (Dillehay 1976, 1979, and 1977; Feltham 1983; Marcus and Silva 1988; Rostworowski 2004; Szremski 2015). The archaeological record of the Chillon Valley

suggests that between 200 BC and AD 540 the *chaupiyunga* was peacefully occupied by a mixture of local and highland populations, suggesting a reciprocal economic arrangement in which highlanders acquired *chaupiyunga* resources, offering political autonomy to local *chaupiyunga* groups, highland products, and potentially their labor (Dillehay 1976 and 1979). This relationship allowed *chaupiyunga* groups to remain politically autonomous.

In the Colonial period there were frequent court disputes between indigenous groups over the ownership of coca fields (Rostworowski 1988). One of these disputes comes from the middle Chillon Valley. Prior to Inca conquest of the Chillon *chaupiyunga*, the Quivi, the local *chaupiyunga* group to whom the disputed lands originally belonged, became subservient to a coastal *señorio* ruler, the Collique. This *señorio* controlled the lower Chillon Valley. The Quivi allowed the Collique access to Quivi lands and paid tribute to the *Señorio* of Collique.

The Canta, a highland group, occupied the eastern banks of the middle and upper Chillon Valley. Under the Inca, a fourth group was brought into the middle valley region, the Chaclla, highlanders who were a *mitmaq* (resettled people working for the state) colony for the Inca. With the Spanish conquest, the Chaclla abandoned Quivi lands, likely because of threats from the Canta. However, in court in 1558, the Chaclla claimed Quivi lands as their own. The Canta challenged the Chaclla's claim, and eventually the Quivi would as well. The Quivi believed the land that had belonged to them prior to the Inca should remain under their control. After ten years, the Spanish court awarded the lands to the Chaclla, recognizing land rights as they were under the Inca (Rostworowski 1988). This court case highlights four different groups, two of

which are highlanders, one coastal groups, and local *chaupiyunga* group. Prior to the Inca takeover, the *chaupiyunga* zone is a place of multiethnic coexistence, but also one of tension. It is unclear how dynamics would have played out if the Inca had not settled a *mitmaq* group in the Chillon *chaupiyunga*. The lawsuit demonstrates how valued the *chaupiyunga* land was to different Andean groups and control over coca fields was contentious and led to conflict. Finally, the case also demonstrates Spanish strategy of upholding land claims established by the Inca.

Murra (1972) presented the Chillon case study as one of his five case studies in support of his vertical archipelago model. Dillehay argues, however, that other models better fit the evidence of the Chillon *chaupiyunga* than Murra's vertical archipelago model (1976, 1979, and 2013). A number of cooperative and coercive strategies rather explain interregional dynamics. Prior to the arrival of the Chaclla, the relationship depicted between the Quivi and Collique in the historical record suggests a vertical archipelago scenario (Murra 1972) or a scenario of resource exchange and protection agreement between the Quivi and Collique (Dillehay 2013). The Quivi polity who occupied the *chaupiyunga* zone allowed the ruler of the coastal Collique polity access to resources in the *chaupiyunga*, and the Quivi paid tribute to the Collique polity. However, it is unclear if Collique people actually labored in the coca fields.

The historical record indicates the Quivi had been threatened by the Canta and other highland groups, and the Canta were also in conflict with the Collique. These factors suggest that the Quivi would have sought an alliance and protection from the Collique. Water rights must also be considered between the Quivi and Collique. The Quivi controlled middle-valley intakes and could make sure that the Collique fields had

sufficient water. The Collique in return may have offered protection from highland groups (2013, 294). Dillehay also suggests the period was marked by armed conflict, out migration, and strained group relations, among other factors (2013, 294). The archaeological record and Colonial documents in the Chillon provide contrasting depictions of the relationship between coastal, *chaupiyunga*, and highland populations during the LIP prior to Inca invasion.

During AD 1400–1600, the archaeological record suggests several types of dominant-subordinate relationships among coastal, *chaupiyunga*, and highland groups in the Chillon Valley. Many archaeological sites in the *chaupiyunga* have evidence of "highland and coastal coresidency and peaceful relations during this long period" (Dillehay 2013, 294). One site, Santa Rosa de Quive presents a variety of coastal (likely Collique and other groups), *chaupiyunga*, and highland ceramic styles. Dillehay suggests the site may have been "occupied, visited and/or ruled by different coastal and highland groups during this time" (2013, 294). Archaeological data indicate coastal, local, and highland groups lived in the Chillon Valley; however, this does not clearly demonstrate a vertical archipelago scenario—rather, it is likely that several different political and economic strategies were utilized throughout history. Dillehay points out that the archaeological record represents a much longer period of time than the historical record (2013, 295) and, in this case, the archaeological record does not clearly support the historical record. Yet both the historical and archaeological record demonstrate that the *chaupiyunga* is a dynamic zone of contact for different groups.

Only recently have archaeologists on the north coast begun to note the importance of the *chaupiyunga* zone and investigate this region (Billman 1996 and

1999; Cutright and Cervantes 2011; Cutright 2013; Tsai 2012 and forthcoming; J. Topic and T. Topic 1985). Thus far, few archaeological investigations of the *chaupiyunga* have occurred. The Jequetepeque Valley and Moche Valley are two valleys where research in the *chaupiyunga* zone has occurred. As in the Chillon Valley, two recent investigations in the *chaupiyunga* zone on the north coast in the Jequetepeque Valley also demonstrate that the *chaupiyunga* was ethnically heterogeneous and occupied by coastal, highland, and local groups during the LAP. Cutright and Cervantes (2011) have recently begun investigations in the *chaupiyunga* of the Jequetepeque Valley at the site of Ventanillas, which has coastal Sican monumental adobe pyramids. In addition to coastal monumental architecture, the site's ceramic assemblage indicates a multi-ethnic occupation, including highland residents as well as a Chimú occupation (Cutright 2013; Cutright and Cervantes 2011).

Las Varas, another site a few kilometers up-valley from Ventanillas, was a site with a multi-ethnic population occupied from the Sican period through sometime in the LIP (AD 700–1300). Coastal, *chaupiyunga*, and highland cultural traditions are represented in Las Varas' public architecture, mortuary traditions, domestic architecture, and the material assemblage recovered in excavations (Tsai 2012 and forthcoming). Tsai argues that Ventanillas was Las Varas' powerful neighbor and the two likely engaged in peaceful exchange. In fact, further up valley in the Jequetepeque, more sites with coastal pottery and architecture are found (Ravines 1986), suggesting Las Varas and Ventanillas are likely not a unique phenomenon. Tsai argues this indicates that there were permeable boundaries between coastal and *chaupiyunga* groups. Tsai uses a study of ethnicity to model group interaction at Las Varas. He

argues that ritual enabled these ethnic groups from different ecological zones "to mark [social] boundaries, signal information on identity and set the proper protocols of interaction," (forthcoming, 128). He posits that exchange between coast and *chaupiyunga* groups were likely frequent, and while his evidence does not support Murra's vertical archipelago model, he suggests that the Jequetepeque valley's topography, its length and gradual slope led to communities trading and exchanging goods rather than colonizing multiple ecological zones (2012, 114). Tsai's hypothesis is modeled on Brush's (1977, 10–16) Extended Andean zonation model (2012, 114).

Stephen Brush proposes three types of Andean zonation, Extended, Compressed, and the Vertical Archipelago, based on contemporary Andean highland communities' land use and their associated social and subsistence traditions, Compressed and Archipelago (1977). The "Extended" model proposes that in large, long valleys with gradual gradient gain, exchange and specialization of agricultural resources would be the primary mode of interaction, as opposed to highland populations traveling on a daily basis or migrating to different ecological niches to cultivate different resources (compressed and vertical archipelago models). Therefore, the geography of the Jequetepeque reduces competition for land, lending to different ethnic groups occupying *chaupiyunga* cooperatively, maintaining exchange relations with each other and other ecological zones (Brush 1977, 13–14). The scenario currently depicted in the *chaupiyunga* of the Jequetepeque Valley by Tsai, Cutright, and Cervantes' research fits Brush's Extended model, in which availability of land decreases the threat of conflict, and multiethnic communities coexisted peacefully, participating in exchange.

The geography of the landscape in the *chaupiyunga* zone impacted the size of the population that could be supported in the zone which naturally could create greater competition over land and resources. The Moche Valley does not qualify as an "Extended" valley as described by Brush due to its highly compressed, steep gradient. However, Brush's other Andean zonation models may be applicable in the Sinsicap Valley. This is not a principal focus of this project, it is a question that may be addressed with more extensive research in the future.

Catherine Julien's (1998) research on the eastern slopes of the southeastern Andes in the Cochabamba and Cuzco area, is also reviewed as her findings may be informative for understanding *chaupiyunga* groups on the western slopes. Julien studied Inca and pre-Inca coca production, and suggests a similar strategy to Brush's vertical archipelago model (1976) for social organization surrounding coca production. She describes Spanish Colonial administrators' report on the organization and administration of the Inca state's coca plantations in an area where tribute was paid in coca by highland encomiendas during the early Colonial period (1998). During the Inca period, highland provinces had small groups of people known as *camayos* living permanently in the coca-growing lowlands. During harvest times, they were joined by temporary workers from the highland, called *mitayos*, who were from the same region as the *camayo*. *Mitayos* rotated per harvest, providing their required labor tax for the Inca state. The coca was then transported back to the highlands. *Curacas* from the Cuzco region told Spanish administrators this system of maintaining fields in the lower *yungas* had existed prior to the Inca period (1998, 131).

Julien postulates that, therefore, the coca-growing *yunga* zone had a small permanent population, which increased during harvest time, when other group members from the home community arrived for the harvest. The required structural infrastructure for this scenario is minimal, archaeologically speaking. Permanent housing for *camayos*, and structures for drying and housing coca leaves and temporary housing for the *mitayo* group would have been very modest. Roofed structures would have been required due to the rainy weather of the eastern *yungas* (Julien 1998). One document from Pocona, a town at 3100 masl, 125 km of southeast Cochabamba, documents more details about the social organization surrounding coca production. Documents indicate that 50 *camayos* were in charge of the coca fields of Chuquioma and Chamorro. The *camayos* were from the highlands but resided permanently in the *yungas* to maintain coca fields. This was a highly valued job, as you received your own plot of coca in addition to caring for community coca fields. Every harvest 200 *mitayos* from the same province of the *camayos* were sent to help with the harvest. The *camayos* directed the harvest, and drying and packing coca for transport. The *mitayos* who arrived for the harvest included 160 women and 8–10 children to cook for the laborers. (Julien 1998, 131–136).

Botanical evidence of coca in the archaeological record is difficult to discern due to archaeological collection techniques and the fragile nature of the plant; however, Hastorf (1987) has identified three coca[15] specimens in storage bins in elite status contexts during the LIP and LH-Colonial contexts in the Upper Mantaro Valley, 50 km

[15] Hastorf identified "ceja de montana," variety of coca, indicating the coca is from the eastern slopes of the Andes (1987).

from the ecological niche where coca can be grown. This is the first documentation of highland groups having direct access to coca, and could support Julien's model for coca access.[16] I highlight this case study as this is one plausible scenario of the tributary province model potentially directed by the Inca, and it could be a plausible strategy for local La Libertad highland groups to access *chaupiyunga* resources.

Julien's research in Cochabamba and Cuzco regions on Inca coca field management suggests that Brush's vertical archipelago model may be applicable in those case studies. The Chillon Valley, like the Moche Valley is significantly smaller and more compact compared to the Jequetepeque Valley. The *chaupiyunga* case studies highlight that a smaller *chaupiyunga* zone with less arable land may lead to more conflict between groups than a larger valley with a less steep gradient, where more land lends itself to less competition over resources. It is likely La Libertad highland groups would have been interested in accessing agricultural resources, like coca in the Collambay *chaupiyunga*.

These case studies from the *chaupiyunga* of the Jequetepeque and Chillon Valleys indicate that the *chaupiyunga* was a contact zone, with permeable boundaries that included coastal, *chaupiyunga*, and highland groups, that incurred conflict over land, but also potentially co-existed and that the archaeological record should be considered as well as the topography of the zone when modeling interregional dynamics.

---

[16] Studies have documented coca use based on chemical analysis of hair (Brown 2013; Cartmell et al 1991) and dental methods (Indriati 1998).

4.2 Chimú and Inca Empires - Local Interaction

Following the review of the diverse and complicated dynamics identified in the *chaupiyunga* zone I briefly discuss previous case studies that have examined imperial-local relationships with the Chimú, Inca and local groups. These case studies come from ecological zones outside of the *chaupiyunga* and include one case study from the Jequetepeque Valley that was subject to both the Chimú and Inca empires.

The case studies include different types of sites (regional capitals, local centers, and rural villages) to illustrate different imperial strategies and the response of the local community. Unfortunately, there have been limited household studies outside of Chimú centers (e.g., Billman et al. in press; Cutright 2009, 2013, and 2015; Moore 1988 and 1991), while more studies of Inca-imperial interaction have occurred recently, household-level studies of local communities are rare (Burger et al. 2007; Malpass and Alconini 2010; Shimada 2015). This has provided a limited understanding of imperial-local interaction; the diverse processes, changes, and continuities in activities within households that are a result of imperial interests in the region; and the interests and actions of the local community to imperial powers. Studies of households enable documentation of status symbols, diet, architectural styles, and household labor (D'Altroy and Hastorf 2001) to detect changes that provide insight into relations and responses of both parties. In order to provide the best coverage of comparative data, the majority of case studies described in the next sections are not located in frontier zones or the *chaupiyunga*. These examples highlight the varied interactions and responses to imperial-local interaction.

4.2.1 Chimú Imperialism and Local Interaction in the Casma Polity

An example of Chimú interaction with local groups comes from its southern expansion overtaking the Casma polity. Limited information is known about the Casma Valley (see Section 3.6.3). Evidence from the site of Cerro La Cruz in the Chao valley on the northern margin of the Casma polity indicates local elites adopted Chimú stylistic elements into their pottery prior to the site being burned and ritually closed (Vogel 2012a). By mid-fourteenth century, the Chimú had overtaken the Casma polity, and conquest impacted settlement patterns. The local Casma capital, El Purgatorio, in the Casma Valley, was abandoned, and Manchan, a new regional center, was founded (Vogel 2012b). Monumental architecture at Manchan includes multiple buildings that are Casma style and Chimú style, leading to the interpretations that the Chimú and Casma had an alliance that co-ruled the region (Mackey 2009). Excavations at Manchan in lower class households indicated that these households were self-sufficient (Moore 1985).

Available research at this time suggests Chimú interests were in agricultural production in the region, perhaps to supplement production in the Chimú heartland. Chimú settlements were established in the lower Casma Valley to focus on agricultural production (Mackey and Klymyshyn 1990). Moore's study of Manchan's lower class found that households were engaged in multiple economic activities and were largely self-sufficient. Labor and production was diverted from households to support elites and other groups (Moore 1985 and 1991). Following an ENSO event in the mid-fourteenth century, a Chimú agricultural work camp was established at Quebrada Santa Cristina in

the Casma Valley, however it was abandoned likely less than 10 years after construction. A planned community, the houses were built of cane and had communal kitchens. The limited range of economic activities in households and site location adjacent to constructed raised fields suggests that occupants were dedicated full-time to agricultural production (Moore 1988 and 1991).

Therefore, this overview of Chimú-Casma interaction at Manchan and in rural communities, Cerro La Cruz and Quebrada Sta. Cristina, suggests that the Chimú interest in the Casma region was primarily for agricultural production, although despite shifts in settlement patterns little change was detected. While others have suggested the Chimú were interested in controlling trade routes between the coast and highlands in the Casma region (Mackey 2009), there is no evidence to support that claim at this time. It appears that Casma leaders collaborated with the Chimú, establishing the new regional center of Manchan together. Architecture at Manchan has been interpreted as distinctly Casma and Chimú, indicating co-rulership. Perhaps Chimú interests were focused on taking advantage of agricultural production in the region, but this did not directly impact lower class residents. This case study suggests that Chimú-local interaction was detected through multiple lines of evidence, architecture, settlement patterns, however, it remains unclear if local residents were co-opted into an alliance relationship. Another case study that includes Chimú-local interaction is reviewed in Section 4.2.3.

4.2.2 Inca-Local Interaction

Different perspectives and approaches to Inca studies present varied depictions of the Inca state's expansion and administration (Burger et al. 2007; D'Altroy 1992; Dillehay 1977; Morris 1972; Morris and Thompson 1985; Murra 1980 [1955]; Zuidema 1995 [1964]). These studies do document variation in Inca interaction with local groups in different provinces. Recent archaeological studies indicate that the archaeological record is at odds with colonial Inca narratives in the ethnohistoric literature (Arkush 2011; Bauer et al. 2010; Covey 2008) and that there is a need for more household studies of Inca communities in the Inca heartland and provinces to understand Inca-local interaction. Covey (2015) calls for new studies of Inca period settlements and household archaeology in order to expand what is currently a limited knowledgebase. I highlight two studies of Inca-imperial interaction in the provinces with local communities, in the Central Highlands in the Upper Mantaro Valley (Earle et al. 1987; Costin and Earle 1989; D'Altroy and Hastrof 2001) and in the Yampara region on the edge of the Southeastern frontier of the Inca empire, just west of the Bolivian Chaco region (Alconini 2004, 2008, and 2010).

In the Upper Mantaro Valley, located near the modern town of Jauja (3,400–4,000 masl) excavations at six sites document the impact of incorporation of the local Wanka into the Inca Empire (Earle et al 1987; D'Altroy and Hastorf 2001). Prior to incorporation into the Inca Empire, the Wanka II period, the region is characterized as several large chiefdoms with very hierarchical settlement patterns. After incorporation,

Wanka III, the Inca took over control of local production from local elites, affecting both the local economy and ideology.

The Inca moved the population from their original sites at higher, defensible locations down to smaller sites at lower elevations, located close to agricultural land. Settlement patterns in the Inca period still have a settlement hierarchy, although settlements are smaller. Domestic production indicates intensified production of agricultural resources (Costin 2015; Costin and Earle 1989). Subsistence patterns comparing elite and commoner access to preferred foods indicate that, prior to the Inca takeover, elites had significantly greater access to preferred foods. Under the Inca, elites and non-elites had similar access to preferred foods. Elites lost control of distribution of highly valued utilitarian craft goods. Local and household storage among elites shrunk drastically, becoming equal to commoner storage, demonstrating that elites had lost control of local economic production. Ideological control was lost as Wanka elites no longer held feasts; household assemblages have significantly fewer serving vessels and the influx of Inca state symbols in material culture displaced local ideology (Costin and Earle 1989). Due to the drastic shift in status, local elites appeared to have suffered through this transition more so than commoners, whose daily lives remained unchanged.

In contrast to the archaeological evidence in the Upper Mantaro Valley, which suggests the Inca significantly restructured Wanka economy and social structure, a study of the Yampara Territory on the Southeast Inca Periphery in Bolivia suggests local elites retained their political authority and the Inca had little to no impact on the local economy (Alconini 2008 and 2010). Inca attempts at expansion further east of the

Yampara Territory into the Bolivian chaco zone, a hot and arid lowland region, was rebuked by local Chiriguano-Guaraní groups (Alconini 2008; Garcilazo de la Vega 1960). In the Yampara region, the Inca established provincial centers, Oroconata and Inkarry Moqo, both built with high quality Inca masonry (Alconini 2008 and 2010).

Despite the significant investment in constructing the buildings with Inca masonry, Yampara Territory provincial center administrators did not appear to affect local socioeconomic processes. Oroconata does not appear to have a support population. It had a low storage capacity, and agricultural terraces are absent in the region, indicating the provincial center was not focused around agricultural extraction and export (Alconini 2010). An absence of evidence of craft production and other activities indicates that the local Inca center was "disembedded" from the empire (Alconini 2008). Alconini suggests that Oroconata may have gained importance as a trade gateway, and the Inca architecture was a symbol of imperial power (2010).

Minimal Inca material culture was recovered in elite households in the region. The local Yampara economy was dominated by the production of lithic tools, which has been documented at the household and supra-household level (Alconini 2010). Lithic manufacture by communities in the Yampara region enabled a level of autonomy and independence, as well as access to exchange networks in the region. Local elites sponsored this production, securing their participation in exchange networks and enhancing their own status (2008 and 2010). It is unclear how Inca facilities factored into this exchange, but there is no evidence at this time that Inca provincial centers affected the local Yampara political economy. Archaeological evidence appears to corroborate ethnohistoric accounts that suggest relations were diplomatic, and Yampara

elites likely benefitted from this additional opportunity to legitimize their power with the Inca presence (Alconini 2010, 106).

These studies from the highlands indicate that the Inca used varied strategies in different regions based on local sociopolitical conditions and their interests. Their principal interest in the Wanka was for the intensification and control of agricultural production in the region, undermining local elites. While they did not invest in Inca architecture in the region, they transformed the sociopolitical and cultural environment of Wanka elites and non-elites. By comparison, Inca investment in the Yampara region, constructing Inca architecture, appears to be more symbolic than functional, establishing a symbol of Inca ideology on the southeastern frontier to emphasize territorial boundaries. The lack of evidence of Inca influence in the region indicates that the Inca's expansion into Yampara is symbolic and political, rather than driven by economic interests. These two case studies demonstrate that the presence of Inca architecture may not indicate direct rule, and the lack of evidence impacting local economic processes may indicate indirect rule. In fact, Inca rule may result in major socioeconomic shifts albeit without direct evidence of the Inca presence. These studies demonstrate the importance of understanding a region's local sociopolitical history and dynamics prior to interaction with imperial powers to be able to recognize changes in dynamics.

4.2.3 Inca and Chimú Empires in the Jequetepeque Valley

Several studies in the Jequetepeque Valley provide insight into both Chimú and Inca tactics. The Jequetepeque is one of the largest river valleys on the north coast in terms of arable land and river discharge. The Chimú controlled the Jequetepeque Valley during AD 1320–1470 and the Inca took over in 1470, remaining in power until the Spanish arrived in 1532. This is one of the few places in the Central Andes that have undergone enough research to begin to be able to directly compare how the two empires interacted with the same local groups. As a result, the case studies from the lower Jequetepeque Valley offer the best comparisons to Collambay of how a local population interacted with both groups. Additionally, as a north coast valley, Jequetepeque Valley's residents became subject to two successive empires. Their initial interaction with the Chimú Empire affected how the Inca interacted with the local population as well as the local populations' response to the Inca. While it is unclear if the Chimú Empire over took Collambay, Collambay interacted with the Chimú and became Inca subjects; therefore, findings from Jequetepeque case studies are useful for modeling Collambay-imperial interaction.

During the LIP, communities in the Jequetepeque Valley are associated with the Lambayeque polity, a tradition that emerged out of the Lambayeque Valley, north of the Jequetepeque Valley (Heyerdahl et al. 1995; Shimada 1995). The sites in which I highlight imperial-local interaction include Farfan, a regional capital under the Chimú and Inca (Mackey 2003, 2006, 2009, and 2010); Pedregal, a rural Lambayeque village incorporated into the Chimú Empire (Cutright 2009 and 2015); Cabur, a local Lord's

palace occupied during both the Chimú and Inca empires (Sapp 2002); and, finally, multiple Inca sites, including an administrative center and rural sites in the Chaman drainage, Research Area 1 and 2, which is considered part of the Jequetepeque Valley a few km from Farfan (Kremkau 2010 and 2011), Figure 4.1.

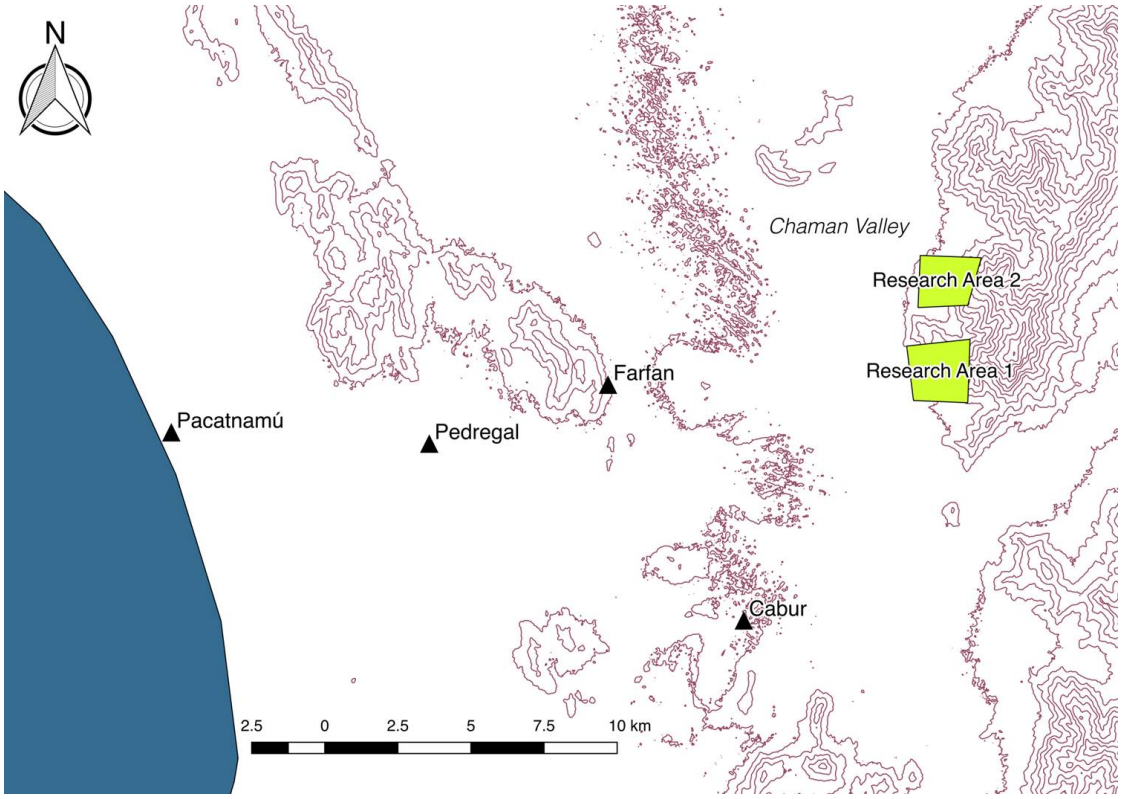


Figure 4.1: Sites mentioned in text in the Jequetepeque Valley

When the Chimú took over the Jequetepeque Valley, Pacatnamu, a site on the lower south side of the valley, was the valley religious center. There appears to have been a two-ranked settlement pattern of at least two levels preceding Chimú control at Pacatnamu (Mackey 2009, 330). The Chimú moved the capital across the valley to Farfan, a Lambayeque period site. At Farfan, the Chimú destroyed the four existing Lambayeque structures, or razed them and covered them with fill, building three new buildings on top of them (Mackey and Jáuregui 2004). At Farfan, the Chimú built three

compounds, which shared architectural features of Chan Chan's palaces and included plazas, *audiencias*, storerooms, and an above-ground burial platform. The number of *audiencias* and storerooms at Farfan was much smaller than at Chan Chan; however, they appear sufficient to support local administrators and host state sponsored rituals and feasts (Mackey 2009, 330). Recovered cultural material and the construction of monumental architecture in Chimú style suggest that the Chimú displaced Lambayeque leaders at the top of the political hierarchy. The construction of Chimú style architecture and lack of adoption of local traditions established a direct separation of the Chimú from local leaders.

The Inca elected to retain Farfan as a regional center, and their investment at Farfan included adding several new buildings and remodeling Chimú buildings. They constructed typical Inca state administrative structures found at provincial centers, including an ushnu, an aqlla for chosen women, and residential architecture, which has been referred to as "Conciliatory," as it was neither Chimú nor Inca style in design and was built as an effort to appease local elites (Hayashida and Guzman 2015, 288, Mackey 2006 and 2010). The discovery of a Yupana, an Inca accounting device, at Farfan is evidence that the provincial center kept track of tribute goods (Mackey 2003; Urton 2015; Urton and Chu 2015). While new LH pottery features appear, pottery at the site is predominantly Chimú-style pottery. Chimú forms are most frequently found followed by provincial Inca pottery, including aryballoids and plates with polychrome geometric designs. While the Inca distanced themselves from Chimú rule through construction and remodeling of Farfan architecture, Chimú ceramic forms continued to

be produced and used (see Hayashida and Guzman 2015 and Hayashida 1999 for further discussion).

Storage capacity at Farfan doubled under Inca rule. Storage structures contained tools for weaving and making ceramics (such as large tinajas—open-mouthed vessels for chicha, or maize beer, a common alcoholic beverage consumed throughout the Andes). While the Chimú Empire established their regional center at Farfan, effectively erasing local architecture and building Chimú style architecture, it is under the Inca that the site expands. Under the Inca, Chimú administrators were removed and the Inca installed several of their administrative canons, the ushnu and aqlla; however, they did not build with classic Cuzco masonry styles. It is clear they transformed the site, extinguished previous Chimú ideology (with the exception of continued use of Chimú ceramic styles), and established their own imperial presence. Excavations at Farfan suggest that local leaders who lost their position during Chimú rule, became Inca administrators. A Chimú patio was modified to become an Inca cemetery, which had a higher percentage of aryballoid jars and provincial Inca ceramics than any other burial facilities, suggesting it was a cemetery for state administrators, it appears there is a new level of administrator under the Inca at Farfan than there was under the Chimú (Mackey 2010, 246).

To compare Mackey's documentation of Chimú imperial strategies at Farfan, Pedregal was a 2.9 ha, rural LIP village in the Jequetepeque Valley that was occupied by Lambayeque populations prior to and during Chimú rule of the Jequetepeque Valley (Cutright 2009 and 2015). Chimú rule did impact Pedregal's residents; however, this is not directly reflected in community and residential architecture, but rather in

subsistence patterns and household activities. This study highlights the necessity of the excavation of households and study of faunal and botanical materials to detect changes in behavior.

At Pedregal, local public areas maintained local architectural traditions through the LIP. Excavations in households indicate that production of agricultural cotton and corn intensified under the Chimú, likely for export and tribute payments. Within households, over time, no new products appear, and the range of foodstuffs remains diverse. However, domesticated species made up a significantly greater proportion of later assemblages than in the earlier LIP assemblage. Over time, wild species are consumed less and cultivated staples are found more frequently, perhaps as a result of demand on Pedregal residents for producing and processing maize and cotton (Cutright 2009 and 2015). The demand placed upon households, while significant, did not require reorganization of households (Cutright 2015). Therefore, the Pedregal case study indicates that the Pedregal community intensified production due to Chimú demands, which also resulted in subsistence patterns relying on more domesticated products. However, the population was not reorganized, no invasive imperial architecture was constructed, and life in Pedregal continued very much as it had prior to Chimú expansion.

Cabur, in the Jequetepeque Valley, was the palace of a local lord. Excavations were limited to monumental architecture. Incorporation of Cabur into the Chimú and Inca empires did not greatly affect residents (Sapp 2002). Some remodeling of architecture and new iconography was detected in a building where religious ceremonies occurred (Sapp 2002). However, Sapp's study did not extend beyond

investigating the monumental architecture at Cabur, and therefore the impact on the local economy and its modes of production is unknown. Sapp (2002) argues that religious traditions and political power of local lords remained intact. His findings indicate little changed at Cabur; however, as Cutright's study of Pedregal demonstrates, examination of household practices over time provides a clearer picture of local groups' experiences. Evidence of intensification of production at Pedregal is absent from the architectural record, yet detected through evidence of subsistence patterns and household activities. Information from households at Cabur may present a different picture of local-Chimú relations at the site than the current understanding.

Excavations from Cabur (Sapp 2002) and Pedregal (Cutright 2009 and 2015), suggest that reorganization at lower levels of the political hierarchy was minimal under the Chimú as well as the Inca, and that Chimú and Inca impact was felt unevenly throughout the valley, focused on upper tiers of the social hierarchy. Cabur is a lower tier elite site, above the rural village of Pedregal but two tiers below Farfan.

However, an additional study in the Chaman Valley, which is a small, secondary valley located just north of the Jequetepeque Valley, provides another perspective of Inca-local interaction in the Jequetepeque Valley (Kremkau 2010). The Chaman and Jequetepeque valleys are connected by the large Talambo Canal, which was constructed during the EIP, and Farfan is at the mouth of the Chaman River. Besides the valley center of Farfan, the only Inca period sites excavated thus far in the Jequetepeque are single occupations, suggesting that outside of the regional capital, the Inca built new sites as part of their imperial strategy in the Jequetepeque Valley. Kremkau conducted

surface collection and test excavations at 16 of these Inca period sites located in Research Area 1 and Research Area 2 of the Chaman Valley (Figure 2.1).

Kremkau (2010) notes several different characteristics of LH sites in the Chaman Valley based on site location, architecture, and material culture recovered in surface collection and test excavations. At least one site was a clear administrative center; one tier below Farfan, it was established to monitor local agricultural production. Other sites were in positions to regulate water access along the Talambo canal, adjacent to farmland, and located at valley necks to regulate access and trade. Finally, several sites are interpreted as ceremonial in nature and connected to sacred landscape features, located below dry waterfalls. Natural landscape features are sacred elements to the Inca and other Andean polities. However, within north coast iconography and traditions, marine iconography is prevalent, highlighting that water or waterfalls is unusual on the north coast, and Kremkau argues that waterfalls are connected to the Inca ideology of sacred features on the landscape, or wak'as (2010, 311-312). Sacred water features are common in the highlands, and can be springs or rivers, and many water features are connected to the Inca ceque system of ritual pathways beginning in Cuzco and extending throughout the empire (Bauer 1998; Urton 1978). "This transformative power of the water was important to the Incas, linking the present material world to the natural world of ancestors and deities" as sacred (Kremkau 2010, 311–312). Other sacred features associated with water include springs, rivers, and rain, and these natural elements "transformed through human agency" for agriculture (311).

Kremkau argues that the Inca initiated this investment in the Chaman Valley, installing local lords in the region who constructed the sites. The Inca are known to have occupied empty land throughout the Andes (Burger et al 2007; Hyslop 1984 and 1990; Morris 1970; Morris and Covey 2006). This occupation of empty space enabled "remaking conquered region fit to their imperial mold" (Kremkau 2010, 306). Overall, there is little evidence in the Chaman Valley of Inca style—the organization of sites are typical north coast architectural styles, as was the material culture recovered. The Inca collaborated with local lords to build and occupy these sites. Under the Chimú, coastal foreigners were these lords' central authority. The Inca, however, established their own imperial landscape in the Jequetepeque, which enabled local lords to control their own lands, giving them more control and self-rule than they had under the Chimú (Kremkau 2010, 314). However, characteristics of the sites, such as ones located close to dry waterfalls served as a reminder that the Inca Empire was in control.

It is clear that the Chimú and Inca interacted with the Jequetepeque Valley's population differently. Kremkau demonstrates that the Inca transformed the local valley landscape with the construction of new Inca rural settlements and ritual sites. These small sites are peripheral to a valley center like Farfan, but would have affected local populations living in the region without disrupting local sociopolitical boundaries. The local lords would be obligated to rotate turns working the Inca fields, but this appears to be a minimal investment. While Kremkau makes a convincing case that the Inca affected local groups by establishing their own Inca landscape in the Jequetepeque Valley, it is unclear how much the Chimú interacted with locals prior to the Inca. While intensification of agricultural production is documented at Pedregal, it is unknown if

Pedregal worked state fields for the Chimú as well. Were Cabur's occupants obligated to work state fields?

The differences in Chimú and Inca corporate architecture inform how the empires interacted with subjects (Moore 1992). Chimú architecture is characterized as architecture of separation with large walls, and controlled access separated elites from the lower classes. Large plazas for ceremonies are located in elite compounds, limiting participation in these events to select groups and individuals. In contrast, the Inca incorporated large public plazas into many provincial capitals (Bauer and Stanish 2001). Plazas were divided into sectors to differentiate class and status, but different classes did come together occasionally. Late Horizon administrative centers in the Jequetepeque and throughout the north coast generally (e.g. Chiquitoy Viejo see section 3.15.1) are a mixture of the two forms (Kremau 2010, 297).

In comparison to the LIP, the LH occupation of Farfan is much larger and contains a greater diversity of administrative staff, overseeing a variety of activities that included craft production, chicha brewing and food preparation, and large kitchens to feed the large groups of people (Kremkau 2010). The Inca held feasts for subject groups, but there is no evidence for this under the Chimú at Farfan, suggesting they did not incorporate local groups into the empire beyond requiring tribute payments, and did not incorporate local elites into upper levels of administration. Excavations at Cabur also support this idea, as little change was detected between the Lambayeque and Chimú periods (Sapp 2002).

Excavations at Pedregal indicate the Chimú did intensify the local economy. While Chimú ceramics were adapted beyond this, there is no material evidence to

indicate the Chimú had a significant impact on local traditions or ideology. Life at Pedregal continued relatively unaffected, suggesting the Chimú did not alter lower level communities beyond requiring tribute payment.

This is in stark contrast to what Kremkau has documented in the Chaman Valley under the Inca, where he reports that an Inca administrative center sits strategically placed for monitoring trade, access, and agricultural production for Inca fields, supported by local groups who alternate turns carrying out the work (2010, 298).

Kremkau's findings indicate the Inca did directly affect local groups by establishing new sites; however, they did so in a way that limited disturbance of preexisting *señorios* and social organization. Kremkau's study is significant, as traditionally on the north coast it has been assumed the Inca ruled indirectly, as there was limited evidence of Inca architecture and material culture. While we cannot expect to find similar settlement patterns like Kremkau in every region the Inca overtook, as also demonstrated by studies in the Upper Mantaro Valley and Yampara region, his study indicates how we can begin to identify Inca impact without traditional Inca imperial correlates. In Collambay, settlement patterns over time will be examined as well as changes in architectural style, local production levels, and material culture. What these case studies of Chimú and Inca imperial interaction with local groups in the Jequetepeque Valley demonstrate is the importance in considering multiple lines of evidence and also the nuances that a *longue durée* perspective provide.

4.3 Imperial and Local Dynamics in the Andes

This chapter has provided an introduction into the dynamics of imperial strategies, imperial interaction with local groups, and frontier zones, and argues that to examine the dynamics of imperial-local interaction, a bottom-up perspective is best utilized. A bottom-up approach provides a more encompassing perspective of local dynamics to inform shifts in local communities tied to imperial interaction, regardless of whether they are direct or indirect, in resistance to or acceptance of imperial power interests. This bottom-up perspective was essential in understanding local dynamics in Tsai's study in the Jequetepeque Valley (2012). Likewise, the conflicting information from the archaeological data and Colonial documents in the Chillon Valley case study demonstrates that multiple lines of evidence demonstrate the complicated dynamics of the past.

In my overview of case studies examining Chimú and Inca empires that posit that the Chimú and Inca had varied interests in different regions and implemented different strategies, some more direct and territorial than others, based on preexisting sociopolitical conditions and imperial interests. The evidence presented here suggests that both empires had varying impacts upon local groups. It is not clear in most of these cases what local groups' responses were to the Chimú and Inca. Evidence of resistance to either the Chimú or Inca in these case studies is not particularly clear either. It is likely in the Yampara case study, and perhaps at Manchan, that local elites took advantage of the political opportunity to improve their own status and wealth through these relationships.

Evidence from Quebrada Sta. Cristina indicates that the Chimú had an available labor force, and were interested in exploiting staple resources; Pedregal's evidence also suggests this. Did the need for staple resources drive Chimú expansion? It appears to be one reason for expansion. It is also clear in the Inca case studies in the Upper Mantaro Valley and the Chaman Valley that the primary interest was in staple resources as well. The Inca's direct intervention in the Upper Mantaro Valley, compared to building new sites in a previously unused area in the Chaman Valley, is likely tied to preexisting political conditions and Inca strategy as to how best to obtain the products they needed. In the Yampara case study, Inca presence appears more symbolic than anything else, and this is likely connected to Yampara's location on the borderland and the violent history between the Inca and groups in the Chaco region.

The evidence of imperial-local interaction demonstrates that neither the Chimú nor the Inca used the same formula when interacting with different groups, but rather tactics depended on preexisting sociopolitical conditions in the region and specific Inca interests, and it is likely that local elites were significant participants in this negotiation. In the case of the Upper Mantaro Valley, the Inca disempowered local elites, either perhaps because they saw them as a threat, or because this was a natural component of the tribute requirements they imposed upon the community. In the Chaman Valley, local elites were put back into power after having been subject to the Chimú, and this may have been one of the reasons the Inca did not appear to reorganize local lords' territories. One motivation of expansion that is not demonstrated in any of the case studies was to protect borderlands or frontiers from enemy attacks. The Aztecs' creation of buffer states to protect their heartland from direct threats (Smith and Berdan 1996)

could also be considered as a motivator for Inca and Chimú expansion (See Sections 2.4.2 and 2.4.3. Other factors that have not been addressed by these case studies, but are relevant to understanding imperial-local interaction and tactics, include proximity to the imperial capital. Finally, in both the *chaupiyunga* case studies, and Chimú and Inca imperial case studies a better understanding of local processes and imperial-local interaction is possible through consideration of local dynamics over time, or a *longue durée* perspective.

5 Fieldwork Program Overview and Methods

Chapters Five through Eleven describe the research program in the Collambay region the data collected and analyzed, and offers preliminary findings of this data. Chapter Five includes an overview of the field and laboratory methods applied throughout fieldwork and analysis. Chapter Six presents the settlement pattern data documented in the Sinsicap Valley, Chapter Seven describes Cerro Huancha MV 900's site sectors and surface collection. Chapter Eight and Nine describes Cerro Huancha MV 900 and Cerro Ramon MV 1000's excavations and the occupational history documented. Chapter Ten delves into the ceramic assemblage recovered in excavations at both sites. Chapter Eleven describes the findings of other artifact classes, bone, shell, etc. recovered in excavations. Chapter Twelve presents this study's interpretations and conclusions. This chapter provides overviews of the methods used in pedestrian survey and excavations, and analysis. I also discuss my excavation strategies and challenges, provide overviews of the mapping of Cerro Huancha MV 900, surface collection at Cerro Huancha MV 900, ceramic typology and analysis as well as the methods used in analysis of other artifact classes.

5.1 Pedestrian Survey in the Sinsicap Valley and Methods

Since 2009 I have directed the Sinsicap Valley Archaeological Project a part of the Moche Origins Project/Proyecto Arqueologíco Cerro Oreja, carrying out reconnaissance and initial archaeological excavations within the territory of the modern

Comunidad Campesina de Emilia Gonzalez Obregoso de Collambay in the Sinsicap Valley. Continuing up valley from where Billman's (1996) systematic survey ended, in the lower Sinsicap Valley the MOP/PACO, carried out pedestrian survey extending into the Collambay area in 2005 and 2006. I continued this pedestrian survey in 2009 and 2010, covering about 80% of the Collambay basin area.

Following Billman's methodology (1996) we did not survey the valley bottom as all areas in the survey range are dedicated to agricultural production, with the exception of the dry river bed[17] located adjacent to the Collambay area. In the systematic survey zone topography was varied, elevations ranged from 400 - 600 masl on the valley floor to the maximum elevation of 1,831 masl at Cerro Ramon. Thirty sites were recorded. Site description forms were completed documenting visible architecture and artifacts encountered on the surface. Photos were taken and diagnostic sherds, if any were found, were collected to help determine the time period of occupation. In 2005 and 2006 collection units recovered diagnostic sherds, analysis of these ceramics has not been completed. Sites surveyed in 2009 and 2010 had so few diagnostic ceramics that all were collected.

Systematic survey further up valley was not continued due to time constraints; however, the zone was surveyed informally in 2014 as part of a community project I directed through MOCHE Inc. This informal survey[18] included hiking the territorial limits of the community of Collambay with community leaders and MOCHE Inc project

---

[17] The confluence of two narrow valleys occurs at this dry, flat river bed. One tributary continues towards the highland community of Parrapos in the the Chicama Valley, the other runs parallel to the Sinsicap Valley, ending at the town of Narí.

[18] I refer to this as informal because it was not systematic pedestrian survey.

directors, Patrick Mullins, Guy Duke, and MOCHE Inc volunteers. We recorded territorial boundaries to help Collambay leaders begin the process to apply for a formal land title for the community property[19]. During this survey another eight sites in the upper Sinsicap region were noted, although little time was spent surveying the sites. Notes and GPS points were taken recording the site location and a brief description of the sites. Photos of diagnostic sherds and sites were taken. Figure 5.1 shows the limit of the systematic and informal surveys.

This research has recorded a total of 42 sites in the Collambay region of the Sinsicap Valley through pedestrian and informal survey. Sites were counted by location, if a site had diagnostic ceramics from multiple time periods it was still counted as one (Appendix C). In addition, MV 336, a site that was recorded by Billman in 1990 (Billman pers comm July 2015). Surface ceramics identified during surface collection suggest these sites were occupied between 200 BC and the Colonial period. Some sites appear to have a single occupation, others were occupied during multiple periods, and some sites did not have identifiable ceramics on the surface to assign a time period of occupation.

Site numbers correspond with who recorded the site. Briceño and Billman began numbering sites in the Sinsicap Valley with number nine hundred, separating newly recorded sites in the Moche Valley tributaries from the sites Billman recorded in his dissertation field work in 1990-91. In 2006 Jochem and Fariss (MOP/PACO project members) assigned the site of Cerro Ramon MV 1000 (Jochem 2007). Sites that I

---

[19] This research was sponsored by a 2013 Wenner Gren Foundation grant received by Rudi Colloredo-Mansfeld and Diego Quiroga "ICRG Program, Territories, Stewardship, and Place-Based Economies in Andean Communities: Building Participatory Research Capacity"

subsequently have recorded I assigned in the 1000s[20]. See Chapter Six for further discussion of settlement patterns.

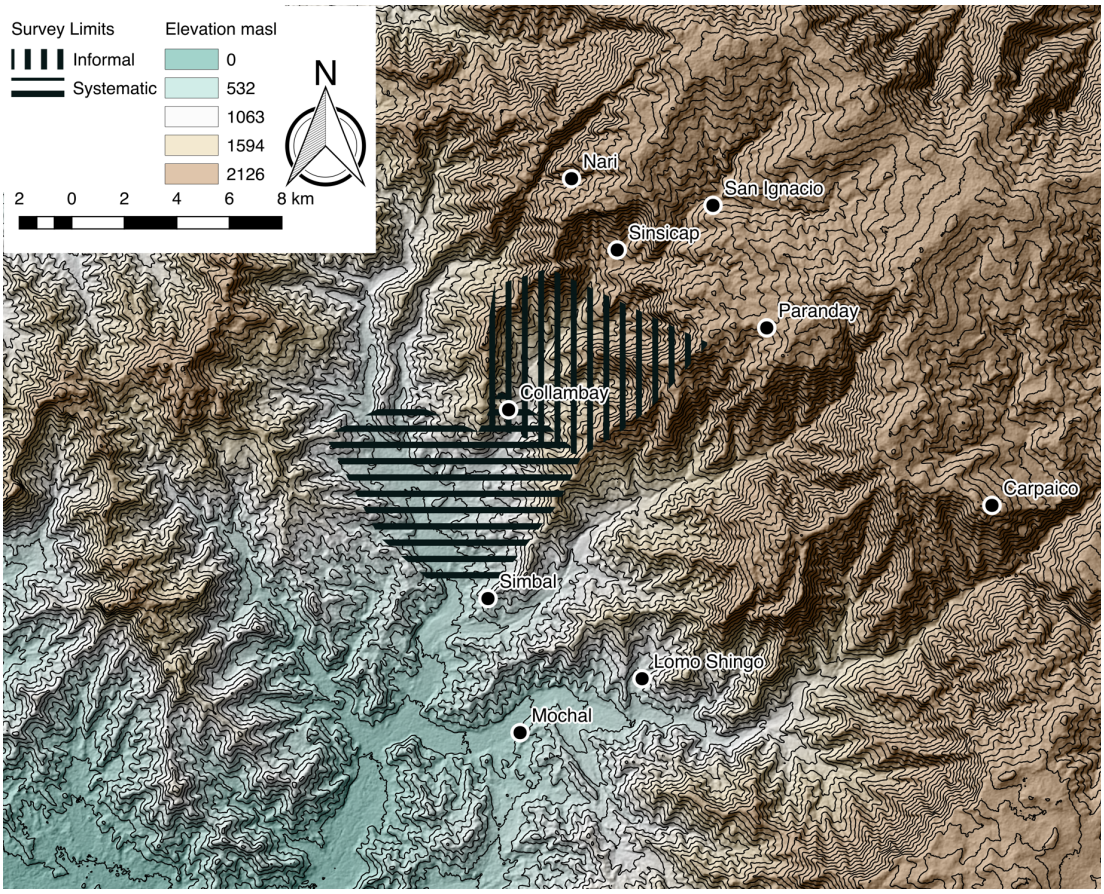


Figure 5.1: Sinsicap Valley Survey Area (with sites mentioned in text in Chapter 6)

5.2 Site Selection for Excavation

Cerro Huancha MV 900 and Cerro Ramon MV 1000 were selected for excavations based on information gathered through reconnaissance in the Sinsicap Valley. The presence of Chimú-style ceramics on the surface of both sites suggested they were occupied during the LIP and potentially during the LH, however the sites have contrasting features in both size and geographic location in the valley. Cerro

[20] During survey of the Sinsicap Valley the Cuesta Valley has been surveyed. Site number 1001 and 1002 are in the Cuesta Valley, see Briceño and Billman 2009.

Huancha MV 900 is 10 HA and located on a low hill at 1,000 masl, adjacent to the Sinsicap river and valley floor. Cerro Ramon MV 1000 is 1.5 HA and is located on the summit of a mountain at 1,831 masl. Excavations were carried out at both sites to document each site's occupation, daily practices, and economy over time. Comparing the culture history recovered at each site provides a more encompassing perspective of local dynamics in the Sinsicap valley during the LIP and LH. It also provides information about relationships with outside groups, such as the Chimú and Inca. Therefore the rationale behind conducting excavations at both sites was to provide a more complete understanding of Collambay's interregional and intraregional dynamics during the LIP and LH.

5.3 Site Formation Processes

The climate of the *chaupiyunga* includes annual rainfall and humidity. Therefore, the only organic materials that were preserved in excavations were carbonized plant remains. Natural processes and human disturbance have left limited site architecture standing at Cerro Huancha MV 900 and Cerro Ramon MV 1000. At Cerro Huancha MV 900 architecture that remain somewhat intact are less than .5 meter tall. Modern land snails were frequently encountered in disturbed architecture, and assumed to have invaded archaeological contexts. A modern plant species found in archaeological contexts during excavations at Cerro Huancha MV 900 and Cerro Ramon MV 1000 is a previously unreported wild tuber, related to a sweet potato. The species was identified by Eric Rodriguez Rodriguez of the Herbarium Truxillense at the National University of Trujillo as "camote de gentile" and named Ipomoea sagasteguii

(Convolvulaceae). Locals referred to the tuber as "camote silvestre" (Rodriguez et al. 2012).

5.4 Mapping at Cerro Huancha MV 900

Mapping of Cerro Huancha MV 900 was carried out over several seasons with a total station. The time allotted for mapping was limited, nevertheless our strategy was to record as much visible architecture as possible. In addition to the restrictions introduced by the scant budget for mapping, various factors influenced the quantity of map-able architecture. The site has 14 site sectors based on topography and cultural features (Figure 5.2). Due to the topography of Cerro Huancha and the location of visible architecture, 5 different base points were used while mapping. Initial mapping efforts were focused on documenting the scope of architecture at the site, recording the extent of terraces, as well as at least some of the architecture in all site sectors. Once excavations were underway in 2012, mapping focused on architecture in Sector 1 and recording excavation units and cultural features in different sectors.

Despite our team's extensive efforts of clearing architecture in Sector 1 to see the foundations of buildings[21], the combination of compact architecture and extensive wall fall prevented clear identification of the limits and relationships between rooms. This made clear identification of rooms in agglutinated compounds difficult. Figure 5.2 presents the extent of architecture recorded, and many sectors do not include details of the extent of architecture present including, Sectors 1, 2, 3, and 10. In the future

[21] 95 cubic meters of wall fall was cleared in Sector 1.

hopefully the details of these agglutinated compounds, and terraces can be added to this map.

Figure 5.2: Cerro Huancha MV 900 Site Sector

5.5 Surface Collection Methods

Surface collection at Cerro Huancha MV 900 was designed to identify site sectors with LIP and LH occupations to collect data to identify what activities may have occurred in different site sectors.[22] Surface collection was carried out in June – July 2011 (PDs 1-78) with the assistance of Loren Teetelli, Caitlin (Smith) Lackett, and Elizabeth Olson. At 10 HA in size Cerro Huancha is a hill with diverse topography and cultural features are found on all sides and most elevations. Initial survey indicated that not all site sectors had material culture, therefore employing a systematic surface collection would have been a disadvantage as many of the units would have been placed in sectors nearly devoid of cultural material, like Sectors 7, 8, 9, 13, and 14. Therefore a stratified, judgmental sampling strategy was used for surface collection. See Chapter 7 for descriptions of site sectors.

While I was particularly interested in identifying LIP and LH occupations to determine where to excavate, surface collection also provided the opportunity to begin to document the occupational history of Cerro Huancha MV 900, and identify specific site sectors with specific time periods of occupation. The total area surface collected within each sector varied depending on visible architecture, density of material culture on the surface, and location on site. Due to environmental processes and looting activity many of the buildings and walls have collapsed, with architectural fall and material culture falling downslope. Surface collection units were placed within architectural

[22] I could not replicate Cerro Huancha MV 900's surface collection at Cerro Ramon MV 1000 due to site conditions. No formal surface collection occurred at Cerro Ramon MV 1000, however surface grabs did occur occasionally.

compounds. To account for material that had fallen downslope, collection units were also placed below the sector to collect this fallen material culture. Units located below site sectors below site sectors were not in areas assigned to other site sectors and were considered part of the site sector in analysis.

A total of 10,125 m^2 or 10.1% of the site was surface collected recovering 1,407 diagnostic sherds[23]. This included 69 different units of various sizes and shapes in 11 of 14 site sectors (Figure 5.3 and Appendix B). At least 4% of each site sector's area (that underwent surface collection) was surface collected. In several sectors, 100% of the site sector was surface collected. Non-ceramic artifacts encountered in surface collection units were rare but collected with the exception of large groundstones and lithics. Metal artifacts noted outside of collection units were classified as surface grabs.

Surface collection did not occur in Sectors 9, 13, or 14. For a description of analysis of ceramics recovered in surface collection see Section 5.7. Further details about site sectors collected and ceramics recovered are in Chapter 7.

[23] Due to time constraints non-diagnostic sherds were not collected or counted.

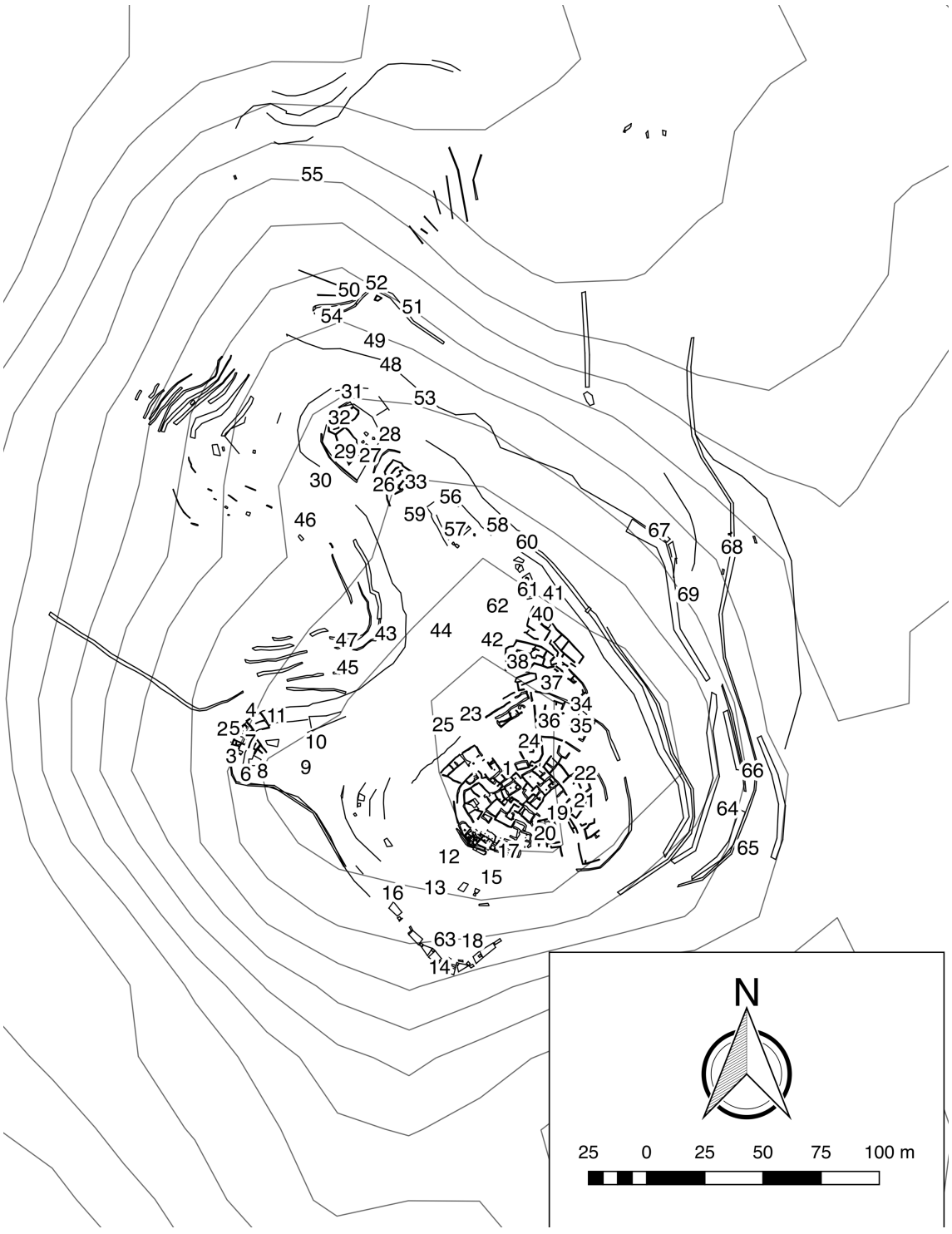


Figure 5.3: Location of Surface Collection Units

5.6 Cerro Huancha MV 900 Excavation Strategy

Excavations at Cerro Huancha MV 900 was modeled after the Upper Mantaro Archaeological Research Valley Project, with the goal of sampling entire well-preserved architectural compounds (Earle et al. 1987) rather than a systematic sampling of the entire site. This strategy was designed to understand daily practices, establishing a baseline of activities and resources identifying changes and/or continuity over time. To do this, large sectors of architectural compounds were selected based on location, preservation, visible architecture, and the artifacts recovered in surface collection in the sector around the compound. Excavations focused on exposing entire architectural compounds, which usually consisted of a patio and smaller rooms in order to document activities in the entire structure throughout its time of use. Excavations therefore recorded each compound's production, consumption, storage, and distribution to provide a well-rounded understanding of the local economy and activities occurring within architectural compounds. While this methodology limited the number of site sectors that could be tested, the data recovered provides a more complete picture of activities that occurred in the site sectors sampled. This strategy also allowed for documentation of remodeling.

Excavated compounds were termed "Compounds" and were numbered sequentially, Compound 1 through Compound 6. Units were ideally 2 x 2 m, but often were of varied dimensions based upon visible architecture, as nearly all units were within architectural compounds. One trench, Trench 1 was also excavated. See Section 1.8 for a description of excavation methods. Excavations occurred in four different sectors—1, 3, 6, and 7, a total of 114.92 m^2 was excavated (Figure 5.4 and Table 5.1).

Figure 5.4: Cerro Huancha MV 900 Location of Excavations

5.7 Cerro Ramon MV 1000 Excavation Strategy

Located at 1,831 masl on a double-saddle, the site Cerro Ramon MV 1000 sites on the summit of Cerro Ramon. Reaching the site requires a multiple hour hike from the valley floor making working at Cerro Ramon MV 1000 a challenge in logistics and excavation strategy. Site conditions and limited time forced me to change my initial excavation strategy. The initial plans were to carry out the same excavation strategy employed at Cerro Huancha MV 900, excavation of complete architectural compounds. This, however was not feasible due to site conditions.

Fallen architecture as a result of natural forces and looters' disturbance over the years, has resulted in piles of back dirt and heavy brush cover. At least a month of time would have been needed to clear the brush and stack wall fall in a single site sector. However, carrying this out at Cerro Ramon MV 1000, would have potentially destabilized architecture on the site further. Therefore, concern about destabilizing parts of the site by cutting down this brush and moving fallen architecture prevented systematic surface collection and further mapping of the site. In response to these conditions and limited time the most feasible option was to carry out test excavations and trenches in looters holes.

Cerro Ramon MV 1000 has three site sectors (Jochem 2007) and excavations were limited to Sector 2. Sector 2 was selected because it had most recently been a grazing ground for a herd of goats, and therefore had less overgrown brush than other site sectors. I excavated a total of 12.95 m^2 allowing me to preliminarily document the duration of Sector 2's occupation. While this is a very limited sampling of the site, it

builds on Jochem (2007)'s initial study and establishes a preliminary understanding of the site's occupational history.

Table 5.1: Cerro Huancha MV 900 and Cerro Ramon MV 1000 Area Excavated

Cerro Huancha MV 900 Compounds	Cerro Huancha MV 900 Area Excavated (m^2)	Volume Sediment Excavated (m^3)	Cerro Ramon MV 1000 Units	Cerro Ramon MV 1000 Area Excavated (m^2)	Volume Sediment Excavated (m^3)
1	4	0.69	1	1	0.15
2	52.95	13.01	2	1	0.11
3	28.97	7.68	Looter Hole A	4	0.14
4	1.1	2.04	Looter Hole B	6.95	1.10
5	10	1.10			
6	10	1.76			
Trench 1	7.9	0.33			
Total per Site	114.92	26.61		12.95	1.50
Total Cubic Meters Sediment (m^3)	**28.11**				
Total Area Excavated (m^2)	**127.87**				

5.8 Excavation Methods

Excavations undertaken at Cerro Huancha MV 900 and Cerro Ramon MV 1000 in 2012 employed different excavation strategies, however the methods implemented at both sites followed the same protocol. Every context was assigned a separate provenience designation number, or PD (Appendices A and B). Excavations followed natural levels. If no change in sediment occurred, levels were arbitrarily kept at 10 cm

intervals for control. Features were excavated separately and bisected when possible[24]. Each was assigned a sequential number based on the architectural compound in which it was located. For example, the second feature encountered in Compound 2 is identified as 2.02. See Appendix A for field and analysis forms.

Soil samples of 4 L of sediment per level were collected within each unit, and features were sampled as well. All of the recovered soil samples were floated, and light and heavy fractions were stored for future analysis. All sediment not collected for soil samples was screened on-site with 1/4" screen. Occasionally, 1/8" screen was used—for example, when metal fragments were recovered. The volume of sediment removed was recorded by bucket count, a total of 28.11m^3. Cultural material recovered was separated by material type. Diagnostic and non-diagnostic sherds were separated in the field. Other material types saved included bone, shell, lithics, metals, charcoal, and organics. Distinct artifacts, such as beads and spindle whorls, were cataloged as artifacts. All recovered material culture was cleaned, counted, and weighed in the laboratory and organized for analysis. Upon completion of analysis in March 2013, all recovered cultural material was submitted to Peru's Ministry of Culture's storage facility in Trujillo at Huaca Dragon. Subsequent analysis of cultural materials recovered in excavations is described in the following sections.

5.9 Ceramic Analysis

Ceramics are a link in the behavioral chain of activities that includes interactions between many people and artifacts, people and people, and between artifacts themselves

[24] This only applies to Cerro Huancha MV 900, excavations at Cerro Ramon MV 1000 did not encounter any features and units were not defined by architectural compounds.

(Schiffer 1995; Skibo 2013). A more durable material than other material culture classes that was part of Prehispanic societies, ceramics are often the most frequently recovered artifact class in excavations. Ceramic assemblages were involved in most economic activities, production, distribution, and consumption, and their functional attributes and stylistic elements inform about site activities and cultural associations. Studies of ceramic vessels or fragments of vessels reveals information about household-level, community-level, and state-level activities. In this project three ceramic assemblages were recovered, surface collection at Cerro Huancha MV 900 and the excavated assemblages at Cerro Huancha MV 900 and Cerro Ramon MV 1000 (Appendix C). Methods used and analysis undertaken are described in the following sections.

5.9.1 Ceramic Analysis Methodology and Protocol

Surface collection at Cerro Huancha MV 900 recovered 1,407 diagnostic sherds which I analyzed in July-August 2011[25]. Excavations at Cerro Huancha MV 900 (N=2,775) and Cerro Ramon MV 1000 (N=151) recovered a combined 2,926 diagnostics and 34,463 non-diagnostic sherds which were analyzed October 2012 - March 2013, weighing just over 500 kilos. Diagnostic sherds are defined as parts of vessels that enable identification of vessel class, or are decorated. Therefore, rims, bases, handles, appliqués, and body sherds with decoration—molded, paddle-stamped or painted—are considered diagnostics. Non-diagnostic sherds are all other undecorated

[25] Non-diagnostic sherds were not counted or collected during surface collection due to time constraints.

sherds. I studied this assemblage with the assistance of several recent graduates and current archaeology students from the Universidad Nacional de Trujillo, Lorenzo Risco, Ernesto Zavaleta, Roy Lezama, and Aldo Pulache. Analysis of diagnostic sherds followed Jennifer Ringberg's 2012 ceramic study of Cerro Leon, an EIP period site in the middle Moche Valley. New attributes were added to categories as appropriate.

Both ceramic assemblages, from surface collection and excavations, were washed with water with the exception of 2 complete and 1 almost-complete vessels recovered in excavations. Collections were then counted, weighed and studied. Sherds smaller than ¼" were not included in counts. When possible, diagnostic sherds were refitted with original mates. Diagnostic sherds underwent a detailed analysis that recorded each diagnostic sherds': paste type[26], vessel type, part of vessel present, manufacturing technique, and surface treatment. If a diagnostic sherd was decorated the part of the sherd decorated, the technique employed, the decorative motif, as well as color paint used, and the width of the sherd was also recorded. For rims, the shape of the lip of rim and general classification of the angle of the neck of the rim was recorded. The surface diameter of rims and bases were recorded as well as the percentage present of the original rim or base. These attributes were recorded to understand the form and size of the vessels in the assemblage as well as how they were used. For example, use wears provides information about how the vessels were used throughout their lifetime, i.e. – vessels with heavily sooted bases were likely cooking vessels, vessels with lots of pitting and scratches on the bottom were moved often. Decorative techniques and

[26] Preliminary paste categories were established through analysis however, without a petrographic study I am not confident in my classification.

stylistic elements were also recorded to document local trends and compare with styles documented in other regions. Non-diagnostic sherds were preliminarily classified by ware and the presence/absence of soot. The presence/absence of soot provides information about whether the fragments may have been originally from cooking vessels.

Ideally, whole vessels are used as the basic unit of analysis, however studies by Braun (1980), Plog (1985), and Ringberg (2012) demonstrate that even with only a rim sherd a vessel's form can be determined. Therefore, while I report the quantities of parts of vessels of all diagnostic sherds I focus the majority of my analysis on rim sherds. I rely on the frequencies and distribution of rims from vessel types to understand what categories of functional activities occurred in different site sectors.

The majority of ceramic analysis focuses on distribution and frequencies of rim sherds to inform about site production, consumption, and exchange. Rims are a part of the vessel that is often more easily identifiable than other parts of a vessel. From a rim segment (of sufficient size) one can determine what type of vessel the rim came from. Recovered rim segments that had less than 5% of the rim diameter of the vessel were often too small a fragment and too eroded to identify a vessel class. Therefore in my analysis I focus on the rim assemblage with 5% or more of the rim diameter present with the assumption that identifying vessel class will be more consistent (Table 5.2).

Table 5.2: Rim counts from all ceramic assemblages

	MV 900 SC		MV 900 EXC		MV 1000	
	Ct	5% ≥	Ct	5% ≥	Ct	5% ≥
# Total Rims	1131	1073	1766	1329	105	96
Assigned Vessel Class	1075	1032	1016	847	68	65

As Table 5.2 indicates, the rim assemblage used in analysis from different ceramic assemblages varied and in some cases included a large percentage of the total rim assemblage recovered and in other cases it did not. For example, Cerro Huancha MV 900 excavation recovered 1,766 rims and only 58% (N=1,016) of those rims could be assigned a vessel class. Surface Collection at Cerro Huancha MV 900 recovered 1,131 total rims, and 91% of the assemblage (N=1,032) were assigned a vessel class and had at least 5% or more of rim diameter present[27]. See Chapter 7 and Chapter 10 for further details on the ceramic assemblage recovered in excavations and Appendix C for the raw data.

However, vessels are not always ideally constructed for their intended use and not always used for what they were constructed for. For example, a cooking pot may also serve as a storage jar. Therefore, intended and actual pottery function should both be considered to tell "the story that vessels, individually, and collectively have to tell about the people who made and used them" (Tite 1999, 181, cited in Skibo 2013, 5). See Section 1.9.3 for further discussion of analysis.

[27] This includes complete vessels.

5.9.2 Ceramic Vessel Typology

Like my ceramic methods, my vessel typology is also based on Ringberg's previous ceramic study of Cerro Leon, an EIP site in the middle Moche Valley (2012). I utilize Ringberg's vessel class categories which are defined by broad features including vessel shape, such as whether it has an open or closed orifice, and include functional and non-functional vessel class forms. However, several of my vessel varieties are unique to the ceramic assemblage recovered at Cerro Huancha MV 900 and Cerro Ramon MV 1000, and distinct from varieties identified by Ringberg's at Cerro Leon. Vessel shape categories identified at Cerro Huancha MV 900 and Cerro Ramon MV 1000 are commonly identified in the Andean ethnographic record. I use English and Spanish nomenclature for vessel classes (Ringberg 2012, 193). See Table 5.3 for average rim diameter for each vessel type.

Olla (cooking pot): are vessels that generally have a wide mouth with a more globular body and rounded base. This body shape enables heat to be distributed evenly to contents. Ollas have shorter necks than jars and are used for cooking, heating, stirring, and serving liquids, especially stews and soups, informal serving, and short-term storage of leftovers and ingredients. Four varieties of ollas were identified, neckless, angle neck, vertical neck, and carinated rim. Surface treatment often includes burnishing. Handle applique may be attached to the neck and body or the rim and body. Decoration

Neckless: These vessels have a slightly restricted profile with unmodified or incurved rims and a thickened lip (Figure 5.5). The vessel wall does not change

direction defining a neck from body- neckless ollas are like incurved bowls (Ringberg 2012, 213). Both plainware and blackware (reduced fired) varieties were recovered. Surface treatment may include burnishing.

Angle neck: Angle neck variety is a short neck vessel with an angled flare neck from where shoulder and neck meets (Figure 5.6). Thing angle ranges from slight to extreme. This variety of olla is less restricted than all other olla forms and there is the most variety in surface diameter in angle-rim ollas.

Vertical neck: A more restricted vessel variety, vertical neck ollas have a straight neck that may be slightly everted or incurved towards the rim (Figure 5.7). This variation also includes ollas whose neck have a slight bulge either in the middle or upper part of the neck. The exterior of the rim may be reinforced.

Carinated rim: Carinated rim ollas are a restricted mouth variety. It is a common olla variety associated with the coast and Chimu culture. Named for the carinated angle of its rim and neck, variation is found in the height of neck as well as the length and angle of carination, becoming more pronounced or slight (Figure 5.8).

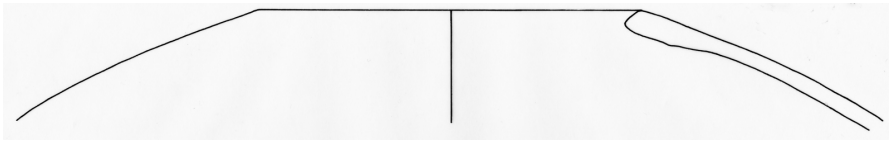


Figure 5.5: Neckless olla (rim diameter 14 cm)

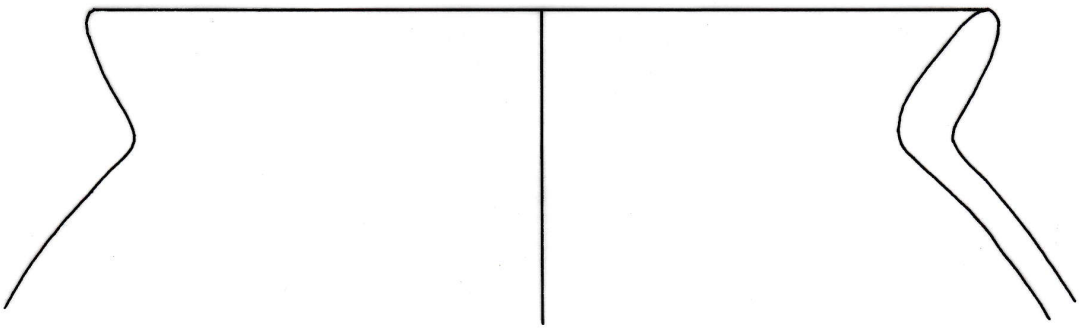


Figure 5.6: Angle neck Olla (rim diameter 16 cm)

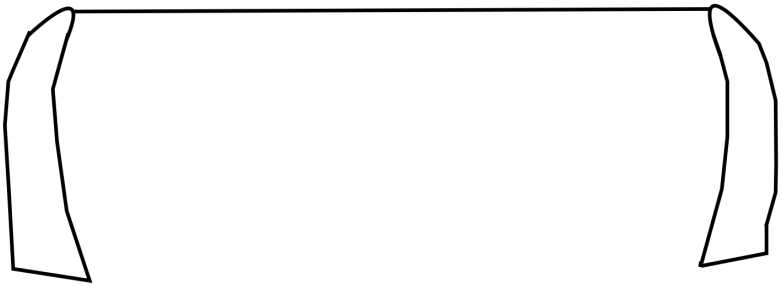


Figure 5.7: Vertical neck olla (rim diameter 10 cm)

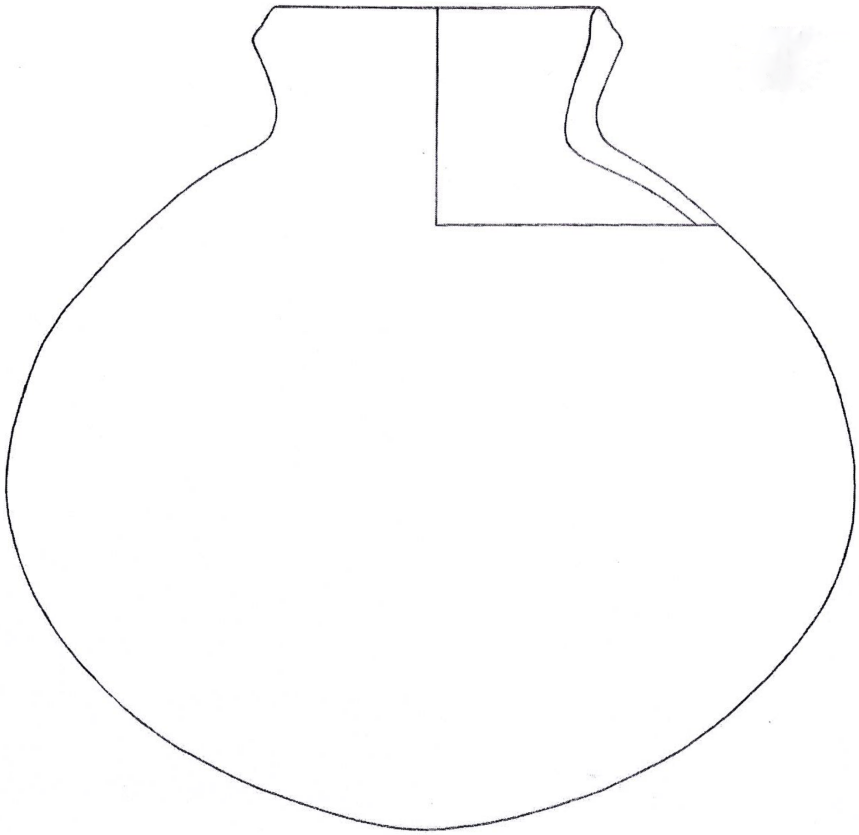


Figure 5.8: Carinated rim olla (rim diameter 12 cm)

Pan (Tostaderos) Pans are a functional category used for cooking and serving. A utilitarian form, pans are shallow, open vessels with a base that is flat or nearly flat (Figure 5.9). The sides of pans are everted on a wide angle, and the lip of the rim if often tapered. The form is fairly standardized. Used for toasting, pans are often found with the base and walls sooted from being placed over an open fire. However, they also could serve as a form of serving vessels. In Collambay, pans are plainware, undecorated vessels, very rarely is burnishing or surface treatment noted. Pans are similar to a form documented in the highlands, the colander[28] (Lau 2010; Toohey 2009; T. Topic and J.

[28] Colanders are reported to have cutouts on the vessel, while pans do not.

Topic 1982). The colander has been proposed to be used for roasting meat or other foods (Toohey 2009).

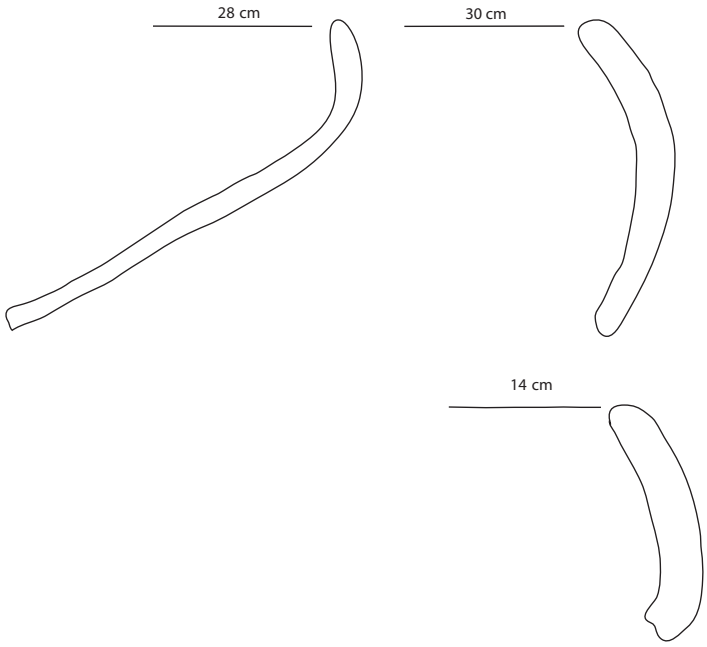


Figure 5.9: Pan Profiles

Individual serving bowl (cuenco) are open vessels with a diversity of utilitarian and fineware forms (Figure 5.10). Blackware and plainware bowls were recovered. The body of bowls are more rounded than pans in body shape, and tend to have taller sides and a smaller rim diameter. The height and angle of the sides of bowls vary greatly. Sides of bowls range from everted sides to a softer, rounded angle. Bases of bowls are varied from flat to round. Fineware bowls bases often have a high or low ring-bowl base. Fine ware bowls recovered were also occasionally painted, slipped, and polished. Standard utilitarian bowls to not have a special base and lack surface treatment outside the occasional burnishing. Bowls were likely used on a daily basis for serving both

individual and groups portions. Bowls are deep enough for serving liquids like stews and chicha, a traditional corn beer (Cutright 2009; Ringberg 2012). Fine ware bowls are assumed to be reserved for special occasions.

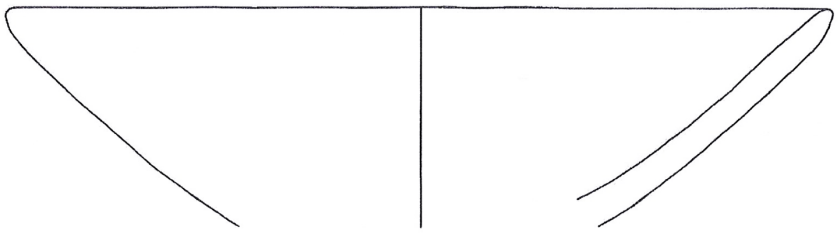


Figure 5.10: Bowl

Bottle is a restricted form that is not interpreted as having a culinary function, but part of the assemblage of serving vessels. Bottles have more or less vertical, thin necks, which is taller than the orifice's width. Two varieties of bottles were identified in the assemblage, single-spout and stirrup-spout. Both utilitarian and fineware bottles are reported. This vessel class may be plainware or blackware, slipped, polished, and be decorated with paint or press-mold, paddle-stamp designs (Figure 5.11).

Figure 5.11: Bottle

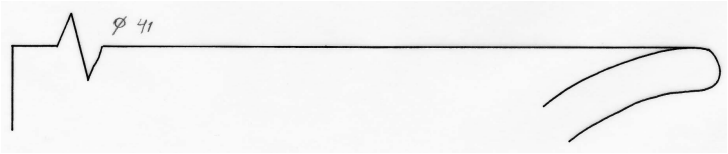
Jar (*Cantaro/Jarra*) is a liquid storage vessel. Jars are vessels that are generally larger than ollas and smaller than tinajas, another vessel type associated with long-term storage. Characterized by a restricted orifice, both large and small jars have longer necks than ollas. Generally, the body of a jar is more ellipsoid in shape than an olla (Ringberg 2012). In Collambay, jar bases were either egg-shaped, rounded, or angled. Three varieties of jars were identified in the assemblage: everted necks (Figure 5.12), straight-neck jars (Figure 5.13), and aryballoids.

Everted neck: Large jars with everted, flaring necks. Jars with necks that are severely everted are typically associated with EIP-LH periods in the northern highlands (Topic and Topic 1982). This severely everted variety was only identified in plainwares.

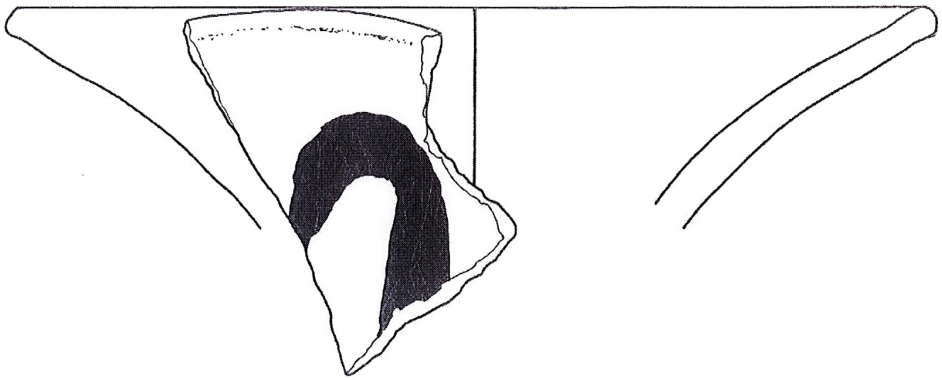
Straight-neck: Small, medium to large-sized jars with straight necks. Manufacture technique includes mold-made and coiling, a typical Chimú style was documented in the collection. This variety included both blackware and plainware vessels.

Surface treatment for both varieties also included burnishing. A variety of different decorative techniques including painted red orange bands on the interior and exterior of the rim and neck of both everted and straight neck varieties. Appliqués such as handles and nubs were found on the neck of the vessel. Occasionally on blackware vessels face motifs were identified on vessels that appear to be mold-made and incised, and appliques applied for facial features.

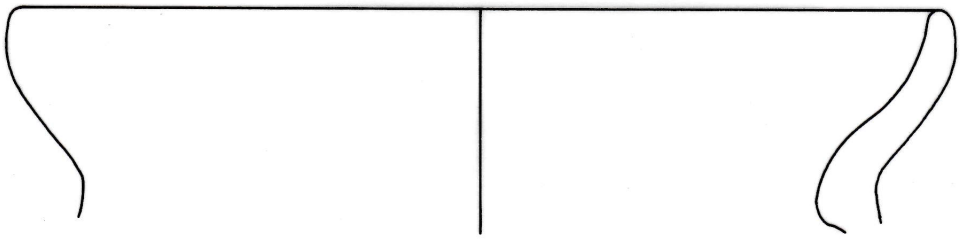
Aryballoid: is a variety of the jar that dates to the LH/Inca period. These small and medium-sized vessels have a conical-shaped base. A material symbol of the Inca empire these bottles are usually fine ware vessels and are often decorated with press-mold designs or painted (Bray 2003).



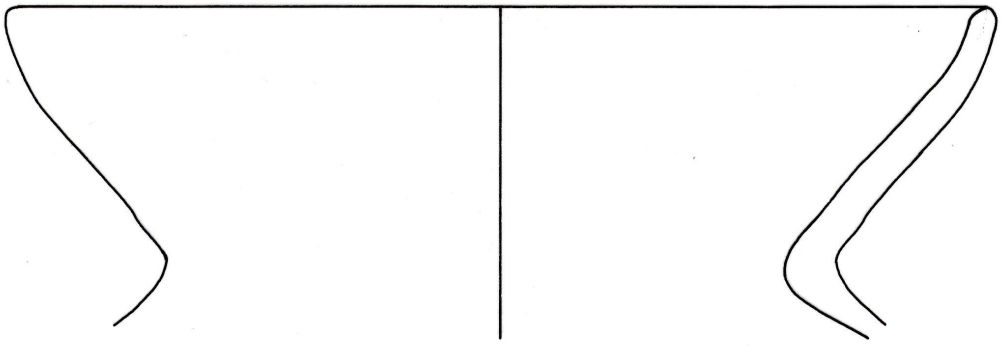
rim diameter = 41 cm



rim diameter = 34 cm



rim diameter = 21 cm



rim diameter = 44 cm

Figure 5.12: Everted Jar Profile Varieties

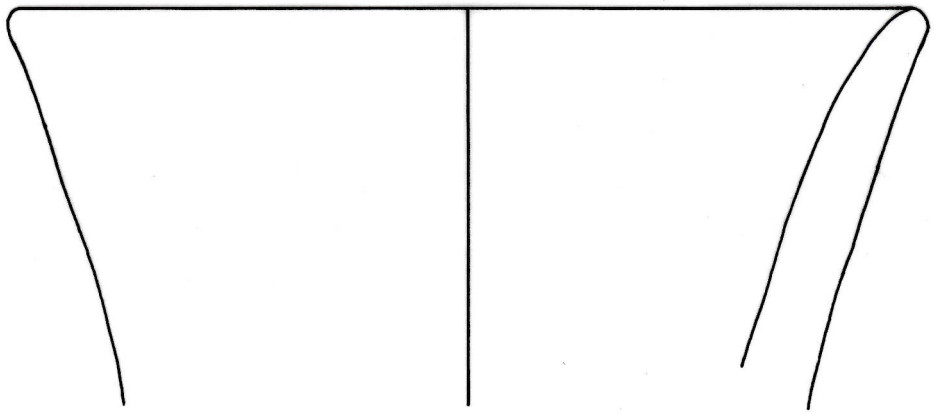


Figure 5.13: Straight-neck Jar (rim diameter 24 cm)

Tinaja is extra-large utilitarian storage vessel with open or closed orifices. Ringberg reports these are the largest vessel class found at EIP archaeological sites and this is the case in Collambay as well. Two varieties of tinajas were found in Collambay, necked and neckless. Smoothed or left rough on the exterior, all tinajas recovered were undecorated. Tinaja is a preferred storage vessel for chicha and dry goods, it is often set into the ground with the opening just four or five inches above the ground, Figure 5.14 (Mackey 2010, 241; Moore 1985, 66).

Figure 5.14: Tinaja Profile (rim diameter 30 cm)

Rallador (Grater Bowl) is a utilitarian bowl which have incised linear or curved patterns on the interior. An unrestricted vessel form, the rallador has flat and thick walls

(Figure 5.15). These vessels are reported on the coast during several time periods but it is unclear what function the form served. It may have been related to food processing or some type of activity not associated with food production. Few rallador sherds were recovered at Cerro Huancha MV 900.

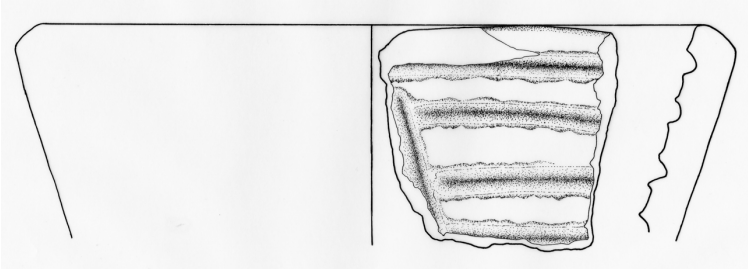


Figure 5.15: Rallador Profile (rim diameter = 34)

Miniature Vessel in the form of ollas and jars were recovered at Cerro Huancha MV 900 and Cerro Ramon MV 1000 (Figure 5.16). The vessels have no clear functional use with producing, consuming, or serving food but may have been used to hold small quantities of liquids or dry foodstuffs potentially plants or herbs in small quantities or for ritual activities.

Figure 5.16: Example of Miniature Vessel from Cerro Ramon MV 1000 (rim diameter 8 cm)

Table 5.3: Ceramic Assemblage Average Vessel Rim Diameter and Standard Deviation by Vessel Class

Vessel Class	Rim Diameter (cm)	StdDev
Olla	12.8	3.8
Pan	17.4	6.2
Bowl	14.7	4.6
Jar	16.4	6.2
Tinaja	29.6	10.1
Rallador	21.3	6.3
Mini	10	1.4

5.9.3 Ceramic Analysis: Qualitative and Quantitative

The ceramic assemblage underwent both qualitative and quantitative study. For Cerro Huancha MV 900's surface collection I evaluate the distribution of Chimu stylistic traits in the assemblage to assist with identifying site sectors with LIP and LH

occupations to select sectors for excavations. I also apply functional analysis and correspondence analysis to examine relationships between the ceramic rim assemblage and site sectors.

I describe local Collambay stylistic traditions in addition to comparing Collambay's ceramic assemblage to regional highland and coastal assemblages, considering vessel form and decoration techniques and motifs characteristic of these areas. Like Cerro Huancha MV 900's surface collection, functional analysis and correspondence analysis are used to better understand the makeup of the excavated assemblage.

Ceramic form and function provides evidence of how vessels were used which enables us to understand how vessels' use is tied to activities carried out by people in the past. I apply functional analysis to compare the distribution of functional vessel classes in different site sectors and over time. The distribution of vessel classes throughout the site provides information about what different functional activities different site sectors were used for. Functional analysis is used to examine both Cerro Huancha MV 900's surface collection ceramic rim assemblage and excavated ceramic rim assemblage (See Section 7.16 and Section 10.1). These two datasets provide a robust dataset to document functional activities at the site.

Functional analysis infers the use of a vessel based on its shape, paste, temper, thickness of walls, and surface finish to understand that vessel's utility and durability for particular activities that are part of daily life (Ringberg 2012). Ethnographic and ethnohistoric information also provides valuable insight to understand how certain vessel forms may have been used (Arnold 1993; Pauketat 1987; Skibo 2013).

Functional categories are typical activities to maintaining a household that specific vessel classes are assumed to have been used for or associated with, based on vessel attributes. Identifiable functional categories include: cooking, liquid transport, serving, short-term storage, long-term liquid storage, dry storage, food preparation, and presentation/serving (Ringberg 2012). Vessel attributes that provide information about what activities the vessel may have been used for include vessel shape, paste, temper, thickness of walls, and surface finish. These attributes provide information about the vessel's utility and durability for particular activities. Morphological properties and mechanical performance characteristics of vessels are also tied to functional categories (Table 5.4). Many of these attributes are elements studied to determine what kind of vessel a diagnostic sherd was originally from.

Therefore, functional analysis considers each vessel classes' function, assigns vessel classes to a functional category, and compares the quantity of vessels representing each category. Using only rims that have at least 5% of rim diameter present I use this method to compare functional assemblages between site sectors recovered in surface collection to better understand what functional activities may be associated with different site sectors. I also use functional analysis to compare ceramic assemblages recovered from excavations in architectural compounds at Cerro Huancha MV 900. Functional analysis considers vessel class function and allows for comparison of the distribution of vessel class forms providing information about the ratios of vessel forms to document what types of activities occurred in different areas. However, my analysis did not recover enough information about the morphological properties of the assemblage to separate my ceramic typology's vessel classes into the six functional

categories identified by Ringberg[29]. Therefore, I lump these six categories into three, assigning specific vessel classes to each category:

-Cooking or culinary technology includes vessel classes used for cooking and food preparation. Olla and pan are vessel forms used to prepare foods. Only utilitarian vessels have been documented to be used for cooking and food preparation.

-Serving includes vessel forms used to serve group and individual servings of food and liquids for shared drinking. Vessel classes from the typology that serve this function include bowls and bottles. These vessel forms have both utilitarian and fine ware varieties. Utilitarian wares would be used on a daily basis. Fine ware varieties were used for special occasions.

-Storage includes vessel forms for both short-term and long-term liquid storage for both dry goods and liquids. Vessel classes that are used for storage include jars and tinajas. Storage vessel classes would be used for long-term and short-term storage as well as dry goods and liquids. They would be expected to be found in kitchens, patio spaces, storerooms, and trash deposits.

I compare the distribution of surface collection rims from vessels assigned to the cooking, serving, or storage categories in each site sector and between site sectors to explore each sector's relationship to these functional categories and between them collectively (Section 7.16). I also compare the excavated compounds distribution between compounds and site sectors (Section 10.1). This information documents the

[29] Not all vessel classes are assigned to a functional category.

ratios of functional categories to understand activities in different site sectors at Cerro Huancha MV 900.

Correspondence analysis complements functional analysis. It is a statistical applied to evaluate descriptive data. A multivariate method, correspondence analysis uses a two-way contingency table like the Chi-squared test. I use this this method to statistically evaluate the relationship between vessel forms and site sectors. Correspondence analysis identifies patterns between variables, measuring multivariate relationships of descriptive data with a two-way contingency table like the chi-square test. Chi-square evaluates whether the expected distribution is or is not present, and correspondence analysis tries to explain this variation. It presents this data in a table as well as graphically. See Shennan (1997) and Baxter (1994) for further explanation of this method for archaeology. Correspondence analysis has become increasingly popular for developing typological seriation, but has also been used to compare variation of types to assume functional differences across a site (e.g. Gidding 2016; Klaus 2008; Neff 1994; Rodning 2009; Shennan 1997; Smith and Munro 2009). I applied correspondence analysis to evaluate the relationships identified between functional vessel classes and site sectors from surface collection and excavations at Cerro Huancha MV 900 (Section 10.1.1). The findings from both functional and correspondence analysis will be considered in reference to the other datasets available from Cerro Huancha MV 900 to understand sector levels' organization of production and subsistence strategy.

Table 5.4: Functional Vessel Categories for Cerro Huancha MV 900 & Cerro Ramon MV 1000: Proposed Morphological Properties and Mechanical Performance Characteristics

Functional Category	Mechanical Performance/Physical Properties
Cooking	• Rounded base and relatively thin vessel walls, texturing of exterior surfaces, and coarse temper for efficient heat transfer and thermal shock resistance, • Necks constricted to allow for manipulation of contents but minimize spilling, heat loss, and evaporation
Liquid Transport, Serving, Short-Term Storage	• Relatively small for easy lifting/pouring • Constricted but straight or flared neck to aid pouring and reduce spilling • Surface treatments (burnishing and/or slipping) to reduce permeability, evaporation, leaking • Stable bases • Range from minimal to significant investment in decoration depending on social context, has higher visibility.
Long-Term Liquid Storage	• Large capacity, can be immovable when full • Flared necks for ease in tipping/pouring or to act as a funnel for filling • Constricted orifices to inhibit spills and keep dirt/pests out • Surface treatments (burnishing and/or slipping) to reduce permeability, evaporation, or leaking • Lips altered or thickened to aid in covering orifice • Stable bases
Dry Storage	• Large capacity, can be immovable when full • Stable bases • Lips altered or thickened to aid in covering orifice • Relatively thick-walled • Possibly uniform in size and shape to permit stacking • Relatively tall and narrow for efficient use of space.
Food Prep, Serving	• Open or unrestricted orifices to allow ease of access to contents, manipulation of contents, or visibility • Surface treatments (burnishing and/or slipping) to reduce permeability, evaporation, or leaking
Presentation, Serving	• Open or unrestricted orifices to allow for visibility, filling or removal of contents • Range from minimal to significant investment in decoration depending on social context (higher visibility) • Size classes appropriate for one person, family-sized, or possibly for large-scale gatherings (feasting).

Source: Ringberg 2012, Table 7.3.3.

5.10 Analysis of Other Artifact Classes

Beyond ceramics, several other classes of material culture from excavations were analyzed to provide information about Collambay's local economy and engagement with outside groups. Study of fauna and shell remains and artifacts (ex. spindle whorls, metal artifacts) recovered in excavations provide information about Collambay's daily activities and local production, distribution and consumption behaviors. Human remains recovered in excavations from Compound 4, a funerary structure, were examined to identify how many individuals, their age, and gender were present in the tomb to better understand this burial tradition reserved.

Study of fauna and shell remains provides information about subsistence practices including the resources, local and non-local, were available to residents. Fauna samples selected were from Cerro Huancha MV 900 and Cerro Ramon MV 1000 for analysis included intact and disturbed contexts. Faunal remains from a total of 264 different contexts were recovered, totaling 11.62 kilos of bone, 4.87 kilos were from human remains in Compound 6. The sample analyzed represents just less than 12% of the entire fauna sample, too small to make statistical inferences. A sample of the studied fauna assemblage underwent analysis by Elizabeth Olson in 2012 and Victor Vasquez Sanchez and Teresa Rosales Tham of Arqueobios at the National University of Trujillo in 2015 (Appendix D). Olson studied 29 different contexts and Vasquez Sanchez and Rosales Tham studied 30; both recorded the number of identified specimens present (NISP), Olson also recorded elemental data when possible. These results are presented in Chapter 11.

All shell specimens recovered were analyzed by Roy Lezama Garcia in 2013. A total of 1.85 kilos of shell, including marine shell and land snails, were recovered at Cerro Huancha MV 900 and Cerro Ramon MV 1000. Presentation and implications of shell remains recovered from excavations are presented in Chapter 11.

Celeste Gagnon analyzed human remains in 2015. A description of Gagnon's methods and data recovered from human remains at Cerro Huancha MV 900 is described in Appendix D. I describe her findings in Chapter 11. Colin Thomas provided preliminary impressions of the metal artifacts recovered from Cerro Huancha MV 900 in 2013 (Appendix D). I analyzed all other artifacts in 2012-2013, this included spindle whorls, needles, beads, and other unidentified artifacts (Appendix C). Much of this data is presented in Chapter 11.

This chapter has provided an overview of the various methods used throughout the fieldwork program. As described in the introduction the following chapters describe data collection and analysis of recovered information. This project combines a variety of different methodological scales – from settlement patterns to analysis of single artifact class recovered in excavations. However, the combination of these diverse lines of evidence are essential as this is the first archaeological study of the region and provides a more comprehensive study and documentation of the prehistory of Collambay.

6 Settlement Patterns in the Collambay region of the Sinsicap Valley

Survey in the Collambay region in the Sinsicap Valley has recorded 42 sites (Figure 6.1). See Section 5.1 for pedestrian survey and site recording methods, as well as Figure 5.x 5.1 for area surveyed in the valley. The following sections present identifiable settlement patterns from this data chronologically. The preliminary dating of sites is based on surface ceramics noted during survey. 15 of 42 sites, or 36% of sites recorded could not be assigned an occupational period due to either the absence of ceramics or unidentifiable ceramics on the site surface. Surface ceramics at 64% of the sites recorded, however, provide preliminary understanding for settlement patterns in the valley. Sites associated with the Early Intermediate Period, Late Intermediate Period, Late Horizon, and Colonial period have been identified. One site is characterized by petroglyphs, MV 1015, and its date is unclear.

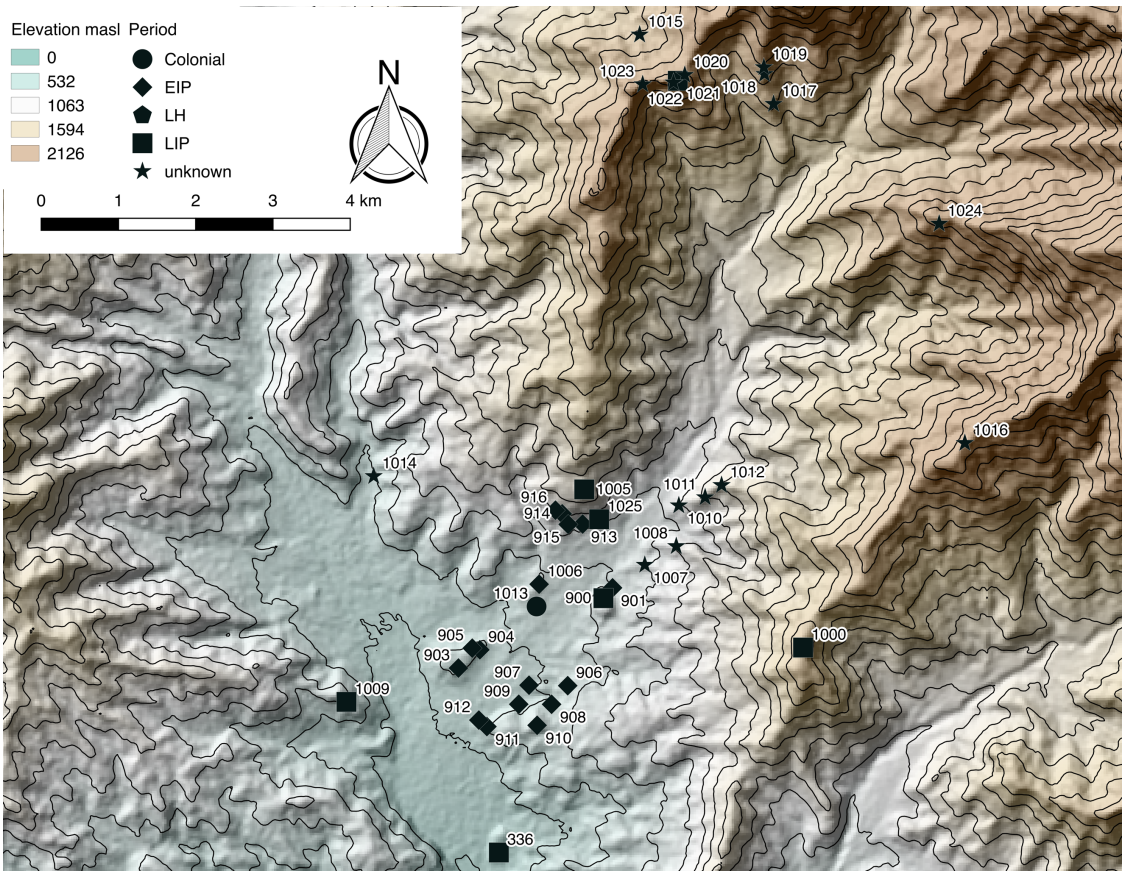


Figure 6.1: All sites recorded in Collambay region of Sinsicap Valley

6.1 Early Intermediate Period and Middle Horizon

Eighteen EIP sites have been tentatively identified. 17 early EIP sites and 1 potential late EIP/MH site were recorded during survey of the Sinsicap Valley (Figure 6.2). These sites were recorded in 2005 and 2006. I did not record these sites nor have I had access to their original survey forms. Analysis of the diagnostics recovered during this survey has not yet been completed, however a report and publication note 17 of these sites have Salinar ceramics on the surface, suggesting they correspond to the early EIP (Briceño and Billman 2006, 2009 and 2012). MV 1006 is tentatively assigned to the late EIP. A single Moche III or IV figurine fragment was identified on its surface

(Billman personal comm 2016; Ringberg personal comm 2016). While the majority of Salinar phase sites are located on the lower slopes of the valley, four sites have defensive walls (Cerro Huancha MV 900, 910, 916, 1005) and three of these sites are located on hilltops in desirable defensive positions that permit excellent views up and down valley (Cerro Huancha MV 900, 910, 1005). All of the sites identified with Salinar occupations may also have Gallinazo occupations, as ceramic analysis has yet to be completed.

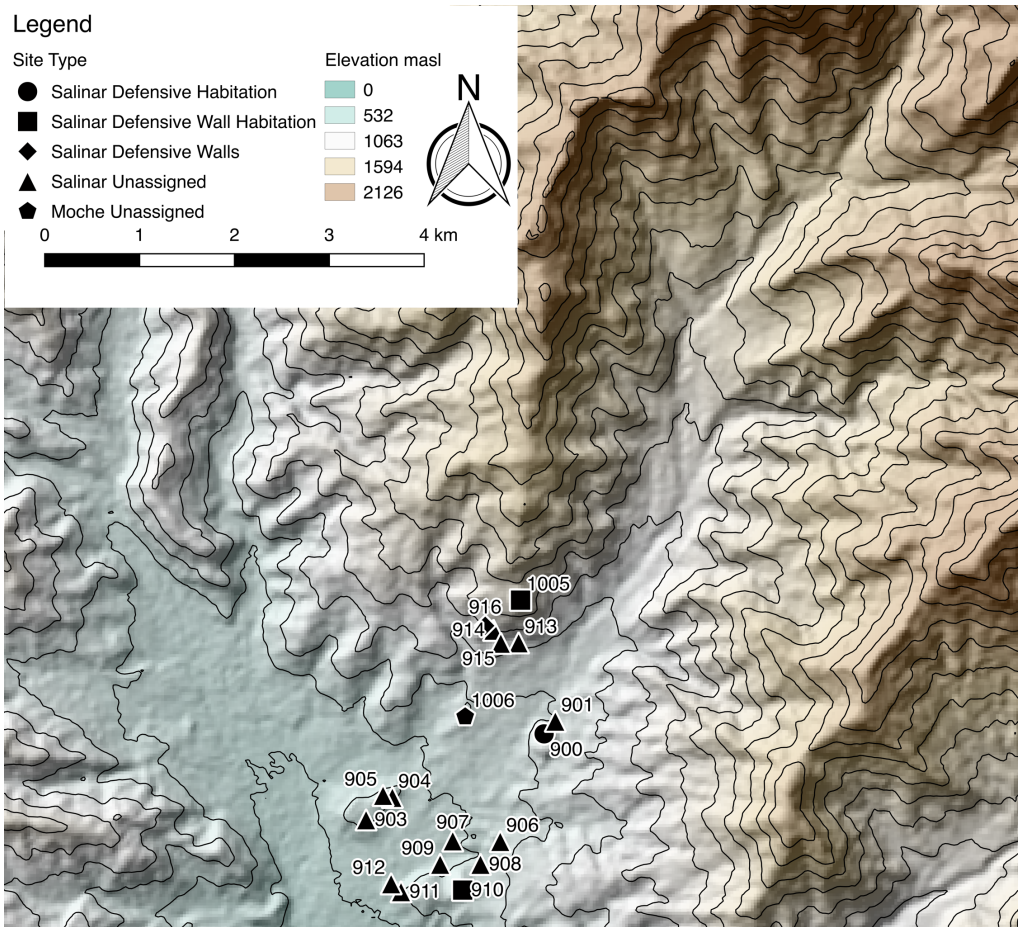


Figure 6.2: Early Intermediate Period and Middle Horizon Sites

6.2 Late Intermediate Period

At this time, there is little evidence of a late EIP/MH occupation in the Sinsicap Valley, with one site, MV 1006, tentatively having a Moche period occupation. There is, however, a clear occupation in the Late Intermediate Period. A two-tier settlement hierarchy has been identified for the LIP, with Cerro Huacha MV 900 serving as the local center. Including Cerro Huancha MV 900 seven sites have LIP ceramics[30] (Appendix C), three additional sites likely also date to the LIP based on settlement patterns and architectural attributes. The LIP sites form a network of sites located in defensive positions, several of which are situated along prehispanic roads.

All LIP sites, with the exception of MV 1025, are located on hilltops (Figure 6.3). Three sites (Cerro Huancha MV 900, Cerro Ramon MV 1000, Cerro Cabra 1005) are in defensive locations and have defensive architectural features, including defensive walls surrounding the site and/or are located at site entrances. All three of these sites have agglutinated architectural compounds. Grinding stones were noted during survey, suggesting site architecture was built to support populations in moments of conflict or, and more likely permanent residents. MV 1025 also has agglutinated compounds and a wall, but the site's location on a slope below Cerro Cabra MV 1005 does not appear as defensive as the other three. Cerro Huancha MV 900, Cerro Ramon MV 1000, and Cerro Cabra MV 1005 are the largest sites in the valley, all three would have required an extensive amount of labor investment to build, more than any other construction in the valley during any time period.

[30] I surveyed all of these sites with the exception of MV 336.

These three LIP sites have much more extensive and intensively occupied agglutinated compounds compared to EIP period sites. Cerro Huancha MV 900, Cerro Ramon MV 1000, and Cerro Cabra MV 1005 are the largest sites in the valley, all would have required an extensive amount of labor investment to build, more than any other construction in the valley during any time period. Three other LIP sites are also located in defensive positions but lack evidence of habitation in comparison to Cerro Huancha MV 900, Cerro Ramon MV 1000, and Cerro Cabra MV 1005. These sites, Cerro Carrizal MV 1009, MV 1021, and MV 336 likely functioned more as outposts.

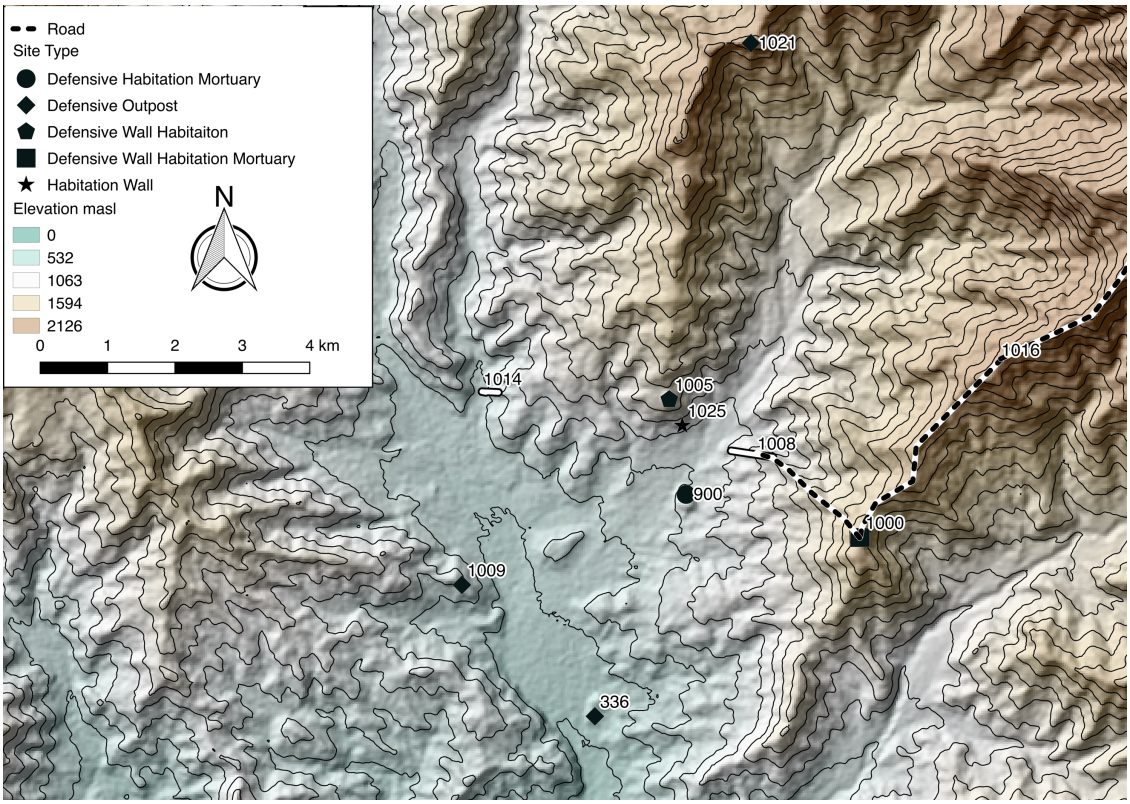


Figure 6.3: Late Intermediate Period Sites

6.2.1 Cerro Huancha MV 900

Cerro Huancha MV 900 at 10 hectares in total area, the largest site in the Collambay area and Sinsicap Valley. It was recorded in 2005 by MOP/PACO (Briceño and Billman 2009). Located at 1,000 masl, it occupies a low hill in the middle of the Sinsicap valley on the east side of the river. With 14 site sectors, nearly the entire hill has architectural features. Architecture at Cerro Huancha includes standing walls, terraces, and architectural compounds made up of agglutinated rooms and open plazas. Not all visible architecture on site was mapped (Figure 5.2). The site has defensive features including walls built running both vertically and horizontally on the lower slopes of the site. On the middle and lower east side of the site, there are a series of constructed terraces that may have also served as walls. I refer to them as wall-terraces. One of these wall-terraces encircles the entire hill. Initial survey of Cerro Huancha MV 900 produced Salinar, Chimú, and highland ceramics suggesting occupations during the EIP and LIP. Surface collection was undertaken in 2011 to identify locations with LIP/LH components (Chapter 7), followed by excavations in 2012 (Chapter 8).

6.2.2 Cerro Ramon MV 1000

Cerro Ramon MV 1000, sits on a double saddle at 1,831 masl and is 1.5 hectares in area. The site includes the mountain's summit and runs due north, occupying the entire summit. Cerro Ramon looks down on the Collambay area and Cerro Huancha MV 900 as well as the Cuesta Valley. Members of the Chan Chan/Moche Valley project visited Cerro Ramon MV 1000 in the early 70's (Billman, personal

communication 2013), but nothing was published about the site by the project. In 2006 a UNC undergraduate geography honors thesis project by Chris Jochem, mentored by Barker Fariss (A UNC graduate student) as part of the MOP/PACO project, focused on MV 1000 (Fariss et al 2007; Jochem 2007). Previous fieldwork by Jochem and Fariss included limited surface collection and mapping of site architecture. Juliana Quist and I were fortunate to participate in part of this initial fieldwork in 2006. This initial study documented a LIP occupation and the presence of Chimú and Highland style ceramics.

Cerro Ramon MV 1000 is built on a very narrow ridgeline. It has three sectors and is densely covered in architecture. Walls surround the site, which is characterized by agglutinated compounds surrounding open plazas and patio spaces. The site sits on a prehistoric road and would have served as a checkpoint for coastal-highland traffic (Figure 6.3) It is one of several sites that are visually connected across the Moche Drainage tributaries and likely monitored traffic. From Cerro Ramon looking west the Carabamba plateau on the other side of the Moche Drainage is visible (Boswell et al. 2009, Boswell in press). When descending from the highlands to the coast and arriving at MV 1000, travelers were greeted by walls more than two meters high and were forced to ascend about fifty meters to enter the site. The prehistoric road which runs along the ridge top from the highlands down to Cerro Ramon MV 1000 ends at the site. The road then continues down into the valley towards Cerro Huancha MV 900.

Cerro Ramon MV 1000's location is about a two-hour hike from the modern Collambay community. I relied on donkeys to transport project supplies, and project members camped at the site. Looters disturbance at Cerro Ramon MV 1000 over the years has led to fallen architecture, piles of rubble and backdirt, making it an ideal

locale for growth of heavy brush. Concern for destabilizing parts of the site (and our own safety) by cutting down this brush and moving fallen architecture prevented systematic survey and further mapping of the site. The 2006 study divided Cerro Ramon MV 1000 into three sectors (Figure 6.4; Jochem 2007), my test excavations and surface collection were limited to one site sector, Sector 2 where most of the brush had been recently cleared by a local herd of goats. Excavations and surface collection were undertaken at Cerro Ramon MV 1000 over three days in October 2012, and is described in Chapter 9.

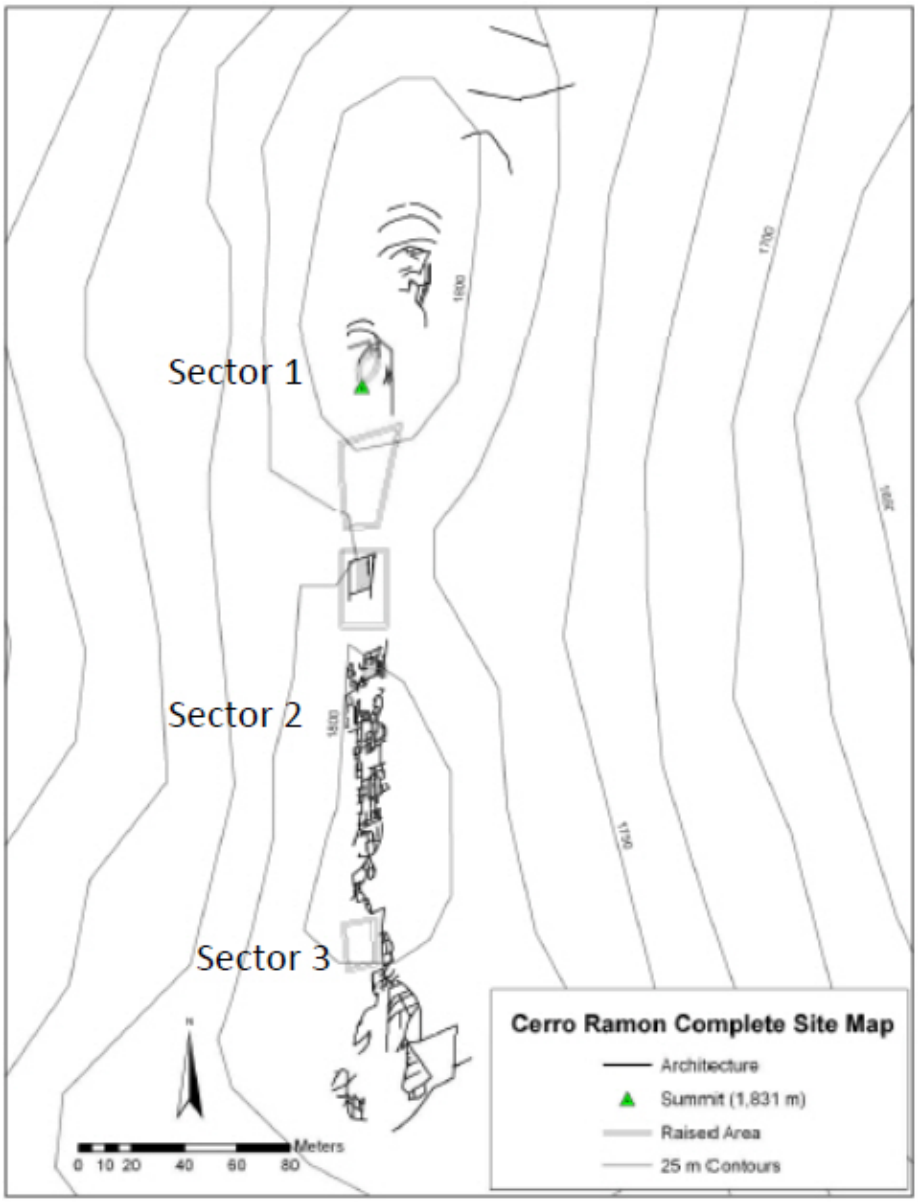


Figure 6.4: Cerro Ramon MV 1000 Site Sectors (Adapted from Jochem 2007, Map 3)

6.2.3 Cerro Cabra MV 1005 and MV 1025

Cerro Cabra is on the north side of the Sinsicap Valley across from Cerro Ramon. Two sites with LIP occupations have been identified here, MV 1005 and MV 1025. MV 1005 shares similar characteristics with Cerro Ramon MV 1000, a mountaintop location, with defensive architecture at entryways and encircling walls around both sites. Both sites straddle opposite ridgetops, with Cerro Cabra MV 1005 at 1,660 masl, looking down on Cerro Huancha MV 900 and the lower Collambay region and part of the chain of sites across the Moche Drainage. Like Cerro Ramon MV 1000, Cerro Cabra MV 1005's architecture occupies the entire ridgeline and both sites consist of a series of terraced compounds, with agglutinated rooms around plaza and smaller patio spaces within the defensive walls. Both sites have defensive entryway features. Cerro Cabra MV 1005 has a defensive ditch at its entryway. EIP ceramics were encountered at Cerro Cabra MV 1005, however its architecture is in the same construction style of Cerro Ramon MV 1000, and I expect that the site was remodeled and the LIP occupation was much larger than the original EIP occupation.

MV 1025 is a series of agglutinated structures on multiple terraces located on the slopes of Cerro Cabra, just above a prehistoric canal. The site does not exhibit defensive features like MV 1005 and likely was a series of habitation structures. Just below the site a vertical wall, like MV 1008 (See Section 6.2.6), runs downslope, below habitation terraces into modern agricultural fields.

6.2.4 Cerro Carrizal MV 1009

Cerro Carrizal is located on the southeast side of the Collambay area adjacent to the dry wash on the north side of the Collambay area. I define this site as an outpost because of the evidence of very little investment in site construction. I was introduced to the site by Sr. Aldo Rafael from Collambay. The entire area of the site is estimated to be less than 400 square meters. The site is made up of three terraces on the south side and north side of the hilltop. Ceramic sherds were scattered about, but no architecture remains (if there ever was) besides terraces. The location of Cerro Carrizal MV 1009 is well situated to monitor traffic entering the Collambay area from the upper and middle Chicama Valley.

6.2.5 MV 1021

Located on the northeast side of the valley, just south of Cerro Orga, MV 1021 sits adjacent to a roadway connecting Narí a community just east of Collambay in the next quebrada east of the Sinsicap valley to the upper Sinsicap Valley. Time did not permit complete survey of MV 1021 however it appears to have likely served as an outpost. Little architecture was noted; rather the natural bedrock appears to have been used as a defensive outpost. Local Collambay ceramics were noted. It is difficult to estimate the size of the site due to heavy brush coverage, however it is estimated to be smaller than 200 square meters in area. Its location, would be a key point to monitor traffic.

Prehistoric petroglyphs, MV 1015, have been noted in the Narí area close to this roadway and it is likely there is a prehistoric occupation in the region. MV 1021 sits on what is likely a prehistoric roadway between Narí and the upper Sinsicap Valley. Today, the footpath is used by locals to travel between Narí and larger towns in the upper Sinsicap Valley such as Sinsicap and San Ignacio. It potentially may have been part of a roadway to connect prehistoric communities in the Upper Chicama valley and the upper Sinsicap Valley.

6.2.6 Potential LIP Sites: MV 1008, MV 1014, MV 1016

Diagnostic sherds were not recovered at several sites in the Sinsicap Valley, however, based on site characteristics and settlement patterns I believe that three additional sites are associated with the LIP period, MV 1008, MV 1014, and MV 1016 (Figure 6.3). MV 1008 and MV 1014 are both walls that run vertically up the slope of mountains. No additional architecture nor material culture was found associated with either site. MV 1008 is located down slope of a ridge running from Cerro Ramon MV 1000 to the Collambay valley floor. MV 1008's association with Cerro Ramon and the prehispanic road and similar traits at MV 1016's location suggests these walls date to the LIP. MV 1014 is located in the Narí quebrada, just north of where the Quebrada Narí meets the Quebrada Llanten at El Carrizal. These walls may have been a symbol on the Collambay landscape a visual reminder to travelers and Collambay residents alike of whose territory they were within.

MV 1016 is located on the same prehistoric road at Cerro Ramon MV 1000. Time constraints prevented a thorough survey of the site and no diagnostic ceramics were noted preventing identification of site's occupation. Its location on a roadway, similar to Cerro Ramon, suggests it may date to the LIP. The construction style of architecture and defensive features at MV 1016 are unclear, although it is located in a defensible position.

6.2.7 Description of Prehistoric Road and Site Locations

The prehistoric route to Cerro Ramon has already been described (Section 6.2.2). However, when travelers arrived at Ramon the ridgetop road ends and they were forced to descend into the valley for the next part of their journey descending into the Collambay valley alongside MV 1008, a wall. Arriving near the valley floor they would view the north side of Cerro Huancha (Boswell in press; Boswell et al. 2011). Using ArcGIS intervisibility tool, which considers sight lines of up to 5 km, the sight lines between LIP hilltop sites were compared, and all sites were visible to each other with the exception of MV 1021 (Figure 6.5).

The LIP sites in the Collambay basin are all visually connected with each other and offer vantage points to view and easily interact with travelers traveling through the valley. This network of sites extends to the Cuesta Valley. Hilltop sites, Cerro Cabra MV 1005 and Cerro Ramon MV 1000 are visually connected, and Cerro Ramon MV 1000 is connected with Cerro Cascaday MV 1001, in the Cuesta Valley. I believe this network of sites extends across the Moche drainage connecting to the LIP sites reported

by the Topics in the Upper Moche drainage located along trade routes (Coupland 1979; Topic and Topic 1982, 1985). These sites all reportedly have Chimu ceramics and thus the network of LIP sites appears associated with the Chimu.

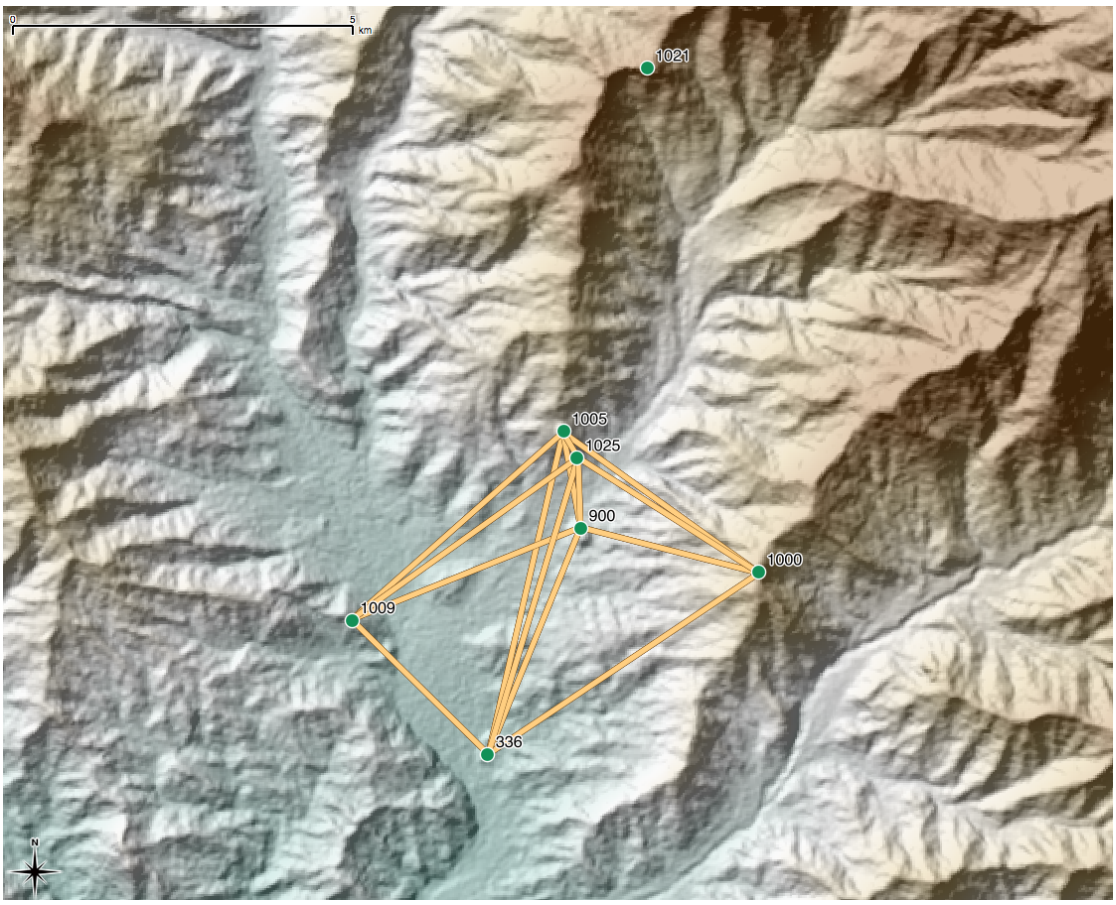


Figure 6.5: Intervisibility between LIP Sites (sites with LIP ceramics)

6.3 Late Horizon Occupation

At this time Cerro Huancha MV 900 is the only site identified with a Late Horizon occupation (Figure 6.6). This is based on diagnostic surface ceramics and archaeological excavations. In addition, Colonial documents state that Collambay was home to an Inca *tambo* and coca fields (Netherly 1977; Rostworowski 1987). One of the Inca coca fields was named Guancha or Huancha (Netherly 1977, 317). Locals informed us that Cerro Huancha MV 900 is called Cerro Huancha, indicating perhaps

that this field was located close to Cerro Huancha, and this area may have been known as Huancha since the Late Horizon.

Other LIP period sites in the Sinsicap valley may have been occupied in the Late Horizon; however, at this time surface collection does not confirm that any other sites were occupied during the Late Horizon[31]. Cerro Ramon MV 1000's strategic location on a roadway suggests it may have been occupied during the Late Horizon, however the limited material culture recovered in the few test excavations at this site do not indicate a LH occupation at this time.

[31] Other studies on the coast and highlands has documented little change in local ceramic styles between the LIP and LH (Hayashida and Guzman 2015; Krzanowski 2006; Tate 2006; Topic 2009)

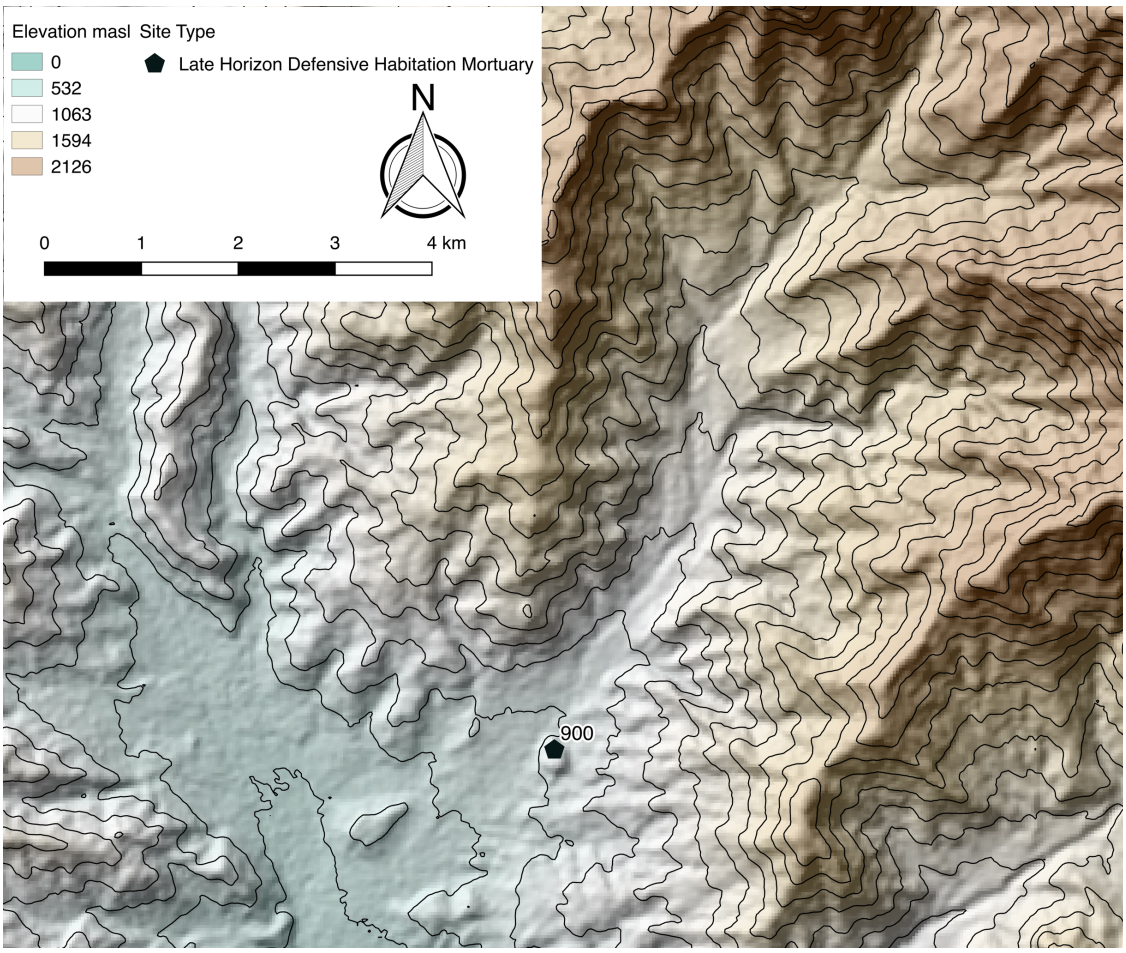


Figure 6.6: Late Horizon Period Site

6.4 Colonial Period Occupation

Late Colonial period ceramics have been noted on the north side of Collambay hacienda building, MV 1013. No other Colonial period ceramics were noted during survey. Colonial documents report that *chaupiyunga* populations in the Moche, Virú, and Chao valleys that had been under the jurisdiction of Huamachuco, under the Inca, were moved to the town of Simbal, founded as San Juan Bautista de Simbal, a Spanish *reducción*, in anticipation of the *visitador general* Francisco Alvarez Cueto in 1574 (Castañeda and Millaire 2015). In 1562 the *Encomendero* of Huamachuco, Captain Don Juan de Sandoval Guzman was given permission to use the coca fields in Collambay,

which were reported to have been planted twice earlier during the early colonial period (ANP Aguas 3.3.10.68; Netherly 1977, 316). MV 1013, the hacienda building may not have been built until after 1594 when the property was donated to the Monastery of Santa Clara in Trujillo (Vega Cardenas 2012). Today, the hacienda's location, on a slope overlooking the lower Collambay region is likely the original building's location (Figure 6.7).

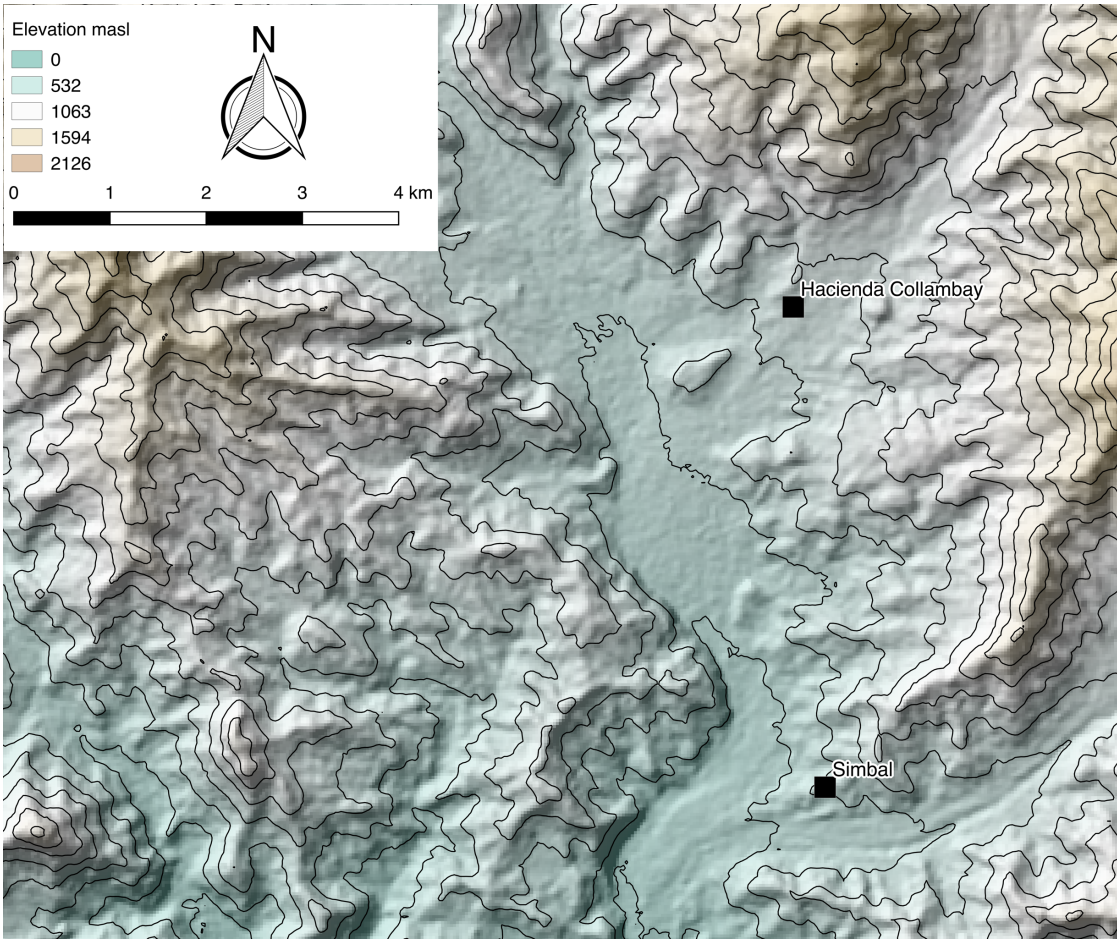


Figure 6.7: Colonial Period Settlements

6.4.1 Collambay Hacienda MV 1013

The timing of the original construction of the hacienda building is unclear. The Collambay hacienda is reported to have been remodeled in the late eighteenth century when Captain Evaristo Céspedes Noriega owned the property (Cardenas 2012). Captain Céspedes Noriega was one of the most important builders in the city of Trujillo during the Colonial period. Today, the Collambay hacienda building has several late eighteenth century Colonial architectural features (Belsy Gutíerrez Jave pers comm 2015). Its current location is likely close to its original location. The modern pueblo of Collambay is founded around the Colonial hacienda building. There are likely other Colonial period sites in the valley, such as where hacienda workers lived. At this time, however, the location of these structures are unknown. The modern town of Sinsicap (Figure 1.2) was occupied during the Colonial period in the 18th century, however it was not part of the Hacienda Collambay, and it is unclear at this time if it had a Precolumbian period settlement.

On the east side of the Hacienda building today, there are trash middens with late colonial period artifacts. Northeast of the building an industrial chimney for producing chancaca, a sweet sauce from unrefined sugar cane used for preparing sauces for desserts or meats, is still standing. Chancaca production was a focal point of the hacienda's economy during the eighteenth and early nineteenth century when much of the hacienda's production was dedicated to sugar cane.

Colonial documents offer a wealth of history about the Hacienda Collambay; however, that is not the focus of this dissertation. Briefly, however the Hacienda's

building location is quite a contrast compared to the hilltop, defensive locations of the LIP and LH sites. In addition to the Hacienda's topographic location, its construction on the east side of the river, close to the modern highway demonstrates one of the significant shifts that occurred between the Precolumbian and Colonial period. The Colonial period introduced changes to traditional Andean routes of transportation. Riding horseback and the use of carts changed transportation routes that gradually have evolved into modern day transportation routes, with roads built on the flattest sections of land. The introduction of wheeled vehicles transformed transportation (albeit gradually) in the Andes. However, footpaths still remain important to many, more isolated communities. The Colonial hacienda's location, on a low hill on the east side of the river, opposite the late prehispanic local center, Cerro Huancha is symbolic of the dramatic changes that the Andean region's population underwent during the Colonial period.

6.5 Implications of Sinsicap Valley Settlement Patterns

This preliminary analysis of settlement patterns over time in the Collambay area suggests that significant shifts in valley settlement patterns from the early EIP – Colonial period. Current survey data suggests a significant early EIP occupation associated with the Salinar culture. Middle EIP, late EIP, and MH occupations are unclear. Only a single Moche diagnostic sherd has been reported at MV 1006. In the area of the valley that I surveyed I did not encounter any Moche or Wari ceramics. Ceramic analysis and further survey will help clarify settlement patterns during these periods.

During the LIP there is a two-tier settlement hierarchy with Cerro Huancha as the regional center. A network of LIP sites has been identified, not all are habitation sites, but appear to be defensively minded and appear related to controlling movement through the Collambay zone. This network is likely connected to networks in the other Moche drainage tributaries. Despite incomplete survey data for the region, overall at this time it appears that during the LIP, settlement patterns suggest that a new population moved into the Collambay area.

At this time survey has produced little evidence of a Late Horizon occupation in the valley. Cerro Huancha MV 900 is the only site with evidence of a Late Horizon occupation. This suggests a significant shift in settlement patterns from the LIP to LH suggesting that under the Inca the focus of the Collambay economy changed significantly. The Colonial period also only has a single site dating to this period, the Hacienda building.

7 Cerro Huancha MV 900 Site Sectors and Surface Collection

At 10 HA in size, Cerro Huancha is centrally located in the valley and was the local political center during the LIP and LH periods. The mountain itself dominates the valley floor as one travels up or down on the valley bottom. Given the importance of the site in these two periods I focused my investigation on the site, beginning with surface collection in site sectors. Surface collection was carried out to identify occupation periods associated with site sectors and establish a preliminary understanding of the types of activities that may have occurred in different site sectors. Site sectors dating to the LH and LIP were later selected for excavations.

I defined fourteen site sectors (Figure 5.2) which are described below. This is followed by a discussion of the surface collection methodology implemented at Cerro Huancha MV 900, the assemblage recovered, and its implications for the site's occupational history and test excavations. Site sectors are measured by area as represented in Figure 5.2.

7.1 Sector 1

Sector 1 is located at the top of Cerro Huancha and is considered the center of the site. At 5700 m^2 it has the largest flat area on the mountain and has the densest architecture of all site sectors. The architecture is disturbed due to natural forces, wall fall, and looting activity. A local informant reports that in the recent past the buildings in Sector 1 were two stories tall. Based on the amount of architectural fall in the sector

this seems likely, as described in Chapter 5, a total of 95 cubic meters of fallen architecture was stacked in Sector 1 for mapping.

Old looting activity exposed human remains on the east and south side of Sector 1 suggesting mortuary structures/tombs were within architectural compounds on this side of the sector, with some rooms in agglutinated compounds serving as tombs, likely as a secondary use. A typical highland tradition is to bury the deceased in the household. At Cerro Leon in the Moche Valley both cist tombs and a slab-lined tomb were identified constructed within elite household compounds (Ringberg 2012).

Architectural compounds, plazas, and walk-ways were visible in Sector 1 after fall had been moved. On the top of the hill is a large open plaza with small rooms surrounding it. Architectural compounds made up of agglutinated rooms of different sizes with patios, often on split-levels when constructed on terraces. Elite households are potentially located on the east side of Sector 1 overlooking the river. The surface of Sector 1 also included large densities of ceramics and grinding stones. More grinding stones were found in this site sector than any other site sector (Figure 7.1 and Figure 7.2)[32]. Several architectural compounds in Sector 1 underwent excavations, Compounds 1, 2, and 3, see Chapter 8 for excavation descriptions.

[32] Not all grinding stones in Sector 1 are included on this map. The largest grinding stone at Cerro Huancha is located between Sectors 9 and 12, and is unusually large at .75 m x .63m x .75m.

Figure 7.1: Location of Grinding Stones in Sector 1

Figure 7.2: Grinding Stone in Patio, Sector 1

7.2 Sector 2

Sector 2 is located in a naturally flat area on the northeast side of MV 900 about halfway up Cerro Huancha, overlooking the Sinsicap River. About 1360 m^2 in area, Sector 2's terraces are covered with architectural compounds of agglutinated structures, made up of patios, which are sometimes split-level with different size rooms surrounding each. Several smaller plazas are located between architectural compounds.

7.3 Sector 3

Almost a mirror image of Sector 2 in terms of location on Cerro Huancha, Sector 3 is also located about halfway up Cerro Huancha, in a naturally flat area on the southwest side of the mountain, overlooking the Sinsicap River. About 900 m^2 size, artificial terraces have been constructed to create a larger flat area to build structures. In this sector architectural compounds often include split-levels, and are more standardized in layout than Sector 2. Architectural compounds in Sector 3 extend north into Sector 4. Most compounds are about 10 x 7 m, and are made up of a patio space, storage rooms, and a bench (Figure 7.3). Excavations were undertaken in Sector 3 in two architectural compounds, Compounds 5 and 6.

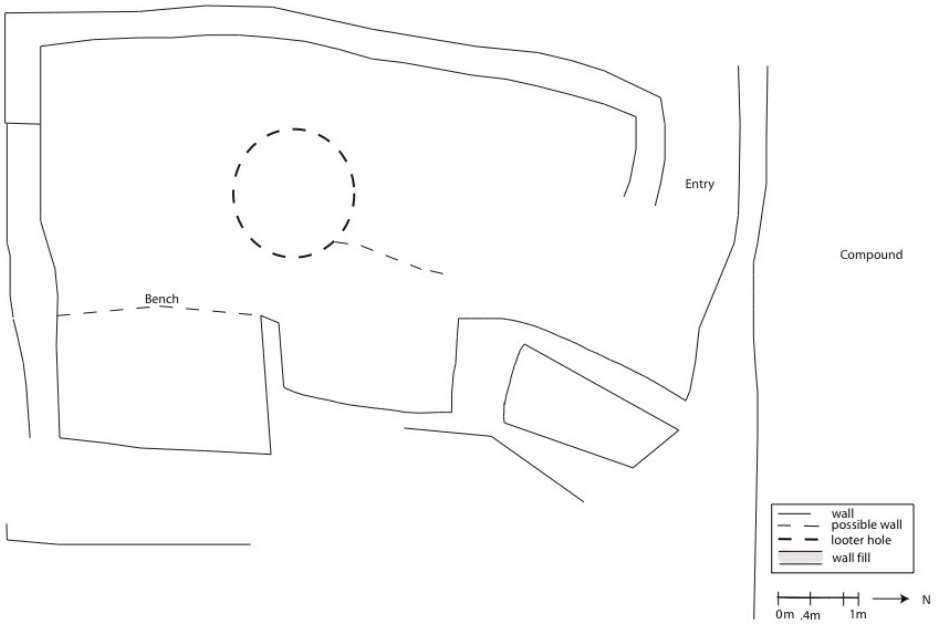


Figure 7.3: Typical Architectural Compound

7.4 Sector 4

Sector 4 is located between Sectors 2 and 3, about 8000 $m^{2,}$ on the western side of Cerro Huancha, from the base of the mountain to just below Sector 1. There are remnants of constructed terraces located throughout Sector 4, however, due to the steep incline, rain fall, and collapsed architecture from above sectors, most of these terraces have been destroyed. There are a few isolated cases where foundations of architecture remain, however it is unclear if all of the terraces that were in Sector 4 had architecture compounds or not. One terrace, which was likely the widest terrace on the west side of Cerro Huancha is well-preserved and at one time likely encircled all of Cerro Huancha. Today it is best preserved between Sectors 3 and 4, and continues to Sector 2. It is constructions like these that likely connected different site sectors allowing easy

movement between sectors. The remnants of architectural complexes, as described for Sector 3, are still standing on this terrace.

7.5 Sector 5

Sector 5 is about 1,210 m^2 in size and located adjacent to and below Sector 1 and above Sector 6. Sector 5 is enclosed by a wall. Within the wall is a large, multi-level patio, and adjacent are both small and large rooms. It is my impression that this architectural compound was built later than the architecture in Sector 1 and Sector 6, and may date to the Late Horizon Period. Ceramic molds and sherds with unique press-mold designs were recovered in surface collection in this sector.

7.6 Sector 6

Sector 6 is about 445 m^2 in area, and located adjacent to Sector 5 on the northwest side of Cerro Huancha, and above Sector 11. Sector 6 is a naturally flat area defined by a multi-room rectangular structure on the north side of the sector. South of the structure is open area.

A concentration of lithic debitage is noted in the open area on the south side of the structure. Also, disarticulated, fragmented, and sun-bleached human remains from looting activities are also scattered around structure which is an above ground funerary structure used in ancestor worship (Doyle 1988; Isbell 2010). Above-ground mortuary structures are known as "*chullpas*." Sector 6's mortuary structure is oriented towards north.

The structure has four separate rooms although it is also heavily disturbed from looting activity. All rooms had a small doorway that opens onto the open space south. Salvage excavation was carried out in Compound 4 to examine whether any of the

structure was intact and understand construction of the structure. Sector 6 and Sector 11, both located on the northeast side of Cerro Huancha both have funerary structures.

7.7 Sector 7

Sector 7 is located on the north side of Cerro Huancha, below Sectors 1 and 5. It is a total of 8,120 m^2 in size. Extending from the north side of Huancha to the south side Sector 7 is characterized by multiple large walls constructed with local rock that run parallel along the north side of Cerro Huancha and continue to the south side. These walls are constructed like terraces, and could have been used as defensive features. The original height is unknown, but they could also have served as a walkway around Cerro Huancha and are likely associated with the preserved terrace described in Sector 4. These walls do not have evidence of habitation and, with the exception of a few small rooms, are devoid of architectural compounds. Along one of the walls there is a break with, with upright stones, forming a doorway. Rooms are on either side of the doorway, and this may have been the official or ceremonial entryway to the site. Another note regarding these walls/terraces is that they would have led visitors directly to Sectors 6 and 11. In Sector 7 one test trench, Trench 1, was excavated to understand wall construction.

7.8 Sector 8

Sector 8 is about 11060 m^2 in area and located on the northeast part of MV 900 below Sectors 6 and 11 close to the base of Cerro Huancha and the Sinsicap River. Similar in character to Sector 7, Sector 8 has several walls that continue into Sector 7,

which continue east around Cerro Huancha. It also has at least one perpendicular wall that runs up from the base of Huancha. No architecture besides walls has been noted in this Sector and it is practically devoid of cultural materials.

7.9 Sector 9

Sector 9 is 1600 m^2 in area and located on the north east side of Cerro Huancha, below Sector 12. Like Sectors 7 and 8 it is devoid of visible structures, however, rather than being characterized by large walls, like Sector 8, it has a series of small agricultural terraces. It is possible that these served as agricultural terraces, there are modern terraces at the same elevation not far from these terraces.

7.10 Sector 10

Sector 10 is 3735 m^2 in area and located on the southeast side of Cerro Huancha, and is just below Sector 1. Composed of architectural compounds that follow similar patterns as Sector 1, Sector 10 is made up of plazas, multi-level compounds made up of small and large rooms with patios. As a result of looters activity, human remains were noted in the Sector and tombs were likely part of architectural compounds.

7.11 Sector 11

Sector 11 is about 330 m^2 in area and located on the northeast side of Cerro Huancha below Sector 6 and above Sector 2. Like Sector 6, Sector 11 is characterized by a structure adjacent to open area. The structure, or *chullpa*, an above-ground funerary structure, has disarticulated and sun-bleached human remains from looting

activities around it. There are several differences between Sector 6 and 11. The flat area that makes up Sector 11 appears to have been constructed, compared to Sector 6 which is a naturally flat area on the mountain. The Sector 11 structure is the south side of the sector, oriented north. Two rooms make up the structure, each with a small doorway facing east that opens onto the plaza. Sector 11's funerary structure has fewer rooms than Sector 6.

7.12 Sector 12

Sector 12 is 4910 m^2 in area located on the southeast side of Huancha, southeast of Sector 9 and west and below Sector 8. Sector 12 is a natural plateau and is made up of a series of architectural compounds. This is the lowest architectural compounds on Cerro Huancha. Most of the site at this elevation consists of walls or terraces. Sector 12's architecture is less dense compared to Sector 1. However, the sector is heavily looted and has been subject to much fall from sectors above.

7.13 Sector 13

Sector 13 is located on the northwest side of Cerro Huancha below Sector 2 and east of Sector 12. This area is about 6000 m^2 in area and characterized by terraces. There is no visible standing architecture and perhaps they were built to prevent erosion. It is likely that they may be associated with terraces in Sector 4. No material culture was noted in this sector.

7.14 Sector 14

Sector 14 is located on the south side of Cerro Huancha, below Sector 3 and 10. The sector begins just above modern agricultural fields and is about 8770 m^2 in area. Prehispanic canals and small terraces have been identified during survey of the site, but are not included in the current site map. It is rare to encounter material culture in this sector. The little material culture that was noted is presumed to have fallen down from Sectors 3 and 10. The total area reported between all site sectors is 8 hectares, the remaining 2 hectares is made up by area between site sectors.

7.15 Surface Collection

A stratified, judgmental sampling strategy was employed at Cerro Huancha MV 900 as initial survey of the site indicated this was the most time-effective strategy for investigating what site sectors were occupied in what period. Surface collection methods were previously described in Section 5.5. Eleven of fourteen site sectors underwent surface collection in 69 collection units of various sizes and shapes based on architectural layouts (Figure 5.3).

A total of 1,407 diagnostic sherds (Table 7.1) were recovered in surface collections in a total of 10,125 m^2 or 10.1% of the 10 ha site. Between 4% and 100% of each site sector's total area was surface collected (Tables 7.2). An example of a collection unit from Sector 4 is seen in Figure 7.4. Sections 5.5 and 5.9 describe the methods used in surface collection and ceramic analysis.

Figure 7.4: Surface Collection Unit at Cerro Huancha in Sector 4

Rims are the most frequent part of type a vessel present in the assemblage, making up 80.4% (n=1,131) of the assemblage. The second most frequent diagnostic part of vessels recovered was decorated body sherds at 13.4%[33] (Table 5.1). Non-ceramic artifacts are described in Section 7.20. To gain a better understanding of where different types of activities on site occurred I have calculated ceramic densities per site sector. I also compare the distribution of functional vessel types using rim frequencies and correspondence analysis to begin to understand what different site sectors may have been used for. Finally, I present relevant data recovered in surface collection that indicates what site sectors were likely occupied during the LIP/LH.

[33] Body sherds category also includes necks without rims.

Table 7.1 Cerro Huancha MV 900 Surface Collection Ceramic Assemblage

Part	Ct	%
Decorated Body	189	13.4
Rim	1,131	80.4
Base	54	3.8
Unknown	33	2.4
Totals	1407	100

7.15.1 Site Sectors Ceramic Frequencies

A breakdown of total square meters collected in each sector, the number of diagnostics and density of diagnostics per square meter in each sector is in Table 5.2. Site sectors had an average of between .03 and .19 diagnostic sherds per square meter. The overall average was 0.14 diagnostic sherds per square meter were collected. Not surprisingly, site sectors characterized by agglutinated architectural compounds, 1, 2, 3, 4, 5, and 10 had higher densities of diagnostic sherds than site sectors without agglutinated architectural compounds (with the exception of Sector 11). All of these sectors averaged at least .10 diagnostics per square meter or greater. At .19 diagnostics per square meters, Sector 11, a sector associated with ceremonial practices also has a high density of diagnostic sherds per square meter. All of the sherds collected in Sector 11 were from heavily looted architecture.

Sectors 1 and 10 had the highest concentration of diagnostics recovered with .19 diagnostics per square meter. Sector 1 is characterized by small plazas with agglutinated compounds. With the densest concentration of architecture on site its location and architecture suggests it is a primary space of activity for site residents. Similarly, Sector

10, adjacent to Sector 1 is also characterized by dense terraced agglutinated architectural compounds.

Sectors 2 and 3 are smaller sectors than Sectors 1 and 10. Both are located on the west side of Cerro Huancha at about the same elevation. As small sectors characterized by agglutinated compounds they both also had higher frequencies of diagnostics compared to other sectors, at .15 and .18 per square meter. Sector 4, located downslope of Sectors 1, 2, and 3, is a large site sector with limited agglutinated architecture preserved. The few foundations of structures remaining suggest architectural compounds on terraces were less dense in this area, compared to Sectors 1, 2, 3, and 5. The higher density of diagnostic sherds in Sector 4 is likely due to ceramics that have fallen downslope from Sectors 1, 2, and 3.

On the opposite end of the spectrum, Sectors 7 and 8 have the lowest densities of any site sector collected at .03 diagnostic sherds per square meter collected. Neither of these site sectors have agglutinated compounds, they are characterized by wall-terraces devoid of residential compounds therefore a lower density of ceramics is expected. Architecture in these sectors suggest they were not used for production activities on a daily basis such as cooking. Sectors with agglutinated architecture and higher densities of diagnostic ceramics suggest these areas were more likely to be in use on a daily basis. Overall this data indicates that site sectors with agglutinated architectural compounds averaged a much higher quantity of diagnostic sherds per square meter collected than those without architectural compounds.

Table 7.2: Average Diagnostics by Sector, Cerro Huancha MV 900 Surface Collection

Sector #	Area Collected ($m^{2)}$	# diags	Avg. Diags per m2 collected	Total Area (m2)	% of Sector Collected
MV 900-1	1693	327	0.19	5700	30
MV 900-2	1360	206	0.15	1360	100
MV 900-3	732	128	0.18	900	81
MV 900-4	1461	147	0.1	8000	18
MV 900-5	1210	192	0.16	1210	100
MV 900-6	445	23	0.05	445	100
MV 900-7	322	10	0.03	8120	4
MV 900-8	552	16	0.03	11060	5
MV 900-10	1204	230	0.19	3735	32
MV 900-11	330	58	0.18	330	100
MV 900-12	816	64	0.08	4910	17
NA*	0	6	0	0	0
Totals	10125	1407	0.14	45770	

7.16 Functional Analysis: Comparing Site Sectors

Functional analysis and methods are explained in detail along with my ceramic typology in Section 5.9. The general principle is that vessel classes are grouped into functional categories based on vessel form and other physical characteristics (Ringberg 2012; Skibo 2013). I have identified three functional categories and their associated vessel forms: cooking (ollas and pans), serving (bowls and bottles), and storage (jars and tinajas). The distribution and frequencies of vessel types associated with cooking, serving, and storage provides a line of evidence for inferring the relative importance of

different activities in each sector. This analysis uses rims with a rim diameter of 5% or greater that were assigned a vessel class during analysis.

If different activities were carried out in different site sectors I would expect a varied distribution of functional categories. The average distribution of the assemblage as a whole offers a means to broadly classify areas of the site based on frequencies of vessel functions.

Comparing sector distributions to the overall average distributions may correspond with the following expectation:

- Households at Cerro Huancha MV 900 were likely located in multiple site sectors.
- Elites are expected to have occupied large compounds in Sectors 1 and 10, site sectors with the largest compounds at Cerro Huancha MV 900. Larger compounds were likely public community spaces and elite households. As community leaders, elites were obligated to sponsor feasting events for the community and visitors. I expect higher densities of ceramics overall in elite households and administrative areas compared to commoner households. I also expect a greater percentage of serving wares present in these sectors than commoner households.
- Commoner households are expected to be located in site sectors lower on Cerro Huancha, like Sectors 2, 3, and 12, where agglutinated compounds tend to be made up of small rooms. Commoner households are expected to have a greater percentage of their rim assemblage dedicated to cooking and storage than serving.

- Some site sectors may primarily be dedicated to community storage and I would expect a higher percentage of storage vessels present compared to other site sectors.
- Site sectors associated with ceremonial activities, like Sectors 6 and 11 may have an unusual distribution of functional vessels, potentially high in serving wares, as the architecture present associated with disarticulated human remains suggests this site sector is a ceremonial space and unlikely location where daily cooking and storage activities occurred.

Figure 7.5 and Table 7.3 display the distribution of surface collection by functional category. Table 7.3 also includes breakdown by vessel form, 94% of rims with 5% or more of rim diameter present were assigned to a functional category. Overall, 62% of the functional surface collection assemblage were rims from cooking vessels (Table 7.3). The second highest frequency of rim vessel forms recovered is in the storage category at 22%. This is followed by rims from the serving category at 16%. In all site sectors, cooking vessel types are the most frequently encountered rims, accounting for between 56% and 100% of the site sectors' assemblages. Following the cooking functional category, like the overall distribution of rims from surface collection, many site sectors had vessels associated with storage as the second most frequently encountered category including Sectors 1, 2, 6, 11 and 12. From this data it appears that Sectors 2 (28%) and Sectors 12 (38%) have the highest percentage of their rim assemblages associated with storage. The percentage of rims associated with serving vessel types is greater than storage forms in Sectors 3, 4, 5, and 10. Sectors 4 (21%) and 5 (22%) have the highest percentage of serving wares among site sectors.

Overall, this data suggests that all site sectors that were surface collected, with the exception of Sectors 7 and 8, had similar frequencies of cooking, serving and storage vessels activities. While the frequencies in Sectors 7 (N=9) and 8 (N=8) are consistent with the distribution of the other site sectors' functional categories frequencies few diagnostics were recovered in this area. As has been previously noted these sectors' wall-terraces and absence of buildings suggests ceramics in these sectors have fallen downslope into these sectors from sectors located higher up on Cerro Huancha with buildings.

It is not unexpected that cooking vessel types, in particular ollas, have the highest frequency among vessel classes as they have more frequent use than other vessel classes, leading to a higher occurrence of breakage. Returning to my earlier hypotheses about elite and commoner households, if Sector 1 was an area of elite households and administrative buildings, and Sector 3 was an area of commoner households, comparing the distribution of functional categories between the two suggests that commoner households may have a slightly greater frequency of cooking vessels, while elite households had more storage, but overall the distribution between functional categories is very similar. One sector that stands out is Sector 12, which has nearly 38% of its assemblage dedicated to storage, suggesting this area may have been primarily dedicated to storage activities. I tested the statistical significance of my surface collection findings using correspondence analysis.

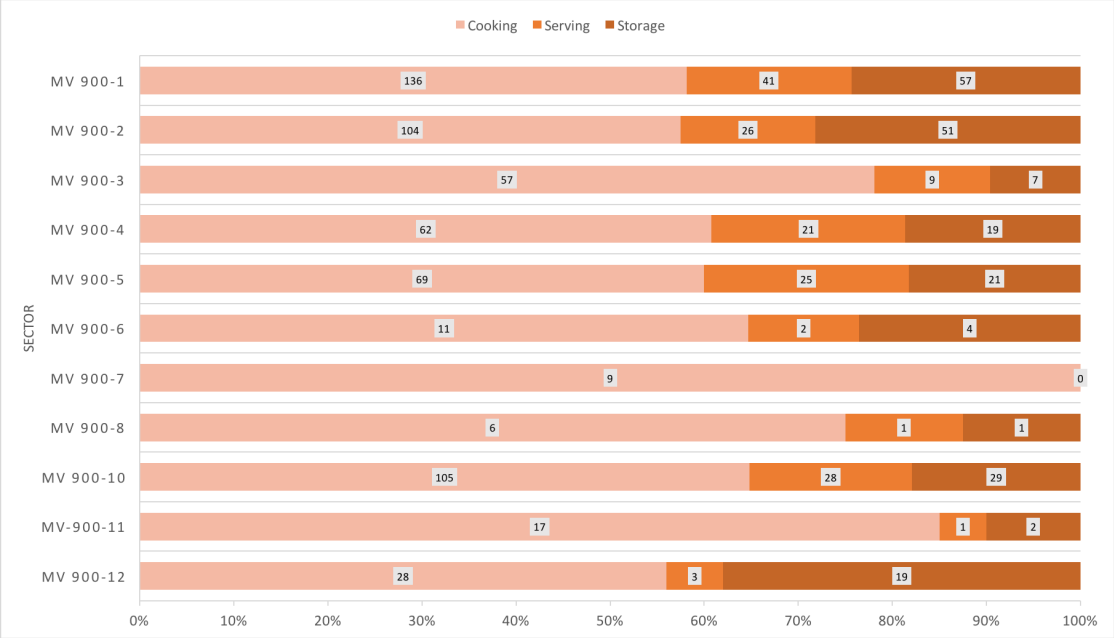


Figure 7.5: Cerro Huancha MV 900 Surface Collection Frequencies by Functional Categories with count

Table 7.3: Cerro Huancha MV 900 Surface Collection Assemblage by Functional Categories by Site Sector

Category	Forms	MV 900-1		MV 900-2		MV 900-3		MV 900-4		MV 900-5		MV 900-6		MV 900-7		MV 900-8		MV 900-10		MV-900 11		MV 900-12		Total	
		Ct	%	CT	%	CT	%	CT	%	CT	%	CT	%	CT	%	CT	%	CT	%	CT	%	CT	%	Ct	%
Cooking	Pan	8	58	10	58	4	78	8	61	7	60	0	65	0	100	0	75	4	65	1	85	3	56	45	62
	Olla	128		94		53		54		62		11		9		6		101		16		25		559	
Serving	Bowl	42	18	26	14	9	12	21	21	25	22	2	12	0	0	1	12.5	27	17	1	5	2	6	156	16
	Bottle	0		0		0		0		0		0		0		0		1		0		1		2	
Storage	Jar	50	24	49	28	7	10	17	18	20	18	2	23	0	0	1	12.5	24	18	2	10	19	38	191	22
	Tinaja	7		2		0		2		1		2		0		0		5		0		0		19	
NA	Other	4	NA	0	NA	0	NA	0	NA	2	NA	0	NA	0	NA	0	NA	2	NA	0	NA	0	NA	8	NA
	Unknown	10		2		28		4		1		0		0		0		6		0		1		52	
All Rims		249		183		101		106		118		17		9		8		170		20		51		1032	
Rims in Analysis		235	100	181	100	73	100	102	100	115	100	17	100	9	100	8	100	162	100	20	100	50	100	972	100

7.17 Correspondence Analysis: Comparing Site Sector

Correspondence analysis provides additional insight into the relationship between functional vessel classes and site sectors. Based on optimal scaling by establishing rank-order between categories it measures multivariate relationships. In this case I use correspondence analysis to determine the rank-order between Cerro Huancha MV 900's site sectors and vessel classes (based on rim counts). The closer to the axis of the two planes, the closer the relationship. The further away from the plane and other variables indicates less association between vessel classes and site sectors.

At Cerro Huancha MV 900 I expect strong relationships between vessel type and sector to indicate what the function of that site sector was. Correspondence analysis between Cerro Huancha MV 900 site sectors and the distribution of vessel classes is statistically significant with a p-value of .003. There are five visible clusters on the graph, which shows the relationships between site sectors and vessel forms based on rim counts from surface collection, See Section 5.9.2 for ceramic typology. Below are some observations.

Some observations from the graph (Figure 7.6):

- Individual serving bowls (2) are strongly associated with Sectors 1, 4, 5.
- Jars (7) and pans (1) are strongly associated with Sector 2.
- Ollas (6) are most closely related to Sectors 3, 7, 8, 10, 11
- Two outliers in the graph are bottles (8) are most closely related to Sector 12, and tinajas (9) are most closely associated with Sector 6

For reference see a map of Cerro Huancha MV 900 in Figure 5.2. The results of the correspondence analysis compliments and contradicts the functional analysis, adding nuance to initial interpretations of site sectors' functions. Sectors 1 and 5 are adjacent at the top of Cerro Huancha. They are both made up a series of agglutinated, terraced structures. The strong relationship with individual serving bowls suggests that these sectors may have been locations for feasting. The distribution of functional categories between Sectors 1, 4, and 5 are very similar.

Sector 4 is located below Sector 1 in a wash. There are several agglutinated architectural compounds built on terraces that descend towards the base of Cerro Huancha. The limited remaining architecture in Sector 4 suggests architecture in this sector was initially much less dense than other site sectors characterized by agglutinated architecture such as Sectors 1, 5 and 10. During surface collection many groundstones were found towards the base of Cerro Huancha in Sector 4, having fallen downslope. I suggest that Sector 4's association with bowls is likely due to architectural and material culture falling downslope from Sector 1. However, among all site sectors the close association of individual serving bowls with these site sectors suggests that while there is not a clear area designated only for feasting at Cerro Huancha MV 900, these sectors have the closest relationship with the form, suggesting this could have occurred on site.

Jars are a vessel form associated with liquid storage, and pans are a form associated with cooking and serving. Their relationship is not surprising given that both vessel types are used for food preparation and serving. These two forms are most closely associated with Sector 2, a site sector of common households.

The two outliers in the data are attributed to the low counts of these vessel forms types in the rim assemblage. Bottles are most closely related to Sector 12, but the functional analysis shows an unusually high percentage of rims from storage vessels. Bottles and storage vessels are not forms traditionally associated together. The other outlier is in Sector 6, a site sector associated with ceremonial and ancestor worship activities. Tinajas, a storage vessel used for storing large volumes of dry and wet goods, is the vessel type most closely associated with Sector 6. This is also surprising as fineware vessel such as bottles would be expected associated with ceremonial activities.

The relationship between ollas and Sectors 7 and 8 is surprising. These areas are characterized by wall-terraces on the east side of Cerro Huancha devoid of buildings. It is likely that the ceramics recovered in this sector had fallen into the area from Sectors 1,5, and 6, site sectors with buildings located just above Sectors 7 and 8.

The evidence for differentiated relationships between vessel classes and site sectors suggests certain site sectors were the location of specific activities. The clusters in the graph highlights (with the exception of outliers) sectors that likely served as commoner households, elite households, and administrative spaces based on the vessel types associated with them.

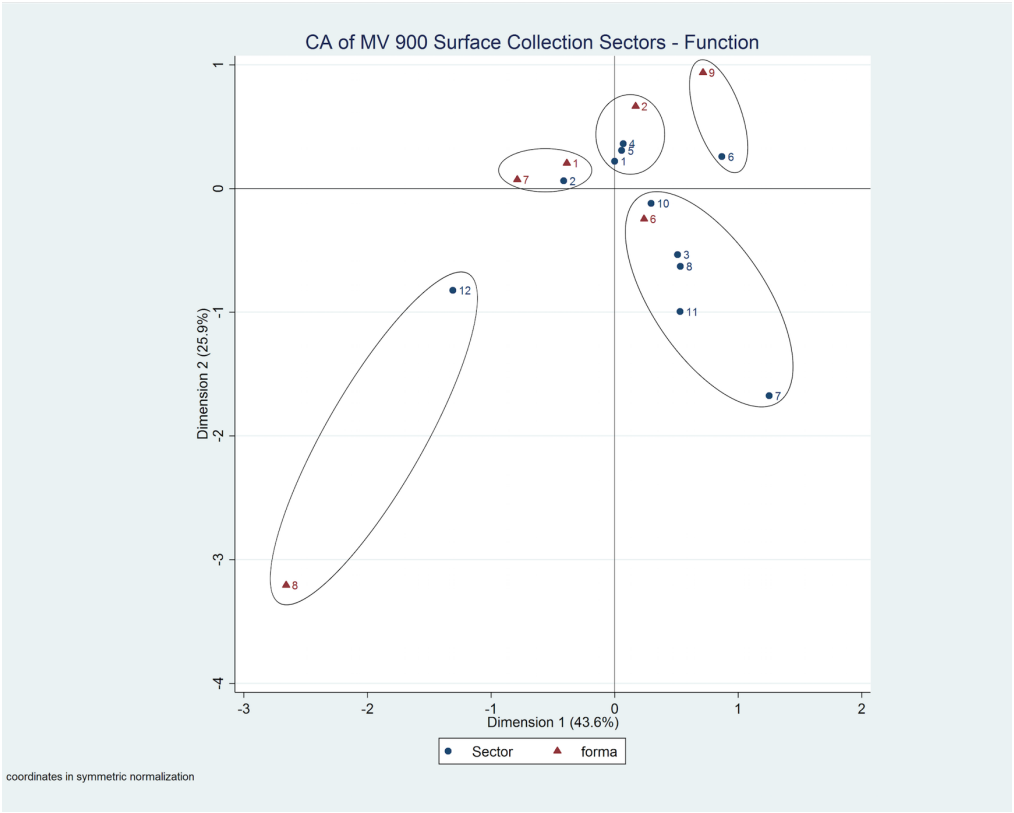


Figure 7.6: Cerro Huancha MV 900 Surface Collection Vessel Forms and Sectors Correspondence Analysis

(1 = Pan, 2 = Individual Serving Bowl, 6 = Olla, 7 = Jar, 8 = Bottle, and 9 = Tinaja).

7.18 Temporal Early Intermediate Period Ceramics

The ceramic assemblage recovered in surface collection at Cerro Huancha MV 900 suggests the site has a Salinar phase occupation. Some Gallinazo phase diagnostic sherds were also recovered, including Castillo Incised. Surface collection did not recover evidence to indicate a Moche phase occupation. While diagnostic Salinar and Gallinazo diagnostic sherds were noted in many sectors of Cerro Huancha MV 900[34], it is likely that the EIP occupation of the site is limited to Sector 1.

[34] Ceramic data was not recorded in a manner to quantify the number of Salinar and Gallinazo diagnostics in the assemblage.

7.19 Late Intermediate Period and Late Horizon Ceramics

One of the goals of the surface collection was to identify sectors at Cerro Huancha MV 900 with LIP and LH occupations. I relied on the distribution of Chimú and Chimú-Inca style ceramics to identify these sectors. Notable characteristics of Chimu and Chimu-Inca ceramics are that they are often blackware and have press-molded or paddle-stamped designs. A vessel form associated with the Chimú and LIP that was also used into the early Colonial period is the carinated rim olla (Figure 5.8). Another unique vessel form, the aryballoid, is distinctive of the Inca and Late Horizon period. The presence of these vessel forms in site sectors suggests that those sectors were occupied during the LIP and/or LH periods.

Utilitarian black or gray wares are produced as a result of firing in a reduced atmosphere. Blackware ceramics in the Moche Valley are well-documented as associated with the Chimu tradition. They appear in the Moche Valley in the MH and are produced through the early Colonial period (Donnan and Mackey 1978). Blackware ceramics are reported in the Huamachuco/Alto Chicama highlands but are identified as Chimú sherds and are not produced in those highland areas (Krzanowski 2006; J. Topic and T. Topic 1985).

Black/gray wares recovered at Cerro Huancha MV 900 include both utilitarian and finewares. Of the 1,407 diagnostic sherds collected during surface collection, 6.3% were black or gray wares, 84.5% plainwares and 9.2% undetermined. Black wares were collected in all site sectors that underwent surface collection, except Sector 7. However,

their absence in Sector 7 likely has little significance as Sector 7 has a very low density of sherds compared to the majority of other site sectors.

A total of 2.8% of the diagnostic collection (40 sherds total) were either press-molded or had paddle-stamped designs. Press-molded or paddle-stamped sherds were found in all sectors that underwent surface collection (Sectors 1, 2, 3, 4, 5, 6, 8, 10, 11) except Sectors 7 and 12. The designs included classic Chimú "piel de ganso" or "goose skin", or stippling. Stippling appears in various sizes. Other typical Chimú designs including diagonal press-mold lines with designs, and other geometric designs, are present. One diagnostic sherd recovered dates to the Late Horizon or Inca period. A diagnostic body sherd that is painted in Cuzco-Inca aryballoid style was recovered in Sector 11 (Figure 7.7) indicating this sector was in use during the LH.

Two molds with designs typical for Chimu-style press-molds were found in Sector 5 (Figure 7.8). It is unclear if these molds correspond to the LIP or LH. Some unique press-mold designs were recovered and are likely local adaptations (see Section 10.5.3). No other evidence of ceramic production was recovered at MV 900.

Additionally, 10 carinated rims were collected in diagnostic surface collection in Sectors 1(N=4), 3(N=1), 5(N=2), and 10(N=3). All of these sectors have agglutinated compounds; the majority are located in the upper area of Cerro Huancha, suggested to be elite households and administrative sectors. Based on the ceramic data presented thus far, Sectors 1, 2, 3, 4, 5, 6, 10, and 11 have surface ceramics associated with the LIP and/or LH periods. See Figure 5.2 for map of Cerro Huancha. These eight sectors make up the majority of site sectors with agglutinated architecture on the site.

Differentiating between Chimu style LIP and LH diagnostic sherds is not possible at this time. The only clear LH diagnostic sherd recovered in surface collection is a single Cuzco-Inca aryballoid sherd recovered in Sector 11.

Figure 7.7: Cuzco-Inca aryballoid sherd

Figure 7.8: Ceramic Mold with Press-Mold Design

7.20 Other Artifacts

Throughout surface collection, artifacts were collected as well when encountered in collection units. Surface grabs also occurred when metal artifacts were noted on site. When surface grabs occurred the site sector collected in was noted, and when possible the artifact's UTM location was recorded. Non-ceramic artifacts recovered included lithics (e.g. hoes, cores, debitage flakes) (Figure 7.9), four spindle whorls, and metal artifacts including a nose ring (Figure 7.10), and a *tupu*, or pin.[35]. Several hoes were recovered as surface grabs encountered in lower site sectors, the majority are made of andesite or basalt, occasionally local stone is modified into a lithic tool. Mudstone lithics are reported in the middle Moche Valley (Surridge 2010), however none were encountered at Cerro Huancha MV 900. There is no systematic patterning indicated by the distribution of these non-ceramic artifacts across MV 900 site sectors. Concentrations of debitage was noted in Sectors 6 and 11 in open areas of the sectors. This is likely a result of shaping stone used as a roof for the above-ground tomb in this sector. The debitage is the same material as the stones thrown aside by looters that were likely part of the roof structure of the funerary structures in both sectors.

[35] For descriptions of metal artifacts by Colin Thomas see Appendix G.

Figure 7.9: Lithic

Figure 7.10: Nose Ring

7.21 Surface Collection Implications

Several conclusions can be drawn from surface collection at Cerro Huancha MV 900. Site sectors with agglutinated architecture, 1, 2, 3, 5, and 10 had higher densities of diagnostic sherds (see Section 7.16) than site sectors without agglutinated architecture. Sectors with higher densities of diagnostics may indicate these sectors were spaces of concentrated activities, but they also may indicate those site sectors have been occupied for longer periods of time. If that is the case Sectors 1 and 10 may have longer occupational periods than other site sectors based on their high density of ceramics.

The overall distribution of rims within functional categories, 62% cooking associated vessel types, 22% storage associated vessel types, and 16% serving, was fairly representational of most site sectors. The distribution of site sectors without agglutinated architectural compounds, Sectors 6, 7, 8 and 11, was fairly consistent with the other site sectors. The low frequencies of ceramics in areas without buildings, like Sectors 7 and 8, suggest cooking and storage activities did not occur here. Sectors 6 and 11, areas characterized by ceremonial architecture, but dominated by open space, also do not appear to be areas where cooking and storage activities occurred. Vessel forms associated with functional categories activities may have been brought into those areas for other types of activities, or they also may have fallen down into these sectors from sectors further uphill where these activities did occur.

Functional analysis suggests that site sectors with elite households, like Sectors 1 and 5, may have a higher percentage of storage and serving wares than common households, like Sector 3. The functional categories however do not highlight specific site sectors dedicated to a single activity. Only Sector 12 appears to have a large percentage of its rim assemblage that are storage vessels, and may have principally served as a storage facility.

Correspondence analysis complements the functional analysis highlighting close and distant relationships between specific vessel forms and site sectors. For example, bowls, serving vessel forms are most closely associated with Sectors 1, 4, and 5. While there are outliers in the analysis, the surface collection rim assemblage suggests that Sectors 1, 5, and 10 may contain elite households, and administrative buildings. Commoner households, like Sector 3, had similar vessel

forms, but have higher frequencies of cooking forms present compared to serving and storage forms. Prior to this analysis, relying on sector location and the presence of architecture I assumed that Sector 2 was also a commoner household as it shares similar features as Sector 3. However, Sector 2 has a higher percentage of storage than Sector 3, and even greater than Sector 1. Therefore, it is unclear what activities occurred in Sector 2, was it a commoner household with more storage? Or elite household, or had another use? Surface collection alone does not answer these questions.

One of the goals of surface collection was to identify types of activities in different sectors based upon the ceramic assemblage. While my surface collection analysis does not clearly distinguish what each site sector was used for, it has provided a preliminary baseline for understanding site sectors' functions. This analysis was taken into consideration when site sectors and architectural compounds were selected for excavations.

Another goal of surface collection was to identify what site sectors were occupied during what time periods. Coastal EIP diagnostics (Salinar and Gallinazo), with the exception of Moche diagnostics were recovered in several site sector, however, Chimú diagnostic sherds are found in nearly all site sectors collected in larger quantities. I will need to rely on excavations can confirm that all site sectors were occupied in the LIP and LH, and identify site sectors with Salinar occupations. Chimú style diagnostic ceramics were recovered in almost all site sectors surface collected (11 of 12), suggesting these site sectors may have been occupied during the LIP and/or LH.

8 Cerro Huancha MV 900 Excavations

Excavations enabled documentation of Cerro Huancha MV 900's occupational history, including local practices and activities over time to understand residents' histories and interregional interaction with outside groups. Excavations recorded architecture, features, and recovered material culture to understand local practices and activities changed and/or were maintained from the LIP to LH. Two occupations at Cerro Huancha MV 900 were identified corresponding with the Salinar/early EIP and LIP/LH as a result of excavation of 114.92 m^2 and 26.61 m^3 of sediment in four site sectors, Sectors 1, 3, 6, and 7 (Figure 8.1, Table 8.1), The LIP/LH occupation is confirmed by AMS dating (Section 8.6.2). Three phases were identified in the LIP/LH occupation. Sector 1 is the only site sector with excavated evidence that indicates it was under use in both occupations and all three phases. Excavations in the other three site sectors suggest these sectors were constructed in the LIP/LH. This chapter describes excavations at Cerro Huancha MV 900 including site architecture, masonry, and significant features. See Chapter 5 for descriptions of excavation strategy and methods.

Figure 8.1: Cerro Huancha MV 900 Sectors excavated

Table 8.1: Cerro Huancha MV 900 Area Excavated

Cerro Huancha MV 900 Compounds	Area Excavated (m^2)	Volume of Sediment Excavated (m^3)
1	4	0.69
2	52.95	13.01
3	28.97	7.68
4	1.1	2.04
5	10	1.1
6	10	1.76
Trench 1	7.9	0.33
Total	114.92	26.61

8.1 Construction and Architecture at Cerro Huancha

The remaining intact architecture at Cerro Huancha MV 900 suggests its initial construction was well-planned and an incredible amount of labor was mobilized to construct the site. In Section 5.4 I describe mapping methods at Cerro Huancha MV 900. An overview of Cerro Huancha MV 900' is available in Section 6.2.1. In Sections 7.1-7.14 Cerro Huancha MV 900 site sectors are described. In the next section I generally describe terracing construction and architecture identified on site including agglutinated compounds, plazas, and corridors.

8.1.1 Terraces

Cerro Huancha MV 900 was constructed with material from the mountain the site was built on. To build buildings on Cerro Huancha, flat areas had to be created on the hill. At Cerro Huancha MV 900 I identified two ways flat areas and terraces were constructed:

- By quarrying the natural stone of the mountain to create a level, wide area. Retaining walls, built with quarried stone are located below and above quarried flat areas against the face of the mountain, to support these terraces. Quarried stone was also used as necessary to create a level surface. No natural stone face was left exposed; retaining walls were constructed in Masonry Style I (Section 6.3.2.1), the highest quality masonry identified on site. Retaining walls are the tallest intact walls on site today, with some retaining walls in Sector 1 standing at 1.5 m tall. Sectors 1 and 3 are examples of this type of construction. Parts of Sectors 2, 3, and 10 were constructed in this style.
- On slopes, a wall is constructed to the desired height, sterile construction fills the area between the wall and mountain slope creating a flat area. At Cerro Huancha MV 900 these types of terraces tend to be architecture found in Sectors 4, 7, 8, and one terrace encircles Cerro Huancha. Sectors 1, 3, and 7 had terraces built this way. Construction fill was predominately sterile. Only on rare occasionally would a sherd or lithic be encountered in the fill.

8.1.2 Cerro Huancha MV 900 Architecture

Three general types of architecture were identified at Cerro Huancha MV 900: agglutinated compounds, plazas, corridors. These three types of architecture were identified in Sector 1; corridors in particular were not as easily identifiable in other site sectors. The majority of architecture at Cerro Huancha MV 900 is built with local stone. Much of Cerro Huancha MV 900 construction materials came from the southwest side

of the hill. Non-local stone to Cerro Huancha was occasionally used in construction, including up-right slabs for doorways and corners of rooms made from igneous rock, potentially andesite or basalt[36], and occasionally groundstone. When constructing architectural compounds and preparing floors at Cerro Huancha MV 900 no additional sediment was brought in, resulting in little depositional stratigraphy in excavations. In 2009, I conducted test excavations in architectural compounds on terraces under MOP/PACO at MV 224, a Gallinazo period site in the middle Moche Valley. The excavations documented that sediment from the river or valley floor was brought up to prepare floors on terraces. My excavations did not document this at Cerro Huancha MV 900.

Agglutinated compounds are the most common form of architecture at Cerro Huancha MV 900. Constructed on terraces or flat spaces, retaining walls often serve as one side of the multi-room enclosure or compound. Agglutinated compounds share walls with the adjoining compound. In fact, the only freestanding or individual structures at Cerro Huancha MV 900 are funerary structures in Sectors 6 and 11. No other structures are freestanding they are always associated with a series of agglutinated compounds.

Agglutinated compounds are typically made up of a large patio space and at least one room. Large agglutinated compounds like those found in Sector 1 are often multi-level and have multiple rooms adjacent to the patio space. Occasionally benches were also identified in agglutinated compounds but are not found universally. Typically,

[36] Billman report an igneous rock quarry in the lower Sinsicap valley (MV 309).

compounds are somewhat rectangular in shape; often one side is curved following site topography (Figures 7.3 and 8.2).

Patio spaces within compounds are the largest open spaces within compounds at Cerro Huancha MV 900. Patios were also multi-level and contained storage bins. They are likely where the majority of household activities occurred. Excavations documented activities ranging from preparing and cooking food to weaving in patios. Patios were likely roofed and some buildings in Sector 1 were at least two stories tall. Walls intact today are usually less than 1 meter high.

Two other walls that delimited the compound run parallel away from the retaining wall. These walls delimited compounds, which originally are very large and open, were subdivided as compounds were remodeled over time. They also often have uprights slabs at the end of the wall, similar to uprights that form doorways. These walls often descend down multiple levels of retaining walls terminating at the edge of construction in that sector, suggesting that these buildings were constructed at the same time.

Rooms and patios in agglutinated compounds at Cerro Huancha MV 900 varied in size or shape, ranging from 1 x 1 m, to 3 x 1 m, to 5 x 5 m. The majority of rooms are square or rectangular occasionally one side is curvilinear. Construction quality and style of rooms varies extremely. Masonry styles documented in excavations are described in Section 8.2.2, however there are bound to be other masonry styles on site yet to be documented. Often times each wall in a room was built with different masonry styles.

Excavations in Sector 1 documented that this is in part because compounds and rooms become subdivided over time. Consistent masonry styles do not appear to be a

priority on site. Also, no corner abutments are noted for walls constructed during remodeling. New walls are constructed directly on to a preexisting wall. Entryways to compounds are usually directly into the compound's patio and designated by upright stones on either side of the entryway.

In addition to agglutinated compounds, plazas are also a common architectural type found at Cerro Huancha MV 900. Plazas of varying size, between 4 x 5 m and 20 x 10 m, have been identified in all site sectors with agglutinated compounds. The largest plaza at Cerro Huancha MV 900 is in Sector 1, 20 x 10 m. Smaller open plazas are located on the northwest, northeast, and southwest sides of Sector 1. Characterized as open space areas not enclosed by a compound and devoid of other architecture, plazas are located on both natural and artificial terraces adjacent to compounds and corridors. Plazas are spaces for community to come together for ceremonies, celebrations, and carryout communal tasks.

Finally, corridors, narrow open spaces like alleyways, were identified between agglutinated compounds in Sectors 1 and 10 (Figure 8.3). These walkways enabled movement through Sectors 1 and 10 between agglutinated compounds and plazas. No formal corridors were identified in site sectors on the lower slopes but it is likely that the constructed terraces served as walkways to enable movement between site sectors, as has been identified in Sector 4 (see Section 7.4). Single stairs and sloped ramps allow access between terraces on different levels.

Figure 8.2: Split Level Architectural Compound Sector 1 (room is in foreground)

Figure 8.3: Corridors – Sector 1 Ground Floor

8.2 Excavations in Sector 1: Compounds 1, 2, and 3

Excavations in Sector 1 occurred on the south side of the sector in Compound 1, Compound 2, and Compound 3 (Figure 8.4). Compound 1 is located in Sector 1, one terrace above Compounds 2 and 3**.** Excavations in this compound were limited to a single 2 x 2 m unit. Early on in excavation the disturbed nature of the unit was apparent, which resulted in the unit being backfilled and excavations focusing on Compounds 2 and 3.

Compound 2 is a 52.95 m^2 compound, composed of two terraces with patio sectors as well as two small rooms on the west side of the compound on the lower terrace. Excavations occurred in 11 units of various sizes, and 12 features were

identified (Appendix B). Two occupations were identified dating to the Salinar LIP/LH periods. During the LIP/LH period, two clear phases were identified through features and remodeling of compound architecture. Units 1, 5, 6, 7, 9, and 10 were excavated to sterile. Floors and features were documented including hearths and ash dumps. Compound 2 provides insight into the final phase of occupation at Cerro Huancha MV 900 during the LH period.

Compound 3 is a 28.97 m^2 compound that also includes two terraces; however, the upper terrace component is very small, compared to the terrace in Compound 2. Compound 3's lower terrace has a split-level patio and two small rooms on the west side, with an additional room, Feature 3.16 (1 x 1 m), very poorly constructed in the lower patio, Unit 5. Excavations occurred in eight units, and 25 features were identified (Appendix C). A single occupation with three phases was identified, dating to the LIP/LH. Architectural remodeling and features distinguish each phase. Excavations primarily focused on the upper and lower patio spaces, documenting activities in these sectors. Units 1, 2, 3, 4, 6, and sections of Units 5 and 7, were excavated to sterile.

Highlights from Compound 2 include features corresponding to the Salinar occupation at Cerro Huancha MV 900 and its storage rooms on the west side of the compound corresponding to the LH. Highlights from Compound 3 include a large *in situ* vessel and multiple large hearths, as well as remodeling activities. These highlights are hallmark traits for different occupations and phases, described in detail below.

Figure 8.4: Sector 1 Compounds, Units in Compounds 1 (Unit 1), 2 (Units 1-11), and 3 (Units 1-8)

8.2.1 Compounds 2 and 3: Floors, Features, Architecture, and Occupations

Initial levels of excavation in all architectural compounds included removing architectural fall from natural processes and looters' disturbance from the unit. Initial levels always contained the largest quantity of sediment removed. Excavations documented that Compounds 2 and 3 had undergone at least two occupations with three phases occurring during the LIP and LH. These phases were identified through remodeling of compounds (elaborated in the next section). Two features in Compound 2 (Features 2.11 and 2.12) were identified as dating to the Salinar period; however, no architecture was associated with the Salinar period in Compounds 2 or 3.

Excavations in Compounds 2 and 3 each encountered two thin floors, although they do not appear to correspond to the same occupational phases. Floors were compact, made with silty sediment and roots, and landsnails shells were often found in sediment in addition to cultural materials. Features recorded included hearths, ash dumps, and vessels in association with these floors (see Appendix B) for a list of features encountered in all excavations). The upper patio of Compound 3 (Units 1 and 2) had the best-preserved floors in the compound (PDs 116, 124, 167, and 168) (Figure 8.5). The majority of Unit 2 is dedicated to a large hearth feature associated with the floor. The later floor was 3–5 cm in thickness and uneven throughout the unit (Figur). Between floors was a thin deposit of construction fill made up of trash, 1–2 cm in thickness. In Compound 2, two floors were encountered in Units 9 and 10, each associated with hearths and complete vessels. Unit 5 had a compact level, made of plaster, dirt, and rocks (PD 275), which is associated with Features 2.02–2.05. Below this compact level in Level 9 (PD 342) were two Salinar period features, Features 2.10 and 2.11 (PD 315) located on a gravel deposit on bedrock.

Excavations detected very shallow occupations and minimal stratigraphy; therefore, architecture and masonry style is key to understanding remodeling and occupations during the LIP & LH. Remodeling may occur on a familial level, such as a family repurposing sectors of their household following the death of a family member and cultural traditions requiring the closing off of a room in the household to serve as a tomb. However, the new construction and remodeling of space in Compounds 2 and 3 were connected to local and regional sociopolitical and economic processes.

Figure 8.5: Floor in Compound 3, Unit 1

8.2.2 Masonry in Compounds 2 and 3

Different masonry styles enable reconstruction of phases of remodeling Compounds 2 and 3, providing insight into the sector's activities. A brief description of masonry styles and architecture will be followed by discussions of associated features. Section 8.2.3 describes Compounds 2 and 3's occupations and use of space over time. Different masonry types did not really stand out in surface collection; however, excavation of compounds, or what were assumed to be entire compounds, demonstrated differences in masonry styles corresponding to different phases of construction.

Masonry of Compound 3 will be highlighted, as excavations documented more frequent remodeling and reuse of sectors there than in Compound 2, primarily because

limited excavations occurred in the patio sectors of Compound 2. In Compound 3, the four walls delimiting Unit 1 and Unit 2, which is a patio, all have different masonry styles, and joint abutments are missing in corners, suggesting each wall was constructed at a different time as part of compound remodeling, and previously existing walls were reused or new masonry was constructed or added to older construction during remodeling. Generally, the remodeling in Compound 3 made the compound smaller over time, and the compound's smallest rooms, Units 3, 4, and Feature 3.16, were constructed during later occupation phases. Also, generally, the quality and technique of masonry degrades over time, leading the architectural features associated with the final phases of occupation to be constructed with the poorest quality stonework.

Masonry Style I is the earliest masonry identified in Compounds 2 and 3. This masonry is characterized by small, thin, rectangular or square-shaped stonework, about .30 x .10 m in size. There is little variation in size of stone used (as is seen in other masonry styles). It is the original terracing construction in Sector 1, dating to the LIP. Masonry Style I is visible in the north wall of Compound 3, Units 1 and 2 and the west wall of Compound 3, Unit 6. In Compound 2, the north wall of Units 5, 1, 8, 3, and 7, as well as the south wall of Compound 2, Units 2 and 6 and possibly the east wall of Compound 2, Units 9 and 10 are also constructed in this style. The best-preserved example of this masonry style comes from the north wall of Compound 2, Unit 3 (PD 99).

Masonry Style II construction is a mix of small, medium, and some larger stonework that ranges from triangle to rectangular shape. Smaller stones are found between larger stones. Masonry II does not have a consistent or uniform pattern of size

or shape of stones—large rocks found on top of medium rocks as well as medium rocks on top of large rocks. Masonry Style II is found in the bi-level patio in Compound 3, and in the southern limit of Units 1 and 2 and the north wall of Units 5 and 7. Style II also dates to the LIP. It is double-faced; the side facing Units 5 and 7 has finished masonry.

Masonry Style III is much more uniform than style II. It is characterized by larger, medium-sized upright stones, usually square or rectangular in shape, for the base of the wall. Medium and small rectangular-shaped rocks are placed on top of the base stones. Evenly applied plaster is noted. This masonry style dates to the LIP/LH. A retaining wall in Compound 3, Unit 7 that bisects the unit north to south is constructed in Masonry Style III. The wall begins at the north wall of Compound 3, Units 5 and 7, and when originally built, ended just short of the south wall of Compound 3, Unit 7. The retaining wall has a small constructed bin feature, Feature 3.25 (see Masonry Style IV). Sometime after it was originally built, the wall was extended to reach the newly constructed south wall of Unit 7. There is a clear joint where this extension occurred and the masonry is very sloppy compared to Masonry Style III. Masonry Style III is also found in the south wall of Compound 3; the south wall of Compound 3, Units 5 and 7 is also built in Masonry Style III, but the top half of the wall was added with a different masonry style from the bottom half, assumed to have been added on at a later time. Perhaps a second story was added to this wall after its original construction.

Masonry Style IV is characterized by small, worked, rectangular-shaped stones, nearly uniform in shape and size, .15 x .10 m, laid flat, each touching the other. Sometimes they are stacked on one other or slightly overlapping with part of one sitting

on the next. It is not clear if plaster was used to construct this style. The construction style is uniform, and stones used are similar in size and thickness. Masonry Style IV is found at Bin Feature 3.25 and the low terraces that extend east and west of the wall that bisects Compound 3, Unit 7. The bin is built against the wall that bisects Unit 7 built in Masonry Style III. This masonry style dates to the LIP.

In Masonry Style V, one or two large rocks form the base, and small and medium mostly square and rectangular rocks fill in the remaining space between and on top of the large rocks. These large rocks are much bigger than those used in style III. This style is associated with LH construction and is found in the north and east walls of Compound 3, Unit 3.

Masonry Style VI is made up of medium and small stonework of irregular shape used to construct the northwest, northeast, and southeast walls of Compound 3. The southwest wall predates Feature 3.16 and is the west wall of Compound 3, Unit 4. This masonry style post-dates Masonry Style V and dates to the LH, and is best demonstrated in Feature 3.16 in Compound 3, Unit 7. This small structure, about 1 x 1 m in size, is sloppily constructed, and uses more adobe plaster than structures of any other masonry style. Originally it was unclear whether this was a structure or architectural fall.

Masonry Style VII is a mix of style I and II, as it there is no consistent or uniform pattern of size or shape of stones in the masonry, with medium rocks found on small rocks at the base of the wall; however, the rocks are mostly rounded square or thin rectangular in shape. It is represented by the initial architecture in Sector 3, Compound 6, Unit 1 and 3. This style dates to the LIP/LH.

8.2.3 Sector 1: Occupations, Architecture, and Associated Features

Excavations identified two occupations in Sector 1. One occupation corresponds to the Salinar period, and the other occurred during the LIP through LH. During the later occupation, multiple remodels and change in use of space occurred. Three phases have been identified to differentiate phases based on architecture remodeling, excavated features, material culture recovered. Preliminary evidence suggests these

In the next section, I first discuss Compound 2's evidence of a Salinar period occupation and then highlight Compound 3, where remodeling and construction suggests shifts in use of space occurred during the LIP/LH. The three phases of the LIP/LH period are described. Phases 1 and 2, found in Compound 3, date to the middle and late Chimú period. Phase 3, best demonstrated as the final occupation of Compounds 2 and 3, corresponds to the LH period. Chapters 7 and 8 follow up on this initial discussion by describing the artifact assemblages corresponding with each phase.

Excavations in Compounds 2 and 3 also recovered Salinar sherds. Features 2.11 and 2.12 in Compound 2, Unit 5—a small hearth and ash dump on bedrock and gravel—are the only excavated features associated with the Salinar occupation at Cerro Huancha MV 900. Salinar ceramics were exclusively recovered in excavation of these features.

No prepared floor or architecture in Compounds 2 and 3 were identified in association with Salinar finds. It is suggested that during the Salinar phase of the EIP (200 BC–200 AD), Cerro Huancha MV 900 followed a similar pattern to the one

described for site MV 910—a defensive hilltop site—and it supported a much smaller population than during the LIP with the population likely concentrated in Sector 1.

The initial LIP occupation was documented in excavations in Compound 3, Unit 2, corresponding to LIP/LH Phase 1. Masonry Style I, the earliest masonry style identified in the compound and part of initial terrace construction, is found in the north wall of Unit 1 and 2, the west wall of Compound 2, Unit 6, and the east wall of Compound 2, Unit 8 (Figure 8.5). Feature 3.13 dates to this initial Phase 1 occupation of Compound 3. Feature 3.13 is the base and part of the body of a tinaja, a large storage vessel, located in the southeast corner of Compound 3, Unit 2. This tinaja has a conical base, and was set in a conical hole in the bedrock. The diameter of the tinaja's body is greater than a meter and a half wide, making it the largest vessel encountered during excavations. Rather than this large vessel being removed during remodeling of the architectural compound in LIP/LH Phase 2, it was truncated, with part of the body and base remaining and filled, and later rooms constructed on top (Unit 3 and Unit 4). Parts of the remaining intact bottom half of the tinaja was encountered in Unit 2, Unit 3, Unit 4, and in the small structure, Feature 3.16, in Unit 5 (Figure 8.6 and Figure 8.7).

The Feature 3.13 vessel was associated with the initial floor of the patio space, corresponding to LIP/LH Phase 1 in Compound 3, Units 1 and 2. The thin initial LIP/LH Phase 1 floor is constructed on bedrock that on the east side of Unit 2 slopes as much as 50 cm from the northeast to the southeast part of the unit and Feature 3.13. The initial floor on this side of the unit was leveled, and the north profile of Compound 3, Units 1 and 2 indicates the floor and construction of masonry are associated (Figure 8.8). Another feature associated with the Phase 1 initial floor is Feature 3.15 in Unit 1,

an ash dump dug into bedrock. A sample from this feature was submitted for AMS dating (see Section 8.6.2). In Compound 2, corresponding to the LIP/LH Phase 1 is a small domestic hearth, circular in shape, built with rock and plaster in Unit 8 (Feature 2.01). Compound 2 has split terraces that were likely constructed in Phase 1, coinciding with the north wall of Compound 3, Units 1 and 2. This evidence suggests a domestic occupation in Compound 2 during Phase 1.

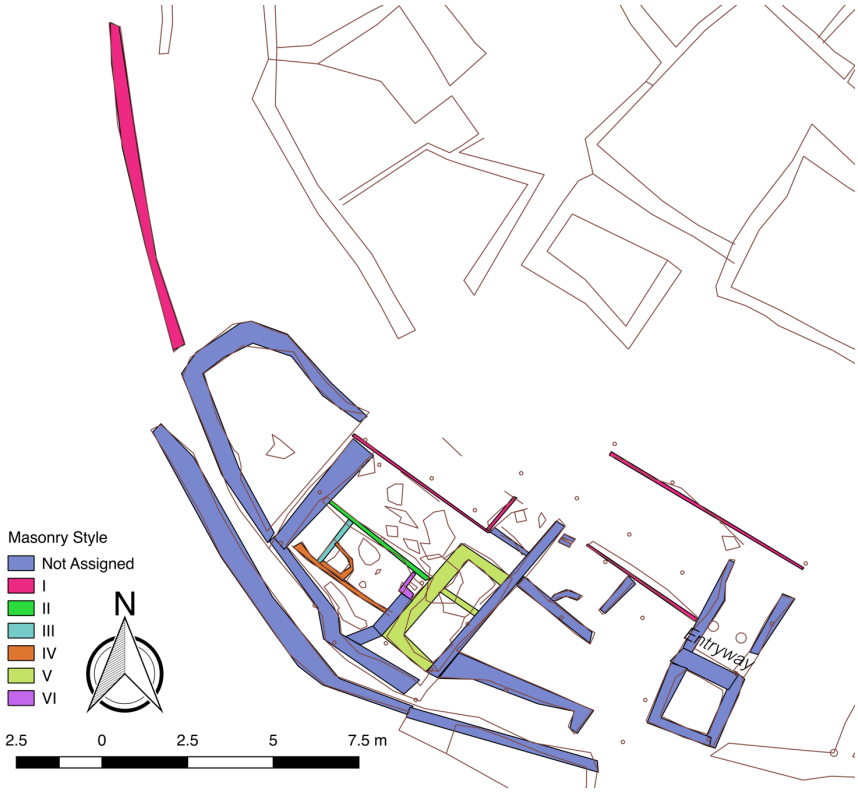


Figure 8.5: Masonry Styles in Compounds 2 and 3

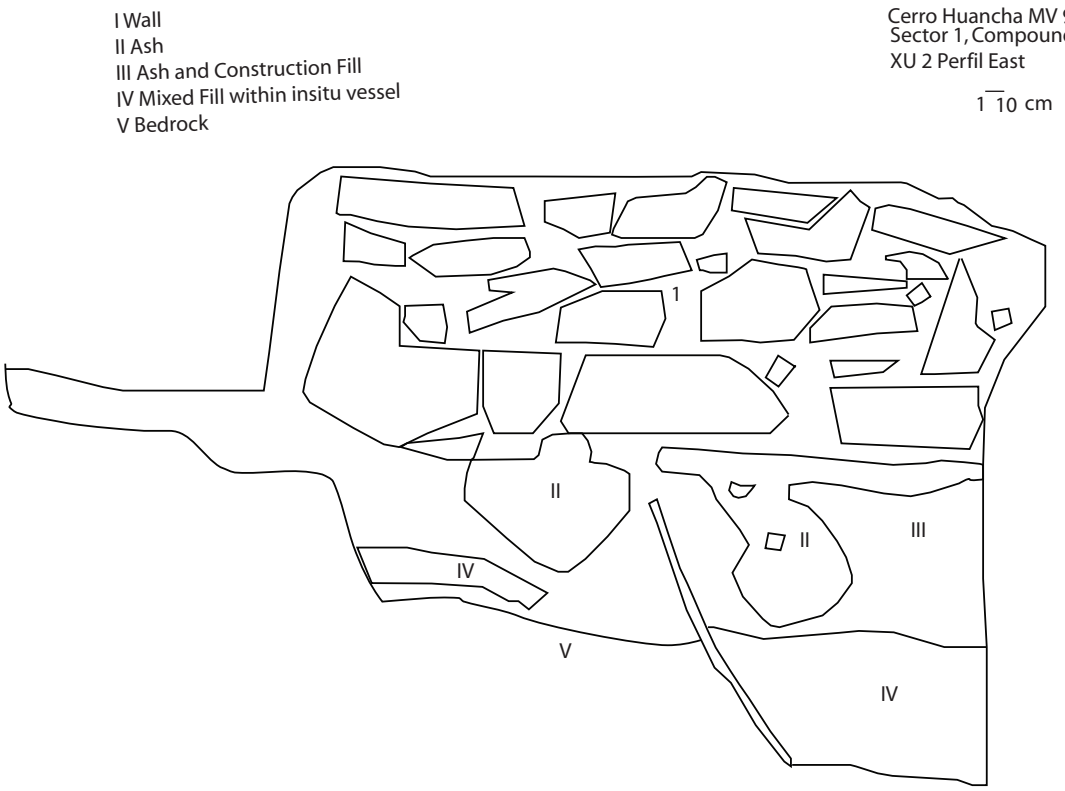


Figure 8.6: East Profile, Unit 2, Compound 3, Feature 3.13 truncated *in situ* storage vessel

Figure 8.7: Feature 3.13, truncated *in situ* storage vessel, Unit 3, Compound 3, Cerro Huancha MV 900

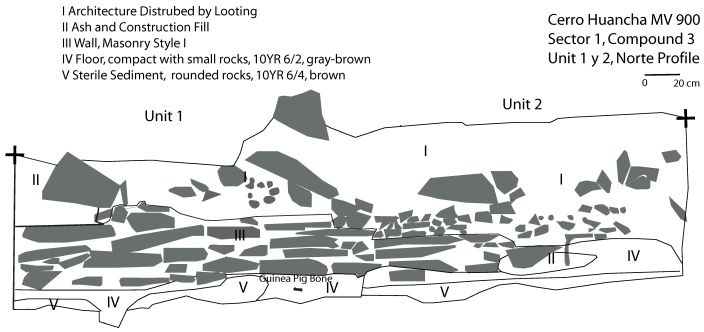


Figure 8.8: North Profile Units 1 and 2, Compound 3, Cerro Huancha MV 900

8.2.4 Architectural Plan and Access to Compounds 2 and 3 in Phase 1

The construction of large terraces, the north wall of Compound 3, and the north wall of Compound 2, Units 1, 5, and 8 all date to Phase 1. Compound 3 during this early occupation was much larger and likely extended west outside of excavations into the adjacent compound (Figure 8.9). Access to Compound 3 was either through the compound on the west side of Compound 3 or through Compound 2. Access between Compound 2 and Compound 3 was through the south half of Unit 3. The varied masonry of this wall, visible on its east side, indicates this wall and the north half of Unit 3 and in Unit 4 were built in Phase 3. Compound 3, Unit 8 likely served as a south limit of the compound. This access way between Compound 2 and 3 was used through all three phases. Compound 3 did not have a bi-level patio in Phase 1, and the wall dividing Units 1, 2, 5, and 7 was constructed later. Access to Compound 2 likely occurred through Unit 6, into Unit 5, where there is a remaining step.

Figure 8.9: Planview of Compounds 2 and 3 in Phases 1-3

8.2.5 Late Intermediate Period/Late Horizon Phase 1

Compound 3 is the best exposure of the Phase 1 occupation. In Phase 1, the compound was much larger and likely extended west outside of Compound 3 into the adjacent compound. While it is unclear what the exact original layout and dimensions were, it is clear that Compound 3 was an open space containing the large vessel, Feature 3.13, associated with this early occupation. It is unclear if all of Compound 2 and 3 had prepared floors during this occupation. Limited evidence about Phase 1 in Compound 2 was documented in excavations beyond the presence of a single domestic hearth. It is possible the large truncated *in situ* vessel is located within an elite household or community space for storage; similar vessels have been identified associated with Inca

state feasting activities at Farfan (Mackey 2010). The domestic hearth in Compound 2 suggests the compound also served as a residence. However, the location of Sector 1 on Cerro Huancha MV 900 suggests that architectural compounds in Sector 1 may be elite or administrative structures. While it is unclear if the storage vessel was stored in an elite household or in administrative area, it is clear that its storage capacity exceeded that of a nuclear household. The artifact assemblage reviewed in Chapters 10 and 11 provides more insight into Compound 3's activities during Phase 1.

8.2.6 Late Intermediate Period/Late Horizon Phase 2

Phase 2 in Compound 3 is characterized by construction of new architecture and large hearths. A bi-level patio space was constructed, the north wall of Units 5 and 7—in Masonry Style II—creating the upper patio, Units 1 and 2, and lower patio, Units 5 and 7. Masonry Style III appears in Unit 7 in the form of a wall that bisects the unit, running north to south. The wall stops short of the south wall of Unit 7, but part of the wall is also constructed in Masonry Style III. The west side of the wall is higher than the east side. Feature 3.25, a small circular masonry bin, is built on the east side of the wall. The storage bin combines Masonry Styles III and IV. Emerging from under the southwest side of Feature 3.25 is a low terrace in Masonry Style IV, running on an angle, which connects to the bisecting wall that extends on either side of the wall constructed in Masonry Style III (Figure 8.10).

Feature 3.25 is about .70 x .65 m and .40 m in depth from the top of the bin to sterile at its base. Its walls are stone in Masonry Style III, with Masonry Style IV at the

top of the feature. Excavations removed loose fill and some architectural fall from the bin. At the bin's base was a large worked slab, lying flat. Sterile and loose fill was found under the slab, which was on top of bedrock. The contents had been removed; however, it is likely that this bin served as a storage bin for foodstuffs or tools in Compound 3.

Figure 8.10: Storage Bin in Unit 7, Compound 3, Cerro Huancha MV 900

The Phase 2 occupation contains the first evidence of a prepared floor in the lower patio of Compound 3, Feature 3, in Units 5 and 7. The floor was located on the west side of the wall that bisects Unit 7, and associated with this wall and the low terrace in the south part of the unit. The floor was compact sediment with small rocks, found on the southeast side of the Masonry Style III bisecting wall, in association with the Masonry Style IV terrace, but at a much lower level than the west side of the wall. This compact sediment is also associated with Feature 3.19. Below this compact sediment was sterile fill, used to raise the level of the west side of Unit 7 up to the

retaining wall, creating the terrace. This created a split-level terrace in the lower patio of Unit 7 similar to an architectural feature in Compound 2's lower patio. While it does not appear to have a storage bin, Compound 2, Unit 3 also has a small terrace, whose west side is higher side than the east side. It appears to be a step; however, it is in a parallel location in the lower patio of Compound 2, Unit 3 to its location in Compound 3, Unit 7. Time did not permit Compound 2, Unit 3 to be excavated; however, it appears that the lower patios of Compounds 2 and 3 have similar low terraces.

Excavations in Compound 3 also documented two very large hearths associated with Phase 2, one in Unit 2 (Features 3.03-.06 and 3.08) and one in Unit 5 (Feature 3.19). Feature 3.03-3.06, 3.08 was originally given multiple feature numbers, as initial excavations were in such a large sector of Unit 2 that it was hypothesized that they were separate hearths. However, excavations determined that, in fact, this was one large feature 1.7 x .30 x .65 m in size, covering nearly all of Unit 1 (Figure 8.11 and Figure 8.12). The large hearth was associated with the Phase 2 upper floor in the upper patio of Compound 3.

Much of the floor in Units 1 and 2 along the edge of the hearth is burnt. The feature itself was full of white ash. There were multiple depressions in the floor, which could have been a pot support prior to or before being set on the hearth. Feature 3.08 runs through the middle of the large feature, which may have been the only space used as a hearth. Intact stones covered in charcoal and ash form a long channel on which multiple pots could have been set and heated simultaneously. This is the only part of the feature with rocks that could have served as a base for pots to sit on and be cooked; the other sector's depressions may have been stands for pots and/or sectors for dumping

ash.[37] Several cooking pots could have been set on Feature 3.08—it is a narrow and long hearth, distinct from the domestic hearths excavated at Cerro Huancha MV 900, which are small and circular in shape. This hearth was much larger and a different hearth than domestic hearths.

Features 3.03-3.06, 3.08 was full of gray and white ash. Very few fragments of carbonized organics were recovered, suggesting that cooking occurred at very high temperatures. In the southeast part of Unit 2, 2,134 liters of ash were removed. An AMS date was obtained from this feature, see Section 8.6.2.

The other large hearth associated with Phase 2 is Feature 3.19 in Unit 5, which was deeper and more contained than Feature 3.03-8. Feature 3.19 is .9 m x .35 m and oval in shape, with a depth of 0.6 m. The feature was full of ash, small rocks, and fill. Fine white ash from Feature 3.19 was found throughout the southeast side of Unit 5 and throughout Unit 8. Burning is apparent on the sidewalls of the feature. In Feature 3.19, part of a base of a utilitarian vessel was found sitting in the west side of the hearth on a rock (Figure 8.13). This feature predates the south wall of Units 5 and 7. As mentioned previously, Feature 3.19 is associated with the low terrace in Units 5 and 7, which are adjacent to the feature. Figure 3.20, is also associated with the low terrace and Feature 3.19. A sample from Figure 3.20 was submitted for AMS dating (Sample AA104557), see Section 8.6.2.

Smaller domestic hearths and associated ash dumps associated with Phase 2 were excavated in Compounds 2 and 3. Hearths in Compound 2 were clearly for

---

[37] Another possibility is that Feature 3.08 was the final hearth used in the Sector and others destroyed or broken down after use.

domestic use, circular in shape, while the smaller hearth features documented in Compound 3 were not formally constructed with stones. In Compound 2, Units 9 and 10, two vessels were found. One was a cooking vessel adjacent to a domestic hearth and ash dump (Figure 8.14) and the other is adjacent to an ash dump; both vessels are heavily sooted from cooking. These vessels were used in Phase 2 and predate the construction of the east wall of Units 9 and 10. The division of space in Compound 3 and construction of smaller terraces within patio spaces suggest this also occurred in Compound 2 during Phase 2. While there are fewer noted terraces in Compound 2, a bi-level patio was built on the west side of the compound.

Figure 8.11: Ash Surrounding Hearth Mid-excavation with Ipomoea sagasteguii (Convolvulaceae) visible, Unit 2, Compound 3

Figure 8.12: Large Hearth (Feature 3.03-3.06, 3.08), Unit 2, Compound 3, Cerro Huancha MV 900

Figure 8.13: Large Hearth with part of cooking vessel (Feature 3.19), Unit 5, Compound 3, Cerro Huancha MV

Figure 8.14: Cooking Vessel Adjacent to a Hearth

8.2.7 Architectural Plan and Access during Phase 2

During Phase 2, Compound 3 was accessed from its east side through Unit 8 and through the south half of Unit 3. A Masonry Style II wall was built dividing Units 1, 2, 5, and 7. Compound 3 was divided into two separate patio areas and direct access between patios seems unlikely. The entrance to the upper patio (Units 1 and 2) was accessed through Unit 6 on the east, and this compound would have likely extended west of Compound 3, including part of Compound 2. Access to the lower patio (Units 5 and 7) was through the east wall of Unit 8, and this compound space extended west of Compound 3. This suggests that the two patio spaces with the industrial size hearths, Features 3.03-3.08 in Unit 2 and Feature 3.19 in Unit 5, were in fact accessed through

different entrances and part of separate compounds. However, it is likely the two patios were part of the same compound (Figure 8.9).

8.2.8 Summary of Phase 2

In Compounds 2 and 3 during Phase 2 there was extensive investment in construction of architecture and remodeling of space. This suggests that, between LIP/LH Phase 1 and 2, Compound 2 and 3 activities shifted significantly, with an extensive investment in construction, as a multi-level compound and storage bin were constructed in Compound 3. Two industrial-size hearths whose size and shape suggest they were used for production activities in both patios of the compound indicate new activities were being carried out in Phase 2 in Compound 3. Excavations in Compound 2 do not indicate much about Compound 2's architecture and access in Phase 2, except that Units 9 and 10's east wall was not present in Phase 2, and these rooms were part of the open patio. Access to Compound 2 on its west side was through Compound 3, and there was likely access on the east side as well.

8.2.9 Late Intermediate Period/Late Horizon Phase 3

The final phase of occupation is characterized by the addition of small rooms each about 2 x 2 m in size, to the east side of Compound 3 (Units 3 and 4), and Compound 2 (Units 9 and 10). It is noted that some of the walls in these smaller structures were in use in the previous occupation, but the space is remodeled during this third occupation to function as storage structures (Figure 8.9). Of the two sets of rooms

identified, on the east side of Compound 2's storerooms there is an entryway, although it may have been closed off during Phase 3 and storerooms were accessed via ladder like Compound 3's two storerooms, Units 3 and 4. Another possibility is that the two storage rooms are part of the adjoining architectural compound (Figure 8.15). The original height of the walls is unclear, but they stand just under .70 m today. However, compound access patterns changed with construction of Units 9 and 10's eastern wall and the wall dividing the two units to create two storerooms. Compound 3's Units 3 and 4 had little original context intact. Unit 4 had been disturbed by looting activity, and in Unit 3, only a small part of floor was intact.

Excavations in Compound 2, Units 9 and 10, however, revealed that these rooms served as storage spaces, as Compound 2, Unit 9 had many ceramic vessels remaining in the room. The collapse of Unit 9's walls buried numerous vessels, although it is possible that looters prior to architectural collapse disturbed the room, as the recovered ceramics were very fragmented. A minimum number of 78 vessels (MNV) was calculated; however, we were not able to completely reconstruct any of the vessels recovered in the room, which may suggest this area also served as a trash deposit (Figure 8.16).

Figure 8.15: Storage Rooms in Compound 3 (Units 3 and 4) Cerro Huancha MV 900

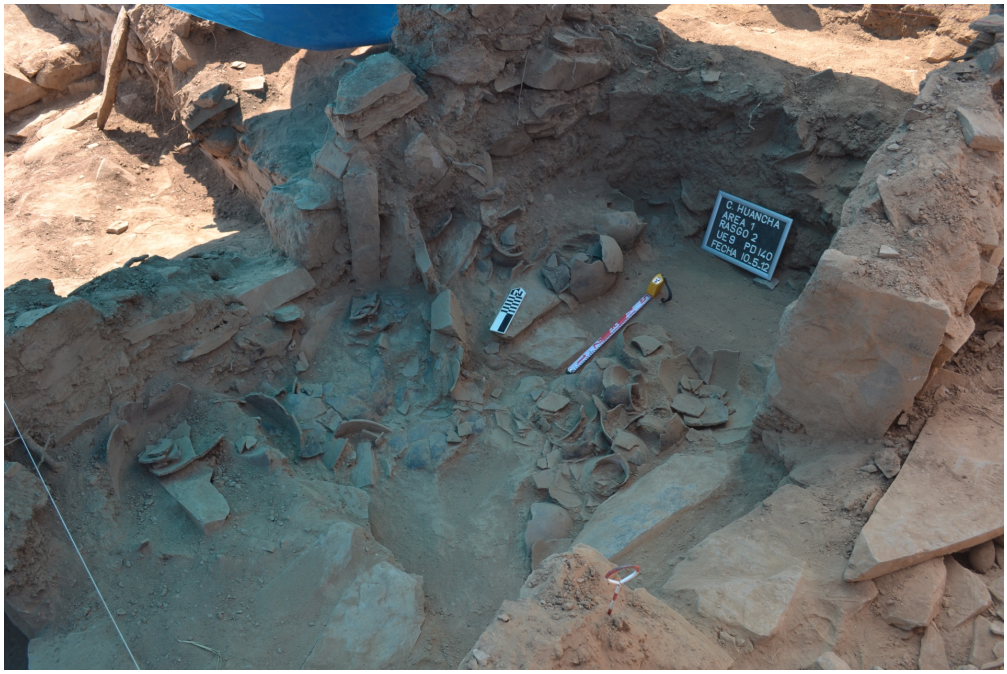


Figure 8.16: Storage Room with Broken Vessels, Unit 9, Compound 2, Cerro Huancha MV 900

Both floors identified in Units 9 and 10 date to this final Phase 3 occupation and are associated with construction of the wall on the east side of Units 9 and 10. Cultural material recovered in this level in Unit 9 and Unit 10 indicates it dates to the LH, Chimú-Inca phase. Chimú-Inca ceramics were recovered, as was a mini llama figurine (Figure 8.17). Phase 3 floors were constructed over two vessels described in Phase 2, a photo of one is in Figure 8.14. The wall on the southern limit of Compound 2 was constructed in this phase. It is set closer to the unit than the previous wall, which is related to Compound 3, Unit 8's south wall, creating a narrow walkway.

Following construction of Compound 3's storage rooms, a new structure and several new walls were added to Compound 3 in Phase 3, both located in Unit 5. In Unit 7, the retaining wall with storage bin was sloppily extended to connect with a new wall constructed on the southern limit of Compound 2. This late phase wall runs from Unit 7 east into Unit 5, connecting to a previous existing wall in Unit 8. However, Unit 8 was closed off on its eastern side during Phase 3. In fact, a bench is built in front of it associated with a small structure, Feature 3.16, located in the northeast corner of Unit 5. Unit 8 is covered with intentionally stacked medium-sized and rectangular-shaped stones (without mortar). This construction suggests that Unit 8 was intentionally sealed off during Phase 3.

The new, small structure, R.3.16, about 1 x 1 m in size, was built in Unit 5, abutting the west wall of Unit 4 and the north wall of Unit 5. The south and west walls are poorly constructed in Masonry Style VI (Figure 8.9). Architectural fall and fill was removed from the structure. No new prepared floor associated with this new structure was encountered. The use of Feature 3.16 is unclear, as it is such a small structure.

Perhaps at one time it served as part of a bench that extended to the southeast corner of Unit 5. Excavations south of Feature 3.16 on the eastern edge of the unit encountered similar but lower concentrations of plaster and rocks up to the southeast corner where Units 8 and 5 meet. This suggests a longer bench that cut off access and use of Unit 8 as an entryway for Compound 3.

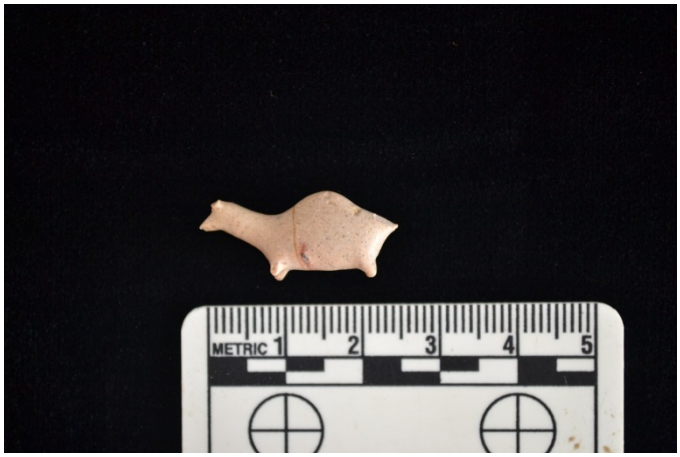


Figure 8.17: Llama Figurine

8.2.10 Architectural Plan and Access in Phase 3

The addition of two small rooms on the west side of Compounds 2 and 3 during Phase 3 affected access routes in both compounds. While Compound 2, Unit 9 has a doorway on its east side, into these small storerooms, it appears that, these double rooms did not have doorways. It is likely that Compound 2's entryway may have always been on the east wall of Compound 2, Units 9 and 10's east limit, and during Phase 3, this entryway was converted to a storeroom. The Phase 3 entryway to Compound 2 changed, relying on access through the upper terrace of Compound 2, or from the lower terrace of Compound 2 in Unit 11.

In Compound 3, the construction of two small storerooms, Units 3 and 4, on the east side, suggests that access to the lower patio of Compound 3 was through the west side of Compound 2. However, Unit 8 is blocked off by the bench that extends from Feature 3.16. This suggests that access to the lower patio of Compound 3 was limited to the west side of Compound 3. Access to the upper patio of Compound 3 was through Compound 3 Unit 6 and possibly the west side of Unit 1.

8.2.11 Summary of Phase 3

Phase 3 remodeling occurred during the LH. AMS dates for this phase are not available, but datable material culture recovered offer a *terminus post quem* included Chimú-Inca ceramics and a small llama figurine (Figure 8.17). These confirm this final occupation dates to the LH period. Notably during this period, new storage rooms incorporated previously existing walls with no attempt to use earlier masonry styles, creating a sloppy hodgepodge of masonry styles. For example, Compound 3, Unit 3's four walls show three different masonry styles. It appears that high quality and uniform masonry was not important during this phase. Also an additional small room was added to Compound 3 in Unit 5 adjacent to the two storage rooms. The addition of smaller rooms, which appear to have been used as storerooms, suggests that activities in Compounds 2 and 3 shifted during this final phase. It is clear that sectors that were previously used for cooking and preparing food became used for storage as demonstrated by Compound 2, Unit 9. The only floors clearly associated with this phase are in Compound 2, Units 9 and 10. Despite this construction of new rooms, the lack of

investment in new floors suggests perhaps these sectors were not used frequently or formally, or that this final phase was very brief.

8.2.12 Summary of Sector 1 Occupations

Excavations have identified two distinct occupations in Sector 1. Two features in Compound 2, Unit 5 correspond to the Salinar period. Only limited evidence for the Salinar occupation of Cerro Huancha MV 900 was found in excavations. The LIP/LH architecture in Sector 1 at Cerro Huancha MV 900 is very dense. Excavations at Compounds 2 and 3 demonstrate the architecture was used through three phases of remodeling and additional construction. General trends exhibited by Compounds 2 and 3's masonry show that both compounds featured multi-level patio spaces. Compound 2 has a small step-feature, and Compound 3 has a low terrace and retaining wall with bin feature, Feature 3.25. Overall, throughout the LIP/LH, both compounds became more subdivided with distinct spaces.

Access to both compounds changed over time due to remodeling, and this, in addition to new construction, suggests shifts in site activities as well. The three phases outlined for the LIP/LH periods in Compounds 2 and 3 indicate new architecture was built and previously existing architecture was remodeled throughout Phases 1–3. The initial LIP/LH Phase 1, dated to the Chimú period based on ceramics, is characterized by the initial construction of large terraces in Sector 1 and the placement of a very large tinaja and a hearth feature in Compound 2. This is followed in Phase 2, also likely dating to the Chimú period, when both compounds underwent remodeling and

construction of split-level patios. Features indicate that sector activities surrounded Compound 3's large hearths. A final Phase 3, corresponding to the Inca period (AD 1470), is characterized by construction of small double rooms associated with storage. One interesting aspect is the investment in remodeling the compounds, and general trend to subdividing compounds over time. There is a lack of investment in new floors in Compounds 2 and 3 during Phase 3. The masonry constructed during remodeling phases is of poor quality.

8.3 Sector 3 Excavations: Compounds 5 and 6

Sector 3 is located on the west side of Cerro Huancha MV 900 about halfway up the hill, overlooking the Sinsicap River. Significantly smaller in size than Sector 1, it is made up of six terraces, all of which have architectural compounds with similar layouts. The lowest, largest, and best-preserved terrace in Sector 3 runs north beyond Sector 3, through Sector 4 to Sector 2. Sector 3 is nearly a mirror image of Sector 2, although the layouts of compounds in Sector 2 are not as uniform as those in Sector 3. The typical architectural compound in Sector 3 is about 10 x 7 m in size and composed of a patio, bench, and storage room (see planview of Compound 6
(Figure 8.18). Vertical walls have been identified below Sector 3.

Excavations in Sector 3 occurred in two compounds, Compounds 5 and 6, both located on the lowest terrace of the six terraces that make up Sector 3 (Figure 8.19). Compound 5 faces west and is characterized by a split-level patio and bench. Two test units (2.5 x 2 m) were located adjacent to each other on the lower patio. Both units were

excavated to sterile soil, with the exception of one hearth feature in Unit 2 that was not excavated due to time constraints.[38]

North of Compound 5 is Compound 6, which faces west. Compound 6 is made up of an open patio, a small room located on the northeast side of the compound, and a bench adjacent to the room. Units 1 and 2, both 2 x 2 m units, were placed in the patio and a third unit, Unit 3, 2.3 x 1 m, in the small room on the northwest side of the unit (Figure 8.19). Units 1 and 3 were excavated to sterile. Unit 2 excavations were terminated after a level of construction fill used for terrace construction was encountered. The construction fill was sterile, and void of cultural material. Stratigraphy and architecture in Compounds 5 and 6 indicate both compounds were only occupied during the LIP/LH. Two phases of occupation were documented in each compound through remodeling of compound architectural, floors, and associated features.

[38] Although we did not excavate the hearth, it exhibited the same features in shape and visible carbon on the surface that was exhibited by hearth Feature 5.04.

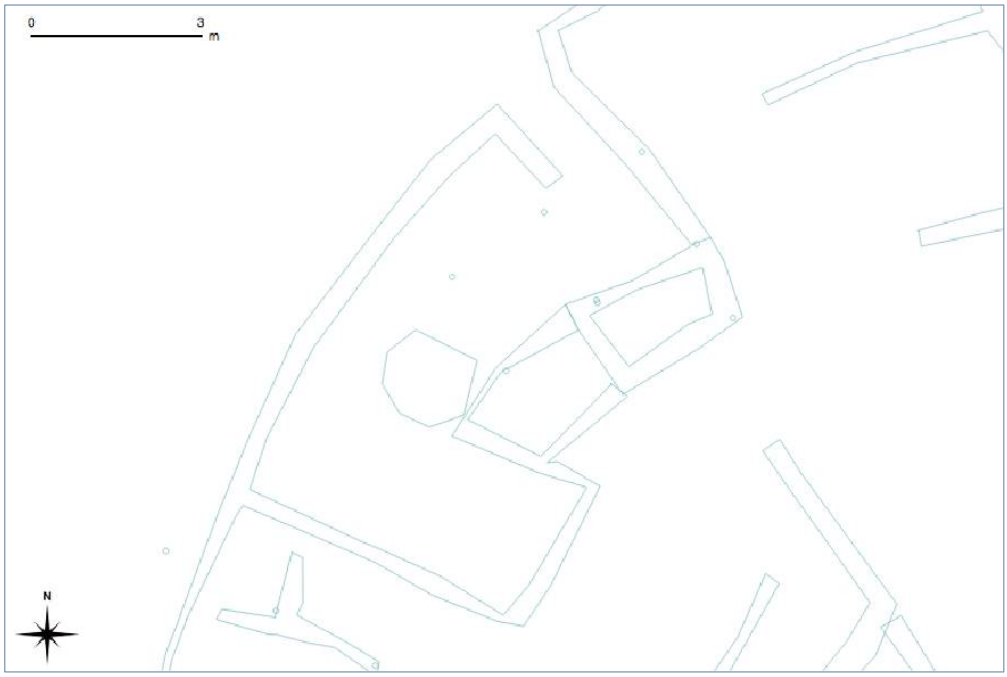


Figure 8.18: Planview Sector 3, Compound 6

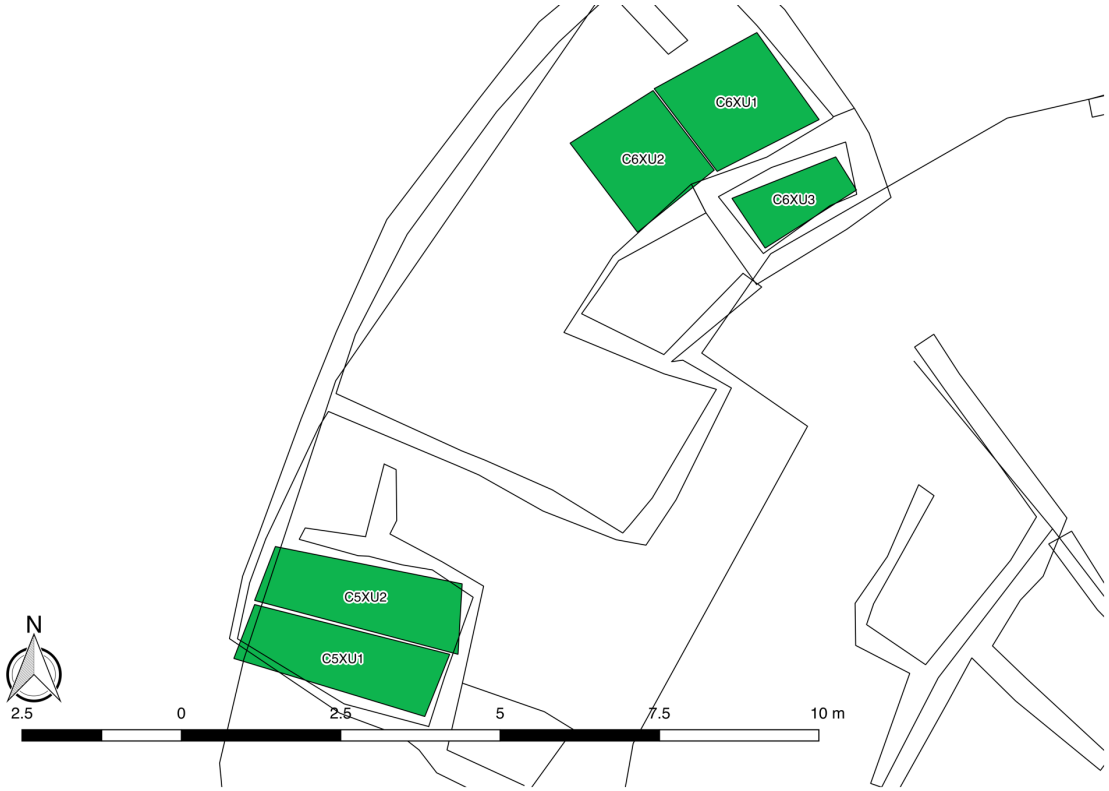


Figure 8.19: Sector 3, Compound 5 (Units 1 & 2) and Compound 6 (Units 1-3)

8.3.1 Compounds 5 and 6: Floors, Features, Architecture, and Occupation

Two floors were identified in Compound 5, Units 1 and 2. Below the initial floor was construction fill, with deposits of trash including sherds, fish otoliths, and seashells, used to level out the patio. This initial below-floor deposit of trash contained marine resources from the coast, a rare occurrence in the *chaupiyunga*; the deposit is likely tied to a ritual event (Figure 8.20).

Two hearths and several ash deposits are associated with the lower floor. One of Compound 5's hearths is located on the southeast side of Unit 2, and is circular in shape, the same as domestic hearths identified in Sector 1 excavations. The hearth, Feature 5.04, is .55 x .40 m in diameter and constructed with rocks and compact sediment. Another hearth just north of Feature 5.04 with a similar shape and size was identified but not excavated. Several domestic hearths in Compound 2 also had a similar circular form as these two hearths in Compound 5. Chimu-style sherds were deposited on bedrock in the patio of Compound 5, suggesting that the compound was constructed during the LIP/LH. A sample from an ash deposit in Compound 5 was submitted for AMS dating, see Section 8.6.2

Compound 6 underwent at least one remodeling episode, distinguished by three architectural features. The south side of Unit 2 was disturbed by looters' activity; however, the northeast side of the unit was well preserved. The patio of Compound 6, Units 1 and 2, had two thin floors each about 2 cm thick in the patio sector, and a single, 5 cm thick floor was identified in the room in Unit 3. The floors in Units 1 and 3 were built on sterile fill and bedrock. The floors extend from Unit 1 to the north side of Unit

2; however, these floors are uneven, with Unit 2's floor as much as 3 cm higher than Unit 1. Also, Unit 2 only has floor on the north and northeast side of the unit. The south and southwest sides of Unit 2 are disturbed by looting. While the floor is not preserved, the construction fill was devoid of cultural material. Unit 3 had a thicker, more well-preserved floor than the other units; this is likely the case because it was covered in architectural fall, protected from natural elements.

From a distance, the architecture in Sector 3 appears fairly uniform, and I believe the series of terraces and compounds were constructed at the same time. Doorways are characterized by upright slabs. The masonry style exhibited in the south walls of Compound 6, Units 1, 2, and 3 is Masonry Style VII. Unit 3's north and south walls (only about 1 m long) was built in Masonry Style I, although more thin square rocks were used than thin rectangular.

Several features of Compound 6 indicate remodeling occurred during its occupation. Along the southwest limit of Unit 2 is a bench, adjacent to the small room (Unit 3). While no excavations occurred on the bench, the wall used to construct the bench was clearly added after the compound's original construction. This wall served as the entryway, before it was sealed, to the small room (Unit 3) on the northeast side of Compound 6. It is clear this bench is a later addition, as the wall, which the small room and bench share, changes angle where the room and bench intersect, and the masonry technique is sloppier than the original masonry of the compound (Figure 8.21).

The sealed entryway into the small room suggests Compound 6 underwent a new phase, likely tied to changes in practices in Sector 3. The sealing off of the entryway to the small room (Unit 3) on the northeast side of Compound 6 has several

associated features documented in Unit 1. Directly in front of the sealed doorway, a burned area was identified associated with the initial floor, Feature 6.04. Adjacent to Feature 6.04 just northeast of the doorway between floors 1 and 2 was a small deposit of sand, likely marine sand—Feature 6.03—that was identified between the two floors. The deposit may have been placed in a posthole. These data suggest that construction of the later floor coincided with sealing off of the doorway (Figure 8.22 and Figure 8.23). The deposit of sand may be a ritual act associated with the sealed doorway and burned area in front of the doorway.

Figure 8.20: Deposit below Floor in Compound 5, Cerro Huancha MV 900

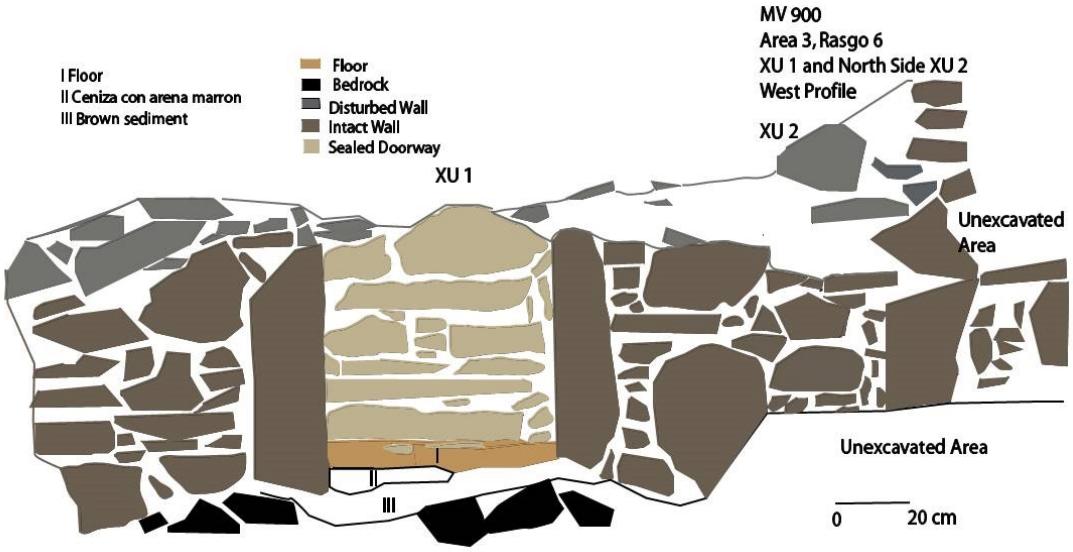


Figure 8.21: East Profile Unit 1, Compound 6, Cerro Huancha MV 900

Figure 8.22: Burned Area with sand deposit, Compound 5, Unit 1

Figure 8.23: Sand deposit between floors

8.3.2 Summary of Sector 3 LIP/LH 2 and 3 Occupations

It is likely that Compound 5 served as a household; however, Compound 6's use is unclear. Each compound contains multiple features that suggest Sector 3 was initially occupied in the LIP, in the middle Chimú period. Compound 6's multiple features suggest that Sector 3 underwent two phases during its occupation. The initial phase is associated with the original floor in Unit 1 and an open entryway into Unit 3. This corresponds to Phase 2 in Sector 1. The sealing off of Compound 6, Unit 3's entryway and the associated ritual acts, and construction of a new floor, indicates a change in use of the space in Phase 3 during the LH. The bench construction in Compound 6 may also correspond to Phase 3.

Excavations in Compound 5's patio documented two floors; as each floor in Compound 6 appears to correspond to Phase 2 and Phase 3, this appears to also be the case in Compound 5. An AMS date from an ash deposit in the initial floor in Compound 5, Unit 1 indicate the occupation corresponds to Phase 2, the middle-late Chimú period. There are several lines of evidence of Sector 3 being connected to the coast and the Chimú. In Compound 5, Chimú-style ceramics and marine fish remains were recovered below the initial floor, connecting the construction of Compound 5 to the Chimú era and confirmed by an AMS date (See Section 8.6.2). The deposit of marine sand in Compound 6, associated with the sealing of the doorway may be another connection to the coast. The room behind the sealed doorway in Compound 6, Unit 3, only had a single floor, suggesting it may not have been used after the doorway was sealed. This may be associated with an era of transition, and the later floors documented in Compounds 5 and 6 may be associated with Phase 3 and the LH period.

There is much evidence suggesting Sector 3 was initially occupied during the LIP. Sector 3 did not have as extensive a history of occupation as Sector 1, although it did undergo remodeling and reuse of space from Phase 2 to Phase 3. Its occupation resulted in much less accumulation of material culture compared to Sector 1 (see Section 10.7 for a comparison of quantities of ceramics recovered), including less depositional stratigraphy than Sector 1, yet the sector is tied to coastal traditions during Phase 2.

8.4 Sector 6 Excavations: Compound 4

Sector 6, located on the north side of Cerro Huancha MV 900, is a ceremonial sector with a funerary structure on a plaza. Sector 11, located just below Sector 6, also

has a funerary structure on a plaza. Sectors 6 and 11 are located above Sectors 7 and 8, characterized by several long walls running along the east side of Cerro Huancha MV 900 that may have originally extended around the entire hill (Figure 5.4). Sectors 6 and 11 are characterized by their rectangular structures in open spaces, where ritual acts celebrating the ancestors of Cerro Huancha MV 900 would have been carried out. Looting activity has disturbed the single structure in the area, Compound 4 (Figure 8.1). Salvage excavation was undertaken in Compound 4 to determine if part of the tombs/structure remained intact. As previously described in Section 7.6, Sector 6 is a flat open space, interpreted as a natural open plaza, with a single structure about 10.2 x 2 m in size on the east side of the plaza (Figure 8.24).

The structure on the east side of the plaza is Compound 4. Originally thought to be made up of two rooms, excavations revealed the structure was in fact made up of four rooms, rectangular or square in shape (Figure 8.25, only 3 rooms are depicted). From south to north, the rooms are 3.2 x 1.60 m, 1.2 x 1.0 m, 1.6 x .80 m, and 1.6 x 1.2 m. Each room has a small doorway on its west side that faces and is open to the plaza. The doorways are very narrow—.25–.35 m wide—and very low. The remaining doorway lintels are .45–.60 m tall, not tall enough or wide enough for an individual to enter the room. Only Room 1's doorway is depicted in Figure 8.25. Extensive looting activity has occurred in Compound 4; the sector around the structure and in the structure was littered with sun-bleached human remains and disturbed architecture.

Salvage excavation was conducted to determine if any sections of the structure were intact. Looters' backdirt covered the masonry on the west side of the structure; clearing this sediment revealed intact architecture on the west side for three of the four

rooms of Compound 4. Three units were excavated, a unit was placed in three of the four rooms from the largest, original room on the southern limit, north. No test excavations were conducted in the fourth room, on the northern limit of Compound 4. Each unit bisected—or in the case of Unit 1, in the largest room, quartered—the room. A fourth unit placed just north of Compound 4 confirmed that the visible architecture was the northern limit of the structure. No intact features were recovered in excavations, but these excavations assisted in identifying the construction sequence of the structure and its rooms, and provided clues to those buried in the structures.

Units were excavated to bedrock. While all of the units were in disturbed contexts, a thin floor of plaster was identified on bedrock in Unit 1. The majority of material culture recovered included a large quantity of disarticulated human remains, including men, women, and children; all were heavily sun-bleached and fragmented amongst other artifacts. See Dr. Celeste Gagnon's report on the human remains recovered in Appendix D. One other notable feature documented in excavations was the presence of red pigment, likely cinnabar, on the lower part of the north wall in Unit 1. Pigment may have been present in other rooms, but Unit 1 was the best preserved of the structures.

Figure 8.24: Sector 6 Compound 4

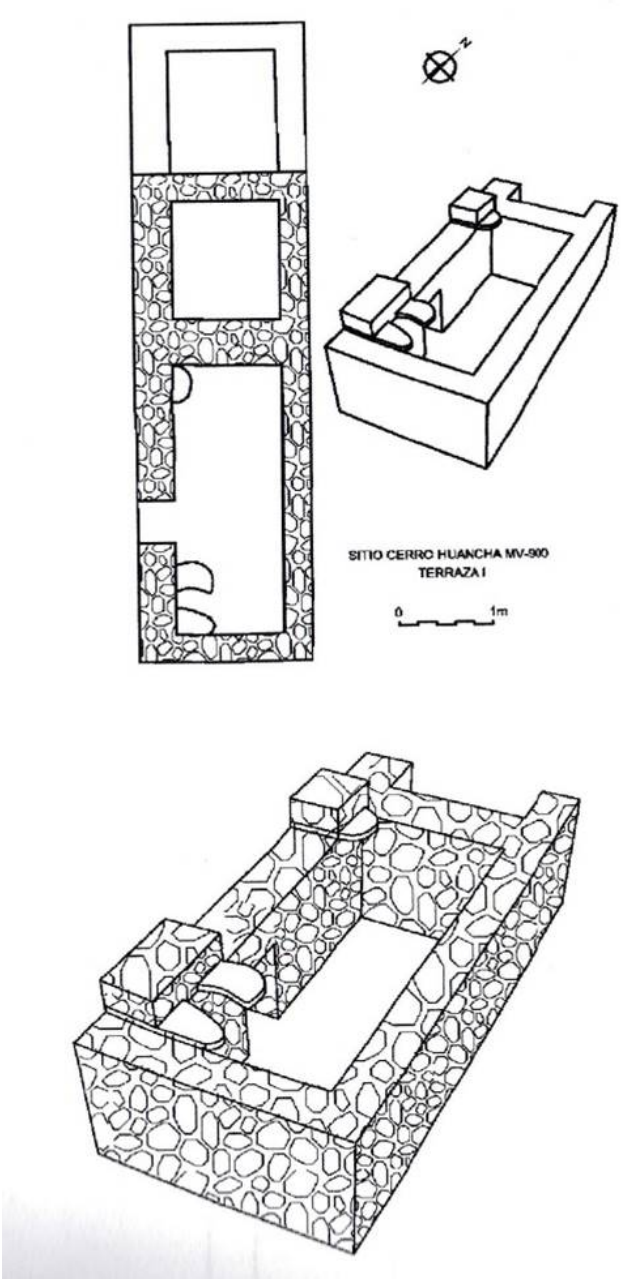


Figure 8.25: Structure 4, Rooms 1-3 (Room 1 in foreground), Sector 6, Cerro Huancha MV 900 (Briceño and Billman 2009, Figures 95 and 96)

8.4.1 Compound 4 Architecture and Occupations

Excavations suggest that Compound 4 was constructed over time, likely over many generations. The largest room, located on the east side of the structure, was the original structure. Each of the three additional rooms was added on separately. The original structure's north wall is the south wall for the first room that was added on, and this pattern continues with each additional room sharing its north and south walls with the adjacent room. Construction over time is indicated through construction techniques. On the exterior of each room's corners are upright slabs placed on a long, thin, flat stone, which are also used for roof construction (Figure 8.26).

Each structure was constructed with rock and mortar but varies in quality of construction. The masonry was a mix of Style V and VII. Some of the shorter walls have a large stone with a mix of small and medium square and rectangular shaped rocks. The longer walls are made up of these small and medium square- and rectangular-shaped rocks. The original room has the highest quality of construction; the masonry of the rooms added was not built as well. Originally, these buildings were roofed. Many of the large, long and flat stones that were used for roofing are still lying adjacent to Compound 4, thrown aside by looters. Roof supports are still intact in the interior of the structure in Unit 1. Interior walls are sloppily joined; it is clear that the exterior of the structure was of better construction quality than the interior (Figure 8.27). Since no intact contexts were discovered during excavation, ceramics found on the surface and in excavations are the only evidence that suggest when these structures were built, see Chapter 10 for more details.

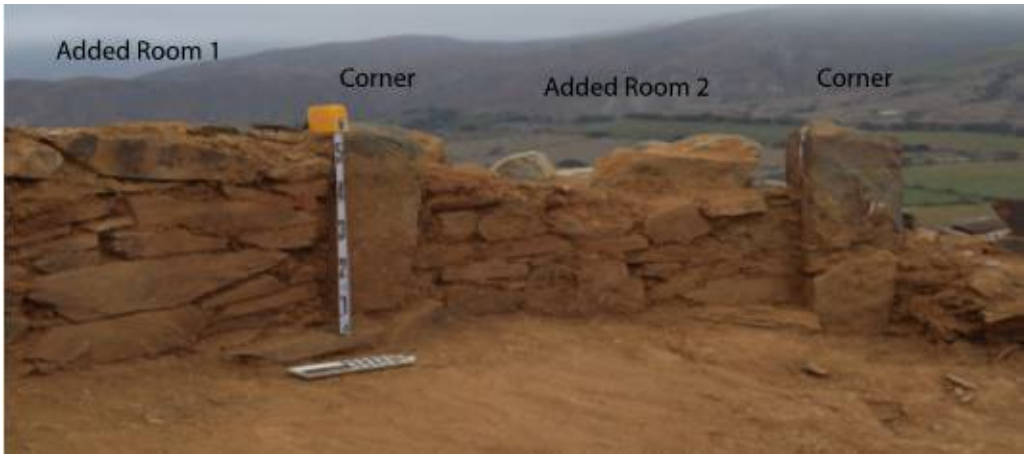


Figure 8.26: West Wall, Exterior Masonry, Compound 4, Cerro Huancha MV 900

Figure 8.27: Compound 4, Room 1, Sector 6, Cerro Huancha MV 900

8.4.2 Summary of Sector 6, Compound 4 Occupation

Evidence suggests the material culture collected during surface collection and excavations in Compound 4 confirms it was in use during the LIP/LH, but does not provide a definitive date of its initial construction. Sector 6 and Compound 4 are part of a ceremonial space at Cerro Huancha MV 900, associated with Sector 11. Compound 4

is interpreted as a *chullpa*, which is an above-ground Andean funerary structure of highland traditions. *Chullpas* are reserved as funerary structures for prominent ancestors of ethnic groups and have been interpreted as a symbol of territoriality and social boundaries (Isbell 1997; Mantha 2009; Salomon 1995). Ceremonies involving ancestor veneration would have occurred adjacent to the structure. Doyle defines the space used to interact with ancestors as "machay," a term which can also mean *chullpa*, ancestor burial crypt, natural sacred cave, (1988, 87–134). I use the term chullpa for the funerary structure and associated space around it used for rituals. Open spaces adjacent to *chullpas* in Sector 6 and 11, would be used for ceremonies and it is plausible that the wall/terraces below in Sectors 7 and 8 may have also been used as part of these ceremonies.

The architectural style of the *chullpas* at Cerro Huancha MV 900—single-story, rectangular structures on a plaza with small doorways—are unique to the northern highlands. In the Huamachuco and Cajamarca highlands, there have been no reports of *chullpas* in this architectural style (T. Topic 2011, pers comm; Watanabe 2011, pers comm). Additionally, there are no previous reports of *chullpas* in the *chaupiyunga* zones. The only reported *chullpas* with similar architectural styles are from the central highlands of the Ancash region and associated with the Middle Horizon period (Paredes et al. 2000; Ponte 2000). Despite the fact that excavations did not indicate the phase associated with Compound 4's initial construction, they did demonstrate that a highland funerary tradition was practiced at Cerro Huancha MV 900 and likely represents the local population.

8.5 Sector 7 Excavations

Sector 7 is characterized by a series of walls running parallel to the hill, adjacent to Sector 8 and below Sector 1 (Figure 5.4, see Section 7.7). No architectural compounds have been noted in the sector. Surface collection in the sector recovered the lowest density of sherds of all sectors at Cerro Huancha MV 900 at .03 diagnostic sherds per square meter (Table 7.2). Four walls have been recorded in the sector, each standing about 1.5 m high. Their original height is unclear. It should be noted that these walls may have had a dual function, as defensive architecture and terraces that enabled movement/walkways in Sectors 7 and 8. Two of the walls intersect in Sector 7, and as the walls extend eastward through Sector 7, they begin to converge into one wall. On the east side of the mountain facing Cerro Ramon MV 1000, one wall continues southeast into Sector 10, and then around the rest of Cerro Huancha MV 900. Another possible function may be that this sector may have served as agricultural terraces or drying terraces for agricultural products such as coca leaves, as Dillehay (1977) reports from his excavations in the Chillon Valley. One test trench, 7.90 m x 1 m was placed between two walls, exposing both wall faces (Figure 8.1 and Figure 8.28). Excavation was conducted to understand the wall/terrace construction techniques, determine the timing of construction, and explore the possibilities of evidence of occupation or associated architecture in the sector.

Excavations in Trench 1 revealed that walls were constructed simply by building a wall on the sloped mountainside. A base was constructed with many layers of medium and large rocks, with occasional small rocks. The wall was then built in Masonry Style VII to the height desired. The rocks used for the wall are just like those used for

buildings, all quarried from Huancha. The space between the wall and slope of the hillside was filled in with sterile construction fill made up of small and medium rocks quarried from the hill and the occasional cobbles from the river bed to create a level terrace (Figure 8.29). All the lower horizontal walls at Cerro Huancha MV 900, many of which encircle Cerro Huancha MV 900, are constructed in this style.

Excavations did not reveal any evidence of human occupation in Trench 1. A single core and blackware body sherd was recovered. Based on excavations, it appears that the walls in Sector 7 may have been multi-functional, serving as a defensive wall and terrace for moving around Cerro Huancha MV 900. It is unlikely Cerro Huancha MV 900 residents could have used these terraces for irrigation agriculture, as it is too high for water to reach. While lower terraces at Cerro Huancha MV 900 may have supported rainfall agriculture during the rainy season (as water could have potentially reached the lowest terraces at the slope of Cerro Huancha MV 900), the terraces in Sector 7 also lack appropriate sediment for agriculture. The stone fill documented in the terrace would have not been suitable for agriculture. While the terraces could have served as drying terraces for coca (Dillehay 1977), no direct evidence supporting this was recovered.

Throughout Sectors 7 and 8, the walls intersect at certain points, creating a path to ascend Cerro Huancha MV 900 on the north side and eventually arrive in Sectors 2, 6, and 11, or descend the mountain on the north slope. The terraces likely served as pathways to enter Cerro Huancha MV 900. A doorway was identified on the wall in Sector 8, with small rooms on either side. It is likely that the Masonry Style VII coincides with the LIP. The same masonry style is found in both Sectors 3 and 7. In

fact, the terrace that Sector 3's Compound 5 and 6 are built on extends north from Sector 3, through Sector 4, and encircles the mountain running through Sector 7.

Trench 1 excavations documented one of the construction methods of terrace building at Cerro Huancha MV 900. While no features were found in Trench 1, the single blackware body sherd and terrace masonry suggest the terrace was constructed during the LIP. Blackware ceramics date to the LIP but, more convincingly, the terraces in Sector 7 are part of a terrace system that encircles Cerro Huancha MV 900. The architectural compounds excavated in Sector 3, with Chimú-style ceramics are built on a terrace that is connected to the terrace system on the north side of Cerro Huancha MV 900. Additionally, the use of these terraces as a means of entering Cerro Huancha MV 900 on the north side, potentially from the prehispanic road that runs from the highlands through Collambay, is significant and may have both political and ceremonial significance.

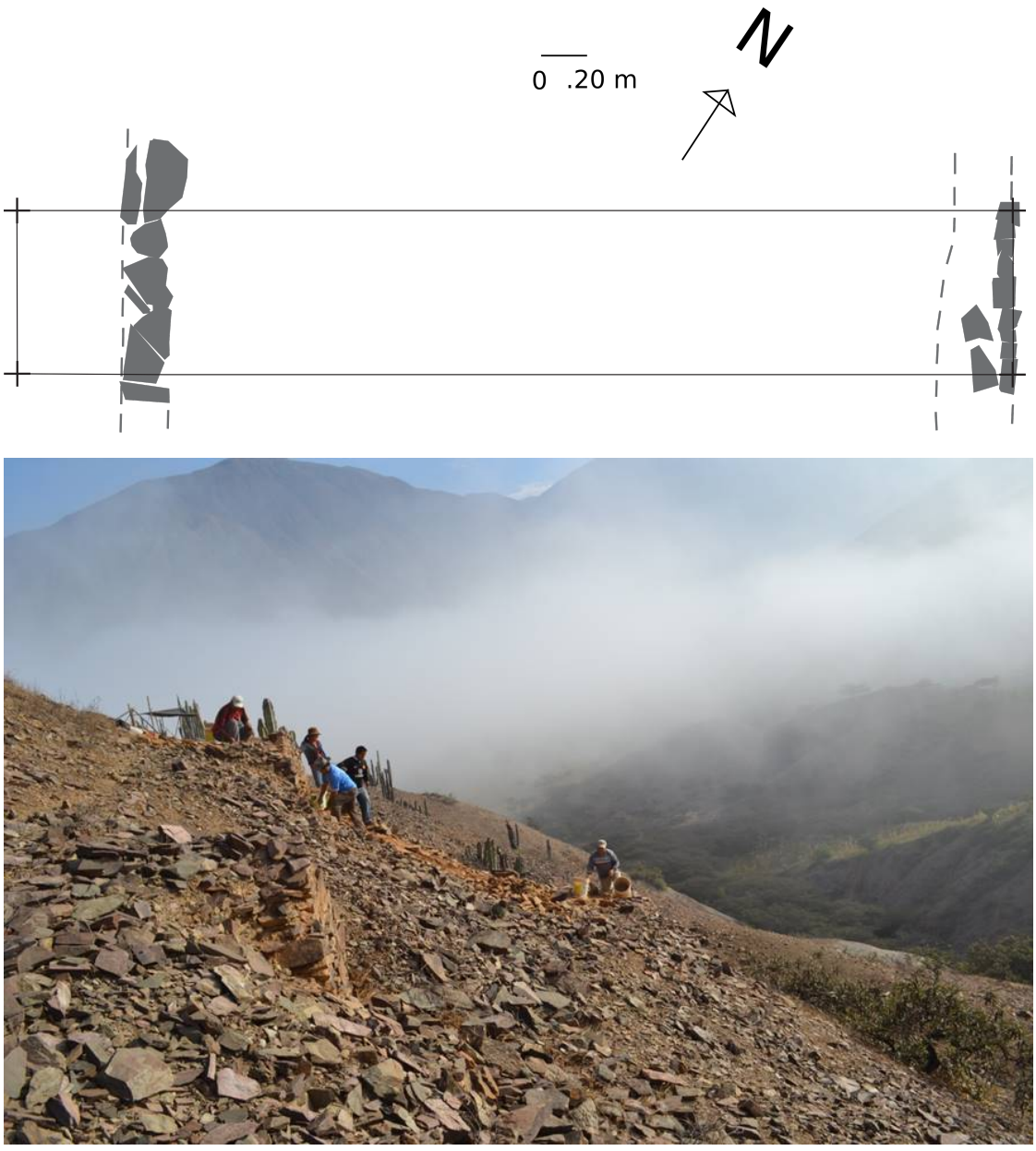


Figure 8.28: Trench 1, Sector 7, Cerro Huancha MV 900

Figure 8.29: South Wall, Trench 1, Sector 7, Cerro Huancha MV 900

8.6 Cerro Huancha MV 900 Occupations

Excavations documented evidence of Cerro Huancha MV 900 undergoing various occupations throughout its history of occupation. I briefly review additional data that provides insight into the duration of and timing of these occupational phases.

8.6.1 Volume of Sediment per Phase

A total of 26.61 m^3 was excavated at Cerro Huancha MV 900 (Table 8.1). However, a significant amount of this sediment was from disturbed contexts. The actual excavated volume recovered from excavations of intact contexts was 16.6 m^3. Table 8.2 presents the volume of sediment excavated at Cerro Huancha and corresponding occupations and phases. This information is important to consider as not all excavations were in intact contexts, and the occupational periods and phases documented were not equally represented in the archaeological record. In the following chapters the recovered artifact assemblage from excavations is analyzed. Some occupations and phases have a much larger assemblage to characterize site activities and behaviors compared to others. The Salinar occupation had the least amount of sediment excavated at .8 m^3. The remaining excavated sediment from intact contexts are associated with the LIP/LH occupation, which if all three phases were evenly represented in excavations would have averaged 5.25 m^3 per phase. However, that was not the case, and LIP/LH Phase 1, the initial LIP occupation recovered 1.2 m^3 of sediment. A greater volume of intact sediment was recovered in subsequent phases, with LIP/LH phase 2 recovering 5.7 m^3 and Phase 3, 8.9 m^3 had the largest volume of sediment recovered overall.

Table 8.2: Sediment excavated per occupational period and phase

Phase	Sediment Excavated (m^3)
Salinar	0.8
LIP/LH Phase 1	1.2
LIP/LH Phase 2	5.7
LIP/LH Phase 3	8.9
Average per phase LIP/LH phase	5.3
Total	16.6

8.6.2 Cerro Huancha MV 900 Radiocarbon Dates

Four charcoal samples from excavations at Cerro Huancha MV 900 were submitted to the NSF-Arizona AMS Laboratory for AMS dating. Three samples were from Sector 1, Compound 3 (AA104555, AA104556, AA104557), and one sample was from Sector 3, Compound 5 (AA104558). The dates are shown uncalibrated in Table 8.3 and calibrated in Figure 8.30 (with calibrated **σ** and 2**σ**). All AMS samples are from features, or associated with features and suggest preliminary timelines for the remodeling of Compound 3 in Sector 1, LIP/LH phases, and the timing of initial construction of Compound 5 in Sector 3. They also provide a preliminary chronological sequence for the three phases identified during the LIP/LH occupation.

Sample AA104556 (PD 243) calAD 1185-1216 (1**σ**) (Bronk Ramsey 2009 and Hogg et al 2013) was carbonized twigs that were embedded in the floor adjacent to Feature 3.15 in Compound 3, XU 1 (see Section 8.2.3). This sample corresponds with LIP/LH Phase 1, and is the earliest of the four samples. Wood is not ideal for

radiocarbon dating, but trees living in this region are small and do not live for centuries. The other three samples correspond with features associated with LIP/LH Phase 2. Sample AA104555 (PD 146) is from Feature 3.03-3.06, 3.08, a large hearth in Compound 3, XU 2. The sample consisted of carbonized organic remains, either a fragment of corn cob or wood, it was not possible to determine. The sample yielded a result of calAD 1229 – 1271 (Bronk Ramsey 2009 and Hogg et al 2013).

Sample AA104557 (PD 279) was carbonized wood. Also recovered from Feature 3.20, a burned spot on the floor adjacent to the low terrace in Unit 5 of Compound 3. The dated wood from Feature 3.20 was a small twig likely from a bush or small tree. Feature 3.20 is associated with the other large hearth Feature 3.19, corresponding to Phase 2 (see Section 8.2.6-8.2.8). This sample resulted in an AMS bimodal range of calAD 1284–1302 (48.8% probability) or calAD 1365–1375 (19.4% probability) (Bronk Ramsey 2009 and Hogg et al. 2013). Samples AA104555 and AA104557 dates suggest that Feature 3.03 and Feature 3.19 were used during the same phase.

Finally, the AMS sample (AA104558) submitted from Sector 3, Compound 5 was a fragment of carbonized corn husk from an ash deposit just below the floor in the southeast corner of Unit 1 (PD 351). It yielded a date of calAD 1316 +/-43 (1σ) (Bronk Ramsey 2009; Hogg et al. 2013). This ash deposit is associated with the initial occupation of Sector 3 suggesting that Compound 5 was constructed in the 14th century, and is also associated with LIP/LH Phase 2 (see Section 8.3.1).

These four AMS dates establish preliminary time periods for LIP/LH Phases 1-3. LIP/LH Phase 1 is likely from ~900? to 1229 - 1271, based on Sample AA104555,

which had the earliest dates for Phase 2. Sample AA104556, from a LIP/LH Phase 1 feature, has a range of 1185-1216 (1σ). The three AMS samples from features used during Phase 2 are AA104555 (PD 146) and AA104557 (PD 279), and AA104558 (PD 351) which provide ranges of 1229-1271; 1284-1302 and 11365-1375; and 1275-1381. These ranges indicate that LIP/LH Phase 2 is as long as 250 years from 1229-1470, or just under 200 years, 1271-1470. While no AMS dates were available for LIP/LH Phase 3, ethnohistoric documents indicate that the Inca took over the north coast in 1470 (Rowe 1948), therefore LIP/LH Phase 3 is 1470-1532.

Table 8.3: Uncalibrated Radiocarbon Samples Data

Sample ID	Field ID	Uncalibrated Dates	d14 AC age
AA104555	PD 146	822 BP	30
AA104556	PD 243	891 BP	18
AA104557	PD 279	731 BP	18
AA104558	PD 351	740 BP	44

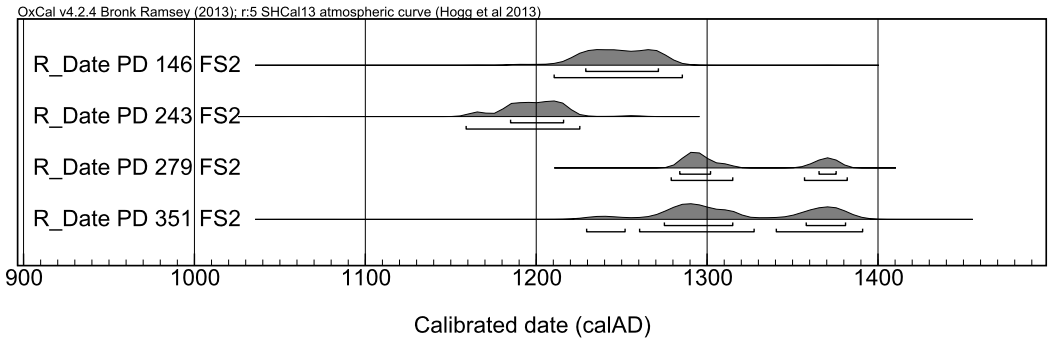


Figure 8.30: Calibrated dates for Cerro Huancha MV 900 (Bronk Ramsey 2009 and Hogg et al 2013)

8.6.3 Summary of Cerro Huancha MV 900 Occupations

Excavations at Cerro Huancha MV 900 in four site sectors indicates there are two distinct occupations, the initial Salinar period occupation and a LIP/LH occupation with three associated phases. The Salinar occupation is only documented in Sector 1, Compound 2. While Salinar ceramics were noted in the majority of site sectors during surface collection, the only features and architecture associated with this phase were documented in Sector 1, suggesting the occupation may have been limited to the top sector of Cerro Huancha MV 900. The density of the Salinar occupation documented in excavations does not compare to the later occupations of Sector 1, however this may be because later occupations disturbed or destroyed the Salinar phase occupation. During the LIP/LH occupation three phases are distinguished through associated features and remodeling in Sector 1. Sector 3 excavations documented two phases of occupation. Four AMS dates provides preliminary dates for the three phases (Section 8.6.2). Below I summarize distinguishing characteristics for each phase:

Phase 1: ~900? to AD 1229-1271 (AA104556)

- Initial construction of Sector 1 terraces and large agglutinated compounds.
- Few excavated features correspond to this phase
- Large in-situ storage vessel (Feature 3.13) associated with feasting present in Compound 3.

Phase 2: AD 1229-1271 to 1470 (AA104555, AA104557, AA104558)

- Phase 2 is characterized by extensive site expansion.
- In Sector 1 architecture was remodeled including construction of multi-level patio spaces within agglutinated compounds.
- In Sector 3, Compound 5 was constructed, it is likely all architecture in Sector 3 was constructed at same time.
- Terraces in Sector 3 that Compounds 5 and 6 were constructed upon extend around all of Cerro Huancha. Same masonry style suggesting it was constructed in same phase.
- Excavation of wall/terraces in Sector 7 support this timing.
- This extensive investment in construction of new architecture on the lower slopes of Cerro Huancha and remodeling of architecture in Sector 1 suggests Cerro Huancha MV 900 emerged as a local center, the architecture on site dwarfs all other sites in the region.
- Chimu ceramics are found associated with site expansion.

Phase 3: AD 1470 to 1532

- Colonial documents indicate the north coast, including Collambay was overtaken by the Inca by 1470 (Rowe 1948).
- Architecture in Sectors 1 and 3 underwent remodeling in Phase 3.
- In Sector 1, 2 storage rooms were added to Compounds 2 and 3.
- Masonry constructed during remodeling appears to be carried out hastily and is poorly built.

- Remodeling in Sectors 1 and 3, including sealing of doorway in Compound 6, indicate that activities in site sectors changed under the Inca.

Excavations suggest that Cerro Huancha MV 900's occupation may have been limited to Sector 1 during Phase 1. Architectural compounds were much larger and more open in Phase 1 than later phases. During Phases 2 and 3, compounds in Sector 1 became more subdivided. Phase 2 is characterized by extensive site expansion. Excavations documented construction in Sectors 3 and 7, its likely Sectors 2, 4, and 8 were also constructed at that time. Phase 3 remodeling corresponds to the Inca period, which in Sector 1 appears to focus on storage. It is noted that the amount of storage documented at Cerro Huancha MV 900 is not comparable to that reported for a provincial Inca capital, for example, outside of Huamachuco (Topic and Chiswell 1992). Collambay may not have been a principal *tambo* but it is the only reported *tambo* in the *chaupiyunga* zone. The Spanish defeated the Inca in 1533. The closest Spanish *reducción* in the Collambay region, Simbal, was not founded until 1572 (Espinoza Soriano 1974, 35), so it is possible Cerro Huancha MV 900 was occupied intermittently until then.[39] Cerro Huancha MV 900 underwent extensive site expansion and changes in site activities occurred throughout the LIP/LH occupation. These changes are documented in the architecture and features such as construction of new buildings, walls, and use and abandonment of hearths. Chapter 9 describes excavations at Cerro Ramon MV 1000 and Chapters 10 and 11 elaborate on the material culture and

[39] A few potential early Colonial period artifacts were recovered in excavations but no intact Colonial occupation was encountered.

production activities documented by excavations at Cerro Huancha MV 900 during the LIP/LH to better understand these changes.

9 Cerro Ramon MV 1000

Excavations at Cerro Ramon MV 1000 occurred over a three-day period in October 2012. Located at 1,000 masl, on a prehispanic road, the site is hypothesized to serve as a checkpoint for travelers descending from the highlands into the Collambay region. The following chapter describes the site's three sectors, excavation strategy, and excavations accomplished. From this information I suggest when the site was constructed and discuss Cerro Ramon MV 1000's relationship with Cerro Huancha MV 900.

9.1 Cerro Ramon MV 1000 Sectors 1, 2, and 3 Construction and Architecture

Cerro Ramon MV 1000 was divided into three sectors based on the summit ridgeline topography and visible architecture (Figure 6.6; Jochem 2007, Map 3). Access to Cerro Ramon MV 1000 occurred through the north side of the site in Sector 1, which is characterized by a series of large, defensive retaining walls over two meters in height. The southern limit of Cerro Ramon MV 1000 is a large, contiguous wall that runs along the southern perimeter of the site. Architecture on the summit of Cerro Ramon MV 1000 is 450 m wide, extending 100 m in the southern third of the site. At points on the south side, it narrows to only 25 m wide as it follows the summit ridge. Survey by Jochem recorded 3,000 square meters of enclosed, possible habitation space, not including open patio spaces or raised platforms without architecture. The total area of the site including open areas without architecture is 10,000 square meters (Jochem 2007, 25).

As noted in Chapter 6, Cerro Ramon's ridgeline is very narrow, it was necessary to build terraces to create flat areas to construct buildings. Sector 1 is characterized by the series of six defensive, retaining walls. South of the retaining walls, Sector 1 includes Cerro Ramon MV 1000's summit, which is characterized by walls as well as multiple terraces with both open plazas and terraces with agglutinated compounds. Sector 2 is the central part of the site and has the densest architecture on site. Like the south part of Sector 1, the topography narrows to 25 m wide at points. Agglutinated compounds on raised platforms characterize the architecture in Sector 2, with multi-size rooms including storage and larger rooms around open spaces. Open spaces are located throughout the site, occasionally on raised platforms, as well as in the center of the site. Agglutinated compounds are located on the east and west sides of the site, often on different levels of terraces. Large grinding stones were noted in Sector 2. Landslides have severely affected Sectors 1 and 2, destroying retaining walls and, potentially, architectural compounds.

In Sector 3 the ridge widens. Sector 3 architecture is more irregular and dispersed compared to the central section, Sector 2. The architecture includes several walls, terraces, and open spaces. Fariss et al (2007) notes in the south sector are a series of rooms that were likely used as storage, surrounding an open area that may have been used for feasting. On the southeast side of Sector 3 there are lined cists and looted burials (Jochem 2007, 21). I was unable to visit this area in 2012 due to the architecture's instability. I did notice in Sector 3 potential mortuary structures, similar to the *chullpas* identified at Cerro Huancha MV 900 in Sectors 6 and 11 in Sector 3.

Sector 3 has a contiguous wall that spans almost the entire southern perimeter of the site.

Like Cerro Huancha MV 900, Cerro Ramon MV 1000's masonry was constructed predominately of local stone, likely from the area immediately surrounding Cerro Ramon. Terraces were constructed with the same two construction techniques identified at Cerro Huancha MV 900. One difference in construction techniques between the two sites is that Cerro Ramon MV 1000's terraces were built to a much greater height than Cerro Huancha MV 900. This is due to the severe slope and narrow topography of parts of Cerro Ramon compared to Cerro Huancha which has a larger surface area to build on.

Cerro Ramon MV 1000 architecture is generally similar in style to Cerro Huancha MV 900—rectangular, agglutinated rooms situated around patio spaces and open plazas. One masonry style noted at Cerro Ramon MV 1000 is Masonry Style VII. Movement through the site appears to have been primarily through the middle of the site. Multiple sets of stairs, three to five steps each, were found in Sectors 2 and 3 to access different level terraces (Figure 9.1).

To enter the site on the north end, through Sector 1, would have required passing through defensive retaining walls. The only other potential entryway into the site would be on the south side, although it is unclear if there was an entryway on the southern limit of the site. Figure 9.2 is a door jamb with niche is associated with the Sector 3 southern contiguous wall, which may have been the southern entryway, although it is unclear due to wall fall (Fariss et al 2007).

Figure 9.1: Stairs

Figure 9.2: Door Jamb with Niche

9.2 Cerro Ramon MV 1000 Excavations

Excavations included two test pits (Unit 1 and 2) in architectural compounds, and two trenches in looters' holes (Looter Hole A and Looter Hole B) to document Cerro Ramon MV 1000's occupation. The two trenches, 1.1 x 1.5 m and 2.3 x 1.5 m, were placed in areas with looting disturbance to expose profiles, to document site stratigraphy to aide in understanding the occupational history (Table 9.1 and Figure 9.3).

Table 9.1: Cerro Ramon MV 1000 Excavated Area and Volume

Units	Area Excavated (m^2)	Volume Excavated (m^3)
1	1	0.15
2	1	0.11
Looter Hole A	4	0.14
Looter Hole B	6.95	1.1
Total	12.95	1.5

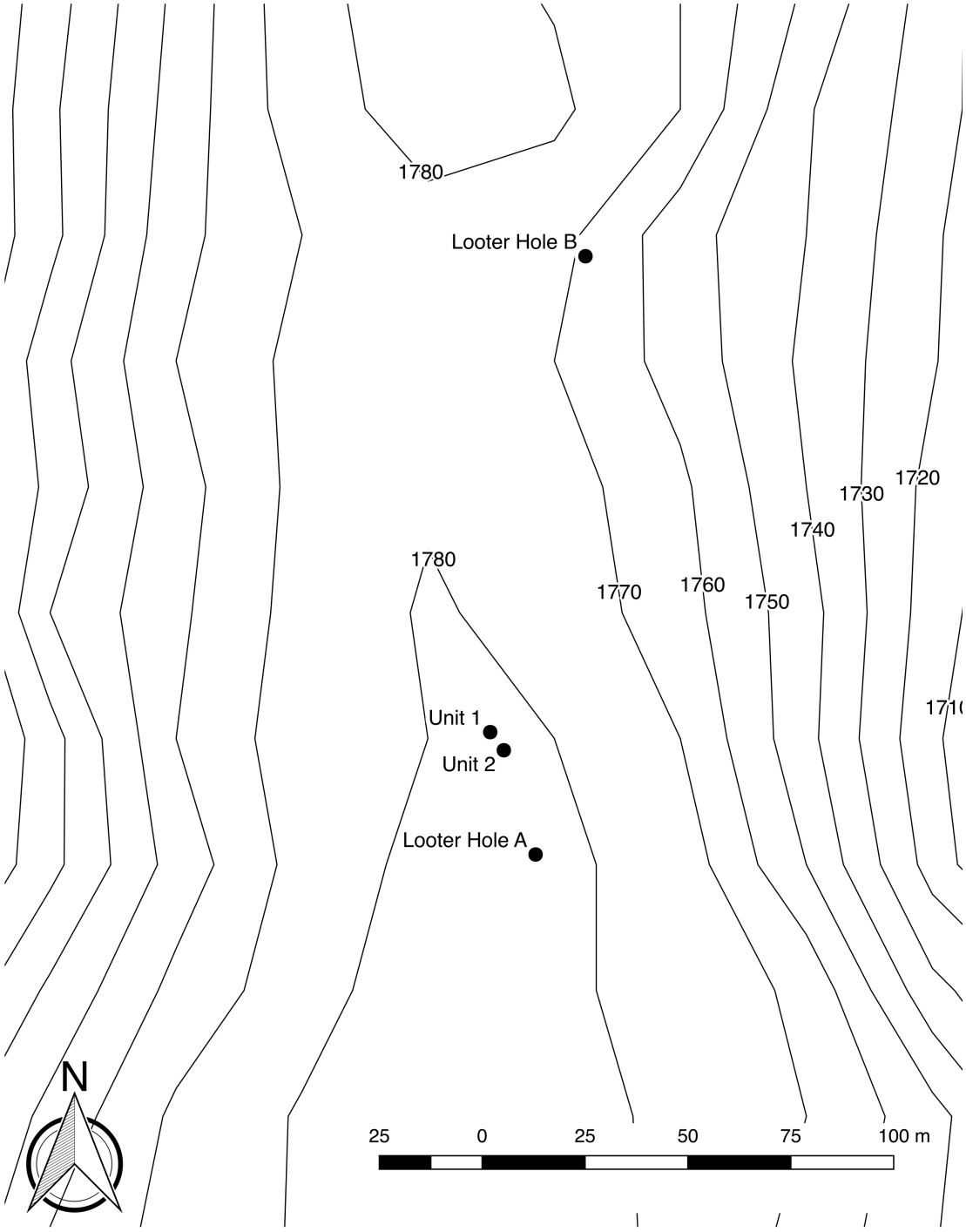


Figure 9.3: Location of Excavations

9.2.1 Units 1 and 2

Unit 1 was in the southeast corner of a 4 x 10 m masonry room, on the south side of Cerro Ramon MV 1000, facing the Cuesta Valley. The room has been disturbed by looting, but the southeast corner appeared undisturbed, covered in looter's backfill. Test Unit 2 was located in the southeast corner of a plaza, adjacent to the room. The wall on the north side of Unit 2 is the southwest wall of Unit 1, although it is on the south side of the wall from Unit 1. The wall on the east side of Unit 2 was constructed off the north wall.

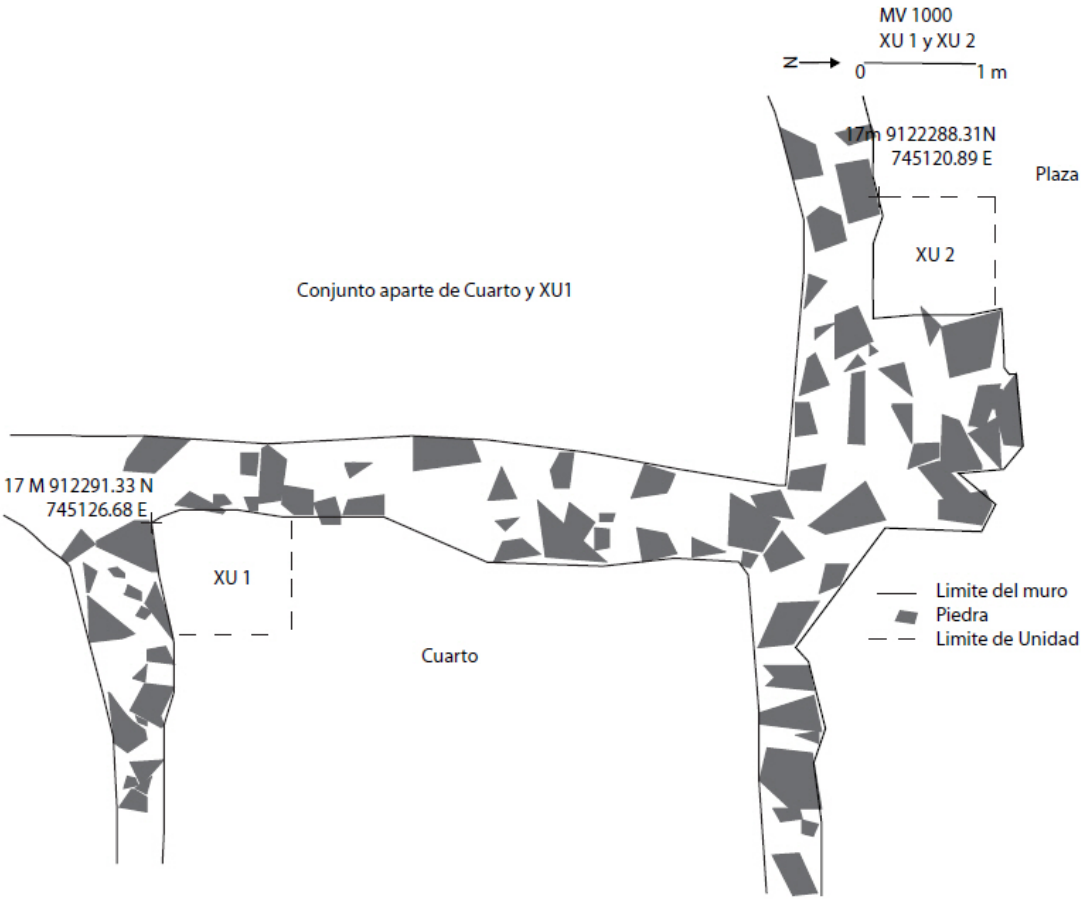


Figure 9.4: Units 1 and 2 Plainview, Cerro Ramon MV 1000

Both units were very shallow. Two floors were identified in Unit 1, constructed directly on bedrock. No fill was detected between the two floors. Floor 1 averaged 10 cm in thickness and was made of compact clay 7.5YR 6/6 reddish yellow with a sandy texture. Floor 2 averaged 5 cm in thickness and was slightly more yellow in color. Both floors were disturbed by modern plants, Ipomoea sagasteguii or "camote gentil" (Figure 9.4)

Figure 9.4: Floor 1, Unit 1, Cerro Ramon MV 1000 with "camote gentil"

In Floor 2, two small holes, circular in shape, were identified. One was 10 cm in diameter, the other 20 cm in diameter; they may have been postholes. Cultural materials were recovered in Floor 1, but they were few and included ceramics, carbon, and bone. In the architectural fill above Floor 1, a half of a mini olla with resin inside was recovered (Figure 9.4, PD 419). No architectural fill was recovered in Floor 2. It is possible that Floor 2 was construction fill for Floor 1.

Figure 9.5: Bedrock, Unit 2, Cerro Ramon MV 1000

Unit 2 excavations in the adjacent plaza, about 15 x 10 m in size, did not detect any prepared floor or construction levels. Excavations were terminated at bedrock (Figure 9.5). Small diagnostic rims were recovered but the sherds were so small and eroded that the vessel form was undeterminable. Additional cultural material recovered included bone and carbon.

9.2.2 Looter Hole A

Looter Hole A was located in the southern part of Sector 2, about 30 meters south of Test Units 1 and 2 in another architectural compound. Excavations occurred in the north profile of an old looter's pit; the profile was 1.5 x 1 m. The profile and looter's pit were cleaned and the profile was cut back 25 cm to reveal previously unexposed

sediment. Excavations revealed a thin floor varying between 3 and 5 cm thick; below the floor fill was a construction fill made up of ash and small rocks built on plastered bedrock (Figure 9.6). Diagnostic sherds recovered included several ollas and a blackware rim from an unidentifiable vessel type. Decorative motifs recovered included a sherd with piel de ganso and two painted sherds like the Collambay band recovered at Cerro Huancha MV 900 (see Chapter 10).

Figure 9.6: North Profile of Looter Hole A

9.2.3 Looter Hole B/Trench 1

Looter Hole B[40] was located north of Units 1 and 2 on the southeast side of Section 1 facing the Cuesta Valley. A 1.5 m long area was selected and cleaned, and the

[40] Looter Hole B was originally identified as Trench 1. In order to not confuse it with Cerro Huancha MV 900's Trench 1, the name was changed to Looter Hole B.

west profile was cut back 20 cm, resulting in an excavation area of 2.3 x 1.5 m. Excavations revealed looters' disturbance, leading to architectural collapse. On the east side of the unit was a collapsed wall, constructed on bedrock, covered in a thin plaster (Figure 9.7).

This test trench provides evidence of one occupation and insight into how Cerro Ramon MV 1000 architectural compounds were constructed. Level 1 is made up of disturbed, loose sediment with architectural fall, large and small rocks, and cultural materials. Level 2 is the only identifiable occupation; sediment was more compact than Level 1 and composed of trash and small rocks. No floor was detected. Level 3 is construction fill .6 m deep, made up of medium and large rocks. Associated with this construction fill is the collapsed wall on the east side of the unit constructed on bedrock. Cultural materials were absent in the construction fill, and the profile suggests that terraced compounds were constructed using the same method as at Cerro Huancha MV 900. Looter Hole B had the largest fill deposit encountered in any excavations. It also had a greater density of cultural material recovered than in other excavations because it included such a large area.

Figure 9.7: Looter Hole B/Trench 1 West Profile, Sterile Fill and On Architectural Base

9.2.4 Cerro Ramon MV 1000 Occupation and Summary

Excavations at Cerro Ramon MV 1000 were very limited, however, test excavations suggest the site was constructed and occupied in the LIP. This is supported by similar masonry style to Cerro Huancha MV 900 noted on site and material culture

(Chimu ceramics) recovered in excavations, see Chapter 10. No features were encountered in excavation units and trenches to indicate specific activities or changes in site use in Sector 2 during its occupation. Cerro Ramon MV 1000 may have been occupied into the LH; however my excavations do not confirm this. The site's placement on a prehistoric road suggests it served as a checkpoint during the LIP but also potentially during the LH despite lack of evidence at this time of LH occupation. The site has defensive architectural features however its primary function at this time cannot be determined to be defensive in nature, serving as a refuge for Collambay residents.

The extensive investment in terrace construction documented in Looter Hole B is likely part of building stable constructions. There is also extensive investment in construction of walls, terracing, platforms, and structures at the site too. Does this indicate the site was home to a permanent occupation? Again, my limited testing does not provide conclusive evidence. However, the abundance of artifacts on the site surface suggests the site was not a temporary refuge but may have sustained a permanent population.

Despite the physical challenge of hiking to the site for our team, prehispanic populations would have been more accustomed to this type of hiking. Living in the foothills of the Andes movement between the highlands and *chaupiyunga* zone was frequent among prehispanic groups. Llama trains could have provided a constant supply of water and food. While the site is located at a relatively high elevation for the region, residents could have easily descended to the valley floor for farming from the site. During our brief excavations at the site, we climbed to the site in just 2.5 hours. That

afternoon our guide descended into the Cuesta Valley to water the donkeys, returning within a few hours. I have known Collambay community members to check on animals grazing up on Cerro Ramon and return in the same afternoon to Collambay. While the climb is intimidating, it is likely that prehispanic populations would have had no issue descending into the valley from Cerro Ramon MV 1000 to work in agricultural fields or tend animals for the day. Additionally, pack animals could carry water, food, and other heavy items for the settlement.

Additionally, a spring has been identified close to Cerro Ramon MV 1000, located about 500 m north of Sector 1[41]. This may have been a suitable local water source during the prehispanic era. Therefore, I suggest it is possible that MV 1000 had year-round residents that were potentially working in the valley. However, further excavations are necessary to confirm this.

9.3 Cerro Huancha MV 900 and Cerro Ramon MV 1000

Excavations at Cerro Huancha MV 900 and Cerro Ramon MV 1000 suggest both sites were occupied contemporaneously in the LIP. While Cerro Huancha MV 900 is a much larger site with two occupations, Cerro Ramon MV 1000 only had a single occupation. Radiocarbon dates and material culture confirm Cerro Huancha was occupied during the LIP and LH. While my testing of the site was very limited I suggest Cerro Ramon was constructed during Cerro Huancha MV 900 LIP/LH Phase II,

[41] It is unclear if this spring is seasonal or has water year-round. Visiting in the tail end of the dry season in October, it had limited water, and our donkeys were watered in the Cuesta Valley while we were excavating.

corresponding with the middle-late Chimú period, contemporaneous with site expansion at Cerro Huancha MV 900.

It is clear that the two sites are closely associated, their proximity, contemporaneous occupational history, architecture, material culture and masonry at both indicate the two are closely tied to one another. Both Cerro Huancha MV 900 and Cerro Ramon MV 1000's architecture also exhibits defensive characteristics, in site location and architectural features and are connected to the coastal-highland roadways, with Cerro Ramon MV 1000 serving as a checkpoint on a prehistoric road that then forces travelers to descend into the Collambay area, passing by Cerro Huancha MV 900. While there is a clear LH occupation at Cerro Huancha MV 900, at this time it is unclear if there was an occupation at Cerro Ramon MV 1000 although assumingly the roadway continued to be used.

9.4 Conclusion

This chapter described Cerro Ramon MV 1000 and excavations carried out in Sector 2. This fieldwork indicates that Cerro Huancha MV 900 and Cerro Ramon MV 1000 were occupied during the LIP. Chapters 9 and 10 discuss the artifact assemblage recovered in excavations at Cerro Huancha MV 900 and Cerro Ramon MV 1000 that, in relation to previous information presented, provides a more encompassing understanding of Collambay practices, local economy, cultural traditions and changes that occurred through the LIP/LH.

10 Cerro Huancha MV 900 and Cerro Ramon MV 1000 Ceramics

This chapter presents the ceramic data recovered in excavations at Cerro Huancha MV 900 and Cerro Ramon MV 1000. Information from the ceramic assemblage including the distribution and quantities of different functional categories and vessel classes provides information about site activities. Discussion of local and regional ceramic stylistic traditions provides information about interregional relationships in Collambay. These characteristics of the ceramic assemblage enables an understanding of site activities over time.

Excavations at Cerro Huancha MV 900 and Cerro Ramon MV 1000 recovered a total of 2,927 diagnostic sherds. Table 10.1 displays the distribution of the diagnostic assemblage by parts. Rims (N=1,871) are the most frequent part of ceramic vessel recovered, followed by diagnostic body sherds (N=934). Analysis of rim frequencies and distribution only considers rims with 5% or more of the surface diameter present as rim sherds with less than 5% present are more difficult to assign a vessel class (Table 5.2). Table 10.2 provides a breakdown of vessel class by the distribution of rims with 5% or greater of rim diameter present.

Ollas and jars are the most frequently recovered vessel forms in the excavated rim assemblage at both Cerro Huancha MV 900 and Cerro Ramon MV 1000 (Table 5.2). These two vessel classes together make up over 50% of the Cerro Huancha MV 900 rim assemblage and nearly 50% of Cerro Ramon MV 1000 rim assemblage. Over 30% of each sites' rim assemblage could not be assigned to a vessel class. The other

vessel classes present at Cerro Huancha (pan, bottle, bowl etc.) at Cerro Huancha MV 900 make up less than 10% of the rim assemblage. At Cerro Ramon MV 1000 other vessel classes make up over 15% of the rim assemblage. Excavation strategy at both sites were significantly different, however, ollas and jars dominate both ceramic assemblages suggesting these are the two most frequently found vessel forms in the Collambay region.

Cerro Ramon MV 1000's excavated ceramic assemblage (Table 10.2) is significantly smaller than Cerro Huancha MV 900 due to the limited excavations at the site. The recovered assemblage from Cerro Ramon MV 1000 does not indicate any significant differences in vessel classes from those documented at Cerro Huancha MV 900. Rims from pans, ollas, bowls, jars, tinajas. A single rallador rim and miniature vessel rim were also recovered. While no bottle spouts were recovered at Cerro Ramon MV 1000 one undecorated black ware bottle body sherd was recovered, suggesting bottles were present at Cerro Ramon MV 1000.

Excavations at Cerro Huancha MV 900 recovered 1,329 rims ($\geq$5% of rim surface diameter present), from architectural compounds, see Table 10.3 and Figure 10.1. See Chapter 8 for a review of excavations in Compounds 1-6. The raw totals of rims in Table 10.3, show that excavations in Sector 1, Compounds 1, 2, and 3 recovered a significantly greater number of sherds than excavations in other site sectors (N=1,228). In fact, Sector 1, Compounds 1, 2, and 3's rim assemblage accounts for nearly 94% of the rim assemblage from all compounds excavated. However, Compound 2 and 3's rim assemblage (N= 1,106) makes up the majority of the entire excavated rim assemblage at 85%. Compound 1 was included, but it was not excavated to intact

context, which is why in Table 10.3 the rim totals column includes total rims recovered in Compounds 2, 3, 4, 5, and 6, and a separate column includes Compound 1 with other Compounds totals. The fact that the raw count of rims in Compound 1 greatly outnumbers the number of rims recovered in Compounds in Sectors 3 and 6 (N=122 to 81) indicate that Sector 1 has greater quantities of material culture denser than other site sectors[42]. Additionally, the superficial levels at Cerro Huancha MV 900 was very dense in material (see Section 10.6 for quantities of rims recovered from intact contexts).

Like noted previously in Table 10.2, the most frequently recovered rim forms were olla and jars. In Sector 1 olla and jar rims each make up around 30% of each compounds' assemblage. This is also the case in Sector 3, Compound 5. The other excavated compounds, Compound 4 and 6, ollas make up 22.2 and 31% of the compounds' rim assemblage. Jar rims make up 10% or less of the assemblage. Further discussion of the distribution of Cerro Huancha MV 900 rims continues in the subsequent sections.

Table 10.1: Distribution of Excavated Diagnostic Assemblage

Part	MV 900	MV 1000	Totals
Body	894	40	934
Rim	1766	105	1871
Base	66	5	71
Other	22	0	22
Unknown	28	1	29
Totals	2776	151	2927

[42] Sector 1 had a much denser occupation than other site sectors combined it certainly had more buildings many of which were likely two stories.

Table 10.2: Cerro Huancha MV 900 and Cerro Ramon MV 1000 Frequency by Rims

	MV 900 EXC*		MV 1000*		Total*	
Vessel Class	Ct	%	Ct	%	Ct	%
Pan	38	2.9	7	7.3	45	3.2
Bowl	66	4.9	5	5.2	71	5
Olla	397	29.9	19	19.8	416	29.2
Jar	327	24.6	28	29.2	355	24.9
Bottle	2	0.1	0	0	2	0.1
Tinaja	14	1.1	4	4.2	18	1.3
Mold	0	0	0	0	0	0
Rallador	0	0	1	1	1	<.1
Mini	2	0.1	1	1	3	0.2
Unknown	483	36.4	31	32.3	515	36.1
Totals	1329	100	96	100	1425	100

Table 10.3: Cerro Huancha MV 900 Vessel Forms by Compound

	Sector 1						Sector 3				Sector 6		Totals			
Compounds	1		2		3		5		6		4		Compounds 2,3,4,5,6		All Compounds	
Vessel Class	Ct	%	Ct	%	Ct	%	Ct	%	Ct	%	Ct	%	Ct	%	Ct	%
Pan	1	0.8	14	3.3	21	3.1	0	0	2	5.5	0	0	37	3.1	38	2.9
Bowl	10	8.2	23	5.5	27	3.9	1	6.3	1	2.8	1	3.5	53	4.4	63	4.7
Olla	40	32.8	135	32.2	200	29.1	5	31.2	8	22.2	9	31	357	30	397	30.3
Jar	42	34.4	116	27.7	157	22.9	4	25	2	5.6	3	10.3	282	23.8	324	24.8
Bottle	0	0	2	0.5	0	0	0	0	0	0	0	0	2	0.2	2	0.1
Tinaja	1	0.8	7	1.7	5	0.7	0	0	1	2.8	0	0	13	1.1	14	1.1
Mini	0	0	1	0.2	1	0.1	0	0	0	0	0	0	2	0.2	2	0.2
Unknown	28	23	121	28.9	276	40.2	6	37.5	22	61.1	16	55.2	441	37.2	469	35.9
Total	122	100	419	100	687	100	16	100	36	100	29	100	1187	100	1309	100

*Includes rims with 5% or more present

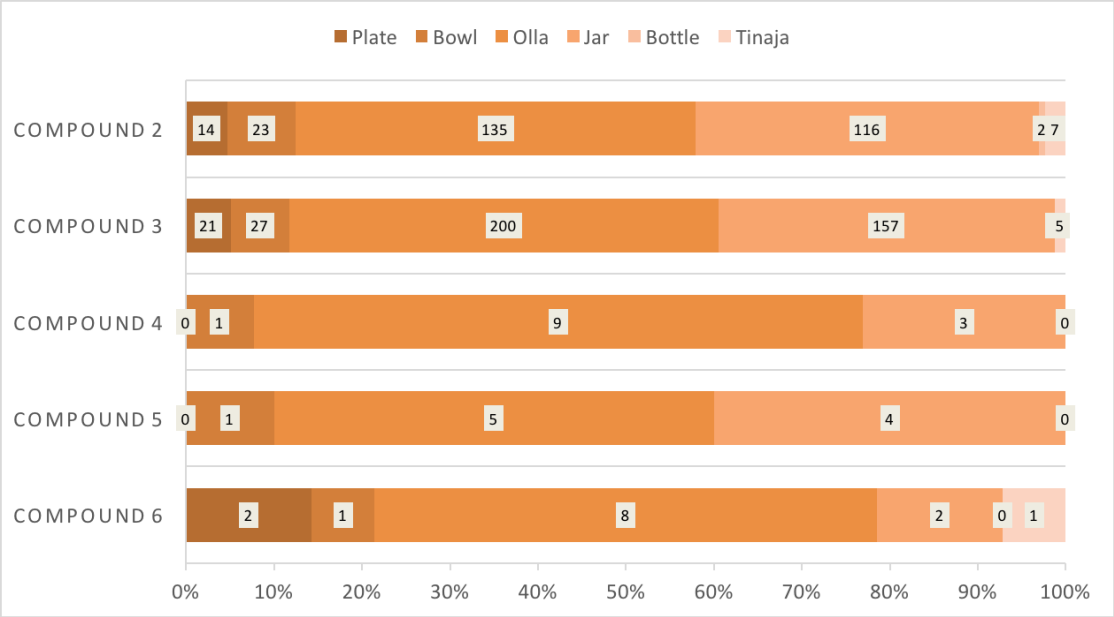


Figure 10.1: Cerro Huancha MV 900 Rim Distribution by Compounds and Functional Vessel Class

10.1 Functional and Correspondence Analysis by Sector

Functional analysis provides information about the excavated ceramic assemblage recovered in Sectors 1, 3, and 6 (see Table 10.4). For a review of functional analysis see Section 5.9.3. The small samples recovered in Compounds 4, 5, and 6 makes it problematic to compare with Compounds 2 and 3.

Overall, 52.9% of the recovered rim assemblage from all three sectors is dedicated to cooking (ollas and pans). The second most frequent category represented by the overall excavated compounds rim assemblage was the serving category (bowls and bottles) at 39.7%. Finally, storage was the least frequently recovered category, making up 7.4% of the assemblage. Within each excavated compound the cooking category is always the most frequently recovered category, representing over 50% of each sectors' rim assemblage, Sector 1, 52.3%, Sector 3, 60.9%, and Sector 6, 71.4%

(see Table 10.4). Comparing the serving and storage categories Sectors 3 and 6 have similar ratios of rim frequencies. Additionally, fewer rims in Sectors' 3 and 6 rim assemblages are dedicated to storage than Sector 1, 30.4% and 14.3% compared to 40.3% (Table 10.4). This suggests that in Sectors 3 and 6, storage-associated activities occurred less frequently than Sector 1. This is not surprising as Sector 6 is characterized by funerary ceremonial architecture. Sector 3 is characterized by smaller architectural compounds when compared to Sector 1. Features documented in excavations in Sector 3, Compound 6 suggest Sector 3 was made up of households. The few rims associated with typical storage vessels suggests the compounds in Sector 3 were not focused on storage activities, or if they were, was not a principal sector for storage at Cerro Huancha MV 900.

Sector 1's rim assemblage indicates that 52.3% of the rim assemblage is associated with cooking, while 40.3% of the rim assemblage is related to storage. These distributions suggest that while the remains of food preparation/cooking, serving, and storage were found in compounds in Sectors 1 and 3, and that Sector 1 compounds were principally dedicated to food preparation and storage activities. Excavated features in Sector 1 include hearths, storage bins, and storage rooms. Excavations in Sector 3 documented domestic hearths but did not identify any designated storage spaces. Excavations in Sector 6 did not include any features tied to cooking or storage activities suggesting the rims recovered in this area form other site sectors. Despite the limited sample size from Sectors 3 and 6, some interpretation from the material culture provides information about the activities in the zone.

Table 10.4: Functional Categories by Compound and Sector

Functional Category	Forms	Sector 1			Sector 6		Sector 3			All Comp Totals	
		Comp 2	Comp 3		Comp 4		Comp 5	Comp 6			
		Ct.	Ct.	%	Ct.	%	Ct.	Ct.	%	Ct.	%
Cooking	Pan	14	21	52.30%	0	71.40%	0	2	60.90%	37	52.9
	Olla	135	200		9		5	8		357	
Serving	Bottle	2	0	7.40%	0	14.30%	0	0	8.70%	2	7.4
	Plate	23	27		1		1	1		53	
Storage	Jar	116	157	40.30%	3	14.30%	4	2	30.40%	282	39.7
	Tinaja	7	5		0		0	1		13	
NA	Other	1	1	NA	0	NA	0	0	NA	2	
	Unknown	121	276		16		6	22		441	
All Rim Sherds*		419	687		29		16	36		1187	
Total Rim in Functional Analysis		707		100.00%	13	100.00%	24		100.00%	744	100

*Surface Diameter >5 % present

10.1.1 Correspondence Analysis

Correspondence analysis of the frequencies of the six functional vessel classes (olla, pan, bowl, bottle, tinaja, jar) in Sectors 1, 3, and 6 highlights relationships between specific vessel forms and site sectors that functional analysis does not. While the results are not statistically significant, the correspondence analysis amplifies slight differences between site sectors and rims of different vessel classes (Figure 10.2). See Section 5.9.3 for a review of correspondence analysis. The large quantity of sherds in Sector 1 (Table 10.3) compared to other site sectors prevents statistically significant correlation between the three sectors. As a result, in Figure 10.2, Sector 1 establishes the "normal" distribution of the three sectors, with the relative quantities of sherds of Sectors 3 and 6 are compared to Sector 1.

The close proximity of rim sherds of ollas (6), bowls (2), jars (7), and vessel classes to Sector 1 on the graph indicate these forms are closely associated with Sector 1. Each of these three forms, ollas, bowls, and jars, fall into one of the three functional categories, cooking, serving, storage. Sector 1 is also associated with tinajas (9) and pans (1), however tinajas (9) and pans (1) are also the closest vessels on the x and y axis to Sector 3 indicating a strong correspondence between Sector 3 and tinajas and pans. While more tinajas were recovered in Sector 1 (N=12) compared to Sector 3 (N=1) the ratio of tinajas to the total functional rim assemblage in each sector indicates tinajas are more often associated with Sector 3 (1 of 24 diags) than Sector 1 (12 of 709 diags). The association of tinajas with Sector 3 is illustrative of why the correspondence analysis is

not statistically significant. I have already discussed why Sector 3 may have fewer rims from storage vessel classes compared to Sector 1 previously in this section. I highlight this finding to demonstrate the issue with the disproportionate sample size from excavations[43].

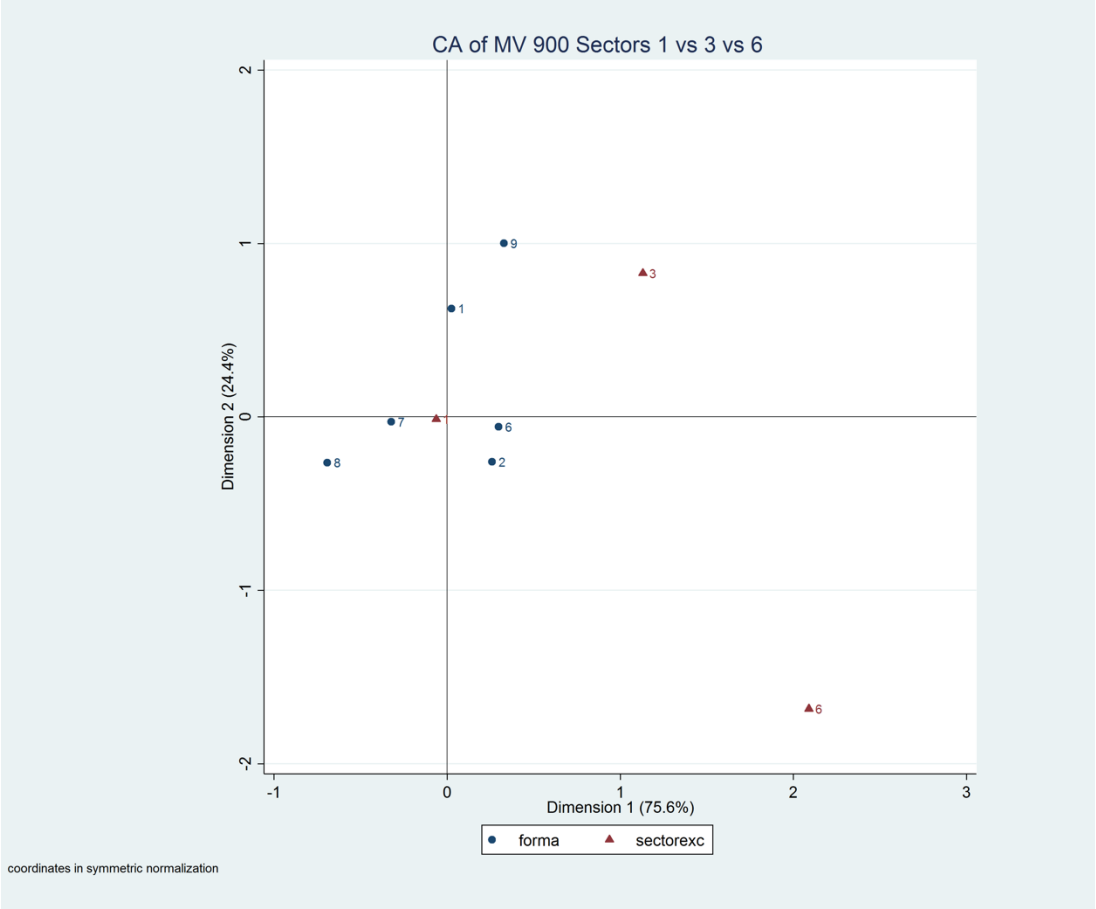


Figure 10.2: Correspondence Analysis of Functional Categories in Sectors 1, 3, and 6.

10.2 Varieties of Ollas

[43] I also evaluated the relationship between rim assemblages of Compounds 3 and 6 and then Compounds 2 and 3 with correspondence analysis however the results for each test were not significant.

Four different varieties of ollas were identified (Table 10.5 and Table 10.6) at Cerro Huancha MV 900. See Ceramic typology in Section 5.9.2 for descriptions of olla varieties. Not all four varieties were documented in all sectors and compounds (Table 10.5). All four varieties were documented in excavations in Sector 1, Compounds 1, 2, 3, including one complete carinated olla (Figure 10.3) and an angle-neck olla (Figure 10.4) in Compound 2. Carinated rims were not recovered in excavations in Sectors 3 and 6. The most frequent variety present in Compounds 1, 2, 3 was the angle-neck olla, which made up between 32.5-50% of the olla rim assemblage. Following angle-neck ollas, Compounds 2's second most frequent variety of olla was neckless at 34.82% followed by vertical at 110.26%. Carinated rims only made up 2.96% of the assemblage, 4 out of 135 rims. Compound 3 had the most olla rims of all compounds excavated. Compound 3's distribution of olla varieties is fairly even between angle-neck, neckless, and vertical neck varieties at 32.5%, 29.5% and 29.5%. Carinated-rim ollas made up 5.5% of the rim assemblage.

In Sector 3, Compounds 5 and 6, and Sector 6, Compound 4, few olla rims were recovered. The distribution of olla rims in Compound 5 follows the pattern of Compound 3, angle-neck rims, are the most frequently variety recovered at 60% of the olla rim assemblage, followed by neckless and vertical varieties at 20%, making up the remaining assemblage. In Sector 6, Compound 4 neckless olla rims were the most frequent variety recovered 44.44%, followed by vertical 33.33%, and angle-neck, 22.22%.

Overall, the distribution of ollas rims recovered at Cerro Huancha MV 900 suggest that angle-neck, 37.54%, neckless, 210.47%, and vertical, 25.44%, ollas are

found in similar frequencies, one olla variety does not dominate the excavated olla rim assemblage. The olla rim variety frequencies also do not indicate that one olla variety was the preferred vessel form over another at Cerro Huancha MV 900. The average diameter of each variety is listed in 10.6. These different olla varieties may have been used for preparing different kinds of foods, although there is limited information about preferred olla varieties for preparing different foods, rather these olla varieties may be connected to social identity. While angle-rimed ollas, are found throughout the coast and highlands, carinated ollas are a typical coastal tradition associated with Chimú culture. All carinated rims sherds recovered in excavations came from Sector 1. The few carinated rims recovered overall suggests they may have been acquired through trade with coastal groups. Or it may indicate that some residents in Sector 1 were originally from the coast, and preferred to cook with a traditional olla form.

At Cerro Ramon MV 1000, three of the four olla varieties were recovered including: angle neck (N=10), straight neck (N=7), and neckless (N=1) varieties. No carinated ollas were recovered, and previous investigation of the site does not report the presence of carinated rim sherds (Jochem 2007). This data suggests that carinated are a rare form encountered in Collambay. The presence of the three other types of vessels may be related to preparing specific dishes or personal preferences.

Table 10.5: Frequencies of Olla Varieties by Sector and Compound Cerro Huancha MV 900

	Sector 1						Sector 6		Sector 3				Total	
Compound	1		2		3		4		5		6			
	Ct	%	Ct	%	Ct	%	Ct	%	Ct	%	Ct	%	Ct	%
Neckless	5	12.5	47	34.82	59	29.5	4	44.44	1	20	1	12.5	117	29.47
Angle-neck	20	50	56	41.48	65	32.5	2	22.22	3	60	3	37.5	149	37.54
Carinated-rim	3	7.5	4	2.96	11	5.5	0	0	0	0	0	0	18	4.53
Vertical	8	20	26	19.26	59	29.5	3	33.33	1	20	4	50	101	25.44
Unknown	4	10	2	1.48	6	3	0	0	0	0	0	0	12	3.02
Total	40	100	135	100	200	100	9	100	5	100	8	100	397	100

Table 10.6: Olla Varieties Average Vessel Rim Diameter and Standard Deviation

Olla Varieties	Rim Diameter	StdDev
Neckless	12.3	4.1
Angle neck	14.9	4
Vertical neck	13.2	4.3
Carinated rim	10.9	2.9

Figure 10.3: Carinated Olla

Figure 10.4: Angle Neck Olla

10.3 Storage Vessels

As has been noted in previous sections (Sections 7.15 and 10.1), there is little evidence of extensive storage vessels in the surface collection rim assemblage and excavated rim assemblage. A large, in situ storage vessel was discovered in Sector 1, Compound 3 in excavations, corresponding to LIP/LH Phase 1, however it is unclear whether it was an open-mouth or closed-mouth vessel. No other vessel was recovered during the project that was comparable in size to this large vessel. Only fourteen tinaja rims, all undecorated, were recovered in excavations at Cerro Huancha MV 900 (Table 10.4). While this in part, is not completely unexpected, fewer tinajas would be expected at both Cerro Huancha MV 900 and Cerro Ramon MV 1000 because such large vessels have such "low rates of breakage and replacement," (Ringberg 2012, 227), especially in comparison to a vessel used much more frequently such as an olla. There still appears to be a general shortage of these vessel forms however. Which, is why I suggest that at both sites residents may have used alternate storage strategies, repurposing other vessel forms for their storage needs. This point is supported by the small, storage room that was excavated in Sector 1, Compound 2 which held a variety of broken vessels but did not include any tinajas, rather it included ollas and jars. The absence of tinaja rims in the rim assemblage has to be considered when reconstructing Collambay subsistence strategies and available resources to understand local practices.

10.4 Other Assemblage Highlights

Briefly I highlight other aspects of the diagnostic ceramic assemblage from Cerro Huancha MV 900 and Cerro Ramon MV 1000. Ralladors, miniature vessels, and musical instruments were also recovered at Cerro Huancha MV 900. All three forms were recovered in Sector 1, Compounds 1, 2, and 3. A fragment of a flute (Figure 10.5) and an unidentified utilitarian ware ceramic instrument was recovered in close proximity to one another. Two rims from plain ware miniature vessels were recovered in Sector 1, one in Compound 2, the other in Compound 3.

Ralladors (N=4) were recovered in excavations in Sector 1, Compounds 1, 2, and 3[44]. The distribution of rallador rims suggests that production activities associated with this vessel form was limited to specific site areas (Figure 5.15). Excavations indicate that ralladors are found in low densities in context, perhaps each household or compound possessed only one or two of this vessel type.

A highlight of the Cerro Ramon MV 1000 assemblage was four high ring base bowl base fragments recovered in surface collection, all from the same architectural compound adjacent to Unit 1 (Figure 10.6). These ring base bowls were in the best condition/most complete of the high ring bases recovered during the project. Two of the ring base bowls had small holes drilled in the base on either side, possibly as part of repair or to be used for hanging for storage or transporting vessels (Figure 10.7). The interior of two of the bases were painted the orange and red-purple color, typical, Collambay style, see Section 10.5.

[44] Surface collection recovered ralladors in Sectors 1, 4, 5, and 10.

Figure 10.5: Flute

Figure 10.6: High Ring base bowl from Cerro Ramon MV 1000

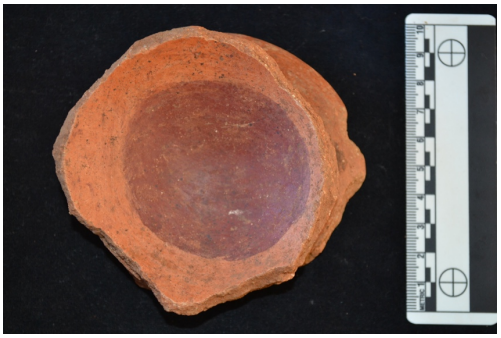


Figure 10.7: High Ring base bowl from Cerro Ramon MV 1000

10.5 Regional Influences and Local Trends

Analysis of the ceramic assemblages indicates that vessel classes in Collambay have stylistic similarities to documented ceramic assemblages on the highlands and coast, in addition to similarities in vessel forms. Decorative styles documented on vessels in Collambay include unique, local traditions and decoration styles associated with regional traditions from the highlands and the coast.

10.5.1 Local Collambay Style

Several stylistic characteristics were noted in the studied ceramic assemblages that are determined to be of local tradition. A painted red band is commonly found on the interior and exterior of rim and necks at Cerro Huancha MV 900 and Cerro Ramon MV 1000. Often a second band is directly below the red band, painted in purple or orange (Figure 10.7).[45] This band has also been identified on the body of ollas, jars, and bowls (Figure 10.8) and a variety of different types of surface treatments including vessels with untreated surfaces to highly polished fine ware vessels (Figure 10.9). The painting is typically sloppily executed. When it is evenly applied it is on a fine ware vessel, such as a polished bowl. This decoration style is found exclusively on plain ware vessels; it was not noted on any black ware vessels.

Another noted local motif found on body sherds is a circle design in purple or red with an orange dot on the interior (Figure 10.10). This is also sloppily applied. Body

[45] Jochem 2007 identifies this stripe as Highland Style Phase 4 from Huamachuco (T. Topic and J. Topic 1982). See my discussion of Phase 4 vs Collambay style in Section 10.5.2.

sherds noted with this motif have untreated surfaces and appear to be storage vessels. Both of these painted, decorative trends I refer to as Collambay style or local style. This decorative tradition however is similar to that reported in the Otuzco/Upper Moche Area by the Topics (1982), see further discussion in Section 10.5.2.

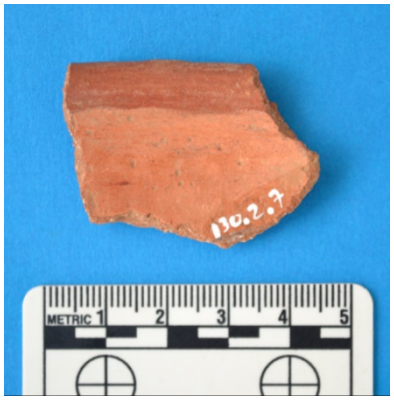


Figure 10.7: Collambay Style Red Band on Rim with Cream paint on interior of neck

Figure 10.8: Collambay Style band on exterior of fine ware vessel

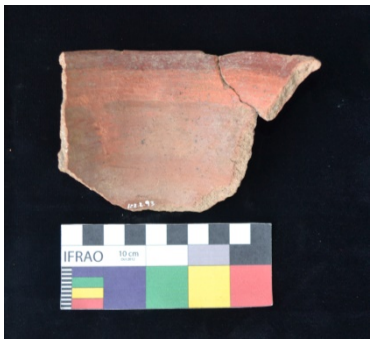


Figure 10.9: Collambay style with double band on interior of Jar rim

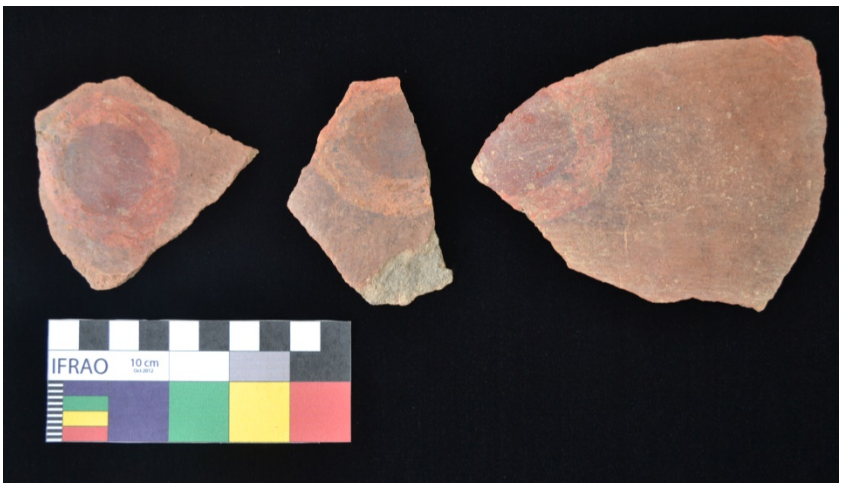


Figure 10.10: Collambay style with circle

10.5.2 La Libertad Highland Influences and Shared Characteristics

The Collambay ceramic assemblage shares some characteristics with La Libertad highland ceramic traditions in both form and decoration. Collambay LIP/LH ceramics include everted jar forms and some decorative elements that are described for the La Libertad highland region and Lomo Shingo in the Upper Moche Valley (Coupland 1979; Melly 1983; T. Topic and J. Topic 1982). Initially I believed Collambay had a similar decorative style to that reported in the Alto Chicama Valley and Huamachuco region (Krzanowski 2006; McCown 1945; Thatcher 1972). After visiting the Phoebe Hearst Peabody Museum at UC Berkeley in January 2015 and examining ceramics from the Max Uhle and John P. Thatcher collections from the Huamachuco region I realize that Collambay region has a unique decorative style distinct from that reported for the Alto Chicama and Huamachuco region. It does, however have a similar decorative technique and motifs to ceramics reported from the

Otuzco/Upper Moche area (T. Topic and J. Topic 1982). While I have not seen any of these ceramics in person, their description and drawings appear very similar.

The Topics' Fortification Project in the Otuzco/Upper Moche area produced a ceramic sequence based on surface collection in the middle and upper Moche and Virú valleys. Relying on the Topics' descriptions I note several similarities and differences between ceramic assemblages in the Otuzco/Upper Moche and Collambay regions for the LIP/LH periods. Phase 4 in the Topics' ceramic sequence corresponds to the LIP/LH periods. The phase is characterized by fairly uniform ceramics. Three forms the Topics describe are: large jars with flaring necks, jars with incurving necks, and bowls with round colander cut-outs (T. Topic and J. Topic 1982, 16). Both varieties of jars described for the Otuzco/Upper Moche area are present in Collambay. Bowls with round colander cut-outs may be the same form to what I refer to as "pans" are also present in Collambay, however, there are no cut-outs on the vessel as is described for this variety of the form in the Otuzco/Upper Moche region, no drawings of this form are available to compare.

The Topics also describe the incurving neck jars as often having oval lugs on the rim lip exterior (1982, 16). Oval lugs were encountered in the Collambay assemblage, however, none were found attached to the rim exterior, nor did any rim appear to be missing such an applique. Lugs were, however, commonly found on necks, a trait also present in coastal assemblages. They also report the occasional presence of caolin sherds in the region, a characteristic of the Middle Horizon period, however, I did not encounter any caolin sherds at Cerro Huancha MV 900 or Cerro Ramon MV 1000.

Everted jars are the only vessel form in Phase 4 that may be painted. These jars are described as commonly having a thick red paint band or a thick orange band on the interior or exterior of everted jar rims. The paint may be black and orange, and in all cases is described as unevenly applied (1982, 16). While this does sound similar to the Collambay style (Section 10.5.1), no black bands were encountered in Collambay, and the Collambay style is found on additional vessel types in addition to everted jars. Therefore, while there are similarities between Phase 4 and Collambay decorative traditions there are noted differences.

Everted jars, like those described for Otuzco/Upper Moche Valley, are present in Collambay, and are also a common vessel form found in the northern highlands including the Huamachuco region and Alto Chicama valley. However, there have been few studies of the Huamachuco and Alto Chicama region which has resulted in limited information about the ceramics from the area. In fact, the few publications on the region continuously publish photos of the Max Uhle collection collected in the early 20th century which is now housed at the Phoebe A. Hearst Museum at the University of California, Berkeley[46]. Photos and drawings of two vessels from Uhle's collection reportedly from the site of Marcahuamachuco: Jar 12/Hearst Specimen #4-3544 and Hearst Specimen #4-3541 (Figure 10.11) are published in works by Krzanowski (2006, Fig 0-16e), Thatcher (1972, Fig 51, Fig 52), and McCown (1945, Plates 20 l, m). From these publications these two vessels appear to have painted motifs that somewhat resemble the motifs I recorded in the Collambay assemblage. There is no published

[46] An exception to this is Krzanowski's (2006) survey of the Alto Chicama Valley which includes many rim profile drawings, but also includes drawings of vessels from the Uhle collection.

information on the frequency that this decoration style is noted or if it is found on a variety of vessel forms in the Huamachuco region. My visit to the Phoebe A. Hearst Museum enabled me to compare styles between the jars from the Uhle collection and Collambay style. From this experience I am able to determine while there are general similarities between the decorative techniques, the styles are distinct and do not appear related.

For one, the painting on the exterior of the Uhle vessels was executed differently than in Collambay. Jar 12/#4-3544 is a small jar and does not have any apparent surface treatment. Hearst Accession #4-3541 is a slipped, fine ware jar. Its neck is shorter than #4-3544. Both vessels have rounded bodies, and no evidence of use wear. Today both vessels have holes in their bodies and slightly damaged rims. Both vessels originally had applique lugs on their shoulders, the #4-3541 is missing its applique lugs, while #4-3544 “nub” appliques are intact.

The exterior of both vessels’ rims are painted, while the interior is not. The painted motifs on Specimen #4-3541 (Figure 10.11) are much more complex than #4-3544. The body of the vessel is divided into sections by sloppy vertical lines and a horizontal line around the neck. Within each section are motifs consisting of a series of dots and spirals in purple and red. The other motif (Figure 10.11) is much simpler. The vessel has a horizontal, purple stripe around the neck. Two large, purple painted circles on either side of the vessel, that extend from nearly the base to the neck and also encircles the nub applique. Inside the circle is a smaller, orange circle.

These motifs are quite different from what I described in Section 10.5.1 as Collambay style. Collambay style is not found on the base of the neck of a vessel, nor did I

encountered any sherds that had a combination of vertical and horizontal bands with circle motifs. In fact, over three days of examining sherds from Uhle and McCown's collections from Huamachuco I did not encounter any with Collambay style.

A typical decorative tradition of the Alto Chicama and Huamachuco areas is Huamachuco Impressed (Krzanowski 1986 and 2006), characterized by a row of small punctuate circles typically found on a raised collar at the base of the neck of a vessel. Criss-cross incisions are often found between the circles. Only two sherds at Cerro Huancha MV 900 were found with Huamachuco Impressed. No sherds at Cerro Ramon MV 1000 were recovered with Huamachuco Impressed. While typical jar forms from Huamachuco are present in Collambay, decorative motifs and techniques in Collambay are distinct.

Collambay's ceramic collection shares the everted jar form known in the northern highland regions. However, Collambay style appears to be a local tradition. The presence of Huamachuco impressed style at Cerro Huancha MV 900 suggests that Collambay residents were in contact with the Alto Chicama and Huamachuco areas; however, few Huamachuco-trait sherds were recovered in Collambay compared to the much higher frequencies of Chimú ceramic traditions (see next section), and local Collambay styles. Collambay ceramics have greater similarities in decoration styles with their upper tributary neighbors in the Otuzco region/Upper Moche Valley than with the Alto Chicama and Huamachuco region. This is not surprising given their close proximity and the road network of the *chaupiyunga* in the Upper Moche tributaries. Collambay retains unique stylistic tradition, as a much larger range of vessel forms are painted in local style than reported in the Otuzco region. Also, few neckless ollas are

reported in Otuzco/Upper Moche Valley while in Collambay they are encountered frequently.

A final shared tradition with the highlands is that in Collambay, a potential version of the highland vessel form, colander in the form of pans or tostaderos is present. Colanders are a form typically only found in the highlands and not reported on the coast (Isbell 1977; Lau 2010; Toohey 2009). Ringberg's study of an EIP highland colony in the middle Moche Valley also reports the presence of the colander (2012, 166). However, these studies also report the colander to have cutouts (Lau 2010, 172-173; Toohey 2009, 383; T. Topic and J. Topic 1982, 16), colanders/pans identified in Collambay did not have cutouts.

Regional ceramic traditions from the Otuzco/Upper Moche Valley and Huamachuco/Alto Chicama Valley are present in Collambay. Highly everted jars are a common tradition in all three regions. Another highland vessel form that is reported in the highlands that Collambay has is the colander. Colanders, tostaderos, or pans are a vessel form typically found only in the highlands and not reported on the coast (Isbell 1977; Lau 2010; Toohey 2012).

Source: Courtesy of the Phoebe A. Hearst Museum, University of California, Berkeley.

Figure 10.11: #4-3544 (left) and #4-3541 (right) Vessels from Max Uhle Marcahuamachuco Collection, Hearst Collection.

10.5.3 Coastal Influences and Shared Characteristics

Proximity to the coast itself suggests coastal influences on Collambay's ceramic assemblages' forms and styles. While the presence of Chimú style ceramics has previously been mentioned (Section 7.19 and Section 10.1.2), I describe its influence in more detail in this section. A ceramic form reported in coastal assemblages, including Chimú sites, that is not found in the highlands is the rallador. What this vessel form was used for is not understood, however it is not reported in highland assemblages. Multiple rallador body sherds were recovered at Cerro Huancha MV 900 and a single rim recovered at Cerro Ramon MV 1000. Other coastal LIP vessel forms and decorative

motifs produced by press-molds and paddle-stamping were recovered at Cerro Huancha MV 900 and Cerro Ramon MV 1000. Collambay's ceramic assemblage includes Chimú forms and styles and Casma style motifs as well. However, of coastal styles, Chimú traditions are undoubtedly the most frequently encountered in the ceramic assemblage. Chimú ceramics were likely obtained through trade, perhaps were imported by Chimú residents living in Collambay, and local imitation of Chimú style ceramics were made in Collambay. It appears that locals were producing their own designs of press-mold and paddle-stamped vessels as I encountered several Chimú style motifs that are not reported elsewhere (Figure 10.12 and Figure 10.13)[47].

Chimú ceramics are known for certain attributes and vessel forms, including black ware vessels, carinated ollas, mass-produced utilitarian bowls, and press-mold and paddle-stamped motifs (Donnan and Mackey 1978; Keatinge 1973; J. Topic 1976). All of these attributes and vessel forms are found in Collambay at Cerro Huancha MV 900. About one-sixth of the Cerro Huancha MV 900 and Cerro Ramon MV 1000 diagnostic ceramic assemblages were black ware vessels, a coastal tradition. Another attribute of Chimú vessels is that some plain ware forms are described as having sloppily applied white paint around the collar and exterior of the rim. A single example of this was recovered at Cerro Huancha MV 900.

Classic Chimú press-mold plain ware and black ware sherds are found at Cerro Huancha MV 900. Carinated rim ollas have been recovered in excavations in Sector 1, see Section 10.1.1. The Chimú were known for vessels made from molds, including

[47] The possibility of local Collambay elites emulating Chimú styles was first suggested by Carol Mackey after I shared several photos of press-mold designs from Cerro Huancha MV 900 (pers comm 2014).

jars, ollas, bottles, and bowls. Mold-made vessels of these forms are present at Cerro Huancha MV 900. At Cerro Huancha MV 900 and Cerro Ramon MV 1000 both plain ware and black ware sherds with press-mold and paddle-stamped motifs are commonly found. The most frequently encountered design is piel de ganso or goose skin, which are raised bumps of various sizes (Figure 10.14). The other typical coastal press-mold designs include raised lines forming triangles with zoomorphic or anthropomorphic figures inside the triangle. Occasionally, animal appliques were found that were an adorno on a bottle or jar, also common on Chimú vessels, Figure 10.15 (Donnan and Mackey 1978). Another coastal tradition in Collambay is from the Casma stylistic tradition, south of the Moche Valley. Collambay has a press-mold design that resembles the incised/impressed circle-and-dot stamped design (Figure 10.16) that was recently reported on molds at El Purgatorio in the Casma Valley (Vogel 2011, Figure 13). However, Chimú piel de ganso and local press-mold designs are more frequently encountered on sherds than the Casma circle-and-dot design.

Figure 10.12: Chimú style and local emulation of Chimú style

Figure 10.13: Local press-mold design with red slip

Figure 10.14: Chimú piel de ganso

Figure 10.15: Chimú Style

Figure 10.16: Circle-and-Dot design

10.5.4 Ceramic Production or Exchange

Without a clay survey in the Collambay region and petrographic study is it not possible to determine which Chimú style ceramics were imported and which were locally produced in Collambay. Ceramic production may have occurred at Cerro Huancha MV 900 during the LIP and/or LH periods. Surface collection did recover two molds in Sector 5. If ceramic production did occur it took place in a site sector that was not excavated, as no evidence for ceramic production was recovered in excavations. The presence of unique press-molded and paddle-stamped designs suggests that ceramics were produced locally as well as received in exchange with Chimú elites.

It is clear that Collambay residents had access to Chimú ceramics that were likely obtained by trade. It is possible that Chimú people did reside in Collambay, perhaps intermarrying with local elites, although if they did they used local ceramics as well since neither surface collection or excavations recovered contexts with only Chimú style ceramic assemblages. The presence of ceramics emulating Chimú styles suggests that Chimú ceramics may have been associated with prestige and political power in

Collambay. The significance of the different types of Chimú vessels also indicates an ongoing exchange relationship between Collambay and the Chimú, this is also indicated by temporal data, see Section 10.6. Collambay admired Chimú style but also created unique variations of Chimú style suggesting they did this independently of Chimú control. The relationship with the Casma polity and ceramic styles I s unclear at this time and could have been introduced to the region through Chimú exchange networks.

The presence of highland vessel forms and stylistic traditions also suggests trade and affiliation with highland groups. Collambay's local tradition of colored bands on the interior and exterior of rims has similarities to the Otuzco/Upper Moche area however as previously discussed Collambay has its own variation. This design is found on an extended range of vessel classes. However, highland style vessel forms are present in Collambay. It seems likely that these vessels were made in Collambay and obtained through exchange. The parallels to highland traditions suggests affiliation with the highlands, although whether this extends to political affiliation it is unclear, as there is such a strong influence of Chimú ceramic styles in Collambay.

10.6 Temporal Trends: Collambay Ceramics Over time

Following discussion of overall distribution of vessel forms and stylistic characteristics of the assemblage this section focuses on the ceramic assemblage recovered from excavations and reviews trends identifiable by occupations and phases. In Section 8.6.1, I presented the sediment volume and density of ceramics recovered in each phase from Cerro Huancha MV 900. The data (Table 8.2) demonstrates that the

majority of excavated sediment from intact contexts were in LIP/LH Phase 2 and 3. Table 10.7 presents the sherd density for each occupation, including both diagnostic and non-diagnostic sherds. While a total of 1,766 rims were recovered in excavations only 790 rims came from contexts that could definitively be associated with an occupational phase (Table 10.8). The Salinar occupation and LIP/LH Phase 1 recovered very few rims and other material culture, making characterization of these periods limited.

Table 10.7: Cerro Huancha MV 900 Rim Frequencies by Occupation and Phase

Phase	Total Sherds	m3	Sherds/M3
Salinar	374	0.8	467
LIP/LH Phase 1	1103	1.2	919.2
LIP/LH Phase 2	8473	5.7	1486.5
LIP/LH Phase 3	8930	8.9	1003.3
All Occupations	18880	16.6	1137.4

Table 10.8: Cerro Huancha MV 900 Rim Assemblage by Occupation/Phase

Occupation/ Phase	Salinar		LIP/LH Phase 1		LIP/LH Phase 2		LIP/LH Phase 3		Total	
	Ct	%	Ct	%	Ct	%	Ct	%	Ct	%
Pan	0	0	1	1.4	10	3.9	16	3.7	27	3.4
Olla	25	86.2	37	51.4	67	26.2	117	27	246	31.1
Bottle	0	0	0	0	1	0.4	0	0	1	0.1
Bowl	1	3.5	2	2.8	6	2.3	19	4.4	28	3.5
Jar	0	0	14	19.4	35	13.7	131	30.2	180	22.8
Tinaja	0	0	0	0	7	2.7	3	0.7	10	1.3
Other	0	0	0	0	0	0	2	0.5	2	0.3
Unidentified	3	10.3	18	25	130	50.8	145	33.5	296	37.5
Total	29	100	72	100	256	100	433	100	790	100

10.6.1 Salinar

Excavations documenting the Salinar phase at Cerro Huancha MV 900 were limited to Sector 1 in the upper patio of Compound 3, Units 1 and 2, and Compound 2, Unit 5. The recovered rim assemblage is very small (N=29). The rim assemblage, however, is dominated by ollas, 23 of the 25 ollas were neckless. The only other identifiable form was a bowl. The majority of these ollas came from a context associated with a small hearth and ash dump, Features 2.11 and 2.12 in Compound 2. This assemblage and associated feature indicates that this Salinar context included cooking activities. Neckless olla rims are often thickened and raised occasionally with incision designs like those that have been reported at other Salinar sites (Brennan 1980 and 1982; Briceño and Billman 2012; Mujica 1975).

10.6.2 LIP/LH Phase 1

LIP/LH Phase 1 has been identified only in the upper patio of Compound 3 in association with the large storage vessel in situ, Feature 3.13 (Section 8.2, Figure 8.6 and Figure 8.7). The majority of the rim assemblage associated with this phase are cooking-related forms, including 37 ollas (24 neckless) and one pan (Table 10.8). A total of 14 jars make up the reminder of the rim assemblage assigned to a vessel class. As the only identification of a LIP/LH Phase 1 contexts potential interpretation of general trends associated with this phase are not possible. However, the ceramic assemblage recovered in association with the large storage vessel suggests that ollas may have secondarily been used as storage vessels in this space or perhaps the space served as a trash deposit. Collambay style painted bands are found on the interior and exterior of rims on bowls and ollas in this phase. A Huamachuco impressed sherd was also recovered. no Chimú carinated rims were recovered in LIP/LH Phase 1 contexts. However, a fragment of a Chimú base bowl with piel de ganso as well as other press-mold motifs on black ware body sherds were recovered.

10.6.3 LIP/LH Phase 2

LIP/LH Phase 2's ceramic assemblage is characterized by a greater variety of vessel forms compared to the previous phase. Bowl rims appear more frequently as do tinajas. In fact, the majority of tinajas recovered at Cerro Huancha MV 900 are from LIP/LH Phase 2 contexts (Table 10.8). Carinated ollas appear for the first time in LIP/LH Phase 2, as do bowl ring bases (both low and high), and a new shape of jar

base, the egg-shape. All three of these varieties were documented in excavations in Sector 1 and they are also present in Phase 3[48].

A new shape of jar base, the egg-shaped base, appears for the first time in Phase 2 (Figure 10.17). This form is similar to Chimú jars documented at San Jose de Moro in the Jequetepeque Valley (Prieto 2008, Figure 18a-c). This base form was recovered only from Cerro Huancha Sector 1 in Phases 2 and 3.

A very early highland tradition is potentially revived in the LIP/LH Phase 2 in Collambay. An applique in the shape of a triangle is found on rims of several vessel classes, including bowl and jars as well as unidentified forms (Figure 10.18). A similar applique design is reported in the Alto Chicama and Huamachuco region corresponding to the Early Horizon period (Krzanowski 2006, Figures 53-2 5, 6). Of course, this attribute on Collambay ceramics could be a completely independent development of the earlier tradition reported in the highlands. Coastal ceramic influences are prevalent during Phase 2 with black ware appearing more frequently than Phase 1. Typical Chimú and local style press-mold and paddle stamped motifs continue to be present.

Finally, LIP/LH Phase 2 excavations also documented a new secondary use practice with ollas and jars. Olla and jar vessels are cut in half and the bases were reused in production activities in Compounds 2 and 3 leaving the interiors of these vessels are charred with residue[49] (Figure 10.19).

---

[48] No carinated rim ollas or egg base jars have been recovered at Cerro Ramon MV 1000, although high and low ring base bowls were recovered in surface collection. Surface collection at Cerro Huancha MV 900 also ring bases.

[49] Not all vessels with evidence of burning on the interior had metal residue as Figure 10.19 does

Phase 2 is characterized by the introduction of new vessel forms at the site, a more diverse ceramic assemblage is present than Phase 1. This also includes new and old decorative elements that suggests continuity with Phase 1, Chimú-style and Collambay diagnostics are present in Phase 2, like Phase 1. But new varieties of vessel forms appear, carinated rim ollas, a new variety of jar base, the egg-shape is introduced, as are bowl ring bases.

Direct evidence of new production activities occurring in Sector 1 are supported by the presence of the charred interiors of halved jars and ollas indicating secondary use in some type of production activity. This coincides with new architecture being built in site sectors at Cerro Huancha MV 900 and remodeling and construction of new architecture in Compound 3. This information, in consideration of the previously described industrial-size hearths in Compound 3 demonstrates a shift of new production activities in association with the remodeling of Compound 3. These new production activities are suggested to be tied to larger political processes in the region.

Figure 10.17: Egg-Shaped base

Figure 10.18: Triangle-applique on rim

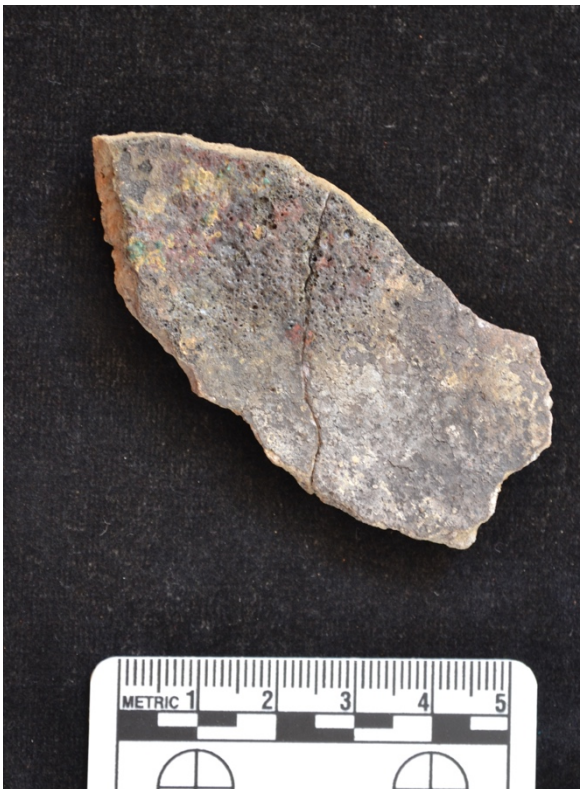


Figure 10.19: Charred residue on interior of vessel

10.6.4 LIP/LH Phase 3

LIP/LH Phase 3 coincides with the Inca takeover of the north coast in 1470. Compared to Phase 2, Phase 3 maintains the same diversity in vessel forms. LIP/LH Phase 3 has the largest rim assemblage of all phases (N=433), (Table 10.8). This

includes egg-shaped jar bases and triangle-shaped appliques on rims, Collambay style, and Chimú press-mold and paddle-stamped designs. Significant shifts in the ceramic assemblage of Phase 3 are the presence of Inca-associated ceramic forms and a new focus on storage activities in Sector 1, Compounds 2 and 3. This shift from production to storage in Sector 1 leads to jar rims outnumbering olla rims for the first time in Phase 3.

Excavations in the LIP/LH Phase 3 included a storage room, which contained many vessels. The assemblage also includes the only two musical instrument fragments recovered during the project, including a fragment of a ceramic flute from Sector 1, Compound 2, Unit 5 (previously described in Section 10.4). During LIP/LH Phase 3 for the first time, jar rims (N=131) outnumber olla rims (N=117). The storage room excavated with vessels, Compound 2, Unit 9, had a MNV of 78 vessels. The storage room assemblage included ollas, jars, bowls and unidentified vessels. All four varieties of ollas were recovered, vertical neck, angle neck, neckless ollas, and carinated. The absence of tinajas in the storage room, could lead to the interpretation that this was a trash dump, however, I argue that this space served as a storage space.

A new painting style appears in Phase 3. Some utilitarian plain ware vessels are slipped grayish black. The paint has an unusual texture, not the typical pigmented slip which made the vessel look like a black ware vessel from a distance (Figure 10.20). Many body sherds were recovered with this gray-black slip. The painting has a metallic sheen not to be confused with burnishing. Few vessels were found with this gray-black slip compared to the typical Collambay bands of orange, red and purple, however, those that were all corresponded to the LIP/LH Phase 3.

Other new ceramic styles in Phase 3 are Late Horizon vessel attributes. Several Chimú-Ina vessel forms were documented in Compounds 2 and 3, including the adorno (applique) of a bird for a stirrup spout bottle or jar (Donnan and Mackey 1978, 360), Figure 10.21. Also, a figurine like Mackey reports at Farfan, was found on the surface of Compound 2 (2010, Figure 10.13), Figure 10.22. A Late Horizon bottle rim was recovered as were wide strap handles (Figure 10.23 and Figure 10.24), which have been characterized as Chimú-Inca traits (Mackey 2003). One imperial Inca style aryballoid sherd was recovered during surface collection (Figure. 7.6).

The diversity of ceramic forms and decoration styles reported in LIP/LH Phase 2 is also present in Phase 3 at Cerro Huancha MV 900. The big change documented in the ceramic assemblage is a higher frequency of jar rims, new decorative elements incorporated into the assemblage, and adoption of some Late Horizon vessel forms. Phase 3's ceramic assemblage suggests there is a new emphasis of storage in Sector 1, which is also documented in remodeling of architecture, and it is likely this shift is tied to larger political processes as the Inca state assumed control over Collambay.

The Inca were known for strategically moving subject groups throughout their empire as a means of control. If a new group had been moved to Cerro Huancha MV 900, like a *mitmaq* colony or perhaps a military unit, new ceramic forms and styles would be expected to be part of the LIP/LH Phase 3 ceramic assemblage. The presence and location of gray-black slipped jars on site does not indicate a new population has moved into the zone as the rest of the ceramic assemblage remains consistent from Phase 2 to Phase 3. New Chimú-Inca forms were adopted; this is not surprising given the plethora of Chimú-associated ceramics present in the Collambay region during the

LIP. Phase 2 vessel forms and Collambay decorative traditions continued to be used in Phase 3 suggesting that the same population who occupied Cerro Huancha MV 900 during the LIP remained at the site during the LH.

The ceramic assemblage in LIP/LH Phase 3 maintains many traditions from the previous period, including incorporation of coastal Chimú influence and local traditions. While LH ceramic forms were added to the existing ceramic assemblage, there were minimal shifts, suggesting that the same population remained at Cerro Huancha MV 900 during the LH.

Figure 10.20 Late Horizon Gray-Black slip on jar neck

Figure 10.21 Chimú-Inca Bird Adorno

Figure 10.22: Chimú-Inca Figurine

Figure 10.23: Late Horizon Jar

Figure 10.24: Chimú-Inca Olla with wide-strap handle and piel de ganso

10.7 Discussion and Conclusion

This chapter has provided an overview of the excavated ceramic assemblages recovered at Cerro Huancha MV 900 and Cerro Ramon MV 1000. This discussion demonstrates that the ceramic assemblages at Cerro Huancha MV 900 and Cerro Ramon MV 1000 have similar vessel forms and decorative motifs, confirming close association. Functional analysis comparing excavated collections from Sectors 1, 3, and 6 at Cerro Huancha MV 900 highlighted that Sectors 1 and 3 are areas where similar activities took place.

Sector 1 is an area of dense agglutinated rooms on a series of terraces where elite households were located. The extreme difference in ceramic densities between Sector 1 and other site sectors suggests this was a place of concentrated activity and perhaps where the majority of production activities took place at Cerro Huancha MV 900. Sector 1's ceramic assemblage provides a baseline for determining trends and

change in the ceramic assemblage over time, as this was the only site sector with a documented Salinar and LIP/LH Phases 1-3 occupations.

Evaluating ceramic trends at Cerro Huancha MV 900 over time, more types of ceramic vessel forms appear. Early Salinar period occupation and the LIP/LH 1 assemblages are dominated by cooking vessels; however, later periods include more vessel forms, indicating a greater range of activities occurring in site sectors. Finally, LIP/LH Phase 3 jars outnumber ollas as storage takes on a more prominent role in Sector 1.

The ceramic assemblage forms and decoration indicate some connection to the coast and the Chimú culture, as well as to the La Libertad highlands, in particular, the Otuzco region/Upper Moche Valley. This indicates interregional interaction between Collambay residents and coastal and highland groups, and the adoption of ceramic forms and styles and their incorporation into Collambay daily life is not independent of sociocultural, political, and economic interactions between these groups. However, despite the adoption of outside ceramic forms and designs, Collambay maintains its own unique traditions, suggesting maintenance of independence from complete influence of these outside groups.

In Chapter 11 I continue discussion of artifacts recovered from excavations that inform about ritual practices, subsistence trends, local production activities at Collambay over time. I continue to evaluate Collambay's influences from other regions well as its own local traditions to understand consistencies and changes during the LIP and LH.

11 Other Artifact Classes

Other classes of material culture recovered during excavations provides information about the cultural behaviors of residents at Cerro Huancha MV 900 and Cerro Ramon MV 1000 over time, including production and consumption activities. Analysis of fauna and shell remains, human remains, and spinning tools provide information about subsistence trends and activities on site and information about residents' access to resources from outside of the *chaupiyunga* zone. See Section 5.10 for a review of methods and associated Appendices A, B, C, D. This material culture in addition to features documented in excavations provide information about ritual behaviors and community practices. I consider the data recovered in Collambay along what has been documented in other cases studies.

11.1 Interregional Exchange and Subsistence: Fauna and Shell

The *chaupiyunga* zone is a well-documented place of exchange between local and non-local groups. For north coast specialist communities, exchange and redistribution were ways to access food resources. Chimú state infrastructure regulated this exchange and redistribution in the Chimú heartland (J. Topic 2003), however the means of which this occurred in the heartland and outside of it still remains debated (Moore 1989; Netherly 1984 and 1990; Rostworowski 2004). Netherly suggests that on the north coast during the period of Inca rule, local lords continued to use the exchange

network that was in place prior to the Inca, unless they had been relocated by the Inca state as a *mitmaq* colony (1977).

Direct evidence of a new population moving into the Sinsicap Valley in the LIP and LH was not recovered in excavations. Material culture styles remain consistent during the LIP-LH suggesting that Cerro Huancha MV 900 residents remained at Cerro Huancha MV 900. An exchange relationship between coastal groups and the Collambay community is indicated by the presence of marine resources at Cerro Huancha MV 900 found in association of both EIP and LIP/LH occupations. During the LIP/LH, Collambay may have acquired marine resources through a formal exchange network with the Chimú state or on a more informal basis through local lords. Exchange for marine resources continued during the Inca period as well, demonstrating that *chaupiyunga* populations were involved in interregional exchange networks.

Based on analysis of faunal and shell remains recovered at Cerro Huancha MV 900 and Cerro Ramon MV 1000, it is apparent that subsistence patterns included local wild resources and domesticated species, and the population had access to limited marine resources (Table 11.1). The sample of faunal remains analyzed is too small to make statistical inferences however it does however provide preliminary information about local and non-local resources available to Cerro Huancha MV 900 and Cerro Ramon MV 1000 residents. As discussed in Chapter 10, ceramic styles and forms indicate that Cerro Huancha MV 900 and Cerro Ramon MV 1000 were both part of the Collambay polity. Communication from each site likely occurred on a daily basis, suggesting they likely had access to the same resources in the local economy. The close

association of these two sites allows me to consider all of the species identified in the analyzed assemblage as representative for both sites.

The fauna and malacological assemblages include diverse taxa from different ecological niches, suggesting Cerro Huancha MV 900 and Cerro Ramon MV 1000 accessed resources through exchange. Collambay residents consumed wild animals native to the region, including white-tailed deer, crayfish, small river crabs, toad, and owl. Not surprisingly, domesticated llama and guinea pig are well represented in the fauna sample studied, making up 23.7% of the NISP fauna assemblage. It is likely that the specimens identified as family muridae, are also guinea pigs. Considering, this additional 141 NISP (Table 11.1), then domesticated guinea pig and llamas made up 40.7% of the studied fauna assemblage.

Marine resources made up 2.52% of the fauna NISP and included Shark/Selachimorpha, varieties of Croaker/*Sciaena deliciosa* and *Sciaena sp., Sardine/Sardinops sagax*, and other unidentified marine fish species. Otoliths and fish vertebrae were recovered, suggesting entire fish were consumed. Cormorant, a large marine bird, was also recovered at Cerro Huancha MV 900.

Other marine resources, including shellfish, were also documented in the study assemblage in very small quantities. Of the shell and shellfish assemblage (NISP = 6,374 and MNI =1976), 94.72% is terrestrial and dominated by lands nails. Lands nails are likely overrepresented in the assemblage (see Section 5.3). Marine species present make up 5.28% of the sample assemblage, 2% were marine shell, and 3.2% familia xanthidae, a crab commonly found on the Moche Valley coast. The most frequent marine shell recovered was *Donax obesulus*. Two species make up the majority of land

snail species: *Scutalus chiletensis granulatus*, 74.79% (NISP) of study assemblage, and *Bostryx turritus turritus*, 10.57% (NISP) of the assemblage. Live lands nails were frequently encountered at Cerro Huancha MV 900 when fallen masonry was cleared at the beginning of the project at the end of the wet season. While one Collambay community member collected lands nails to take home to consume,[50] the amount of labor investment in collecting lands nails does not produce a worthwhile return in calories gained (Billman, pers comm; see Galvez Mora et al. 1993 for an alternative view). Lands nails were likely incorporated into Cerro Huancha MV 900 and Cerro Ramon MV 1000 diet occasionally.

The marine resources identified were consumed as foodstuffs, used in ritual activities, and production activities, like bead making. Shell beads, in addition to stone and ceramic beads, were recovered at Cerro Huancha MV 900 (Figure 11.1). One fragment of spondylus shell, a highly valued, rare shell from the Tumbes region of Peru was also recovered. Animal long bones were transformed into tools as well (see Section 11.3). A large portion of the analyzed shell from Cerro Huancha MV 900, 94.72%, is made up of land snail species potentially invasive to the archaeological context.

The limited analysis of Cerro Huancha MV 900 and Cerro Ramon MV 1000's faunal remains suggest that Collambay residents had access to the same resources. There is no indication at this time if elites had access to different resources or more marine resources than non-elites during the LIP/LH occupations in Collambay. Marine resources, including fish and shell, were identified in Sectors 1 and 3. Llama and guinea

[50] The informant claimed she enjoyed lands nails with rice.

pig, two domesticates that likely made up a substantial part of protein sources for Collambay area residents, were identified in all compounds in Sectors 1 and 3. The sample studied indicates that residents relied on both local wild and domesticated resources.

White-tailed deer (NISP = 21) was also identified in the faunal assemblage at both Cerro Huancha MV 900 and Cerro Ramon MV 1000 (Table 11.1). Known to occupy the foothills of the Andes in the *chaupiyunga* zone, due to overhunting and development few deer remain in zone in the modern day. However, Moche imagery depicts elite warriors pursuing white-tailed deer suggesting it was an activity of the elite (Donnan and McClelland 1999). Information is lacking whether this was the case in Collambay, the limited sample of fauna analyzed indicates llama was recovered more frequently than deer remains[51]. Other wild species native to the *chaupiyunga* zone present in the assemblage, include frog, bird, and crayfish (Table 11.1). This data suggests that a significant part of Collambay subsistence came from local wild resources as well as domesticated llama and guinea pig.

[51] Not all specimens present have elemental data available but multiple antlers were recovered.

Table 11.1: Fauna and Malacological Species NISP

Scientific Name	Common Name	NISP	MNI*
Mollusks			
Balanus sp.	barnacle	3	2
Bostryx turritus turritus	land snail	674	388
Choromytilus chorus	purple mussel	14	3
Donax obesulus	tide zone clam	83	6
Drymaeus sp.	land snail	1	1
Drymaeus vexillum	land snail	13	8
Drymaeus vexillum form. Tigris	land snail	224	57
Mesodesma donacium	clam	6	1
Olivella columellaris	gastropod	1	1
Polinices uber	gastropod	1	1
Prisogaster niger	gastropod	2	2
Protothaca thaca	large clam	2	0
Scutalus chiletensis chiletensis	land snail	361	186
Scutalus chiletensis granulatus	land snail	4767	1295
Semele corrugata	bivalve	8	0
Spondylus princeps	bivalve	1	1
Stramonita chocolata	gastropod	1	1
Tegula atra	gastropod	1	1
Tegula luctuosa	gastropod	1	1
Xanthochorus buxea	gastropod	1	1
Unidentified Mollusk		5	1
Subtotal		**6170**	**1957**
Crustacean			
Decapoda Order		4	
Familia Xanthidae	purple crab	204	19
Family Pseudothelphusidae			
Hypolobocera sp.	freshwater crab, cangrejo de rio	4	
Family Palaemonidae			
Cryphiops caementarius	freshwater shrimp, camaron de rio	1	
Subtotal		**213**	
Fish			
Family Sciaenidae			

Table 11.1: Fauna and Malacological Species NISP, continued

Scientific Name	Common Name	NISP	MNI*
Sciaena deliciosa	croaker, lorna	3	
Sciaena sp.	croaker	2	
Family Clupeidae			
Sardinops sagax	pacific sardine	1	
Fish	unidentified fish	12	
Subtotal		**18**	
Reptiles and Amphibians			
Bufo sp.	toad	1	
Iguana iguana	green iguana	1	
Reptil n/i	unidentified reptile	3	
Selachimorpha	shark	2	
Subtotal		**7**	
Birds			
Ave Clase			
not further differentiated	unid. Bird	65	
Phalacrocorax bougainvillii	Guanay cormorant	1	
Strigidae	typical owl	1	
Subtotal		**67**	
Mammals			
Mammailia	mammal	42	
Carnivora	carnnivore	2	
Artiodactyla Order	even-toe ungulate	67	
Camelidae Family			
Lama sp.	Llama	113	
not further differentiated	Camelid	27	
Cervidae Family			
Odocoileus virginianus	white-tailed deer	21	
Order Rodentia			
Caviidae Family			
Cavia porcellus	domesticated guinea pig	83	
Family Muridae			
not further differentiated	rodent	141	
Subtotal		**523**	

Table 11.1: Fauna and Malacological Species NISP, continued

Scientific Name	Common Name	NISP	MNI*
Unidentified Specimens		**238**	
Grand Total		**6997**	

*MNI was only calculated for mollusks and occasional shellfish found with mollusks

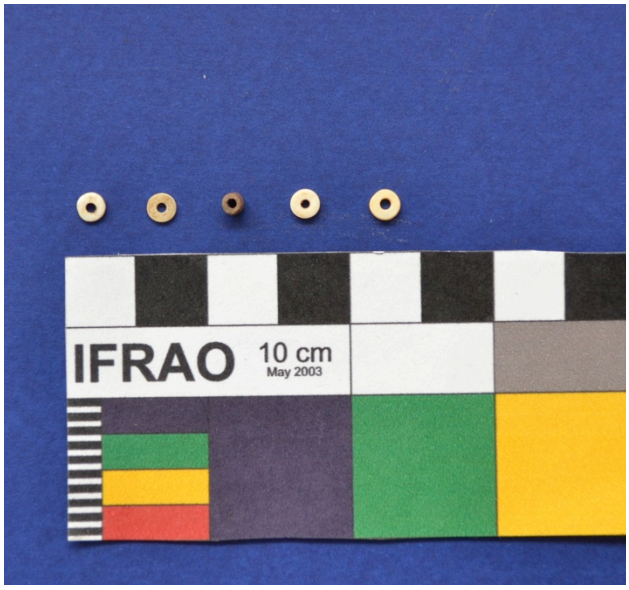


Figure 11.1: Beads

11.1.1 Temporal Trends

Evaluating the representation of taxa by phase there is not a significant change in between the Salinar and LIP, and LIP/LH Phases 1–3. Marine fish were present in the Salinar and LIP/LH occupations. Comparing the representation of marine shell present between the Salinar occupation and LIP/LH Phases 1, 2, and 3, in the Salinar assemblage marine shell makes up 4.65% of its identified shell. The phase with the

highest percentage of marine shell after the Salinar period is LIP/LH Phase 2, at 2.72%. It is not particularly surprising for Salinar occupants to have access to marine resources as Salinar groups have been documented on the Moche Valley coast to the *chaupiyunga* (Briceño and Billman 2012); however, the smaller percentage of marine shell species in the LIP/LH Phases 1–3 suggests that Collambay residents may have relied on an exchange network for marine resources. Salinar residents of the Collambay area may have had more direct access to marine shell resources because of their cultural affiliation with lower valley Salinar groups (Briceño and Billman 2012). *Donax obesulus* and Fam. Xanthidae, a common crab found on the north coast, were present at Cerro Huancha MV 900 in all LIP/LH phases and compounds.

These two marine resources are commonly found at LIP phase Moche Valley sites (Briceño and Billman 2012; Prieto 2014; S. Pozorski 1976). *Donax obesulus* is very commonly found during the LIP (S. Pozorski 1976) and is commonly noted on the surface of Chimú sites in the Moche Valley (Billman and Mullins 2014, pers comm). The quantity of marine animal remains and shell within the study assemblage suggests that marine resources in Collambay was not common, which suggests resources were likely accessed through exchange networks with the coastal groups. Once caught on the coast, fish were presumably dried (Marcus 1987) or may have been salted (Sandweiss 1992) to preserve them, and transported inland for exchange.

11.2 Camelids

If Collambay was directly incorporated into the Chimú Empire, one potential shift in diet would be the consumption of a greater frequency of domesticated camelid during the LIP, in addition to evidence of increased access to marine resources within

elite households. In the Moche Valley, S. Pozorski (1976) has documented that by the LIP, Chimú sites that were well integrated into the empire had increased access to camelids, which became the primary meat source, and local sources were abandoned. Outside the Chimú heartland at Pedregal under the Chimú, there was an increased representation of domesticated species with fewer wild resources incorporated into local diet (Cutright 2009 and 2015).

However, at this time, the limited analysis of fauna and malacological collections at Cerro Huancha MV900 and Cerro Ramon MV 1000 does not indicate increased access to domesticated camelid species over time. It does present information that marine resources were available in very limited quantities in Collambay throughout its LIP/LH Phases 1-3 occupation. However, further analysis of the recovered assemblages, including elemental level data for the fauna, would provide a more encompassing dataset to understand Collambay subsistence traditions over time.

Domesticated camelids are an essential economic and subsistence resources for Andean communities, both pastoralists and agriculturalists. While there is no direct evidence for this at this time, it is possible that some of Collambay's residents maintained camelid herds. By the Moche period, and arguably much earlier, there is evidence of coastal populations tending llama herds (Helmer 2015; Shimada and Shimada 1985; Szpak et al. 2015). Faunal analysis indicates that Collambay residents had regular access to camelids and the *chaupiyunga* terrain offers plentiful areas for grazing[52]. Tending herds of camelids may have been an important component of

[52] Today in the Comunidad Collambay there are several designated areas reserved for community members' herds of goats, sheep, and cows. Annually or more often Collambay community members stage

Collambay's economy, as they were used as pack animals, and Collambay is located on a trade route.

11.3 Cloth Production

Camelid wool is also an important resource to Andean communities. Spun from raw wool, to yarn and cloth camelid wool and cotton fibers were used for making clothing. There is an extensive literature that discusses the importance of cloth in the Andes (Costin 1993 and 2011a; Gero 1992; Murra 1962 and 1989; Niles 1992; Stone 2007). Textiles were considered the most important, valuable commodity in the Inca world; they served as symbols of ethnicity and status, and were given as political gifts as well as payments for services (Costin 2011). The archaeological (J. Topic 1990) and ethnohistoric (Netherly 1977) record suggests Chimu elites controlled specialized textile production at Chan Chan during the LIP. Spinning activities (Cutright 2009; Moore 1985) and cloth production (Billman et al. in press)[53] has also been documented at the household level in Chimú administrative and village sites, and were likely for household consumption.

Costin has suggested that in LIP highland polities, cloth production was principally a household process, with "large, polygynous elite households producing greater amounts of cloth to underwrite the political aspirations of their male kin" (2011a, 110). While the social organization surrounding cloth production in the

---

a surprise "round-up" of the animals grazing in community lands to ensure that only Collambay community members are using this land.

[53] At least one backstrap loom was recovered at Cerro La Virgen and Manchan (Pers Comm. Brian Billman and Jerry Moore).

Huamachuco and Alto Chicama region is not documented archaeologically, it is likely that LIP elite households produced cloth for social distinction, and this appears to have occurred in Collambay at Sector 1 at Cerro Huancha MV 900. Under the Inca, cloth production still occurs, however Inca regulations limited the previous production stages documented in the LIP/LH Phase 2. Unfortunately, the environment of the *chaupiyunga* prevents the preservation of textiles and other organic materials in the archaeological record. However, the tools of the trade provide evidence for an activity whose product is not available for study.

A number of artifacts and tools associated with cloth production were recovered at Cerro Huancha MV 900. In contrast, only one spindle whorl and several long bone tools with surface treatment were recovered at Cerro Ramon MV 1000 (Figure 11.2). A total of 46 spindle whorls, many of which were broken, two metal needles (Figure 11.3), two metal needle blanks, multiple bone tools including weaving tools associated with a backstrap-loom were recovered (Figure 11.4). See Appendix D for Colin Thomas' description of metal artifacts. The artifact assemblage indicates that spinning, sewing, and weaving was carried out at Cerro Huancha MV 900, and likely at Cerro Ramon MV 1000 as well. Two types of spindle whorls are present in the assemblage, tortero style, which is a disc shape made from a ceramic sherd, and piruros, made of ceramic stone and metal (Figure 11.5 and Figure 11.6.[54] Piruros are smaller than torteros and more cylindrical. Torteros are preferred to use the drop spindle whorl technique to make yarn for heavier fibers like camelid wool. Smaller and lightweight

[54] No metal piruros were recovered in the Collambay region.

spindle whorls, like piruros, are thought to be used for spinning cotton fiber (Vreeland 1986).

The presence of both spindle whorl types suggests that processing of both camelid wool and cotton occurred at Cerro Huancha MV 900. Both types of spindle whorls have also been reported in the *chaupiyunga* at Las Varas in the Jequetepeque Valley (Tsai 2012). In contrast, at Pedregal in the lower Jequetepeque Valley, only piruros are reported and Cutright (2009) notes the absence of torteros and loom parts.

Surface collection in Cerro Huancha MV 900 site sectors 1, 4, 6, 7, 8, 10, and 12 recovered individual spindle whorls and metal needles, the majority of cloth production artifacts came from excavated contexts associated with Phases 2 and 3 on the west side of Compound 2 and the east side of Compound 3, a space of 25 m^2 in area. A total of 19 piruros and 13 torteros were recovered in this area. In comparison, only 1 piruro was recovered in excavations in Compounds 5 and 6.

Figure 11.2: Fragments Bone Tools with surface treatment, several are burn

Figure 11.3: Metal Needle

Figure 11.4: Long Bone Tool

Figure 11.5 Fragment of Tortero Spindle Whorl

Figure 11.6: Piruro Spindle Whorl

11.3.1 Cloth Production in Sector 1, Compounds 2 and 3

Compounds 2 and 3 are part of a series of large compounds of agglutinated rooms and patios that are associated with local elites, based on the size and location of the structures at Cerro Huancha MV 900. The space is much larger than commoner households, which are assumed to be located on the lower slopes of Cerro Huancha MV 900. A concentration of weaving related artifacts in a limited area in Compounds 2 and 3 (Compound 2, Unit 5 and Compound 3, Units 1-3) suggests textile production occurred in this part of an elite household (Chapter 6), during Phases 2 and 3 (Table 11.2). This area contains two patios, open space suitable for using backstrap looms.

While both Phase 2 and 3 had a high concentration of weaving-related artifacts the area they were recovered in appears to have had different uses over time.

Table 11.2: Cloth Production Tools in Phases 2 and 3, Compounds 2 and 3

Phase	Spindle Whorls		Other Weaving Artifacts			Total Weaving Related Artifacts Per Phase
	Torteros	Pirurous	Needle	Needle Blank	Tool	
2	7	3	0	2	5	17
3	4	5	1	0	2	12
Totals	**11**	**8**	**1**	**2**	**7**	**29**

During Phase 2, 10.5 spindle whorls per cubic meter were recovered in this concentrated area. This included a total of 10 spindle whorls (three ceramic and stone piruros and seven ceramic and stone torteros), two metal needle blanks, and five bone tools in these spaces. Also in Phase 2 a large, industrial-size hearth was in use in the upper patio of Compound 3 (See Section1.2.6). Another industrial-size hearth also associated with Phase 2 is located in the lower patio. The majority of sediment recovered from the Phase 2 industrial-hearth was gray and white ash, indicating it burned at very high temperatures, much higher than would be expected for cooking food. In addition to these industrial hearths, small fragments of slag and a utilitarian sherd with metal residue on the interior were recovered in Compound 3 (Figure 10.19 and Figure 11.7).

Metal production has been documented in Chimu households by non-specialists (Moore 2006); however, the very limited evidence recovered of slag and sherds with metal residue is insufficient evidence to suggest metal production occurred in Compounds 2 and 3. One possibility however is that metal residue was used in dye production for cloth. The presence of an industrial hearth within an area of concentrated spinning and weaving implements makes it plausible that this hearth may have been

part of the cloth production process, perhaps used for dyeing fibers[55]. To my knowledge there have been no archaeological studies of cloth production to suggest archaeological correlates for the fiber dying process in the Andes. Fiber is dyed before the weaving process begins. Specific colors were created through a dye preparation process that includes plants, pigments, and a combination of metal alloys in a large vessel over fire. The cloth is then put in the liquid, and wrung and hung to dry before weaving (Arnold 2010). If the industrial-hearth was used for dying fibers during the middle-late LIP then this area of Compounds 2 and 3 has evidence for the entire cloth production process during Phase 2.

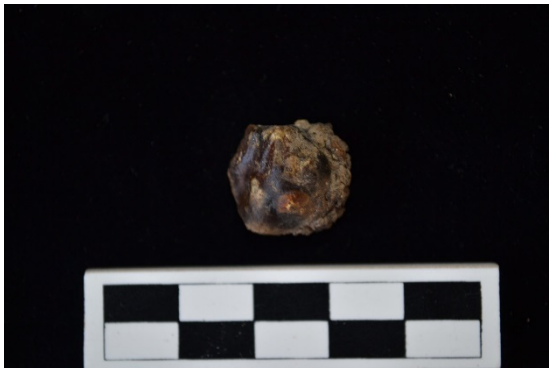


Figure 11.7: Slag fragment

In Phase 3, during the Inca period, a set of storage rooms in Compound 3 characterizes this same area. In fact, ash from the Phase 2 hearth is visible in the mortar of the storage room's west wall. Phase 3 recovered nine spindle whorls (five stone and ceramic piruros, and four ceramic torteros), one metal needle, and two bone tools. This is only 3.4 spindle whorls per cubic meter was recovered, nearly three times less than

[55] A series of conversations with Colin Thomas led to this idea.

the density of spindle whorls per cubic meter reported for Phase 2. A comparison of this data to that reported from the Upper Mantaro Valley when the Inca took over the region is very striking.

Under the Inca Empire, cloth production occurred at the household level for mit'a or tax obligations or was carried out at Inca centers where women of the acllawasi (chosen women) crated high-quality textiles for the state and brewed chicha, maize beer. In the Upper Mantaro Valley the density of spindle whorls in elite households doubles with the Inca takeover. Elite households averaged about 1.9 spindle whorls per cubic meter prior to Inca takeover. Under the Inca they averaged 3.8 spindle whorls per cubic meter (Costin 2015, Figure 2.5). Commoner households show nearly a threefold increase in density of spindle whorls with the Inca takeover, matching elite household production levels during the Inca period. Based on the density of spindle whorls as well as the distribution of cloth production tools, commoner and elites textile production intensified in response to Inca tribute demands. Inca storehouses also stored raw wool and spun thread which was likely acquired through taxing local people as well (Costin 2015).

Current data from Cerro Huancha MV 900 does not correspond with Costin's findings. In fact, the spindle whorl densities decrease between the LIP and Inca takeover. One possibility is that the organization of production and production activities at Cerro Huancha changed under the Inca. The construction of storage rooms indicates other activities took priority in the area. The Inca required all subjects to pay tribute that included cloth, therefore it is assumed that cloth production was moved to another

part of the site in Phase 3. This example indicates that at least some activities at Cerro Huancha MV 900 were reorganized under the Inca.

11.4 Collambay Traditions

Ritual practices both reflect and reinforce community identity, traditions, and beliefs. Excavations documented evidence of ritual practices at Cerro Huancha MV 900 on several different spatial scales. In this section I briefly introduce multiple occurrences of ritual and symbolic artifacts documented in excavations to provide insight on local Collambay traditions and social identity. These examples also include elements from outside influences were incorporated into these practices.

11.4.1 Ancestor Veneration and Funerary Architecture

Highland style funerary architecture associated with ancestor veneration known as *chullpas* are distinguishing architectural features of Sectors 6 and 11 (Doyle 1988; Isbell 1997; Moore 1996a, 1996b, and 2004). See Chapter 7 for a description of site sectors and Section 8.4 for excavation descriptions of Sector 6. Another possible chullpa is located in Sector 8.

Ethnohistoric literature suggests *chullpas* are considered the pacarina, a place from which sacred ancestors emerge (Doyle 1988, 87). The individuals interred in this sacred space were the founding ancestors of the lineage, important leaders and significant members of the community (Doyle 1988). Based on this information it is likely that the Collambay community's founding ancestors were buried in *chullpas* and

their descendants were likely interred in these structures upon death as well. Ancestor funerary structures and associated ritual practices that occurred in these spaces that may involve the human remains have been suggested to be a mechanism to reinforce and maintain social relationships between lineage members (Isbell 1997). The relationship between *chullpas* in different site sectors is unclear; perhaps each area was a chullpa representing different lineages that lived in Collambay.

The single *chullpa* structure excavated, Compound 4 had four separate rooms with doorways. Construction techniques indicate that each room was added on over time. Perhaps one or two generations of significant lineage group members were interred in each room, and new rooms were added every few generations. Excavations in Compound 4 recovered a minimum number of 25 individuals, including children and male and female adults of all ages. Many small bones, such as toe and hand bones were also recovered suggesting these bodies were initially interred in the *chullpa* (see Appendix D). If these bones were missing it would suggest that the bodies had been transferred from another location.

Functional analysis (see Section 10.6) documented the presence of more cooking vessels than other functional categories were recovered in excavation. Surface collection, however in Sectors 6 and 11 recovered diagnostics that included a variety of fine ware and utilitarian vessels dating from the early EIP and the LIP/LH, although there were many more LIP/LH diagnostics than early EIP sherds. These diagnostic sherds included Salinar rims and the only Imperial Inca aryballoid sherd found at the site (Figure 7.7). Several other diagnostics were recovered, including Chimú blackware,

with piel de ganso design, and vessel forms dating to the LH, including a Cuzco imperial aryballoid sherd.

Larger utilitarian flaring rim jars and ollas and a pan were also recovered. These non-local ceramics are considered exotic items. Several interred mortuary goods were recovered in excavations, including two beads—one made of stone, the other of bone. A small fragment of metal was also recovered in Compound 4. Small Fragments of metal sheets (copper) were also found adjacent to the potential *chullpa* in Sector 8.

The presence of nonlocal ceramics and metal sheets indicates that ancestor funerary traditions at Cerro Huancha incorporated coastal elements. Metal sheets are often present in elite coastal tombs (Alva and Donnan 1993; Donnan and Mackey 1978; Moore 1985; Moseley and Day 1982) and while metal sheets are present in the northern highlands, they have not been found in tombs[56] (Toohey 2009, 450).

The ceramic assemblage recovered indicates that the *chullpas* were used throughout the LIP and LH. Settlement patterns indicate a new group moved into the *chaupiyunga* in the LIP. I argue that these *chullpas* were constructed in the LIP, with the arrival of a new population. As they practiced a tradition well-documented in the highlands, this suggests that Collambay LIP and LH residents were originally from the highlands.

The presence of the very few Salinar sherds in areas with *chullpas* is either due to extensive looting activity and natural forces site disturbance, or these Salinar ceramics were incorporated into ancestor veneration practice in the LIP. The continued

[56] Topic and Topic (1984, 16) report four metal tupus, pins, recovered from excavations in a cist tomb at Cerro Amaru

use of these *chullpas* over time is indicated by the construction of additional rooms to some *chullpas* and presence of LIP and LH ceramics. The continued engagement with the *chullpas* through the LH supports the argument that Collambay residents remained at Cerro Huancha MV 900 under the Inca. If a new group was brought into the area and Collambay residents were relocated as a *mitmaq* colony, it is unlikely the *chullpas* would have been continued to be part of community rituals. The incorporation of non-local ceramics into ceremonies honoring the ancestors, or their interment with the ancestors, speaks volumes for political relationships. Both Chimú and Inca ceramics were found associated with *chullpas*, suggests these vessels were presented to or incorporated into rituals for Collambay's ancestors, symbols of relationships with outside groups.

11.4.2 Interregional Influences

In Sector 1 and Sector 3, special artifacts were found associated with the construction of the floors. In the floor of Compound 5, Unit 10, a small llama figurine is interpreted as an offering interred upon floor construction (Figure 8.17). The ethnohistoric and ethnographic record reports stone figurines, known as conopas or illas in ethnohistoric literature, representing livestock or crops and believed to hold supernatural power (Arriaga 1968[1621], 20-30; Duviols 2003, 112). Illas, specifically, are stone miniatures of llamas and alpacas kept by herders and used in religious rituals. I am not aware of an occurrence where these objects were placed within floor construction outside of my example; rather, they are reported as figurines found in

wrapped ritual bundles used in ceremonies that involve ancestor veneration (Doyle 1988; Lau 2008; Salomon 1995). I have not encountered descriptions of llama figurines in the northern highlands; however, they are reported in Ancash highlands (Lau 2002 and 2008; Ponte 2013). Ponte found a llama figurine in association with an Inca period occupation at the site of Mareniyoc (2013). He was given two other illas by locals who recovered them while constructing their homes on the site of Mareniyoc. This tradition is clearly associated with the highlands.

In Sector 3, ritual practices are connected to the initial construction of the floor in Compound 5 and the ceremonial closing of a room in Compound 6. Both of these acts include coastal elements that suggest the activities are related to the Chimú Empire. Both of these ritual deposits have been described previously in Section 6.4. In Compound 5, below the construction of the initial floor, were several small deposits of ash with trash. These ash deposits included marine animal bones, including sardine and croaker remains. Another ash deposit in the same context included marine cormorant, llama, and even toe bone of an ungulate. Chimú sherds, and local press-mold motifs were also found with the trash.

In Compound 6, Unit 3 the doorway to the small storage room on the northeast side of the unit was sealed off. A deposit of marine sand was found adjacent to the doorway, next to a hearth placed in front of the doorway and another small hearth in the corner of the room. The marine sand deposit and hearths' locations in front of and

adjacent to the doorway suggest these features are connected to the sealing of the doorway.[57]

Both of these rituals in Sector 3, Compounds 5 and 6 are connected to the coast and Chimú culture. I argue that these ritual acts represent the Collambay's relationship with the Chimú, who likely sponsored the construction of Sector 3 and other site areas at Cerro Huancha MV 900. The presence of Chimú material culture and marine resources deposited below construction of the initial floor suggests Collambay residents carried out this construction in association with the coast and Chimú. This relationship is well documented through other material culture recovered in Collambay. The other ritual act, sealing of the doorway to Unit 3, and associated burning event and deposit of sand signals the end of this relationships as the Inca overtook political control of the region, and greatly reduced the role of the Chimú on the coast and in Collambay. With the beginning of the LH and takeover of the Inca, Collambay transitioned into a new role. No longer was it focused on monitoring trade. The archaeological record indicates Cerro Huancha MV 900 became a local storage center for the Inca state, a *tambo*, one of the many nodes on the Inca road system, rather than a place where coastal-highland exchange was monitored and perhaps carried out. These examples highlighted here demonstrate that Collambay residents maintained traditions associated with both the coast and highlands.

---

[57] I believe this is marine sand; it was very fine, and a light brown-gray color distinct from the floor. It had a consistent grain size consistent with the sand found on beaches in the Trujillo area. However, it is possible this was very fine sand from the river bottom.

11.5 Collambay Local and Interregional Economy and Traditions

This chapter presented information from much of the artifact assemblage in Collambay providing further information Collambay residents' economy and subsistence patterns. It also describes ritual practices and community traditions which incorporated elements from other regions. While some of these traditions, such as building *chullpas* for ancestor veneration, are traditions that were likely brought to Collambay by LIP settlers from their homeland, others, such as depositing marine resources and coastal Chimú ceramics on floors prior to construction of architecture may be tied to political relationships.

There is no evidence of new groups moving into the Collambay region under the Inca. There is consistency in material culture styles (Chapter 10). Residents relied on local, wild fauna in addition to camelids and guinea pig as part of their diet. They also had consistent access to limited marine resources during the LIP and LH. There is, other evidence that indicates reorganization of production at Cerro Huancha MV 900 under the Inca. The change in use of space in Sector 1, Compounds 2 and 3 from cloth production to an area emphasizing storage suggests that with Inca takeover Collambay's economy may have been reorganized. This storage was likely part of the *tambo* that Collambay maintained for the Inca state. It is likely that the local political prestige Collambay elites attained through their relationship with the Chimú was lost under the Inca. Colonial documents report that Collambay and the entire *chaupiyunga* zone was subject to Huamachuco. Locally, Mochal, located in the *chaupiyunga* of the upper Moche tributary, was the local authority, therefore Collambay answered to Mochal,

whom reported to Huamachuco, suggesting Collambay had a very distant relationship from Inca authority compared to the Chimú.

12 Discussion and Conclusion

This study demonstrates that Collambay was settled by a highlander group in the LIP. They maintained an exchange relationship with the Chimú and outside groups that transitioned to a patron-client relationship with the Chimú in the middle of the LIP. Under the Inca, Collambay became a tributary province. While sociopolitical relationships changed and new empires came into power over the 500 plus years of Collambay's LIP/LH occupation, the local community maintained its own, cultural traditions despite undergoing significant changes their own economy in relation to these political dynamics.

However, as part of this investigation being the initial archaeological study of the region, it was also important to document as much of the culture history of the Sinsicap Valley as time allowed to understand the historical conditions of local groups in the Collambay region. This especially was relevant to understanding the potential dynamics between local-imperial groups in the LIP/LH periods. Also more broadly this investigation contributes new information about the dynamics of the *chaupiyunga* zone on the north coast. In the following sections I summarize my research findings, first providing an overview of settlement patterns identified in the region and then describing local-imperial relationships through the LIP/LH Phases 1-3 relying on the initial models and correlates described in Chapter 2 and evidence from my excavations described in Chapters 6-11. I also address remaining questions and future research and what can be

taken away from this case study, presenting several ideas about the role of the *chaupiyunga* on the north coast throughout prehistory.

12.1 Collambay Settlement throughout Prehistory

Settlement patterns indicate that initial settlements in the Collambay region occurred during the Salinar phase in the early EIP. It appears that coastal groups moved into the region at this time. It is possible that there are also sites with Gallinazo phase occupations, and one site may have a Moche occupation. While there is limited information available about this occupational period, at this time there is little ceramic evidence to indicate that Collambay was occupied continuously by coastal groups from the early EIP through the LIP/LH. Frankly, the absence of Moche phase ceramics in the valley is unexpected[58]. While it is possible that highland groups occupied the valley from the late EIP/MH through LIP, regional highland ceramic chronologies are thought to have little variation in form and style from the EIP-LIP, but I argue, this is unlikely. Regional highland ceramic chronologies are understudied and if Cerro Huancha MV 900 had been occupied continuously for 1500 years, excavations would have documented evidence of a more extensive occupation period.

Settlement patterns in the LIP are distinct from the early EIP. During the early Late Intermediate period, the Collambay area was resettled by highlanders. LIP sites were much larger in area than EIP sites and located in defensive locations on hilltops. Cerro Huancha MV 900 is the largest site and local center in the area. Sites that were

[58] Despite the fact that ceramics recovered by Briceño and Billman remain to be analyzed, Moche ceramics are easily identifiable and are notably absent from the assemblage.

likely inhabited full-time had defensive architecture, Cerro Huancha MV 900, Cerro Ramon MV 1000, and Cerro Cabra MV 1005. LIP sites form a defensive network including several sites located on a prehistoric road (Cerro Ramon MV 1000 and MV 1016) indicating this network was tied to monitoring coastal-highland roadways. This pattern corresponds with settlement patterns identified in the Upper Moche Valley (Coupland 1979; Mackenzie 1980; Topic and Topic 1982, 1985).

It is also likely that many Collambay residents were also living in small settlements of extended households dispersed throughout the region close to agricultural fields. Perhaps in similar patterns that modern households in the region are located today. Although because this area has been under almost continuous use from the prehispanic era to the present finding evidence of these structures, which were likely perishable, are unlikely.

Settlement patterns in the LH are somewhat tenuous. It is clear that Cerro Huancha MV 900 remained occupied by the same LIP population. What is unclear is whether other LIP sites continued to be used. While the limited excavations at Cerro Ramon MV 1000 did not document a LH occupation, it is likely that the site remained under use to monitor coastal-highland traffic. Further excavations to better document LH material culture are required to better understand the LH occupation of the valley. Similar to my hypothesis for the LIP, during the LH small settlements of extended households were likely living close to agricultural fields.

During the early Colonial period Collambay residents were moved to Simbal, a Spanish *reducción.* While the Collambay Hacienda was founded in the early 16th century, it is unclear when the Hacienda building was first constructed and if laborers

traveled from Simbal or lived closer to the Hacienda. Modern informants who live in the region and whose families worked for the Hacienda until the late 1960's and early 1970's report that their families had been recruited from local highland towns and lived in the Collambay region. Settlement patterns between the Inca and Colonial periods shifted dramatically, with potentially the Collambay region forcibly abandoned, and residents moved to Simbal. The founding of the Hacienda eventually brought laborers to settle in the region, although at this time it is unclear when that occurred in the 16th century.

12.2 Collambay and Imperial Interactions throughout LIP and LH

Excavations at Cerro Huancha MV 900 and Cerro Ramon MV 1000 recovered material culture associated with two occupational periods, the early EIP and the LIP/ LH periods. However, only a single, Salinar phase intact context was excavated in Sector 1 at Cerro Huancha MV 900. The LIP/LH occupation was much more extensive at Cerro Huancha MV 900 and three phases were identified through excavations and remodeling of site architecture. Excavations at Cerro Ramon MV 1000 documented a LIP occupation as well and the masonry and material culture recovered indicates a close relationship with Cerro Huancha MV 900. Excavations at Cerro Huancha MV 900 provided the majority of data to understand local-imperial interaction. Remodeling of architecture and masonry styles at Cerro Huancha MV 900 are important components for understanding the timing of construction of site sectors however the majority of

material culture recovered in excavations came from Sector 1, which is also the only site sector where intact contexts from LIP/LH Phases 1-3 were encountered.

12.2.1 LIP/LH Phase 1 (AD ~900? to 1229-1271): Exchange

During the early LIP the Chimú were engaged in an exchange relationship with Collambay residents, while they were consolidating control over their heartland, the Moche, Virú, and Chicama valleys (Moore and Mackey 2008). While it is unclear when Cerro Huancha MV 900 was occupied, in the late MH or early LIP, a single AMS date (AA104556) of calAD 1185-1216 (1σ) (Bronk Ramsey 2009 and Hogg et al 2013) indicates the site was in use at that time. I suspect the site may be in use by AD 900.

This initial LIP/LH phase was only documented in excavations in a single patio in Sector 1, Compound 3. Based on excavations it seems likely that only Sector 1 and possibly Sector 10 had architectural compounds and were under use during Phase 1 based on masonry styles and AMS dates. Material culture recovered associated with the LIP/LH Phase 1 occupation suggests that Cerro Huancha MV 900 itself was a venue for exchange between the Chimú and Collambay.

The archaeological correlates for an exchange relationship described in Section 2.4.1 specifies that no significant changes in public or local architecture would occur under an exchange relationship. The architecture at Cerro Huancha MV 900 in Sector 1 during the LIP/LH Phase 1 is characterized by large, open compounds and retaining walls in Masonry I style. Compounds are not yet subdivided as they will become in later phases. The discovery of a large storage vessel suggests that this was a communal space

used by extended families or large groups of people. This feature and site architecture suggests residents lived in extended family compounds and/or these large compounds may have housed an ebb and flow of people based on the annual ritual and harvest calendar. Cerro Huancha MV 900's compounds could have functioned much like an Inca building often referred to as a *kallanka* which is a long, rectangular hall typically adjacent to plazas used for feasting activities and housing large groups of people (Hyslop 1990: Nair and Protzen 2015). Similar structures have been described at Marcahuamachuco, which is proposed to have been a center where lineages from the Huamachuco region came together for specific celebrations throughout the year (T. Topic 2009).

Another correlate of an exchange relationship suggests that local cultural traditions are expected remain consistent, however, foreign prestige items would be recovered in elite households, as a result of exchange relationships. Nonlocal artifacts were recovered in the limited material culture from Phase 1, however they do not qualify as foreign prestige goods. These nonlocal materials included utilitarian Chimú ceramics and limited marine resources. Utilitarian Chimú ceramics are not prestige goods, they are found frequently throughout the north coast, fine ware vessels are rarer and were occasionally recovered at Cerro Huancha MV 900 in Phases 2 and 3. It is also unclear if marine resources are considered prestige resources to the Collambay community, however they are nonlocal resources. Marine resources were not frequently recovered at Cerro Huancha MV 900 suggesting that they were not a readily available resource and residents relied on exchange relationships to access them. The sample of the fauna assemblage analyzed suggests community subsistence consisted of local, wild

species like deer as well as domesticated species, like guinea pig and camelid. Collambay residents likely maintained herds of camelids and grew crops for subsistence as well as coca, and potentially other resources, like fruits, for exchange for nonlocal products like marine resources.

Previously described in Chapter 3, John and Theresa Topic propose that *chaupiyunga* groups were independent polities that assumed the role of middlemen during the LIP, mediating exchange between the Chimú and highland groups (1983 and 1985). Archaeological evidence recovered nonlocal resources, marine resources and Chimú ceramics, at Cerro Huancha MV 900 assumed to be obtained through exchange. In addition, site architecture in this phase could have functioned as communal spaces for hosting large groups of people.

Ethnohistoric and ethnographic evidence also support the argument that the *chaupiyunga* was a place of exchange. A Colonial court case reports exchange between regional groups in Simbal in the early 16th century (Hart 1988). Exchange in Simbal is also reported in the twentieth century between coastal and highland groups (Gillin 1947; Prieto 2009). These ethnohistoric and ethnographic accounts of exchange indicate that the *chaupiyunga* ecological niche was a place of exchange where different regional groups came together to exchange products from their respective ecological niches, fish and totora reed mats from the coast, coca from the *chaupiyunga* and potatoes and camelid products from the highlands. While this tradition is documented in the 16th and 20th centuries, it is likely that this tradition occurred throughout prehistory. I suggest that these exchange relationships may have become more formalized with *chaupiyunga* residents serving as hosts for such events during the LIP.

12.2.2 LIP/LH Phase 2 (AD 1229-1271 to 1470): Alliance

Corresponding with the final phase of consolidation of the Chimú heartland in the 13th century Collambay-Chimú relations developed into an alliance or patron-client relationship. It is likely that shift from an exchange relationship to patron-client alliance occurred in relation to the final phase of consolidation of the Chimú heartland which was occurring at this time. As a client of the Chimú empire, as opposed to an exchange partner, Collambay received an elevated political position as a Chimú ally. The archaeological correlates for an exchange relationship and alliance are the same, with the exception of domestic production (Appendix E). Under a patron-client alliance scenario evidence of increased domestic production is expected, while no increased production is expected in an exchange relationship. I highlight this correlate because the LIP/LH Phase 2 is a period characterized by intensification of construction and production in the Collambay region.

In fact, excavations documented extensive remodeling and construction of new site sectors at Cerro Huancha MV 900 during this phase. An AMS date of calAD 1275-1381 in Sector 3 (AA104558) indicates this sector was in use for the first time during Phase 2 (Bronk Ramsey 2009 and Hogg et al. 2013). The architecture and masonry style in Sector 3 is associated with other site sectors indicating Sectors 2, 3, 4, 7,8, 10, 12, and potentially Sectors 13 and 14 all occurred during Phase 2. In Sector 1, remodeling of compounds was documented in excavations. Phase 2 also likely coincides with the construction of other 10 LIP phase sites. Several of these sites are stand-alone walls, but

3 sites (Cerro Huancha MV 900, Cerro Ramon MV 1000 and Cerro Cabra MV 1005) are the largest sites in the valley are may have been permanently occupied.

The construction of LIP sites is part of Collambay's infrastructure established to regulate coastal-highland trade. There is no direct evidence that this construction and site expansion occurred at the direction of the Chimú, although all the majority of these sites have Chimú ceramics on their surfaces. Local ceramics are also present on site surfaces. However, the timing of this construction which occurred while the Chimú empire was beginning to expand suggests they are connected. The close proximity of Collambay to the Chimú heartland suggests that construction in Collambay would not have occurred without Chimú approval and potentially collaboration.

It is unclear if new group members settled in Collambay during Phase 2 and/or where the labor for these construction projects came from. If there was a larger population living in the Collambay region, they are part of the same group as the initial LIP highlanders who settled in the area. While more diverse forms of ceramic vessels are found in Phase 2 compared to Phase 1, no new styles are introduced into the region, and material culture styles remain consistent between Phases 1 and 2.

Excavations at Cerro Huancha MV 900 documented remodeling in Sector 1 including the construction of bi-level patio and storage bin. The artifact assemblage from these excavations indicates that a greater variety of vessel forms are present in Sector 1 than the previous phase. The diversity and quantity of cloth-making tools recovered and large hearths indicates the area became dedicated to cloth production (Section 11.3). The artifact assemblage included coastal and highland spindle whorls, suggesting both cotton and camelid wool were spun, in addition to tools associated with

looms. Large hearths and bits of slag may have been used to prepare dye for fibers, indicating the full range of cloth production activities was present in a concentrated area of Compounds 2 and 3 in Sector 1. Cloth production was likely managed by local elites and may have been tied to the interregional trade economy Collambay was engaged in.

Like in Phase 1, one of the proposed archaeological correlates for this patron-client model was that it is expected that Collambay elites would receive Chimú prestige items, however there is an absence of evidence of prestige items at Cerro Huancha MV 900. As stated previously it does not appear that Chimú ceramics held special significance in Collambay as they were found throughout the Collambay region. Chimú craft specialists' products that were prestige goods included featherworks, special textiles, or metal regalia may have been received by Collambay elites, however, if they were received Collambay's climate prevented preservation of these organic products. Several metal objects, needles and a nose ring, were recovered during the project but they do not appear to be prestige goods.

In a patron-client scenario subsistence patterns remained consistent and the faunal and malacological samples studied confirms the diversity of taxa available is consistent. There are, more marine resources reported in Phase 2, than Phase 1, suggesting elites may have received marine resources in exchange. The reality, however, is that Chimú investment in the Collambay zone was minimal. The absence of Chimú infrastructure indicates local administration and regulation of trade was under control of Collambay elites. Like in Phase 1 there is evidence of exchange but no direct evidence of exchange of prestige goods.

Archaeological correlates suggest that little change in Collambay household architecture and assemblage will occur under a patron-client relationship. Local traditions will persist with only minimal influence of foreign traditions. Archaeological evidence documented at Cerro Huancha MV 900 fits these correlates, subsistence patterns remain the same, and architecture, while new masonry styles do appear, are not associated with specific outside groups. Local traditions persist in material culture during Phase 2. However, as previously explained, changes that do occur between Phases 1 and 2 are an increase in local production.

A patron-client relationship assumes the patron and the client both benefit from the relationship – initially it was assumed that exchange of prestige resources would define the Chimú-Collambay relationship. While exchange did occur, Collambay maintained access to coastal resources and had access to Chimú material culture, which they emulated in their own style. Yet the greatest benefit may have been the power of regulating coastal-highland trade networks, enabling Collambay to have political and economic power in the valley. Site construction in the Collambay region likely occurred in the interest of monitoring movement through the *chaupiyunga*. With this responsibility Collambay interests would have been aligned with the Chimú and they were likely eager to align themselves with a growing political authority in the region.

12.2.3 LIP/LH Phase 3 (AD 1470 to 1532): Tributary Province

In 1470, the Chimú Empire fell to the Inca (Rowe 1948). My excavations indicate that despite a short time period under the Inca Empire, 70 years or so, life in

Collambay changed. In fact, Collambay residents transitioned from a patron-client relationship with the Chimú to a tributary province of the Inca, who may have produced coca for an Inca King and his mother. Archaeological evidence indicates that while larger political processes changed and site activities did undergo some changes, aspects of the local economy and community practices did not.

The ethnohistoric record reports that under the Inca, Collambay was part of the Huamachuco Province and subject to the *Curaca* of Mochal, another *chaupiyunga* group in the Upper Moche tributary. With this shift, Collambay went from a geographically close, more direct ally of the Chimú to a third tier, distant subject of the Inca. Settlement patterns shifted in the valley in the LH. At this time there is no direct evidence of the LIP sites in Collambay being used during the LH besides Cerro Huancha MV 900. The limited test excavations carried out at Cerro Ramon MV 1000 did not document evidence indicating the site was occupied during the Inca period, but I suggest it may have been occupied during the LH, due to its location on a road that continued to be used.

One of the plausible scenarios as a tributary province was the possibility of a non-local, *mitmaq* group, to move into the Collambay region to work for the Inca in the region. This model outlined several scenarios in which this new group lived side by side Collambay residents, separately, or potentially LIP Collambay residents were moved out of the region. There is no evidence of a new group moving into the valley under the Inca as did occur in other coca-growing regions like the Chillon Valley (Rostworowski 1988).

The archaeological record suggests that LIP Collambay residents remained in residence. This is supported by the consistency in styles of material culture recovered during the LIP and LH, ceramic styles, local Collambay style, continues to be used, like Chimú style ceramics. Also, there is evidence of continued practice of ancestor worship at Cerro Huancha MV 900's *chullpas* during the LH. In fact, this is the location where the single fragment of direct evidence of Inca material culture was located, a Cuzco-Inca aryballoid sherd was recovered. This fulfills one of my outlined correlates for this model (see Appendix E), the presence of non-local artifacts associated with ritual/religious production.

As a tributary province archaeological correlates suggest new non-local or hybrid public architecture was constructed and the presence of mass storage potentially being located in public architecture. While traditional Inca administrative architecture is absent at Cerro Huancha MV 900 new architecture was constructed during the LH. This construction is, in fact, the most significant change documented between the LIP/LH Phases 2 and 3. New storage rooms were built in series of twos, in Sector 1. These rooms were often added onto preexisting walls and the masonry style is inconsistent and often sloppy. Masonry quality was clearly not important in construction of these storage rooms. The size and quantity of room pale in comparison to the extensive storage facilities, reported by Topic and Chiswell (1992, 210) located outside of Huamachuco. However, these storage facilities were likely built as part of the requirements for an Inca *tambo* (BMN, MS 3035; Rostworowski 1987). These storage rooms were part of Inca state infrastructure; they were likely constructed by locals. The small size and limited number of storage rooms compared to Huamachuco suggests that the Collambay *tambo*

was only of local importance, as has been suggested by T. Topic (1990). The *tambo* was likely used by groups traveling to and from the Chicama Valley and Alto Chicama Valley towards the coast.

As a tributary province, increased domestic production is expected. Site activities in Sector 1 changed between the Chimú and Inca eras. As expected with an increased number of storage facilities during the Inca era, there is also an increased number of jars, which outnumber cooking ollas for the first time in the occupation, which I believe were used for storage (Section 10.6.4). However, the limited period of occupation during this phase provides limited information of other lines of evidence of increased domestic production.

Aspects of the local economy do not appear to have been impacted by the Inca takeover. Collambay residents had continued access to maritime resources through the LH period (Section 11.1.1). Also, as was the case throughout the north coast, Chimú-style ceramic and Chimú-Inca ceramics are used in Collambay. One rare characteristic of the LH ceramic assemblage is the occasional use of a gray-black slip, which is unlike any slip encountered in the region in previous phases (Section 10.6.4). Perhaps this is a local tradition that emerged in this period.

While not all of the tributary province correlates are documented in the LH, Collambay became a tributary province of the Inca. Part of Collambay's economy was reorganized under the Inca, they had to maintain state storage facilities but it appears, that Collambay had an indirect relationship with the Inca. A distant subject of the empire, Collambay presumably fulfilled the tributary requirements but it appears that the very local economy continued as it had prior to Inca rule.

12.3 Remaining Inquiries

Several questions about Collambay during the LIP and LH remain unclear after this study.

- Excavation strategy at Cerro Huancha MV 900 led to the testing of limited site sectors, what about the occupational history of the untested site sectors?

This is an important question, and testing additional site sectors would provide more definitive data for understanding the extent of occupation and population size that occupied Cerro Huancha MV 900 during the LIP and LH. It would provide more information about the timing of occupation and community social organization and dynamics. It could also answer remaining questions about Collambay's occupation during the MH and its economy during the LH. However, the excavation strategy employed at Cerro Huancha MV 900 enabled reconstruction of changes in site activities in architectural compounds over time, which proved essential for understanding how site activities changed throughout the LIP – LH.

- It is unclear where common Collambay community members were buried

Chullpas were reserved for special individuals, however excavations and survey failed to locate where common members of the Collambay community were buried. Sector 1 has evidence of looted tombs within agglutinated compounds, yet there must be another site sector where individuals were buried, as there is a clear shortage of tombs for the number of individuals who lived and worked at Cerro Huancha MV 900 for over 500 years. However, the absence of burials supports the possibility that many

Collambay community members were living in the valley, close to fields. Highland burial traditions document that family members are buried within the home, which would account for the lack of tombs documented at Cerro Huancha MV 900. Another possibility is that only a small permanent population occupied the site throughout the year.

12.4 Collambay Frontiers

During the LIP, Collambay was settled by highlanders whom maintained exchange relationships with the Chimú, which extended to a political alliance and patron-client relationship by the middle-late LIP. Through this relationship Collambay remained a border frontier zone, it was located on the eastern frontier of the Chimú empire and regulated movement of groups between the eastern Chimú front and the La Libertad highlands. Cultural traditions and material documented identify a community that practiced highland ancestor veneration and used coastal and highland material culture in their daily lives. These traditions continued as large-scale political power dynamics shifted and the Inca took over the region. As a subject of the Inca Empire, Collambay was no longer located on a political border, rather it became an enveloped frontier.

By enveloped I mean that while it was a part of the Inca state, under the jurisdiction of Huamachuco, there is little direct evidence of intervention by outside groups. There is evidence of reorganization, to serve as part of state infrastructure, a *tambo*, but this was carried out through local leadership. Collambay maintained an Inca warehouse however they remained engaged in the local interregional economy,

regulating coastal-highland roadways, and local cultural traditions remained intact. Without evidence of outside or new cultural traditions influencing the activities in Collambay it appears that this area maintained its frontier status, but now it was an enveloped as a part of the larger Inca state.

12.5 Conclusions

This dissertation is the first study of Chimú and Inca imperial strategies in the *chaupiyunga* zone on the north coast. It highlighting an understudied region and a local, minority population's experiences throughout the late prehispanic period. A dynamic frontier, the Collambay *chaupiyunga* was inhabited by both coastal and highland groups throughout prehistory. A highland group established Cerro Huancha MV 900 early in the LIP period and as a result of its geographical location and the dynamics of the period the *chaupiyunga* was a place of interregional exchange between coastal, local, and highland groups.

Both Collambay and Chimú benefitted from their relationship and this case study demonstrates Chimú strategy in control of coastal-highland exchange networks, something that has been suggested but not been documented archaeologically previously (Mackey 2009; J. Topic and T. Topic 1990). However, Collambay may be a unique case study of *chaupiyunga* groups. The small and compact Moche Valley situated Collambay in a geographical location in close proximity to the Chimú heartland, and on average on the north coast, *chaupiyunga* groups are not necessarily in such close geographical proximity to coastal polities.

The fall of the Chimú to the Inca led to several transitions in the La Libertad highlands and the Moche Valley. Recent studies of the Inca empire on the north coast indicate that north coast researchers need to reconsider the assumption that Inca impact was not directly felt by local groups (Hayashida 2015; Kremkau 2010; Mackey 2010; Tate 2006). This study demonstrates this as well. Life changed under the Inca for Collambay residents whom transitioned from living on the edge of empire and facilitating local exchange networks to subject producer, maintainer of state infrastructure but also remained a facilitator in local exchange.

This study demonstrates the importance of a bottom-up approach in a local-imperial interaction in a frontier zone. It is in frontiers that Lightfoot and Martinez argue that cultural innovation occurs and group identities are negotiated and manipulated (1995). Collambay's practice of highland funerary traditions, use of coastal and highland ceramic assemblages, and their own local ceramic styles demonstrates a unique hybridity that reflects the dynamics of a community accustomed to interacting with different groups. Both the Chimu and Inca empires substantially impacted Collambay's local economy and community dynamics, yet over more than five hundred years they continued to use the same material culture vessel, continued to honor their ancestors at their *chullpas*, suggesting that while political authorities changed, group identity was reinforced through these experiences.

My strategy of prioritizing horizontal excavations, excavating entire architectural compounds limited the number of site sectors that could be tested at Cerro Huancha MV 900, however it enabled documentation of a compounds' full range of production activities, changes that occurred over time, and insight to long-term

processes. Documenting the *longue durée* in Collambay enabled detection of shifts in behaviors over time, establishing an understanding of the LIP and LH history. There is still much research to be done to understand the *chaupiyunga* groups' roles in the LIP and LH in the Moche Valley, as well as in earlier time periods. The several hundred years' gap in occupational history during the late EIP and Middle Horizon in the *chaupiyunga* has great significance for understanding coastal-highland relations during the Moche period and the role that *chaupiyunga* groups played in north coast regional history.

A frontier that was home to diverse groups throughout history, the *chaupiyunga* zone's history provides insight into coastal-highland relations. This case study exemplifies the diverse dynamics that may impact frontier communities in the Andes and the documentation of local Collambay traditions introduces a new example about Andean communities whom maintained coastal and highland traditions. This case study serves as an excellent example of the important role that *chaupiyunga* groups played in LIP geopolitics. Further study of the region will provide essential information about coastal and highland geopolitics, interregional exchange and Andean economies.

Appendix A: Field and Analysis Forms

Provenience Designation Codes, PD_Codes.doc
Provenience Designation Fom, PD_Form.pdf
Diagnostic Ceramics Codes, 2012.Diag.AttributesList_Appendix.doc
Artifact Codes, Clasificacion de Artifactos.doc

Appendix B: Field Logs

Provenience Designation Log, PDLog_Appendix.xlsx
Surface Collection Units Log, SC_Units.xlsx
Excavated Features Log, FeatureExcavated.xlsx

Appendix C: Data

Sinsicap Valley Sites, Sinsicapsites_appendix.xlsx
Surface Collection Ceramic Data, SurfaceCollection_Appendix.xlsx
Excavated Diagnostic Ceramic Data, Diagsfinal_appendix.xlsx
Excavated Non-diagnostic Ceramic Data, NonDiag_Appendix.xlsx
Artifact Data, Artifact_Appendix.xlsx

Appendix D: Data

Faunal Data, Faunal_Appendix.xlsx
Human Remains Report, HumanRemains_report.rtf
Human Remains Data, HumanRemains_appendix.xlsx
Metal Notes, Metal Notes.xlsx

Appendix E: Correlates

Archaeological Correlates, Correlates_2016.doc

Works Cited

Adelaar, Willem FH.
2004 *The languages of the Andes*. Cambridge University Press, New York

Alcock, Susan E, Terence D. A'Altroy, Kathlee D. Morrison, Carla M. Sinopoli, eds.
2001 *Empires: Perspectives from archaeology and history*. Vol. 122. Cambridge University Press, Cambridge.

Alconini, Sonia
2004 The southeastern Inka frontier against the Chiriguanos: Structure and dynamics of the Inka imperial borderlands. *Latin American Antiquity* Dec. 1: 389-418.
2008 Dis-embedded centers and architecture of power in the fringes of the Inka empire: New perspectives on territorial and hegemonic strategies of domination. *Journal of Anthropological Archaeology* 27.1: 63-81.
2010 Yampara Households and Communal Evolution in the Southeastern Inka Peripheries. *Distant Provinces in The Inka Empire: Toward a Deeper Understanding of Inka Imperialism*, edited by Michael Malpass and Sonia Alconini, pp. 75-107. University of Iowa Press, Iowa City.

Aldenderfer, M. S., & Stanish, C.
1993 Domestic architecture, household archaeology, and the past in the south-central Andes. In *Domestic architecture, ethnicity, and complementarity in the south-central Andes*, pp. 1–12. Edited by Mark S. Aldenderfer and Charles Stanish, University of Iowa Press, Iowa City, IA.

Algaze, Guillermo
1993 *The Uruk World System*. University of Chicago Press, Chicago.

Allen, Catherine
2002 *The Hold Life Has: Coca and Identity in an Andean community*. Smithsonian Institution Press, Washington D.C.

Alva, Walter, and Christopher B. Donnan.
1993 *Royal Tombs of Sipán* [exh. cat., Fowler Museum of Cultural History, University of California]. University of California, Los Angeles.

Ames, Kenneth
1991 The archaeology of the longue durée: temporal and spatial scale in the evolution of social complexity on the southern Northwest coast. *Antiquity* 65(249): 935-945.

Archivo de la Nación, Perú (ANP), Sección Históica.
Aguas 3.3.10.68, ff 86–132

Arkush, Elizabeth
2011 *Hillforts of the Ancient Andes*. University Press of Florida, Gainesville.

Arkush, Elizabeth and Tiffany Tung
2013 Patterns of War in the Andes from the Archaic to the Late Horizon: Insights from Settlement Patterns and Cranial Trauma. *Journal of Archaeological Research*, 21:307-369.

Arnold, Dean E.
1993 *Ecology and Ceramic Production in an Andean Community*. Cambridge University Press, New York.

Arnold, Denise
2010 *Ciencia de la mujeres: experiencias en la cadena textile desde los ayllus de Challapata*. ILCA, La Paz.

Arriaga, Eduardo E.
1968[1621]) *New life tables for Latin American populations in the nineteenth and twentieth centuries*. No. 3. Institute of International Studies, University of California

Barth, Frederik
1969 *Ethnic Groups and Boundaries: The Social Organization of Culture Difference*. Little Brown Company, Boston.

Bauer, Brian
1992 *The Development of the Inca State*. University of Texas Press, Austin.
1998 *The Sacred Landscape of the Inca*. University of Texas Press, Austin.

Bauer, Brian and Covey, Alan
2002 Processes of State Formation in the Inca Heatland (Cuzco, Peru). *American Anthropologist* 104: 846-864.

Bauer, Brian, Lucas C. Kellett and Miriam Araoz Silva
2010 *The Chanka: Archaeological Research in Andahuaylas (Apurimac) Peru*. Cotsen Institute of Archaeology, University of California, Los Angeles.

Bauer, Brian and Charles Stanish
2001 *Ritual and Pilgrimage in the Ancient Andes: The Islands of the Sun and the Moon.* The University of Texas Press, Austin.

Bawden, Garth
1977 *Galindo and the nature of the middle horizon in northern coastal, Peru*. Doctoral Dissertation, Department of Anthropology, Harvard University.

1982 Galindo: A Study in Cultural Transition During the Middle Horizon. In *Chan Chan: Andean Desert City*, edited by Michael Moseley and Kent Day, pp. 285-320. University of New Mexico Press, . Albuquerque.
1996 *The Moche*. Blackwell Publishers, Cambridge, MA.
2001 The Symbols of Late Moche Social Transformation. In *Moche Art and Archaeology in Ancient Peru,* edited by Joanne Pillsbury, pp 285–306. National Gallery of Art, distributed by Yale University Press, Washington D.C. and New Haven.
2004 The art of Moche politics. In *Andean Archaeology,* edited by Helaine Silverman, pp. 116-129. Blackwell Press, Malden, MA.

Baxter, Michael J.
1994 *Exploratory multivariate analysis in archaeology*. Edinburgh University Press, Edinburgh.

Bermann, Marc
1994 *Lukurmata: Household Archaeology in Prehispanic Bolivia*. Princeton University Press, Princeton, N.J.

Berquist, Emily
2013 *The Bishop's Utopia: Envisioning Improvement in Colonial Peru*. The University of Pennsylvania Press, Philadelphia.

Biblioteca Nacional, Madrid (BNM)
M.S. 3035. Ordenanzas para el servicio de los tambos del Repartimiento de Huamachuco.

Billman, Brian
1996 *The Evolution of Prehistoric Settlement Patterns in the Moche Valley, Peru*. Doctoral Dissertation. Department of Anthropology, University of California, Santa Barbara.
1999 Reconstructing Prehistoric Political Economies and Cycles of Political Power in the Moche Valley, Peru. In *Settlement Pattern Studies in the Americas: Fifty Years Since Virú*, edited by Brian R. Billman and Gary M. Feinman, pp. 131–159. Smithsonian Institution Press, Washington, D.C.

2002 Irrigation and the Origins of the Southern Moche State on the North Coast of Peru. *Latin American Antiquity* 13(4): 371-400.

Billman, Brian, Dana Bardolph, and Jean Hudson
In press Fisherman, Farmer, Rich Man, Poor Man, Parcialidad Chief? Household Archaeology at Cerro La Virgen. In *Coastal Communities in the Andes*. D. Sandweiss and G. Prieto, eds.

Billman, Brian, Alicia Boswell, Jesus Briceño Rosario, and Julio Rucabado

In prep Saving the Past and Investing in the Future: Archaeology and Development in the Moche Valley, Peru.

Blanton, Richard
1994 *Houses and Households: A Comparative Study*. Plenum Press, New York.

Bourdieu, Pierre
1977 *Outline of a Theory of Practice*. Cambridge University Press, Cambridge.

Bourget, Steve.
2001 Rituals of sacrifice: its practice at Huaca de la Luna and its representation in Moche iconography. *Studies in the History of Art* 63: 88-109.

Boswell, Alicia, Brian Billman and Barker Fariss
2009 The Chimu Frontier in the Moche Valley, Peru. Paper presented at the 74th annual meeting for the Society of American Archaeology, Atlanta, April 2009

Boswell, Alicia, Evan Surridge, and Brian Billman
2011 The Chaupiyunga in the prehistory of the north coast of Peru: A Case Study from the Moche Valley. Paper presented at the 51st Annual Institute of Andean Studies, Berkeley, January 8.

Braudel, Fernand
1980 History and the Social Sciences: The Longue Durée. In *Braudel On History, 25-54*. trans. Sarah Matthews. University of Chicago Press, Chicago.

Braun, David
1980 Experimental Interpretations of Vessel Use on the Basis of Rim and Neck Formal Attributes. In The Navajo Project: Archaeological Investigations, Page to Phoenix 500 KV Southern Transmission Line, edited by D.C. Feiron et al, pp. 171-231. *Museum of Northern Arizona, Research Paper* 1, Flagstaff.

Bray, Tamara
2003 Inka Pottery as Culinary Equipment: Food, Feasting, and Gender in Imperial State Design. *Latin American Antiquity* 14(1): 3-28.

Brennan, Curtis T.
1978 *Investigations at Cerro Arena, Peru: incipient urbanism on the Peruvian north coast*. Doctoral Dissertation. Department of Anthropology, University of Arizona.
1980 Cerro Arena: Early Cultural Complexity and Nucleation in North Coastal Peru. *Journal of Field Archaeology* 7(1): 1–22.

Briceño, Jesus and Brian Billman

2006 *Proyecto Arqueológico Cerro Oreja, Valle de Moche. Informe Final, Tomo I, Temporada 2005.* Submitted to Insituto Nacional de Cultura, Lima.
2009 *Proyecto Arqueologico Cerro Oreja Valle de Moche- Temporada 2007-2008 Informe Final.* Report submitted to Ministry of Culture
2012 La ocupacaión Salinar en la subcuenca del río Sinsicap, parte alta del valle de Moche. *Investigaciones Sociales* 16(28) 197-222.

Bronk Ramsey, C.
2009 Bayesian analysis of radiocarbon dates. *Radiocarbon* 51.1: 337-360.

Brown, Emma Louise
2013 *Investigating the use of coca and other psychoactive plants in Pre-Columbian mummies from Chile and Peru: An analytical investigation into the feasibility of testing ancient hair for drug compounds*. Doctoral Dissertation. Department of Archaeological Sciences, University of Bradford.

Brush, Stephen
1977 *Mountain, Field, and Family: the economy and human ecology of an Andean Valley*. University of Pennsylvania Press, Philadelphia.

Brumfiel, E.M.
1992 Distinguished Lecture in Archaeology: Break and Entering the Ecosystem - Gender, Class and Faction Steal the Show. *American Anthropologist* 94: 551-567.
1996 The Quality of Tribute Cloth: The Place of Evidence in Archaeological Argument. *American Antiquity* 61: 453-462.

Burger, Richard, Craig Morris and Ramiro Matos, eds.
2007 *Variations in the expression of Inka power: a symposium at Dumbarton Oaks, 18 and 19 October 1997*. Dumbarton Oaks Research Library and Collections, Washington D.C.

Calbello de Balboa
1951[1586] *Miscelánea Antártica: Una Historia del Peru Antiguo.* Lima: Instituto de Ethnología, Universidad Nacional Mayor de San Marcos.

Calancha, Antonio
1977[1638] *Cronica Moralizada* (4 vols.) Ignacio Prado Pastor, Lima.

Campana, Cristobal
2006 *Chan Chan del Chimo: studio de la ciudad de adobe más grande de América Antigua*. Editorial ORUS, Lima
2012a Memorias delviento frente a Chan Chan. In *Chan Chan: Ayer y hoy*, edited by Enrique Vergara Montero and Luis Valle Alvarez. SIAN, Trujillo, Peru.
2012b *Arquitectura y ceremonia en Chan Chan*. Fondo Editorial UPAO, Perú

Castañeda Murga, Juan and Jean-Francois Millaire
2015 Agua, tierra, y recursos: Una historia ambiental del valle de Virú, ss. XVI-XIX. *Perspectivas Latinoamericanas* 12: 50-67.

Castillo, Luis Jaime and Christopher Donnan
1994 Los Mochica Del Norte y Los Mochica Del Sur. In *Vicús* edited by Krzysztof Makowski, Christopher B. Donnan, and Ivan Amaro Bullon, pp. 142-181. Colección Arte y Tesoros Del Perú, Banco de Crédito del Perú, Lima, Perú:

Castillo, Luis Jaime, Fernanda Ferdinini P. and Luis Moro Y.
2012 The Multidimensional Relations between the Wari and the Moche States of Northern Peru. In *Los Rostros de Wari: Perspectivas Interregionales Sobre el Horizonte Medio*, edited by Luis Jaime Castillo and Justin Jennings, pp. 53-77. Boletin de Arqueología *PUCP* No. 16. PUCP, Lima.

Castillo, Luis Jaime and Justin Jennings, eds.
2012 *Los Rostros de Wari: Perspectivas Interregionales Sobre El Horizonte Medio*. Boletin de Arqueología *PUCP*, No. 16. PUCP, Lima.

Castillo, Luis Jaime and Santiago Uceda
2008 The Mochicas. In *Handbook of South American Archaeology*, edited by Helaine Silverman and William Isbell, 707-729. Vol. 3, Springer Press, New York

Carcelen, Jose
1995 *Rescate arqueológico flanco norte y arenales al oeste de Cerro Oreja. La Libertad dirección regional de cultura*. Informe de entrega de obra, Tomo II, Vol. IV, Dirección Regional de Cultura de la Libertad, Trujillo.

Carneiro, Robert
1970 A Theory of the Origin of the State. *Science* 169: 733-738

Chapdelaine, Claude
2001 The Growing Power of a Moche Urban Class. In *Moche Art and Archaeology in Ancient Peru*, edited by Joanne Pillsbury, pp 69-88. National Gallery of Art, distributed by Yale University Press, Washington D.C. and New Haven.

2006 Chapter 3: Out in the Streets of Moche: Urbanism and Sociopolitical Organization at a Moche IV Urban Center. *Andean Archaeology I: Variations in sociopolitical organization*, edited by William H. Isbell and Helaine Silverman, pp. 53-88. New York: Springer.

2008 Moche Art Style in the Santa Valley: Between Being “a La Mode” and Developing Provincial Identity. In *The Art and Archaeology of the Moche: an Ancient Andean Society of the Peruvian North Coast*, edited by Steve Bourget

and Kimberly L. Jones, pp. 129–15 2. University of Texas Press, Austin.

2009 Domestic Life in and around the Urban Sector of the Huacas of Moche Site, Northern Peru. In *Domestic Life in Prehispanic Capitals: A study of Specializiation, Hierarchy, and Ethnicity* edited by Linda R. Manzanilla and Claude Chapdelaine, pp 181-196. Memoirs of the Museum of Anthropology, University of Michigan Studies in Latin American Ethnohistory and Archaeology, No. 46, Ann Arbor.

Chase-Dunn, Christopher K., and Thomas D. Hall, eds.
1991 *Core/periphery relations in precapitalist worlds*. Westview Press.

Cieza de León, Pedro
1976 [1552] *The Incas*. Introduction by Victor Wolfgang von Hagen. Translated by Harriet de Onis. Norman: University of Oklahoma Press. 4th edition.

Cock, Guillermo
1986 Power and Wealth in the Jequetepeque Valley during the sixteenth century. *The Pacatnamu Papers* edited by Christopher Donnan and Guillermo A. Cock, pp. 171-182. Vol. 1, Museum of Cultural History, University of California, Los Angeles.

Collier, Donald
1955 Cultural Chronology and Change: As reflected in the ceramics of the Virú Valley, Peru. *Fieldiana Anthropology* 43:1-226.
1962 Archaeological investigations in the Casma valley, Peru. *Akten des* 34: 411-417.

Conklin, William J.
1990 Architecture of the Chimú: Memory, function, and image. In *The Northern Dynasties: Kingship and Statecraft in Chimor*, edited by M. Moseley and A. Cordy-Collins, pp. 43-74. Dumbarton Oaks Research Library and Collections, Washington D.C.

Conrad, Geoffrey W.
1977 Chiquitoy Viejo: An Inca Administrative Center in the Chicama Valley, Peru. J*ournal of Field Archaeology* 4:1-18.

Conrad, Geoffrey W., and Arthur A. Demarest
1984 *Religion and empire: The dynamics of Aztec and Inca expansionism*. Cambridge University Press.

Cook, Noble David
1981 *Demographic Collapse, Indian Peru, 1520-1620*. Cambridge Latin American Studies 41. Cambridge University Press, Cambridge, UK.

Costin, Cathy Lynn
1993 Textiles, women, and political economy in late prehispanic Peru. *Research in Economic Anthropology* 14: 3-28.
2011 Textiles and Chimú Identity under Inka Hegemony on the North Coast of Peru. In *Textile Economies Power and Value form the Local to the Transnational*, edited by Walter E. Little and Patricia A McAnany, pp.101-124. Society for Economic Anthropology No. 29, Altamira Press.
2015 The Cost of Conquest: Assessing the Impact of Inca Tribute Demands on the Wanka of Highland Peru. In *Surplus: The Politics of Production and the Strategies of Everyday Life*, edited by C.T. Morehart and K. De Lucia, pp. 45-71. University of Colorado Press, Boulder.

Costin, Cathy Lynne and Timothy Earle
1989 Status Distinction and Legitimation of Power as Reflected in Changing Patterns of Consumption in Late Prehispanic Peru. *American Antiquity* 54(4): 691-714.

Coupland, Gray
1979 *A survey of prehistoric fortified sites in the north highlands of Peru*. Master's Thesis. Department of Anthropology, Trent University.

Covey, Alan
2003 A processual study of Inka state formation. *Journal of Anthropological Archaeology* 22(4):333-357.
2008 The Inca Empire. In *Handbook of South American archaeology*, edited by Helaine Silverman and William Isbell, pp. 809-830. Springer, New York.
2015 Inka Imperial Interactions and Archaeological Realities in the Peruvian Highlands. In *The Inka Empire: A Multi-disciplinary Approach*, edited by Izumi Shimada. University of Texas Press, Austin.

Cusick, James G., ed
1998 *Studies in culture contact: interaction, culture change, and archaeology*. Center for Archaeological Investigations, Southern Illinois University, Cabondale.

Cutright, Robyn
2009 *Between the Kitchen and the State: Domestic Practice and Chimú Expansion in the Jequetepeque Valley, Peru.* Doctoral Dissertation, Department of Anthropology, University of Pittsburgh.
2013 Household ofrendas and community feasts: Ritual at a Late Intermediate Period Village in the Jequetepeque Valley, Peru. *Nawpa Pacha* 33(1): 1-21.
2015 Eating Empire in the Jequetepeque: A Local View of Chimú Expansion on the North Coast of Peru. *Latin American Antiquity* 26(1): 64-86.

Cutright, Robyn and Gabriela Cervantes

2011 *Informe de Investigaciones Temporada 2011*. Proyecto de Investigación Arqueológica Ventanillas. Submitted to Peru's Ministry of Culture.

D'Altroy, Terence
1992 *Provincial Power in the Inca Empire.* Smithsonian Institution Press, Washington D.C.

D'Altroy, Terence N. and Timothy Earle
1985 Staple Finance, Wealth Finance, and Storage in the Inka Political Economy. *Current Anthropology* 26(2): 187-206.

D'Altroy, Terence N. and Christine Hastorf, eds.
2001 *Empire and Domestic Economy*. Kluwer Academic/Plenum Publishers, New York.

Daggett, Cheryl
1983 Casma Incised pottery: an analysis of collections from the Nepeña Valley. In *Investigations of the Andean Past,* edited by Dan Sandweiss, pp 209-225. Cornell University Press, Ithaca.

Day, Kent
1973 *Architecture of Ciudadela Rivero, Chan Chan, Peru*. Doctoral Dissertation, Department of Anthropology, Harvard University.
1982 Ciudadelas: Their Form and Function. In *Chan Chan: Andean Desert City*, edited by M.E. Moseley and K. Day, pp. 55-66. University of New Mexico, Santa Fe.

Deagan, Kathleen
1996 Colonial Transformation: Euro-American Genesis in the Early Spanish-American Colonies. *Journal of Anthropological Research* 52(2): 135-160.
2001 Dynamics of imperial adjustment in Spanish America: ideology and social integration. In *Empires,* edited by S. Alcock et al., eds, pp. 179-194. Cambridge University Press, Cambridge.

DeHetre, Heather
1979 *Prehistoric settlement and fortifications patterns of La Libertad, Peru: an aerial photographic analysis.* Master's Thesis. Department of Anthropology, Trent University.

Demarest, Arthur and Geoffrey Conrad
1992 *Ideology and Pre-Columbian Civilizations.* School of American Research, Santa Fe.

Dietler, Michael

1998 Consumption, Agency and Cultural Entanglement: Theoretical Implications of a Mediterranean Colonial Encounter. In *Studies in Culture Contact: Interaction, Culture Change and Archaeology*, edited by James Cusick, pp 288-315. Center for Archaeological Investigations, Southern Illinois University, Carbondale.
2005 The archaeology of colonization and the colonization of archaeology: theoretical challenges from an ancient Mediterranean colonial encounter. In *The Archaeology of Colonial Encounters: Comparative Perspectives*, edited by Gil Stein, pp. 33-68. School of American Research Press, Santa Fe.

Dillehay, Tom D.
1976 *Competition and cooperation in a prehispanic multi-ethnic system in the Central Andes.* Doctoral Dissertation, Department of Anthropology, University of Texas, Austin
1977 Tawantinsuyu integration of the Chillon Valley, Peru: a case of Inca geo-political mastery. *Journal of Field Archaeology* 4(4): 397-405.
1979 Pre-hispanic resource sharing in the Central Andes. Science 204(4388) 24-31.
2013 Economic mobility, exchange and order in the Andes. In *Merchants, markets, and exchange in the Pre-Columbian world* edited by Kenneth Hirth and Joanne Pillsbury, pp. 283-308. Dumbarton Oaks Research Library and Collections, Washington D.C.

Dillehay, Tom D and Alan Kolata
2004 Long-term human response to uncertain environmental conditions in the Andes. *Proceedings of the National Academy of Sciences* 101.12: 4325-4330.

Donnan, Christopher
1976 Moche Art and Iconography. *UCLA Latin American Studies Series* 33:1-146.
1997 Deer hunting and combat: parallel activities in the Moche World. In *Spirit of Ancient Peru*, edited by K. Berin, pp. 51-59. Thames and Hudson, New York.
2010 Moche State Religion. In *New Perspectives on Moche Political Organization*, edited by Jeffrey Quilter and Luis Jaime Castillo, pp. 47-69. Dumbarton Oaks Research Library and Collections, Washington D.C.

Donnan, Christopher and Mackey, Carol
1978 *Ancient Burial Patterns in the Moche Valley*. University of Texas Press, Austin.

Donnan, Christopher and Donna McClelland
1999 *Moche Fineline Paintings: Its Evolution and Its Artists*. Fowler Museum, University of California, Los Angeles, Los Angeles.

Donnan, H. and T.M. Wilson, eds.
1994 Border Approaches: Anthropological Perspectives as Frontiers. University of America Press, Lanham, MD.

Donnan, H. and T.M. Wilson

1999 *Borders: Frontiers of Identity, Nation and State*. Berg, Oxford.

Doyle, Mary
1988 *The ancestor cult and burial ritual in seventeenth and eighteenth century Central*
Andes of Peru. Department of Anthropology. Doctoral Dissertation, University of California, Los Angeles.

Downey, Jordan
2015 *Statecraft in the Virú Valley, Peru in the First Millennium*. Ph.D. Dissertation, Department of Anthropology, University of Western Ontario.

Duviols, Pierre
2003 *Procesos y Visitas de Idolatrías. Cajatambo, siglo XVII*. Pontificia Universidad Católica del Peru-Fondo editorial, Instituto Francés de Estudios Andinos, Lima.

Earle, Timothy, C. and T. D'Altroy
1989 The Political Economy of the Inca Empire: The Archaeology of Power and Finance. *Archaeological Thought in America* 183-204.

Earle, Timothy, C. Hastorf, C. Scott, C. Costin, G. Russell, and E. Sandeful, and T. LeVine
1987 *Archaeological Field Research in the Upper Mantaro, Peru, 1982-1983*. Institute of Archaeology Monograph 28, University of California, Los Angeles.

Ekholm, K. and J. Friedman
1979 "Capital" imperialism and exploitation in ancient world systems. In *Power and Propaganda: A Symposium on Ancient Empires*, 41-58. Akademisk Forlag, Copenhagen.

Elson, CM and R.A. Convoy
2006 *Intermediate elites in pre-Columbian states and empires*. University of Arizona Press, Tucson.

Espinoza Soriano, Waldemar
1962 La incorporación del curacazgo de Huamachuco al Imperio de los Incas. In *Actas y Trabajos del II Congreso Nacional de Historia del Perú*. T.I, pp. 117-119, Lima.
1974 *La destrucción del imperio de los Incas: la rivalidad política y sensorial de los curacazgos andinos*. AMARU Ed, Lima.

Fariss, Barker
2012 *Exploring the social landscape of Cerro León: an Early Intermediate Period site on the north coast of Peru.* Doctoral Dissertation. Department of Anthropology. University of North Carolina, Chapel Hill.

Fariss, Barker, Chris Jochem, Brian Billman, Juliana Quist and Alicia Boswell
2007 Archaeological Survey and Assessment of Cerro Ramon: A Late Intermediate Period Site (1130-1200 AD) in the Upper Moche Valley, North Coast, Peru. Poster presented at the 72nd Annual Meeting for Society for American Archaeology, Austin, Tx.

Feltham, Jane
1983 *The Lurin Valley, Peru, AD 1000-1532*. Doctoral Dissertation. University of London.

Fried, Morton
1967 *The Evolution of Political Society*. New York: Random House.

Ford, J.A. and G.R. Willey
1949 *Surface survey of the Viru valley, Peru*. American Museum of Natural History, New York.

Fung, Rosa and Carlos Williams
1977 Exploraciones y excavaciones en el Valle de Sechin, Casma. *Revista del Museo Nacional* XLIII: 111-155.

Gagnon, Celeste Marie
2006 *Daily Life and the development of the state in the Moche Valley of north coastal Perú; a boiarchaeological analysis*. Doctoral Dissertation. Department of Anthropology, University of North Carolina, Chapel Hill.
2008 Bioarchaeological investigations of pre-state life at Cerro Oreja. In *Arqueologia Mochica, nuevos enfoques*, edited by L.J. Castillo, H. Bernier, G. Lockard, and J. Rucabado, pp. 173-185. Fondo Editorial de la Pontifica Universidad Católica del Perú, Lima.

Gagnon, Celeste Marie, Brian Billman, Jose Carcelén and Karl J. Reinhard
2013 Tracking Shifts in Coca Use in the Moche Valley: Analysis of Oral Health Indicators and Dental Calculus Microfossils. *Ñawpa Pacha* 33(2): 193-214.

Gagnon, Celeste and Christopher Wiesen
2013 Using general estimating equations to analyze oral health in the Moche Valley of Perú. *International Journal of Osteoarchaeology* 23(5): 557-552.

Galvez Mora, Cesar A., J. Juan Castañeda Murga, y Rosario M. Beccera Urteaga.
1994 Caracoles terrestres: 11,000 años de tradición alimentaria en la costa norte del Perú. In *Cultura Identitdad y Cocina*, edited by Rosario Olivas Weston. Universidad San Martin de Porres, Lima.

Garcilazo de la Vega, I.

1960 *Comentarios Reales de los Incas*. Atlas, Madrid, vol. 133-135.
1966 *Royal Commentaries of the Incas and General History of Peru*. Trans. by HV Livermore, 2.

Gasco, Janine
2005 Spanish colonialism and processes of social change in Mesoamerica. In *The Archaeology of Colonial Encounters,* edited by Gil Stein, pp. 69-108. School of American Research Press, Santa Fe, NM.

Gamboa Velasquez, Jorge
2015 *Archaeological Heritage in a Modern, Urban Landscape: The Ancient Moche in Trujillo, Peru.* Springer Press, New York.

Gero, Joan
1992 Feasts and females: Gender ideology and political meals in the Andes. *Norwegian Archaeological Review* 25, no. 1 (1992): 15-30.

Gillin, John
1947 *Moche: A Peruvian Coastal Community*. Institute of Social Anthropology, No. 3. Smithsonian Institution, Washington D.C.

Giersz, Milos
2014 Wari Imperial mausoleum at El Castillo de Huarmey. Paper Presented in Integrating Recent Advances in the Mortuary and Bio-Archaeology of the Middle Horizon Period (AD 500-1000) in the South Central Andes, Sarah Baitzel and Nicola Sharratt, chairs. Society for American Archaeology 79th Annual Meeting April 25, 2014.

Godelier, M.
1977 *Perspectives in Marxist Archaeology*. Cambridge University Press.

Goldstein, Paul S.
2005 *Andean Diaspora*. Gainesville: University of Florida Press.

Green, Stanton W. and Stephen M. Perlman, eds.
1985 *The Archaeology of Frontiers and Boundaries*. Academic Press, New York.

Guaman Poma de Ayala, Felipe
1980[1615} *El primer nueva crónica y buen gobierno*. Edited by Juan V. Murra and Rolena Adorno, eds. Trans. by Jorge L. Urioste. 3 Vol. Siglo XXI, Mexico City.

Guy, D.J. and T.E. Sheridan, eds.
1998 *Contested Ground: Comparative Frontiers on the Northern and Southern Edges of the Spanish Empire*. University of Arizona Press, Tucson.

Haley, Shawn
1979 *Late Intermediate period settlement patterns on the Carabamba Plateau, northern Peru.* Master's Thesis. Department of Anthropology, Trent University.

Hall, Thomas D.
2000 Frontiers, Ethnogenesis, and World-Systems: Rethinking the Theories. In *A World-Systems Reader: New Perspectives on Gender, Urbanism, Cultures, Indigenous Peoples, and Ecology,* edited by T.D. Hall, 237-270. Rowman & Littlefield Publishers, Inc., United Kingdom.

Hart, Elizabeth
1988 *Prehispanice Political Organization of the Peruvian North Coast. Doctoral Dissertation.* Department of Anthropology, University of Michigan, Ann Arbor.

Hassig, Ron
1992 *War and Society in Ancient Mesoamerica*. Berkeley: University of California Press.

Hastorf, Christine A.
1987 Archaeological evidence of coca (Erythroxylum coca, erythroxylaceae) in the upper mantaro valley, Peru. *Economic Botany* 41.2, 292-301.

Hastorf and D'Altroy 2001
2001 The Domestic Economy, Households, and Imperial Transformation. In *Empire and Domestic Economy*, edited by D'Altroy and Hastorf, pp. 3-25. Kluwer Academic/Plenum Publishers, New York.

Hayashida, Frances
1995 *State pottery production in the Inka provinces.* Doctoral Dissertation, Department of Anthropology, University of Michigan, Ann Arbor.
1998 New insights into Inka pottery production. *MASCA Research Papers in Science and Archaeology* 15 (1998): 313-338.
1999 Style, Technology, and State Production: Inka Pottery Manufacture in the Leche Valley, Peru. *Latin American Antiquity* 10(4): 337-352.

Hayashida, Frances and Natalia Guzman
2015 Reading the Material Record of Inka Rule: Style, Polity, and Empire on the North Coast of Peru. In *The Inka Empire: A Multidisciplinary Approach*, edited by Izumi Shimada, pp. 287-306. University of Texas Press, Austin.

Heggarty, Paul
2008 Linguistics for Archaeologists: A Case Study in the Andes. *Cambridge Archaeological Journal* 18(1): 35-56.

Helmer, Matthew

2015 *The archaeology of an ancient seaside town: performance and community at Samanco, Nepeña Valley* (ca 500-1 BC). Archaeopress, Oxford, England.

Heyerdahl, Thor, Daniel H. Sandweiss, and Alfredo Narváez
1995 *Pyramids of Tucume: the quest for Peru's forgotten city*. Thames and Hudson.

Hirth, Kenneth
2016 *Aztec Economic World*. Cambridge University Press, Cambridge.

Hirth, Kenneth and Joanne Pillsbury, eds.
2013 *Merchants, markets, and exchange in the Pre-Columbian world*. Dumbarton Oaks Research Library and Collection, Washington D.C.

Holdridge, Leslie R.
1967 *Life Zone Ecology.* Tropical Science Center, San Jose, Costa Rica.

Hogg, Alan G, Quan Hua, Paul G. Blackwell, Mu Niu, Caitlin E. Buck, Thomas P. Guilderson, Timothy P. Heaton, Jonathan G. Palmer, Paula J. Reimer, Ron W. Reimer, Chris S.M. Turney, Susan R.H. Zimmerman
2013 SHCal13 Southern Hemisphere calibration 0-50,000 years calBP. *Radiocarbon* 55(4): 1889-1903.

Hyslop, John
1984 *The Inka Road System*. Academic Press.
1990 *Inka Settlement Planning*. University of Texas Press, Austin.

Indriati, Etty
1998 *A Dental Anthropological Approach to Coca-Leaf Chewing in the Andes*. PhD. Dissertation. Department of Anthropology, University of Chicago.

Isbell, William
1977 *The Rural Foundation for Urbanism: Economic and Stylistic Interaction between Rural and Urban Communities in Eighth-century Peru.* Urbana, Ill: University of Illinois Press.
1997 *Mummies and mortuary monuments: a postprocessual prehistory of Central Andean social organization*. University of Texas Press, Austin.

Isbell, William and Gordon F McEwan, eds.
1991 *Huari Administrative Structure: Prehistoric Monumental Architecture and State Government.* Dumbarton Oaks Research Library and Collection, Washington D.C.

Jackson, Margaret
2004 The Chimú Sculptures of Huacas Tacaynamo and El Dragon, Moche Valley, Perú. *Latin American Antiquity* 15: 298-322.

Jennings, Justin, ed.
2010 *Beyond Wari Walls: Regional Perspectives on Middle Horizon Peru*. University of New Mexico Press, Albuquerque.

Jochem, Warren Christopher
2007 *Cerro Ramon: Archaeological Investigations at the Environmental and Political Border of the Chimú Empire.* Honors Thesis. Department of Geography, University of North Carolina, Chapel Hill.

Julien, Catherine
1988 How the Inca Decimal Administration Worked. *Ethnohistory*. 35(3): 257-279.
1998 Coca production on the Inca frontier: the yungas of Chuquioma. *Andean Past* 5: 129-160.

Kaulicke, Peter.
1992 Moche, Vicús-Moche y el mochica temprano. *Boletín del Instituto Francés de Estudios Andinos* 21.3: 853-903.

Keatinge, Richard
1973 *Chimú Ceramics from the Moche Valley, Peru: A Computer Application to Seriation.* Doctoral Dissertation. Department of Anthropology, Harvard University.
1974 Chimú Rural Administrative Centres in the Moche Valley, Peru. *World Archaeology* 6(1): 66-82.
1975 Urban Settlement Systems and Rural Sustaining Communities: An Example from Chan Chan's Hinterland. *Journal of Field Archaeology* 2(3): 215-227.

Keatinge, Richard and Richard Conrad
1983 Imperialist Expansion in Peruvian Prehistory: Chimú Administration of a Conquered Territory. *Journal of Field Archaeology* 19(3): 255-283.

Keatinge, Richard and Kent C. Day
1973 Socio-economic organization of the Moche Valley, Peru, During the Chimú Occupation of Chan Chan. *Journal of Anthropological Research* 29(4): 275-295.

Kent, Susan, ed.
1990 *Domestic Architecture and the Use of Space: an interdisciplinary cross-cultural study.* New York: Cambridge University Press.

Klaus, Haagen
2008 *Out of Light Came Darkness: Bioarchaeology of Mortuary Ritual, Health, and Ethnogenesis in the Lambayeque Valley Complex, North Coast Peru, AD 900-1750.* Doctoral Dissertation. Department of Anthropology, Ohio State University, Columbus.

Klymyshyn, Alexandra Maria Ulana
1976 *Intermediate architecture, Chan Chan, Peru*. Doctoral Dissertation. Department of Anthropology, Harvard University.
1982 Elite compounds in Chan Chan. In *Chan Chan: Andean Desert City* edited by Michael E. Moseley and Kent C. Day, pp. 119-144. University of New Mexico Press, Albuquerque..

Kolata, Alan
1978 *Chan Chan: the form of the city in time*. Doctoral Dissertation, Department of Anthropology, Harvard University.
1990 The urban concept of Chan Chan. In *The Northern Dynasties: Kingship and Statecraft in Chimor*, edited by M. Moseley and A. Cordy-Collins, pp. 107-144. Dumbarton Oaks Research Library and Collections, Washington D.C.

Kolata, Alan L., Michael W. Binford, Mark Brenner, John W. Janusek, and Charles Ortloff.
2000 Environmental thresholds and the empirical reality of state collapse: A response to Erickson (1999). *Antiquity* 74, no. 284: 424-426.

Koons, Michele
2012 *Moche Geopolitics Networks and the Dynamic Role of Licapa II, Chicama Valley, Peru*. Doctoral Dissertation. Department of Anthropology, Harvard University.
2015 Moche Sociopolitical Dynamics and the Role of Licapa II, Chicama Valley, Peru.
Latin American Antiquity 26(4): 473-92.

Koons, Michele L., and Bridget A. Alex.
2014 Revised Moche Chronology based on Bayesian Models of reliable radiocarbon dates. *Radiocarbon* 56(3):1-17.

Kosok, Paul
1965 *Life, Land, and Water in ancient Peru*. Long Island University Press, New York.

Kremkau, Scott
2010 *Late Horizon Imperial Landscapes in the Jequetepeque Valley, Peru.* Doctoral Dissertation, Department of Anthropology, Columbia University.
2011 Late Horizon Sites in the Chaman Valley. In *From State to Empire in the Prehistoric Jequetpeque Valley, Peru* edited by Colleen M. Zori and Ilana Johnson, pp. 179-192, BAR International Series 2310, United Kingdom.

Kroeber, Alfred
1944 *Peruvian archaeology in 1942.* Viking Fund Publications in Anthropology No. 4 Wenner-Gren Foundation for Anthropological Research, New York.

Krzanowski, Andrzej
1986 The Cultural Chronology of Northern Andes of Peru (The Huamachuco-Quiruvilca-Otuzco Region). *Acta Archaeologeca Carpathica* XXV, 231-263
2006 *Sitios Arqueológicos en al Región de Alto Chicama, Perú.* Corpus Antiquitatum Americanensium Pologne III. Académie Polonaise des Sciences et des Lettres.

Kus, James
1972 *Selected Aspects of irrigated agriculture in the Chimu heartland, Peru*. Doctoral Dissertation, Department of Anthropology, University of California, Los Angeles.
1984 The Chicama-Moche canal: Failure or success? An alternative explanation for an incomplete canal. *American Antiquity* 49(2): 408-415.

Lambert, Patricia, Celeste Gagnon, Brian R. Billman, M. Anne Katzenberg, Jose Carcelén, and Robert H. Tykot
2012 Bone chemistry at Cerro Oreja: A stable isotope perspective on the development of a regional economy in the Moche valley, Perú. *Latin American Antiquity* 23(2): 144-166.

Larco Hoyle, Rafael
1948 *Cronología arqueológica del norte del Perú*. Sociedad Geográfica Americana.
2001 *Los mochicas*. 2 vols. 2nd ed. Lima: Museo Arqueológico Rafael Larco Herrera.

Lau, George
2002 Feasting and Ancestor Veneration at Chinchawas, North Highlands of Ancash, Peru. *Latin American Antiquity* 13(3): 279-304.
2008 Ancestor Images in the Andes. *Handbook of South American Archaeology*, Silverman and Isbell, eds, New York, Springer, 1027-1045.
2010 *Ancient community and economy at Chinchawa*s. Yale University Publications in Anthropology, Number 90. Yale University Press, New Haven.
2012 Intercultural Relations in Northern Peru: The North Central Highlands during the Middle Horizon. In *Los Rostros de Wari: Perspectivas Interregionales Sobre el Horizonte Medio*, edited by Luis Jaime Castillo and Justin Jennings, pp. 23-51. Boletin de Arqueología No. 16. PUCP, Lima.

Lechtman, Heather and Michael E. Moseley
1975 The Scoria at Chan Chan: Non-Metallurgical Deposits. *Ñawpa Pacha* 10-12 (1972-1974): 135-185.

Lightfoot, Kent
2005 *Indians, Missionaries, and Merchants: The Legacy of Colonial Encounters on the California Frontiers*. University of California Press, Berkeley.

Lightfoot, Kent and Antoinette Martinez

1995 Frontiers and Boundaries in Archaeological Perspective. *Annual Review of Anthropology* 24:471-92.

Lightfoot, Kent G., Antoinette Martinez, and Ann M. Schiff.
1998 Daily practice and material culture in pluralistic social settings: an archaeological study of culture change and persistence from Fort Ross, California. *American Antiquity* 63(2):199-222.

Lockard, Gregory
2009 The Occupational History of Galindo, Moche Valley, Peru. *Latin American Antiquity* 20(2): 279-302.

Lujan, Alfredo Cabeza
2009 El Culle: Evidencias de una Antigua lengua norperuana. *Revista del Museo de Arqueoloía, Antropología, e Historia* 11: 309-314.

Lumbreras, Luis Guillermo.
1974 *The peoples and cultures of ancient Peru*. George Braziller.

Luttwak, E.
1976 *The Grand Strategy of the Roman Empire from the First Century A.D. to the Third*. John Hopkins University Press, Baltimore.

Mackenzie, Janet
1980 *Coast to highland trade in pre-Columbian Peru: dendritic economic organization in the North Sierra. Master's Thesis*. Department of Anthropology, Trent University.

Mackey, Carol
2003 La Transformación Socioecónomica de Farfan Bajo el Goberino Inka. *In Identidad y Transformaciónen el Tahuantinsuyu y en los Andes Coloniales. Perspectivas Arqueológicas y Etnohistóricas* (Segunda parte), edited by Peter Kaulicke, Gary Urton, and Ian Farmington, pp. 321-353. Boletín de Arqueologia PUCP 7, Lima.
2006 Elite residences at Farfán: a comparison of the Chimú and Inka occupations. In *Palaces and Power in the Americas: From Peru to the Northwest Coast,* edited by Jessica Joyce Christie and Patricia Joan Sarro, pp. 313-352. University of Texas Press, Austin,
2009 Chimú Statecraft in the Provinces. In *Andean Civilizations: Papers in Honor of Michael Moseley*, edited by J. Marcus and P.R. Williams, pp. 325-350. Monograph 63, Cotsen Institute of Archaeology, University of California, Los Angeles.
2010 The Socioeconomic and Ideological Transformation of Farán under Inka Rule. In *Distant Provinces in the Inka Empire*, edited by Michael A. Malpass and Sonia Alconini, pp. 221-259. University of Iowa Press, Iowa City.

Mackey, Carol and César Jáuregui
2004 *Informe Preliminar de Proyecto Arqueológico Farfan*. Instituto Nacional de Cultura, Perú, Lima.

Mackey, Carol and Ulana Klymyshyn
1990 The Southern Frontier of the Chimú Empire. In *The Northern Dynasties: Kingship and Statecraft in Chimor*, edited by Michael E. Moseley and Alana Cordy-Collins, 195-226. Dumbarton Oaks Library and Collections, Washington D.C.

Malpass, Michael
1993 *Provincial Inca: Archaeological and ethnohistorical assessment of the impact of the Inca State*. University of Iowa Press, Iowa City.

Malpass, Michael A. and Sonia Alconini, eds.
2010 *Distant provinces in the Inka Empire: toward a deeper understanding of Inka imperialism*. University of Iowa Press, Iowa City

Mann, Michael
1986 *The Sources of Social Power*. Cambridge University Press, Cambridge.

Mantha, Alexis
2009 Territoriality, social boundaries and ancestor veneration in the central Andes of Peru. *Journal of Anthropological Archaeology* 28(2): 158-176.

Marcone, Giancarlo and Enrique Lopez-Hurtado
2015 Dual Strategies of the Rural Elites: Exploring the Intersection of Regional and Local Transformations in the Lurin Valley, Peru. *Latin American Antiquity 26(3):401-420.*

Marcus, Joyce and Jorge E. Silva
1988 Part I. In *Conflicts over Coca Fields in XVIth-Century Peru*. Number 21. Memoirs of the Museum of Anthropology University of Michigan, Ann Arbor.

Masuda, S. Izumi Shimada, and Craig Morris
1982 *Andean Ecology and Civilization: An Interdisciplinary Perspective on Andean Ecological Complementarity*. University of Tokyo Press, Tokyo.

Mattingly, D.J., ed.
1997 Dialogues in Roman Imperialism. Power, Discourse and Discrepant Experience in the Roman Empire. *Journal of Roman Archaeology* (Supplementary Series 23), Portsmouth, R.I.

McClelland, Donna, Don McClelland and Christopher Donnan

2007 *Moche Fineline Painting from San José de Moro*. Cotsen Institute of Archaeology, University of California, Los Angeles, Los Angeles.

McCown, Theodore
1945 *Pre-Incaic Huamachuco: Survey and Excavations in the Region of Huamachuco and Cajabamba.* University of California Publications in American Archaeology and Ethnology 39(4): 223-400.

Melly, Alfredo
1983 Informe final de los trabajos realizados por el Proyecto Arqueológico Loma del Shingo: Un Sitio Chimú fortificado en la Valle de Moche. Tesis, Programa Academico de Ciencias Sociales, Universidad Nacional de Trujillo.

Menzel, Dorothy
1977 *The archaeology of ancient Peru and the work of Max Uhle*. R.H. Lowie Museum of Anthropology, University of California, Berkeley.

Millaire, Jean-Francios and Magali Morlion, eds.
2009 *Gallinazo: An Early Cultural Tradition on the Peruvian North Coast*. Cotsen Institute of Archaeology Press, Vol 66, University of California, Los Angeles.

Montoya Zavaleta,
2004 *Javier Pulgar Vidal. Yachaq Yachacheq, el sabio que enseña*. Universidad Alas Peruanas, Lima.

Moore, Jerry D.
1985 *Household Economics and Political Integration: The Lower Class of the Chimu Empire.* Doctoral Dissertation. Department of Anthropology, University of California, Santa Barbara.
1988 Prehistoric Raised Field Agriculture in the Casma Valley, Peru. *American Anthropologist* 15(3):265-276.
1989 Pre-Hispanic Beer in Coastal Peru: Technology and Social Context of Prehistoric Production. *American Anthropologist* 91(3): 682-695.
1991 Cultural Responses to Environmental Catastrophes: Post-El Niño Subsistence on the Prehistoric North Coast of Peru. *Latin American Antiquity* 2(1): 27-47.
1992 Pattern and Meaning in Prehistoric Peruvian Architecture: The Architecture of Social Control in the Chimu State. *Latin American Antiquity* 3(2): 95-113.
1996a *Architecture and Power in the Ancient Andes: The archaeology of public buildings*. Cambridge University Press, Cambridge.
1996b The Archaeology of Plazas and the Proxemics of Ritual. *American Anthropologist* 98(4): 789-802.
2004 The Social Basis of Sacred Spaces in the Prehispanic Andes: Ritual Landscapes of the Dead in Chimú and Inka Societies. *Journal of Archaeological Method and Theory.* 11(1): 83-124.

2006 Copper metallurgy in a prehistoric household, Casma Valley, Peru. *Ñawpa Pacha* 28: 141-149.

Moore, Jerry D, Bernardino Olaya Olaya, and A. Wilson Puell Mendoza.
1997 Investigaciones del Imperio Chimú en el valle de Tumbes, Perú. *Revista del Museo de Arqueología, Antropología, e Historia* 7: 173-184. Universidad Nacional de Trujillo, Perú.

Moore, Jerry D and Carol Mackey
2008 The Chimú Empire. *Handbook of South American Archaeology*, edited by Helaine Silverman and William Isbell, pp. 783-807. Springer Press, New York.

Morris, Craig
1970 Huánuco Viejo: An Inca administrative center. *American Antiquity* 35(3): 344-362.
1972 State settlements in Tawantinsuyu: a strategy of compulsory urbanism. *Contemporary Archaeology* 393-401.

Morris, Craig and Alan Covey
2006 The Management of Scale of the Creation of Scale: Administrative Processes in two Inka Provinces. In *Intermediate Elites in Pre-Columbian States and Empires*, edited by C. Elson and R. Covey, pp. 136-153. University of Arizona Press, Tucson.

Morris, Craig and Donald E. Thompson
1985 *Huánuco Pampa: an Inca city and its hinterland.* Thames and Hudson.

Morrison, Kathleen
2001 Coercion, resistance, and hierarchy: local processes and imperial strategies in the Vijayanagara Empire. In *Empires,* edited by S. Alcock, et al, pp. 252-278. Cambridge University Press, Cambridge.

Moseley, Michael
1975 Chan Chan: Andean alternative of the preindustrial city. *Science* 4173: 219-225.
1990 Structure and History in the Dynastic Lore of Chimor. In *The Northern Dynasties: Kingship and Statecraft in Chimor*, edited by M.E. Moseley and A. Cordy-Collins, pp. 1-42. Dumbarton Oaks Research Library and Collections, Washington D.C.
1992 *The Incas and their ancestors: the archaeology of Peru*. Thames and Hudson, London.

Moseley, Michael and Alana Cordy-Collins, eds.
1990 *The Northern Dynasties: Kingship and Statecraft in Chimor*. Dumbarton Oaks Research Library and Collections, Washington D.C.

Moseley, Michael and Kent Day, eds.
1982 *Chan Chan: Andean Desert City*. University of New Mexico Press, Albuquerque.

Moseley, Michael and Eric Deeds
1982 The land in front of Chan Chan: agrarian expansion, reform, and collapse in the Moche Valley. In *Chan Chan: Andean Desert City*, edited by Michael E. Moseley and Kent C. Day, pp. 25-53. University of New Mexico Press, Albuquerque.

Moseley, Michael, Christopher Donnan, David Keefer.
2008 Convergent Catastrophe and the Demise of Dos Cabezas. In *The Art and Archaeology of the Moche: An Ancient Andean Society of the Peruvian North Coast* edited by Steve Bourget and Kimberly Jones, pp. 81-91. University of Texas Press, Austin.

Mullins, Patrick
2012 *Fortaleza de Quirihuac: A Chimú Fortress in the Middle Moche Valley*. Undergraduate Honors Thesis. Department of Anthropology, University of North Carolina, Chapel Hill.

Mujica, Elias
1975 *Excavaciones arqueológicas en Cerro de Arena: un sitio del formativo superior en el Valle del Moche, Perú*. B.S. thesis, Pontifica Universidad Católica del Peru.

Murra, John
1968 An Aymara Kingdom in 1567. *Ethnohistory* April 115-151.
1972 "El control vertical" de un máximo de pisos ecológicos en la economía de las sociedades andinas. In *Provincia de Léon de Huanuco en 1562. Iñigo Ortiz de Zuñiga, Visitador,* edited by J. Murra, Vol. 2: 427-476. Universidad Nacional Hermilio Valdizán, Huánuco, Perú.
1980[1955] *The Economic Organization of the Inca State*. Doctoral Dissertation, University of Chicago.
1982 The cultural future of the Andean majority. In *The prospects for plural societies,* D. Maybury-Lewis, ed. Proceedings of the American Ethnological Society, Washington D.C.
1985 The limits and limitations of the 'vertical archipelago' in the Andes. In *Andean Civilization and Ecology*, edited by I. Shimada and S. Mazuda, pp. 15-42. University of Tokyo Press, Tokyo.

Nair, Stella, and Jean-Pierre Protzen.
2015 The Inka Built Environment. In *The Inka Empire: a multidisciplinary approach* edited by Izumi Shimada, pp. 215-232. University of Texas Press, Austin.

Nash, Donna and Patrick Ryan Williams
2004 Architecture and power on the Wari–Tiwanaku frontier. In *Archaeological Papers of the American Anthropological Association* 14(1): 151-174.

Nesbitt, Jason
2012 *Excavations at Caballo Muerto: An Investigation into the Origins of the Cupisnique Culture*. Doctoral Dissertation, Department of Anthropology, Yale University.

Neff, Hector
1994 RQ-Mode Principal Components Analysis of Ceramic Compositional Data *Archaeometry* 36(1): 115-130.

Netherly, Patricia
1977 *Local Level Lords on the North Coast of Peru*. Doctoral Dissertation. Department of Anthropology, Cornell University
1984 The Management of Late Andean Irrigation Systems on the North Coast of Peru. *American Antiquity* 49(2): 227-254.
1990 Out of Many, One: The Organization of Rule in the North Coast Polities. In *The Northern Dynasties: Kingship and Statecraft in Chimor,* edited by M. Moseley and A. Cordy-Collins, pp. 461-487. Dumbarton Oaks Library and Collections, Washington D.C.
1998 El reino de Chimor y el Tawantinsuyu. In *La Frontera del Estado Inca*, edited by T.D. Dillehay and P. Netherly, pp. 85-105. Fundacion alexander von Humboldt and ABYA/YALA, 2nd edition, Quito.

ONERN
1973 *Inventario, Evaluación y Uso Racional de los Recursos Naturales de la Costa: Cuenca del Rio Moche*. Oficina Nacional de Evaluación de Recursos Naturales, Lima.

Ortloff, Charles, Michael Moseley, and Robert Feldman
1982 Hydraulic engineering aspects of the Chimu Chicama-Moche Intervalley Canal. *American Antiquity* 47: 572-595
1983 The Chicama-Moche Intervalley Canal: Social Explanations and Physical Paradigms. *American Antiquity* 48: 375-389.
1985 Hydraulic engineering and historical aspects of the pre-Columbian intravalley canal systems of the Moche Valley, Peru. *Journal of Field Archaeology* 12.1: 77-98.

Ossa, Paul
1973 *The preceramic lithic occupation of the Moche Valley, Perú*. Doctoral Dissertation, Department of Anthropology, Harvard University.

Pacifico, David

2014 *Neighborhood Politics: Diversity, Community, and Authority at El Purgatorio, Peru*. Doctoral Dissertation, Department of Anthropology, University of Chicago.

Paredes, Juan, Berenice Quintana, and Moisés Linares
2000 Tumbas de la Época Wari en el Callejón de Huaylas, Ancash. *Boletín de Arqueologia PUCP* 4:253-288.

Parker, Bradley
2006 Toward an Understanding of Borderland Processes. *American Antiquity* 71(1): 77-100.

Pease, Franklin
1982 The Formation of Tawantinsuyu: Mechanisms of Colonization and Relationship with Ethnic Groups. In *The Inca and Aztec States, 1400-1800: Anthropology and History*, edited by G.A. Collier, R. Rosaldo, and J.D. Wirth, pp. 173-198. Academic Press, New York.

Pillsbury, Joanne
1993 *Sculpted friezes of the empire of Chimor*. Doctoral Dissertation. Department of Art and Architecture. Department of Art History and Archaeology, Columbia University.
2001 *Moche art and archaeology in ancient Peru*. National Gallery of Art, Washington D.C.

Pillsbury, Joanne and Banks L. Leonard
2004 Identifying Chimú Palaces: Elite Residential Architecture in the Late Intermediate Period. *Palaces of the Ancient New World*, edited by Susan Toby Evans and Joanne Pillsbury, pp. 247-298. Dumbarton Oaks Research Library and Collections, Washington D.C.

Pillsbury, Joanne and Lisa Trever
2008 The king, the bishop, and the creation of an American antiquity. *Ñawpa Pacha* No. 29, pp. 191-219.

Plog, Stephen
1985 Estimating Vessel Orifice Diameters: Measurement Methods and Measurement Error. In *De-coding Prehistoric Ceramics*, edited by B. Nelson, pp. 243-253. Southern Illinois University Press, Carbondale.

Ponte, Victor.
2000 Transformación Social y Política en Callejón de Huaylas, Siglos III-X D.C. In *Boletín de Arqueología PUCP* 4: 219-251.
2013 *Arqueología en la Cordillera Negra del Callejon de Huaylas Peru: Area de la Influencia Mina Pierina*. Surco: Minera Barrick Misquichilca

Pozorski, Sheila
1976 *Prehistoric Subsistence patterns and site economics in the Moche Valley, Peru*. Ph.D. Dissertation Department of Anthropology, University of Texas at Austin.
1982 Subsistence systems in the Chimú state. In *Chan Chan: Andean Desert City,* edited by Michael E. Moseley and Kent C. Day, pp. 177-196. *University of New Mexico Press, Albuquerque*.

Pozorski, Sheila and Thomas Pozorski
1979 An Early Subsistence Exchange System in the Moche Valley, Peru. *Journal of Field Archaeology 6*(4): 413-432.

Pozorski, Thomas
1976 *Caballo Muerto: a complex of early ceramic sites in the Moche Valley, Peru*. Doctoral Dissertation. Department of Anthropology, University of Texas.
1987 Changing Priorities within the Chimú state: the role of irrigation agriculture. In *The Origins and Development of the Andean State*, edited by J. Haas, S. Pozorski, and T. Pozorski. Cambridge University Press, Cambridge.

Pozorski, Tom and Pozorski Sheila
1982 Reassessing the Chicama-Moche Intervalley Canal: Comments on "Hydraulic Engineering Aspects of the Chimu Chicama-Moche Intervalley Canal." *American Antiquity* 45(4): 851-868.
2003 The impact of the El Niño Phenomenon on prehistoric Chimú irrigation systems of the Peruvian Coast. In *El Niño in Peru: biology and culture over 10,000 years,* edited by Jonathan Haas and Michael O. Dillon, pp. 71-89. FIELDIANA Botany New Series 43, Field Museum of Natural History, Chicago.
2006 Prehistoric Chimú irrigation strategies on the Peruvian north coast. *Kay Pacha: cultivating earth and water in the Andes*, edited by Penelope Dransart, pp.171-184. BAR International Series 1478.

Prieto, O. Gabriel Burmeister
2008 Ceramica Utilitaria Chimú de San Jose de Moro: Tipología de Formas y Modelos Interpretativos. *Revista del Museo de Arqueología, Antropología e Historia* 10: 111-154.
2009 Tres Aspectos Etnograficos del Pueblo de Huanchaco. *Revista del Museo de Arqueología, Antropología e Historia* 11: 277-306
2014 The Early Initial Period Fishing Settlement of Gramalote, Moche Valley: A Preliminary Report. *Peruvian Archaeology* 1: 1-46.

Prieto, O. Gabriel Burmeister, Nicolás Goepfert, and Katia Valladares.
2014 Camélidos Jóvenes durante el Intermedio Tardío en la periferia de Chan Chan, Valle de Moche, Costa Norte del Peru. *Arqueología y Sociedad* 27.

Protzen, Jean-Pierre
1983 Inca quarrying and stonecutting. *Ñawpa Pacha* 21(1):183-214.
1993 *Inca Architecture and Construction at Ollantaytambo*. Oxford University Press, New York.

Proulx, Donald
1973 *Archaeological Investigations in the Nepeña Valley, Peru*. Research Report No. 13. University of Massachusetts, Department of Anthropology.
1982 Territoriality in the Early Intermediate Period: The Case of Moche and Recuay. *Ñawpa Pacha* 20, 83-96.

Quilter, Jeffrey and Luis Jaime Castillo, eds.
2010 *New Perspectives on Moche Political Organization*. Dumbarton Oaks Library and Collections, Washington D.C.

Quilter, Jeffrey and Michele Koons
2012 The Fall of the Moche: A Critique of Claims for South American's First State. *Latin American Antiquity* 23(2): 127-143.

Quilter, Jeffrey, Marc Zender, Karen Spalding, Regulo Franco Jordan, Cesar Galvez Mora, and J. Castañeda Murga
2010 Traces of a Lost Language and Number System Discovered on the North Coast of Peru. *American Anthropologist* 112(3): 357-369.

Ramirez, Susan
1985 Social Frontiers and the Territorial Base of Curacazgos. In *Andean Civilization and Ecology*, edited by I. Shimada and S. Mazuda, pp. 432-442. University of Tokyo Press, Tokyo.
1986 *Provincial Patriarchs: Land Tenure and the Economics of Power in Colonial Peru,* University of New Mexico Press, Albuquerque.
1990 The Inca Conquest of the North Coast: A Historian's View. In *The Northern Dynasties: Kingship and Statecraft in Chimor.* M. Moseley and A. Cordy-Collins, eds. pp. 507-538. Dumbarton Oaks Research Library and Collections, Washington D.C.
1996 *The World Upside Down: Cross Cultural Contact and Conflict in Colonial Peru,* Stanford University Press, Stanford.

Ramirez-Horton, Susan
1981 La organización economica de la Costa Norte. In *Etnohistora y antropologia Andina*, edited by Amalia Castelli, MM de Pease, pp. 181-197. Museo Nacional de Historia, Lima, Peru
1982 Retainers of the Lords or Merchants: A Case of Mistaken Identity? in *El hombre y su ambiente en los Andes Centrales,* edited by Luis Millones and Hiroyasu Tomoeda, pp. 123-136. Senri Ethnological Studies, No. 10, Osaka, Japan.

Ravines, Rogger
1980 *Chan Chan: metropoli Chimú.* Instituto de Estudios Peruanos: Instituto de Investigación Tecnológica Industrial y de Normas Técnicas, Lima.
1986 *Arte rupestre del Perú: inventario general*. Instituto Nacional de Cultura.

Ringberg, Jennifer
2012 *Daily Life at Cerro Leon: An Early Intermediate Period Highland Settlement in the Moche Valley, Peru*. Department of Anthropology, University of North Carolina, Chapel Hill. Ph.D. Dissertation.

Rodbell, Donald T., Geoffrey O. Seltzer, David M. Anderson, Mark B. Abbott, David B. Enfield, and Jeremy H. Newman.
1999 An ~15,000-year record of El Niño-driven alluviation in southwestern Ecuador. *Science* 283, no. 5401, pp. 516-520.

Rodning, Christopher
2010 Place, landscape, and environment: anthropological archaeology in 2009. *American Anthropologist* 112(2): 180-190.

Rodriguez, E. Rodriguez, J. Briceño Rosario, B. Billman, A. Boswell, María A. Morillo Horna, K.L. Monzon Licera, K. Burgos Inca, L.A. Bernabé Salomón, C.F. Ramirez Obeso and J.M. Lujan Rojas.
2012 Avances en el studio de la flora de Collambay (Simbal, Trujillo, La Libertad, Perú) y la descripción de una especial nueva especie de Ipomoea (Convolvulaceae). Paper presented at XIV Congreso Nacional de Botánica, Trujillo, Peru, October 2012.

Rodseth, L and B. Parker, eds.
2005 Theoretical Considerations in the Study of Frontiers. In *Untaming the frontier in anthropology, archaeology, and history* edited by Lars Rodseth and Bradley Parker, pp. 3-22. University Arizona Press, Tucson.

Rostworowski, Maria
1970 *Mercaderes del Valle de Chincha en la época prehispánica: un document y unos comentarios*. Revista Española de Antropologia Americana, Madrid.
1977 *Etnía y sociedad: costa peruana prehistpánica*. Instituo de Estudios Peruanos, Lima.
1987 Ordenanzas para el servicio de los tambos del Repartimiento de Huamachuco hecho por el licenciado Gonzalez de Cuenca. *Revista Histórica* 36:15-31.
1988 *Conflicts Over Coca Fields in XVIth-Century Peru*. Memoirs of the Museum of Anthropology University of Michigan, Number 21.
1989 *Organizacion economica en los Andes*. HISBOL, La Paz, Bolivia.
1990 Ethnohistorical considerations about the Chimor. In *The Northern Dynasties: Kingship and Statecraft in Chimor* edited by M. Moseley and A. Cordy-Collins,

pp. 447-460. Dumbarton Oaks Research Library and Collections, Washington D.C.
1999 *History of the Inca realm*. Cambridge University Press, Cambridge, UK.
2004 *Costa peruana prehispánica: prólogo a Conflicts over coca fields in XVIth century Peru*. Institute of Estudios Peruanos, Lima.
2005 *Recursos naturales renovables y pesca, siglos XVI y XVII: Curacas y sucesiones, Costa Norte*. Vol. 4 Obras completas de Maria Rostworowski de Diez Canseco. Instituto de Estudios Andinos, Lima.

Rowe, John H.
1948 The Kingdom of Chimor. *Acta Americana* 6(1-2):26-59.
1962 Stages and Periods in Archaeological Interpretation. Southwestern Journal of Anthropology 18(1): 40-54.
1982 Inca policies and institutions relating to the cultural unification of the empire. In *The Inca and Aztec States 1400-1800: Anthropology and History*, edited by George A. Collier, Renato I. Rosaldo, John D. Wirth, pp. 93-118. Academic Press, New York.

Rowe, John H. and Dorothy Menzel, eds.
1967 Introduction. In *Peruvian Archaeology, Selected Readings*, pp. vx, Peek Publications, Palo Alto.

Rucabado, Julio, and Luis Jaime Castillo
2003 El periodo transicional en San José de Moro. *Moche: Hacia el final del Milenio* edited by Santiago Uceda and Elias Mujica B, pp. 15-42. Actas del Segundo Coloquio sobre la Cultura Moche, Trujillo y Lima, Vol 2.

Salomon, Frank
1995 The beautiful grandparents: Andean ancestor shrines and mortuary ritual as seen through colonial records. In *Tombs for the living: Andean mortuary practices*, edited by TD Dillehay, pp. 315-353. Dumbarton Oaks Research Library and Collections, Washington D.C.

Sahlins, Patrick
1989 *Boundaries: The Making of France and Spain in the Pyrenees*. University of California Press, Berkeley.

Sapp, William D
2002 *The impact of imperial conquest at the palace of a local lord in the Jequetepeque Valley, Northern Peru*. Doctoral Dissertation. Department of Anthropology, University of California, Los Angeles

Sandweiss, Daniel
1992 *The archaeology of Chincha fishermen: specialization and status in Inka Peru*. No. 29. Carnegie Museum of Natural History, Pittsburgh.

Sandweiss, Daniel and James Richardson III
2008 Central Andean Environments. In *Handbook* the *of South American Archaeology*, edited by Helaine Silverman and William Isbell, pp. 93-104. Springer, New York.

Sandweiss, Daniel and Dave Reid
2016 Negotiated Subjugation: Maritime Trade and the Incorporation of Chincha into the Inca Empire. *Journal of Island and Coastal Archaeology* 11(3): 311-325.

de San Pedro, Juan.
1992[1560] *La persecución del Demonio: Crónica de los primeros agustinos en el norte del Perú: Manuscrito del Archivo de Indias*. Vol. 1. Algazara.

Schortman, Edward and Patricia Urban
1992 *Resources, Power and Interregional Interaction*. Plenum Press, New York.

Schiffer, M.B.
1995 *Behavioral Archaeology First Principles*. University of Utah Press, Salt Lake City.

Schreiber, Katerina
1992 *Wari Imperialism in Middle Horizon Peru*. Museum of Anthropology, University of Michigan. University of Michigan, Ann Arbor:
2001 The Wari empire of Middle Horizon Peru: The epistemological challenge of documenting an empire without documentary evidence. In *Empires: Perspectives from archaeology and history*, edited by S. Alcock et al, 70-92. Vol. 122. Cambrige University Press, Cambridge.

Scott, James
2009 *The Art of Not Being Governed: An Anarchist History of Upland Southeast Asia*. Yale University Press, New Haven.

Service, Elman
1975 *Origins of the State and Civilization: The Process of Cultural Evolution*. Norton.

Schiffer, Michael
1995 *Behavioral archaeology*. University of Utah Press, Salt Lake City.

Shennan, Stephen
1997 *Quantifying Archaeology*. Edinburgh University Press, 2nd Edition.

Shimada, Izumi

1985 Perception, Procurement, and Management of Resources: Archaeological Perspective. In *Andean Ecology and Civilization* edited by S. Masuda, I. Shimada, and C. Morris, pp. 357-399. University of Tokyo Press, Tokyo.
1990 Cultural continuities and discontinuities on the northern north coast of Peru, Middle-Late Horizons. In *The Northern Dynasties: Kingship and Statecraft in Chimor* edited by M. Moseley and A. Cordy-Collins, pp. 297-322. Dumbarton Oaks Research Library and Collections, Washington D.C.
1994 *Pampa Grande and the Mochica culture*. University of Texas Press, Austin.
1995 *Cultura Sicán: dios, riqueza y poder en la Costa Norte del Peru*. Lima: Fundacion del Banco Continental para el Fomento de la Educación y la Cultura.

Shimada, Izumi, ed.
2015 *The Inka Empire: a multidisciplinary approach*. University of Texas Press, Austin.

Shimada, Melody and Izumi Shimada
1985 Prehistoric Llama Breeding and Herding on the North Coast of Peru. *American Antiquity 50*(1): 3-26.

Sinopoli, C
1994 The Archaeology of Empires. Annual Review of Anthropology 23: 159-180.
2001 Part III: Imperial Integration and imperial subjects. In *Empires*, edited by S. Alcock, T. D'Altroy, K. Morrison, C. Sinopoli. Cambridge University Press, Cambridge.

Skibo, James
2013 *Understanding Pottery Function.* Springer Press, New York.

Smith, Michael
2001 The Aztec Empire and the Mesoamerican world system. In *Empires*, edited by S. Alcock, T. D'Altroy, K. Morrison, C. Sinopoli, pp. 128-154. Cambridge University Press, Cambridge.

Smith, Michael and Frances Berdan, eds.
1996 Introduction. In *Aztec Imperial Strategies*, pp. 1-12. Dumbarton Oask Research Library and Collections, Washington D.C.

Smith, Alexia and Natalie D. Munro
2009 A Holistic Approach to Examining Ancient Agriculture: A Case Study from the Bronze and Iron Age Near East. *Current Anthropology* 50(6): 925-936.

Stanish, Charles
1989 Household Archaeology: Testing models of zonal complementarity in the south-central Andes. *American Anthropologist* 91: 7-24.

1997 Nonmarket imperialism in the prehispanic Americas: The Inka occupation of the Titicaca Basin. *Latin American Antiquity* 8(3): 195-216.
2001 Regional Research on the Inca. *Journal of Archaeological Research* 9(3): 213-241.

Stein, Gil J.
2002 Distinguished Lecture: Passive Periphery to Active Agents: Emerging Perspectives in the Archaeology of Interregional Interaction. *American Anthropologist* 104: 903-916.
2005 Introduction: The Comparative Archaeology of Colonial encounters. In *The Archaeology of Colonial Encounters,* edited by G. Stein, pp. 3-22. School of American Research Press, Santa Fe.

Stone, Rebecca
2007 "And All Theirs Different from His": The Dumbarton Oaks Royal Inka Tunic in Context. *Variations in the Expression of Inka Power*, R.L. Burger, C. Morris and R. Matos, pp. 385-422, Dumbarton Oaks Research Library and Collection, Washington D.C..

Strong, William Duncan and Clifford Evans, Jr.
1952 *Cultural Stratigraphy in the Virú Valley, Northern Peru: The Formative and Florescent Epochs*. Columbia University Press, New York.

Szpak, Paul, David Chicoine, Jean-Francois Millaire, Christine White, Rebecca Parry, Fred Longstaffe
2015 Early Horizon Camelid Management Practices in the Nepeña Valley, North-Central Coast of Peru. *Environmental Archaeology* 21(3): 230-245.

Szremski, Kasia
2015 *Shellfish, Water, and Engantlements: Inter-community Interaction and Exchange during the Late Intermediate Period (1100-1470 CE) in the Huanangue Valley, Peru.* Doctoral Dissertation. Department of Anthropology, Vanderbilt University.

Squier, Edward
1877 *Peru: Incidents of travel and exploration in the land of the Incas*. Harpers, New York.

Swenson, Edward
2004 *Ritual and power in the urban hinterland: religious pluralism and political decentralization in late Moche Jequetepeque, Peru*. Doctoral Dissertation, Department of Anthropology, University of Chicago.

Tate, James

2006 *The Late Horizon Occupaton of the El Brujo Site Complex, Chicama Valley, Peru*. Doctoral Dissertation, Department of Anthropology, University of California, Santa Barbara.

Taylor, Gerald.
1987 Ritos y tradiciones de Huarochirí. Manuscrito quechua de cominezos del siglo XVII: version paleográfica, interpretación fonológica y traducción al castellano. *Historia Andina 12*. Instituto de Estudios Peruanos, Lima.

Tello, Julio
1956 *Arqueoloía del valle de Casma: Cultura Chavin, Santa o Huaylas Yunga y sub-Chimu*. Publicación Antropológica del Archivo "Julio C. Tello" de la Universidad Nacional Mayor de San Marcos 1. Editorial San Marcos, Lima.

Thatcher, John P.
1972 *Continuity and Change in the Ceramics of Huamachuco, North Highlands Peru. Doctoral Dissertation*, Department of Anthropology, University of Pennsylvania.
1974 Early Intermediate Period and Middle Horizon 1B ceramic assemblages of Huamachuco, north highlands, Peru. *Ñawpa Pacha* 10-12:109-127.
1977 A Middle Horizon 1B cache from Huamachuco, north highlands, Peru. *Ñawpa Pacha* 15(1): 101-110.
1979a Addendum to: Early Intermediate Period and Middle Horizon 1b ceramic assemblages of Huamachuco, northern highlands, Peru. *Ñawpa Pacha* 17: 107-108.
1979b Early ceramic assemblages from Huamachuco, north highlands, Peru. *Ñawpa Pacha* 17(1): 91-106.

Tite, MS
1999 Pottery production, distribution, and consumption – the contribution of the physical sciences. *Journal of Archaeological Method and Theory* 6(3): 181-233.

Toohey, Jason
2009 *Community Organization, Militarism, and Ethnogenesis in the Late Prehispanic Northern Highlands of Peru.* Doctoral Dissertation, Department of Anthropology, University of California, Santa Barbara.

Topic, John
1977 *The lower class at Chan Chan: a qualitative approach*. Doctoral Dissertation, Department of Anthropology, Harvard University.
1982 Lower-class social and economic organization at Chan Chan. In *Chan Chan Andean Desert City*, edited by M Moseley, K.C. Day, , pp. 145-176. Albuquerque: University of New Mexico Press.
1986 A sequence of monumental architecture from Huamachuco. *Perspectives on Andean prehistory and protohistory: papers from the third annual Northeast*

conference on Andean Archaeology and Ethnohistory, edited by D. Sandweiss and P. Kvietok. Latin American Studies Program, Cornell University, Ithaca, NY.

1990 Craft Production in the Kingdom of Chimor. In *Northern Dynasties: Kingship and Statecraft in Chimor,* edited by M. Moseley and A. Cordy-Collins, pp. 145-176. Dumbarton Oaks Research Library and Collection, Washington D.C.

1991 Huari and Huamachuco. In *Huari Administrative Structure*, edited by W.H. Isbell and G.F. McEwan, pp. 141-165. Dumbarton Oaks Research Library and Collections, Washington D.C.

1992 Las huacas de Huamachuco: precisiones en torno a una imagen indigena de un paisaje andino. In *La Persecución del Demonio: Crónica de los Primeros Agustinos en el Norte del Perú by Fray Juan de San Pedro*, pp. 41–99. Algazara y CAMEI, Malaga y Mexico, D.F.

1998 Ethnogenesis in Huamachuco. *Andean Past* 5: 109-127.

2003 From stewards to bureaucrats: architecture and information flow at Chan Chan, Peru. *Latin American Antiquity* 14(3): 243-274.

2009 Settlement Patterns in the Huamachuco area. In *Andean Civilization: a tribute to Michael E. Moseley* edited by Joyce Marcus and P.R. Williams, pp. 211-240. Cotsen Institute of Andean Studies, University of California, Los Angeles.

Topic, John and Coreen Chiswell

1992 Inka Storage in Huamachuco. In *Inka Storage Systems* edited by Terry Levine, pp. 206-231. University of Oklahoma Press, Norman, Ok.

Topic, John and Michael Moseley

1983 Chan Chan: A Case Study of Urban Change in Peru. *Ñawpa Pacha* 21: 153-182.

Topic, John and Theresa Lange Topic

1978 Prehistoric Fortification Systems of Northern Peru. *Current Anthropology* 19(3): 618-619.

1979a *Prehistoric fortification systems of northern Peru*, Preliminary report on the second field season, June-August 1978. Trent University, Petersborough, April 1979

1979b Prehistoric fortification systems of northern Peru, Preliminary report on the third filed season, May-August 1979. Trent University, Petersborough, December 1979

1982 *Huamachuco archaeological project*. Department of Anthropology, Trent University.

1983 Coast-highland relations in northern Peru: some observations on routes, networks, and scales of interaction. In *Civilization in the Ancient Americas*, edited by Richard Leventhal and Alan Kolata, pp. 237-259. University of New Mexico Press, Albuquerque.

1985 Coast highland Relations in Northern Peru: The Structure and Strategy of Interaction. In *Status, Structure, and Stratification: Current Archaeological Reconstructions*, edited by M. Thompson, M.T. Garcia, F.J. Kense, pp. 55-65.

Proceedings of the 16th Annual Conference Archaeological Association of the University of Calgary, Calgary.

1993 A Summary of the Inca Occupation of Huamachuco. In *Provincial Inca Archaeological and Ethnohistorical Assessment of the Impact of the Inca State*, edited by M. Maplass, pp. 17-43. University of Iowa Press, Iowa City, Iowa.

Topic, John, Theresa Topic, and Alfredo Melly Cava

2002 Catequil: The archaeology, ethnohistory and ethnography of a major provincial huaca. In *Andean Archaeology I: Variations in sociopolitical organization*, edited by William H. Isbell and Helaine Silverman, pp. 303-336. Kluwer Academic/Plenum, New York.

Topic, Theresa Lange

1977 *Excavations at Moche*. Doctoral Dissertation, Department of Anthropology, Harvard University.

1990 Territorial Expansion and the Kingdom of Chimor. In *The Northern Dynasties: Kingship and Statecraft in Chimor,* edited by M. Moseley and A. Cordy-Collins, pp. 177-198. Dumbarton Oaks Research Library and Collections, Washington D.C.

2009 The meaning of monuments at Huamachuco. In *Andean Civilization: a tribute to Michael E.* Moseley, edited by Joyce Marcus and P.R. Williams, pp. 241-256. No. 63, Cotsen Institute of Archaeology Studies, University of California, Los Angeles.

Topic, Theresa Lange and John Topic

1982 *Prehistoric Fortification Systems of Northern Report: Preliminary Report on the Final Season January-December, 1980*. Trent University, Peterborough, Ontario.

1984 Huamachuco Archaeological Report: Preliminary Report on the Third Season, June-August 1983. *Trent University Occasional Papers in Anthropology* No. 1. Petersborough, Ontario.

1987 Huamachuco Archaeological Project: preliminary report on the 1986 field season. *Trent University Occasional Papers in Anthropology,* No. 4. Petersborough, Ontario.

2010 Contextualizing the Wari-Huamachuco Relationship. In *Beyond Wari Walls: regional perspectives on Middle Horizon*, edited by Justin Jennings, pp. 188-212. University of New Mexico Press, Albuquerque, NM.

Torero, Alfredo

1986 Deslindes lingüísticos en la costa norte peruana. *Revista andina* 4(2): 523-548.

1989 Áreas toponímicas e idiomas en la sierra norte peruana. Un trabajo de recuperación lingüistica. *Revista Andina* 13:217-257.

Tsai, Howard

2012 *An Archaeological Investigation of Ethnicity at Las Varas, Peru*. Doctoral Dissertation. Department of Anthropology, University of Michigan, Ann Arbor.
Forthcoming *Ethnic Groups and Boundaries in the Ancient Andes*. University of Florida Press, Gainesville.

Tschauner, Harmut
2006 Chimú Craft Specialization and Political Economy: A View from the Provinces. In *Andean Archaeology III: North and South*, edited by H. Silverman and W. Isbell, pp. 171-196. Springer, New York.

Turner, Frederick Jackson
1893 "The Significance of the Frontier in American History" speech given at a meeting of the American Historical Association Chicago, Ill.
1921 *The Frontier in American History.* H. Holt and Company, New York.

Uceda, Santiago and Armas
1998 An urban Pottery Workshop at the Site of Moche, North Coast, Peru. In *Andean Ceramics: Technology, Organization, and Approaches* edited by Izumi Shimada, pp. 91-150. Museum Applied Science Center for Archaeology, University of Pennsylvania Museum of Archaeology and Anthropology, Philadelphia.

Uceda, Santiago and Ricardo Morales
2006 Informe Tecnico 2005. Proyecto Arqueológico Huaca de la Luna, Universidad Nacional de Trujillo.
2007 Informe Tecnico 2006. Proyecto Arqueológico Huaca de la Luna, Universidad Nacional de Trujillo.
2011 Informe Tecnico 2010. Proyecto Arqueológico Huaca de la Luna, Universidad Nacional de Trujillo.
2013 Informe Tecnico 2012. Proyecto Arqueológico Huaca de la Luna. Universidad Nacional de Trujillo.

Uhle, Max
1913 Die Ruinen von Moche. *Journal de la Société des Américanistes de Paris*, n.s. tome x, fasc. 1, pp. 95-117. Paris. Pls 4-6, figs 1-20.

Urton, Gary
1978 Orientation in Quechua and Incaic Astronomy. *Ethnology* 17(2): 157-167.
2015 The State of Strings: Khipu Adminsitration in the Inka Empire. In *The Inka Empire: A Multidisciplinary Approach*, edited by Izumi Shimada, pp. 149-164. University of Texas Press, Austin.

Urton, Gary and Alejandro Chu
2015 Accounting in the King's Storehouse: The Inkawasi Khipu Archive *Latin American Antiquity* 26(4): 512-529.

Vargas Ugarte, R
1936 La fecha de la fundación de Trujillo. *Revista Histórica*, 10(2): 229-239.

Van Gijseghem, Hendrik
2001 Household and family at Moche, Peru: An analysis of building and residence patterns in a prehispanic urban center. *Latin American Antiquity*, 1:257-273.

VanValkenburgh, Nathaniel Parker
2012 *Building Subjects: Landscapes of Forced Resettlement in the Zaña and Chamán Valleys, Peru, 16th and 17th Centuries C.E*. Doctoral Dissertation, Department of Anthropology, Harvard University.

Vega Cardenas, Carlos Alberto
2012 "La Hacienda Collambay." Historia Documental del Perú. http://historiadocumentaldetrujillodelperu.blogspot.com/2012_01_01_archive.html. Retrieved January 2013.

Vidal, Pulgar
1972 *Geografía del Peru/Las ocho regiones naturales del Peru*. 7th ed. Editorial Universo, Lima.

Vogel, Melissa
2003 *Life on the Frontier: Identity and Sociopolitical Change at the Stie of Cerro La Cruz Peru*. Doctoral Dissertation. Department of Anthropology, University of Pennsylvania.
2011 Style and interregional interaction. *Ñawpa Pacha* 31.2 (2011): 201-224.
2012a *Frontier Life in Ancient Peru*. University Press of Florida, Gainesville.
2012b Exit Strategies: The Conquest and Abandonment of El Purgatoria. Paper Presented at the Institute for Andean Studies 52nd Annual Meeting in Berkeley, CA.

Vranich, Alexei and Charles Stanish, eds.
2013 *Visions of Tiwanaku*. Cotsen Institute of Archaeology Press, University of California, Los Angeles, Vol 78.

Wachtel, Nathan
1982 The mitimas of the Cochabamba valley: The colonization polity of Huayna Capac: In *The Inca and Aztec states 1400-1800*, edited by G.A. Collier, R. Rosaldo, and J.D. Wirth, pp. 199-236. Academic Press, New York.

Wallerstein, Immanuel
1974 *The Modern World-System I.* Academic Press, New York.

Waylen, P.R. and C.N Caviedes

1986 El Niño and annual floods on the northern Peruvian littoral. *Journal of Hydrology* 89(1): 141-156.

Wernke, Steve
2007 Negotiating Community and Landscape in the Peruvian Andes: A Trans-Conquest View. *American Anthropologist* 109(1): 130-152.
2011 Convergences: Producing Colonial Hybridity at an Early Doctrina in Highland Peru. In *Enduring Conquests: Rethinking the Archaeology of Resistance to Spanish Colonialism in the Americas*, Matthew Liebmann and Melissa Murphy, eds. School for Advanced Research, Santa Fe.

Wiener, Charles
1890 *Plan du Gran Chimu*. Hachette et Cie, Paris.

Wilson, David
1988 *Prehispanic Settlement Patterns in the lower Santa Valley, Peru*. Washington D.C.: Smithsonian Institution Press.

Wilk, Richard and William Rathje
1982 Household Archaeology. *American Behavioral Scientist* 25: 617-39.

Wittfogel, Karl
1957 *Oriental Despotism: A Comparative Study of Total Power*. New Haven: Yale University Press.

Wolf, Eric
1982 *Europe and the People without History*. Berkeley: University of California Press.

Yoffee, Norman
2005 *Myths of the Archaic State*. Cambridge: Cambridge University Press.

Zaki, Andrzej
1983 Cultura Pelón: Una desconocida cultura en la Sierra Norte. *Boletin de Lima* 5(29):13-19.

Zárate, Agustin de
1983 [1581]) *A History of the Discovery and Conquest of Peru: Books I-IV*. Penguin Press, London.

Zevallos Quinones, Jorge
1941 Una Nota sobre el primitive idioma de la Costa Norte. Revista Históica 376-378.
1946 Un diccionario yunga. *Revista del Museo Nacional, XV* (1946).

1948 Primitivas lenguas de la costa norte. In *Revista del Museo de Arqueología, Antropología e Historia.* 8: 114-119. Universidad Nacional de Trujillo, Trujillo.
1993a Toponomia Chimú. *Fuentes para la estudio de la lengua Quingnam*, 1. Fundación Alfredo Pinillos Goicochea, Trujillo.
1993b Onomastica Chimú. *Fuentes para la studio de la lengua Quingnam*, 2. Fundación Alfredo Pinillos Goicochea, Trujillo.

Zimmerer, Karl S. and Martha G. Bell
2013 An early framework of national land use and geovisualization: Policy attributes and application of Pulgar Vidal's state-indigenous vision of Peru (1941-present). *Land Use Policy,* 30(1): 305-316.

Zuidema, R. Tom
1995 *El sistema de ceques del Cuzco: la organización de la capital de los Incas: con un ensayo prelimiar.* Fondo Editorial de la Pontifica Universidad Católica del Perú, Lima.