ELSEVIER

Contents lists available at ScienceDirect

Journal of Anthropological Archaeology

journal homepage: www.elsevier.com/locate/jaa





Assembling the early expansionary state: Wari and the southern Peruvian coast

Justin Jennings ^{a,b,*}, Matthew E. Biwer ^c, Christina A. Conlee ^d

- ^a Department of Art and Culture, Royal Ontario Museum, 100 Queen's Park, Toronto, Ontario M6R2V3, Canada
- ^b Department of Anthropology, University of Toronto, 19 Ursula Franklin Street, Toronto, Ontario M5S 2S2, Canada
- ^c Department of Anthropology and Archaeology, Dickinson College, 28 North College Street, Carlisle, PA 17013, USA
- d Department of Anthropology, Texas State University, 266 Evans Liberal Arts, 601 University Drive, San Marcos, TX 78666, USA

ARTICLE INFO

Keywords: Wari Middle horizon South coast Andes Empire State expansion Assemblage theory Meso-scale analysis

ABSTRACT

Most conceptualizations of the state in archaeology remain rooted in Enlightenment ideas of interlocking institutions that existed external to individuals and their interactions. These static conceptualizations often run counter to the temporal and spatial variability in a state's footprint, especially in those cases where a state expanded and endured across a larger region. In this article, we suggest that states are more fruitfully seen as dynamic assemblages that leaders, as well as other agents, attempt to manipulate to achieve their desires. Reconstructing these desires is most feasible at a meso-scale where broader patterns across local assemblages can be more easily discerned. To demonstrate the utility of this approach, we consider the Wari expansion into the southern coast of Peru during the Middle Horizon (AD 600–1000). The variation in Wari-related flows provides insights into the limits and ancillary effects of state-making in the region.

1. Introduction

Sometime in the seventh century AD, the Wari state expanded out of the central highlands of present-day Peru. Widespread exchange and emulation of Wari-style objects define the Middle Horizon (AD 600–1000), and dozens of outlying settlements have been located that likely housed Wari-affiliated colonists (Schreiber, 1992; Isbell, 2009). Interpretations of the Wari phenomenon have varied over time, following general trends in the interpretation of early states. The first Wari models were of an all-powerful empire that conquered and controlled a wide swath of the central Andes (Menzel, 1968; Lumbreras, 1974a). Subsequent interpretations often question the reach, economics, and political organization of the polity (see chapters in Castillo and Jennings, 2014; Jennings, 2010). Although there is now wide recognition that the state's impact varied substantially across time and space, we remain mired in debate regarding how Wari might be best characterized.

In this article, we argue that our understanding of Wari expansionary dynamics, and those of early states in general, have been limited in two related ways. First, models of the Wari state and its expansion remain grounded in stage-of-development approaches inherited from the Enlightenment (Graeber and Wengrow, 2021; Jennings, 2016; Yoffee,

2005). Normative expectations come with these approaches—a state should be organized in a certain manner—but more importantly for our present purposes is the underlying assumption in stage-of-development approaches of the state as a fixed, interlocking suite of institutions in place prior to expansion. The expanding state, in whatever form it might have held, is conceived of as a constant, while environmental change, local conditions, and other factors cause the temporal and spatial differences seen in the archaeological record.

The second way in which studies of Wari expansionary dynamics have been limited is in the scales of analysis typically used to evaluate the phenomenon. On the one hand, Wari tends to be studied at the macro-level: the polity as a whole is considered, albeit often by pulling together data from a few better-studied sites and valleys (e.g., Cook, 2001; Isbell, 2006). On the other hand, Wari scholars also work at a more micro-level, using data from a site or valley and then extrapolating out to the state and its role in the Middle Horizon (e.g., Bélisle, 2015; Glowacki, 2014). Both approaches seek, writ large or writ small, to uncover the true nature of the Wari state. Temporal and spatial variability needs to be explained away to get to the essence of a state that was consistent in its organization and intentions across the central Andes and throughout much of the Middle Horizon. Since the "essence" of Wari is dependent upon where and how one investigates (Isbell and McEwan,

^{*} Corresponding author at: Department of Art and Culture, Royal Ontario Museum, 100 Queen's Park, Toronto, Ontario M6R2V3, Canada. *E-mail address*: justinj@rom.on.ca (J. Jennings).

1991: 9-10), the debates about the polity remain polarized.

This paper seeks to move beyond these debates by considering new perspectives on the state as an assemblage that was always in the making and locally constituted. With these theoretical concepts in mind, we evaluate the roles that Wari played on the southern coast of Peru from the Nasca to Moquegua Valleys (Fig. 1). As in other regions, significant differences in Wari's impact preclude the use of a particular site or valley as a microcosm for the rest of the southern coast. Much is also obscured in macro-scale approaches encompassing the entire state that might portray, for example, all sites with imported Wari pottery as contemporaneous. A meso-scale of analysis allows us to better 'see' the temporal and spatial rhythms of Wari assemblage-making across the southern coast. We argue that the state in southern Peru is these rhythms, a coming together and breaking apart of interrelated ideas, objects, sites, people, animals, and other things that both changed significantly over time and was widely manipulated and emulated by local actors (e.g., Joyce and Mukerji, 2017; Smith, 2015).

2. Stages, assemblages, state expansions, and scales of analysis

The question of how early states expanded was easily answered for most of the twentieth century. Following Enlightenment thinkers, archaeologists posited a progression from mobile hunter-gatherers to the first states (e.g., Fried, 1967; Service, 1962). Even as an increasing variety of pathways to the state were recognized (e.g., McCormick Adams, 1972; Steward, 1972), their expansions unfolded in the same way: an urban, class-based society formed, military expansion was required to obtain resources, and outlying groups either lacked the wherewithal to resist state advances or were eager to be civilized. The state crashed like a wave across a region and then remained in place until its collapse from internal rot or invasion.

Aspects of this narrative of the early state began to break down in the 1970s. The breakdown was part of the post-processual reaction to restrictive evolutionary typologies that defined states as regionally organized societies composed of a ruling class, commoner class, and a highly centralized and internally specialized government (Johnson and

Earle, 1987: 246; Marcus and Feinman, 1998: 4). The re-thinking of early state expansion was also a reflection of increasing, more sustained, fieldwork beyond major urban centers. Previously, a few markers were employed—a pottery style, the use of cylinder seals—to define a state's boundaries. As more people worked in the hinterland, they noted considerable variability in a state's impact, and the rising popularity of the world systems approach in archaeology brought a greater attention to different kinds of long-distance interaction (e.g. Champion, 1989; Kardulias and Hall, 2008). By the, 1990s, scholars were seeking more fulsome explanations for how states emerged in different regions and why their expansions varied (e.g., Possehl, 1990; Mattingly, 1997).

The recognition of considerable variability in a state's broader impact, however, left other aspects of early state conceptualizations unchallenged. In treating the transition to the state as a phase change, the institutions that composed the state are seen to have been in place at the inception of the phase (Yoffee, 2005). Through the aughts, states might be seen as more volatile (Alt, 2006), heterarchical (Kenoyer, 2008), or weaker (Stein, 2002), but they remained a fixed entity that existed external to individuals and their interactions. We could point, albeit vaguely, to something out there that was a state that encompassed a population and lasted for centuries. It was "a 'real-concrete' agent with will, power, and activity of its own" (Abrahms, 1988: 69). Although a change in state organization was possible, the transition tended to be construed as another phase change from one political structure to the next—a shift akin to the Roman Republic becoming an empire.

In a similar manner, critiques posited spatial variation largely as the effects of external factors acting on the state. Scholars noted that the "tyranny of distance", for example, made it difficult for states to extend their reach (Bairoch, 1988: 211), and that local leaders routinely repurposed state exports and ideas to meet their needs (Hodos, 2017). These and other insights provided a far richer understanding of the many ways that state expansions could impact lives on the periphery, but a conceit nonetheless remained of a state apparatus existing in the core that was attempting to exercise its interests abroad. Although riven with factionalism and other court intrigue, the state emanated out from the core into variable encounters that reshaped how its plans were

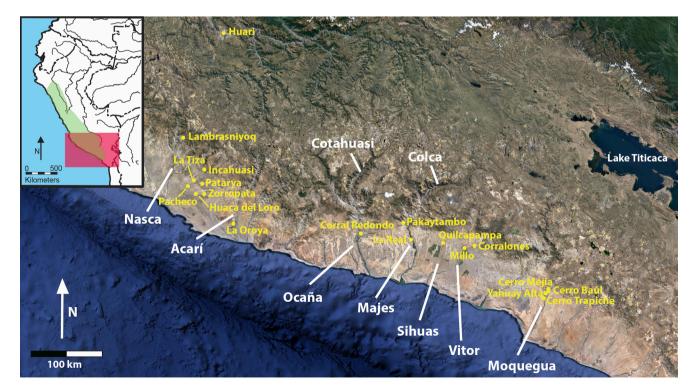


Fig. 1. Map of southern Peru showing the valleys and sites mentioned in the text. The inset map shows the map's location within Peru (in red), as well as the spread of Wari-related objects (in green).

implemented on the ground.

Over the last decade, there has been increasing interest in reconceptualising states as assemblages (Allen, 2011; Müller, 2015; Smith, 2015). Drawing from a number of theoretical paradigms from both within and outside of archaeology (Chapman, 2000; DeLanda, 2006; Hodder, 2012; Latour, 1993), this approach looks at how ideas, objects, sites, people, animals and other things come together into what can be considered a single whole. Humans are de-centered in many of these approaches (Cipolla et al., 2021)—each thing in an assemblage has its own "affordances" that enable, limit, or channel interactions within and between assemblages in different ways (Bennett, 2010: 34). Assemblages, in turn, have their own unique affordances. They are thus different from the sum of their parts, often with unanticipated features that are beyond the control of the things that constitute them. Assemblages are always in flux as conditions change, coming together and falling apart at different scales and in novel ways (DeLanda, 2006: 18).

A state is an exercise in extending sovereignty through violence, gift giving, charisma, and other mechanisms (Graeber and Wengrow, 2021:431). State-making, especially in the ancient world, can be seen as an attempt at the impossible: to create and continually exercise power over a vast, ever-shifting, assemblage of unexpected affordances. The human capacity for empathy, forethought, and cooperation nonetheless gives us a heightened capacity to constrain an assemblage's inherent fluidity by continually asserting how things should "properly" come together (Deleuze and Guattari, 1987: 20).

Leaders attempt to create and maintain states through interrelated processes of what Deleuze and Guattari call coding, stratification, and territorialisation. DeLanda suggests that these processes serve as "knobs" that can be adjusted in an effort to mold an assemblage into the form of one's choosing (2016:3). Coding is the use of text, art, architecture, and other elements to manufacture desires and expectations that naturalize the existence of a current assemblage (also see Larkin, 2013; Wilkinson, 2019). Stratification and territorialisation are the acts, respectively, that assert the relationships between the elements within an assemblage, such as between a leader and subjects, and inscribe these relationships on the landscape. In this manner, code is entered into particular locations within an assemblage to serve as knobs that can be adjusted to maintain its overall form. Over time, seemingly simple acts such as how one enters a house or offers a greeting become unconscious habits that help to provide some solidity to an assemblage (Bourdieu, 1977; Ortner, 2006). Other actors, however, can adjust the knobs to accelerate change.

Conceiving of states as assemblages forces us to see temporal and spatial variability in a new light. If assemblages are in continual flux, then we should expect change over time as coding, stratification, and territorialisation efforts can only mitigate the inherent fluidity of an assemblage. As scholars, we can draw a line around an assemblage and call it a state, but then that line will need to be redrawn again and again as the assemblage changes across space and time. State leaders perform a similar exercise in order to make a polity legible (e.g., Scott, 1998), with their knob-tuning occurring on multiple societal levels to shape an assemblage to their liking. Rival leaders, as well as many other things, have their own desires that they bring to bear during assemblage creation (Colebrook, 2002). State making thus occurs in many places at once—in a field, temple, or along a road—with each encounter between things producing a smaller-scale assemblage that, when combined with thousands of others, forms the larger assemblage of the state. Seen in this light, temporal and spatial variability in a state's footprint is not a byproduct of its expansion over a variegated landscape that obscures the essence of the state, this variability is the state.

Adequately capturing this variability is difficult at both the macroand micro-level of analysis. At the macro-level, it is too unwieldy to encapsulate ever-shifting assemblages across space and time. Scholars are therefore forced to accept higher levels of simplification in some aspects of their models, in order to better capture complexities in other areas. By bringing certain aspects of state expansion and organization into focus, however, other aspects—and the links between them—necessarily recede from view. Understanding the expansion of the state from the micro-level is also problematic. Since there is wide variation across time and space, data, no matter how fine-grained, from one particular site or locale cannot serve as a microcosm for what was happening in other regions. We often lose sight of the trees in the macro-level, but more clearly "seeing" each individual tree does not give us the composition of the forest.

In An Archaeology of Interaction (2011), Carl Knappett emphasizes the need to produce more meso-level scales of analysis that can bridge micro- and macro-scale approaches. On its own, a meso-scale analysis is also flawed; both the big picture and the fine-grained details are fuzzy. Yet the value of a meso-scale approach is that it nonetheless provides a better vantage point to observe patterns of assemblage creation and unravelling across a region that can speak to broader campaigns of coding, stratification, and territorialisation by state actors. We can see communities of practice emerging across a few valleys, for example, or trace the path of immigrants from the coast into the mountains. Especially when combined with micro- and macro-level approaches, a meso-scale analysis holds the promise of a richer, more nuanced rendering of how the earliest expansive states were assembled. In this article, we attempt to show the value of working at the meso-scale by examining the Wari impact on the southern coast of Peru.

3. Assembling Wari

By the beginning of the twentieth century, scholars had recognized a widespread Wari artistic style that would later be used to define the Middle Horizon period (Uhle, 1991[1903]). The style's source, however, would only be accepted in the 1950s, when further excavations and reconnaissance at Huari confirmed Julio C. Tello's earlier assertions of the style coming from this sprawling Pre-Columbian city (1942, 2009 [1931]). Tello, like many archaeologists of his day, championed the idea of mother cultures that then diffused across a wider area. Huari, the city, was the spring from which the Wari culture (and style) flowed. In contrast, Rowe, Bennett, and other scholars working the 1950s and 1960s looked at Wari through a culture history approach that placed greater emphasis on uncovering the particular political, economic, and social institutions that made broader diffusion possible (Rowe, 1962; Rowe et al., 1950; Bennett, 1953). With little additional data in hand, these scholars were hesitant to provide definitive institutional characterizations to what Bennett referred to as "the Wari problem" (1953:114).

Further work at Huari and its environs into the 1970s culminated in an article by Isbell and Schreiber (1978) that was entitled "Was Huari a state?". The authors answered in the affirmative, and also joined a rising chorus of scholars who suggested that Wari might be best described as an empire that conquered much of Peru (e.g., González Carré and Gálvez Pérez, 1977; Lumbreras, 1974; Menzel, 1968). Alternatives to empire would follow in the 1980s. These counter models also envisioned Wari from a macro-level. Wari sites were conceived as rival city-states (Paulsen, 1989), or the Wari capital was just one of many interacting peer polities (Shady Solís, 1988). Neither the monolithic imperial model nor its alternatives proved satisfactory as archaeologists conducted more fieldwork in outlying regions. In one valley, the Middle Horizon might have been a period of massive change. Wari colonists arrived, agriculture was intensified, and villages were uprooted (e.g., Schreiber, 1987). In a neighbouring valley, the changes could be far subtler with little evidence for direct state intervention (e.g., Meddens, 1991). One size fits all models were not working.

In 1992, Schreiber published *Wari Imperialism in Middle Horizon Peru*, a book that explained the spatial variability in Wari's impact as a function of adjusted governance. For Schreiber, Wari's military conquest of the central Andes was followed by the establishment of a "mosaic of control" that tailored administration based on local conditions and resources (1992:269). The state invested heavily in some regions, while

leaving others indirectly controlled via relationships with local leaders. Spatial variability in this model was thus a product of external factors. "Wari," as Schreiber (1992:275) argued, "conquered much of the central Andes, and established political control and economic control over its domain."—it was an autonomous actor whose internal organization would remain largely stable throughout the Middle Horizon.

Schreiber's model was highly influential in Wari studies. Following her lead, many scholars sought to fill in the tiles of the mosaic through more micro-scale analysis of particular sites and valleys (e.g., Glowacki, 2002; Williams et al., 2001). If local factors that caused variability in the state's impact could be controlled for, then the hope was that Wari's underlying structure could be revealed. At the same time, efforts to capture the variable impact of expanding states were also occurring in other regions of the world (e.g., Algaze, 1993; Berden et al., 1996). Many of these models stressed economic hegemony rather than imperial conquest—the state 'expanded' by asserting its interests over at least nominally independent groups—and made the relationship between colonists, their home communities, and the political leadership a more open question. By the early 2000s, some Wari scholarship was also echoing these themes, as well as considering how Wari-inspired ideas and objects could spread beyond the state's reach (e.g., Chapdelaine, 2010; Topic and Topic, 2010). This work complicated the reasons behind Wari's spatial variability but left intact the notion of a state with a "will, power, and activity of its own" (Abrahms, 1988: 69).

Explorations of Wari's temporal variability have been similarly constrained. As in other regions of the world, the first radiocarbon dates for the Pre-Columbian Andes occurred in the years following World War II. The Middle Horizon was defined on the southern coast of Peru in the 1950s (Rowe, 1962). However the small number of samples taken, as well as the larger error ranges associated with the samples, meant that little could be said about change over time across the Middle Horizon. The first discussions of Wari's organization were therefore undifferentiated across the four-hundred-year period. Menzel's ceramic seriation of Wari ceramics nonetheless suggested that a "severe crisis" had occurred midway through the Middle Horizon (1964:69)-she also highlighted considerable spatial variability in styles. Menzel's seriation was widely adopted, with scholars noting the styles that they found in their respective regions (also see Cook, 1994). A larger number of more accurate radiocarbon dates also provided a greater sense of how Wari's impact varied across time. Yet this variation was often framed as happening to Wari. Wari, for example, might take longer to reach a location, get taken up through different local mechanisms, or get thrown out early (Isbell, 2010).

Schreiber, once again, played an important role in recognizing temporal variation in Wari governance. Wari Imperialism in Middle Horizon Peru (1992) also contained an in-depth discussion of the state's footprint in the Sondondo Valley. A tile in her mosaic of control, Schreiber suggested that Wari investment changed dramatically in the valley after the state consolidated its control over the valley in the late Middle Horizon. She would outline a ninth century transition across the polity in a later publication (2001). At the same time, Isbell's reconstruction of Huari's urban history noted considerable change in the city's organization over time (Isbell, 1997; Isbell William, 2001; Isbell, 2009), and a surge of survey and excavations in the mid-1990s to today has only further emphasized the wide variation in Wari's temporal footprint (see chapters in Castillo and Jennings, 2014; Jennings, 2010). Most discussions of Wari writ large nonetheless remain implicitly atemporal because Wari is still broadly conceived as both arriving in a phase change at the inception of the Middle Horizon and enduring as a fixed entity that existed external to, or above, individuals and their interactions.

Today's wide recognition of spatial and temporal variability in Wari's organization and impact therefore stands in opposition to an entrenched conceptualization of the state that can be traced back at least to the Enlightenment. The problems with this Enlightenment conceptualization of the state, as discussed in the previous section, are now well

known. Yet as Bawden argued more than three decades ago (1989: 328), instead of "grappling with the problem head on we perform some admirable intellectual contortions in order to maintain the "state" as an analytical unit." This article argues that thinking of the state as an assemblage provides a means to move beyond this impasse by allowing us to think of the state as being continually reconstituted by many encounters between things. The efforts to code, stratify, and territorialize these encounters—to constrain the inherent fluidity of thousands of fluid assemblages scattered across the central Andes—was state-making. Understanding the roles that Wari leaders and other actors played in these assemblages can perhaps best be seen on the meso-scale where we can begin to identify some of the broader patterns without losing nuance. In this article, we attempt to show the value of working at this scale by examining the Wari impact on the southern coast of Peru.

4. The southern coast of Peru

In this article, we define the southern coast of Peru as the region from Nasca to the country's current border with Chile. Within this region, there are 14 major drainages that run from the western flanks of the Andes through a wide coastal plain to the Pacific Ocean (Kennan, 2000; Thouret et al., 2007; Vidal and Javier, 1981) (See Fig. 1). The natural vegetation throughout much of this region is sparse, consisting of perennial grasses, semi-woody shrubs, and various cacti (Kuentz et al., 2012). Rainfall largely occurs from January through March, with fluctuations in the amount of precipitation over the centuries having a significant impact on human populations (Dillehay and Kolata, 2004; Guillet, 1992; Winsborough et al., 2012). The southern coast's arid environment confines most arable land, and hence larger, more sedentary populations, to those portions of the entrenched river valleys where irrigation is possible (Gelles, 2000; Guillet, 1992; Gelles, 2000; Guillet, 1992; Mächtle et al., 2009; Trawick, 2003). Most of this arable land on the coastal plain is mid-valley, closer to the foothills of the Andes than to the Pacific Coast (Conlee, 2021; Scaffidi, 2018).

From at least the first millennium BC, the coastal plain of southern Peru has been crisscrossed by pathways that connected population centers to resource zones and ritual sites (Cardona Rosas, 2008; Reid, 2020, Jennings et al., 2018; Yépez Álvarez et al. 2018; Edwards, 2021). The circulation of products, ideas, and people along these trails helped communities minimize risk against localized disturbances, as well as from earthquakes, severe El Ñinos, and other disasters (Pulgar Vidal, 1981). Rock art sites located along these trails feature a shared iconography that suggests sporadic contact across much of the southern coast by the first millennium BC, and Nasca stylistic influence on some textiles, alongside the rare imported object down to the Tambo Valley, hint at increasing long-distance interaction by the end of the Early Intermediate Period (Haeberli, 2009; van Hoek, 2018; Szykulski and Wanot, 2021).

Most people in the southern coast in the centuries preceding the Middle Horizon lived as agropastoralists in small, isolated, and largely egalitarian, villages (Disselhoff, 1969; Goldstein, 2005; Jennings, 2002; Lozada et al., 2018; Wernke, 2003, 2011; Santos Ramírez, 1976). The exception to this general trend was the Nasca and neighboring Acarí Valleys that hosted larger, socially stratified populations (Kent and Kowta, 1994; Menzel and Riddell, 1986; Valdez, 2009a; Silverman and Proulx, 2002). More arid conditions by the end of the Early Intermediate Period (200 BC – 600 AD) placed considerable stress on both valleys (Beresford-Jones et al., 2009; Schreiber and Lancho, 2003; Silverman, 2002; Valdez, 2009b). Violence increased, intra-regional religious ties broke down, and local leaders consolidated power (Forgey, 2006; Isla and Reindel, 2005; Knudson et al., 2009; Valdez, 2009b). By AD 600, shifting desert was smothering agricultural land and aridity intensified (Eitel et al., 2005; Mächtle et al., 2009).

4.1. Huari's coalescence and early colonization

The societal turmoil in Nasca at the end of the Early Intermediate Period would have not gone unnoticed in Ayacucho, the highland valley that would soon become the heartland of the Wari polity. Nasca sits at the terminus of a natural corridor to the Pacific from Ayacucho—obsidian from Ayacucho had been widely used in Nasca for thousands of years (Burger and Glascock, 2000; Eerkens et al., 2010)—and Nasca influence became widespread on Ayacucho ceramics by the sixth century AD (Doi, 2019; Knobloch, 1983; Leoni, 2006; Menzel, 1964). Immigrants from Nasca may have had a direct hand in the evolving pottery styles (Eitel and Mächtle, 2009; Schreiber, 2005; Valdez et al., 2016), and possible Ayacucho-style architecture in Nasca at Huaca del Loro and Huayuncalla hints at immigrants coming down to the coast (Conlee et al., 2021; Paulsen, 1983; Sossna 2014).

In Ayacucho, Huari was one of a number of competing ritual centers (Ochatoma Paravicino et al., 2015; Isbell et al., 1991). The coastal migrations and influence, coupled with rising intra-valley violence, may have driven rapid population movement from villages into Huari at the beginning of the seventh century (Valdez and Valdez, 2021). The rapidly expanding city, at least initially, appears to have been organized around competing kin groups who lived next to each other and worshiped together (Isbell, 2009; Perez, 1999). Craft specialization and social stratification skyrocketed, and a violent ideology that celebrated conquest and domination appeared (Bergh, 2012). The work of assembling a state within the confines of Huari's house compounds and D-shaped temples was just getting underway when Wari's first colonies were established hundreds of kilometers away in the mid-seventh century (Table 1).

By far, the most intensive and far-reaching colonization effort occurred in the Nasca region. Most of these settlements were in the valley's highest reaches (2000-3500 masl), where 40 Wari-affiliated sites have been identified (Edwards, 2010; Edwards and Schreiber, 2014; Isla and Reindel, 2014; Sossna, 2014). Many have Wari-style rectilinear compounds and mausoleum tombs with multiple burials (Conlee, 2011; Cuadrado and Johny, 2009; Isla Cuadrado, 2001). At least two have D-shaped temples. Many of these sites are located on or around Pre-Columbian trails leading down from the sierra. These same trails are also linked to Wari-affiliated sites in the upper valley (800-2000 masl). The best known of the upper valley settlements are Lambrasniyoq and Pataraya, both small sites with rectangular compounds, mausoleum- style tombs, and extensive agricultural terraces (Edwards and Schreiber, 2014; Isla and Reindel, 2014; Sossna, 2014). Pataraya is the best-dated Wari site in the region with an occupation between AD 687 and 1021 (Edwards and Schreiber, 2014) (Fig. 2). Wari colonies were also found in Nasca's middle valley (400-800 masl). The most famous is Pacheco, known for its three tons of smashed ceramic offerings (Isbell and Cook, 2002; Menzel, 1964, 1968; Tello, 2002). Another mid-valley settlement was Huaca del Loro, a 20-ha site containing Wari-style rectilinear compounds, a D-shaped temple, large quantities of cotton, hybrid burial practices, and houses constructed in the local style (Conlee et al., 2021; Strong, 1957; Tello, 2002) (Fig. 3).

Although only a few of the Wari-affiliated sites are well dated, archaeological, isotopic, and DNA evidence suggest that the Wari and Nasca regions were closely intertwined by the end of the seventh century with people and influence moving both directions (Conlee, 2021; Fehren-Schmitz et al., 2014; Knobloch, 1983, 2005). This is perhaps most clearly seen at La Tiza, a local site in the middle valley associated with more than 70 mausoleum-style tombs. The tombs have high status items including copper *tupu* pins and *Spondylus* shell objects, and at least two foreigners from the highlands were buried in them (Buzon et al., 2012; Conlee et al., 2009) (Fig. 4). An increase in obsidian from Ayacucho is documented during this period, as is the introduction of highland style textiles (Conlee, 2016; Mills and Conlee, 2019). The domestic contexts range from AD 651–888 and the burials AD 773–1025. If La Tiza's residents welcomed the Wari intrusion, others did not—those

living in the site of Zorropata (AD 416–773) rejected Wari influence and assembled sling-stones along walls that faced the colonists living at Huaca del Loro (Kerchusky, 2018).

The Wari state in Nasca, at a minimum, was assembled in the interactions between people, animals, and goods moving along the high-land/coastal trails. Some also became entangled with the state when acquiring new prestige objects, emulating styles, and marrying new-comers. Assembling Wari subjects, however, seems to have taken place primarily in the sustained face-to-face encounters that occurred at feasts and other ritually charged events held within Wari house compounds and D-shaped temples (Cook, 2001; Jennings et al., 2021). Extensive archaeological research has been conducted in these spaces, demonstrating that hosts served copious amounts of meat and beer to a few dozen guests on Wari-style serving wares (Nash, 2011). In some cases, this beer was laced with a powerful hallucinogen to create a communal psychotropic experience (Biwer et al., 2022).

At least one mid-seventh century AD Wari-affiliated group chose to travel south-eastward from the Nasca region, passing along the same coastal trails where Wari objects and ideas were beginning to circulate. This group founded a colony at Cerro Baúl in the upper Moquegua Valley, possibly bringing with them a group of followers from Nasca who continued to manufacture ceramics in their homeland's style during the colony's first decades (Moseley et al., 2005) (Figs. 5 and 6). Cerro Baúl was a mesa of religious importance prior to their arrival (Williams, 2001). The local Huaracane people, however, lived lower in the valley where more arable land was available. The earliest Wari constructions on the mesa include house compounds (Moseley et al., 2005; Williams, 2001; Williams and Nash, 2016:141). The most notable of these residences was a large walled complex dubbed the Palace by its excavators that contained the finest architecture, pottery, and luxury goods in the colony (Nash, 2017; Nash and Williams, 2005). At around the same time, the colonists built a tiered platform that was aligned with a snowcapped mountain peak and directly fronted by a sunken plaza (Williams and Nash, 2006; Williams and Nash, 2016). Another platform mound was constructed in alignment to a second peak (Williams and Nash, 2016:142). Two D-shaped temples were built around the same time. More Wari-affiliated colonists settled nearby in Cerro Mejia (Nash, 2017). A mix of Huaracane families, perhaps intermingled with households originated from Nasca and other regions, lived in more ephemeral structures along the flanks of both sites.

As was the case in Ayacucho and Nasca, Wari statecraft primarily took place within house compounds and temples in Moquegua. Repeatedly hosting events in small plazas and interior building spaces was critical to their success, as was their privileged access to the obsidian and other long-distance goods that may have been distributed in these settings (Williams and Nash, 2016, 2021; Vining, 2005). Over time, these relationships allowed the colonists to obtain control over the labor of the other populations who migrated into the valley. Their labor was used to support elite lifestyles, as well as the irrigation and terracing of the upper Moquegua Valley (Williams et al., 2002). The colonists' inroads into the middle Moquegua Valley, however, were limited. Wari influence on ceramics, cuisine, and burial practices can be found at a few sites, such as Yahuay Alta (Costion, 2009; Biwer, 2019), but the only Wari-affiliated group to settle in the middle Moquegua Valley were those who founded a single compound at Cerro Trapiche during the seventh century AD. They lived with Huaracane families at the settlement, and hosted feasts and other events (Goldstein, 2005; Green, 2015; Green and Goldstein, 2010). Their success in creating Wari subjects appear to have been limited, however, and it is currently uncertain how they interacted with the Tiwanaku colonists who had come down from the Lake Titicaca region and settled in this part of the valley (Goldstein,

Although those who settled in Moquegua walked through Arequipa, we have no evidence for Wari colonies in the region during the early Middle Horizon. The arrival of Wari settlers in Nasca is nonetheless correlated with widening coastal interaction from Acarí to Majes that

 Table 1

 Calibrated radiocarbon dates from Wari-related contexts in southern Peru.

Nasca Site	¹⁴ C Age (E	SP) +/- Bl	Ca	librated Age	Reference
GRANDE VALLEY (300 masl)				
Los Molinos 1	1277	37	68	2-748 AD (26.5%) 767-889 AD (69.0%)	Unkel et al. 2012, supplementary table
Los Molinos 2	1290	36		0–754 AD (37.9%) 766–884 AD (57.5%)	Unkel et al. 2012, supplementary table
Los Molinos 3	1450	53		0-689 AD (86.3%) 706-714 AD (0.7%) 738-772 AD (8.5%)	Unkel et al. 2012, supplementary table
Los Molinos 4	1482	35	54	6–560 AD (3.8%) 574–661 AD (91.7%)	Unkel et al. 2012, supplementary table
AJA VALLEY (675 1	masl)				, 11
La Tiza 1	1340	40	65	2-776 AD (85.9%) 787-797 AD (1.2%) 809-853 AD (8.4%)	Conlee 2016: Table 7.1
La Tiza 2				1–774 AD (95.4%)	Conlee 2016: Table 7.1
La Tiza 3	1323	36		5–776 AD (77.2%) 786–800 AD (2.5%) 806–869 AD (15.7%)	Conlee 2016: Table 7.1
La Tiza 4	1275	35		5–744 AD (23.9%) 769–888 AD (71.6%)	Conlee 2016: Table 7.1
La Tiza 5	1160	44		3–787 AD (2.8%) 795–813 AD (2.3%) 858–1022 AD (90.3%)	Conlee 2016: Table 7.1
La Tiza 6 1149 44			3–785 AD (1.9%) 798–811 AD (1.3%) 873–1025 AD (92.3%)	Conlee 2016: Table 7.1	
TIERRAS BLANCAS			,,	0 / 30 1 1 (1.570) / 30 311 1 1 (1.670) 373 1 323 1 1 (32.670)	Comec 2010, Table / II
Pataraya 1	1182	36	77	2–814 AD (9.4%) 849–993 AD (86.1%)	Edwards and Schreiber 2014: Table 1
Pataraya 2	1157	36		4–784 AD (1.4%) 878–995 AD (90.1%) 1002–1020 AD (3.9%)	Edwards and Schreiber 2014: Table 1
Pataraya 3	1253	36		7–740 AD (10.9%) 770–895 AD (81.4%) 935–957 AD (3.2%)	Edwards and Schreiber 2014: Table 1
Pataraya 4	1252	36		8–740 AD (10.4%) 771–895 AD (81.5%) 935–958 AD (3.6%)	Edwards and Schreiber 2014: Table 1
Pataraya 5	1131	36		2–1021 AD (95.4%)	Edwards and Schreiber 2014: Table 1
Pataraya 6	1233	37		1–703 AD (1.5%) 720–736 AD (1.8%) 771–904 AD (78.8%) 920–971 AD (13.3%)	Edwards and Schreiber 2014: Table 1
Pataraya 7	1235	36		4-698 AD (0.5%) 771-907 AD (76.5%) 916-975 AD (17.9%) 980-986 AD (0.6%)	Edwards and Schreiber 2014. Table 1
Pataraya 7 Pataraya 8	1202	36		4-098 AD (0.5%) 771-907 AD (76.5%) 910-975 AD (17.9%) 980-986 AD (0.6%) 2-819 AD (19.1%) 836-988 AD (76.4%)	Edwards and Schreiber 2014: Table 1 Edwards and Schreiber 2014: Table 1
Pataraya 8 Pataraya 9	1139	36		2–019 AD (19.1%) 836–988 AD (76.4%) 9–1020 AD (95.4%)	Edwards and Schreiber 2014: Table 1 Edwards and Schreiber 2014: Table 1
•		30	88	J-1040 MJ (7J,770)	Edwards and Schreiber 2014; Table I
NASCA VALLEY (30 Estaqueria	900 ması)	70	10	34–1277 AD (95.4%)	Strong 1057-Table 4
		70	10	OT-14// 11D (70.770)	Strong 1957:Table 4
TARUGA VALLEY (4.4	60	2 745 AD (16 10%) 768 808 AD (72 40%) 029 064 AD (5 00%)	Conlee 2000: Table 4.2
Pajonal Alto 1	1256 1400	44 50		3–745 AD (16.1%) 768–898 AD (73.4%) 928–964 AD (5.9%)	Conlee 2000: Table 4.2 Conlee 2000: Table 4.2
Pajonal Alto 2			59	6–774 AD (95.4%)	Coniee 2000: Table 4.2
LAS TRANCAS VAL			00	0.1000 4D (04.5%) 1050 10(0.4D (0.0%)	0. 1055 m 11 4
Huaca del Loro 1	970	70		2–1228 AD (94.5%) 1253–1262 AD (0.9%)	Strong 1957:Table 4
Huaca del Loro 2	1200	80		1–750 AD (9.9%) 767–1024 AD (85.6%)	Strong 1957:Table 4
Zorropata 1	1631	21		6–535 AD (95.4%)	Kerchusky 2017: Table 5.4 and UA repo
Zorropata 2	1461	20		6–659 AD (95.4%)	Kerchusky 2017: Table 5.4 and UA repo
Zorropata 3	1479	20		9–650 AD (95.4%)	Kerchusky 2017: Table 5.4 and UA repo
Zorropata 4	1622	21		9–538 AD (95.4%)	Kerchusky 2017: Table 5.4 and UA repo
Zorropata 5	1475	20		2–652 AD (95.4%)	Kerchusky 2017: Table 5.4 and UA repo
Zorropata 6	1382	20	64	9–688 AD (55.6%) 739–773 AD (39.9%)	Kerchusky 2017: Table 5.4 and UA repo
Arequipa					
Site	¹⁴ C	Age	+/-	Calibrated Age	Reference
	(BI	-	BP	·	
CARAVELI VALLEY	(20	0 masl)			
Curaca	950		20	1045-1090 AD (38.7%) 1098-1211 AD (56.7%)	unpublished, also see Lopez Hurtado 201
OCOÑA VALLEY				· · · · · · · · · · · · · · · · · · ·	
	(60				
		0 masl)	120	578-1021 AD (95.4%)	Rowe 1967: 27
Corral Redonda	130	0 masl))5	120 120	578–1021 AD (95.4%) 672–1154 AD (95.4%)	Rowe 1967: 27 Rowe 1967: 27
	130 116	0 masl) 05 55	120	672–1154 AD (95.4%)	Rowe 1967: 27 Rowe 1967: 27 Rowe 1967: 27
Corral Redonda Corral Redonda Corral Redonda	130 116 121	0 masl) 05 55 12	120 120	672–1154 AD (95.4%) 646–1050 AD (91.7%) 1083–1145 AD (91.7%)	Rowe 1967: 27 Rowe 1967: 27
Corral Redonda Corral Redonda Corral Redonda	130 116	0 masl) 05 55 12	120	672–1154 AD (95.4%)	Rowe 1967: 27 Rowe 1967: 27 Royal Institute of Culture Heritage,
Corral Redonda Corral Redonda Corral Redonda Corral Redonda	130 116 121 111	00 masl) 05 55 12	120 120 70	672–1154 AD (95.4%) 646–1050 AD (91.7%) 1083–1145 AD (91.7%) 773–814 AD (4.2%) 847–1073 AD (79.3%) 1078–1152 AD (11.9%)	Rowe 1967: 27 Rowe 1967: 27 Royal Institute of Culture Heritage, Unpublished
Corral Redonda Corral Redonda Corral Redonda Corral Redonda Corral Redonda	130 116 121 111	00 masl) 05 55 12 10	120 120 70 25	672–1154 AD (95.4%) 646–1050 AD (91.7%) 1083–1145 AD (91.7%) 773–814 AD (4.2%) 847–1073 AD (79.3%) 1078–1152 AD (11.9%) 891–994 AD (95.4%)	Rowe 1967: 27 Rowe 1967: 27 Royal Institute of Culture Heritage, Unpublished Dumbarton Oaks, Unpublished
Corral Redonda Corral Redonda Corral Redonda Corral Redonda Corral Redonda Corral Redonda	130 116 121 111 115 126	00 masl) 05 55 12 10 60	120 120 70	672–1154 AD (95.4%) 646–1050 AD (91.7%) 1083–1145 AD (91.7%) 773–814 AD (4.2%) 847–1073 AD (79.3%) 1078–1152 AD (11.9%)	Rowe 1967: 27 Rowe 1967: 27 Royal Institute of Culture Heritage, Unpublished
Corral Redonda Corral Redonda Corral Redonda Corral Redonda Corral Redonda Corral Redonda	130 116 127 111 115 126 EY (25	00 masl) 05 55 12 10 60 64	120 120 70 25	672–1154 AD (95.4%) 646–1050 AD (91.7%) 1083–1145 AD (91.7%) 773–814 AD (4.2%) 847–1073 AD (79.3%) 1078–1152 AD (11.9%) 891–994 AD (95.4%)	Rowe 1967: 27 Rowe 1967: 27 Royal Institute of Culture Heritage, Unpublished Dumbarton Oaks, Unpublished
Corral Redonda COTAHUASI VALLE	130 116 123 111 115 126 3Y (25 ma	0 masl) 05 55 62 00 60 64 600 6sl)	120 120 70 25 37	672-1154 AD (95.4%) 646-1050 AD (91.7%) 1083-1145 AD (91.7%) 773-814 AD (4.2%) 847-1073 AD (79.3%) 1078-1152 AD (11.9%) 891-994 AD (95.4%) 684-744 AD (17.5%) 768-893 AD (77.3%) 943-949 (0.6%)	Rowe 1967: 27 Rowe 1967: 27 Royal Institute of Culture Heritage, Unpublished Dumbarton Oaks, Unpublished King 2012: 29
Corral Redonda COTAHUASI VALLE Tenahaha	130 116 127 111 115 126 EY (25 ma 104	00 masl) 05 05 05 06 06 06 06 06 06 06 06 06 06 08 08 08 08 08	120 120 70 25 37	672-1154 AD (95.4%) 646-1050 AD (91.7%) 1083-1145 AD (91.7%) 773-814 AD (4.2%) 847-1073 AD (79.3%) 1078-1152 AD (11.9%) 891-994 AD (95.4%) 684-744 AD (17.5%) 768-893 AD (77.3%) 943-949 (0.6%) 990-1054 AD (55.4%) 1060-1070 AD (2.1%) 1080-1150 AD (37.9%)	Rowe 1967: 27 Rowe 1967: 27 Royal Institute of Culture Heritage, Unpublished Dumbarton Oaks, Unpublished King 2012: 29 Jennings 2010: 45
Corral Redonda Corral Redonda Corral Redonda Corral Redonda Corral Redonda Corral Redonda COTAHUASI VALLE Tenahaha	130 116 127 111 115 126 EY (25 ma 104 128	00 masl) 05 05 05 06 06 06 06 06 06 06 06 06 08 08 08 08 08 08 08 08 08 08 08 08 08	120 120 70 25 37 35 33	672-1154 AD (95.4%) 646-1050 AD (91.7%) 1083-1145 AD (91.7%) 773-814 AD (4.2%) 847-1073 AD (79.3%) 1078-1152 AD (11.9%) 891-994 AD (95.4%) 684-744 AD (17.5%) 768-893 AD (77.3%) 943-949 (0.6%) 990-1054 AD (55.4%) 1060-1070 AD (2.1%) 1080-1150 AD (37.9%) 685-744 AD (27.4%) 768-885 AD (68.1%)	Rowe 1967: 27 Rowe 1967: 27 Royal Institute of Culture Heritage, Unpublished Dumbarton Oaks, Unpublished King 2012: 29 Jennings 2010: 45 Jennings 2010: 45
Corral Redonda Corral Redonda Corral Redonda Corral Redonda Corral Redonda Corral Redonda COTAHUASI VALLE Tenahaha Tenahaha Tenahaha	130 116 127 111 118 126 EY (25 ma 104 128	00 masl) 05 05 05 06 06 06 06 06 06 06 06 08 08 08	120 120 70 25 37 35 33 72	672-1154 AD (95.4%) 646-1050 AD (91.7%) 1083-1145 AD (91.7%) 773-814 AD (4.2%) 847-1073 AD (79.3%) 1078-1152 AD (11.9%) 891-994 AD (95.4%) 684-744 AD (17.5%) 768-893 AD (77.3%) 943-949 (0.6%) 990-1054 AD (55.4%) 1060-1070 AD (2.1%) 1080-1150 AD (37.9%) 685-744 AD (27.4%) 768-885 AD (68.1%) 688-739 AD (5.2%) 771-1025 AD (90.3%)	Rowe 1967: 27 Rowe 1967: 27 Royal Institute of Culture Heritage, Unpublished Dumbarton Oaks, Unpublished King 2012: 29 Jennings 2010: 45 Jennings 2010: 45 Jennings 2010: 45
Corral Redonda Corral Redonda Corral Redonda Corral Redonda Corral Redonda Corral Redonda COTAHUASI VALLE Tenahaha Tenahaha Tenahaha Tenahaha	130 116 123 111 115 126 EY (25 ma 104 128 118	00 masl) 05 05 05 05 06 06 06 06 06 06 08 08 08 08 08 08 08 08 08 08 08 08 08	120 120 70 25 37 35 33 72 41	672–1154 AD (95.4%) 646–1050 AD (91.7%) 1083–1145 AD (91.7%) 773–814 AD (4.2%) 847–1073 AD (79.3%) 1078–1152 AD (11.9%) 891–994 AD (95.4%) 684–744 AD (17.5%) 768–893 AD (77.3%) 943–949 (0.6%) 990–1054 AD (55.4%) 1060–1070 AD (2.1%) 1080–1150 AD (37.9%) 685–744 AD (27.4%) 768–885 AD (68.1%) 688–739 AD (5.2%) 771–1025 AD (90.3%) 895–935 AD (11.3%) 957–1052 AD (69.2%) 1082–1147 AD (14.9%)	Rowe 1967: 27 Rowe 1967: 27 Royal Institute of Culture Heritage, Unpublished Dumbarton Oaks, Unpublished King 2012: 29 Jennings 2010: 45
Corral Redonda Corral Redonda Corral Redonda Corral Redonda Corral Redonda Corral Redonda COTAHUASI VALLE Tenahaha Tenahaha Tenahaha Tenahaha Tenahaha	130 116 121 111 115 126 EY (25 ma 104 128 118	00 masl) 05 05 05 05 06 06 06 06 06 06 08 08 08 08 08 08 08 08	120 120 70 25 37 35 33 72 41	672–1154 AD (95.4%) 646–1050 AD (91.7%) 1083–1145 AD (91.7%) 773–814 AD (4.2%) 847–1073 AD (79.3%) 1078–1152 AD (11.9%) 891–994 AD (95.4%) 684–744 AD (17.5%) 768–893 AD (77.3%) 943–949 (0.6%) 990–1054 AD (55.4%) 1060–1070 AD (2.1%) 1080–1150 AD (37.9%) 685–744 AD (27.4%) 768–885 AD (68.1%) 688–739 AD (5.2%) 771–1025 AD (90.3%) 895–935 AD (11.3%) 957–1052 AD (69.2%) 1082–1147 AD (14.9%) 891–1046 AD (92.1%) 1088–1107 AD (2.1%) 1121–1132 AD (1.2%)	Rowe 1967: 27 Rowe 1967: 27 Royal Institute of Culture Heritage, Unpublished Dumbarton Oaks, Unpublished King 2012: 29 Jennings 2010: 45
Corral Redonda Corral Redonda Corral Redonda Corral Redonda Corral Redonda Corral Redonda COTAHUASI VALLE Tenahaha Tenahaha Tenahaha Tenahaha Tenahaha Tenahaha Tenahaha	130 116 121 111 112 126 2Y (25 ma 104 128 118 100 109	00 masl) 05 05 05 05 05 06 06 06 06 06 06 06 06 06 06 06 06 06	120 120 70 25 37 35 33 72 41 42 38	672–1154 AD (95.4%) 646–1050 AD (91.7%) 1083–1145 AD (91.7%) 773–814 AD (4.2%) 847–1073 AD (79.3%) 1078–1152 AD (11.9%) 891–994 AD (95.4%) 684–744 AD (17.5%) 768–893 AD (77.3%) 943–949 (0.6%) 990–1054 AD (55.4%) 1060–1070 AD (2.1%) 1080–1150 AD (37.9%) 685–744 AD (27.4%) 768–885 AD (68.1%) 688–739 AD (5.2%) 771–1025 AD (90.3%) 895–935 AD (11.3%) 957–1052 AD (69.2%) 1082–1147 AD (14.9%) 891–1046 AD (92.1%) 1088–1107 AD (2.1%) 1121–1132 AD (1.2%) 892–1023 AD (95.4%)	Rowe 1967: 27 Rowe 1967: 27 Royal Institute of Culture Heritage, Unpublished Dumbarton Oaks, Unpublished King 2012: 29 Jennings 2010: 45
Corral Redonda Corral Redonda Corral Redonda Corral Redonda Corral Redonda Corral Redonda COTAHUASI VALLE Tenahaha Tenahaha Tenahaha Tenahaha Tenahaha Tenahaha Tenahaha Tenahaha Tenahaha	130 116 121 111 115 128 2Y (25 ma 100 128 118 100 100 112	00 masl) 05 05 05 05 06 06 06 06 06 06 06 06 06 06 06 06 06	120 120 70 25 37 35 33 72 41 42 38 35	672–1154 AD (95.4%) 646–1050 AD (91.7%) 1083–1145 AD (91.7%) 773–814 AD (4.2%) 847–1073 AD (79.3%) 1078–1152 AD (11.9%) 891–994 AD (95.4%) 684–744 AD (17.5%) 768–893 AD (77.3%) 943–949 (0.6%) 990–1054 AD (55.4%) 1060–1070 AD (2.1%) 1080–1150 AD (37.9%) 685–744 AD (27.4%) 768–885 AD (68.1%) 688–739 AD (5.2%) 771–1025 AD (90.3%) 895–935 AD (11.3%) 957–1052 AD (69.2%) 1082–1147 AD (14.9%) 891–1046 AD (92.1%) 1088–1107 AD (2.1%) 1121–1132 AD (1.2%) 892–1023 AD (95.4%)	Rowe 1967: 27 Rowe 1967: 27 Royal Institute of Culture Heritage, Unpublished Dumbarton Oaks, Unpublished King 2012: 29 Jennings 2010: 45
Corral Redonda Corral Redonda Corral Redonda Corral Redonda Corral Redonda Corral Redonda COTAHUASI VALLE Tenahaha	130 116 121 111 115 128 128 104 128 118 107 109 112 111	00 masl) 05 05 05 06 06 06 06 06 06 06 08 08 08 08 08 08 08 08 08 08 08 08 08	120 120 70 25 37 35 33 72 41 42 38 35 38	672–1154 AD (95.4%) 646–1050 AD (91.7%) 1083–1145 AD (91.7%) 773–814 AD (4.2%) 847–1073 AD (79.3%) 1078–1152 AD (11.9%) 891–994 AD (95.4%) 684–744 AD (17.5%) 768–893 AD (77.3%) 943–949 (0.6%) 990–1054 AD (55.4%) 1060–1070 AD (2.1%) 1080–1150 AD (37.9%) 685–744 AD (27.4%) 768–885 AD (68.1%) 688–739 AD (5.2%) 771–1025 AD (90.3%) 895–935 AD (11.3%) 957–1052 AD (69.2%) 1082–1147 AD (14.9%) 891–1046 AD (92.1%) 1088–1107 AD (2.1%) 1121–1132 AD (1.2%) 892–1023 AD (95.4%) 893–1024 AD (95.4%)	Rowe 1967: 27 Rowe 1967: 27 Royal Institute of Culture Heritage, Unpublished Dumbarton Oaks, Unpublished King 2012: 29 Jennings 2010: 45
Corral Redonda Corral Redonda Corral Redonda Corral Redonda Corral Redonda Corral Redonda COTAHUASI VALLE Tenahaha	130 116 127 117 118 126 27 (25 ma 100 128 118 107 109 112 1,1,1	00 masl) 05 05 05 05 06 06 06 06 06 06 08 08 08 08 08 08 08 08 08 08 08 08 08	120 120 70 25 37 35 33 72 41 42 38 35 38 35	672-1154 AD (95.4%) 646-1050 AD (91.7%) 1083-1145 AD (91.7%) 773-814 AD (4.2%) 847-1073 AD (79.3%) 1078-1152 AD (11.9%) 891-994 AD (95.4%) 684-744 AD (17.5%) 768-893 AD (77.3%) 943-949 (0.6%) 990-1054 AD (55.4%) 1060-1070 AD (2.1%) 1080-1150 AD (37.9%) 685-744 AD (27.4%) 768-885 AD (68.1%) 688-739 AD (5.2%) 771-1025 AD (90.3%) 895-935 AD (11.3%) 957-1052 AD (69.2%) 1082-1147 AD (14.9%) 891-1046 AD (92.1%) 1088-1107 AD (2.1%) 1121-1132 AD (1.2%) 892-1023 AD (95.4%) 893-1024 AD (95.4%) 890-1021 AD (95.4%) 890-1021 AD (95.4%) 772-815 AD (12.9%) 845-991 AD (82.5%)	Rowe 1967: 27 Rowe 1967: 27 Royal Institute of Culture Heritage, Unpublished Dumbarton Oaks, Unpublished King 2012: 29 Jennings 2010: 45
Corral Redonda Corral Redonda Corral Redonda Corral Redonda Corral Redonda Corral Redonda COTAHUASI VALLE Tenahaha	130 116 121 111 115 126 127 (25 ma 104 128 118 107 109 112 1,1 1,1	00 masl) 05 05 05 05 06 06 06 06 06 06 08 08 08 08 08 08 08 08 08 08 08 08 08	120 120 70 25 37 35 33 72 41 42 38 35 38 35 38	672–1154 AD (95.4%) 646–1050 AD (91.7%) 1083–1145 AD (91.7%) 773–814 AD (4.2%) 847–1073 AD (79.3%) 1078–1152 AD (11.9%) 891–994 AD (95.4%) 684–744 AD (17.5%) 768–893 AD (77.3%) 943–949 (0.6%) 990–1054 AD (55.4%) 1060–1070 AD (2.1%) 1080–1150 AD (37.9%) 685–744 AD (27.4%) 768–885 AD (68.1%) 688–739 AD (5.2%) 771–1025 AD (90.3%) 895–935 AD (11.3%) 957–1052 AD (69.2%) 1082–1147 AD (14.9%) 891–1046 AD (92.1%) 1088–1107 AD (2.1%) 1121–1132 AD (1.2%) 892–1023 AD (95.4%) 893–1024 AD (95.4%) 890–1021 AD (95.4%) 772–815 AD (12.9%) 845–991 AD (82.5%) 772–814 AD (7.9%) 852–994 AD (87.6%)	Rowe 1967: 27 Rowe 1967: 27 Royal Institute of Culture Heritage, Unpublished Dumbarton Oaks, Unpublished King 2012: 29 Jennings 2010: 45
Corral Redonda Corral Redonda Corral Redonda Corral Redonda Corral Redonda Corral Redonda COTAHUASI VALLE Tenahaha	130 116 121 111 115 126 127 (25 ma 104 128 118 107 109 112 1,1 1,1 1,1	00 masl) 05 05 05 05 06 06 06 06 06 08 08 08 08 08 08 08 08 08 08 08 08 08	120 120 70 25 37 35 33 72 41 42 38 335 338 35 335 335	672-1154 AD (95.4%) 646-1050 AD (91.7%) 1083-1145 AD (91.7%) 773-814 AD (4.2%) 847-1073 AD (79.3%) 1078-1152 AD (11.9%) 891-994 AD (95.4%) 684-744 AD (17.5%) 768-893 AD (77.3%) 943-949 (0.6%) 990-1054 AD (55.4%) 1060-1070 AD (2.1%) 1080-1150 AD (37.9%) 685-744 AD (27.4%) 768-885 AD (68.1%) 688-739 AD (5.2%) 771-1025 AD (90.3%) 895-935 AD (11.3%) 957-1052 AD (69.2%) 1082-1147 AD (14.9%) 891-1046 AD (92.1%) 1088-1107 AD (2.1%) 1121-1132 AD (1.2%) 892-1023 AD (95.4%) 893-1024 AD (95.4%) 890-1021 AD (95.4%) 890-1021 AD (95.4%) 872-815 AD (12.9%) 845-991 AD (82.5%) 772-814 AD (7.9%) 852-994 AD (87.6%) 893-1021 AD (95.4%)	Rowe 1967: 27 Rowe 1967: 27 Royal Institute of Culture Heritage, Unpublished Dumbarton Oaks, Unpublished King 2012: 29 Jennings 2010: 45
Corral Redonda Corral Redonda Corral Redonda Corral Redonda Corral Redonda Corral Redonda COTAHUASI VALLE Tenahaha	130 116 121 111 112 24 27 (25 ma 104 128 118 107 109 112 1,1 1,1 1,1 1,1 1,1	00 masl) 05 05 05 05 06 06 06 06 06 06 08 08 08 08 08 08 08 08 08 08 08 08 08	120 120 70 25 37 35 33 72 41 42 38 35 38 35 35 35 35 35	672-1154 AD (95.4%) 646-1050 AD (91.7%) 1083-1145 AD (91.7%) 773-814 AD (4.2%) 847-1073 AD (79.3%) 1078-1152 AD (11.9%) 891-994 AD (95.4%) 684-744 AD (17.5%) 768-893 AD (77.3%) 943-949 (0.6%) 990-1054 AD (55.4%) 1060-1070 AD (2.1%) 1080-1150 AD (37.9%) 685-744 AD (27.4%) 768-885 AD (68.1%) 688-739 AD (52.%) 771-1025 AD (69.2%) 1082-1147 AD (14.9%) 895-935 AD (11.3%) 957-1052 AD (69.2%) 1082-1147 AD (14.9%) 891-1046 AD (92.1%) 1088-1107 AD (2.1%) 1121-1132 AD (1.2%) 892-1023 AD (95.4%) 893-1024 AD (95.4%) 890-1021 AD (95.4%) 772-815 AD (12.9%) 845-991 AD (82.5%) 772-814 AD (7.9%) 852-994 AD (87.6%) 893-1021 AD (95.4%) 893-1021 AD (95.4%) 893-1021 AD (95.4%) 893-1021 AD (95.4%) 888-996 AD (87.4%) 1001-1020 AD (8.1%)	Rowe 1967: 27 Rowe 1967: 27 Royal Institute of Culture Heritage, Unpublished Dumbarton Oaks, Unpublished King 2012: 29 Jennings 2010: 45
Corral Redonda Corral Redonda Corral Redonda Corral Redonda Corral Redonda Corral Redonda COTAHUASI VALLE Tenahaha	130 116 121 111 115 126 27 (25 ma 100 128 118 100 110 111 1,1 1,1 1,1 1,1 1,1 1,1 1,1	00 masl) 05 05 05 05 05 06 06 06 06 06 06 08 08 08 08 08 08 08 08 08 08 08 08 08	120 120 70 25 37 35 33 41 42 38 35 38 35 33 35 33 35 33 35	672-1154 AD (95.4%) 646-1050 AD (91.7%) 1083-1145 AD (91.7%) 773-814 AD (4.2%) 847-1073 AD (79.3%) 1078-1152 AD (11.9%) 891-994 AD (95.4%) 684-744 AD (17.5%) 768-893 AD (77.3%) 943-949 (0.6%) 990-1054 AD (55.4%) 1060-1070 AD (2.1%) 1080-1150 AD (37.9%) 685-744 AD (27.4%) 768-885 AD (68.1%) 688-739 AD (5.2%) 771-1025 AD (90.3%) 895-935 AD (11.3%) 957-1052 AD (69.2%) 1082-1147 AD (14.9%) 891-1046 AD (92.1%) 1088-1107 AD (2.1%) 1121-1132 AD (1.2%) 892-1023 AD (95.4%) 893-1024 AD (95.4%) 890-1021 AD (95.4%) 890-1021 AD (95.4%) 772-815 AD (12.9%) 845-991 AD (82.5%) 772-814 AD (7.9%) 852-994 AD (87.6%) 893-1021 AD (95.4%) 888-996 AD (87.4%) 1001-1020 AD (8.1%) 771-987 AD (95.4%)	Rowe 1967: 27 Rowe 1967: 27 Royal Institute of Culture Heritage, Unpublished Dumbarton Oaks, Unpublished King 2012: 29 Jennings 2010: 45
Corral Redonda Corral Redonda Corral Redonda Corral Redonda Corral Redonda Corral Redonda COTAHUASI VALLE Tenahaha	130 116 121 111 112 24 27 (25 ma 104 128 118 107 109 112 1,1 1,1 1,1 1,1 1,1	00 masl) 05 05 05 05 05 06 06 06 06 06 06 08 08 08 08 08 08 08 08 08 08 08 08 08	120 120 70 25 37 35 33 72 41 42 38 35 38 35 35 35 35 35	672-1154 AD (95.4%) 646-1050 AD (91.7%) 1083-1145 AD (91.7%) 773-814 AD (4.2%) 847-1073 AD (79.3%) 1078-1152 AD (11.9%) 891-994 AD (95.4%) 684-744 AD (17.5%) 768-893 AD (77.3%) 943-949 (0.6%) 990-1054 AD (55.4%) 1060-1070 AD (2.1%) 1080-1150 AD (37.9%) 685-744 AD (27.4%) 768-885 AD (68.1%) 688-739 AD (52.%) 771-1025 AD (69.2%) 1082-1147 AD (14.9%) 895-935 AD (11.3%) 957-1052 AD (69.2%) 1082-1147 AD (14.9%) 891-1046 AD (92.1%) 1088-1107 AD (2.1%) 1121-1132 AD (1.2%) 892-1023 AD (95.4%) 893-1024 AD (95.4%) 890-1021 AD (95.4%) 772-815 AD (12.9%) 845-991 AD (82.5%) 772-814 AD (7.9%) 852-994 AD (87.6%) 893-1021 AD (95.4%) 893-1021 AD (95.4%) 893-1021 AD (95.4%) 893-1021 AD (95.4%) 888-996 AD (87.4%) 1001-1020 AD (8.1%)	Rowe 1967: 27 Rowe 1967: 27 Royal Institute of Culture Heritage, Unpublished Dumbarton Oaks, Unpublished King 2012: 29 Jennings 2010: 45
Corral Redonda Corral Redonda Corral Redonda Corral Redonda Corral Redonda Corral Redonda COTAHUASI VALLE Tenahaha	130 116 121 111 115 126 27 (25 ma 100 128 118 100 110 111 1,1 1,1 1,1 1,1 1,1 1,1 1,1	00 masl) 05 05 05 05 06 06 06 06 06 06 08 08 08 08 08 08 08 08 08 08 08 08 08	120 120 70 25 37 35 33 41 42 38 35 38 35 33 35 33 35 33 35	672-1154 AD (95.4%) 646-1050 AD (91.7%) 1083-1145 AD (91.7%) 773-814 AD (4.2%) 847-1073 AD (79.3%) 1078-1152 AD (11.9%) 891-994 AD (95.4%) 684-744 AD (17.5%) 768-893 AD (77.3%) 943-949 (0.6%) 990-1054 AD (55.4%) 1060-1070 AD (2.1%) 1080-1150 AD (37.9%) 685-744 AD (27.4%) 768-885 AD (68.1%) 688-739 AD (5.2%) 771-1025 AD (90.3%) 895-935 AD (11.3%) 957-1052 AD (69.2%) 1082-1147 AD (14.9%) 891-1046 AD (92.1%) 1088-1107 AD (2.1%) 1121-1132 AD (1.2%) 892-1023 AD (95.4%) 893-1024 AD (95.4%) 890-1021 AD (95.4%) 890-1021 AD (95.4%) 772-815 AD (12.9%) 845-991 AD (82.5%) 772-814 AD (7.9%) 852-994 AD (87.6%) 893-1021 AD (95.4%) 888-996 AD (87.4%) 1001-1020 AD (8.1%) 771-987 AD (95.4%)	Rowe 1967: 27 Rowe 1967: 27 Royal Institute of Culture Heritage, Unpublished Dumbarton Oaks, Unpublished King 2012: 29 Jennings 2010: 45
Corral Redonda Corral Redonda Corral Redonda Corral Redonda Corral Redonda Corral Redonda COTAHUASI VALLE Tenahaha	130 116 127 117 118 126 27 (25 ma 104 128 118 107 100 112 1,1 1,1 1,1 1,1 1,1 1,1 1,1 1,1 1,1	00 masl) 05 05 05 05 06 06 06 06 06 06 08 08 08 08 08 08 08 08 08 08 08 08 08	120 120 70 225 337 335 338 339 341 442 42 338 335 338 335 335 337 337	672-1154 AD (95.4%) 646-1050 AD (91.7%) 1083-1145 AD (91.7%) 773-814 AD (4.2%) 847-1073 AD (79.3%) 1078-1152 AD (11.9%) 891-994 AD (95.4%) 684-744 AD (17.5%) 768-893 AD (77.3%) 943-949 (0.6%) 990-1054 AD (55.4%) 1060-1070 AD (2.1%) 1080-1150 AD (37.9%) 685-744 AD (27.4%) 768-885 AD (68.1%) 688-739 AD (5.2%) 771-1025 AD (90.3%) 895-935 AD (11.3%) 957-1052 AD (69.2%) 1082-1147 AD (14.9%) 891-1046 AD (92.1%) 1088-1107 AD (2.1%) 1121-1132 AD (1.2%) 892-1023 AD (95.4%) 893-1024 AD (95.4%) 890-1021 AD (95.4%) 890-1021 AD (95.4%) 772-814 AD (7.9%) 852-994 AD (87.6%) 893-1021 AD (95.4%) 888-996 AD (87.4%) 1001-1020 AD (8.1%) 771-987 AD (95.4%) 889-996 AD (86.8%) 1001-1020 AD (8.8%)	Rowe 1967: 27 Rowe 1967: 27 Royal Institute of Culture Heritage, Unpublished Dumbarton Oaks, Unpublished King 2012: 29 Jennings 2010: 45
Corral Redonda Corral Redonda Corral Redonda Corral Redonda Corral Redonda Corral Redonda COTAHUASI VALLE Tenahaha	130 116 127 117 118 126 27 (25 ma 104 128 118 107 100 112 1,1 1,1 1,1 1,1 1,1 1,1 1,1 1,1 1,1	00 masl) 05 05 05 05 06 06 06 06 06 06 08 08 08 08 08 08 08 08 08 08 08 08 08	120 120 70 225 337 335 338 339 341 442 42 338 335 338 335 335 337 337	672-1154 AD (95.4%) 646-1050 AD (91.7%) 1083-1145 AD (91.7%) 773-814 AD (4.2%) 847-1073 AD (79.3%) 1078-1152 AD (11.9%) 891-994 AD (95.4%) 684-744 AD (17.5%) 768-893 AD (77.3%) 943-949 (0.6%) 990-1054 AD (55.4%) 1060-1070 AD (2.1%) 1080-1150 AD (37.9%) 685-744 AD (27.4%) 768-885 AD (68.1%) 688-739 AD (5.2%) 771-1025 AD (90.3%) 895-935 AD (11.3%) 957-1052 AD (69.2%) 1082-1147 AD (14.9%) 891-1046 AD (92.1%) 1088-1107 AD (2.1%) 1121-1132 AD (1.2%) 892-1023 AD (95.4%) 893-1024 AD (95.4%) 890-1021 AD (95.4%) 890-1021 AD (95.4%) 772-814 AD (7.9%) 852-994 AD (87.6%) 893-1021 AD (95.4%) 888-996 AD (87.4%) 1001-1020 AD (8.1%) 771-987 AD (95.4%) 889-996 AD (86.8%) 1001-1020 AD (8.8%)	Rowe 1967: 27 Rowe 1967: 27 Royal Institute of Culture Heritage, Unpublished Dumbarton Oaks, Unpublished King 2012: 29 Jennings 2010: 45
Corral Redonda Corral Redonda Corral Redonda Corral Redonda Corral Redonda Corral Redonda COTAHUASI VALLE Tenahaha	130 116 121 111 115 126 127 (25 ma 104 128 116 107 109 111 1,1 1,1 1,1 1,1 1,1 1,1 1,1 1,1 1,	00 masl) 05 05 05 05 06 06 06 06 06 06 08 08 08 08 08 08 08 08 08 08 08 08 08	120 120 70 25 337 335 33 37 24 41 42 238 335 335 335 335 335 335 337 335 337	672-1154 AD (95.4%) 646-1050 AD (91.7%) 1083-1145 AD (91.7%) 773-814 AD (4.2%) 847-1073 AD (79.3%) 1078-1152 AD (11.9%) 891-994 AD (95.4%) 684-744 AD (17.5%) 768-893 AD (77.3%) 943-949 (0.6%) 990-1054 AD (55.4%) 1060-1070 AD (2.1%) 1080-1150 AD (37.9%) 685-744 AD (27.4%) 768-885 AD (68.1%) 688-739 AD (5.2%) 771-1025 AD (90.3%) 895-935 AD (11.3%) 957-1052 AD (69.2%) 1082-1147 AD (14.9%) 891-1046 AD (92.1%) 1088-1107 AD (2.1%) 1121-1132 AD (1.2%) 892-1023 AD (95.4%) 893-1024 AD (95.4%) 890-1021 AD (95.4%) 772-815 AD (12.9%) 845-991 AD (82.5%) 772-814 AD (7.9%) 852-994 AD (87.6%) 893-1021 AD (95.4%) 888-996 AD (87.4%) 1001-1020 AD (8.1%) 771-987 AD (95.4%) 889-996 AD (86.8%) 1001-1020 AD (8.8%) 1026-1185 AD (95.4%)	Rowe 1967: 27 Rowe 1967: 27 Royal Institute of Culture Heritage, Unpublished Dumbarton Oaks, Unpublished King 2012: 29 Jennings 2010: 45
Corral Redonda COTAHUASI VALLE Tenahaha	130 116 121 111 115 126 27 (25 ma 104 128 116 107 117 1,1 1,1 1,1 1,1 1,1 1,1 1,1 1,1 1,	00 masl) 05 05 05 05 06 06 06 06 06 06 08 08 08 08 08 08 08 08 08 08 08 08 08	120 120 70 25 337 25 337 41 42 38 33 35 33 35 33 35 33 35 33 34 49 90 60	672-1154 AD (95.4%) 646-1050 AD (91.7%) 1083-1145 AD (91.7%) 773-814 AD (4.2%) 847-1073 AD (79.3%) 1078-1152 AD (11.9%) 891-994 AD (95.4%) 684-744 AD (17.5%) 768-893 AD (77.3%) 943-949 (0.6%) 990-1054 AD (55.4%) 1060-1070 AD (2.1%) 1080-1150 AD (37.9%) 685-744 AD (27.4%) 768-885 AD (68.1%) 688-739 AD (5.2%) 771-1025 AD (69.2%) 1082-1147 AD (14.9%) 895-935 AD (11.3%) 957-1052 AD (69.2%) 1082-1147 AD (14.9%) 891-1046 AD (92.1%) 1088-1107 AD (2.1%) 1121-1132 AD (1.2%) 892-1023 AD (95.4%) 893-1024 AD (95.4%) 890-1021 AD (95.4%) 772-815 AD (12.9%) 845-991 AD (82.5%) 772-814 AD (7.9%) 852-994 AD (87.6%) 893-1021 AD (95.4%) 888-996 AD (87.4%) 1001-1020 AD (8.1%) 771-987 AD (95.4%) 889-996 AD (86.8%) 1001-1020 AD (8.8%) 1026-1185 AD (95.4%) 897-932 AD (3.4%) 960-1236 AD (89.4%) 1241-1270 AD (2.6%) 995-1001 AD (0.6%) 1019-1225 AD (94.8%)	Rowe 1967: 27 Rowe 1967: 27 Royal Institute of Culture Heritage, Unpublished Dumbarton Oaks, Unpublished King 2012: 29 Jennings 2010: 45
Corral Redonda Corral Redonda Corral Redonda Corral Redonda Corral Redonda Corral Redonda COTAHUASI VALLE Tenahaha	130 116 121 111 115 126 127 (25 ma 104 128 118 107 109 112 1,1 1,1 1,1 1,1 1,1 1,1 1,1 1,1 1,2 112 11	00 masl) 05 05 05 05 05 06 06 06 06 06 06 08 08 08 08 08 08 08 08 08 08 08 08 08	120 120 70 25 337 25 337 24 41 42 238 335 335 335 335 335 335 335 337 34	672-1154 AD (95.4%) 646-1050 AD (91.7%) 1083-1145 AD (91.7%) 773-814 AD (4.2%) 847-1073 AD (79.3%) 1078-1152 AD (11.9%) 891-994 AD (95.4%) 684-744 AD (17.5%) 768-893 AD (77.3%) 943-949 (0.6%) 990-1054 AD (55.4%) 1060-1070 AD (2.1%) 1080-1150 AD (37.9%) 685-744 AD (27.4%) 768-885 AD (68.1%) 688-739 AD (5.2%) 771-1025 AD (90.3%) 895-935 AD (11.3%) 957-1052 AD (69.2%) 1082-1147 AD (14.9%) 891-1046 AD (92.1%) 1088-1107 AD (2.1%) 1121-1132 AD (1.2%) 892-1023 AD (95.4%) 893-1024 AD (95.4%) 890-1021 AD (95.4%) 772-815 AD (12.9%) 845-991 AD (82.5%) 772-814 AD (7.9%) 852-994 AD (87.6%) 893-1021 AD (95.4%) 888-996 AD (87.4%) 1001-1020 AD (8.1%) 771-987 AD (95.4%) 889-996 AD (86.8%) 1001-1020 AD (8.8%) 1026-1185 AD (95.4%) 897-932 AD (3.4%) 960-1236 AD (89.4%) 1241-1270 AD (2.6%)	Rowe 1967: 27 Rowe 1967: 27 Royal Institute of Culture Heritage, Unpublished Dumbarton Oaks, Unpublished King 2012: 29 Jennings 2010: 45

(continued on next page)

Table 1 (continued)

Arequipa				
MAJES VALLEY	(600 masl)			
La Real (Cueva)	1350	40	647-775 AD (90.2%) 789-793 AD (0.4%) 811-845 AD (4.9%)	Tung 2007: 943
La Real (Cueva)	1,335	35	657-776 AD (87.4%) 788-795 AD (0.8%) 810-848 AD (7.2%)	Jennings 2012:174
La Real (Cueva)	1,280	37	682–748 AD (28.8%) 767–888 AD (66.6%)	Jennings 2012:174
La Real (Cueva)	1427	38	591–688 AD (82.7%) 740–772 AD (12.8%)	Jennings 2012:174
La Real (Cueva)	1,319	37	688–776 AD (72.7%) 785–871 AD (22.7%)	Jennings 2012:174
La Real (Cueva)	1,318	38	669–776 AD (71.5%) 785–800 AD (3.6%) 805–871 AD (20.4%)	Jennings 2012:174
La Real (Cueva)	1,199	37	772–819 AD (17.6%) 836–990 AD (77.8%)	Jennings 2012:174
La Real (Cueva)	1,397	37	637–693 AD (57.9%) 699–774 AD(37.6%)	Jennings 2012:174
La Real (Estructura)	1250	40	687-741 AD(11.5%) 770-898 AD(77.9%) 930-963 AD (6.1%)	Tung 2007a: 943
La Real (Estructura)	1120	40	891–1026 AD (95.4%)	Tung 2007a: 943
La Real (Estructura)	1,028	37	992–1009 AD (7.1%) 1014–1153 AD (88.4%)	Jennings 2012:174
La Real (Estructura)	1,112	31	895–936 AD (28.2%) 956–1025 AD (67.2%)	Jennings 2012:174
La Real (Estructura)	1,055	37	974–979 AD (0.5%) 986–1073 AD (62.1%) 1078–1152 AD (32.9%)	Jennings 2012:174
Beringa	1406	53	583–775 AD (95.4%)	Tung 2007b: 270
Beringa	1353	32	656–775 AD (95.4%)	Tung 2007b: 270
Beringa	1340	40	652–776 AD (85.9%) 787–797 AD (1.2%) 809–853-AD (8.4%)	Tung 2007b: 270
Beringa	1330	31	662–776 AD (88.2%) 789–793 AD (0.5%) 811–845 AD (6.7%)	Tung 2007b: 270
Beringa	1243	33	691–704 AD (1.9%) 719–737 AD (2.3%) 771–897 AD (85.5%) 931–962 AD	Tung 2007b: 270
			(5.7%)	
Beringa	840	42	1212–1279 AD (95.4%)	Tung 2007b: 270
CHUQUIBAMBA	(2700			
VALLEY	masl)			
Numero 8	1181	42	772–841 AD (11.4%) 841–994 AD (84.1%)	Coleman 2010: 210
Numero 8	1066	42	900–926 AD (5.4%) 966–1054 AD (63.0%) 1060–1070 AD (1.5%) 1080–1150	Coleman 2010: 210
N C	050	05	AD (25.5%)	G-1 2010, 212
Numero 8	959	35	1030–1189 AD (91.3%) 1195–1210 AD (4.2%)	Coleman 2010: 210
Numero 8	803	35	1212–1297 AD (95.0%) 1370–1373 (0.4%)	Coleman 2010: 210
Huamantambo	1005	42	994–1004 AD (2.2%) 1017–1162 AD (91.2%) 1168–1180 AD (2.1%)	Coleman 2010: 210
Huamantambo	881	42	1051–1082 AD (5.0%) 1147–1279 AD (90.5%)	Coleman 2010: 210
Qoscopa	977	33	1027–1182 (95.4%)	Coleman 2010: 210
PAMPACOLCA VALLEY	(2900			
0.1 1	masl)	10	FF1 015 AD(14.00/) 054 005 AD (00.10/) 015 054 AD (50.50/) 000 00(AD	D 1 1 0001
Culcunche	1201	19	771–815 AD(14.3%) 854–905 AD (30.1%) 917–974 AD (50.5%) 980–986 AD	Popovic et al. 2021
	(0000		(0.6%)	
COLCA VALLEY	(2300			
ol ''	masl)	00	FF1 FF(AD (0.00)) FFF 00F AD (0F.00())	W.1 1.1 W. 1000 F4
Chijra	1380	80	551–556 AD (0.3%) 577–887 AD (95.2%)	Malpass y de la Vera 1990: 54
Chijra	1440	80	437–456 AD (1.0%) 467–775 AD (91.9%) 789–793 AD (0.2%) 812–847 AD	Malpass y de la Vera 1990: 54
Ob !!	1.400	00	(2.3%)	M-1 d-1- V 1000- F4
Chijra	1400	80	542–881 AD (95.4%)	Malpass y de la Vera 1990: 54
SIGUAS VALLEY	(600 masl)	45	(04 (17 AD (0.10)) (05 774 AD (00.00))	H11: 2002, 02, 100
Cornejo	1395	45	604–617 AD (2.1%) 635–774 AD (93.3%)	Haeberli 2002: 92, 130
Quilcapampa	1255	20	772–885 AD (95.4%)	Jennings et al. 2021: 189–190
Quilcapampa	1255	15	782–882 AD (95.4%)	Jennings et al. 2021: 189–190
Quilcapampa	1260	20	694–697 AD (0.6%) 772–886 AD (94.9%)	Jennings et al. 2021: 189–190
Quilcapampa	1275	15	691–704 AD (4.4%) 720–736 AD (4.9%) 772–879 AD (86.1%)	Jennings et al. 2021: 189–190
Quilcapampa	1250	20	774–885 AD (95.4%)	Jennings et al. 2021: 189–190
Quilcapampa	1245 1235	15	773–821 AD (41.6%) 831–886 AD (53.9%)	Jennings et al. 2021: 189–190
Quilcapampa		15	772–820 AD (43.9%) 833–890 AD (51.6%) 772–889 AD (95.4%)	Jennings et al. 2021: 189–190
Quilcapampa	1240	20	774–881 AD (95.4%)	Jennings et al. 2021: 189–190 Jennings et al. 2021: 189–190
Quilcapampa	1260	15		6
Quilcapampa	1265 1060	15 15	772–883 AD (95.4%) 990–1041 AD (95.4%)	Jennings et al. 2021: 189–190
Quilcapampa	1265	20		Jennings et al. 2021: 189–190 Jennings et al. 2021: 189–190
Quilcapampa	1235	20 20	692–701 AD (2.0%) 724–734 AD (1.8%) 772–885 AD (91.6%) 772–892 AD (95.4%)	9
Quilcapampa Quilcapampa	1235	20	772–892 AD (95.4%) 773–887 AD (95.4%)	Jennings et al. 2021: 189–190 Jennings et al. 2021: 189–190
Quilcapampa	1245	20	773–887 AD (95.4%) 771–820 AD (36.1%) 835–898 AD (45.3%) 931–962 AD (14.1%)	Jennings et al. 2021: 189–190 Jennings et al. 2021: 189–190
Quilcapampa	1200	20	771–814 AD (13.6%) 855–906 AD(29.1%) 916–986 AD (52.8%)	Jennings et al. 2021: 189–190
Quilcapampa	1235	20	772–892 AD (95.4%) 771–820 AD (36.1%) 825–808 AD (45.3%) 031–062 AD (14.1%)	Jennings et al. 2021: 189–190
Quilcapampa	1220	20	771–820 AD (36.1%) 835–898 AD (45.3%) 931–962 AD (14.1%)	Jennings et al. 2021: 189–190
Quilcapampa	1225	15	771–819 AD (43.7%) 838–894 AD (48.1%) 940–953 AD (3.6%)	Jennings et al. 2021: 189–190
Quilcapampa	1215	20	771–819 AD (31.3%) 838–899 AD (41.6%) 926–965 AD (22.5%)	Jennings et al. 2021: 189–190
Quilcapampa	1215	20	771–819 AD (31.3%) 838–899 AD (41.6%) 926–965 AD (22.5%) 774–884 AD (95.4%)	Jennings et al. 2021: 189–190
Quilcapampa	1250 1235	15 15	774–884 AD (95.4%) 772–820 AD (43.9%) 833–890 AD (51.6%)	Jennings et al. 2021: 189–190
Quilcapampa Quilcapampa	1235	15	772–820 AD (43.9%) 833–890 AD (51.6%) 772–820 AD (43.9%) 833–890 AD (51.6%)	Jennings et al. 2021: 189–190
				Jennings et al. 2021: 189–190
Quilcapampa	1245	15	773–821 AD (41.6%) 831–886 AD (53.9%)	Jennings et al. 2021: 189–190
Quilcapampa	1230	15	771–820 AD (44.7%) 834–893 AD (50.7%)	Jennings et al. 2021: 189–190
Quilcapampa	1225	15	771–819 AD (43.7%) 838–894 AD (48.1%) 940–953 AD (3.6%)	Jennings et al. 2021: 189–190
Quilcapampa	1215	30	771–904 AD (70.3%) 920–971 AD (25.2%)	Jennings et al. 2021: 189–190
Quilcapampa	1270	20	691–705 AD (3.9%) 718–737 AD (4.7%) 771–884 AD (86.9%)	Jennings et al. 2021: 189–190
Quilcapampa	1200	20	771–814 AD (13.6%) 855–906 AD(29.1%) 916–986 AD (52.8%)	Jennings et al. 2021: 189–190
Quilcapampa	1250	20	774–885 AD (95.4%)	Jennings et al. 2021: 189–190
Quilcapampa	1235	15	772–820 AD (43.9%) 833–890 AD (51.6%)	Jennings et al. 2021: 189–190
Quilcapampa	1195	15		Jennings et al. 2021: 189–190
				(continued on next page

(continued on next page)

Table 1 (continued)						
Arequipa						
			772–784 AD (64.3%)	(4.3%) 803–809 AD (0.8%) 878–904 AD (26.1%) 919–973 AD		
VITOR VALLEY	(800 MASL)		(04.570)			
Corralones	1284	35	682-748 AD	(31.8%) 767–885 AD (63.6%)	Jennings and	Reid 2021: 71
Corralones	1263	42	682–747 AD	(19.1%) 767–895 AD (73.3%)	Jennings and	Reid 2021: 71
Millo	1235	20	772–892 AD		Nigra et al. 20	
Millo	1200	20		(13.6%) 855–906 AD(29.1%) 916–986 AD (52.8%)	Nigra et al. 20	
Millo	1255	20	772–885 AD		Nigra et al. 20	
Millo Millo	1235 1210	15 15		(43.9%) 833–890 AD (51.6%) (26.0%) 853–899 AD (37.9%) 926–965 AD (31.5%)	Nigra et al. 20 Nigra et al. 20	
Millo	1240	15		(42.6%) 833–888 AD (52.9%)	Nigra et al. 20	
				V	0	
Moquegua Site		¹⁴ C Age (BP)	+/- BP	Calibrated Age		Reference
UPPER VALLEY		(1600 masl)	5 1			
Cerro Baúl - Arundane	Temple Complex	1229	34	693–699 AD (0.6%) 729–731 AD (0.2%) 771–904 AD (80.0%) 9 (14.7%)	20–972 AD	Williams and Nash 2016:142
Cerro Baúl - Arundane	Temple Complex	1212	34	772–906 AD (65.6%) 916–947 AD (28.8%) 980–986 AD (1.0%)		Williams and Nash 2016:142
Cerro Baúl - CB-A 9A p	alace	1454	35	579–678 AD (95.4%)		Moseley et al. 2005: Table 1
Cerro Baúl - CB-A 9B p		1308	37	676–777 AD (62.0%) 784–875 AD (33.4%)		Moseley et al. 2005: Table 1
Cerro Baúl - CB-A 25.1:	_	1252	33	689–739 AD (8.6%) 771–894 AD (84.8%) 939–954 AD (2.1%)		Moseley et al. 2005: Table 1
Cerro Baúl - CB-A 25.1	_	1237	41	689–739 AD (7.2%) 771–903 AD (75.7%) 921–971 AD (12.6%)		Moseley et al. 2005: Table 1
Cerro Baúl - CB-A 2 out	-	1370	60	605-618 AD (1.3%) 635-776 AD (81.6%) 785-872 AD (12.6%)		Moseley et al. 2005: Table 1
Cerro Baúl - CB-A 7G o Cerro Baúl - CB-A 7B o	_	1294 1220	35 60	680–755 AD (42.3%) 766–882 AD (53.2%) 688–740 AD (8.3%) 771–992 AD (87.1%)		Moseley et al. 2005: Table 1 Moseley et al. 2005:
Cerro Baúl - CB-A 2 ou	-	1270	60	672–901 AD (88.2%) 924–968 AD (7.3%)		Table 1 Moseley et al. 2005:
Cerro Baúl - CB-A 24.23	-	1201	35	772-818 AD (18.4%) 838-988 AD (77.1%)		Table 1 Moseley et al. 2005:
palace Cerro Baúl - CB-B 1.2 b		1400	60	578-775 AD (91.8%) 788-795 AD (0.4%) 811-849 AD (3.3%)		Table 1 Moseley et al. 2005:
Cerro Baúl - CB-B 1.2 b	-	1090	70	773–786 AD (1.0%) 796–812 AD (0.9%) 870–1160 AD (93.2%)	1172–1177	Table 1 Moseley et al. 2005:
Cerro Baúl - CB-B 1.4 b	orewery	1070	50	AD (0.3%) 895–935 AD (10.0%) 957–1153 AD (85.4%)		Table 1 Moseley et al. 2005:
Cerro Baúl - CB-B 1.4 b	orewery	900	40	1047–1087 AD (10.5%) 1110–1119 AD (0.9%) 1136–1247 AD (84.0%)	Table 1 Moseley et al. 2005:
Cerro Baúl - CB-C 10 D	-temple	1310	44	670–880 AD (95.4%)		Table 1 Moseley et al. 2005:
Cerro Baúl - CB-C 26.13	373 D-temple	1195	44	772–821 AD (17.3%) 831–992 AD (78.2%)		Table 1 Moseley et al. 2005:
Cerro Baúl - CB-B 5 D-t	temple	1140	55	772–817 AD (5.7%) 840–1030 AD (89.7%)		Table 1 Moseley et al. 2005:
Cerro Baúl - CB-B 5D D	o-temple	1150	50	773–814 AD (5.6%) 849–1025 AD (89.9%)		Table 1 Moseley et al. 2005:
Cerro Baúl - CB-C 3E ao	dministrative	1400	45	601-619 AD (3.5%) 633-774 AD (91.7%)		Table 1 Moseley et al. 2005: Table 1
Cerro Baúl - CB-C 6.97- administrative	-1226	1240	33	691–703 AD (1.5%) 721–736 AD (1.7%) 771–899 AD (84.9%) 9 (7.2%)	28–964 AD	Moseley et al. 2005: Table 1
Cerro Baúl - CB-C 3E ao	dministrative	1180	50	772–822 AD (13.4%) 831–994 AD (79.9%) 1005–1017 AD (2.19	%)	Moseley et al. 2005: Table 1
Cerro Baúl - CB-C 3A a	dministrative	1150	50	773–814 AD (5.6%) 849–1025 AD (89.9%)		Moseley et al. 2005: Table 1
Cerro Baúl - CB-E ritua	l platform	1366	35	651-774 AD (95.4%)		Moseley et al. 2005: Table 1
Cerro Baúl - CB-H 21 sl	lopes	1438	35	592–681 AD (90.2%) 749–758 AD (5.2%)		Moseley et al. 2005: Table 1
Cerro Baúl - CB-K 30.30	68 slopes	1211	46	771–992 AD (95.4%)		Moseley et al. 2005: Table 1
Cerro Baúl - CB-K 30.37	72 slopes	1162	61	772–1025 AD (95.4%)		Moseley et al. 2005: Table 1
Cerro Mejía - CM 3B slo	•	1313	58	656–888 AD (95.4%)		Nash 2002
Cerro Mejía - CM 136 s		1289	41	679–758 AD (37.3%) 766–886 AD (58.2%)		Nash 2002
Cerro Mejía - CM 145 s		1284	54 42	699–895 AD (93.2%) 936–956 AD (2.3%)		Nash 2002
Cerro Mejía - CM 118 s Cerro Mejía - CM 5 sloj		1269 1268	42 40	680–753 AD (23.0%) 766–895 AD (70.5%) 937–955 AD (2.0%) 682–749 AD (21.5%) 767–894 AD (72.7%) 940–952 AD (1.3%)		Nash 2002 Nash 2002
cerro mejia - em o sioj	μισ	1200	40	עה לד ו־200 (1.3%) עה לכני-100 (1.3%) עה לד ו-200 (1.3%) עה לד ו-200		(continued on next need)

(continued on next page)

Table 1 (continued)

Cerro Mejía - CM canal	1236	35	691–703 AD (1.5%) 722–736 AD (1.6%) 771–900 AD (81.9%) 924–968 AD (10.5%)	Moseley et al. 2005: Table 1
Cerro Mejía - CM 11 El Paso	1174	43	773-815 AD (9.2%) 845-994 AD (84.3%) 1006-1017 AD (1.9%)	Nash 2002
Cerro Mejía - CM 8 slopes	886	40	1051-1083 AD (5.5%) 1147-1267 AD (89.9%)	Nash 2002
MIDDLE VALLEY	(1200			
	masl)			
Cerro Trapiche - Sector D Terrace 4	1385	38	642–774 AD (95.4%)	Green 2015
Cerro Trapiche - Sector D Terrace 6	1381	31	645-692 AD (48.5%) 700-726 AD (8.5%) 734-774 AD (38.5%)	Green 2015
Cerro Trapiche - Sector D Terrace 7	1249	32	690–706 AD (2.7%) 716–738 AD (3.3%) 771–895 AD (86.6%) 936–956 AD (2.9%)	Green 2015

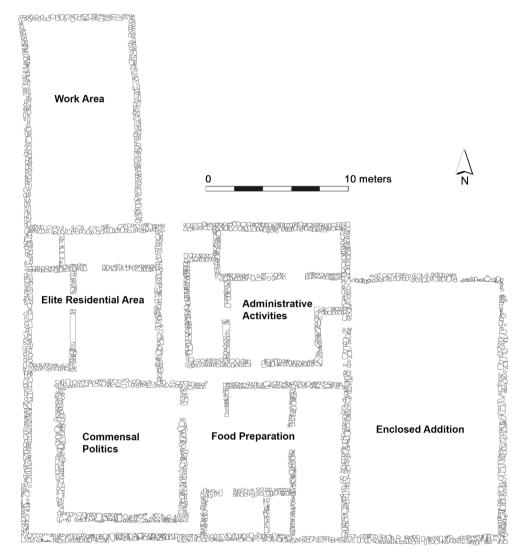


Fig. 2. Architecture and activity areas at Pataraya (based on Edwards 2013: Fig. 2).

paired Wari-style imports and emulations with exotica from other places (Jennings, 2014). In the Acarí Valley, for example, a smashed deposit of pottery at La Oroya contained a mix of local, Wari, and coastal Cajamarca-style vessels (Valdez, 2009c). The initial contexts of a mortuary cave at La Real in the Majes Valley contained a mix of local, Nasca, Wari, and central coast ceramic styles (Yepez Álvarez and Jennings, 2012) (Fig. 7). The earliest radiocarbon dates for Wari imports and influence into Arequipa date to the second half of the seventh century AD, roughly contemporaneous with the founding of colonies in Nasca and Moquegua. Yet "Wari" was experienced far differently in the absence of the sustained face-to-face interactions between Wari hosts and their guests that was so critical to Wari state making.

Wari's arrival came at a time of increasing population pressure,

violence, and social stratification in Arequipa (Lozada et al., 2018; Scaffidi et al., 2021). Interest in Wari objects and iconography in Arequipa, at first, may have been because they came from far away. The imported styles were emulated by local artisans, but also transformed—sometimes literally stitched together with other styles to create unique objects (Jennings and Yépez Álvarez, 2016:89). During a time of sweeping societal change, Wari objects and ideas were two tools to help navigate this change that were incorporated into local feasts, funerals, and other activities (Goldstein, 2010:137; Jennings and Yépez Álvarez, 2016:90–91). Wari influence, however, was spotty. The ceramics of the Majes (Owen, 2010) were utterly transformed, for example, while those living along the same coastal plain trails in the Ocoña Valley had seemingly little interest in Wari styles (Chávez, 1982).



Fig. 3. A D-shaped temple and adjoining rectangular architecture at Huaca del Loro.



Fig. 4. A Loro bowl from a local burial at La Tiza (left) and a Wari lyre cup from Pataraya (right, used with permission of Matthew Edwards).

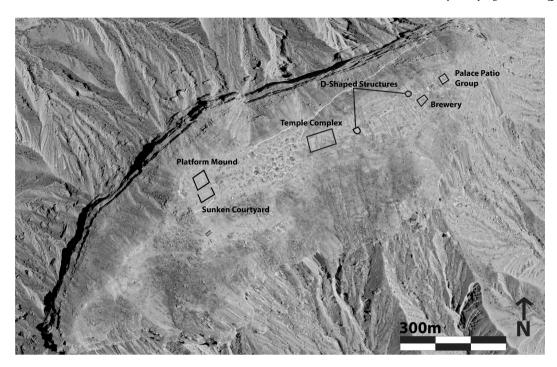


Fig. 5. Cerro Baúl site map with the locations of architecture mentioned in this article.

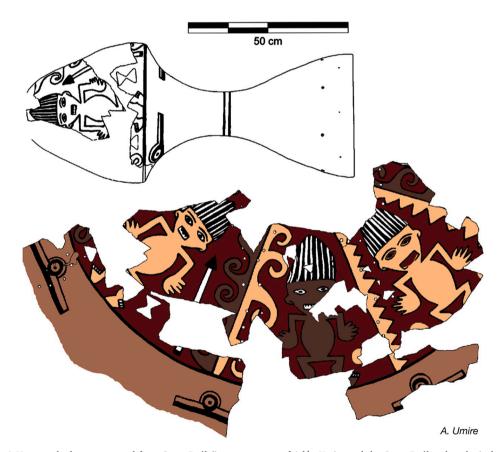


Fig. 6. A Nasca style drum excavated from Cerro Baúl (image courtesy of Adán Umire and the Cerro Baúl archaeological project).

5. Disruption, reorganization, and a second wave of Wari colonization

In the first decades of the ninth century AD, there was a major transition in the Wari heartland. Iconography shifted its focus away from human agents (Knobloch, 2012:131), and there was a greater emphasis on open spaces, larger residential areas, and feasting at Huari and other centers (Cook and Glowacki, 2003:197; Isbell, 2009:114-115; Knobloch, 2012:131). At the same time, efforts were being made to intensify agricultural production in the surrounding countryside and











Fig. 7. Ceramics from the early Middle Horizon context at La Real included a mix of A) Wari, B) Nasca, C) central coast, D) Wari influenced, and E) local styles.

ensure regular access to agricultural products (Doi, 2019:158; Isbell, 1988:74-75; Lumbreras, 1974b:163; Pérez Calderón, 2001). These changes may relate to increased political centralization (Schreiber, 2001:89), perhaps leading to the disenfranchisement of some elite families. The playbook of Wari statecraft nonetheless remained largely the same after the disruption: to bring hosts and guests repeatedly together in intimate gatherings to define their relationships to each other.

The disruption and reorganization in the Wari heartland were felt elsewhere in the central Andes with Wari-affiliated sites being abandoned, founded, or modified (Jennings, 2021; Schreiber, 2001). In Nasca, the disruption was occurring at the same time as even more crippling climate change. Lake cores from Laguna Pumacocha document marked aridity from AD 900 to 1100 (Bird et al., 2011), and analysis of marine sediments near Lima indicates extreme drought from AD 800 to 1250 (Rein et al., 2004). As a result of these changes, the middle reaches of Nasca became almost uninhabitable. Populations moved upriver, abandoning sites like Pacheco (Isla and Reindel, 2014:223; Schreiber, 1999:169). People, animals, and objects nonetheless continued to move back and forth between Nasca and Ayacucho along the same series of well-used trails (Edwards, 2010:403; Isla and Reindel, 2014:214; Edwards, 2021). Population might have actually increased in Nasca's higher elevations during the ninth century, especially in its highest reaches where water remained available. The largest Wari-affiliated sites in this part of the drainage appear to date to around this century based on ceramic assemblages (Edwards, 2014; Isla and Reindel, 2014; Sossna, 2014), perhaps providing the requisite architectural spaces to

better assemble the Wari state through feasting and other ritually charged activities. More radiocarbon dating and excavations are none-theless needed to understand what was happening in Nasca during the late Middle Horizon.

Although much of the southern coast was drying up, the larger drainages in Arequipa still had water. The pull of arable land and the push of the heartland's disruption may have instigated a second wave of colonization into southern Peru. The northernmost indication of this wave is at Corral Redondo, a long-standing ritual center in the Ocaña Valley that sits along one of the major coastal plain trails running between valleys on the coastal plain. A group left a deposit of large Wari face-necked jars stuffed with dozens of feathered cloth panels (King, 2013). The Nasca influence on the jars suggests that the vessels may have been transported from that drainage on the backs of travelers —the vessels were too bulky and heavy to be transported by llamas. No Wariaffiliated settlement has been found in Ocaña, however, and Wari influence in the valley remained limited (Chávez, 1982). If Wari travelers walked into Ocaña in the ninth century, they likely left the vessels and featherwork at Corral Redondo and kept going.

In the Majes Valley just to the east, Wari colonists may have been associated with the creation of way stations along the coastal plain trails. The best evidence comes from Pakaytambo, a site organized around a D-shaped temple, platform, and two patio-groups (Reid, 2020). Pakaytambo and the other Wari-related way stations, radiocarbon dated to the ninth century or later, are located high in the Majes water-shed—Pakaytambo is 1670 masl. How successful these sites were in attracting locals remains unclear, but they may have helped spur the

spread of Wari influence into highland portions of both the Ocaña (Cotahuasi Valley) and Majes (Chuquibamba and Pampacolca) drainages (Goldstein, 2010; Jennings and Yépez Álvarez, 2015). The largest Wari-affiliated colony, albeit only 2 ha in size, was Quilcapampa in Sihuas (Jennings et al., 2021) (Fig. 8). The site's Wari colonists may have come from Ayacucho accompanied by a group of followers from the greater Nasca region. Bayesian analysis of radiocarbon dates suggests that the site was occupied in the mid-ninth century for as little as a generation.

There is evidence for repeated feasts at Quilcapampa, but little uptake of Wari styles and ideas by local families. The Wari colonists at Cerro Baúl had built extensive irrigation and agricultural terracing, ensuring access to many of the resources required to host events. Quilcapampa's residents, like those in the Wari-affiliated sites in Majes, appear to have instead largely relied on pre-existing infrastructure. Accessing the local resources required for a feast thus required locals offering their land and labor (Jennings et al., 2021). Coercion was likely off the table—there were only a handful of Wari-affiliated families living at these sites—and so the Wari leaders had to convince people each time

that they should participate in feasting preparation. The lack of Wari stylistic cachet in Sihuas suggests that it may have been difficult to routinely gain this support. With few knobs to twist, the state could not be assembled at the local level in the same ways as was being done in Nasca and Moquegua.

The ninth century AD pulse of colonization may have pushed Wariaffiliated ideas, objects, and people further down the coastal plain trails, resulting in Wari-influenced ceramics and architecture further southeast in the settlements of Millo and Corralones (Nigra et al., 2017; Cardonas Rosas and Wise, 2000:9). Data from La Real, however, suggests that traffic along these trails would decline by the end of the century (Jennings et al., 2015), with populations now interacting more frequently with those living in the highland portions of Arequipa's coastal drainages. Paradoxically, Wari influence on local ceramics and textiles increased despite Arequipa's reduced contact with the Wari heartland. Rather than indexing relations to a far-off state, Wari iconography, forms, and practices in late Middle Horizon Arequipa may have been increasingly used to create a shared regional identity and ideology that were useful for local relationship building (Jennings and

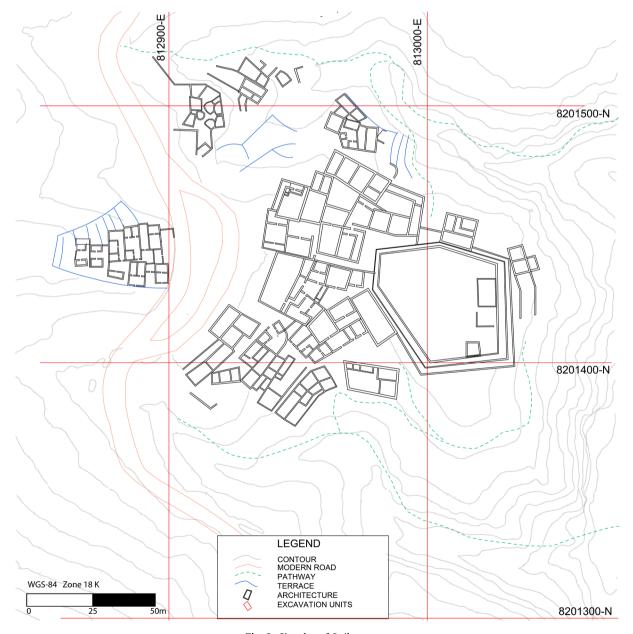


Fig. 8. Site plan of Quilcapampa.

Yépez Álvarez, 2016). By the tenth century, "Wari" in Arequipa had little to do with what was happening elsewhere.

The interactions associated with the second pulse of colonization may be associated with the extensive reorganization of Cerro Baúl that took place around this time (Williams and Nash, 2002). The footprint of the Palace expanded, creating larger public spaces on the summit (Nash, 2015; Nash and Williams, 2009). An associated brewery that centralized beer production was put into use (Moseley et al., 2005), and Palace occupants may have also taken a more direct hand in meat redistribution (Nash and DeFrance, 2019) (Fig. 9). At around the same time, one of Cerro Baúl's temple complexes was remodeled to accommodate Tiwanaku ritual practices (Williams and Nash, 2016:147). These changes occurred while the sites of Cerro Mejia (Moseley et al., 2005; Nash, 2002) and Cerro Trapiche (Green, 2015) were abandoned. Tiwanaku-affiliated groups filled this vacuum by building three temple complexes and several small communities in the foothills of Cerro Baúl (Williams and Nash, 2016:148-150). Why this shift occurred is unclear, but by the tenth century AD Cerro Baúl residents were appealing to Moquegua's Tiwanaku colonists.

The end of Wari occurred at different times and in different ways across the southern coast. The severe aridity in Nasca may have led to a near total abandonment of the entire drainage by the beginning of the tenth century, effectively ending most activities in the drainage until conditions began to improve in the twelfth century AD (Conlee, 2021). Wari, as an art and architectural style, nonetheless continued in Arequipa well into the eleventh century. Sites, such as Sonay (Malpass, 2001, 2019), look Wari in form but date to after the Middle Horizon, and the region's art styles remain influenced by the Wari canon for centuries. In Moquegua, Cerro Baúl also continued to be occupied well into the eleventh century AD. Wari influence, however, was at best muted after the mesa was finally abandoned (Sharratt, 2016; Nash et al., 2020).

6. Finding the Wari State

How to best conceptualize the Wari State? When reviewing the impact of Huari-related people, ideas, and imports across coastal southern Peru, one is struck by how different the Middle Horizon was experienced across space and time. "Wari" in the Nasca drainage in the eighth century was nothing like the "Wari" of the same period in the

Majes or middle Moquegua Valley. Tenth century "Wari" in those same places was different from the "Wari" of only a few generations earlier. These complexities make the polity difficult to label in the conventional manners inherited from Enlightenment thinkers—Wari, for example, might be "imperial" in Nasca, but was it in the Cotahuasi Valley (Conlee et al., 2021; Jennings and Yépez Álvarez, 2015)? Mapping its boundaries also becomes a dubious proposition—does "Wari" end at Nasca? What do we do with isolated Cerro Baúl and short-lived Quilcapampa?

These and other questions can be approached by more nuanced models of expansionary states like the "mosaic of control" proposed by Schreiber for Wari that address many of the deficiencies of early processual models (1992). Yet these second-generation models still tend to treat the state as an independent entity that exists outside of its interaction with a "will, power, and activity of its own" (Abrahms, 1988: 69). Thinking more in terms of assemblages helps us move beyond this impasse by foregrounding the inherent fluidity of how people, animals, objects, and other things come together in different ways across a region. The "state" enters as an idea in these assemblages, a desire by certain humans to bend and constrain assemblages to meet their agendas through actions that include coding, stratification, and territorialisation (Deleuze and Guattari, 1987; Larkin, 2013).

Understanding the desires of Wari leaders requires us to toggle between the micro-, meso-, and macro-levels of analysis in order to see the assemblages in the making at different scales that combine into what we might consider the "state" (sensu Knappett, 2011,). As meso-scale analyses are rarer in archaeology, this article seeks to emphasize the importance of the meso-scale in making better sense of the thousands of local assemblages that came together in a region at any one time that involved Wari-related people, objects, and ideas. We can trace the spread of constellations of learning across a region, for example, as potters, weavers, and farmers adopted new techniques (sensu Roddick and Stahl, 2016), as well as changes in camelid management practices related to long-distance exchange (Melton et al., 2022). Getting a regional perspective of assemblages allows us to recognize patterns related to the coding, stratification, and territorialisation of state making. At the meso-scale, we can begin to see what Wari leaders wanted to do, and their successes and failures in implementing their vision.

Our meso-scale analysis of assemblage making in southern Peru yields at least three critical insights into the desires of Wari leaders and





Fig. 9. A pair of Wari cups smashed during abandonment ceremonies at the Palace in Cerro Baúl (image courtesy of Patrick Ryan Williams and the Cerro Baúl archaeological project).

the contours of the Wari state. First, there seems to have been little appetite for a contiguous empire. The least cost paths leading from the Wari heartland to Arequipa and Moquegua cut diagonally through the highlands (Garaycochea, 2016: 200; Scaffidi, 2018: 123). Yet our data from southern Peru clearly show that Wari objects, colonists, and ideas first came to the region via trails connecting Ayacucho to Nasca and then across the coastal plain. Wari, in the sense of an emulated art style, came to the highland portions of the coastal drainages of Arequipa after long-distance interactions with Ayacucho were already on the wane. In the late seventh century AD when the state first expanded, Wari-affiliated colonists were only living in the Nasca and upper Moquegua Valleys (with the exception of that lone compound at Cerro Trapiche) with seemingly little effort to directly engage with populations elsewhere.

One might suggest that Wari indirectly controlled the yawning space in between. It does seem likely that Wari hands-either in terms of affiliated people from Ayacucho or the Nasca region—introduced some of the Wari-style objects found in the intervening area, raising the possibility of a wealth finance system based on gift giving (sensu D'Altroy and Earle, 1985). Yet Wari imports are exceedingly rare outside of Wariaffiliated settlements apart from Corral Redondo, an offering to an established shrine rather than to a local leader. For the most part, Wari was an art style with associated ideas that was emulated by the region's artists who found them useful during a moment of rapid societal change. Wari leaders in Nasca and Moquegua were working hard at coding, stratifying, and territorializing their relationships with others, turning the same knobs being used to create Wari subjects in the heartland. They hosted ritually charged events and were involved in the circulation of prestige objects and construction of infrastructure. Similar efforts, however, were not occurring in the rest of the southern coast during the early Middle Horizon because their people were not on the ground to enact this state-making strategy.

A second insight from our meso-scale analysis is that Wari expansion on to the southern coast was about access to coastal products. The vast majority of Wari colonists settled in the Nasca drainage within the long-established corridor that linked Ayacucho to the Pacific. They often lived beside local families, celebrated rituals together, and occasionally intermarried. Coastal and highland products flowed through this corridor, often passing by, if not through, the Wari-affiliated compounds built near the trails. Although the mechanisms used to ensure this flow of goods remain unclear, the concentration of sites along these trails suggests that the desires of Wari leaders were focused on the traffic on these trails. The architecture, material assemblages, and practices enacted within these settlements encoded the leaders' rights to demand coastal products, ensuring that Huari's appetite for long-distance goods could be filled (Rosenfeld et al., 2021).

The Wari colonization of Nasca sent echoes across the coastal plain trails as relationships were re-jigged. Travelers may have left Nasca with the types of goods found in La Real's earliest contexts, and at least one group went far past all others to found Cerro Baúl. When colonists moved into the rest of the southern coast in the ninth century, they seem to have followed the same Nasca state-making script: situate sites as waystations along trails and then build the gathering spaces within these sites that were associated with creating Wari subjects. The leaders of these sites could have been independent actors in the wake of Wari's disruption or part of a broader state project to compensate for the impacts of Nasca's extreme aridity. In either case, the late Middle Horizon colonization pulse's success was limited amidst declining coastal plain interactions.

A final insight from our meso-scale analysis is to highlight the anomalous nature of the Moquegua colony. The people that founded Cerro Baúl travelled some 600 km beyond the Nasca drainage within a few decades of Huari's coalescence. They built a settlement on top of a mesa and had to construct extensive canals and terracing in the upper Moquegua Valley to survive. The site seems to have been too far removed to have enjoyed regular contact with other Wari-affiliated settlements, and there was little circulation of goods between

Moquegua and Ayacucho (Sharratt et al., 2009; Williams et al., 2010). Although sometimes depicted as a frontier settlement at the edge of a contiguous polity (Williams, 2001), our meso-scale analysis suggests that the site is better seen as an extreme geographic outlier far removed from other outposts. From the perspective of those living in Ayacucho, what was the point of colonizing the upper Moquegua Valley?

Two of the largest Wari-affiliated sites are Pikillacta and Viracochapampa, unfinished sites at either end of Peru that were built soon after Huari's coalescence (McEwan, 2005; Topic and Topic, 2010). Perhaps Cerro Baúl's founding, along with those of these other two sites, speaks to early ambitions of empire. Whatever the answer to the reasoning behind Cerro Baúl's creation, the site was relatively isolated from the rest of Wari world by the end of the seventh century AD-a condition, with the possible exception of the pulse associated with the ninth century disruption, that would only worsen as the Middle Horizon wore on. With more assured access to agricultural resources, the settlement's leaders successfully used the knobs of Wari statecraft in their feasts and other ritually charged ceremonies to help structure their relationship with Huaracane and, later, Tiwanaku groups. Yet their objectives were more parochial than those living in the Nasca region since there was effectively no road back to Huari for them that could be effectively travelled.

7. Conclusions

Huaca del Loro, Quilcapampa, Cerro Baúl, and the other Wariaffiliated settlements on the southern coast each had significantly different relationships with the Wari heartland, the broader southern coast region, and their surrounding populations because each was part of their own dynamic local assemblage of people, objects, ideas, animals, and other things. A site like La Tiza might have marriage ties and exchange relationships with Wari groups, while Wari-related ideas and imagery further afield flowed in and out of local assemblages as part of a funeral or via a passing caravan. Understanding this assemblage creation at the more micro-level of the household or settlement is important—it provides us with a clearer sense of state-making in action at the level of familial relationships—but only by zooming out to the meso-scale can we begin to see the broader patterns of Wari desires.

Similar to questions about other early expansive polities, archaeologists have long debated the nature of Wari. Was Wari an "expansionary state", "empire", "interaction sphere" or "globalizing era"? This question will prove impossible to answer if we continue to search for some fixed entity existing separate from its relationships. Around the city of Huari, the material record that defines Wari meets most of the classic criteria for a state as developed by processual archaeologists (Isbell and Schreiber, 1978). The vast bulk of the Wari world, however, does not. The same could be said for other expanding polities elsewhere in the world, as flows of ideas, people, animals and other things become entangled and uncontrollable as distances widen (e.g., Hodos, 2017). Depending on where and when one was in Middle Horizon Peru, Wari could be an invading army, evocative vessel, or fleeting artistic irritant. If we think of states as fixed, external entities, then no one on the southern coast lived in the Wari state as experienced in Ayachuco. Yet everyone on the southern coast was nonetheless impacted by both the efforts of Huari's leaders to manipulate the affairs of others and the myriad of reactions to these efforts by other entities.

The Wari state was this effort to extend and maintain sovereignty across an unruly assemblage. Huari's leaders had desires that they sought to encode, stratify and territorialize in communities far from home. Thinking in terms of desires and assemblages brings us closer to how larger-scale polities come together and endure (Law, 1994; Müller, 2015). Wari was both the "doings" of Huari-affiliated actors to achieve their goals, and the myriad of direct and down-the-line effects that these doings had on thousands of local assemblages across Peru (sensu Fowles, 2013). These state actors—who were often in conflict with each other (sensu Brumfiel and Fox, 2002)—ran up against the desires and

affordances of the other entities that were in play at different locations as the larger Wari-related assemblage grew and transformed. By placing these local assemblages into a regional context, we can begin to recognize the broad contours of Wari statecraft as a set of practices, its ancillary impacts, and how both morphed over time as the thousands of assemblages in play invariably changed. We can start to see what leaders in Huari hoped to achieve, the knobs they turned, and the ways in which the vast assemblage that their actions engendered took on a life of its own.

CRediT authorship contribution statement

Justin Jennings: Conceptualization, Methodology, Writing – original draft, Writing – review & editing. **Matthew E. Biwer:** Conceptualization, Methodology, Writing – original draft, Writing – review & editing. **Christina A. Conlee:** Conceptualization, Methodology, Writing – original draft, Writing – review & editing.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

References

- Abrahms, P., 1988. Notes on the Difficulty of Studying the State. J. Historical Sociol. 1 (1), 58–89.
- Algaze, G., 1993. The Uruk World System: The Dynamics of Expansion of Early Mesopotamian Civilization. University of Chicago Press, Chicago.
- Allen, J., 2011. Powerful Assemblages? Area: R. Geogr. Soc. 43 (2), 154-157.
- Alt, S.M., 2006. The Power of Diversity: Settlement in the Cahokian Uplands. In: Butler, B.M., Welch, P.M. (Eds.), Leadership and Polity in Mississippian Society. Southern Illinois University, Carbondale, pp. 289–308.
- Bairoch, P., 1988. Cities and Economic Development: From the Dawn of History to the Present. Translated by Christopher Braider. University of Chicago Press, Chicago. Bawden, G., 1989. The Andean State as a State of Mind. J. Anthropol. Res. 45 (3), 227, 237.
- Berden, F., Richard, E.B., Boone, E.H., Hodge, M.G., Smith, M.E., Umberger, E., 1996.
 Aztec Imperial Strategies. Dumbarton Oaks, Washington D.C.
- Beresford-Jones, D.G., Arce T., S., Whaley, O.Q., Chepstow-Lusty, A.J., 2009. The Role of Prosopis in Ecological and Landscape Change in the Samaca Basin, Lower Ica Valley, South Coast Peru from the Early Horizon to the Late Intermediate Period. Latin American Antiquity 20 (2), 303–332.
- Bélisle, V., 2015. Understanding Wari State Expansion: A "Bottom-Up" Approach at the Village of Ak'Awillay, Cusco, Peru. Latin Am. Antiq. 26 (2), 180–199.
- Bennett, J., 2010. Vibrant Matter: A Political Ecology of Things. Duke University Press, Durham.
- Bennett, W., 1953. Excavations at Wari, Ayacucho, Peru. Yale University Publications in Anthropology 59, New Haven.
- Bergh, S.E. (Ed.), 2012. Wari: Lords of the Ancient Andes. Cleveland Museum of Art, Cleveland.
- Bird, B.W., Abbott, M.B., Vuille, M., Rodbell, D.T., Stansell, N.D., Rosenmeier, M.F., 2011. A 2300-year-long Annually Resolved Record of the South American Summer Monsoon from the Peruvian Andes. Proc. Natl. Acad. Sci. 108 (21), 8583–8588.
- Biwer, M.E., 2019. Colonialism, Cuisine, and Culture Contact: An Analysis of Provincial Foodways of the Wari Empire (A.D. 600 - 1000). Unpublished PhD dissertation, Department of Anthropology, University of California, Santa Barbara.
- Biwer, M.E., Álvarez, W.Y., Bautista, S.L., Jennings, J., 2022. Hallucinogens, Alcohol and Shifting Leadership Strategies in the Ancient Peruvian Andes. Antiquity (in press).
- Bourdieu, P., 1977. Outline of a Theory of Practice. Translated by Richard Nice. Cambridge University Press, New York.
- Brumfiel, E.M., Fox, J.W. (Eds.), 2002. Factional Competition and Political Development in the New World. Cambridge University Press, New York.
 Burger, R.L., Glascock, M.D., 2000. Locating the Quispisisa Obsidian Source in the
- Department of Ayacucho, Peru. Latin Am. Antiq. 11 (3), 258–268.

 Buzon, M.R., Conlee, C.A., Simonetti, A., Bowen, G.J., 2012. The Consequences of Wari
 Contact in the Nasca region during the Middle Horizon: Archaeological, Skeletal, and
- Isotopic Evidence. J. Archaeol. Sci. 39 (8), 2627–2636.
 Cardona Rosas, A., 2008. Caminos Prehispánicos de Arequipa. CIARQ, Arequipa.
 Cardona Rosas, A., Wise, K., 2000. Arequipa: Doce mil años e arte y cultura. CIARQ, Arequipa.
- In: Castillo, B., Jaime, L., Jennings, J. (Eds.), 2014. Los Rostros de Wari: Perspectivas Interregionales sobre el Horizonte Medio. Boletín de Arqueología PUCP 16. Pontificia Universidad Católica del Perú, Lima.
- Champion, T.C. (Ed.), 1989. Center and Periphery: Comparative Studies in Archaeology. Routledge, New York.

- Chapdelaine, C., 2010. Moche and Wari during the Middle Horizon on the North Coast of Peru. In: Jennings, J. (Ed.), Beyond Wari Walls: Regional Perspectives on Middle Horizon Peru. University of New Mexico Press, Albuquerque, pp. 213–232.
- Chapman, J., 2000. Fragmentation in Archaeology: People, Places, and Broken Objects in the Prehistory of South-Eastern Europe. Routledge, New York.
- Chávez, C., Antonio, J., 1982. Evidencias arqueológicas en la Cuenca del Río Cotahuasi-Ocona, Unpublished thesis presented for the license of archeology Universidad Nacional de San Agustin, Arequipa.
- Cipolla, C.N., Montgomery, L., Harris, O., 2021. Archaeological Theory in Dialogue: Situating Relationality, Ontology, Posthumanism, and Indigenous Paradigms. Routledge, New York.
- Colebrook, C., 2002. Understanding Deleuze. Allen and Unwin, New York.
- Conlee, C., 2011. An Exploration of Looted Middle Horizon Tombs from Nasca. Nawpa Pacha 31 (1), 45–54.
- Conlee, C.A., 2016. Beyond the Nasca Lines: Ancient Life at La Tiza in the Peruvian Desert. University Press of Florida, Gainesville.
- Conlee, C.A., 2021. The Importance of Coastal-Highland Interactions and Population Movements on the Development and Collapse of Complex Societies in Nasca, Peru (AD 500–1470). Latin Am. Antiq. 32 (2), 405–420.
- Conlee, C.A., Buzon, M.R., Gutierrez, A.N., Simonetti, A., Creaser, R.A., 2009. Identifying Foreigners versus Locals in the Burial Population of Nasca, Peru: An Investigation Using Strontium Isotope Analysis. J. Archaeol. Sci. 36, 2755–2764.
- Conlee, C.A., Kellner, C., Walker, C., Noriega, A., 2021. Early Imperialism in the Andes: the Wari Colonization of Nasca. Antiquity 95 (384), 1527–1546.
- Cook, A.G., 1994. Wari y Tiwanaku entre el estilo y la imagen. Pontificia Universidad Católica del Perú, Lima.
- Cook, A.G., 2001. Huari D-Shaped Structures, Sacrifical Offerings, and Divine Rulership. In: Benson, E.P., Cook, A.G. (Eds.), Ritual Sacrifice in Ancient Peru. University of Texas Press. Austin. pp. 137–163.
- Costion, K., 2009. Huaracane Social Organization: Change Over Time at the Prehispanic Community of Yahuay Alta. Unpublished PhD Dissertation, Department of Anthropology, University of Pittsburgh.
- D'Altroy, T., Earle, T., 1985. Staple Finance, Wealth Finance, and Storage in the Inca Political Economy. Current Anthropology 26 (2), 187–206.
- DeLanda, M., 2006. A New Philosophy of Society. Continuum, London.
- DeLanda, M., 2016. Assemblage Theory. Edinburgh University Press, Edinburgh. Deleuze, G., Guattari, F., 1987. A Thousand Plateaus: Capitalism and Schizophrenia. University of Minnesota Press. Duluth.
- Dillehay, T.D., Kolata, A.L., 2004. Long-term Human Responses to Uncertain Environmental Conditions in the Andes. Proc. Natl. Acad. Sci. 101 (12), 4325–4330.
- Disselhoff, H.D., 1969. Fruh-Nazca in Suden Perus, Provincia de Camana (Dep. Arequipa). Verhandlungen des XXXVIII Internationalen Amerikanisten Kongress 1, 385–391
- Doi, M., 2019. Asentamentos pequeños durante la formación del Estado Wari. In: Watanabe, S. (Ed.), Diversidad y uniformidad en el Horizonte Medio de los Andes Prehispánico. Research Papers of the Anthropological Institute, vol. 8. Nanzan University, Nagoya, pp. 144-175.
- Edwards, M.J., 2010. Archaeological Investigations at Pataraya: A Wari Outpost in the Nasca Valley of Southern Peru. University of California, Santa Barbara. Unpublished Ph. D. dissertation.
- Edwards, M.J., 2021. Wari State Control of Camelid Caravan Traffic between the Coast and Highlands of the Southern Nasca Region, Peru. In: Clarkson, P.B., Santoro, C.M. (Eds.), Caravans in Global Perspective: Contexts and Boundaries. Routledge, New York, pp. 93–105.
- Edwards, M.J., Schreiber, K., 2014. Pataraya: The Archaeology of a Wari Outpost in Nasca. Latin American Antiquity 25 (2), 215–233.
- Eerkens, J.W., Vaughn, K.J., Linares-Grados, M., Conlee, C.A., Schreiber, K., Glascock, M. D., Tripcevich, N., 2010. Spatio-temporal Patterns in Obsidian Consumption in the Southern Nasca Region, Peru. J. Archaeol. Sci. 37 (4), 825–832.
- Eitel, B., Hecht, S., Bertil Mächtle, G., Schukraf, A., Kadereit, G.A., Wagner, B., Kromer, I. U., 2005. Geoarchaeological Evidence from Desert Loess in the Nazca-Palpa Region, Southern Peru: Paleoenvironmental Changes and their Impact on Pre-Columbian Cultures. Archaeometry 47 (1), 137–158.
- Eitel, B., Mächtle, B., 2009. Man and Environment in the Eastern Atacama Desert (Southern Peru): Holocene Climate Changes and their Impact on Pre-Columbian Cultures. In: Reindel, M., Wagner, G.A. (Eds.), Natural Science in Archaeology: New Technologies for Archaeology. Springer Berlin Heidelberg, Berlin, Heidelberg, pp. 17–23.
- Fehren-Schmitz, L., Haak, W., Mächtle, B., Masch, F., Llamas, B., Tomasto Cagigao, E., Sossna, V., Schittek, K., Isla Cuadrado, J., Eitel, B., Reindel, M., 2014. Climate Change Underlies Global Demographic, Genetic, and Cultural Transitions in pre-Columbian Southern Peru. PNAS 111 (26), 9443–9448.
- Forgey, K., 2006. Investigating the Origins and Functions of Nasca Trophy Heads using Osteological and DNA analyses. University of Illinois, Chicago. Unpublished Ph.D. dissertation.
- Fowles, S., 2013. An Archaeology of Doings: Secularism and the Study of Pueblo Religion. University of New Mexico Press, Albuquerque.
- Fried, M., 1967. The Evolution of Political Society. Random House, New York. Garaycochea, C.F., 2016. La articulación económica prehispánica del Perú sur andino. Diálogo Andino 49, 197–207.
- Glowacki, M., 2002. The Huaro Archaeological Site Complex: Rethinking the Huari Occupation of Cuzco. In: Isbell, W.H., Silverman, H. (Eds.), Andean Archaeology I: Variations in Sociopolitical Organization. Kluwer Academic/Plenum, New York, pp. 267–286.
- Glowacki, M., 2014. Imperialismo en el Horizonte Medio: una reevaluación del paradigma clásico, Cuzco, Perú. Boletín Arqueología PUCP 16, 165–189.

- Goldstein, P.S., 2005. Andean Diaspora. University Press of Florida, Gainesville.
- Goldstein, R.C., 2010. Negotiating Power in the Wari Empire: A Comparative Study of Local-Imperial Interactions in the Moquegua and Majes Regions during the Middle Horizon (550–1050 AD). Northwestern University, Evanston. Unpublished PhD Dissertation.
- González Carré, E., Pérez, J.M.G., 1977. Wari: el primer imperio andino. Consejo Provincial de Huamanga, Ayacucho.
- Graeber, D., Wengrow, D., 2021. The Dawn of Everything: A New History of Humanity. Signal. New York.
- Green, U., 2015. Cerro Trapiche and the Wari Frontier experience in the Middle Moquegua Valley. Unpublished PhD dissertation, Department of Anthropology, University of California, San Diego.
- Green, U., Goldstein, P.S., 2010. The nature of Wari presence in the mid-Moquegua valley investigating contact at Cerro Trapiche. In: Jennings, J. (Ed.), Beyond Wari Walls: Regional Perspectives on Middle Horizon Peru. University Press of Florida, Gainesville, pp. 19–36.
- Gelles, P., 2000. Water and Power in Highland Peru: The Cultural Politics of Irrigation and Development. Rutgers University Press, Brunswick.
- Guillet, D., 1992. Covering Ground: Communal Water Management and the State in the Peruvian Highlands. University of Michigan Press, Ann Arbor.
- Haeberli, J., 2009. Tradiciones del Horizonte Temprano y del Período Intermedio
 Temprano en los valles de Sihuas, Vitor, y Majes, Departamento de Arequipa, Perú.
 In: Zióikowski, M.S., Jennings, J., Franco, L.A.B., Drusini, A. (Eds.), Arqueología del área centro sur Andina: Actas del simposio internacional 30 de junio 2 de julio de 2005, Arequipa, Perú. University of Warsaw Centro de Estudios Precolombinos, Warsaw, pp. 205–227.
- Hodder, I., 2012. Entangled: An Archaeology of the Relationships between Humans and Things. Wiley-Blackwell, New York.
- Hodos, T. (Ed.), 2017. The Routledge Handbook of Archaeology and Globalization. Routledge, New York.
- Isbell, W.H., 1988. City and state in Middle Horizon Wari. In: Keatings, R.W. (Ed.), Peruvian Prehistory. Cambridge University Press, Cambridge, pp. 164–189.
- Isbell, W.H., 1997. Reconstructing Huari: A Cultural Chronology for the Capital City. In: Manzanilla, L. (Ed.), Emergence and Change in Early Urban Societies. Plenum Press, New York, pp. 181–227.
- Isbell, W.H., 2006. Landscapes of Power: A Network of Palaces in Middle Horizon Peru. In: Christie, J.J., Sarro, P.J. (Eds.), Palaces and Power in the Americas: From Peru to the Northwest Coast. University of Texas Press, Austin, pp. 44–98.
- Isbell, W.H., 2009. Huari: A New Direction in Central Andean Urban Evolution. In: Manzanilla, L.R., Chapdelaine, C. (Eds.), Domestic Life in Prehispanic Capitals: A Study of Specialization, Hierarchy, and Ethnicity. Memoirs of the Museum of Anthropology. University of Michigan, Number 46. Muesem of Anthropology, Ann Arbor, pp. 197–219.
- Isbell, W.H., 2010. Agency, Identity, and Control: Understanding Wari Space and Power. In: Jennings, J. (Ed.), Beyond Wari Walls: Regional Perspectives on Middle Horizon Peru. University of New Mexico Press, Albuquerque, pp. 233–254.
- Isbell, W.H., Cook, A.G., 2002. A New Perspective on Conchopata and the Andean Middle Horizon. In: Sivlerman, H., Isbell, W.H. (Eds.), Andean Archaeology II. Springer, Boston, pp. 249–305.
- Isbell, W.H., McEwan, G.F., 1991. A History of Huari Studies and Introduction to Current Interpretations. In: Isbell, W., McEwan, G. (Eds.), Huari Administrative Structures. Dumbarton Oaks, Washington, D.C., pp. 1–17
- Isbell, W.H., Brewster-Wray, C., Spickard, L.E., 1991. Architecture and Spatial Organization at Huari. In: Isbell, W., McEwan, G. (Eds.), Huari Administrative Structures. Dumbarton Oaks, Washington, D.C., pp. 19–53
- Isbell, W.H., Schreiber, K.J., 1978. Was Huari a State? Am. Antiq. 43 (3), 372–389.
 Isla Cuadrado, J., 2009. From Hunters to Regional Lords: Funerary Practices in Palpa, Peru. In: Reindel, M., Wagner, G.A. (Eds.), New Technologies for Archaeology: Multidisciplinary Investigations in Palpa and Nasca, Peru. Spinger-Verglag, Berlin, Heidelberg, pp. 119–140.
- Isla Cuadrado, J., Reindel, M., 2005. New Studies on the Settlements and Geoglyphs in Palpa, Peru. Andean Past 7, 57-92.
- Isla Cuadrado, J., Reindel, M., 2014. La ocupación Wari en los valles de Palpa, costa sure del Perú. Arqueología y Sociedad 27, 193-226.
- Isbell William, H., 2001. Huari: Crecimiento y desarrollo de la capital imperial. In: Millones, L. (Ed.), Wari: Arte Precolombino Peruano. Fundación el, Monte: Seville, pp. 99–172.
- Isla Cuadrado, J., 2001. Wari en Palpa y Nasca: perspectivas desde el punto de vista funerario. In: Kaulicke, P. Isbell W.H. (Eds.), Huari y Tiwanaku: modelos y evidencias. Segunda parte. Boletín de Arqueología PUCP No. 5. Fondo Editorial de la Pontificia Universidad Católica del Perú, Lima, pp. 555–584.
- Jennings, J., 2002. Prehistoric Imperialism and Cultural Development in the Cotahuasi Valley, Peru. University of California, Santa Barbara. Unpublished Ph.D. dissertation.
- Jennings, J., 2010. Beyond Wari Walls. In: Jennings, J. (Ed.), Beyond Wari Walls: Regional Perspectives on Middle Horizon Peru. University of New Mexico Press, Albuquerque, pp. 1–21.
- Jennings, J., 2014. Una reevaluación del horizonte medio en Arequipa. In: Jennings, J., Castillo, L.J. (Eds.), Los rostros de Wari: perspectivas interregionales sobre el horizonte medio, Boletín de Arqueología PUCP 16. Fondo Editorial de la Pontificia Universidad Católica del Perú, Lima, pp. 165-188.
- Jennings, J., 2016. Killing Civilization: A Reassessment of Early Urbanism and its Consequences. University of New Mexico Press, Albuquerque.
- Jennings, J., 2021. Re-envisioning Wari. In: Jennings, J., Yépez Álvarez, W., Bautista, S. L. (Eds.), Quilcapampa: A Wari Enclave in Southern Peru. Tallahassee, University Press of Florida, pp. 17-53.

- Jennings, J., Alaica, A.K., Biwer, M.E., 2021a. Beer, Drugs and Meat: A Reconsideration of Early Wari Feasting and Statecraft. Archaeology of Food and Foodways (in press).
- Jennings, J., Álvarez, W.Y., Bautista, S.L. (Eds.), 2021b. Quilcapampa: A Wari Enclave in Southern Peru. University Press of Florida, Tallahassee.
- Jennings, J., Berquist, S., Spence-Morrow, G., Bikoulis, P., Gonzalez-Macqueen, F., Álvarez, W.Y., Bautista, S., 2018. A Moving Place: The Creation of Quilcapampa. In: Jennings, J., Swenson, E. (Eds.), Powerful Places in the Ancient Andes. University of New Mexico Press, Albuquerque, pp. 399–426.
 Jennings, J., Tung, T.A., Yépez, W.J., Álvarez, G.C., Lucano, Q., Hurtado, M.A.L., 2015.
- Jennings, J., Tung, T.A., Yépez, W.J., Álvarez, G.C., Lucano, Q., Hurtado, M.A.L., 2015 Shifting Local, Regional, and Interregional Relations in Middle Horizon Peru: Evidence from La Real. Latin Am. Antiq. 26 (3), 382–400.
- Jennings, J., Álvarez, W.Y., 2015. Tenahaha and the Wari State: A View of the Middle Horizon from the Cotahuasi Valley. University of Alabama Press, Tuscaloosa.
- Jennings, J., Álvarez, W.Y., 2016. Entangled Objects and Disarticulated Bodies: Managing Social Upheaval in Middle Horizon Peru. In: Der, L., Fernandini, F. (Eds.), Archaeology of Entanglement. Left Coast Press, Walnut Creek, pp. 77–102.
- Johnson, A., Earle, T.J., 1987. The Evolution of Human Societies. Stanford University Press, Palo Alto.
- Joyce, P., Mukerji, C., 2017. The State of Things: State History and Theory Reconfigured. Theory Soc. 46 (1), 1–19.
- Kardulias, P.Nick, Hall, T.D., 2008. Archaeology and world-systems analysis. World Archaeol. 40 (4), 572–583.
- Kenoyer, J.M., 2008. Indus Urbanism: New Perspectives on Its Origins and Character. In:
 Marcus, J., Sabloff, J.A. (Eds.), The Ancient City: New Perspectives on Urbanism in
 the Old and New World. School for Advanced Research, Santa Fe, pp. 183–208.
- Kennan, L., 2000. Large-Scale Geomorphology in the Andes: Interrelationships of Tectonics, Magnetism, and Climate. In: Summerfield, M.A. (Ed.), Geomorphology and Global Tectonics. Wiley, New York, pp. 167–199.
- Kent, J.D., Kowta, M., 1994. The Cemetery at Tambo Viejo, Acari Valley, Peru. Andean Past 109–140.
- Kerchusky, S.L. Dost, 2018. Archaeological Investigations at Zorropata: Local Socioeconomic and Political Development in a Context of Imperial Wari Expansion. Department of Anthropology, University of California, Santa Barbara. Unpublished doctoral dissertation.
- King, H., 2012. Feather Arts in Ancient Peru. In: King, H. (Ed.), Peruvian Featherworks:

 Art of the Precolumbian Era. Metropolitan Museum of Art, New York, pp. 9–45.
- King, H., 2013. The Wari Feathered Panels from Corral Redondo, Churunga Valley: A Re-Examination of Context. Nawpa Pacha: J. Andean Archaeol. 33 (1), 23–42.
- Knappett, C., 2011. An Archaeology of Interaction. Oxford University Press, New York.
 Knudson, K.J., Williams, S.R., Osborn, R., Forgey, K., Williams, P.R., 2009. The
 Geographic Origins of Nasca Trophy Heads Using Strontium, Oxygen, and Carbon Isotope Data. J. Anthropol. Archaeol. 28 (2), 244–257.
- Knobloch, P.J., 1983. A Study the Andean Huari Ceramics from the Early Intermediate Period to the Middle Horizon Epoch 1, Ph.D dissertation. Department of Anthropology, State University of New York, Binghamton.
- Knobloch, P.J., 2005. Monkey Saw, Monkey Did: A Stylization Model for Correlating Nasca and Wari Chronology. Andean Past 7 (10), 111–134.
- Knobloch, P.J., 2012. Archives in Clay: The Styles and Stories of Wari Ceramic Artists. In: Bergh, S.E. (Ed.), Wari: Lords of the Ancient Andes. Cleveland Museum of Art, Cleveland, pp. 122–144.
- Kuentz, A., Ledru, M.-P., Thouret, J.-C., 2012. Environmental changes in the highlands of the western Andean Cordillera, southern Peru, during the Holocene. The Holocene 22 (11), 1215–1226.
- Larkin, B., 2013. The Politics and Poetics of Infrastructure. Annu. Rev. Anthropol. 42 (1), 327–343.
- Latour, B., 1993. We Have Never Been Modern. Harvard University Press, Cambridge. Law, J., 1994. Organizing Modernity. Blackwell, Oxford.
- Leoni, J.B., 2006. Ritual and Society in Early Intermediate Period Ayacucho: A view from the Site of Nawinpukyo. In: Isbell, W.H., Silverman, H. (Eds.), Andean Archaeology III: North and South. Springer, New York, pp. 279–306.
 Lozada, M.C., Warner-Smith, A., Haydon, R.C., Barnard, H., Rosas, A.C., Greenberg, R.,
- Lozada, M.C., Warner-Smith, A., Haydon, R.C., Barnard, H., Rosas, A.C., Greenberg, R., 2018. Head Processing among La Ramada Tradition of Southern Peru. In: Tiesler, V., Lozada, M.C. (Eds.), Social Skins of the Head: Body Beliefs and Ritual in Ancient Mesoamerica and the Andes. University of New Mexico Press, Albuquerque, pp. 187–204.
- Lumbreras, L., 1974a. The Peoples and Cultures of Ancient Peru. Smithsonian University Press, Washington, D.C.
- Lumbreras, L., 1974b. Las fundaciones de Huamanga. Club Huamanga, Lima.
- Mächtle, B., Eitel, B., Schukraft, G., Ross, K., 2009. Built on Sand: Climatic Oscillation and Water Harvesting During the Late Intermediate Period. In: Reindel, M., Wagner, G.A. (Eds.), Natural Science in ArchaeologyNew Technologies for Archaeology. Springer Berlin Heidelberg, Berlin, Heidelberg, pp. 39–46. https://doi.org/10.1007/978-3-540-87438-6_3.
- Malpass, M., 2001. Sonay: un centro Wari celular orthogonal en el valle de Camaná, Perú. In: Kaulicke, P., Isbell, W. (Eds.), Huari y Tiwanaku: Modelos y Evidencias, Secundo Parte. Boletín de Arqueología PUCP, no. 5. Fondo Editorial de la Pontificia Universidad Católica del Perú, Lima, pp. 51-68.
- Malpass, M., 2019. Archaeological Identifiers of Cultural Affiliation: The Case of the Middle Horizon(?) Site of Sonay, Peru. Paper presented at the 84th Annual Meeting of the Society for American Archaeology, Albuquerque, NM.
- Marcus, J., Feinman, Gary M., 1998. Introduction. In: Feinman, G.M., Marcus, J. (Eds.), Archaic States. School for Advanced Research, Santa Fe, pp. 3-14.
- In: Mattingly, D.J. (Ed.), 1997. Dialogues in Roman Imperialism: Power, Discourse, and Discrepant. Supplemental Series 23. Journal of Roman Archaeology, Portsmouth.
- McCormick Adams, R., 1972. The Evolution of Urban Society: Early Mesopotamia and Prehispanic Mexico. Aldine Press, Chicago.

- In: McEwan, G.F. (Eds.), 2005. Pikillacta: The Wari Empire in Cuzco. University of Iowa Press. Iowa City.
- Meddens, F., 1991. A Provincial Perspective of Huari Organization Viewed from the Chicha/Soras Valley. In: Isbell, W., McEwan, G. (Eds.), Huari Administrative Structures. Dumbarton Oaks, Washington, D.C., pp. 215–232
- Melton, M., Alaica, A., Biwer, M., Rosa, L.M.G.L., Gordon, G., Knudson, K., VanDerwarker, A., Jennings, J., 2022. Reconstructing Camelid Diets and Foddering Practices During the Middle Horizon: Microbotanical and Isotope Analyses of Dental Remains from Quilcapampa. Latin American Antiquity (in press).
- Menzel, D., 1964. Style and time in the Middle Horizon. Nawpa Pacha 2 (1), 1–105. Menzel, D., 1968a. La Cultura Huari. Compañia de Seguros y Reaseguros Peruano-Suzia, S.A., Lima.
- Menzel, D., 1968b. New Data on the Huari Empire in Middle Horizon Epoch 2A. Ñawpa Pacha 6 (1), 47–114.
- Menzel, D., Riddell, F.A., 1986. Archaeological Investigations at Tambo Viejo, Acarí Valley, Peru, 1954. California Institute for Peruvian Studies, Sacramento, California
- Mills, B.N., Conlee, C.A., 2019. An Analysis of the Fabrics from La Tiza, a Site in the Southern Nasca Drainage. Nawpa Pacha 39 (2), 213–232.
- Moseley, M.E., Nash, D.J., Williams, P.R., deFrance, S.D., Miranda, A., Ruales, M., 2005. Burning down the brewery: Establishing and evacuating an ancient imperial colony at Cerro Baúl. PNAS 102 (48), 17264–17271.
- Müller, M., 2015. Assemblages and Actor-Networks: Rethinking Socio-material Power, Politics, and Space. Geogr. Compass 9 (1), 27–41.
- Nash, D., 2002. The Archaeology of Space: Places of Power in the Wari Empire.

 Department of Anthropology, University of Florida. Unpublished PhD dissertation.
- Nash, D., 2011. Fiestas y la econmía política Wari en Moquegua, Perù. Chungara: Revista de Antropología 43 (2), 221–242.
- Nash, Donna J., 2015. Evidencia de Uniones Matrimoniales entre las Elites Wari Y Tiwanaku de Cerro Baul, Moquegua, Peru. In: Korpisaari, Antti, Chicama, Juan (Eds.), El Horizonte Medio: Nuevos aportes para el sur de Peru, norte de Chile y Bolivia, Travaux de l'Institut Francais d'Estudes Andines tomo 330. Instituto Frances de Estudios Andinos, Lima, pp. 177–200.
- Nash, D., 2017. Vernacular versus state housing in the Wari Empire. In: Halperin, C.T., Schwartz, L.E. (Eds.), Vernacular Architecture in the Pre-Columbian Americas. Routledge, New York, pp. 91–112.
- Nash, D., deFrance, S.D., 2019. Plotting abandonment: Excavating a ritual deposit at the Wari site of Cerro Baúl. J. Anthropol. Archaeol. 53, 112–132.
- Nash, D.J., Ryan Williams, P., 2005. Architecture and Power: relations on the Wari-Tiwanaku Frontier. In: Vaughn, K., Conlee, C., Ogburn, D. (Eds.), The Foundations of Power in the Prehispanic Andes, Archeological Papers of the American Anthropological Association, pp. 151-174.
- Nash, Donna J., Williams, Patrick Ryan, 2009. Wari political organization on the southern periphery. In: Joyce, Marcus, Williams, Patrick Ryan (Eds.), Andean Civilization: A Tribute to Michael E. Moseley. Cotsen Institute of Archaeology Press, Los Angeles, pp. 257–276.
- Nigra, B.T., Rosas, A.C., Lozada, M.C., Barnard, H., 2017. Reconstructing the Built Environment of the Millo Complex, Vitor Valley, Peru. Nawpa Pacha 37 (1), 39–62.
- Nash, D.J., Ryan Williams, P., 2020. As Wari Weakened: Ritual transitions in the Terminal Middle Horizon of Moquegua, Peru. In: Murphy, J.M.A. (Ed.), Rituals, Collapse, and Radical Transformation. In Archaic States. Routledge, New York, pp. 77-99
- Ochatoma Paravicino, J., Cabrera Romero, M., Mancilla Rojas, C., 2015. El Área Sagrada de Wari: Investigaciones Arqueológicas en Vegachayuq Moqu. Universidad de San Cristóbal de Huamanga, Ayacucho.
- Ortner, S.B., 2006. Anthropology and Social Theory: Culture, Power, and the Acting Subject. Duke University Press, Durham.
- Owen, B., 2010. Wari in the Majes-Camaná Valley: A Different Kind of Horizon. In: Jennings, J. (Ed.), Beyond Wari Walls: Regional Perspectives on Middle Horizon Peru. University of New Mexico Press, Albuquerque, pp. 50–77.
- Paulsen, A.C., 1983. Huaca del Loro Revisited: The Nasca-Huarpa Connection. In: Sandweiss, D.H. (Ed.), Investigations of the Andean Past. Cornell University Latin American Studies Program, Ithaca, NY, pp. 98–121.
- Paulsen, A.C., 1989. Wari and Mycenae: Some Evolutionary Comparisons. In: Czwarno, R.M., Meddens, F.M., Morgan, A. (Eds.), The Nature of Wari: A Reappraisal of the Middle Horizon Period in Peru. BAR International Series 525. British Archaeological Reports, Oxford, pp. 214-224.
- Pérez Calderón, I., 1999. Huari: Misteriosa Ciudad de Piedra. Universidad de San Cristóbal de Huamanga, Ayacucho.
- Pérez Calderón, I., 2001. Investigaciones en la periferia del complejo Huari. In: Pérez, I., Aguilar, W., Purizaga, M. (Eds.), XII Congreso Peruano Del Hombre y la Cultura Andina "Luis. Universidad de San Cristóbal de Huamanga, Ayacucho, pp. 246–270.
- Possehl, G.L., 1990. Revolution in the Urban Revolution: The Emergence of Indus Urbanization. Annu. Rev. Anthropol. 19 (1), 261–282.
- Pulgar Vidal, J., 1981. Geografía del Perú: los ochos regiones naturales del Perú. Editorial Universo, Lima.
- Reid, D.A., 2020. Networks of Empire: The Role of Infrastructure in Wari State Expansion in Arequipa. University of Illinois, Chicago. Peru (AD 600–1000). Unpublished dissertation.
- Rein, B., Lückge, A., Sirocko, F., 2004. A Major Holocene ENSO Anomaly during the Medieval Period. Geophys. Res. Lett. 31 (17), 1–4.
- Roddick, A.P., Stahl, A.B., 2016. Knowledge in Motion: Constellations of Learning across Time and Space. University of Arizona Press, Tucson.
- Rosenfeld, S.A., Jordan, B.T., Street, M.E., 2021. Beyond Exotic Goods: Wari Elites and Regional Interaction in the Andes during the Middle Horizon (AD 600–1000). Antiquity 95 (380), 400–416.

- Rowe, J.H., 1962. Stages and Periods in Archaeological Interpretation. Southwestern J. Anthropol. 18 (1), 40–54.
- Rowe, J.H., Collier, D., Willey, G.R., 1950. Reconnaissance Notes on the Site of Huari, near Ayacucho, Peru. Am. Antiq. 16 (2), 120–137.
- Santos Ramírez, R.S., 1976. Investigación Arqueológica en el valle de Siguas. Unpublished Ph.D. Dissertation, Academic Program in History and Anthropology, Universidad Nacional de San Agustín, Arequipa.
- Scaffidi, C.K., 2018. Networks of Violence: Bioarchaeological and Spatial Perspectives on Physical, Structural, and Cultural Violence in the Lower Majes Valley, Arequipa, Peru, in the Pre- and Early-Wari Eras. Unpublished Ph.D. Dissertation, Vanderbilt University, Nashville.
- Scaffidi, B.K., Kamenov, G.D., Sharpe, A.E., Krigbaum, J., 2021. Non-Local Enemies or Local Subjects of Violence?: Using Strontium (87Sr/86Sr) and Lead (206Pb/204Pb, 207Pb/204Pb, 208Pb/204Pb) Isobiographies to Reconstruct Geographic Origins and Early Childhood Mobility of Decapitated Male Heads from the Majes Valley, Peru. J. Archaeol. Method Theory, https://doi.org/10.1007/s10816-021-09519-5.
- Schreiber, K.J., 1987. From State to Empire: The Expansion of Wari Outside of the Ayacucho Basin. In: Haas, J., Pozorski, S., Pozorski, T. (Eds.), Origins and Development of the Andean State. Cambridge University Press, New York, pp. 91–96.
- Schreiber, K.J., 1992. Wari Imperialism in Middle Horizon Peru. Museum of Anthropology, University of Michigan, Ann Arbor.
- Schreiber, Katharina, 1999. Regional Approaches to the Study of Prehistoric Empires: Examples from Ayacucho and Nasca, Peru. In: Billman, B., Feinman, G. (Eds.), Settlement Pattern Studies in the Americas: Fifty Years Since Viru. Smithsonian Institution Press, Washington, D.C, pp. 160–171.
- Schreiber, K.J., 2001. The Wari Empire of Middle Horizon Peru: The Epistemological Challenge of Documenting an Empire without Documentary Evidence. In: Alcock, S. E., D'Altroy, T.N., Morrison, K.D., Sinopoli, C.M. (Eds.), Empires: Perspectives from Archaeology and History. Cambridge University Press, New York, pp. 70–92.
- Schreiber, K.J., 2005. Imperial Agenda and Local Agency: Wari Colonial Strategies. In: Stein, G.J. (Ed.), The Archaeology of Colonial Encounters: Comparative Perspectives. School of American Research Press, Santa Fe, pp. 237–262.
- Schreiber, K.J., Rojas, J.L., 2003. Irrigation and Society in the Peruvian Desert: The Puquios of Nasca. Lexington Books, Landham.
- Scott, J.C., 1998. Seeing like a State: How Certain Schemes to Improve the Human Condition Have Failed. Yale University Press, New Haven.
- Service, Elman R., 1962. Primitive Social Organization. Random House, New York. Solís, S., Ruth, 1988. Época Huari como interacción de las sociedades regionales. Revista Andina 6 (1), 67–99.
- Sharratt, N., 2016. Collapse and Cohesion: Building Community in the Aftermath of Tiwanaku State Breakdown. World Archaeol. 48 (1), 144–163.
- Sharratt, N., Mark Golitko, P., Williams, R., Dussubieux, L., 2009. Ceramic Production during the Middle Horizon: Wari and Tiwanaku Procurement in the Moquegua Valley, Peru. Geoarcheology 24 (6), 792–820.
- Silverman, H., 2002. Ancient Nasca Settlement and Society. University of Iowa Press,
- Silverman, H., Proulx, D., 2002. The Nasca. Chinchester, John Willey & Sons.

 Smith, A.T., 2015. The Political Machine: Assembling Sovereignty in the Bronze Age
 Caucasus. Princeton University Press, Princeton.
- Sossna, V., 2014. Impacts of Climate Variability on Pre-Hispanic Settlement Behavior in South Peru: The Northern Rio Grande de Nasca Drainage between 1500 BCE and 1532 AD. Unpublished dissertation, Christian-Albrechts-Universität zu Kiel.
- Stein, G.J., 2002. Colonies without Colonialism: A Trade Diaspora Model of Fourth Millennium BC Mesopotamian Enclaves in Anatolia. In: Lyons, C.L., Papadopoulos, J. K. (Eds.), The Archaeology of Colonialism. Getty Research Institute, Los Angeles, pp. 27–64.
- Steward, J.H., 1972. Theory of Culture Change: The Methodology of Multilinear Evolution. University of Illinois Press, Champlain.
- Strong, W.D., 1957. Paracas, Nazca and Tiahuanacoid Cultural Relationships in South Coastal Peru. Memoirs of the Society for American Archaeology no.13. Society of American Archaeology, Salt Lake City.
- Szykulski, J., Wanot, J., 2021. The Tiwanaku Tradition within the Tambo Valley, Southern Coast of Peru: Interpretations of Burial Contexts from La Pampilla 1. Latin Am. Antiq. 32 (3), 577–594.
- Tello, J.C., 1942. Origen y desarrollo de las civilizaciones prehistóricas Andinas. Actas y Trabajos Científicos. International Congress of Americanists 1, 589–720.
- Tello, J.C., 2002. Arqueología de la cuenca del Río Grande de Nasca. Cuadernos de Investigación del Archivo Tello, No. 3. Museo de Arqueología y Antropología, Universidad Nacional Mayor de San Marcos, Lima.
- Tello, J.C., 2009. The Ruins of Wari. In: Burger, R.L. (Ed.), In the Life and Writings of Julio C. Tello: America's First Indigenous Archaeologist. University of Iowa Press, Iowa City, pp. 275–278.
- Thouret, J.-C., Wörner, G., Gunnell, Y., Singer, B., Zhang, X., Souriot, T., 2007. Geochronologic and Stratigraphic Constraints on Canyon Incision and Miocene Uplift of the Central Andes in Peru. Earth Planet. Sci. Lett. 263 (3-4), 151–166.
- Topic, T.L., Topic, J., 2010. Contextualizing the Wari-Huamachuco Relationship. In: Jennings, J. (Ed.), Beyond Wari Walls: Regional Perspectives on Middle Horizon Peru. University of New Mexico Press, Albuquerque, pp. 188–212.
- Trawick, P.B., 2003. The Struggle for Water in Peru: Comedy and Tragedy in the Andean Commons. Stanford University Press, Palo Alto.
- Uhle, M., 1991[1903]. Pachacamac: A Reprint of the 1903 Edition by Max Uhle, with an Introduction by Izumi Shimada. University of Pennsylvania, Philadelphia.
- Valdez, L., 2009a. Walled Settlements, Buffer Zones, and Human Decapitation in the Acarí Valley, Peru. J. Anthropol. Res. 65 (4), 389–416.

- Valdez, L., 2009b. Significado social de la cerámica Nasca temprano en el valle de Acarí, Perú. Revista de Antropología 20, 15–36.
- Valdez, L., 2009c. Una Ofrenda de Cerámica Ceremonial Wari en La Oroya, Valle de Acarí, Perú. Revista de Antropología 20, 189–204.
- Valdez, Lidio, M., Valdez, Ernesto, J., 2016. Highland Coastal Cultural Interaction: New Evidence from the Ancient of Huari, Ayacucho, Peru. University of Calgary, Calgary, pp. 91–108.
- Valdez, Lidio M., Valdez, J. Ernesto, 2021. Investigación arqueológica en un asentamiento rural del Valle de Ayacucho, Perú. Arqueología Y Sociedad 33, 75–106.
- van Hoek, M., 2018. Formative Period Rock Art in Arequipa, Peru: An Up-Dated Analysis of the Rock Art from Caraveli to Vitor. Self-Published, Oisterwijk, Netherlands.
- Vining, B.R., 2005. Social Pluralism and Lithic Economy at Cerro Baúl, Peru. BAR International Series 1461. John and Erica Hedges, Oxford.
- Wernke, S., 2003. An Archaeo-History of Andean Community and Landscape: The Late Prehispanic and Early Colonial Colca Valley, Peru. University of Wisconsin, Madison. Unpublished Ph.D dissertation.
- Wernke, S., 2011. Asentamiento, agricultura y pastoralismo durante el periodo Formativo en el valle del Colca. Perú. Chungará 43 (2), 203–220.
- Wilkinson, D., 2019. Towards an Archaeology of Infrastructure. J. Archaeol. Method Theory 26, 1216–1241.
- Williams, P.R., 2001. Cerro Baúl: A Wari Center on the Tiwanaku Frontier. Latin Am. Antiq. 12 (1), 67–83.
- Williams, P.R., Isla, J., Nash, D., 2001. Cerro Baúl: un enclave Wari en interacción con Tiwankau. Boletín de Arqueología PUCP 5, 69–88.
- Williams, P.R., Isla, J., Nash, D., 2002. Rethinking Disaster-Induced Collapse and the Demise of Highland States: Wari and Tiwanaku. World Archaeol. 33(3), 361-374.

- Williams, P.R., Nash, D.J., 2021. Consuming Kero: Molle Beer and Wari social identity in Andean Peru. J. Anthropol. Archaeol. 63, 101327. https://doi.org/10.1016/j. jaa.2021.101327.
- Williams, P.R., Nash, D.J., 2002. Imperial Interaction in the Andes: Huari and Tiwanaku at Cerro Baúl. In: Isbell, W.H., Silverman, H. (Eds.), Andean Archaeology I: Variations in Sociopolitical Organization. Kluwer Academic/Plenum Publishers, New York, pp. 243–265.
- Williams, P.R., Belisle, V., Cardona, A., Coleman, R., Costion, K., 2010. Obsidian as a Commodity of Interregional Exchange in Wari sites of Southern Peru. Paper presented at the 75th Annual Meeting of the Society for American Archaeology, St, Louis
- Williams, Patrick Ryan, Nash, Donna J., 2006. Sighting the Apu: A GIS Analysis of Wari Imperialism and the Worship of Mountain Peaks. World Archaeol. 38 (3), 455–468. http://www.jstor.org/stable/40026643.
- Williams, P.R., Nash, D.J., 2016. Religious Ritual and Wari State Expansion. In: Murphy, J.M.A. (Ed.), Ritual and Archaic States. University Press of Florida, pp. 131–156. https://doi.org/10.2307/j.ctvx076fd.11.
- Winsborough, Barbara M., Shimada, Izumi, Newsom, Lee A., Jones, John G., Segura, Rafael A., 2012. Paleoenvironmental catastrophies on the Peruvian coast revealed in lagoon sediment cores from Pachacamac. J. Archaeol. Sci. 39 (3), 602–614.
- In: Yépez Álvarez, W., Jennings, J. (Eds.), 2012.¿Wari en Arequipa?: Análisis de los contextos funerarios de La Real. Museo Arqueológico José Mariá Morante, Universidad Nacional de San Agustín, Arequipa.
- Yépez Álvarez, W., Jennings, J., Berquist, S., 2018. Patron Arquitectonico y uso del espacio durante el horizonte tardío en el valle de Siguas, Arequipa. Cuadernos de Qhapaq Ñan 5(5), 126-148.
- Yoffee, N., 2005. Myths of the Archaic State: Evolution of the Earliest Cities, States, and Civilizations. Cambridge University Press, New York, Cambridge.