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Political centers in context: Depositional histories at Formative Period Kala Uyuni, Bolivia

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Publication Date

2014-12-01

DOI

10.1016/j.jaa.2014.09.010

Peer reviewed

Manuscript Number: YJAAR-D-14-00032R1

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Article Type: Full Length Article

Keywords: Political Centers; Depositional Histories; Stratigraphy; Formative Period; Andes; Bolivia

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Abstract: In this paper, we examine the development of a Middle Formative (800-200 B.C.) village and a Late Formative (200 B.C.-A.D. 475) political center at the site of Kala Uyuni on the Taraco Peninsula, Bolivia. Traditional political economy models rely on the spatial distribution of archaeological sites documented through site survey to define and explain the appearance of political centers. Recent scholarship on 'depositional histories' offers a framework for interpreting the dynamic and contingent political histories of such places using rich, stratigraphically excavated data. Our approach sheds new light on the diversity of practices and internally complex political processes that contributed to the transformation of Kala Uyuni from village to political center. We argue that serious attention to such 'depositional histories' has the potential to transform larger archaeological narratives in the region, and contribute to a more subtle understanding of the development of political landscapes.



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August 4, 2014

Dr. John O'Shea
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48109-1079

Dear Dr. O'Shea,

Please find the enclosed revised manuscript "Political Centers in Context: Depositional Histories at Formative Period Kala Uyuni, Bolivia" co-authored with Dr. Maria Bruno (Dickinson College) and Dr. Christine Hastorf (University of California, Berkeley). We thank you and the two reviewers for very helpful feedback about how to improve it, particularly in terms of re-framing our argument. We believe we have dealt with their substantive comments, as well as some of the smaller writing/copy-editing suggestions. Below, we detail the steps taken to deal with each particular issue.

Suggestion: *Both reviewers felt that we focused too much on a critique of Bandy's multi-community model.*

Response: We have substantially changed the front part of the paper to make it a more specific case study of explorations of politics and power within such centers. While Bandy's model still serves as the starting point for our study of Kala Uyuni, the paper no longer centers on the critique of the model.

Suggestion- *Both reviewers suggested more general critique and general discussion of horizontal/vertical histories. They pushed us to extend the discussion to engage with a particular kind of archaeological reasoning and interpretation beyond the Lake Titicaca basin. For instance, the first reviewer advocated for "a general and global critique [of] an approach that sees human history as a struggle for the control of regional economic resources, led by elites." This same reviewer suggested that we discuss other examples, particularly in the Maya world, and his own work with the Inka. The second reviewer stressed that Bandy's model was not the best orienting model...that we should frame it around deposits and power/political process. This reviewer suggested we "start at the beginning of the paper with a theoretical discussion of the kinds of practices necessary for creating vertical histories and emphasize up front the challenges they pose."*

Response: These were very useful suggestions. In order to take them on, we first moved up our theoretical discussion to the first part of the paper, thus highlighting that these issues are not unique to the Lake Titicaca Basin and the Andes. We now include a more specific discussion of how the political economy model is implicitly conceived of in "horizontal histories". Drawing on the reviewer's suggestion, we explored (and cite) various cases from the Mesoamerican world, and use both Kosiba's Inca case study and Susan Gillespie's Olmec study to demonstrate how a vertical history results in a radically different understanding of the politics at political centers.

Suggestion: Reviewer 1 stressed that we should clarify that survey deals with one kind/scale of political dynamic (regional political economy) while excavation records political practice (political contestation, practices of daily life, constitution of authority).

Response: In our new introductory section we clarify our two models substantially, and make the point of both resolutions being important but how excavation reveals new kinds of questions.

Suggestion: There was some concern expressed that our Middle Formative data was better suited for this discussion. Reviewer 2 also wished for more detail on the division between domestic and ceremonial spaces.

Response: We have added several sections to clarify the nature of our sample, and we have added clear statements about the ceremonial: domestic distinctions in the Middle Formative (and lack thereof in the Late Formative).

Suggestion: Clarity and consistency with concepts. Use of landscapes in particular.

Response: We have made sure our use of landscape is consistent throughout.

We believe that these changes have substantially improved the manuscript and hope that you will reconsider this article for publication in the *Journal of Anthropological Archaeology*.

Thank you again for reconsidering our manuscript,

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Roddick, Bruno and Hastorf JAA Re-submission Statement

We have had time to deal with the insightful comments from the two reviewers. They were very helpful in terms of re-framing our argument. We believe we have dealt with their substantive comments, as well as some of the smaller writing/copy-editing suggestions. Below we describe the steps taken to deal with each particular issue.

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Roddick, Bruno, Hastorf Highlights

- We re-examine survey-based, political economic models of political centers in archaeology.
- We explore political processes at political centers in the Titicaca Basin of the Andes through 'depositional histories'.
- Stratigraphic sequences at Kala Uyuni reveal stable village politics during the Middle Formative Period.
- The Late Formative Period at Kala Uyuni is much more dynamic, and is built up through three distinct phases.
- Late Formative depositional histories at Kala Uyuni revise current developmental narratives.

Political Centers in Context: Depositional Histories at Formative Period Kala Uyuni, Bolivia

Paper Re-submitted to the Journal of Anthropological Archaeology
Submitted March 6, 2014, Re-Submitted August 4, 2014

Andrew P. Roddick (McMaster University)
Maria C. Bruno (Dickinson College)
Christine A. Hastorf (University of California, Berkeley)

Keywords: Political Centers; Depositional Histories; Stratigraphy; Formative Period;
Andes; Bolivia

Abstract:

In this paper, we examine the development of a Middle Formative (800-200 B.C.) village and a Late Formative (200 B.C.-A.D. 475) political center at the site of Kala Uyuni on the Taraco Peninsula, Bolivia. Traditional political economy models rely on the spatial distribution of archaeological sites documented through site survey to define and explain the appearance of political centers. Recent scholarship on 'depositional histories' offers a framework for interpreting the dynamic and contingent political histories of such places using rich, stratigraphically excavated data. Our approach sheds new light on the diversity of practices and internally complex political processes that contributed to the transformation of Kala Uyuni from village to political center. We argue that serious attention to such 'depositional histories' has the potential to transform larger archaeological narratives in the region, and contribute to a more subtle understanding of the development of political landscapes.

I. Introduction

Recently, archaeologists have begun to re-conceptualize ancient political landscapes, stressing the role of culturally situated strategic actions and practices that create differences and unique histories within communities (Bauer 2011: 85; Johansen and Bauer 2011; Smith 2011; Yoffee 2005). These researchers are questioning many taken-for-granted of earlier political studies (Pauketat 2007; Smith 2003), exploring the “practical politics” of everyday life, the continual dynamic interactions between different communities and the heterarchical nature of political landscapes (Crumley 1995; Janusek 2004, 2008; Pauketat 2000; Silliman 2001). Some authors focus upon the political nature of the associated material culture and its ability to produce subjects (Brumfiel 1997, 2011; DeMarrais et al. 1996; Gell 1998; Rowlands 2005; Smith 2011: 425). Others explore the politics of place-making and the practices of locality (D’Altroy and Hastorf 2001; Heckenberger 2005; Kosiba 2011). These archaeologists understand that the local not only reflects the political, but in fact, the local actually *produces* the political programs that are visible across geopolitical landscapes. Such an understanding is particularly important for research into political centers, those centrifugal, independent and generative places where emergent forms of power and influence were displayed and negotiated (Cobb 2005; Janusek 2004, Sassaman 2005).

In this paper we contribute to this literature by exploring the political practices, specifically those depositional practices, that constituted an important Formative period political center in highland Bolivia. Our discussion is structured by a distinction between “horizontal” and “vertical” approaches to political dynamics, a difference that involves varying methods and spatio-temporal resolution, but most importantly, a fundamentally distinct understanding of political process. As we discuss below, the horizontal approach is primarily developed through survey-based methodologies and has a particularly broad spatial resolution and perspective with less attention to the micro-processes of political practices. Such an approach has often been geared towards tracking the emergence of social stratification and the development of regional institutions (i.e. political economy). In contrast the “vertical approach” stresses particular events in the biography of particular places, offering a fine-grained stratigraphic perspectives. Here, more attention is paid to

the relationship between structural power, strategic power, and social action (Wolf 1990: 586-587) and to exploring how small, place-based politicized acts can generate larger sociopolitical changes (Mills and Walker 2008; Pollard 2001; Walker and Lucero 2000). While the vertical and horizontal are not mutually exclusive, we suggest that the vertical depositional data is often subsumed in larger political economy narratives, rather than serving to re-evaluate how political relations were constituted in the past.

Our research has explored the inner workings of Formative period political centers in the Lake Titicaca Basin of the Andes. In this paper, we examine the political processes that played out at the site of Kala Uyuni located on the Taraco Peninsula in the southern Lake Titicaca basin in Bolivia based on our excavations there (Figure 1). Matthew Bandy developed a political economic model of population growth and centralization based on a full-coverage survey of the peninsula. Much like similar work in the larger basin and elsewhere, this “horizontal” model tracked settlement pattern changes across the region, sketched out variation in the regional demography and political economy, and effectively identified the site of Kala Uyuni as an important place in Formative times. Nevertheless, the internal dynamics of political centers recorded in the “vertical” depositional processes at settlements such as Kala Uyuni have not been explored in depth. Detailed excavation data allow us to engage directly with several key questions pertaining to political practices within the Formative settlements during these periods of polity formation. What evidence do we have for political subject-making and authority at Kala Uyuni throughout the Formative period? More specifically, what does political authority look like during a period of early, stable, autonomous village formation in the Middle Formative? And how do politically inflected practices change in the Late Formative when there appears to be a centripetal movement of population? The approach taken here permits a closer view of this history through tracing various practices that produced the settlements categorized as *political centers* by Titicaca basin researchers, exploring how the political was enacted *within* these communities over time. This focus allows us to trace the history of social life and engagement at Kala Uyuni in light of the greater political landscape of the Taraco Peninsula during the Formative period, but also to consider how a focus on depositional processes can provide clearer perspectives on political life and processes within early autonomous centers.

II. Political Practices and Depositional Histories

a) Breaking into the “black box” of the political center

For much of the 20th century, Americanist archaeology focused on the political from a specific theoretical paradigm, which shaped both the kinds of questions being asked and the scales and methods deemed appropriate to explore the political. This approach, which might be called a “horizontal history”, theorized the formation of regional political economies as unilinear trajectories of accumulation, centralization and aggrandizement (Pauketat 2007). This paradigm stressed these regional political developments and thus relied almost exclusively on data produced from survey projects. His focus is on the dynamics of site size and related population densities through time, with such patterning used as proxies for the emergence of administrative institutions and regional political authority (e.g. Billman and Feinman 1999; Marcus and Flannery 1996; Wright and Johnson 1975).

This horizontal approach has focused on exploring regional political processes and identifying particularly important places on the landscape. Scholars identify particularly large places, often defined as “political centers”, which are interpreted as something like prehistoric performative stages that are often used to index political developmental stages (Kosiba 2010: 298). While such approaches have mapped out the low-resolution political processes across the landscape, they have been less successful in understanding the making of such places. While regional authority and associated institutions were thought to emerge at such sites, the diachronic micro-politics of place-making and daily life were rarely considered. In some cases, excavated site-level data, seemed less weighty within narratives of political development, or even was ignored to fit into these larger “horizontal histories” (Joyce 2002). As a result, political centers became a sort of “black box”, as archaeologists were thought to have little data to speak to the political processes that actually produced such centers, the temporalities involved in their evolution, and how particular social relations within (and between) such places were distinct from other sites in the greater political landscape.

In many of these “horizontal histories” elites dominate the political arena and

emphasis is on elite authority structures, strategies, and prestige competition (Clarke and Blake 1994; Earle 1993, 1997; Brumfiel and Earle 1987; Stanish 1999). Indeed, elite actors are “implicitly or explicitly at the fore of social action” (Costin 2007: 144). So-called “commoners” played little to no role in the sociopolitical processes in the past; elites are thought to provide managerial role and their tactics and strategies dominate these narratives. Other scholars have recently stressed how these particular orientations of political economy and their associated materialist framings have resulted in a lack of attention to other important aspects, from symbolic elements, meaning and the historically constituted nature of political authority (Pollard 2001; Rosebury 1988; Rowlands 2004, as discussed in Johansen and Bauer 2011: 11-12). Although new terms have been inserted into political economy models (such as dual processualism) there has been a general maintenance of focus on the emergence of institutions and a deterministic role of elites in social process (Pauketat 2007; Smith 2011).

As Smith (2011: 419) has recently stressed, the 1990s saw a number of “ground-clearing projects” to develop fresh approaches to the political, and more recently we have seen a number of studies that focus on “things, places, representations, and the political work they do”. For instance, Johansen and Bauer have recently defined a usefully broad perspective on the political as,

“...a fluid and dynamic field of social relations where navigation, negotiation, consensus, and contestation over the production of a web of social differences and affiliations unfold. It is the social location where power is mediated through established and emergent cultural logics and social relations, where relations of power are challenged, renovated and reinvented, or the status quo of social orders are maintained. Finally, it is a field of creative and performative tensions through which ideological positions, individual and collective interests, and structures of authority, legitimacy, status and access are acted out and upon.” (Johansen and Bauer 2011: 9-10)

For these authors, politics are limited to neither economic framings, nor the rational self-interest of elite actors or corporate groups. While authority and power emerges, is sustained and questioned from within such social relations, politics itself moves along potentially non-rational historical and social trajectories in complex fashions engaging all members of society (Johansen and Bauer 2011: 10). This pivoting vis-a-vis political

economy models and a shift towards practice parallels those seen in cultural anthropology (Ortner 1984:142-144), yet is particularly useful for archaeologists less interested in end products and more interested in on the processes and materializations of the political world.

Such a re-configuration of the political has happened at a number of scales. For instance, a renewed understanding of landscapes as political constellations of authority has brought a renewed perspective to how survey data may be interpreted (Smith 2003). This perspective introduces the possibility that a focus on the local can be particularly revealing. This shift has also heightened attention to variation and the internal processes of social change at specific sites (Brumfiel 2000; Gillespie 2008: 134). If tradition is both reproduced and politicized at the local level (Bermann 1994; Dietler 2001: 65; Kosiba 2010; Roddick and Hastorf 2010) then political dynamics are equally revealed at the site level, particularly at so-called political centers. But we must move beyond the understanding of political centers as passive backdrops for displays of power, by considering how the “places themselves, and the *very acts that build and transform* places, may constitute authority” (Kosiba 2010: 298). Such a practice-based approach to micro-scale social relations, whereby everyday actions are constitutive of social worlds, substantively shifts our analytical focus. To track such processes means exploring finer-grained resolution political processes at the site level. Particularly useful here is what we are calling “vertical histories”, where historical processes of political production can be reconstituted by stratigraphic evidence. Such data are often ignored in political economy models, yet if we take seriously the materialities of politics at this level, in-situ artifacts and soil deposition of can reveal past actions and therefore power, authority and subjection (Johansen and Bauer 2011). Often, these micro-social narratives clarify the political situation, and in some cases they can call into question the political economy models of horizontal histories.

b) The strategies and consequences of deposition

Indeed, a focus on fine-grained depositional histories, carefully reconstructed by archaeologists, is particularly useful when considering political dynamics at the local scale of analysis (Joyce and Pollard 2010; Mills and Walker 2008). Depositional

practices are results of particular strategies that are enmeshed in specific cultural values (Pollard 2001). In this vertical approach to political centers, scholars focus on site biographies, the subtle diachronic practices that both produce and constitute power relations, as they specifically place political authority and the production of subjectivities at the local scale. Political processes can and must be considered archaeologically through the careful study of generations of depositional practices and their spatial reconfigurations. Careful excavation, recording, and analysis can result in fairly nuanced site biographies (Bernbeck et al. 2003), involving both political strategies recorded in the deposition, as well as the unintended consequences of material practices of everyday life.

There are many examples of intentional or “overt performances” of depositional practices (Pollard 2008: 45; Walker 1998). Many building and earth-moving projects, as well as differential discard and accumulation of material can be overtly political in both their planning and use. For instance, the construction of public space, one of the more recognizable patterns in the archaeological record, can reveal how authority, conflict and ritual were enacted in real space (Moore 1996, 2005; Swenson 2012). These spaces also are about the production of particular kinds of subjects. For instance, in Mapuche rituals “social soil”, different layers of soil from different lineage homelands, is deposited on burial mounds, which when mixed, materializes and constitutes social and political relations (Dillehay 2012). Although formal architecture clearly has important and clear political roles (Mills 2008), unpacking less formal depositional histories offer thick descriptions of a range of past dynamics, including ritual practices (Walker 1998, 2002), the marking of important group events (Brück 2006; Tringham 2000) and the practical politics of everyday life (Silliman 2001). The deliberate, conscious and structured deposition of objects is wrapped up in differential local knowledge (Brück 1999; Pollard 2001; Richards and Thomas 1984). The deposition of specific assemblages of objects can create “buried geographies”, which map out particular social relations and distributed forms of personhood (Pollard 2001: 327), but also can be used to gain, justify and maintain particular forms of social power (Walker and Lucero 2000). In some cases special objects found in particular deposits hint at inalienable wealth (Weiner 1992), “materialize[d] histories of social relations” that would serve to both produce and fragment hierarchy (Mills 2004: 240).

Some deposition is non-discursive and unplanned, yet can have unintended and interpretable consequences. There are also long-term political implications of repeated quotidian practices (Giddens 1984: 344-46). Such non-deliberate elements and their impacts are virtually impossible to access through horizontal histories. Even the most mundane actions, such as the choice of wood for house posts or the collective efforts involved in raising these posts can indicate politically motivated practices (Kahn and Coil 2006; Pauketat and Alt 2005). The most mundane of middens, unintentionally built up over many generations may have also been a powerful and politically empowered place on the landscape (Joyce and Pollard 2010: 301-302; Lightfoot and Luby 2002; McNiven 2013; Needham and Spence 1997: 84-85). From this perspective, close attention to pits, floor surfacing and refuse practices may reveal particular social dynamics and hint at the larger sociopolitical processes through these non-discursive depositional acts (Roddick 2013; Roddick and Janusek 2011). Trash disposal or the discrete cleaning of a surface produce specific places as they participated in political events that contributed to long-term social memories, memorialized and repoliticized by future inhabitants (Roddick and Hastorf 2010). Places that received particular types of materials may have been more discursively performative. Residents as well as guests anticipated, experienced and remembered the earlier ceremonies in such places. In other cases depositions may facilitate strategic moments of forgetting (Mills 2008). Finally, the social, political or ritual relevance of particular places can simply morph over time as past events gradually disappear from communal memory.

c) Producing and performing authority: A vertical approach to political centers

As the above discussion demonstrates, there are a number of approaches to depositional histories across a wide range of cultural contexts. Two further examples are particularly noteworthy in highlighting how depositional histories can reconfigure our understanding of political places and therefore past political activities. The first example demonstrates how explicit attention to depositional processes and a more grounded perspective on political practice can radically change the understanding of a political center, whereas the second demonstrates how a horizontal and vertical approach can work in tandem.

There has long been an interest in depositional histories across Mesoamerica; due in part to the range of ritual deposits, dedicatory offerings, caches and other ritualized depositional events (Mock 1998). Nevertheless, the mere presence of such deposits does not necessitate the consideration of their political implications or historical process. For instance, Gillespie (2008: 110) argues that the dominant synchronic representations of La Venta, including a site plan (produced from excavations in 1955) and the well-known figurines and mosaics, has resulted in little attention to the diachronic processes that produced both Complex A by the elite actors of the settlement. Although the original excavators assumed a continuity in architecture at Complex A and a fairly static political organization involving dominating elites, she demonstrates how social differentiation and political authority were “entwined with the rise of new categories of social persons in a value-laden landscape built from generations of depositional practices” (Gillespie 2008: 135).

Through careful reanalysis Gillespie teases out sociality from the original stratigraphic profiles, exploring “emerging subjectivities” (Gillespie 2008: 124), and both the unintentional effects of deposition and the more overt strategies taken by the builders of Complex A. For instance, she suggests that the buried mosaics of Complex A, while invisible, were deposits of particular “political resonance” due to their invisibility, “engendering remembering rather than forgetting” in the residents (Gillespie 2008: 125). Gillespie (2008: 126-127) considers other depositional contexts, such as the various foundation caches, in terms of performativity and memory work. She believes that several chiefly houses had claims to different areas of Complex A, and through their differentiated depositional practices there created a “buried geography” (sensu Pollard 2001, and Pollard 2008) of social relations that continued to be recalled through ceremonial events on the surface of Complex A. Other later deposits, including “pseudoburials”, appear to hint towards larger structural transformations by new powerful leaders at La Venta (Gillespie 2008: 130-133). Ultimately, Gillespie demonstrates that attention paid to depositional histories can radically change understandings of past socio-political process.

Steve Kosiba’s (2012) recent analysis, like Gillespie, explores how elites may have naturalized their authority and how social distinctions of people, places and things,

were enacted through depositional practices. Yet it differs in that it uses both horizontal and vertical approaches to examining places undergoing changes from pre-Inka and Inka sites. Kosiba relies on an intensive survey and GIS modeling in the northern Cuzco region of Peru. His work builds on the tenet that we need to “scale down our view of the state” and to focus on particular contexts and practices to explore questions of shifting values, new political subjectivities and social relations (Kosiba 2012: 103). His horizontal work establishes the pre-Inka site of Wat'a as a significant place that was then converted by the Inka into one of their settlements.

It is in his excavation of a sequence of deposits that Kosiba traces series of specific materialized political strategies. For instance, the Inka created a monumental plaza, which as a finished structure, was a politically powerful place but also possessed a “hidden monumentality” because a high density of very prestigious pre-Inka objects that were buried below it (Kosiba 2012: 113). This place was co-opted by a process of Inka architectural disassembly, fill episodes that included complete fine polychrome serving vessels broken during the act of deposition, and a localized burning event. Similar sequences were associated with earlier ovoid structures converted to Inka storage buildings (burning, feasting, and careful placement of llama mandibles) and to Inka houses (sediment, burning, special offerings and carefully placed river cobbles and human burials). Like Gillespie, Kosiba (2012: 122) stresses the “ritualized program of conversion” necessary in the production of the new political authority, wrapped up in the depositional practices of feasting, building and burying. As he puts it, “In destroying pre-Inka buildings, local people concealed their own past. In raising Inka buildings, they defined the political authority to which they were subject.” (Kosiba 2012: 125)

Both of these case studies demonstrate that the political center black box can be pried open (contra Leach 1973), by examining the “vertical history”, involving both fine-grained excavation and engagement with the theoretical literature. While horizontal histories are not abandoned, in that regional processes are integrated, the local nature of the stratigraphic data offers new diachronic perspectives on political centers. We now turn to the Lake Titicaca Basin, where researchers have identified a landscape dotted with political centers, and where horizontal narratives have dominated our understanding of the political. Recent fine-grained work at the site-level offers the opportunity to explore

vertical histories and identify the processes behind the changes identified through survey and political economy models. As will be seen, such approaches can provide a finer resolution but also a renewed sense of political dynamics, including the production of power and authority within the depositional sequences of political centers.

II. Horizontal Histories in the Lake Titicaca Basin and Taraco Peninsula

In the Lake Titicaca Basin, research into early political process has focused on Formative Period (1500 BC- AD 475). Over this long time inhabitants settled into villages, developed fishing, farming and herding practices, and engaged in long distance trade. By the Middle Formative period (800-200 BC), some communities appear to have been key locales of religious, political, and social activity. Scholars identify such ‘centers’ by the presence of public architecture, sunken enclosures some with standing carved stone monoliths, constructed topographic features and higher densities of certain types of artifacts (Albarracín Jordán 1992; Bandy 2001; Hastorf 2003; Janusek and Kolata 2004; Lémuz 2001; Stanish 2003). As research on the Formative period has expanded in recent years, so too have the debates of the significance and role of these sites across the Formative Period landscape (Albarracín Jordán 1996; Burger et al. 2000; Hastorf 2005; Janusek 2003a, 2008; Smith 2009; Stanish 2003). Although some prioritize the economic or religious importance of these settlements, most researchers conceive of them as political centers, places where early forms of power and influence were displayed and negotiated.

As with the broader trends in anthropological archaeology discussed above, researchers in the Lake Titicaca Basin have employed political economy models involving ambitious and competitive “emergent elites” in their archaeological narratives of these places (Klarich 2005; Plourde and Stanish 2006; Stanish 2003). Several emphasize decentralized models of power, focusing on community political dynamics, and argue for a nested model of autonomous yet interacting villages and centers (Albarracín Jordán 1996; Bandy 2001; Janusek 2008). In both cases, elites are the key agents of change. In these models, groups change their residence due to different redistribution options provided by local leaders, “a chief or leader is a point resource on the landscape. S/he is a location from which goods emanate, and proximity to this

location could prove advantageous to other persons” (Bandy 2001:79). Thus, dynamic leaders predicated where people settled, channeling the demographics throughout the Formative Period in the Lake Titicaca Basin, including our region of research, the Taraco Peninsula.

The Taraco Peninsula of Bolivia is a jut of land that extends into the smaller Lake Titicaca, called Lake Wiñaymarka (Figure 1). Bolivian archaeologists have long recognized the region as a locus of early settlement, beginning around 1500 BC (Bennett 1936; Browman 1978; Janusek 1994; Kidder 1956; Mohr 1966; Mohr Chávez 1988; Ponce Sangines 1970; Wallace 1957). While early research on the peninsula focused on the mound at the proposed political center of Chiripa, little work was completed off of the mound or in the prehistory of the greater Taraco Peninsula. Since 1992 the international and interdisciplinary Taraco Archaeological Project (TAP) has been working to clarify early developments at Chiripa and other Formative sites through survey, fine-grained excavation and analysis (Bandy and Hastorf 2007; Hastorf 1999, 2003). Matthew Bandy’s (2001, 2006) survey of the region was foundational to this first phase of research. He conducted a full-coverage survey of the peninsula around Chiripa, providing a fuller picture of settlement intensity as well as developing a model of political economic change on a regional scale across the Formative phases (Bandy 2005, 2006, illustrated in Figure 2).

Bandy recorded a total of 476 prehistoric sites in his survey of the western Taraco Peninsula (2001:40). He identified Formative Period occupations in the region by using a modified ceramic attribute analysis system based on Lee Steadman’s (1999) ceramic work. He had little trouble identifying the Middle Formative phase and the transition to the Late Formative, but struggled with the shifts within the Late Formative times. This 700-year period (200 BC – AD 475) does not easily split into ceramic sub-phases; attributional changes are quite subtle and those decorated diagnostic sherds associated with the later phases are found in low densities across the region. Bandy (2001: 47-56) drew on John Janusek’s (2003b) suite of radiocarbon dates and ceramics from Tiwanaku to identify Late Formative I (200 BC - AD 250) and Late Formative II (AD 300 - AD 500) phases. He specifically relied on design style and paste to distinguish these two sub-phases and a “paste index profile” to date mixed assemblages. Applying the changing

densities of phased ceramic surface scatters to identify settlement histories, he used an innovative set of archaeological models and computer programs to examine changing household population densities through time.

With these survey data, Bandy (2005, 2006) proposed a model of “multi-community polity formation”, a processual model much like Robert Carneiro’s (1970), which relies upon a causal relationship between population growth in a constrained region, settlement proximity and site size (population) management. Bandy proposes that the first small villages and hamlets were settled along the lakeshore of the Taraco Peninsula during the Early Formative period. These early settlements were socially unstable, having a threshold size of approximately 4ha, above which some villagers departed to form new communities. This “fissioning” process gradually filled in the peninsula with settlements throughout the Early Formative period. During the subsequent Middle Formative phase, four key communities (including Chiripa and Kala Uyuni) grew, creating what archaeologists recognized as a two-tier site hierarchy, with smaller and larger settlements existing in the same region. These larger, autonomous Middle Formative villages were defined in part by the presence of sunken courts and low-mounded public architecture, spaces where researchers believe inhabitants from the surrounding smaller villages and hamlets would periodically gather for political and ritual activities (Beck 2004; Hastorf 2003; Mohr Chávez 1988; Stanish 2003).

Demographic changes, believed to be associated with political change, again occurred during the early part of the Late Formative period in the 2nd century BC, when several Middle Formative villages were abandoned and inhabitants founded several larger villages extending over 5 ha in size, with large platform/plazas on the western end of the peninsula (Bandy 2006:228-229). This population resettlement resulted in a three-tier site size hierarchy with these larger settlements serving as peninsular political centers. Bandy (2006:229-232) argued that the site of Kala Uyuni served as one of the centers of a “Taraco Peninsula Polity” from 250 BC to AD 100. He argues that regional political authority later shifted to the sites of Sonaji and Kumi Kipa around AD 100. By the end of Late Formative Period, the political landscape of the Taraco Peninsula changed dramatically again with the emerging Tiwanaku state (20km to the southeast) exerting its cultural and political hegemony across much of the Southern Lake Titicaca Basin.

The multi-community polity model was significant because it broadened our political view beyond the site of Chiripa and has served as an excellent starting point for understanding the dynamics of the Formative political landscape through time in the region. Based on the regional surface survey and rooted in a political economy theoretical paradigm, this model provides a “horizontal history” of political development on the peninsula. While Bandy (2006: 220-228) took some initial steps to explore the relationship between excavated data at Chiripa and the model, he did not have the data from other sites to examine how the political landscape was built up as inhabitants constructed, lived in and modified such places or what political authority may have looked like at these centers at different moments in time. It is this “vertical history” that we seek to elucidate in this paper.

Based on Bandy’s survey and the lack of excavation data on the Late Formative period, TAP conducted excavations at the identified later political centers of Kala Uyuni, Sonaji and Kumi Kipa between 2003-2009. We conducted the most extensive excavations at Kala Uyuni, and it is our focus here. We examine the architecture, midden/fill deposits, and selected artifactual patterns from this long inhabited, deep and positionally complex site to not only clarify its creation and development as a political center, but to also study the local production of political authority during two distinct phases of its history as first delineated in the multi-community model. First, we assess what political authority may have looked like during the Middle Formative period when it was a stable, autonomous village. Second, we examine how political practices changed and transformed in the Late Formative period when the site grew in size and may have become a more centrifugal place on the peninsula. Finally, we utilize this case study of Kala Uyuni to consider the interpretive impact of a more ‘vertical’ perspective on our understanding of the prehistory of the generations of inhabitants. Does the multi-community model narrative shift with a detailed site biography produced through local depositional sequences rather than broad settlement patterns? How can vertical perspectives illuminate different aspects of political life on the Taraco Peninsula?

IV. Temporal Grounding: Stratigraphy, C14 dates and Ceramic Phasing

Taking a depositional history approach is a potentially useful way to better observe the internal processes at Formative Period centers, as well as to consider political acts through time. Examining such detailed depositional processes requires fine-grained excavation methodologies, good stratigraphic recording, and temporal control. Walker and Lucero (2000) suggest that archaeologists trace the “pathways” of depositional histories at each site through simplified schemas. In our excavations on the Taraco Peninsula we constructed relational event matrices using Edward Harris’s (1989) well-known, context-based recording system. In our methodology, the foundation is the *locus*, which constitutes the smallest deposition unit evident during excavation. When one or several loci are found to be representative of the same process, either via a natural or a cultural formation process, they are grouped and labeled as an *event*. Importantly, the event can include both removal and depositional practices. An event can be a feature (a trench cut, a burial, etc.) or it can be part of an architectural structure (called an architectural subdivision [ASD] by TAP (Hastorf et al. 2009)). Excavators distinguish particular events by TAP’s convention of labeling each locus by site (initials), sector of the site (letter), and a unique event number. For example KU-B234 is at Kala Uyuni in sector B and is event number 234. Each event is unique to a site.

Without good chronological control the matrices float in time and are not depositional histories. The excavations at Kala Uyuni were phased based on recent regional chronologies (Janusek 2003b; Lémuz 2001), but more specifically by Lee Steadman’s detailed system of ceramic attribute analysis for the Taraco Peninsula (Steadman 1999, 2007). This is a multi-scalar system that in the highest level of detail involves more than 20 attributes (Roddick 2009: 179-205). The various phases of the Middle Formative are readily recognizable in this system due to changing ceramic pastes and distinctive surface finishes, decoration and forms (Steadman 1999).

The ceramic changes at the onset of the Late Formative phase are relatively clear, with a shift in percentage of mineral tempers, less intensively produced surface finishes and new forms of surface decoration (Roddick 2009: 206-262; Steadman 2007). For instance, Late Formative ceramics include the appearance of new zonally-incised ceramics as well as the easily recognizable red-rimmed bowl (also known as the Kalasasaya bowl) (Figure 3). Yet we are still building up our understanding of the

changes within this period, due both to the lack of detailed excavations of these phases and the ceramic variability across the Late Formative Titicaca Basin landscape. Steadman (2007) and Roddick (2009, 2013) have both demonstrated that there is no abrupt stylistic change across the region through the Late Formative period. Rather there was very slow and subtle shifting of attribute choices in the tempers, surface finish and vessel forms. These shifts do not regularly correlate with chronometric breaks found elsewhere in the region (Marsh 2012a). TAP obtained 23 radiocarbon dates from excavations throughout Kala Uyuni's depositional history (See Figure 2). These dates and our stratigraphic data did not entirely conform to the Late Formative sub-phases of the system employed by Janusek (2003b) and Bandy (2001). We have attempted to resolve this difficulty through our careful reconstruction of the site's depositional history, but for the purpose of this paper we discuss most events in terms of the Late Formative in general. We return to the different temporal sequences for the region and their implications for narratives of multi-community polity formation below.

V. Depositional Histories at Kala Uyuni: The Emergence of a Formative Period Political Center

A. Consecrating and deconsecrating space at Middle Formative Kala Uyuni (KUAC sector)

We begin our site biography of Kala Uyuni with the Early and Middle Formative occupations in the Achachi Coa Collu or KUAC sector of the site (Figure 4), during the hypothesized shift from demographic dynamism (Early Formative) to relative stability (Middle Formative) across the peninsula. The early occupations at Kala Uyuni are found in the northeastern sector of the site, on a north sloping hillside that provides a southern view of Lake Wiñaymarka and various mountain peaks in the distance, especially the volcanic peak of C'capia (Figure 1). At KUAC, Bandy mapped a dense scattering of geometrically decorated cream-on-red painted bowl fragments phased to the Middle Formative period (Steadman 2007: 76) as well as several non-local stones protruding from the surface. Our excavations of this sector revealed two sunken courts as well as

midden deposits to the east of the buildings (Cohen and Roddick 2007) (Figure 5). The two contemporaneous courts could have even been visited during the same ceremonial event. The presence of two courts similar in form and size is suggestive of moieties and a dual political structure, a socio-spatial arrangement found throughout Andean history and prehistory, with similar architectural patterns at neighboring Chiripa and Alto Pukara, both on the Taraco Peninsula (Bandy 2007: 138; Beck 2004; Chávez Mohr 1988; Cohen and Roddick 2007: 63; Hastorf 2003). Significant labor and sociopolitical coordination would have been required to move the heavy limestone blocks into place as well as to transport and prepare the clay flooring up on the hillside.

Attention to this depositional history reveals an even more dynamic political space. The earliest place-making contexts on the hill are a pit of dense carbonized plant remains, the earliest floors of the two sunken court surfaces, and a midden laying on sterile, all of which date between 1126-852 B.C.¹ (Figure 2), in the Early Formative period. The excavations in the southern court revealed the earliest constructed walls with cobbles and carefully crafted multi-colored mudbricks. By the Middle Formative Period inhabitants outlined these enclosures with standing limestone blocks filled in-between with small river cobbles. The surface deposits of the southern structure alternate between carefully prepared yellow clay, charcoal rich lenses, and water lain, natural fill episodes (Cohen and Roddick 2007). A similar sequence of flooring practice was seen in the northern court, with fine deposits of yellow, orange and red clays interspersed with *in situ* burning (of dung and plant remains) and cultural fill, which at locations had all blended through bioturbation and exposure (Goodman-Elgar 2004). These clay deposit surfaces are true anthroseds (Gartner 1993), collected off-site and carefully prepared through sieving and subsequent “tempering”, analogous to ceramic soil preparation (Goodman-Elgar 2004, Goodman-Elgar et al. 2011). These findings suggest that what appears macroscopically as single deposits are in fact a sequence of thin surfaces, recording a long history of exposure, use and maintenance of these open yet special places.

Although the multi-community polity model predicts instability and fissioning of

¹ All dates in this paper are reporting the 1-sigma range and were calibrated using IntCal04.

villages across the peninsula at the end of the Early Formative period around the 8th century B.C., the courts at KUAC were not abandoned. Instead, we recorded rather dramatic renovations (Figure 5). In the lower, southern court, an adult male was buried within a new floor matrix, splayed on his back with his disarticulated cranium on his chest. This treatment suggests the person was an offering for the renovations of the court (Cohen and Roddick 2007: 65). In the upper, northern court, villagers erected a large standing sandstone monolith at its center and carefully curated a finely carved stone at its base (Cohen and Roddick 2007; Figure 5). These deposits certainly had political implications, particularly given the tradition of animate and politically active geo-cultural materials in the Andes, which travelled across the landscape (Astvaldsson 1994; Dean 2010). Both of these stone objects may have travelled long distances to arrive at Kala Uyuni, involving significant effort (Roddick nd). The deposits of the specially curated stone carvings and carefully positioned dead speak to a particular form of political subject-making during village stabilization involving living and sacrificed bodies, animate stones and an animate landscape.

These constructive acts included moments of participatory politics, with feasting, and we suspect, additional sensory practices like communal food preparation, parading and dancing. Surrounding the southern court were several small pits filled with dense charred plant and fish remains, which we believe represent specific civic food preparation and disposal locations associated with court activities (Moore et al. 2010). To the southeast of these courts were contemporaneous midden deposits, including evidence of a single dump from an earth-oven cooking event (Cohen and Roddick 2007: 62). These food remains represent relatively specialized garbage, including plant food fragments, fish bone (Bruno 2008; Capriles et al. 2008; Logan et al. 2012; Moore et al 2010), and a quotidian pottery assemblage with finer pastes and more serving and storage vessels (Steadman 2007: 75). We interpret these deposits to be public feasting middens that occurred in and around these sunken Middle Formative enclosures.

In the lower, southwestern sector of Kala Uyuni, which we refer to as the Ayrampu Qontu (KUAQ) sector (Figure 4), we recovered nearly two meters of quite distinctive domestic refuse. This midden area began to be accumulated towards the end of the Early Formative, perhaps as early as 900 B.C. It was continually used as a refuse

deposit throughout the Middle Formative period until about 400 B.C. (Figure 2). In contrast to the KUAC court material, the ceramics from this midden area are overwhelmingly utilitarian (Steadman 2007: 72-86). A comparison of the botanical remains from these two areas indicate that the same plant species were utilized for both daily and special-occasion meals, although their cooking and presentation styles were most certainly distinct (Bruno 2008). The integration of local, daily ingredients into the public and more ritually charged occasion reflects how Middle Formative political performance, while carried out in spatially distinct, topographically higher settings, emerged from “practical politics” (Silliman 2001:194), from the social positioning and negotiation of daily life in the lower KUAQ sector.

While KUAC endured as a ceremonial space at Kala Uyuni for generations of Formative Period occupants, it was eventually closed off and the sunken courts (and power-laden carved stones) were ritually burned and buried (Cohen and Roddick 2007: 62-63). The lower court may have been the first to undergo this closure. An ashy layer above the last floor of this court dates to 763-402 B.C. and is roughly contemporaneous with the latest date from the KUAQ deposits, 779-418 B.C. The court was then covered with fill. The upper court with the monolith was used a few hundred years longer and was filled in sometime between 395-113 B.C. (Figure 2). In sum, both courts in the KUAC area hint at several hundred of years of group ceremonial use, a cycle of renovations and re-surfacing events, and evocative deposits, suggesting power production within this social space. Although the political was most publically produced in these hillside spaces, the domestic, practical politics were ongoing downslope at the same time.

Such politico-ritual processes are not unique to Kala Uyuni as the depositional histories from Middle Formative Kala Uyuni are similar to those found at the nearby site of Chiripa. At Chiripa, we also found sequences of carefully prepared use surfaces, and the deposition of decorated drinking vessels and special food remains in public architecture (Bruno 2008; Goodman 1998; Hastorf 2003, 2012; Logan et al. 2012; Roddick 2002). Melissa Goodman’s (1999: 60) micromorphological work, while hindered by bioturbation, revealed uninterrupted use of many of Chiripa’s structures and the continuity of construction techniques. In one early Middle Formative ceremonial structure, eight prepared floors were found, dating between 550 and 380 BC, suggesting

the ritualized resurfacing of this small structure each generation, every 21 years on average (Bandy 1999, 2006: 25; see also Roddick 2013). The quotidian and political were also interwoven at Chiripa. While some ritualized spaces were difficult to distinguish from daily, routinized use space during the Early Formative (Dean and Kojan 2001), inhabitants produced clearer divisions of domestic and ceremonial space by the later phases of the Middle Formative. These more discrete spaces were evident in the appearance of nested, delimited ceremonial gathering locations, restricted access to structures, sunken court architecture, and deposited ritual objects such as incense burners and trumpets (Bennett 1934; Chávez and Mohr Chávez 1975; Hastorf 2003; Mohr Chávez 1988; Roddick and Hastorf 2010).

The closures of ceremonial spaces at Kala Uyuni and Chiripa spaces appear to have occurred in tandem with other changes on the Peninsula, including those indexed by changes in pottery attributes at the end of the Middle Formative. The Middle Formative social spaces that were produced by earlier political practices were abandoned early on in the Late Formative period. In fact, it appears that there may have been an avoidance of these earlier spaces in the ensuing generations. Several trenches excavated in sectors of Kala Uyuni (KUAQ, KUKU, and KUSQ) over two meters down to sterile found no continuous occupations from the Middle into Late Formative period (Figure 4). This rupture in the depositional history suggests a “deconsecration” of powerful ritual spaces by the practice of covering up and avoiding (Mills 2008: 82). While the social memory of these two KUAC sunken structures and their buried floors, bodies, and stones, may have been invoked for generations, Late Formative occupants began to produce a new, distinct social-political space on the lower portion of the site.

B. Unpacking the Late Formative Occupation at Kala Uyuni (KUKU sector)

Bandy (2001: 176-177) found that the Late Formative occupation at Kala Uyuni extended over the largest area of the site, spanning 14.75 ha, located at the base of the hill slope on a built flat area between the two Middle Formative deposits (KUKU in Figure 4). Surface collections in this sector, referred to as KUKU, recovered high densities of Late Formative I red-banded bowls. Topographic and surface features suggest the presence of a 50m x 50m platform structure (Hastorf and Bandy 2002). Bandy believed that the large

cut stone blocks found in a nearby modern field walls likely were from this Late Formative architectural complex. The excavations in the KUKU sector, which included both deep trenching and horizontal excavation, have revealed almost two meters of complex Late Formative deposits before reaching sterile soil, a depositional history built up over approximately 200 years (Bruno 2008; Bruno and Leighton 2007; Fernandez and Fontenla 2009; Paz and Fernandez 2007; Roddick 2009) (Figure 6).

In contrast to the abandoned Middle Formative KUAC area, the KUKU sector continued to be utilized by generations of Late Formative and Tiwanaku period inhabitants. This long use introduced a range of site formation processes that both shaped our excavation strategies and the data collected, occasionally blurring our vision of the depositional histories. Tiwanaku phase deposits, including domestic spaces and structures, burials, larger civic structures and gigantic garbage pits create particularly challenging archaeology. Some of the Tiwanaku pits were up to 4 meters across and cut deeply into the earlier occupations, removing the occupational surfaces that originally linked distinct areas of the sector (Roddick and Janusek 2011) (such as those in the eastern units of the profile in Figure 6). These digging practices created a ripple effect; the organic remains deposited in the later pits likely increased the vertical and lateral micro-faunalurbation (e.g. worm holes, insects, mites), and potentially disaggregated the deposits into what can look like a single homogenous fill deposit (Goodman-Elgar 1999, 2011).

Despite the many pits, we did encounter several relatively thick (20-30cm) horizontal deposits dating to the Late Formative and the Tiwanaku periods that allowed us to link broad areas together (such as Events 8, 25, and 33 in Figure 6). These layers were composed of a very “mottled” mixture of silty clay soils and moderate to high densities of artifacts and ecofacts. While our initial interpretations of these strata were simply as “middens” or garbage accumulations, their broad horizontal extent and homogenous nature suggests they derive from a wide range of discrete practices that were churned up in later activities related to building, pit digging, filling, and human foot traffic, as well as modern farming and herding (plowing, grazing). Such fine-grained depositional analysis of these KUKU deposits urges caution in interpreting what at first glance is a single deposit event. Many Late Formative political centers, villages, and perhaps all sites in the Titicaca Basin may in fact be formed of such a palimpsest of

complex depositional histories but unlike the Middle Formative, we have fewer excavated sites with which to make comparisons².

Thus, for the Late Formative period sector of Kala Uyuni (KUKU), rather than a singular event of platform construction, we uncovered a series of living deposits that were built up throughout this long period to create a settlement analogous to a tell across the 50 by 50 m 'platform'. Out of this complex depositional history, we have identified three phases of Late Formative construction and occupation, which we discuss in the sections that follow.

C. Place-Making and Citation in the Early Late Formative

The earliest evidence we have for Late Formative occupation in the KUKU sector is in the northern section of the 11 m long N-S trench in the form of two vestigial structures dug into sterile (Fontenla and Sistrunk 2011). The earliest structure, ASD 10, was constructed into the compact, red clay-rich sterile soil (Figure 7). Although the excavators only identified a single alignment of foundation stone, the building seems to have been oval and approximately 3 meters at its longest dimension, with squared corners. The excavators defined ephemeral cobble collapse as it was dismantled and possibly intentionally destroyed. Atop this collapse, the inhabitants laid reddish clay fill, upon which the foundations of another small building, ASD 9, were established. Like ASD 10, inhabitants constructed ASD 9 by digging a foundation trench into the rich red clay, using fieldstones to construct the building's foundation for the stone and mud walls. ASD 9's circular stone foundation consisted of two rows of stones, approximately 20cm in width forming a structure 3-4m in diameter (Figure 7). We encountered Late Formative ceramics in both structures, including diagnostic red-rimmed bowls (Kalasasaya) sitting horizontally on the clay floors. Although no radiocarbon dates from these surfaces have been gained, the earliest date for the architecture just to the south suggests a date of approximately AD 20. A midden above sterile to the west dates to between AD 22-212 (Figure 2). These are the dates that define the onset of the Late Formative at Kala Uyuni.

² Lukurmata (Bermann 1994) and Kk'araña (Marsh 2012b) are two possible cases, but the most extensively excavated Late Formative site to date, Khonko Wankané, is quite different in that it is very shallow (Janusek et al. 2003). While we draw some comparisons here, a more detailed regional analysis will be the subject of a future publication.

These initial Late Formative spaces were produced well after (about 200 years) the closure of the Middle Formative sunken courts and after a transitional period in ceramic manufacturing techniques. It appears that there was a temporal break in social space formation at the beginning of the Late Formative. This shift in location and ceramic production practice and use, however, should not overshadow the architectural continuities across the settlement's phases. The builders and inhabitants of these structures both "cited" earlier Middle Formative construction styles as well as established new conventions that continued throughout the Late Formative. These two structures, like the Middle Formative public enclosures at KUAC, are semi-subterranean. Indeed, place-making at Kala Uyuni, and elsewhere on the Taraco Peninsula appears to have begun not with building up, but with excavation *down* into the ground surface (Petersen 2007: 124). The construction style of both ASDs 9 and 10 is similar to other later Late Formative circular domestic structures at Kala Uyuni (discussed below), as well as Late Formative domestic buildings found across the greater Lake Titicaca Basin (Bermann 1994; Janusek 2005; Smith 2009). Household activities are suggested by the deposits within these two structures and in the area north, just outside of ASD 9. These deposits include charred plants, fish and camelid bones, a rustic hearth, a grinding stone, and a small number of ceramic production tools.

Villagers maintained these surfaces as they drew upon earlier practices. They extracted clay both within the site and elsewhere on the Peninsula for repeated resurfacings, building upon the initial living surfaces. Although time constraints and deep complex stratigraphy made it impossible to explore the full extent of such "re-deposits" yet, we did uncover a distinct sequence of exterior clay surfaces, temporally associated with or slightly after these early Late Formative structures. Micromorphological analysis revealed thin yellow clay strata interspersed with sharp boundaries of charcoal and organic layers, indicating purposefully laid down external use surfaces associated with ASD 9 (Goodman-Elgar 2011). The use of yellow clay to surface the interior of this structure suggests a long use-life, and perhaps a sequence of ritualized re-surfacings similar to those noted in the Chiripa structures, KUAC as well as elsewhere in the highlands (Sara-Lafoss 2007).

These stacked structures, ASD 9 and 10, were covered by a thick sediment

deposit filled with large cobbles, possibly wall stones from ASD 9 accompanied by a high density of Late Formative ceramics. This deposit looks intentionally filled in, accompanying the closure of ASD 9, followed by the construction of another structure, ASD 6, an oval structure with only two fallen courses remaining, scattered throughout the matrix and rather difficult to interpret (Fontenla et al 2009). Later Tiwanaku pitting events cut into both the fill and this later structure erasing further *in situ* evidence of walls and surfaces.

D. Chamber Architecture and Buried Caches of the Late Formative

Upon the fill surfaces above these earliest Late Formative structures, subsequent generations initiated a second, distinct building phase characterized by an intensification of social space construction in the KUKU sector. Above this heavily disturbed matrix we recovered evidence for several buildings and associated occupations during a critical moment in Kala Uyuni's political history. ASD 6 is temporally associated with this new phase of building and related activity, located to the south of the earliest buildings. The clearest architecture of this phase is the stone foundation of ASD 2; a 3.5 meters long by 2.8 meters wide building (Figure 8). The walls of this building, approximately 1 meter thick, were constructed of river cobbles, with gravel embedded in yellow and red clay mortar. From these small traces, the excavators believe that colorful clay plasters covered the walls but had since melted away (Paz and Fernandez 2004:25-26; Roddick 2011:38) (Figures 8 and 9). Substantial deposits of eroded yellow clay encountered above this area are likely to be the remains of the thick and possibly very tall clay brick walls. The interior surface of the structure was described as a single thick yellow clay floor (Paz and Fernandez 2007:26), but after micromorphological analysis we learned that this is a series of thin laminations of compacted yellow clay (Goodman-Elgar 2011). Two radiocarbon dates place the floor between AD 24 and 337 (Figure 2). The occupation surfaces associated with these floors were littered with Late Formative ceramics, both decorated and undecorated, but were quite clean of botanical and faunal remains (Bandy 2007:26; Bruno 2008: 399; Paz and Fernandez 2004:26).

We exposed four other contemporaneous building foundations that each had

similar cobble foundations with clay surfaces. The first of these structures is ASD 4, represented by a poorly preserved 2-meter southern wall located about two meters north of and roughly aligned with ASD 2 (Fernandez and Fontenla 2007). To the south of ASD 2, a geophysical survey in 2008 by TAP and Ryan Williams along with excavations in 2009 revealed two thick-walled rectangular structures ASDs 7 and 8 (Capriles and Machicado 2011). Although these structures were initially believed to represent two unique buildings, a possible adobe brick associated with ASD 7 suggests this wall segment may have originally united with the better-preserved foundation of ASD 8. Although these foundations are technologically similar to ASD 2 and 4, their form is more reminiscent of the patio enclosure walls encountered by Janusek (2003a: 283) in the Akapana East domestic occupations of Tiwanaku (Capriles and Machicado 2011). If this assumption is correct, these walls represent a bounded compound-like space, a different kind of social setting than that of ASD 2 or 3, which displayed no evidence for enclosures surrounding them. Inside the ASD7/8 complex excavators encountered a series of three compact clay floors, which like many encountered floors, were quite clean of debris. Steadman and Roddick phased these surfaces to the Late Formative I period.

Exterior deposits associated with these buildings provide a sense of an active, well-defined social space. The formal western entryway to ASD 2 (five flat stones through the middle of the western wall) led to a patio of carefully laid small pebbles. This exterior surface thinned after 1-2 meters west of the entrance, suggesting that in front of ASD 2 was a well-trodden area. There, the cobbles transitioned to a heavily used packed surface produced by continuous foot traffic between ASD 2 and the western unexcavated spaces, which we suspect to represent a courtyard. In the areas north of ASD 2 towards ASD 4 were two possible exterior surfaces containing several pits filled with ashy, botanical-rich deposits, likely exterior cooking locales (Bruno 2008). To the north of ASD 6 was a hearth and garbage pit. The exterior surface to the east of the ASD 7/8 compound contained a small canal (Figure 8), and is similar in form and orientation (16 degrees east of north) to one in the domestic Akapana East sector of Tiwanaku (Capriles and Machicado 2011; Janusek 2003a).

In sum, the later Late Formative building foundations, patios, canals and floors, suggest an intensive use of space in rather close quarters. In contrast to our earlier

Middle Formative contexts, we see few traces of commensality here. All cooking areas suggest very small-scale food processing and consumption.

There are several qualitatively distinct kinds of deposits associated with ASD 2, which speak to different performative engagements involving both common and rare objects. Within 50 cm of the entrance to ASD 2, in a carefully created pit, there was a small cache of what are sometimes called ‘crucibles’³ which we refer to as “*cubos*”, rectangular white objects each measuring approximately 7 by 3 cm (Figure 9). These blocks have been found in a range of notable contexts across the Late Formative Titicaca Basin, including burials and carefully prepared caches associated with both domestic and public space (Bermann 1990: 103; Janusek personal communication 2010; Portugal Zamora 1955: 62-67). Their size includes block, cube and cylinder shapes (Smith and Pérez Arias 2013, nd). Some samples are partially hollowed out, as is the case with several of the examples we encountered, and at times we only recover small fragments of such squares. Di Hu's (2011) recent XRF analysis of these found that the *cubos* are primarily calcium oxide (CaO), or quicklime, a substance that is caustic and produces heat when it touches water. In their recent discussion of similar objects at the large Late Formative site of Khonkho Wankane, Smith and Pérez Arias (2013, nd) and Hu suggest that the quicklime may have been used as a plant chemical activator for consuming eastern slope vilca (*Anadenanthera colubrina* (Vell.) Brenan) and coca (*Erythroxylum coca* Lam.). More intriguing, however, is their discussion of the contexts of recovery of these *cubos*. At Khonkho Wankane the *cubos* have been found in association with a rather remarkable deposit of skeletons and ceramic vessels covered in the quicklime material, suggesting to Smith and Perez Arias that quick lime was used for cleaning and curating human bones⁴. Both of these uses seem possible at Kala Uyuni. Either activity is linked to powerful transformative actions associated with deities, making the *cubos* a signal of ceremonial activities in this plaza area in front of ASD 2. The careful deposition of six of these *cubos* just outside the ASD 2 entrance suggests overt performances

³ Marc Bermann (1990: 103) was one of the first archaeologists to suggest that cubos were used for metallurgy, and they do bare a remarkable similarity to the containers made of volcanic rock for metallurgy in Muyu Moqo, Peru (Maribel Pérez personal communication 2010, Ravines 1978: 526). However, Di Hu's (2011) x-ray fluorescence analysis of TAP cubos found no traces of copper, silver, or gold.

⁴ Smith and Pérez Arias note that veterinarians and doctors in La Paz, Bolivia, use a quicklime/water solution to deflesh animal bones while creating type collections for training students.

occurred there that were meant to “bring the received qualities, connections, and meanings of objects to the fore” (Pollard 2008: 45).

Other objects carefully placed *in situ* at Kala Uyuni are found in burial contexts. Unlike the sacrificed individual at KUAC, the individuals in the KUKU sector were placed in burial pits in tightly flexed positions (Machicado 2009: 115-16). No Late Formative burials at Kala Uyuni included objects that archaeologists typically attribute to wealth or elite status, such as metals or exotic objects. Instead, the bodies appear to have been prepared by being wrapped and buried with ceramic vessels. In the exterior courtyard west of ASD 2 we encountered three burials, two of which were identified as male, the third could not be sexed. The individual of indeterminate sex had annular cranial modification and was interred in a stone lined tomb with a complete red-rim bowl, a diagnostic food presentation ceramic of this period. No ceramic vessels were included with the two male burials (Machicado Murillo 2009).

Another evocative ‘placed’ deposit is an intrusive pit from later Late Formative times that destroyed the corner of ASD 2. This pit was subsequently filled with carefully chosen materials. The pit was of 1.2 meters in diameter and 2.5 meter deep cut down into the sterile matrix. Although this pit was intrusive, it was cut and filled sometime between the destruction/abandonment of ASD 2 and the end of the Formative KUKU occupation. The excavators initially considered that the stratified pit deposits identified a storage pit (Figure 10). Upon considering the specialized materials within the hole, including stone hoes, hammer stones, pestles, fragments of *cubos*, and in particular, several intentionally broken decorated red-rimmed vessels and zonally-incised ceramics, they instead suggested that the pit represented an offering, perhaps a closing offering for the sector (Paz and Fernandez 2004:27). The fragments of these fairly rare and still useable objects such as the *cubos* and sherds of finely made ceramics suggest a purposeful burial by the collective community of ASD 2 in this structured deposit (Richards and Thomas 1984). This deposition proposes a “buried geography”, a map of particular social relations laid out within the structure at the time of abandonment (Pollard 2001). Interestingly, while several of the sherds in Figure 10 appear to be purposefully fragmented, they could not be re-assembled, suggesting other fragments were carried away or deposited elsewhere. These special objects may have been a form of inalienable wealth being taken out of

circulation through their burial in this closing pit (Mills 2004; Weiner 1992). This evidence does not clarify how many people built, maintained, used and identified with ASD 2, but it seems like more than one or two generations of residents associated themselves with the structure.

The abandonment of this occupation level that includes ASDs 6, 2, 4, and 7/8, suggests that there was a major spatial reevaluation of that part of the platform at the end of this second phase of Late Formative life, around AD 300. We see little evidence for violent conflict or destruction in this redevelopment of Kala Uyuni (KUKU) space, contra Stanish and Levine's (2011) argument for this same time period in the northern Titicaca Basin. Rather, what we see is more of a mix of ritual activities, of dismantling some buildings, ritual closure of others, rebuilding over other structures, and an avoidance of specific spaces. After the pit filling/closure at ASD 2, it appears that the walls of the structure were left to erode, weathering producing the distinctive layer of hard, thick, bright yellow clay discussed earlier. The abandonment of ASD 7/8 appears to have been more abrupt and involved active wall destruction and possibly intentional removal of stones. ASDs 4 and 6 were either mostly dismantled during this abandonment period, or were greatly impacted by post-depositional disturbances created by the later massive Tiwanaku phase pit digging in that area. Such reuse of the space was almost as if the dwellers there purposefully forgot what had been there for so many hundreds of years. A date from an associated last fire feature, a possible hearth, above ASD 4, revealed a date of AD 679-878 (Figure 2), likely associated with this post-abandonment use. One particular stratum, a 15-20 cm thick deposit of clay-rich soil, ran across almost the full 20 meters of our east-west KUKU excavation area. This KUKU B-33 event is likely the result of the long-term decomposition of these structures, creating a compact ground surface that was later walked across. This new space was primarily an area where debris was left and exposed to weathering, soil formation, and erosion, away from new construction on the settlement. While no other later buildings were constructed over this particular area, a renovation or new way of occupying KUKU took place north of where the chamber architecture of ASD 2 and ASD 4 once stood.

E. Residential Transformations at the Terminal Late Formative

In the third and final phase of Late Formative life at Kala Uyuni the platform was the locale of notably different types of architecture and activities, with less labor invested and less clearly identifiable public space. While the earlier buildings to the south were in a state of decay, the inhabitants re-surfaced the platform to the west and north with a fairly compact yellow clay surface (Event KU-B237) (Roddick et al. 2006: 32-33). The distribution of artifacts on this yellow clay surface, in particular the finely worn bone tools, spindle whorl blanks, and ceramic smoothing tools, are markedly different from the previous period. These artifacts suggest that this may have been a domestic crafting location as well as an informal, social space (Fontenla, Sistrunk, and Bruno 2011; Roddick 2009: 210-212). A radiocarbon date obtained from this surface in the western edge of this sector ranges from AD 256-422 (Figure 2). There is some overlap with the date ranges obtained for the interior of ASD 2 but stratigraphically this exterior surface was clearly later; thus, this relatively tight range of dates could suggest the transition occurred within one or two generations between the 3rd and 4th centuries AD.

The more residential nature of this occupation is best represented by a well-preserved roughly 3 meter long by 2 meter wide oval building, ASD 5, located east and slightly up hill from these later surfaces. A date from the interior occupation deposits of ASD 5 ranges between AD 356 and 550 (Figure 2) while the exterior yellow clay surfacing (KU-B237) may have continued to be in use suggesting that the structure was built after and even upon this yellow surface (Figure 11). The foundation of this small structure was three cobbles-wide on the clay base, resulting in relatively thinner walls (25-30 centimeters thick) than ASDs 2 or 4 (80 cm-1 meter thick), built more like the Late Formative house foundations encountered at Lukurmata by Bermann (1994). Adobe bricks were likely used as the supra-structure of this building, as a substantial burned adobe brick was found on top of some of the series of carbonized cooking vessels placed along the northern interior wall (Figure 11). Its interior surface was composed of compact and uneven clay with abundant fish bones, with relatively high concentrations of carbonized plant remains, including particularly high percentages of quinoa seeds (Bruno 2008: 425-26). The interior surface of ASD 5 had the highest density of sooted and charred sherds from any event at the site. Interestingly, we also recovered several sherds

of the typical decorated red-rimmed Late Formative I (Kalasasaya) bowls inside the structure despite the later date of the structure (see below).

We will return to the significance of finding decorated serving vessels together with cooking vessel fragments below. For now it is important to note that the evidence of cooking inside this structure displays a notable difference from the earlier KUKU buildings where food preparation appeared to have taken place outside, and interior floors were kept quite clean. Another indication that this sector had become a more intimate living space was the placement of a neonate burial in an ashy pit near the entrance, capped with clay. Burials near homes and in house floors were a common practice in the residential areas of Tiwanaku times but not earlier (Janusek 2003a).

Despite all of these changes in the spatial layout and usage over the passage of time and in a range of depositional events, the Late Formative ceramics remained remarkably unchanged. While there is no clear shift in ceramic technology signaling the onset of the Late Formative II, this transition is found in the depositional histories of architecture, artifact and ecofact assemblages. In this terminal Late Formative phase (II), the more overt political centrality of KUKU seems to have waned or at least shifted to other parts of the large platform that had built up over the years. It is possible that Kala Uyuni still held local sway as an important place, as suggested by the maintenance of the exterior yellow clay surface (KU-B237) across at least part of the platform. The residents of homes like ASD 5 may have been slightly later generations of the families that once directed the activities in the earlier architecture and whose ancestors and their powerful objects were buried just steps away. The continued significance of this platform is reflected in the fact that it was still intensively utilized during the later Tiwanaku period for burials, residences, and plenty of garbage pits.

VI. Discussion: Palimpsests and Political Process at Kala Uyuni

In light of the depositional histories uncovered at Kala Uyuni to date, we now reconsider the political practices and processes that were enacted at and, in turn, helped to create this Formative period political center. While we use the available “horizontal history” to structure our discussion, we consider what the vertical, depositional sequences

reveal about the production of power and authority through time. What did political authority look like during the Middle Formative period when it was a stable, autonomous village amongst many on the peninsula? What about during the Late Formative period when it developed into a larger, multi-community polity with greater influence on the peninsula?

The excavations at KUAC and KUAQ do suggest the presence of a stable village in the earliest occupation of Kala Uyuni. This is not surprising, as the excavated data elsewhere on the Taraco Peninsula offers additional perspectives on stable Middle Formative villages such as Chiripa and Alto Pukara (Bandy 2006: 220-228; Beck 2004), although the depositional history discussed here provides a richer perspective. Early Formative phased ceramics and C¹⁴ dated deposits are found in clay-surfaced floors in the early sunken structures and midden deposits. We only recovered a small sample from this phase, as many of these deposits are deeply buried. Such deeply buried deposits have an impact on horizontal survey models that are based on surface findings; much of the evidence of village founding and fissioning is often only encountered beneath centuries of later occupation. This problem also impacts the later Middle Formative period, which can be covered by later Late Formative occupations.

Yet the stability that the horizontal model hints at *is seen* in our vertical depositional history, including the elaboration and labor involved in the construction of the Middle Formative sunken courts. Much like the construction patterns at Chiripa, there is a certain amount of difference between social spaces at Kala Uyuni, with civic spaces on the KUAC hilltop and residential spaces below at KUAQ. The depositional practices that hint at the movement of large limestone blocks and stone monoliths up the KUAC hillside may signal larger structural changes. We can imagine a particular leader appropriating these depositional practices (Hastorf 1990; Lucero 2008), involved in a type of “social alchemy” that may have promoted a particular form of “collective misrecognition” (Bourdieu 1990: 195; Lucero and Walker 2000). Specifically, leaders at Kala Uyuni may have been promoting solidarity through the construction of these spaces but at the same time, accruing an increased role in other community domains.

Bandy (2006: 220) has suggested that with the increased settlement density, there was also the founding of “a social framework for the production of authority and for the

generation of community solidarity.” There is ample evidence at Middle Formative Kala Uyuni for participatory politics through commensality (such as the dense middens representing group feasting at KUAC) but equally in the practical politics involved in multiple re-surfacing and renovation of these ceremonial structures. As Robin Beck (2007: 286) has suggested for Alto Pukara, another Middle Formative site on the Taraco Peninsula, the construction and maintenance of such spaces likely “mediated” potential conflicts by “formalizing social relationships in tangible, physical space” through group work. Beck makes the useful suggestion that the complementarity of two structures, such as we see in the KUAC area, may in fact aid in supporting the stability that Bandy proposes. Indeed, it may have rendered “fissioning” a less desirable option, as there was always the other to retreat to in case of conflict. Thus at KUAC we see material traces of ceremonial longevity.

We enter into new research territory with our excavations in the KUKU area of Kala Uyuni. This area, which appeared as a potentially influential Late Formative village and political center based on its large size on the surface, is defined by deep, complex depositional histories. The complexity of the stratigraphy, temporal issues, as well as few other excavated Late Formative sites with which to compare complicate our understanding of political processes here. However, there are discernable sequences that do point towards important intra-site re-organization and evidence for political action on the small-scale.

One important shift is apparent in the new spatial practices at the transition between the Middle and Late Formative phases. It was not just ceramics that changed in this transitional period, but also use of space. It appears that the upper area of the site, which offered sight lines across the peninsula to the C’capia peak and a rich social history of participatory politics, was abandoned. This abandonment, and the rich social memories associated with these places, are perhaps best seen in the careful deconsecration of space through filling-in, and the careful burial of powerful stone objects. Inhabitants of the site shifted their focus downslope to the KUKU area, an area with little evidence for occupation during the Middle Formative period.

This KUKU area displayed a much more dynamic space than was suggested by the horizontal, survey-based model. This mound area was not a synchronic space but

rather was the result of a long sequence of deposits and occupations that, unsurprisingly, are not accessible through survey. The depositional history of this particular mound was more analogous to a tell, a palimpsest of occupation phases and generations of building and maintenance practices, with shifting uses of space and political engagement (Bandy 1999; Steadman 2000)⁵. Early occupation of this sector included the founding of domestic space, by way of excavation into culturally sterile soil and the laying down of clay floors. Above these events were a series of more formally constructed structures. The social remodeling of these spaces was more intense, creating more bounded space to move through. It included both residues of daily practices and overt performance space. The abandonment of this larger architectural space was defined by a series of abandonment events, including a “buried geography” of *cubos* and fragments of highly burnished red-rimmed ceramic vessels within the large Late Formative pit feature (Pollard 2001).

The participation of decorated ceramics in Kala Uyuni’s depositional histories deserves further temporal and spatial consideration. The red-rimmed (Kalasasaya) vessels are thought to be only indicative of the Late Formative I phase (Bandy 2001; Janusek 2003b), yet the presence of these sherds in contexts with C¹⁴ dates firmly in the previously defined Late Formative II phase (such as ASD-5), suggests the ceramic distinctions between the Late Formative I and II are not as clear as has been implied in the earlier regional chronologies. More detailed analysis of other ceramic attributes, such as paste recipes, also suggests the need for caution in the use of regional ceramic ware chronologies to study long phases (Roddick 2009: 173-175, 381). The depositional history discussed here introduces a local temporality that is inaccessible in horizontal models (for instance, in the three unique phases within the Late Formative occupation at Kala Uyuni), but one that may be more *politically significant* than the boundaries introduced by efforts of regional ceramic seriation.

The spatial patterning of these same ceramics is also of interest in terms of thinking of political variability within the Late Formative periods. The red-rimmed

⁵ This is also seen at the equally depositionally complex site of Sonaji, which Bandy (2006: 232) saw as “relatively specialized” and likely the “the residential locus of a local elite, as well as the location of the principal public architectural complex on the Taraco Peninsula” (Bandy 2001: 182). At Sonaji, we also see a long complex sequence of deposits over many generations of habitation.

(Kalasasaya) vessels have been used for mapping out variation across the region. For instance, Janusek (2003b: 46) working in the neighboring Katari Valley found that the Kalasasaya decorated ceramics were unequally distributed both within and between sites. One site, Qeya Kuntu, had a high number of these decorated Kalasasaya sherds, while another site, Kirawi, had very few examples. Of the decorated sherds Janusek found at Kirawi, 90% were concentrated in one outdoor midden rather than in the primary domestic contexts. In contrast, we do not see such discrete evidence for differential deposition at Kala Uyuni, or even across the Taraco Peninsula. There was no preferential distribution of decorated sherds between contexts, or between sites. These vessels do not appear to have been “definitive status markers or categories for feasting”, but may have been “social cues” during special meals for example. Indeed, “the decorated red-rimmed vessels which are found across Taraco sites may have been important in a range of social contexts, including political and ritual events, but not limited to them.” (Roddick 2009: 371). As the example of the large pit in ASD 2 discussed above suggests, there may not have been a single fixed meaning for such materials. Instead they may have been framed differently and played distinct purposes when placed in particular deposits. As such, the dynamics of depositional contexts are always important to consider for combinations of unique materials.

VII. Conclusions

With our perspective on Kala Uyuni, we have attempted to understand how local actions and practices contributed to the creation of important political places and the political landscapes in which they are situated. To date, our understanding of political centers and landscapes in the Lake Titicaca Basin, including the Taraco Peninsula, have been mainly structured by what we describe as “horizontal” models. These are created through survey data that identify political centers based on their surficial characteristics, and the role of these centers is explained through a political economic framework. So, how do the detailed depositional histories recovered through excavation speak to the developmental political narratives currently in use in the region?

The multi-community model developed by Bandy identified a sea-change in the Middle to Late Formative on the Taraco Peninsula, but we have found that this process

was not as linear as often presented in horizontal histories. The Late Formative occupation is much more dynamic than has been presented in the political developmental stages of social evolutionary narratives. Although excavations corroborate that the population density of the site increased over time (Bandy 2007: 231) and intensification of agricultural production occurred (Bruno 2014), we do not currently see clear evidence of elite aggrandizers, as many Titicaca models suggest (Bandy 2001; Klarich 2005; Plourde and Stanish 2006; Stanish 2003). Of course, political subjects *were* produced during the Late Formative in these communal spaces, but we see little evidence for the conspicuous consumption of elites, so common in current narratives. We see little variation in wealth distribution across the phases, nor high labor investments at Kala Uyuni. In fact, the Middle Formative currently offers clearer evidence for the organizational capacity of leaders, whereas the Late Formative Kala Uyuni demonstrates that the internal relations within households may have been more of the “prime movers of political dynamics” in this setting (Brumfiel 2011:272).

Admittedly, we currently have relatively small sample of Late Formative contexts but future recovery at Kala Uyuni of special and mundane things in ritually charged deposits may aid our understanding of the potential “inalienable possessions” in these Late Formative spaces. Further excavation of this deep site will introduce more range and variability to our Late Formative depositional histories. One strategy in our analysis would be to examine these local processes and places in the larger, regional contexts of the Taraco Peninsula and the Lake Titicaca Basin. In particular, we might investigate the hypothesis that “political centers” had social leverage over neighboring settlements. For now, however, the results from Kala Uyuni suggest that dimensions rarely discussed - localized intra-settlement political processes involving community dynamics- may have played the more important role in that Late Formative world.

This leads us to our final question concerning the interpretive impact of a more ‘vertical’ (stratigraphic), local perspective on the narratives of political centers. Does the political narrative shift with more detailed site biographies and a focus on particular sequences? We believe so. Scholars have recently stressed the narrative tension that is produced when engaging with both survey and excavation data. Fine-grained stratigraphic data is in many developmental macro-scale narratives left out as “noise” in

the larger story (Joyce 2002; Roddick 2009: 14-51, 2013). In other cases, “complex stratigraphic sequences are often meticulously described, resulting in very elaborate and complex matrices, which perhaps are sometimes regarded as final results instead of vehicles to reach interpretations” (Berggren 2009: 23). Barbara Mills (2009: 39) argues that, “it is not just the identification of these different [stratigraphic] activities that is important, but how they are used to understand and interpret the meaning of these processes within different archaeological contexts”. In other words, the detailed stratigraphic analyses are glossed over if they contradict the compelling larger narrative, or if privileged, the narrative becomes bogged down in the stratigraphic details while avoiding dealing with the culturally interpretive consequences of depositional histories.

The narrative provided by the multi-community polity model is extraordinarily productive, particularly as it reminds us of the movements of populations across the landscape over time, as well as a horizontal and spatial perspective of the political center. We wanted to revisit this model with a higher resolution by investigating detailed stratigraphic sequences. The data discussed in this paper suggests that Kala Uyuni was potentially a place of changing cultural relationships, as the multi-community model suggests it should be. Yet this model, which places political dynamics primarily at the coarse temporal boundaries of our chronological charts, is not well suited for examining local political practices or the development of political centers (Figure 2). Kala Uyuni was not simply a backdrop for local political practice. The vertical perspective discussed here suggests this Formative place, while perhaps a center of political practice in some sense, was built up, renewed and lived in over generations of depositional practices. Moreover, the excavations suggest that it was a political center in a different sense. Rather than simply reflecting larger regional-scale political process in the Late Formative across the basin, Kala Uyuni was, in fact, an active agent in the production of complex social and political subjects throughout its history.

Acknowledgements

We first and foremost thank all of the members of the Taraco Archaeological Project whose hard work in the field, laboratory, and other forums provided the information upon which this paper is built. We are particularly indebted to Matthew Bandy for his foundational work both surveying the peninsula and articulating a model that highlighted

the importance of Kala Uyuni, structured the excavations at Kala Uyuni and catalyzed these new ideas. We also thank the community of Coa Collu for their gracious permission and participation in the project. This paper benefitted from the thoughtful comments of Steve Kosiba and an anonymous reviewer. The field research for this article was supported by National Science Foundation grants BCS 0234011 and 0631282. The Wenner Gren Foundation, the National Geographic Society and the Committee on Research Faculty Research Grant, University of California-Berkeley, all have generously provided further fieldwork support. Bruno's dissertation work at Kala Uyuni was supported by National Science Foundation (Dissertation Improvement Grant #0321720) and Wenner-Gren Foundation (Grant #7073). Roddick's dissertation work at Kala Uyuni was supported by National Science Foundation grant #0631282.

Figure Captions

1. Map of the Lake Titicaca Basin and Taraco Peninsula with sites mentioned in text.
2. Master Chronology for the Taraco Peninsula including regional time periods, Bandy's settlement model, ceramic phases, Kala Uyuni depositional events, and TAP C14 dates. *Ceramic changes include paste (P), surface finish (SF), and decoration (D). **Carbon 14 dates including depositional event #, (context) and lab number. 1. KU C18 (AQ midden) AA-74669, 2. KU A11 (ASD-1), AA-59720, 3. KU A144 (ASD-3) AA-59711, 4. KU C18 (AQ midden) AA-59715, 5. KU A33 (ASD-1) AA-59717, 6. KU C4/C5 (AQ midden) AA-59716 7. KU A143 (ASD-3) AA-59714, 8. KU A159 (ASD-3) AA-64923, 9. KU D9 (midden) Beta-217120, 10. KU D8 (midden) Beta-217119, 11. KU B97 (midden) AA-59713, 12. KU B12 (ASD-2 floor) AA-70201, 13. KU B39 (midden) AA-59721, 14. KU B22 (ASD2-surface) AA-59721, 15. KU B261 (outside ASD-5) AA-70204, 16. KU B97 (ASD-5 Pit fill) AA-70203 17. KU B34 (clay floor) AA-74667, 18. KU B249 (ASD-5) AA-70205
3. Characteristic Late Formative (Kalasasaya) ceramics including zonally incised (left) and red-rimmed bowl image.
4. Map of Kala Uyuni with sectors discussed in text.
5. Plan view KUAC and its two courts.
6. KUKU southern profile showing Tiwanaku and Late Formative pits and horizontal deposits.
7. ASDs 9 and 10. Plan of structures, cuts and stone foundations, with photo of the cut red soil.

8. Plan map of ASDs 2,4,6,7, 8 plan with exterior and interior floors and the canal display
9. ASD 2 and cubos deposit.
10. Late Formative pit into ASD 2.
11. ASD 5 with thick clay deposit visible to the west (top of photo).

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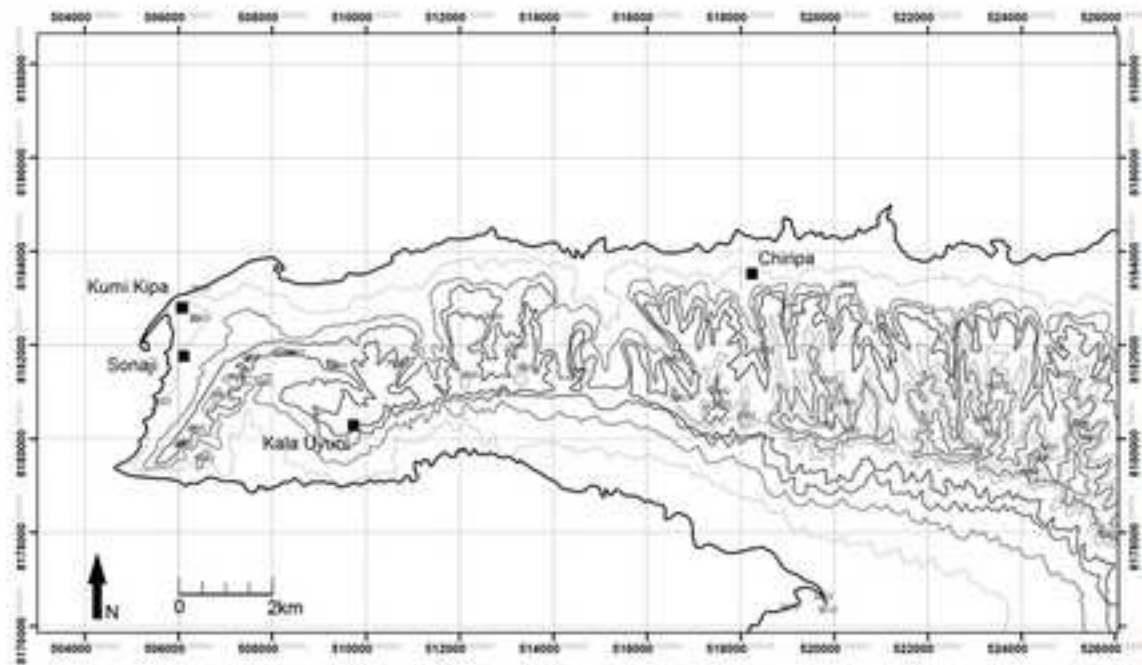
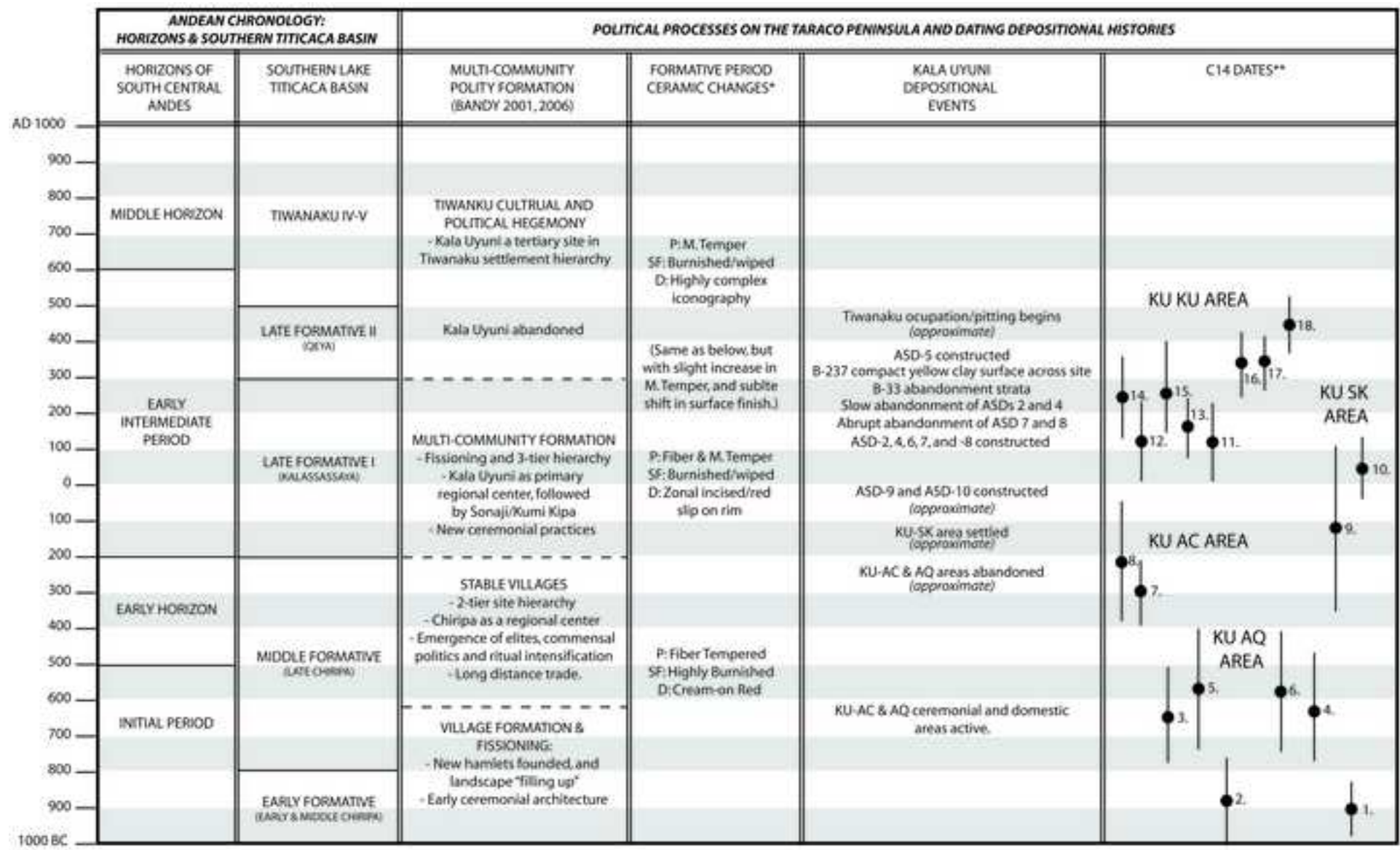


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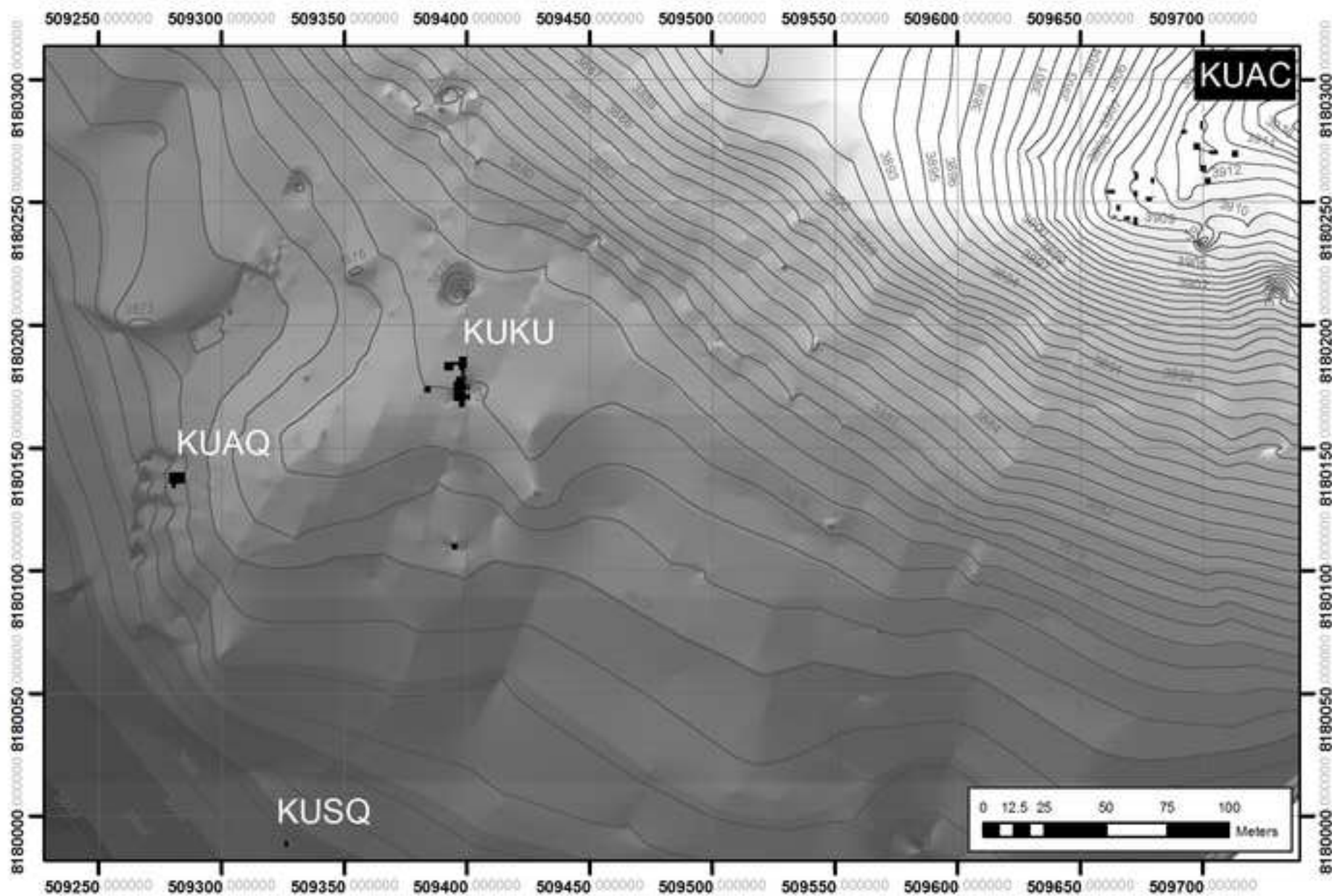


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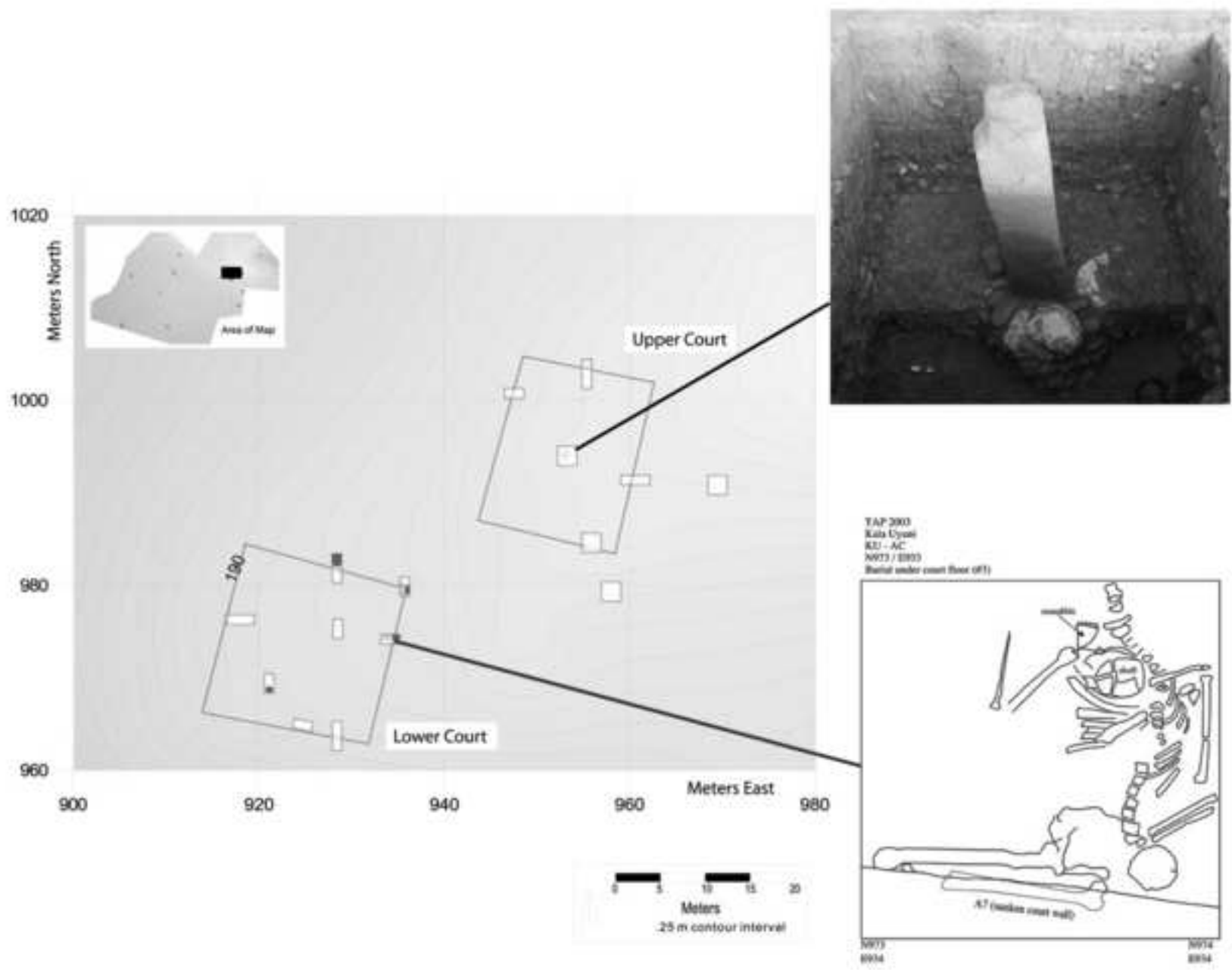


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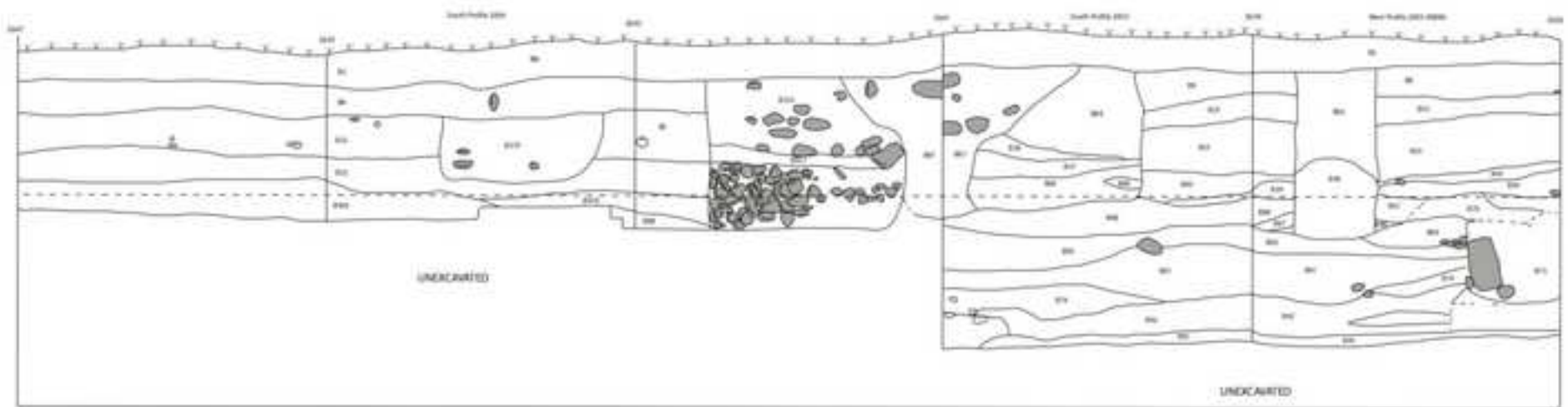
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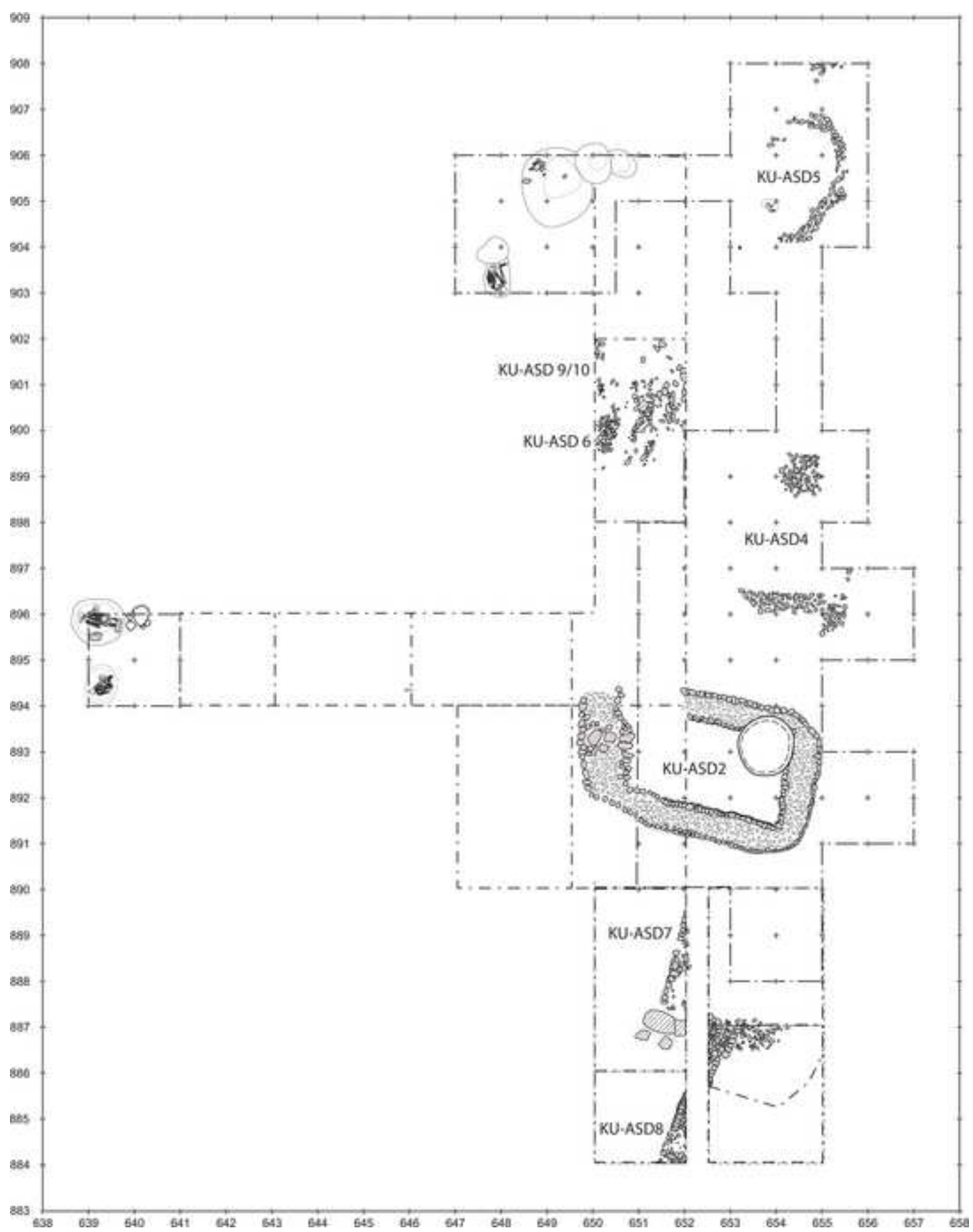


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Wall Fall
Roof Elements?

B9

Pit Fill

B16

Pit Fill

B17

Pit Fill

B57

Pit Fill

B78

Pit Cut

B15

Occ Zone

B10



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