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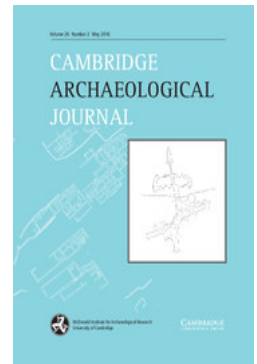
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# Building Household and Community through Active Assemblages: A Late Formative Patio Group at Khonkho Wankane, Bolivia

Erik J. Marsh

*A community is an active assemblage of human and non-human elements bound together by interactions. Archaeologies of communities shed light on sets of overlapping and geographically emplaced assemblages of individuals, practices, spaces, buildings, objects, animals and landscapes. This article presents an archaeology of communities based on a remarkably well preserved Late Formative (AD 1–500) patio group at Khonkho Wankane, Bolivia. Excavation data provide a high-resolution chronology and document two varieties of assemblages: (1) those that played a greater role in biologically and socially reproducing the community, such as daily food and tool production; and (2) those that played a greater role in its transformation, such as gatherings, work parties and construction projects. In the patio group, intimate meetings took place in small, private spaces where incense was burned. Larger gatherings took place in an outdoor space where painted Kalasasaya small jars and bowls were active elements in interactions between residents and visitors. These events most likely involved work parties that contributed to the physical and social construction of the community. Assemblages at multiple scales built a diverse Late Formative community, which played a principal role in regional interaction networks. Within a few generations of residents leaving their homes in Khonkho, local and regional interactions generated the emergence of a state at Tiwanaku.*

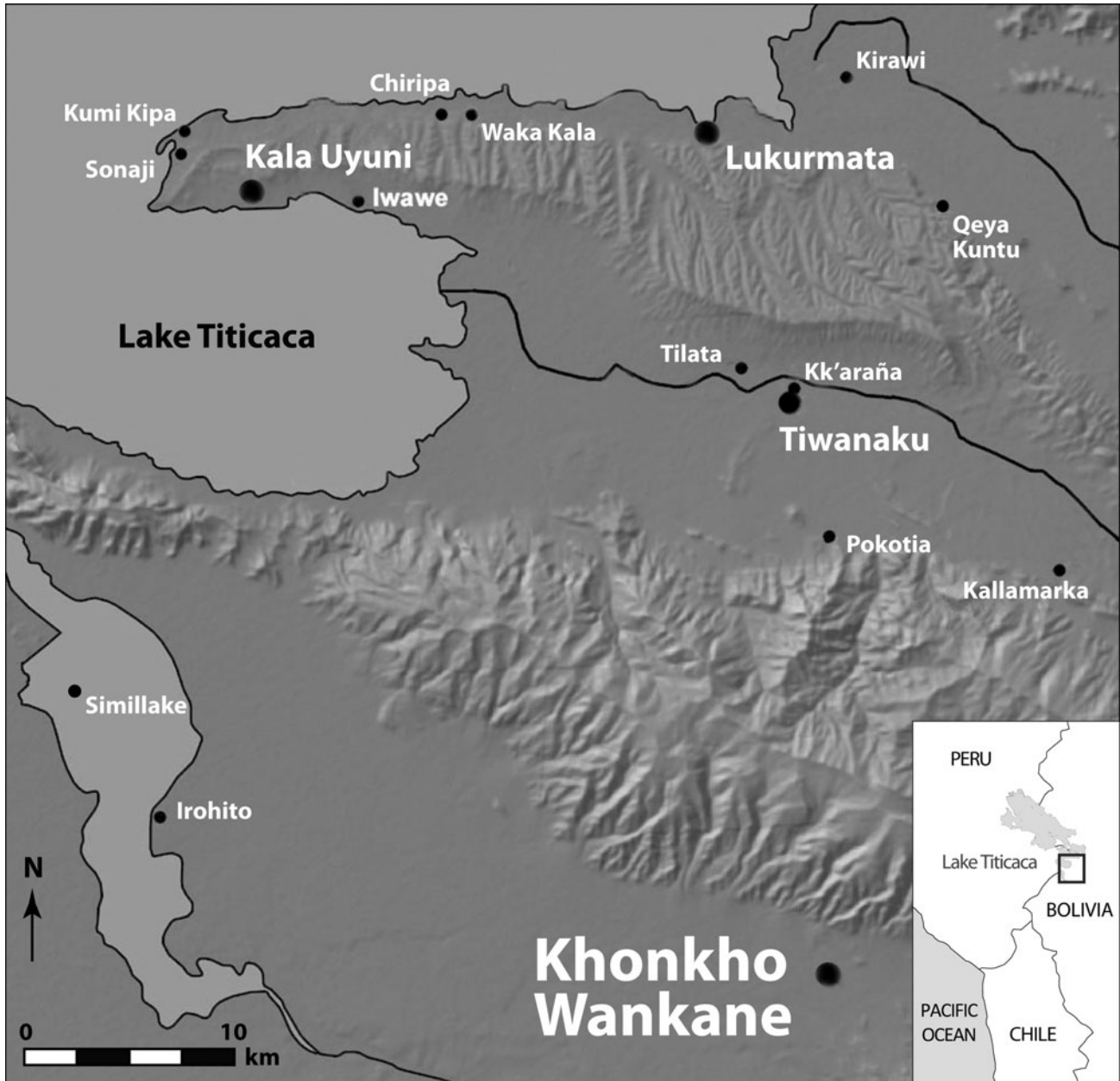
## Introduction

This paper presents an archaeology of the Late Formative (AD 1–500) community of Khonkho Wankane (hereafter Khonkho), located in the southern Lake Titicaca Basin, Bolivia (Figs. 1 & 2). This site is especially well suited to household and community archaeology due to its extensive, well-preserved domestic contexts. The lack of such contexts at contemporary sites in the region has made it difficult to understand the nature of community formation and transformation during the dynamic, yet poorly understood Late Formative. My goal is to clarify the processes that reproduced and transformed community at Khonkho, one of the region's largest and most influential Late Formative communities. To do this, I treat community as an as-

semblage, following Harris (2014, 90). To understand the internal workings of community better, I suggest breaking it down into its constituent assemblages at multiple scales. Data from Khonkho illuminate household assemblages as well as regional ones, which were growing rapidly and would lead to the emergence of the state at Tiwanaku. I hope that this case study will illuminate some of the region's principal historical processes and also provide an example of how an archaeology of communities can make more explicit use of different varieties and scales of assemblages.

## An archaeology of communities

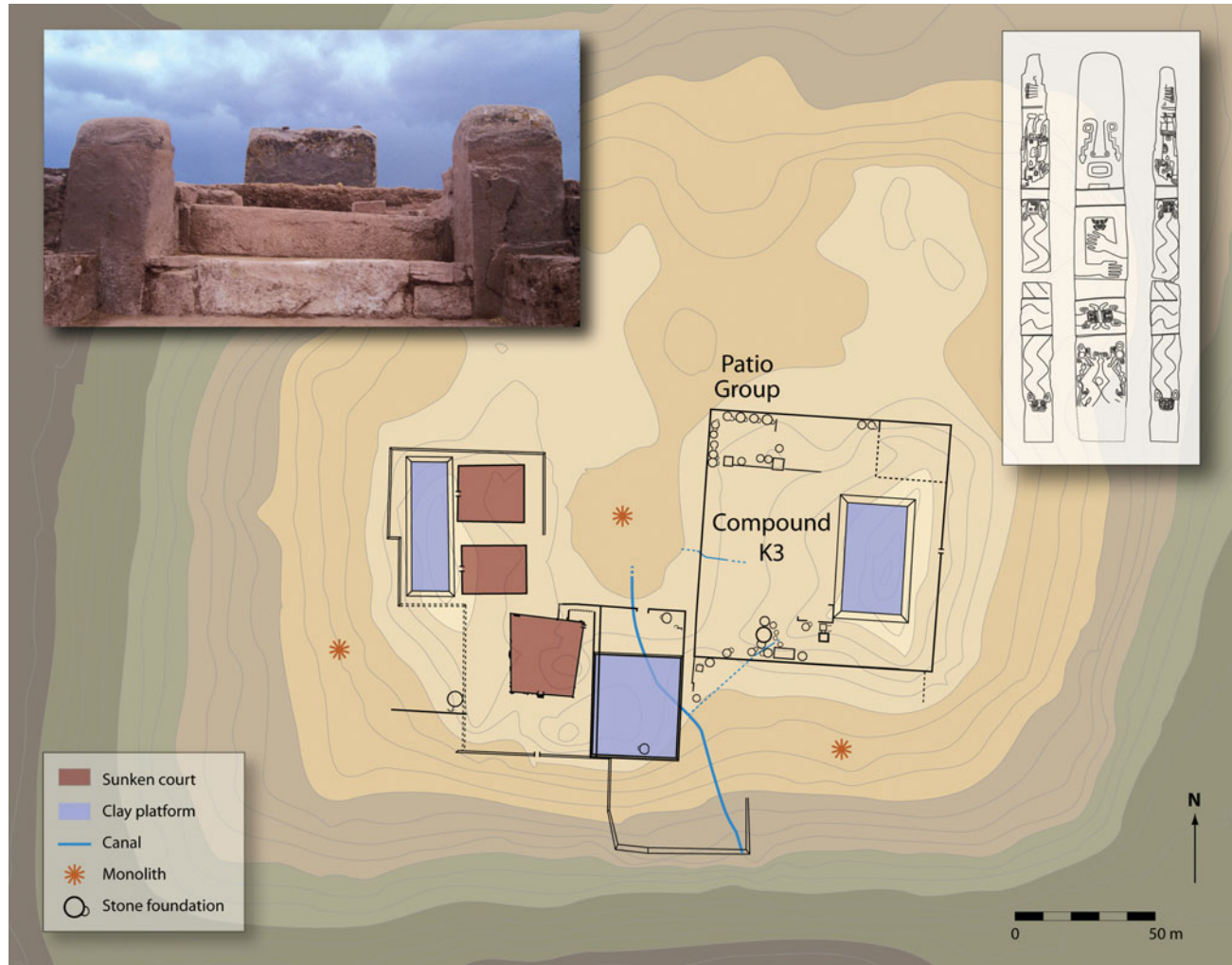
Recent research on the archaeology of communities has begun to 'crack open the black box' (Varien &



**Figure 1.** Principal Late Formative sites in the southern Lake Titicaca Basin. (Updated and redrawn from Janusek (2008, fig. 3.4); based on a map by A. Ohnstad.)

Potter 2008a, 4) of past communities (see Zovar 2012, 19–35 for a cogent review). Initially, the term community was used as a ‘socially empty’ reference to a site’s inhabitants and treated as a homogenous and unified group that corresponded directly to an archaeological site (see Mac Sweeney 2011, 23–4). Today, practice perspectives underlie conceptions of a more active view of ancient social groups: ‘community is what community does’ (Pauketat 2008, 240). This approach is central to recent explorations that identify

communities’ internal fractures and heterogeneity, elements that are actively built and re-built through daily practices, and dynamic links to larger-scale interactions (Canuto & Yaeger 2000; Kolb & Snead 1997; Mac Sweeney 2011; Varien & Potter 2008b). ‘Human-only’ communities have been enriched by including landscape, architecture and material objects among the active participants that continually form geographically-emplaced communities (Harris 2014; Hodder 2012; Mac Sweeney 2011: 31–7).



**Figure 2.** (Colour online) Map of Khonkho Wankane showing major architectural features. Upper left inset is a photograph of the southern entrance to the southern sunken court (photograph taken by Wolfgang Schüler from the court interior). The vertical pillars (around 50 cm wide) are separated by 171 cm (see Janusek 2015b, 133, fig. 6); their position was probably based on celestial alignments (Benítez 2013, 93–6). Upper right inset shows the front and side panels of monolith 1, the Wila Kala, height 5.28 m, located south of compound K3 (from Ohnstad 2011, fig. 4). The fourth monolith is located just south of the edge of map. Contour lines are every 0.5 m, shading every 2 m. (Based on a topographic map by A. Ohnstad & S. Smith.)

Refining an archaeology of communities has required more explicitly distinguishing imagined or relational communities from geographic ones (Isbell 2000; Varien & Potter 2008a, 3–4). The former refer more broadly to groups with shared interests and identity; the latter are more specific as they require space. This makes geographic communities more anthropologically salient and more archaeologically accessible (Mac Sweeney 2011, 31). The social construction of communities is driven through interaction (Yaeger & Canuto 2000, 5–8), a foundational dynamic that was even part of the early, normative treatment of the concept (Varien & Potter 2008a, 2; Zovar 2012,

21). In geographic communities, ‘residential proximity and shared space’ create a ‘phenomenological experience of living together’ which facilitates interaction and, in turn, community formation (Mac Sweeney 2011, 32, 36). These processes are ‘territorialized’ in physical space and tied to material objects (DeLanda 2006, 12). Unlike normative visions of community, the existence and types of interaction and shared practices are not assumed, but must be demonstrated (Yaeger & Canuto 2000, 11; Mac Sweeney 2011, 28; Varien & Potter 2008a, 3).

Communities are also temporally emplaced, which leads us to more explicitly consider variable



rates of change within a community and insist on contemporaneity between data sets. Changes in a community can be best evaluated with chronologies that approach a generational scale, which bring us closer to individuals' and groups' past experiences. Moreover, profound change can be very rapid, an intriguing possibility that can be overlooked with low-resolution chronologies. Historically contingent interactions often develop within shared 'constellations of practices' (Wenger 1998, 127–33) that create community bonds, often over multiple generations.

A focus on interaction is central to the concept of assemblages, which Harris (2014, 90) proposes for advancing archaeologies of communities. Like Ingold's (2011) 'meshwork', it draws on Deleuze and Guattari (2004).

The concept of assemblages makes room for all manner of humans and non-humans as well as gestures, actions, signs and symbols . . . but crucially the assemblage is in a state of becoming; that is, it is in process rather than being static. . . . Whilst an assemblage depends upon the emergent properties of all its parts, it is not reducible to them. This state of becoming means that assemblages are always in process, in flux and are flowing. (Harris 2014, 90)

As historically contingent processes, assemblages enrich Pauketat's (2001, 80, 87) concern with long-term practice histories and their role in social change. They also build on Wenger's (1998, 57–62) 'communities of practice' by recognizing non-human components' active linkages between practices and objects, physical bodies, places and spaces (Bourdieu 1977, 89; Giddens 1984, 64–72, 375–7; Latour 2005, 64–6). This emphasis is crucial in a conception of geographic communities tethered to shared practices and interactions with physical things and spaces (Mac Sweeney 2011, 32). If we treat landscape, architecture and objects as active parts of an assemblage, then material data from specific spaces can be used to illuminate the practices and interactions that bind an assemblage.

While assemblages include humans and non-human elements, they may play different roles. Humans are an essential element of community assemblages who physically modify their surroundings. Objects may inspire emotional responses such as an evocative place or photograph that bring shared memories to the surface. While they cannot participate in the same ways as humans, objects have a crucial role in enduring assemblages, not least because they often outlive individual humans. For example, people might interact with the same objects or spaces as their great-grandparents, whom they may never have met. In this way, landscapes and durable objects may play significant roles in binding multi-generational assem-

blages, even in the absence of direct interpersonal relationships (Harris 2014, 78).

Kitchen practices are a central element to cultural assemblages and can be highly visible in the archaeological record (e.g. Atalay & Hastorf 2006; Graff & Rodríguez-Alegría 2012; Klarich 2010; Twiss 2007). Kitchen practices provide accessible examples of assemblages, which include cooks, recipes, knives, vegetables, dead animals, cooking vessels, fire, serving vessels, utensils and waste. An assemblage approach focuses on the interactions between these elements, for example, a cook's daily habits of moving around walls and furniture or cutting food with the same knives. Such an assemblage would also include physical interactions between non-human elements, such as a knife blade splitting vegetable matter or heat's chemical transformations of food and a cooking vessel. Affective ties bind elements within the assemblage, for example, a cook may choose a specific tool not only based on its utility, but because it was a gift from someone important. Emotional connections to relatives and their preferences may influence how dishes are prepared. Serving food in a painted serving vessel may involve emotional, economic or symbolic connections, reinforced as they are acted out through material interactions. Focusing on interactions sheds light on the active and temporally dynamic aspect of assemblages, a fundamental feature of these 'compositions that act' (Due 2002, 132).

Household assemblages are especially potent in community building. They are crucibles of community-wide cultural change and stability (Bourdieu 1990, 277–83; Pauketat 2001, 74). They bind humans, animals, objects and domestic space through routines, daily practices, and face-to-face interactions (Friedkin 2004, 416–18; Goldberg 1999, 143–4). Over time, interactions create affective bonds of home and family through building, dwelling and living (Harris 2014, 90–91; Ingold 2000, 172–88, 330–37; Tuan 1977, 149–78). Dense affective assemblages within domestic space establish strong, multi-generational bonds for individuals and communities. For the individual, households are loci for identity formation and life-long practices. For the community, inter-household interactions are salient in larger social networks and connections to other communities. Treating households in this way highlights their paramount role in building affective assemblages at multiple scales (see Creese 2013; Harris 2013).

Focusing on household assemblages can help frame research questions that illuminate community. For example, which human and non-human elements were present in the same time and space and probably interacted? What practices and interactions tied them

together into assemblages? How were these practices related to other practices and how did they change (or not) over time? Which smaller assemblages made up larger community assemblages? How did the combination and interaction of nested assemblages allow a community to produce and re-produce itself over time and space? Which assemblages played a greater role in reproducing community and which ones played a greater role in effecting change?

Addressing these questions requires a more explicit methodology that could be specified in three ways. First, identifying smaller assemblages can lead to clearer identifications of overlapping assemblages. Some assemblages are closely tied to well-defined spaces, such as kitchens. Other assemblages are emplaced in multiple spaces, last longer and involve more people, such as growing crops or making pottery. Many people and objects will be involved in each assemblage, which can be more clearly elucidated by focusing on interactions between elements. This also clarifies how a single object can participate in multiple assemblages, for example, a ceramic vessel during manufacture, being used as a cooking pot, for storage, or its sherds being used as smoothers in ceramic production.

Second, assessing relative interaction density can identify where one assemblage ends and another begins. Spaces or times of sparser interaction mark fuzzy boundaries between assemblages (see DeLanda 2006, 12–14). These might be the ‘empty’ spaces between houses with low interaction densities relative to very high interaction densities within each house. There are also times of variable interaction density. Interactions are intense when houses are built, first occupied or abandoned, whether for the season or permanently. For many months during the year, there may be few interactions followed by a flurry of activity for a harvest or festival. This significant distinction separates daily activities and routines from less frequent events.

Finally, relationships between assemblages must be evaluated at different scales (Harris 2013). Changing scales strongly impacts assemblage boundaries and relationships between them. For example, kitchens are nested within household-wide assemblages, which are in turn nested within a neighbourhood. A village is a dense focus of interactions compared to the surrounding landscape, where there are different interactions of lower intensity. Identifying boundaries between nested assemblages may help operationalize archaeological applications of assemblage theory without comprising its conceptual richness and flexibility.

In the case study that follows, I apply these concepts and methods to household data from a patio

group. The goal is to illuminate how active assemblages produced and re-produced the rapidly growing Late Formative town of Khonkho Wankane in the southern Lake Titicaca Basin. Excavation data outline many assemblages of humans and non-humans based on interactions among animals, soil, seeds, plants and the landscape as people hunted, fished, herded, tilled fields, reaped and sowed crops, and organized trade caravans. Next, I describe three nested assemblages. The smallest involves a kitchen space used on a daily basis by the patio group’s residents. The second is a communal food-production and serving area with high concentrations of serving vessels. This elaboration of a food-production assemblage was tied to large events with invited guests. The third comprises the process of building the patio group and other monumental projects at the site. These architectural achievements were likely the result of large and repeated work-parties and assemblages made up of interactions between human and non-human elements from the surrounding landscape and region.

### The Formative southern Lake Titicaca Basin

Lake Titicaca is a large, deep lake in the central Andes, sitting at around 4000 masl. It is nestled between two towering chains of snow-covered peaks and straddles the border between Peru and Bolivia (Fig. 1). Compared to neighbouring high-altitude areas, the Lake Titicaca Basin has more precipitation and more stable temperatures, and has been home to dense human populations for the last 10,000 years. After millennia of practices focused on hunting and gathering (Aldenderfer 1998), agropastoral practices emerged around 1590–1170 cal. BC (Marsh 2015). This rapid transformation marks the onset of the Formative Period, when demography increased rapidly, the climate became more stable, effective moisture increased and village life was established (Bandy 2001; Browman 1981; Hastorf 2008; Janusek 2004; Stanish 2003). The Formative period marks the establishment of stable agropastoral economic practices as well as ritual activities. Groups venerated ancestors at centres with monumental sunken courts during the Early and Middle Formative (Beck 2004b; Hastorf 2003; Roddick 2013; Roddick & Hastorf 2010).

The Late Formative marks a number of departures from earlier periods, which begin to take shape in the first century AD (Roddick *et al.* 2014).<sup>1</sup> There was a remarkable increase in the scale of monumental architecture and the number of regional centres (Janusek 2004). Residential occupation at these centres involved more people who utilized more permanent, formal and segmented architecture (Marsh 2011). Builders

of different sites were in contact and shared specific architectural and ideographic styles (Janusek 2015a). Sunken temples were usually trapezoidal, continuing a 1500-year-old tradition (Cohen 2010, 303), and built with walls or foundations of carved stone aligned to celestial events (Benítez 2013). Carvers standardized and elaborated previous stylistic traditions and began using larger stone with more formal anthropomorphic designs (Janusek 2015b; Marsh 2012a, 88–98; Ohnstad 2011). Mortuary practices adopted a specialized technique with quicklime to deflesh and then paint human bones red and yellow, which was probably done for visitors to Khonkho who interred the bones elsewhere (Smith & Pérez Arias 2015). Bronze alloys were made for the first time (Lechtman 2003, 425). There was a concomitant regional shift in the constellations of pottery production practices (Roddick & Hastorf 2010, 8–11, 17). New Kalasasaya-style serving vessels were part of an enduring, fundamental shift in commensality practices, from many-to-many to one-to-many (Bandy 2013, 140, fig. 8.4). Shared architectural features and ceramic styles suggest dense interaction networks between communities. Finally, interactions between these communities led to the emergence of the state at Tiwanaku shortly after AD 500, when Late Formative traditions were elaborated upon.

It is clear that communities were undergoing profound changes during the Late Formative—within a few centuries, regional social organization shifted from a network of villages to a large, cosmopolitan state that united people from all over the Andes. The larger-scale question here is how this happened, which I think can be elucidated through an archaeology of community at Khonkho and its transformative assemblages.

Recent research at and around Khonkho is part of a collaborative, large-scale project directed by John Janusek (2011; 2015b), which has involved a number of excavators over many years. This research is based on my participation in this project and draws on the myriad contributions of its members. They are building a body of work that already includes a number of publications and theses, which are cited below, in addition to a series of preliminary field reports (see chapters in Janusek 2005; Janusek & Plaza Martínez 2006; 2007; 2008).

### **Khonkho's architecture and chronology**

Khonkho sits atop a mostly-artificial mound that rises some 10 m above the surrounding terrain (Fig. 2). It was built by residents and visitors with enormous volumes of clay and sand. On top of this mound, they placed compacted clay platforms and

cut-stone structure foundations. They built three sunken courts with massive cut-stone blocks, clay platforms, open plazas, four engraved monoliths, subterranean drainage canals and three walled compounds (Janusek 2015b). The three expansive compounds enclosed residential areas, which were subdivided by smaller walls. Wall foundations supported adobe superstructures, turning large parts of the site into mud-walled labyrinths.

The patio group is one of the site's residential areas and an exceptional example of Late Formative domestic space. Excavated as sector 7, the patio group is located in the northwest corner of compound 3 (Figs. 3 & 4; Smith 2009, 110–13; 2011, 80–3, fig. 7). This compound is slightly trapezoidal, measuring 83×84 m, and has carved-stone wall foundations that are 55–60 cm wide. It is oriented about eight degrees east of north, a regionally shared alignment (Janusek 2004, 106). The compound is subdivided by narrower walls (35–40 cm) that define smaller spaces, such as the patio group discussed here, as well as at least two other domestic areas (Gladwell 2006; Smith 2011; Smith & Pérez Arias 2007; Zovar 2009).

Excavations in the patio group revealed portions of 13 circular structures and two rectangular structures surrounding a paved, open space (Marsh 2011, 107–8, fig. 4; 2013). Small annexes were attached to individual structures whose entrances faced each other across the open patio. From the perspective of a person standing in the patio, entrances to the circular structures would have looked like gaps in a continuous undulating mud wall. The spatial layout had a major impact on the interactions and assemblages at Khonkho, which was immediately apparent in excavations on opposite sides of wall foundations. Spaces within the patio group were among the most artefact-dense contexts at the site; excavations outside the walls had very few artefacts. Walls served as well-defined and well-respected boundaries of interactions and assemblages.

The use of highly segmented spaces is another of the differences from the Early and Middle Formative, when residential architecture at ceremonial sites was much more expedient (Hastorf 2003, 314) and resident populations were small (Bandy 2001, 119). In fact, the domestic refuse at these sites may owe more to repeated temporary occupations during festivities rather than permanent residential occupation (Marsh 2012a, 58–9). In either case, by the Late Formative, occupation was clearly permanent and spaces were highly segmented, following the cross-cultural material pattern of complex societies (Marsh 2011, 101–3).





**Figure 3.** (Colour online) Aerial photograph of the patio group during the 2005 excavation, facing north. (Photograph: Wolfgang Schüller.)

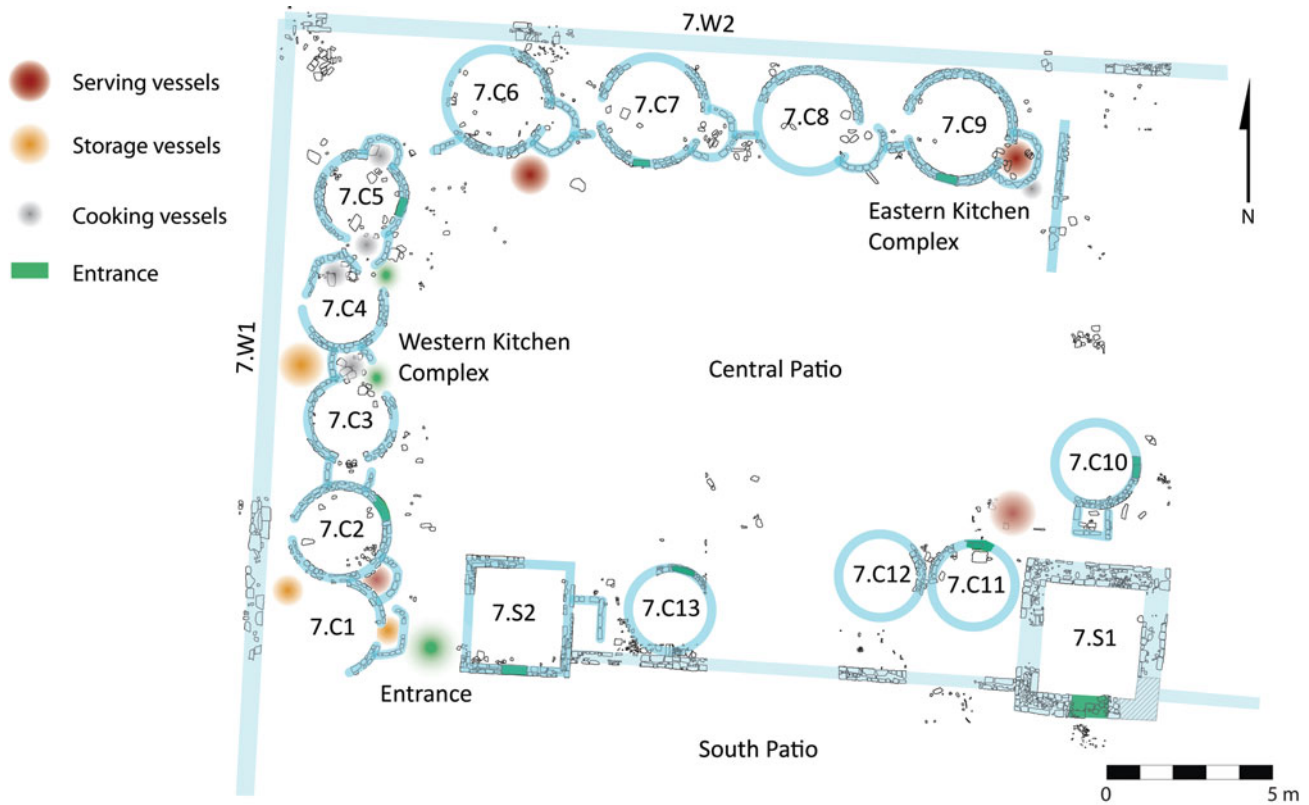
At Khonkho, consistently shaped built spaces suggest that the intended design of builders and architects was to create spatial boundaries that would last for generations (Marsh 2011; Smith 2011; Zovar 2009). Buildings were made of mud set on stone foundations in rectilinear and circular shapes. Two courses of cut stone were used for structure foundations, following a site-wide pattern. A series of architectural features protected adobe walls and structures from water damage (Marsh 2012a, 304–7). Entrances to structures included large threshold blocks, measuring around 50–70×15–20×10–15 cm (length×width×height; Figs. 3 & 5). Just outside structure entrances and in other outdoor spaces, different sizes of gravel and sand helped drain water and keep high-traffic areas free of mud. Structure interiors were kept dry by placing stone foundations over, not within, the underlying clay platform. This may have also made the structures somewhat earthquake resistant. These stone foundations would have slowed rising damp, which dramatically shortens the life of adobe structures. These building features are consistent throughout the patio group and most of the site, indicating shared building practices

that emphasized water management, architecturally defined interaction boundaries, and extending their use-life for multiple generations.

Chronological resolution is a central issue for defining an assemblage and its contemporary, interacting elements. Material objects or buildings can interact with multiple generations, so it is important to establish when objects entered and left the assemblage. Khonkho's chronology is much more refined than that of other sites in the region. It is based on 15 radiocarbon dates (Janusek 2011, table 1), a seven-phase architectural sequence (Smith 2009, 127–57), and a Bayesian model that combines both sets of data (Marsh 2012a, 246, table 5.6). Here, I re-calibrate the Bayesian model with IntCal13 (Reimer *et al.* 2013) in OxCal 4.2 (Bronk Ramsey 2009) and round dates by 10 years. The median probabilities for the beginning and end of the site's Late Formative occupation are AD 80–420; the inclusive 95 per cent range spans 40 BC–AD 500. Janusek (2015b) divides this span into Early, Middle and Late Khonkho.

There is narrower chronology available for the patio group. It was first occupied during the third





**Figure 4.** (Colour online) Map of the patio group.



**Figure 5.** (Colour online) Entrance block to structure 7.C9 surrounded by a layer of melted adobe above floor context. Trowel approximates scale and points north.

century AD, during Middle Khonkho (Smith's phase 4), which probably lasted around 90 years. The median likelihoods for the beginning and end of this phase are AD 220 and AD 310, respectively, with an inclusive 95 per cent range spanning AD 150–360. Most of the patio group's material culture dates to Late Khonkho (phase 6), which probably lasted around 50 years; the median beginning and end dates are AD 350 and AD 400, respectively, with an inclusive

95 per cent range spanning AD 300–450. The occupation lasted just a few generations and most likely, domestic assemblages and practices were stable over that lapse. At this time, the rest of the site had been or was being built, so patio group residents would have interacted with all of the site's other sunken courts, monoliths and assemblages in neighbouring residential compounds. Shortly after phase 6, the patio group and the site were abandoned. This refined

chronology significantly reinforces the fact that these assemblages were contemporaneous, which makes for a more robust assemblage-based archaeology of this community.

Following abandonment, taphonomic impacts were very limited, so it is reasonable to interpret assemblages as contemporary and without major post-depositional alterations. It is likely that the occupation ended with a relatively rapid and complete abandonment. Large portions of vessels were found *in situ* and tools in their primary contexts. Some valuable, usable and easily transportable items were neither curated nor scavenged, such as pins, labrets and bronze knives (Fig. 6). The surrounding adobe walls dissolved as rain fell, probably within a century (Goodman-Elgar 2008, 3068), leaving a protective mud blanket over the patio group's floor contexts (Fig. 5). The area around the patio group was never re-occupied; modern residents use it as a potato field. The rest of site was left unoccupied for a few centuries, so it is unlikely that people returned to the patio group to scavenge, dump trash or recycle house construction materials (see Schiffer 1985, 26–8, 37–8).

### Two varieties of assemblages: those that reproduce and those that transform

Toward further breaking down the black box of communities, I suggest identifying varieties of assemblages within communities. This delicate move to categorize must be done without essentializing taxonomic types, so it should not be based on properties or natural kinds, but rather processes or spaces of possibility (DeLanda 2006, 26–9). If effective, such categories will not deny historical contingency and still offer a means of comparison (Pauketat 2001, 88). With these *caveats* in mind, it seems useful to identify two varieties of assemblages at the intra-community scale: those that reproduce and those that transform (see Beck 2004a, 210–12).

The first variety refers to assemblages with a greater role in the active reproduction of the community, such as daily food production and consumption. They are more heavily influenced by *habitus*, unquestioned habits, routines, and conservative practices (Bourdieu 1977; de Certeau 1984). The second variety has greater potential to transform and generate enduring changes. Such assemblages are less frequent, more consciously enacted and involve larger and more diverse elements and interactions. For example, a single wedding celebration might bring together two families for many generations and significantly change histories of the entire community.

Both varieties naturally overlap and there are no rigid distinctions between them—there is a great deal of 'routine' food production involved in wedding celebrations. These two types of assemblages are intended to be methodologically useful without denying the transformative capacity of daily routines or the habitual nature of periodic events. Identifying these assemblages within a community should better elucidate the specific processes that generate community-level dynamics. They also offer a more explicit means of addressing variable rates of change of different assemblages at different scales. For example, in the southern Lake Titicaca Basin, over the last 2000 years, utilitarian vessel production has been remarkably conservative while serving vessel production has changed radically multiple times (Janusek 2003; Marsh 2012a, 495).

### Assemblages that reproduced Khonkho's community

The assemblages described in this section are constellations of closely linked practices and interactions whose primary role was the economic, social and biological reproduction of the community. They may have been the most closely-shared and most often-repeated practices that were important to the enduring stability of the community; in most cases, they are the most evident in the material record. These assemblages were particularly conservative and resistant to change throughout the region, sometimes for centuries, even before and after the occupation of Khonkho. These assemblages are especially salient in daily interactions and would have included unquestioned routines incorporated into muscle memory. While participating in these assemblages, people were probably not consciously aware that they were building a community with a notable historical trajectory in the region (Harris 2014, 89; Pauketat 2008, 249, *contra* Mac Sweeney 2011, 37).

Data come from the patio group, but each assemblage reaches beyond the small excavated space to the entire landscape where people dwelled, exemplifying how assemblages are not coterminous with physical spaces. The patio assemblages bind, or territorialize, other assemblages. For example, hunting and egg collecting in the nearby fields and hills is indicated by items found in the patio group, such as projectile points, rhea eggshell and bones from wild camelids, rhea, deer and other smaller birds and mammals (Pokines 2014). Lithic tools and debitage were found in the patio group. The economically vital herding assemblage is documented by the presence of bones and teeth from domestic alpacas and llamas (Gasco & Marsh 2013). Farming in tilled fields is suggested





**Figure 6.** (Colour online) Bronze button (a) and knife blade from the annexe of structure 7.C9 (b). Scale bar measures 5 cm.

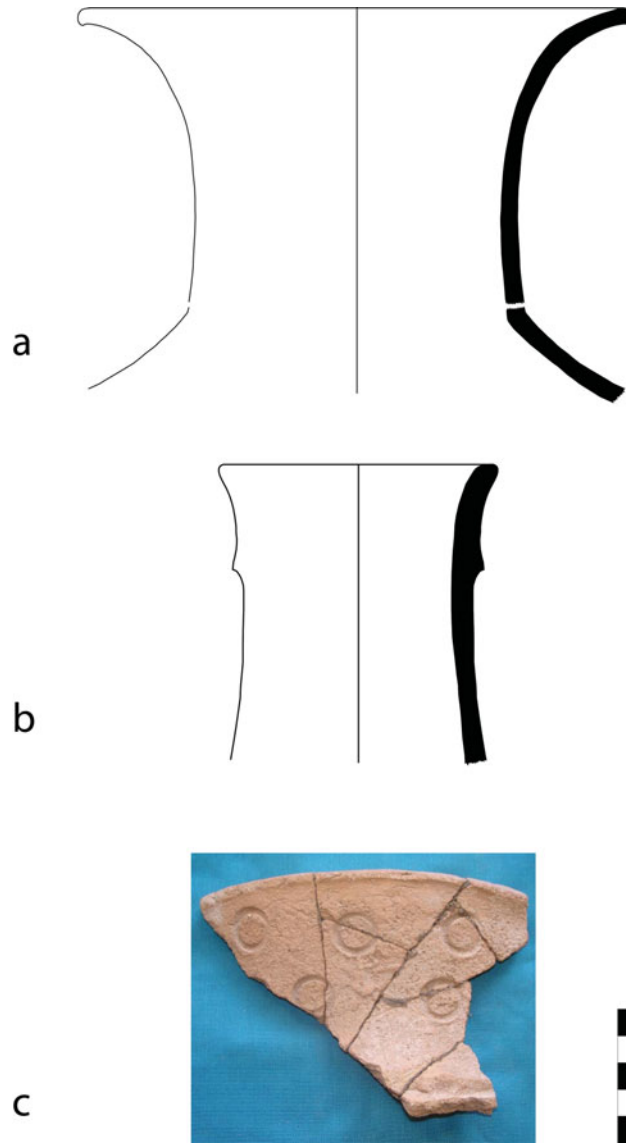
by lithic hoes and deer antlers, which could also have been used to plant seeds (Bermann 1990, fig. 69) and large quantities of ground stone suitable for grinding grain (Garrison 2008). Lithic hoes could have also been used as shovels in the construction of clay platforms. Caravanning is suggested by the presence of castrated llamas (Gasco & Marsh 2013), which are ethnographically preferred for caravans (Nielsen 2000, 410). This is the most likely means by which imported items travelled, including obsidian that moved around 325 km from the Chivay source (Tripcevich 2007, 247). Other items made of gold or bronze are candidates for imported items, but also could have been made locally. Artisans making bronze alloys would have had to collect or trade for ores from around the altiplano (Lechtman 2003, 428). Each of these assemblages involved dense interaction foci anchored to groups of people, spaces, physical objects and the landscape surrounding Khonkho.

Textile production involved bone tools that were used for spinning wool, weaving, sewing and setting fishing nets. Large and diverse sets of tools were found in the patio group and in many other sectors of the site with scrapers, burins, awls, needles, picks, combs, spindle whorls and fish-net weights and guides (Glad-

well 2007, 82–7). Weavers may have made textiles similar to those known from later periods, such as square hats, ponchos and tassels for domestic animals. The wool itself was likely from camelids such as wild vicuñas and domestic alpacas, both processed by people in the patio group (Gasco & Marsh 2013). To clean hides, residents may have used quicklime blocks, fragments of which are a frequent element in domestic refuse (see Choudhary *et al.* 2004; Smith & Pérez Arias 2015). Clothing may have incorporated adornments, such as ceramic and bronze buttons and pins, which may have been used to fasten clothing. Bodies were decorated with labrets worn as piercings in the lower lip and made of stone, bone, and clay. Textiles, jewellery, piercings and widely used cranial modifications may have been highly visible group identity markers (Blom 2005), elements of assemblages that mediated social interactions. These elements probably also participated in transformative assemblages at different times.

The production of ceramics involved a suite of interactions within and beyond the domestic space, but it was most likely a household affair, as at other contemporary towns (Roddick 2009, 210–11). At Khonkho, there are wasters, sherds used as smoothers,





**Figure 7.** (Colour online) Storage jar profiles (a, b) and photo of jar neck with circular impressions (c). Scale bar measures 5 cm.

small pigment bowls, ground stone, and bone tools (Marsh 2012a, 327–30; Smith 2009, 159). Firing may have taken place outside the village, probably using open-pit dung kilns on well-ventilated hills (Roddick 2009, 213). Regionally, there is no evidence for large production workshops, speaking against the possibility of dedicated potters.

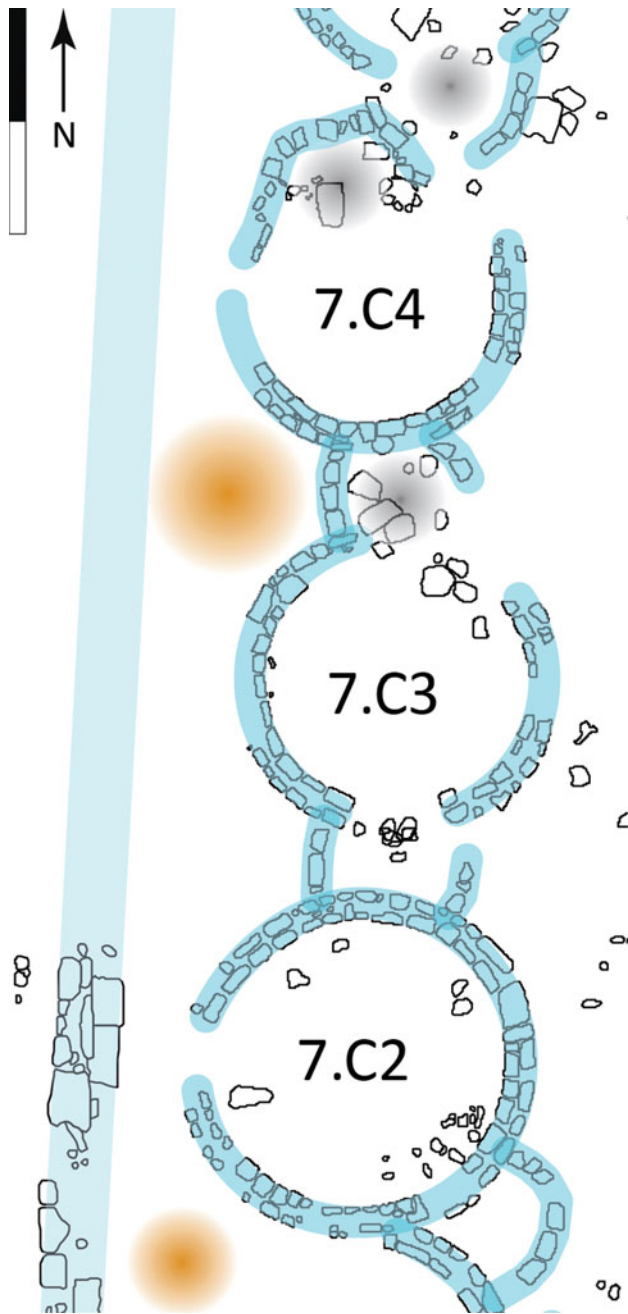
The bulk of the material culture from the patio group reflects an assemblage focused on food production. Processing vegetal foods required grinding, a time- and labour-intensive practice documented by a large variety of shapes and sizes of ground stone (Garrison 2008). Spices or chillies may have been

ground with smaller, cone-shaped pestles and mortars. Large, flat stones were much more common and would have been effective for grinding grain, most likely quinoa harvested in nearby fields. Butchering is suggested by kitchen middens dense with animal bone; cut marks and green fractures indicate bones that were split for marrow. Meals included a variety of proteins from mammals, birds, fish, and rhea egg. Processing plants and animals was done with expedient lithic tools and two bronze knives, both found near kitchen areas.<sup>2</sup> Refuse was deposited in artefact-dense middens near cooking spaces. Other spaces, specifically structure interiors, were swept clean and sherd densities were many times lower (Marsh 2012a, 323, table 6.5).

Food production involved repeated interactions with ceramic vessels, principally storage jars (*jarrones*) and cooking pots (*ollas*). Food was probably kept in storage jars, many of which were found with a white residue on the interior (Fig. 7). These restricted-necked vessels were made with thick walls and coarse temper, which would have made them more resistant to impacts. They were most commonly found in small architectural niches where adobe walls would have blocked direct sunlight, maintained lower temperatures, reduced spoilage and protected them from accidental breakage by pets or children. Cooking was often done in attached semi-circular annexes, where there were concentrations of ash and sooted sherds. Cooking pots were made with thinner walls and finer inclusions, and also had denser mica inclusions, making them more resistant to changes in temperature. They had short, open, wide necks, a form more conducive to cooking. Vessels used for storage and cooking were very similar and some vessels were probably used for both purposes over the course of their use life (Janusek 2003, 41). Khonkho's food-production assemblage was repeated over generations and in many places throughout the site, for example, in the patio group's western kitchen.

The western kitchen comprises a series of small contiguous spaces in and around structures 7.C2, 7.C3 and 7.C4 (Fig. 8). These structures emplaced a food-production assemblage that included storing, grinding and cooking food and depositing refuse. Interactions with the architectural spaces conditioned cooks' bodily movements and muscle memory, one way in which architecture played an active role in generating assemblages. These material remains were part of a dense assemblage of specific recipes, affective bonds and intergenerational interactions.

The interior of structure 7.C2 has a very low sherd density, like other spaces that residents periodically cleaned. The structure's northern and southern



**Figure 8.** (Colour online) Detail of the western kitchen complex. Orange areas were used for storage; grey areas were used for cooking. Scale bar measures 2 m.

annexes include evidence for cooking. There is ground stone and nearly all sherd exteriors are burnt or sooted (94 per cent). To the west, the small space against the compound wall was used for storage, where 83 per cent of sherds are from jars. Large portions of jars were found *in situ*, flattened, or even partially upright,

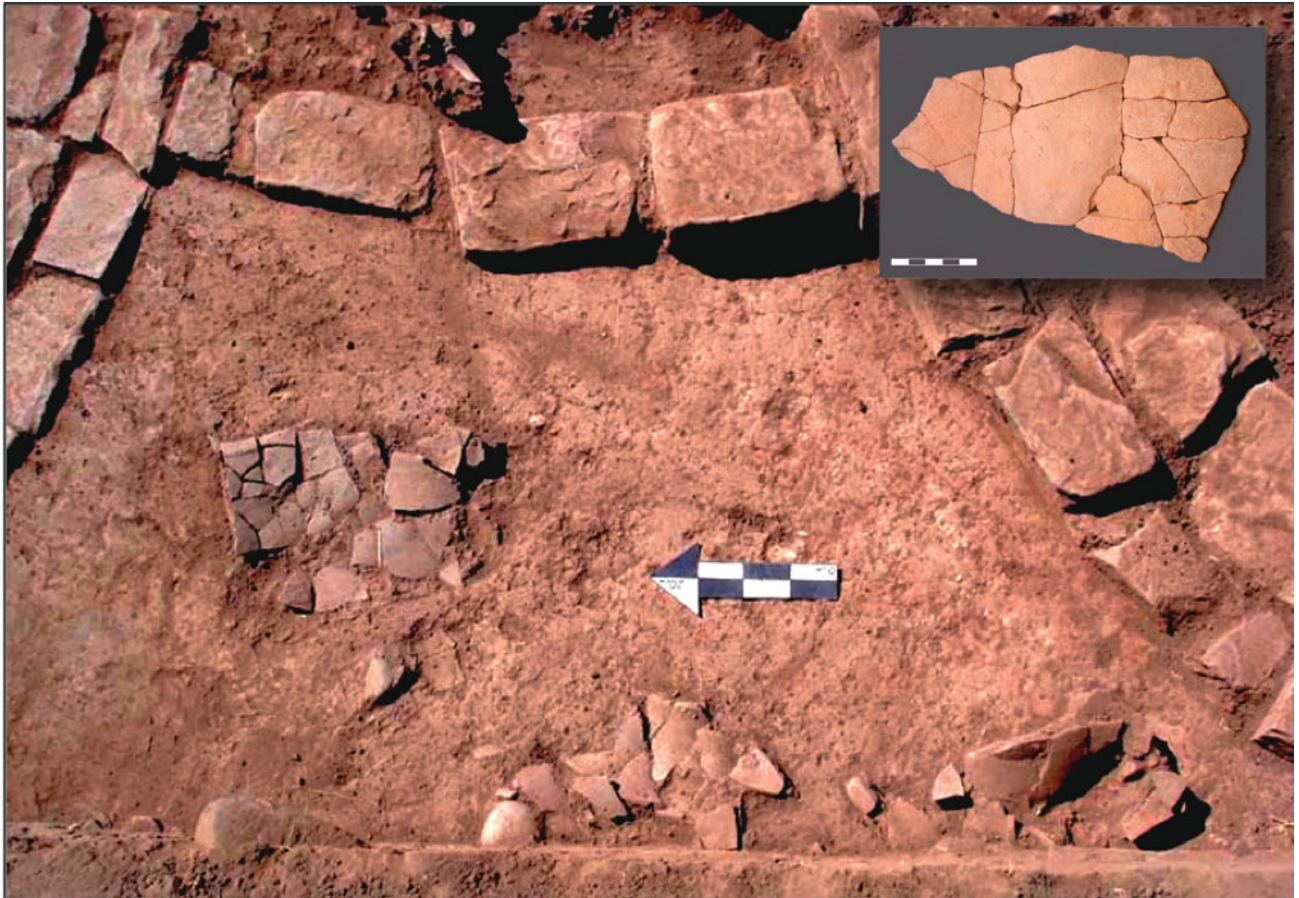
as taphonomic impacts were minimal (Fig. 9). Cooks may have stored and retrieved food from this storage space, milled it on nearby ground stone and cooked it in the annexe, a triad of sequential practices progressing from right to left for a cook working from the structure interior. Kitchen refuse was deposited in the interior of structure 7.C4, dense with mammal bone and rhea eggshell. This dynamic assemblage was continually coming into being as cooks re-enacted and re-produced it on a daily basis.

#### Assemblages that transformed Khonkho's community

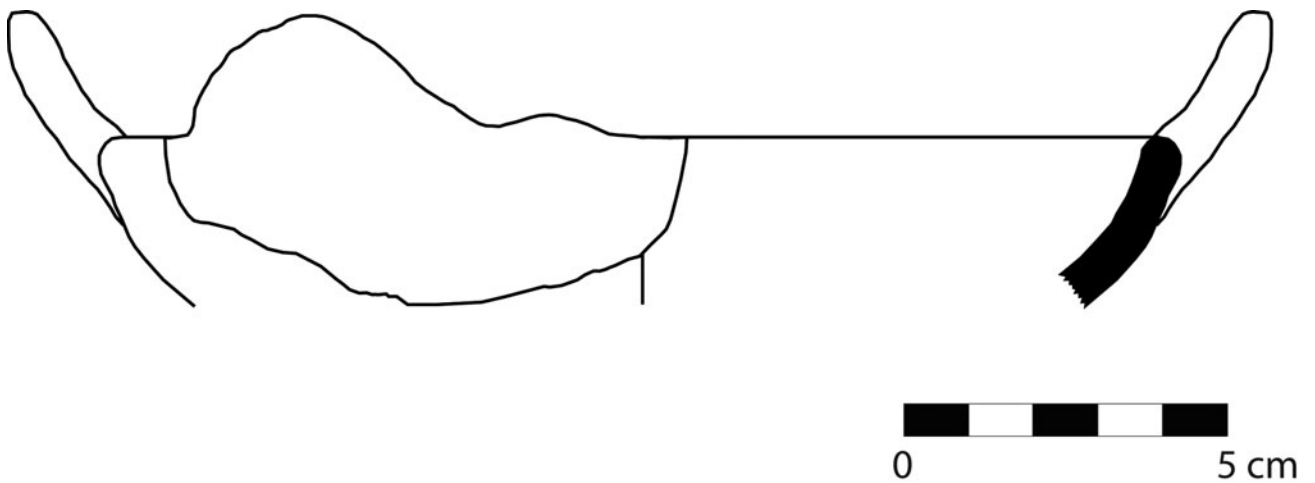
Some assemblages have a stronger tendency to transform community, such as gatherings. These assemblages are less frequent and incorporate a much greater diversity of interactions, typical of larger and more diverse assemblages (DeLanda 2006, 13; Harris 2013). Crucially, these interactions generate novel forms of interaction that extend well beyond the density and spatial extent of more conservative assemblages. Like other phenomena known as emergent properties, these assemblages are more than the sum of their parts (see Bentley & Maschner 2008). Interactions are qualitatively different at different scales. At Khonkho, four emergent assemblages are evident at increasing scales: (1) intimate meetings in indoor domestic spaces; (2) outdoor social gatherings in the patio group; (3) work parties organized to carry out construction projects; and (4) community-wide ceremonies at plazas, temples and platforms. Data from the patio group detail the former two, nested within the latter two, which are apparent from site-wide data.

##### *Intimate indoor meetings*

Intimate meetings probably took place in the western kitchen, an assemblage that overlapped with a space that was also used for daily food production. Most evidence for this was in formal annexes, but in this space, people mimicked the basic pattern with an improvised hearth with unexpectedly low artefact density. It was probably not a cooking area and was adjacent to spaces with very high sherd densities. Non-daily meetings are suggested by sparser yet more diverse artefacts. There are sherds of an incense burner (Fig. 10), a rare form at Khonkho and similar to those at other regional towns (Bermann 1990, fig. 50b; Janusek 2003, 42). Residents from other towns would have recognized the form and probably the interactions and practices related to preparing incense and associated social interactions. There was a small knife and a small ground stone element, which would have been useful for preparing a mixture of herbs or miner-



**Figure 9.** (Colour online) The storage area between structures 7.C3 and 7.C4, showing storage jars smashed in situ, including one with its base still partially upright (lower right-hand corner). Photograph taken facing east. Inset shows assembled sherds.



**Figure 10.** Incense burner from structure 7.C4.



als to burn as incense. Incense smoke would quickly have filled the small structure, with a floor area of only 4.1 sq. m.

The architectural layout would have made interactions within the structure more intense while reducing potential interactions with elements outside the structure, creating a boundary between adjacent assemblages. Unlike other structures, there is no entrance block, making this structure much less accessible to and from the outdoor patio. There is no evidence for serving food or drink, like in the outdoor patio, suggesting a different type of interaction. People sharing this space would have been in close physical proximity and would have had privacy conducive to discussions of intimate or sensitive topics. The assemblage here involved less frequent interactions between fragrances and people that were probably part of consciously organized events. Here, interactions of a different variety involved more diverse artefacts and people, suggesting that this assemblage played a role in enacting community change.

#### *Large outdoor gatherings in the patio group*

Perhaps the most transformative assemblage comprised outdoor gatherings in the patio group. In the eastern kitchen complex near structure 7.C9, there is a remarkable combination of ground stone, serving vessels, jars and cooking pots, which suggests preparing and serving food both on a daily basis and for larger gatherings (see Marsh 2012a, figs. 6.25–9). Two metres west of the structure's entrance, the site's densest concentration of ground stone included 14 instruments of a variety of shapes, sizes and wear patterns, suggesting a variety of types of food production at an increased scale (Garrison 2008, 25). In structure 7.C9's interior, there was a large diversity of vessel forms (Marsh 2012a, tables 6.6–6.7). There were three unusual vessel forms: a grey bowl with a bevelled rim, a sooted ring-base incense bowl and a 'broad plate-shaped basin' (Janusek 2003, 69). This form is rare in the region and would have been useful for serving. In the adjacent central patio, all of the site's largest vessels, with orifices of over 30 cm, were found in this large outdoor space, and are much larger than the site's average of 19 cm (Marsh 2012a, table 5.20). Large vessels are absent in most places at Khonkho but present here, suggesting that food production here was for groups larger than those who ate together on a daily basis.

Serving and burning incense seem to have been closely related practices. Sherds from incense burners are rare at Khonkho and present in only four locations in the patio group, three of which also include high frequencies of serving vessels. The spatial correlation

suggests that hosts may have served food and used scents to create a pleasant atmosphere. These scents would have sensorially distinguished gatherings from daily routines and created memorable events.

Serving activities took place immediately outside the annexe of structure 7.C9 (Fig. 11). The annexe included 38 per cent serving vessel sherds, more frequent than almost any other space at Khonkho, much higher than the site's overall average of 5 per cent. The sherds represent bowls and small jars in both classic and local Kalasasaya styles and were found in the same space as cooking pots and an improvised hearth. This association calls to mind the ethnographic practice of cooks serving guests directly from cooking pots into small serving bowls and guests returning bowls to the cooks. This kind of interaction between cooks, guests, food and bowls may have resulted in high frequencies of broken cooking and serving vessels in a concentrated space. It also documents repeated interpersonal interactions mediated by painted bowls in the outdoor social space of the central patio, immediately outside the entrance to structure 7.C9, where the hosts may have lived.

Rather than using special equipment dedicated to preparing large quantities of food, residents likely pooled their tools, pots, plants and animals to make larger quantities and worked together in the central patio, physically manifesting a larger-scale assemblage. Daily food-production assemblages were repurposed and connected to a different type of transformative gathering assemblage. The lengthy preparation for a gathering is an integral part of the event and would have fostered affective bonds among people dedicating time and energy towards a common goal.

The central patio's 238 sq. m outdoor space is much larger than structure interiors (4–6 sq. m), a difference in size that suggests more distance between people and a qualitatively different nature of social interaction (Moore 1996, table 1). The patio would have been a suitable venue for much larger and more diverse crowds and probably involved residents of other patio groups or other towns. The assemblages that emerged as these groups came together depended on the participation of decorated Kalasasaya bowls and small jars.

#### *Regionally-recognized Kalasasaya vessels*

Kalasasaya vessels were active members of Khonkho's community. This style was developed at the beginning of the Late Formative and used for a few centuries at towns around the southern Lake Titicaca Basin (Janusek 2003; Ponce 1993; Roddick 2009;



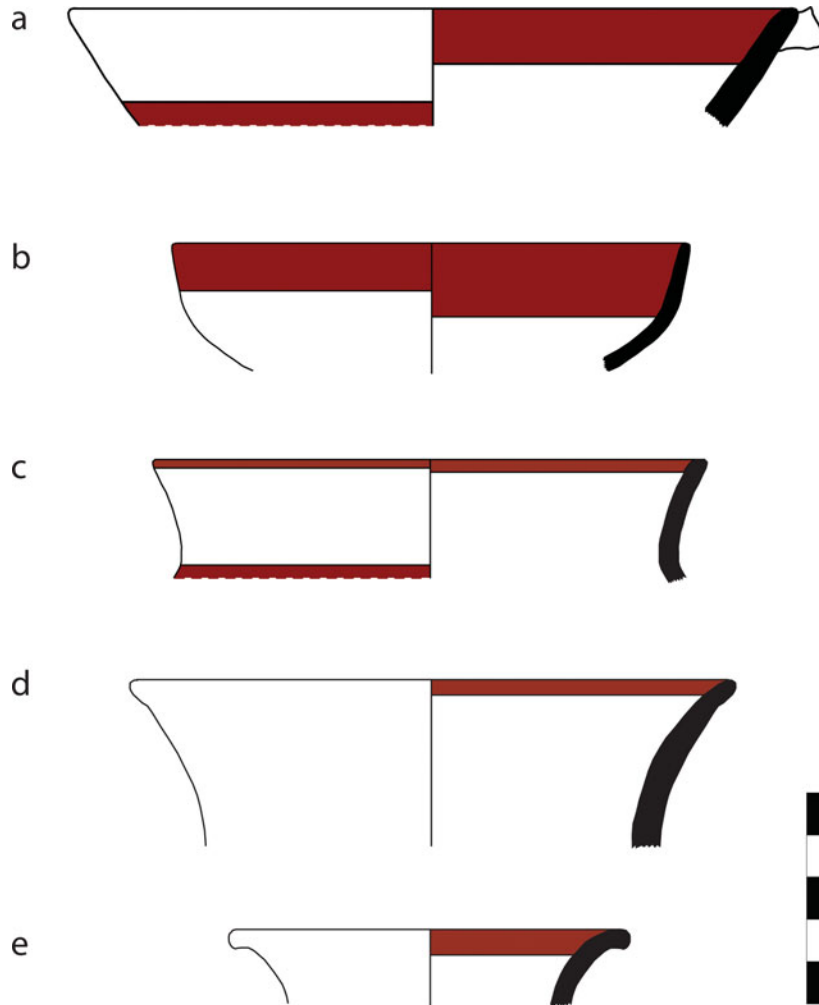
**Figure 11.** (Colour online) Structure 7.C9's annexe, with flattened vessels found in situ. Trowel approximates scale and points north.

Roddick *et al.* 2014; Stanish 2003). It was the only widely disseminated decorated style. People from different towns would have identified the vessels and associated etiquette, part of creating affective bonds that tied together a regional community (Gero 2003, 287).

Similar styles of decorated vessels suggest that potters interacted and shared designs for serving vessels, Kalasasaya red-rimmed bowls and small jars (Figs. 12–14). There were regionally-consistent and standardized classic styles and local variants (Marsh 2012a, 317–19). Classic vessels have more compact pastes, higher firing temperatures, higher surface burnishes and better-executed painting.<sup>3</sup> Potters at Khonkho made local variants with the same size, shape and red-rim decoration, but of lower quality. They probably intended guests to associate them with the classic style. The similarities suggest that Khonkho's potters were aware of regionally recog-

nized styles through interactions with other potters who lived at other towns. These potters probably attended gatherings with similar serving vessels at other towns.

Late Formative groups made and interacted with two other decorated styles, Kalasasaya zonally incised and Qeya (see summary in Marsh 2012a, 99–106). Both are elaborate, polychrome styles that are rare in survey and excavation (Bandy 2001, 166, 173; Janusek 2003, 37–54; Marsh 2012c, fig. 16; Roddick 2009, 233–8; Steadman 2007). Of tens of thousands of sherds recovered at Khonkho, there are several sherds from a single zonally incised vessel and two Qeya sherds. However, at Lukurmata, Qeya sherds comprise 8 per cent of the total, which is a notable exception to the regional pattern (Bermann 1990). Both of these styles are rare or absent at most sites, so it is likely that they did not play a major role in regional community formation; they may have been linked to funerary or ritual activities.



**Figure 12.** (Colour online) Kalasasaya red-rimmed vessels: (a) bowl with handle, outside entrance to structure 7.S2; (b) classic Kalasasaya bowl, north annexe of structure 7.C3; (c) small jar from outside the entrance to structure 7.C10, also shown in Fig. 13; (d) classic and (e) local Kalasasaya small jars from the central patio, just outside the annexe of structure 7.C6. Scale bar measures 5 cm. (Adapted from Marsh 2012, chapter 6, except (c).)

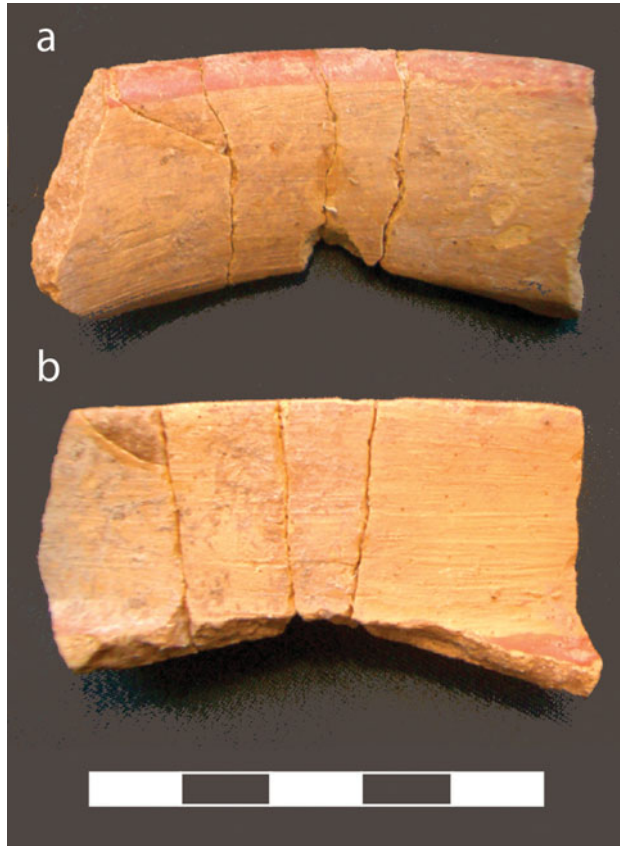
Compared to the other two decorated styles, Kalasasaya red-rimmed sherds are ubiquitous, but still occur in low percentages and in spatial concentrations, suggesting they were not daily-use vessels. Many site-wide counts have around 5 per cent of these sherds (Bennett 1934, 450; Janusek 2003, 51; Marsh 2012a, 109, table 4.2; Roddick 2009, 234; Smith 2009, table 4.4). The patio group data indicate few, small spaces with high concentrations of sherds (10–38 per cent), usually in outdoor spaces, a pattern seen at other contemporary towns such as Lukurmata (Bermann 1990, 101; Janusek 2003, 46; Marsh 2012a, 485–90). The low sherd densities surrounding these concentrations mark the fuzzy spatial edges of serving assemblages. Kalasasaya vessels were conspicuously active elements that people touched and observed during

periodic gatherings at towns throughout the region (Janusek 2015b, 140).

#### Site-wide transformative assemblages: gatherings and work parties

At Khonkho, there were diverse varieties and scales of interaction-intensive assemblages (Smith 2009, 241–2), partially conditioned by physical distance and walls (Moore 1996, table 1). Smith's (2009, 167–228) detailed proxemics analysis identifies a range of social distances and interactions, which is supported and enriched by evidence from the patio group. Khonkho's walls represent marked interaction boundaries between assemblages. The most intimate gatherings were probably indoor meetings in small, indoor struc-





**Figure 13.** (Colour online) Small Kalasasaya jar: (a) interior and (b) exterior rim and neck (see drawing in Fig. 12c). Scale bar measures 5 cm.

tures. The walls that frame gathering spaces suggest that it would have been easy to control access and choose the participants. More inclusive social events took place in outdoor spaces where cooks served food and drink in Kalasasaya serving bowls and small jars. The vessels actively fostered affective links between people who did not interact on a daily basis, which helped build community well beyond the patio group.

Gatherings were probably part of larger, multi-day events that would have been hosted in and around the site's plazas and platforms. At this scale, architecture may not have defined interaction boundaries, but instead surrounded focal points with more diffuse boundaries. For example, interactions may have focused around four tall (4.6–5.3 m) and highly visible monoliths, which were placed in the centre of the compounds (Ohnstad 2011). These assemblages would have brought large numbers of people under a common banner and materially generated new community members – monoliths and residential complexes – that participated in future events for generations (Janusek 2015a). They may have included ceremonies



**Figure 14.** (Colour online) Interior rim and neck of a small Kalasasaya bowl from the midden of structure 7.C4. It is too narrow to estimate its diameter, but clearly shows the painting style and colour. Scale bar measures 2 cm.

to mark important times in the annual rounds of farming and herding practices (Janusek 2015b, 138). Small and large gatherings alike would have integrated another assemblage crucial to the building of Khonkho: work parties.

#### Work parties

An enormous amount of labour was required to build Khonkho, which was built within a few centuries, despite a low resident population of probably just a few hundred people (Marsh 2012a, 445–6, 479–84; Janusek 2015b, 139). In order to carry out large construction events, residents would have had to mobilize visitors to participate in work-parties, as is the case cross-culturally:

The use of feasts to mobilize collective labor has been a widespread and fundamental economic practice of societies around the world. In fact, variants of the *practice* are so *strikingly omnipresent* in the ethnographic and historical literature that a good case can be made for acknowledging it both as virtually a *universal feature* among agrarian societies and as the *nearly exclusive* means of mobilizing large voluntary work projects. (Dietler & Herbich 2001, 240, emphasis added)

In the absence of evidence for coercive relationships or marked social hierarchy, work parties seem to be the only amenable explanation for the town's intensive building programme. Construction projects were temporary, but highly active, webs of interaction between humans and building materials. It is possible that these events took place in July or August, the only

time of the year that would not have been occupied by farming and herding activities (Bandy 2005, 290). During specific times, these assemblages would have fostered bonds between people from different communities, construction materials, decorated ceramics, specially prepared food, locations within the built environment and most likely, elements of the supernatural world (see Owoc 2005).

Patio group residents hosted gatherings and probably took a more active role in organizing work parties and building projects. Work parties helped articulate other assemblages. Community-building events were ongoing—detailed stratigraphy of construction fills reveals piecemeal and continuous mound building as opposed to few, massive events (Janusek 2015b, 130–32; Ohnstad 2007, 149). A large, inclusive community was necessary continually to construct and organize the work parties that physically and affectively built Khonkho's community. Events may have even been intentionally structured to include new members and downplay social difference, an effective means of building larger communities, labour forces and projects. This hospitality-based approach to attracting followers and actively building community seems to have been one of the central processes behind increasing social complexity throughout the region and into the subsequent Tiwanaku period, following Bandy's (2013) suggestion.

Gatherings and work parties were non-daily, transformative assemblages whose dynamics were fundamental to the growth of Khonkho and its expanding network of connections. Gatherings and work parties were closely intertwined and overlapped with more habitual assemblages that reproduced community at Khonkho, such as hunting, herding, cooking, weaving and tool production. Weaving and sewing were likely daily practices, but their products may have played important roles in transformative ceremonies when people or objects, such as monoliths, wore specific colours or symbols (Baitzel & Goldstein 2014; Costin 1998; Janusek 2006, 485; Smith 2012, 56). Caravanning was probably a non-specialist activity, but in the context of a large festival, it would have carried greater weight and formed important links to diverse people and objects from distant places, perhaps for mortuary rituals (Janusek 2015b, 139–40; Smith & Pérez Arias 2015, 115–18). Breaking down assemblages in this way reveals how things and people participated in multiple overlapping assemblages at different scales and how the connections between them generated dynamics that continually produced community at Khonkho.

For the first time during the Late Formative, these sets of interactions became especially dense,

widespread and heterogeneous. These were a primary factor in the sustained growth of Khonkho and the construction and occupation of the patio group before it was abandoned. Subsequently, Khonkho's assemblages endured but were geographically emplaced at Tiwanaku, the physical locus for an emergent state forged by people from all over the Andes (Marsh 2012a, 512–20). The emergence of this state was firmly based on household patterns established in the Late Formative, in many ways analogous to the emergence of cities in Mesopotamia (Ur 2014). Tracking reproducing and transformative assemblages in tandem helps outline local and regional shifts that marked the beginning and end of the Late Formative. These changes were driven by continually generating active, emergent networks of objects, architecture, humans, animals and landscape.

## Conclusion

This paper's goal was to illuminate how active assemblages of people, objects and spaces produced and reproduced the rapidly growing Late Formative town of Khonkho. This case study was used to test the potential of methodological refinements toward a more robust archaeology of communities. Following Harris (2013; 2014), I described assemblages at different scales. This approach made it possible to elucidate and link nested and overlapping assemblages, from a single kitchen to large construction projects. Active assemblages are in the continual process of becoming, which directs research to focus on material indicators of interactions that bind assemblages. Data with high spatial and temporal resolution are most effective at delineating anthropologically relevant assemblages. The methodological steps I followed were intended to break down the sometimes nebulous concept of community into intra-community assemblages and processes.

Identifying interactions at multiple scales allowed me to describe two varieties of assemblages. First, those that played a greater role in reproducing community, such as cooking, herding and making pottery. Material patterns identified times and spaces in which interaction density changed drastically, marking fuzzy boundaries between assemblages. Many interactions were territorialized within the patio group, such as cooking and serving food, while others spanned out onto the landscape. For example, wild animal bones and projectile points are telltale elements of a much larger assemblage that included hunting skills, hunting trips, animals' movements and knowledge of the landscape during different seasons. Within each assemblage, interac-

tions were dense and more than the sum of their parts. Non-human elements, notably well-defined architectural spaces and kitchen tools, played an important role in establishing multi-generational trends that fostered continuity and stability.

Community-reproducing assemblages were closely intertwined with transformative gatherings. The patio group provided detailed evidence of intimate meetings in small, indoor spaces with incense as well as larger, outdoor gatherings that became more potent with the participation of decorated Kalasasaya vessels. People from other villages and towns would have recognized this style and associated patterns of etiquette, service and hospitality. These events would have created social and emotional bonds between residents and non-residents, highlighting the importance of affect in creating and re-creating assemblages (Harris 2014, 90). These events were likely tied to town-wide events that involved work parties. Work parties would have been essential to the construction of Khonkho. These events were probably among the most important transformative events in the history of the community. Like other transformative assemblages, they involved a great number of diverse elements and interactions, in this case tying together people from other towns, construction materials from the surrounding landscape and an animistic and ecological world view that is reflected in the monoliths' carved iconography (Janusek 2015a).

Future research on archaeologies of community at nearby towns and villages would make a significant contribution to understanding regional assemblages. Comparing these may reveal salient similarities or differences in the habitual, daily assemblages that reproduced this Late Formative community. Assemblages that transformed these communities may have been similar at different sites, which nearly always included Kalasasaya serving vessels. Delimiting regional assemblages is a necessary step toward a better understanding of the larger temporal and spatial scale of the subsequent emergence of the state at Tiwanaku, a few generations after the patio group was abandoned. Transformative assemblages at Khonkho, Tiwanaku and other sites in the region can shed light on this emergent episode, which generated one of the most enduring changes in the history of the Lake Titicaca Basin.

## Notes

1. The accepted regional ceramic sequence (Janusek 2003, 37) dates the Late Formative from 200 BC to AD 500. However, I have argued elsewhere that this period did not start this early, as reliable radiocarbon dates associ-

ated with Late Formative material fall after AD 1. This limit is defined by two dates from Lukurmata's earliest structure, which did not include diagnostic Kalasasaya pottery (Bermann 1990, 74–7, 523). Dates from other sites are all later (Marsh 2012b, 213–14) and there is a conspicuous lack of dated contexts between 250 BC and AD 1 (Marsh 2012c, 181–3).

2. These are some of the earliest bronze artefacts known in the region (see Lechtman 2003, 425). The initial use of bronze technology, and perhaps a reason for its invention, was for food-processing tools and buttons for clothing, which implies the importance of cooking practices and textiles.
3. The red colour of paint used for both local and classic variants is similar, from 10r 3/6 to 10r 4/8 on the Munsell colour chart (see Fig. 14). It was probably made from locally available haematite.

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