



# Rural Cuzco before and after Inka Imperial Conquest: Foodways, Status, and Identity (Maras, Peru)

Kylie E. Quave<sup>1</sup> · Sarah A. Kennedy<sup>2</sup> · R. Alan Covey<sup>3</sup>

Published online: 03 January 2019

© Springer Science+Business Media, LLC, part of Springer Nature 2019

## Abstract

State expansion brings cultural change or persistence, and foodways reveal how status and identity result from these events. We examine diet choices and food service at two large villages in the Inka imperial heartland (Cuzco, Peru). Yunkaray was occupied during the time of early Inka expansion (eleventh to fifteenth centuries), whereas Cheqoq housed a late imperial (fifteenth to sixteenth centuries) multiethnic retainer population serving the Inka nobility. We use faunal remains and ceramic assemblages to reveal the uneven process of “Inkanization” and find that migrated retainer laborers had greater affinities with Inka practices than early Inka marriage partners.

**Keywords** Inka empire · Acculturation · Identity · Foodways · Ceramic analysis

Producing, preparing, and consuming food are key elements in the daily practice and negotiation of status and identity, and the dynamics of domestic foodways are fundamental to understanding outcomes of colonization across ancient imperial societies (Jaffe et al. 2018). Processes of state expansion can disrupt, blend, and transform social identities through change and persistence in diet and cuisine (Van Derwarker et al. 2016:154). Modifications to foodways—the social processes surrounding eating that include diet and

---

✉ Kylie E. Quave  
kquave@gwu.edu

Sarah A. Kennedy  
sak201@pitt.edu

R. Alan Covey  
r.alan.covey@austin.utexas.edu

<sup>1</sup> University Writing Program and Department of Anthropology, The George Washington University, 2100 Foxhall Rd NW, Ames 214, Washington, DC 20007, USA

<sup>2</sup> Department of Anthropology, University of Pittsburgh, 3302 WWPB, Pittsburgh, PA 15260, USA

<sup>3</sup> Department of Anthropology, The University of Texas, SAC 4.102, 2201 Speedway Stop C3200, Austin, TX 78712, USA

cuisine—occur at all social scales: among individuals, households, communities, and the expansive state (Dietler 2010; Hastorf 2016; Liebmann 2013). In this study, we focus on households at two sites in the Inka imperial heartland—one settled prior to and during Inka state development, and the other settled afterward—to reconstruct the impacts of state expansion (Bauer and Covey 2002; Covey 2006) and economic intensification (Kosiba 2018) on foodways. Inka elites imagined their imperial heartland to be a cultural whole that they established by gradually integrating diverse populations in rural areas surrounding the capital of Cuzco from about 1200 to 1400 CE (Bauer 2004:15–22; Covey 2018). This ongoing social, economic, and political transformation was more successful in some generations than others, and resulted in some cases of shifting relationships between the people of Cuzco and their neighbors.

In this paper we present a diachronic comparison of food preparation and consumption from two sites located on the Maras Plain to the northwest of Cuzco: the pre-imperial local center of Yunkaray and the late imperial, Inka nobility-affiliated estate site of Cheqoq (Fig. 1). We examine how food-producing communities using the same productive landscape responded to and engaged in processes of Inka expansion, resettlement, and economic centralization. Our analysis reveals how households at these two sites experienced socioeconomic changes that accompanied the uneven process of the Inka transformation of its imperial heartland, and resulted in new and heterogeneous configurations of status and identity. Colonial encounters may produce heightened moments of visible identity transformation and maintenance (Hall 1990), yet cultural change was neither unidirectional nor ubiquitous in the Cuzco region.

## Evaluating Status and Identity through Foodways

Many scholars assume that expanding archaic states promoted acculturation—the acceptance of a dominant cultural pattern, often introduced coercively or through overt

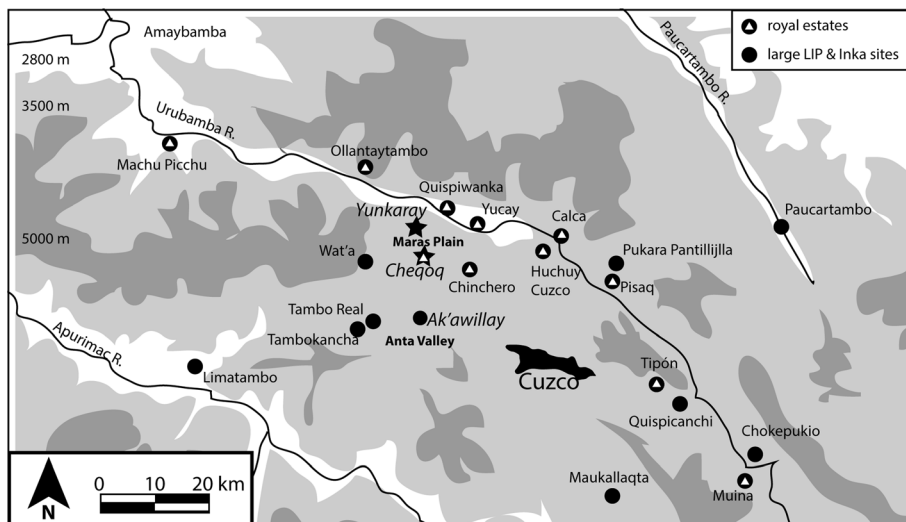


Fig. 1 Map of Inka heartland sites

domination (e.g., Deagan 2013)—among newly incorporated populations. Recent archaeological critiques of acculturation (Cusick 1998; Ghisleni 2018; Schortman and Urban 1998) argue that the concept is overly reliant on simplistic dichotomies (e.g., local/nonlocal, imperial/indigenous), which constrains the formulation of more dynamic reconstructions of ancient imperial growth. For example, Ghisleni (2018) argues that it is necessary to deconstruct acculturation frameworks in order to acknowledge the spatio-temporal dimensions of continuity and change. Ghisleni frames culture contact and culture change in Roman colonial encounters as characterized by a process of *becoming* (a constructionist approach), rather than *being* (essentialist) (cf. Voss 2015). Such work reminds us that identities were not bounded before or after imperial intervention, and that continuity and change can occur coterminously through multidirectional processes.

Rather than treat acculturation as evidence of unilateral, state-mandated change, it is worthwhile to determine what aspects of life changed under imperial rule, and to consider how state policies and local cultural practices generated specific patterns of continuity and change. At sites affected by state expansion, the material record might reflect both the external pressures (state policies) and internal motivations (local strategies) for not just acculturation, but also marginalization. As the counterpart to acculturation, the state of marginalization, from the perspective of the dominant society, is the state of exclusion from economic and social change. While state elites might intend to implement a particular social vision locally, that may or may not entail change; state and local interests can also promote continuity. In assessing cultural change in colonizing contexts, it is important to weigh how superficial or profound transformations may be and to avoid assuming that one change entails others, signifies a permanent transition (as cautioned by Brubaker and Cooper 2000), or is at all meaningful in the construction of identity. Our approach to cultural persistence and interruption in the Inka colonial encounter is to disentangle status from identity, which tend to be flattened in studies of acculturation. We are interested in status and identity as economic and cultural dimensions, respectively, of the state expansion process.

To evaluate status and identity, this study focuses on foodways as active elements in the negotiated production and expression thereof (Curet and Pestle 2010; Hastorf 2016; Jaffe et al. 2018). As Curet and Pestle argue (2010:415), the meanings of foods are culturally constructed in relation to the procurement, preparation, service, consumption, and disposal of food. The acts of creating and serving food in iterative, repeated fashion, is shared among households and communities and serves to solidify and transform the sense of self and distinctions from others (Hastorf 2016:Pt. III). These considerations inform the present analysis of the meanings of foodways in the Cuzco region, where Inka intervention in local foodways was part of the broader transformation of a previously autonomous area into a highly integrated part of their imperial heartland.

In this paper, we focus specifically on faunal remains from excavated contexts. A treatment of faunal remains and dishes in which they were served is necessary due to the availability of these data sets from the two sites. Our analysis follows the elements of the *chaîne opératoire* that can be gleaned, but not all parts of the sequence of procurement, processing, and consumption. Specifically, we analyze animal bone taxonomy and taphonomy, as well as distributions of serving vessels. Following the material remains of meat production and consumption provides insight into the presentation and sharing of meat as powerful forces (Russell 2012:358) in constructing social status and identity.

We reconstruct *status* by evaluating differences in access to high-quality cuts of meat (using age-at-death and meat yield estimates for faunal skeletal elements); these are identified in conjunction with the frequency of decorated serving vessels. To reconstruct the *identity* of households, specifically by finding fidelity to or distinction from Inka practices, we look for indicators of group identification (Jones 1997) as shared among members of a household; these include taphonomic markers for certain meat preparations and distributions of Inka and local serving vessels. The material correlates of status and identity are described in further detail below, but first we turn to ethnohistoric and archaeological evidence from the Maras Plain as starting points for this analysis.

## Case Study: The Maras Plain before and after Inka Expansion

Through this Andean case study, we look to changes and continuities in different aspects of foodways to (1) establish a set of material expectations for the preparation and consumption of meat in the Inka heartland, and (2) assess diachronic processes at two sites as evidence of shifting investments in non-Inka and Inka identities, as well as the introduction of new state-defined status categories. Like other empires, the Inkas attempted to transform some subject communities, but the material evidence of continuity and change seldom resembles the vision of state elites that is preserved in the ethnohistoric record. In the Cuzco region, early Inka state expansion (ca. 1300–1400 CE) involved increasing control over agricultural lands, labor tribute, and the products of skilled artisans. In the later period of Inka imperial consolidation of the Cuzco region (ca. 1400–1500 CE), efforts turned to large laborer resettlement projects for both temporary and permanent posts, called *mitmaqkuna* and *yanakuna*, respectively. Although the Inkas expanded their networks of power over local economies and social institutions in some parts of the Cuzco region, they did not deploy these tactics uniformly (e.g., Bauer 1992; Covey 2015; Kosiba 2011; Quave et al. 2018). Quave and Covey (2015) have previously demonstrated that architecture and pottery reveal uneven processes of Inka cultural transformation in the regions north of Cuzco; we now need to incorporate analysis of foodways to consider how rural populations on the same landscape (the Maras Plain) were constructing status and identity at different periods of Inka expansion. Many assumptions about these transformations originate from the ethnohistoric record, yet are challenged by archaeological evidence. We now turn to these different sources to contextualize this study of the excavated remains of foodways.

## Ethnohistoric Reconstructions of Status and Identity in Maras

Early Colonial accounts from Inka men described the region to the northwest of Cuzco as dominated by a powerful group called the Ayarmaka, whose paramount (Tukay Qhapaq) was a rival to pre-imperial Inka rulers (Rostworowski 1970:59). The oral histories describe a time when Tukay Qhapaq maintained marriage alliances with subordinate communities of valley-bottom farmers in the Xaquixaguana Valley (to the south), as well as upland agropastoralists living to the east in the Sacred Valley (Urubamba Valley) near where many of the Inka royal estate palaces are located (Covey 2006). These accounts mention herding as a source of Tukay Qhapaq's power.

However, early Colonial legal documents from local land disputes identify Ayarmaka people living near Maras who claimed ancient use rights on nearby maize fields (AGN, *Titulos de Propiedad*, Legajo 1, Cuaderno 3 (1557), f. 11–13v), as well as hillside lands used for tuber cultivation and areas of pasture (AGN, *Superior Gobierno*, Legajo 1, Cuaderno 10 (1586), f. 3v-4). Inka noblemen claimed that their royal ancestors gradually established collateral marriage ties with Tukay Qhapaq, over time reducing the Ayarmakas to tribute-paying subjects (Sarmiento de Gamboa 1907 [1572]:Ch. 18, 20–21, 25, 34). These men blamed Ayarmaka repudiation of tributary responsibilities for a subsequent Inka invasion—fought just before the first wave of imperial expansion beyond the Cuzco region—that destroyed the group and resettled most of its survivors in the Cuzco Basin.

After a generation of widespread depopulation in the Maras area, two Inka emperors (Thupa Inka Yupanki and Wayna Qhapaq) established rural estates in the former Ayarmaka domain (Betanzos 1996 [1550s]:Pt. 1, Ch. 38, 43). Over the span of a few decades, they sent huge groups of provincial laborers to the area to transform the productive landscape and build palaces and recreational facilities for royal households. In addition to the palaces at Chinchero and Quispiwanka (Nair 2015; Niles 1999), estate construction created improved farmlands and designated areas of “gardens” (*moyas*) for use or distribution by Inka nobles. Some lands near Maras were taken out of cultivation to pasture camelid herds belonging to the Inka and the cult of the Sun (AGN, *Superior Gobierno*, Legajo 1, Cuaderno 10 (1586), f. 4-4v, 20-20v). Upon completion of the estate infrastructure, the rulers permanently resettled thousands of households from conquered provincial regions, who were assigned the status of permanent retainers or perpetual servants (*yanakuna*) following their resistance to Inka incorporation. Families from dozens of peripheral groups were settled into small communities near estate resources in the Yucaj Valley, where they labored as subordinate members of the royal households who had taken them from their natal communities (Covey and Amado González 2008; Covey and Elson 2007). Land documents mention maize production and herding as central economic activities of these households and those of the remaining autochthonous population.

If accurate, Inka testimony regarding Ayarmaka society and the royal transformation of the Maras region could be confirmed archaeologically at multiple levels of analysis. Regional settlement patterns should indicate the disruption of a hierarchical network of Late Intermediate Period (ca. 1000–1400 CE, henceforth LIP) sites, with Inka settlement largely associated with improved agricultural lands and herding stations, and there should be an overall decline in the quantity of village settlements in the imperial period as agropastoral infrastructure became the focus (ca. 1400–1530s CE). The wealth of the Ayarmaka elite and the longstanding marriage ties to the Cuzco Basin Inkas should be apparent in clear status differences within sites; as seen in other parts of the Cuzco region (e.g., Covey 2015; Kosiba 2010), we should thus find higher-status households showing a greater degree of Inka-affiliated identity, with more Cuzco Basin material culture (namely, Killke and/or Cuzco-Inka polychrome pottery, as well as Inka diet and cuisine practices; see below). For the later period of Inka imperial rule, the articulation of royal estates staffed by retainer populations would be reflected in reduced household-level status differences, with a settlement pattern consisting largely of small sites located near productive valley-bottom farmland in the Yucaj area of the neighboring Sacred Valley. The documents do not offer clues about the extent to which

retainer households used Inka or non-Inka material culture to construct new identities. Many *yanakuna* were resettled for fighting against Inka rule in the provinces, suggesting that they might not have been predisposed to adopt Inka cultural practices prior to resettlement.

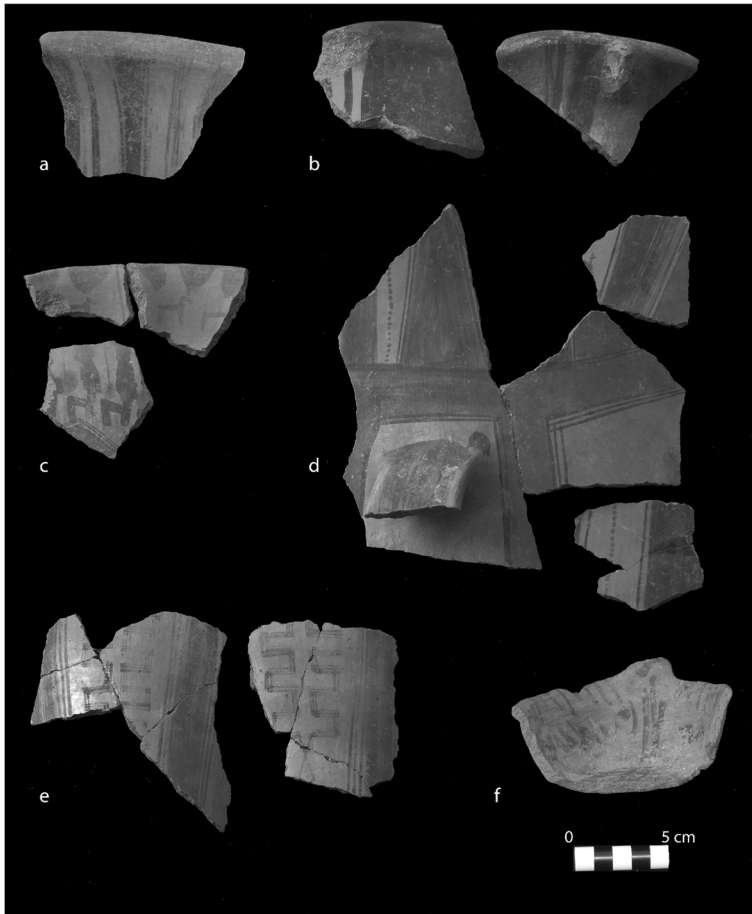
### Regional Archaeology in the Maras Area

From 2004 to 2007, Covey (2014a) conducted full-coverage pedestrian surveys in the Xaquixaguana survey area (an area of approximately 600 km<sup>2</sup>), which produced settlement patterns that confirmed core elements of the Inka ethnohistorical narratives. During the LIP, a large and hierarchical network of new villages grew in the Maras area, and hundreds of systematic surface collections documented a settled area of well over 100 ha. The 20-ha site of Yunkaray lay at the center of this densely clustered group of villages. Other large LIP sites appeared in neighboring areas, including Ak'awillay in the Xaquixaguana Valley and several large villages in the Chinchero area, but site spacing and surface artifacts suggested looser cultural and political affiliations than the ethnohistorical account of a single powerful polity to the northwest of Cuzco. In terms of territory and settled area, the LIP polity based in Maras was substantially more modest than its Cuzco Basin rival (Covey 2015).

Survey crews systematically placed 372 intensive surface collection units across 21 large LIP sites in the Maras area, confirming occupation sizes, as well as the prevalence of decorated pottery with local (Cueva Moqo; Fig. 2) or Cuzco Basin affiliation (Killke and Cuzco-Inka polychrome; Fig. 3). The intensive collection data indicated the presence of few Killke-style ceramics (a type originating in the Cuzco Basin and affiliated with early Inka influence beginning around 1000 CE [Bauer 2004:74; Rivera Dorado 1971]) and a near absence of Cuzco-Inka polychrome pottery (the type produced in the Inka imperial period), supporting the interpretation that the sites were abandoned after around 1400 CE. Inka imperial settlement patterns in the Maras area were dominated by the large-scale occupation of Cheqoq, a site associated with the estate of the Inka Wayna Qhapaq in the colonial documents. Covey's (2014b:157) survey found that no other large villages were present in the area, and the overall settled area dropped by approximately two-thirds from LIP to imperial times. Small Inka sites proliferated in the nearby Yucay Valley, the location of Wayna Qhapaq's main estate facilities (Covey et al. 2008). Cuzco-Inka pottery was common at these sites, but non-local styles were not.

Survey work identified both temporal and stylistic distinctions between Yunkaray and Cheqoq based on the remains of LIP and Inka ceramics; Yunkaray yielded mostly a local LIP style named Cueva Moqo rather than the early Inka (Killke) style (Covey 2014b). And recent excavations at Yunkaray and Cheqoq confirmed that distinction (Quave 2017; Quave et al. 2018). Based on recent archaeological survey and excavation in the broader Cuzco region (Bauer 2004; Covey 2006, 2014a; Kosiba 2010), Cuzco-Inka polychrome pottery began to be produced sometime after 1300 and has been assumed to be restricted in distribution to Inka-identifying or Inka-dominated sites. Cuzco-Inka pottery has long been understood to be a standardized, stylistically and morphologically coherent type (Rowe 1944; Valcárcel 1934, 1935). Cuzco-Inka polychromes represent the primary style identified in the initial surface collections at Cheqoq (Covey 2014b).

Regional archaeology confirms some important changes in presumed markers of status and identity as retainers serving royal households replaced Ayarmaka populations. Local settlement hierarchies and ceramic styles disappeared, and imperial-era



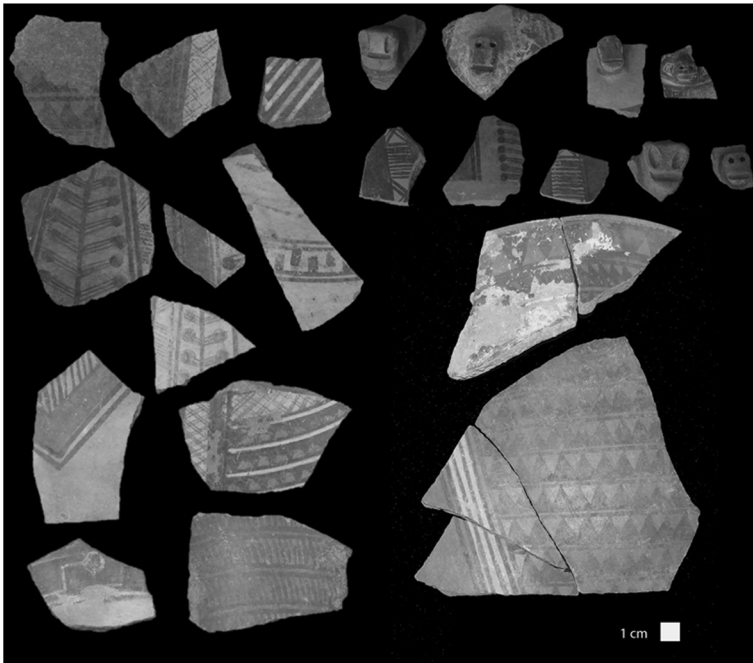
**Fig. 2** Examples of Cueva Moqo pottery from Yunkaray: a. and b. jar rims, c. interior bowl rims and an exterior body sherd with camelids, d. and e. body sherds, f. interior of bowl

sites in the Maras area show a strong Inka affiliation and central coordination by royal estate centers, even though the rural population was drawn from dozens of provincial groups (Covey 2014b; Quave 2012; Quave et al. 2018).

### **Excavations at the LIP Village of Yunkaray**

Building on survey results, the first author directed excavations at Yunkaray in 2015 to investigate areas thought to be public plazas and residential areas containing higher-status and lower-status households. Quave and colleagues excavated a total area of 82.25 m<sup>2</sup> across 15 units (Fig. 4), which included four households in which test units were expanded horizontally. There are at least four prominences across the site and excavations encountered domestic contexts on top and on the side of the three that were excavated. The domestic mounds yielded evidence of post-occupational fill; living floors; features, such as burned offerings, storage spaces, and structures; and sub-floor sterile strata. Houses built atop these low hills were formal constructions (UE2 and UE8),





**Fig. 3** Examples of Cuzco-Inka pottery from Cheqoq

whereas those on hillsides were informal constructions—cut out of the natural clay and lacking permanent materials other than adobe walls—with moderately lower status goods. While all households at Yunkaray yielded very high rates of decorated local Cueva Moqo pottery, those on the hilltops had higher frequencies of well-fired pastes and greater frequencies of figurative decorations on ceramic sherds (namely, camelid motifs). Large, open spaces lying between the mounds yielded lower artifact densities through surface collections and subsurface excavations, and they appear to be open plazas for public activities. Our excavations did not recover evidence of structures in these areas (save for a portion of a wall in UE4), but rather multiple surfaces of use with sparse remains. Eleven AMS dates taken from contexts across the site indicate that Yunkaray was settled in the first half of the LIP (ca. 1050 CE), and was occupied until the first half of the fifteenth century, well into the period of Inka imperial expansion (Quave et al. 2018:336). For the present discussion, intersite comparisons include all faunal remains recovered at Yunkaray, whereas intrasite comparisons include only horizontally excavated units (UE2, UE3, UE8, and UE14) at this site.

Excavations at Yunkaray did not substantiate Inka narratives of elite wealth and longstanding kin ties to the Cuzco Basin. In the early fifteenth century, when many neighboring groups were constructing Inka-style structures and using Inka ceramics during public drinking events and feasts that were similar to those of the Cuzco Basin elite (Covey 2006, 2015; Kosiba 2012; Quave and Covey 2015), Yunkaray's population acquired little Inka material culture. Of nearly 6000 diagnostic pottery sherds analyzed from the Yunkaray excavations, only 2.3% were Killke style and just 0.3%



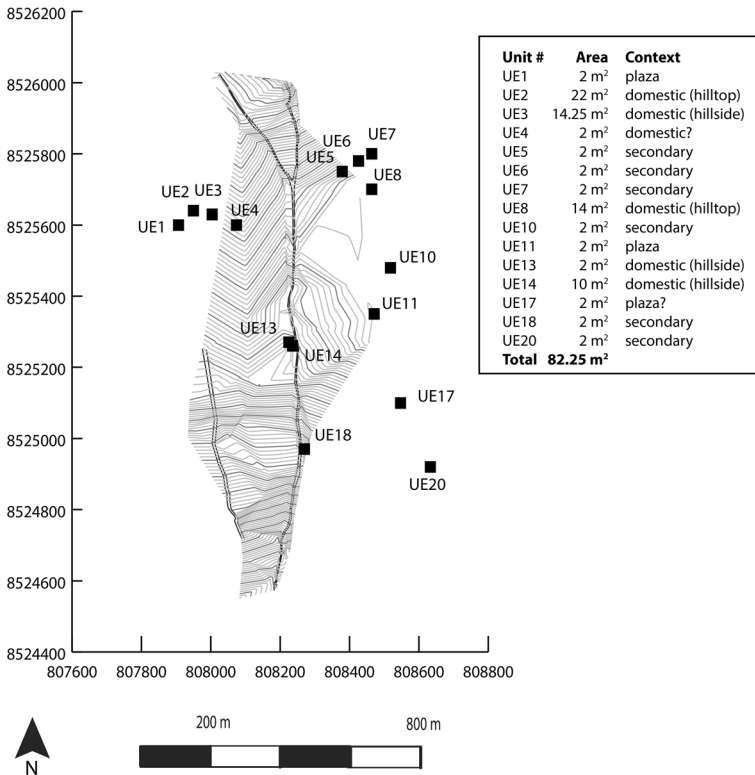
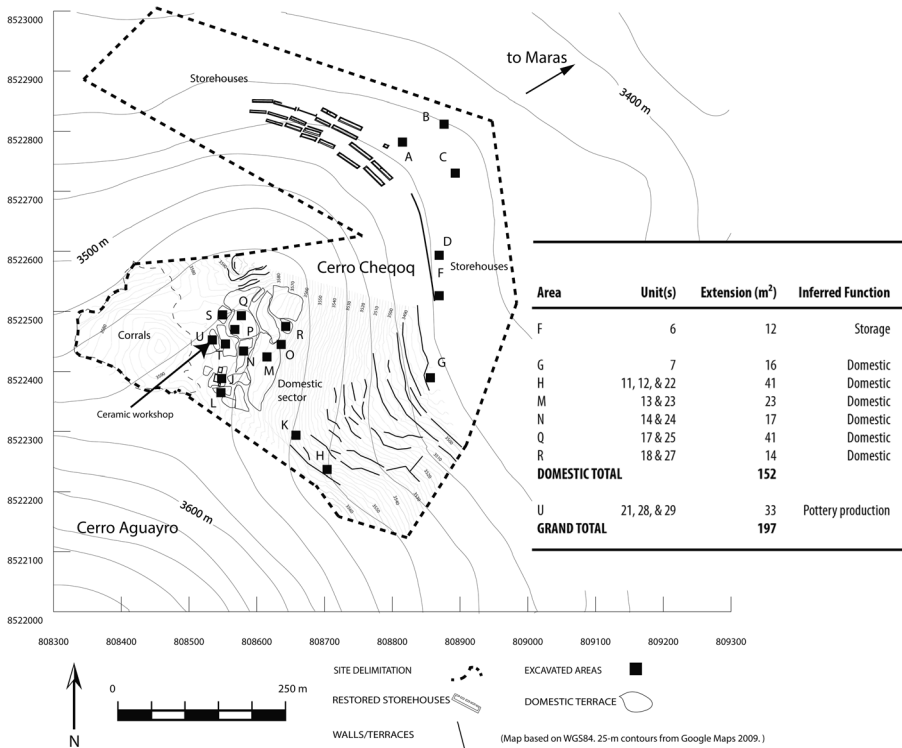


Fig. 4 Map of areas excavated at Yunkaray

were Cuzco-Inka polychromes. These contexts also lacked higher status goods associated with increases in Inka interregional trade (metal, shell) that appear at contemporaneous sites in the Cuzco region (Quave et al. 2018:341).

### Excavations at the Late Inka Village of Cheqoq

The lack of Inka-affiliated status markers in the Yunkaray excavations contrasts with imperial-era contexts excavated at Cheqoq, a production complex affiliated with Wayna Qhapaq’s royal estate, and the residence of retainer laborers (*yanakuna*). In 2009–2010, Quave and colleagues excavated a total area of 252 m<sup>2</sup> at the site (Fig. 5). The Peruvian National Institute of Culture had previously identified an 8-ha storage complex at the site (Guevara Carazas 2004). Quave further excavated the storage complex and sampled an additional 14-ha area containing domestic structures, an imperial-style pottery production locus, and several corrals (Quave 2012, 2017, 2018; Quave et al. 2013). Of the 29 excavation areas at Cheqoq, we include data from horizontal excavations on six domestic terraces with architectural remains (154 m<sup>2</sup>), which all had excellent preservation and clear stratigraphy. Five of these areas yielded identifiable faunal remains that are assessed here, and a sixth household area (Area G) is included in analysis of food consumption using pottery remains alone. In the domestic areas, we recovered limited post-occupational fill, with Inka-era contexts primarily consisting of



**Fig. 5** Map of areas excavated at Cheqoq with table detailing units excavated and their maximum horizontal extension after test excavations

middens, living floors, storage pits, patios, and interiors of structures. Below occupation floors, we identified sterile clay or domestic remains from a Late Formative (ca. 750 BCE- 300 CE) occupation, which were easily distinguishable from Inka strata.

### Material Correlates of Inka Foodways

Most studies of Inka foodways draw heavily on Spanish Colonial sources, especially seventeenth-century authors such as Bernabé Cobo and Felipe Guaman Poma de Ayala (Bray 2003a, 2003b; Hastorf 2003; Jennings and Duke 2018). Few archaeological studies in Inka Cuzco included intensive study of food remains, and we are left with little comparative material beyond our two sites. For the present, we set up material expectations for eating like an Inka based primarily on idealized ethnohistoric descriptions and documentary indications of production of and access to foodstuffs. This paper serves as a starting point in that refinement and effort to build more local expectations than currently possible in the Cuzco region. Only after multiple Inka heartland sites have been analyzed and published will it be possible to refine the material correlates of Inka diet and cuisine more fully.

In the Inka heartland, excavations and flotation sampling of Inka storehouses have yielded evidence for foodstuffs that were kept in large quantities. These data serve as one line of indirect evidence of Inka foodways. Maize, particularly, was ubiquitous in

Cuzco region storehouses, but researchers have also identified the remains of fruits, potatoes, quinoa, kiwicha, beans, cactus, and the herbs verbena and *muña* (*Minthostachys* sp.) (Covey et al. 2016: Table 7.2). Maize, prepared in multiple forms, was an especially prominent Inka foodstuff (Jennings and Duke 2018:308).

Juan de Betanzos, a chronicler writing in the early Colonial period (sixteenth century), provides indirect details on Inka foodways. He describes how Inka Yupanki had commanded that the leaders of subordinate polities around the Cuzco region bring key foodstuffs from their homelands to fill the new state storehouses being constructed in the Cuzco Basin, including maize, *choclo* (fresh maize), peppers, beans, quinoa, *chuño* (freeze-dried potatoes), dried meat, and other unspecified foods (1996[1550s]:Pt. I, Ch. 12). Furthermore, when Inka Yupanki arranged marriages between men and women from different groups under Inka rule, Betanzos tells how he gave them all the provisions required to start their new lives: maize, dried meat, dried fish, live camelids, and pottery with which to serve the food (1996[1550s]:Pt. I, Ch. 13).

According to later Colonial accounts of the Andean table that are typically consulted to distinguish Inka and non-Inka foodways, quotidian highland Andean diets included mostly soups and stews made with maize, tubers, quinoa, and dried meat (Cobo 1990[1653]:Bk. II, Ch. 5). Christine Hastorf has outlined “Andean luxury foods” as those that are less commonly consumed and which mark special occasions or elevated status (see also Curet and Pestle 2010); they include meat in general, especially when grilled or roasted, and particularly when non-local in origin (Hastorf 2003:547). Some chroniclers, who had not actually seen an Inka meal (e.g., Felipe Guaman Poma de Ayala and Martín de Murúa), reported that the Inka feasted with a wide variety of animal meats including exotic jungle fauna. Archaeological analysis indicates that the Inka elite diet included access to greater quantities and qualities of maize and camelid meat, greater diversity of meats, and use of condiments, (Hastorf 2003; Sandefur 2001), and food prepared in toasted and roasted forms and served on plates rather than bowls (Bray 2003a:9–10). Bray (2003a, 2003b) defines the differentiated elite Inka diet—Inka *haute cuisine*—as above, but also as a diet consisting of greater variety than among the general population.

Based on local ecology in Maras, a quotidian diet in line with Hastorf’s (2003:547) description of basic local cuisine should include tubers, *Chenopodium* (quinoa and kiwicha), maize, and camelid meat. Among communities under Inka administration, camelid herds were controlled by Inka regulations governing their separation into state and local holdings, and prescribing the appropriate times to shear and butcher animals classified by sex and age (Cobo 1979[1653]:Bk. II, Ch. 29). In the case of provisioned households—as has been hypothesized for retainer populations similar to Cheqoq’s (La Lone and La Lone 1987:55–56)—one would thus expect to find archaeological evidence for uniform meat packages corresponding to state-provided subsistence goods. However, there are no known mentions of livestock being provided to retainers, although they are thought to have had houses and improved lands provided to them (Espinoza Soriano 1973, 1983; Villanueva Urteaga 1970:37). The Yucay Valley *yanakuna*—including those at Cheqoq (Covey and Amado González 2008)—probably received parcels of land for their own production from their royal masters, which bordered around the rulers’ and their noble relatives’ lands (Villanueva Urteaga 1970:37), and Cheqoq had its own corrals on site.

In terms of expectations for preparation and consumption of wild fauna, the use of royal hunting lands was restricted to the rulers and their family (Cieza de León

1864[1553]:288; Niles 1999:145–146). Thus, we do not expect to find much evidence for consumption of wild faunal taxa among households at Yunkaray or Cheqoq. Taxonomic variety should be low at both sites.

With regard to domesticates, we expect to find broad and even access to camelid meat at Inka Cheqoq, with a marked, uniform pattern of herd culling from the Inka's herds. This should be observed through even distributions of young and older camelids, and even distributions of meaty portions of the animal. The quality of camelid meat should be lower at Cheqoq than at Yunkaray, where we hypothesize there to be greater herd management autonomy. If there are pronounced intrasite differences in access to meat at Yunkaray, that would contradict our earlier interpretation of the site as lacking in evidence for the ethnohistorically documented marriage alliances with Cuzco Inkas. Uneven access to quality camelid meat would indicate differential connections to Inka nobles.

While the above material remains are indicators of aspects of status at the two sites, we also evaluate faunal remains and pottery as evidence of the material expressions of identity. Because Inka cuisine reportedly includes greater emphasis on roasted meats than among non-Inkas, we expect the sites and households with greater acceptance of Inka foodways to reflect that in higher proportions of burned bone. Vessel forms (i.e., bowls versus plates) are also assessed to determine tendencies toward serving soups and stews versus roasted meat and vegetal foodstuffs. Finally, patterns of the styles of pottery (Cuzco-Inka, local Cueva Moqo, or otherwise) within and between sites is treated as a material correlate of Inka cultural affinities.

## Analysis Methods

In order to identify evidence of where changes did or did not occur in the operational chain of food processing and consumption, and to evaluate influences from state elites and institutions versus local agency, we used a suite of analytical techniques. We studied excavated faunal and ceramic remains from both Yunkaray (ca. 1050–1450) and Cheqoq (ca. 1470s or 1490s to 1530s). Faunal remains were recovered by dry screening with 1/8" (3.2 mm) mesh and wet screening 10-liter bulk samples from each stratum with graduated sieves up to 63- $\mu$ m mesh. Pottery recovered with 1/8" (3.2 mm) mesh that was "diagnostic" (including anything other than an undecorated body sherd that could not be matched to other fragments of a single vessel) was analyzed for form, technological attributes, and decoration style.

Zooarchaeological analysis was conducted by Kennedy and Quave for Cheqoq and by Kennedy for Yunkaray. Vertebrate remains were identified to the lowest taxonomic level possible using reference drawings and comparative collections in Cuzco and Lima. Age of fauna was determined by fusion, dentition, and wear patterns among mammals (Getty 1975; Zuck 1938), while birds in particular were assigned age by fusion, porosity, and ossification (de France 2005). Three mammal age categories were employed: juvenile, sub-adult, and adult (de France and Hanson 2008:316). Among camelids, juveniles are those less than six to eight months of age, with unfused epiphyses and deciduous dentition, while sub-adults exhibit partial epiphyseal fusion and some permanent dentition, and adults are older than a year and a half with fused epiphyses and permanent dentition.

Units of quantification included number of identified specimens (NISP), minimum number of elements (MNE), minimum number of individuals (MNI), minimum animal units (MAU), and weights (Klein and Cruz-Urbe 1984; Reitz and Wing 2008). We

determined MNE by assessing element portion, side, age, and pathology by provenience to count the number of possible bones of a particular type from an identified taxon. MNI was determined by anatomical side, symmetry, element section, fusion (Kent 1982; Miller 2003; Reitz 1988) and dental eruption stages (Wheeler 1982), size, and provenience. MAU is an alternative to MNI that attempts to estimate the number of portions of an animal present and is especially useful in counting parts separated by butchery (Binford 1978). Anatomical groupings were assigned according to common butchery patterns for large ungulates: head (skull, mandible, and teeth), axial (ribs and vertebrae), forequarter (scapula, humerus, radius, and ulna), hindquarter (os coxae, sacrum, femur, patella, and tibia), forefoot (carpal and metacarpals), hindfoot (tarsals and metatarsals), and foot (metapodials and phalanges). Anatomical groupings were split into high meat yield (axial, forequarter, and hindquarter), and low yield (head, forefoot, hindfoot, foot). In addition to taxonomic and anatomical identifications, taphonomic attributes were also recorded for each specimen; these included butchery patterns, burning, breakage, working, and scavenger gnawing.

For both sites, ceramic analysis consisted of classifying style, form, size, vessel portion (e.g., rim, neck, body, handle), and technological attributes for every “diagnostic” sherd recovered in the sampled household contexts. Diagnostic fragments comprise recognizable vessel portions (e.g., rims), as well as pieces decorated with paint, colored slip, application, or incision. For each context, we recorded the number of identified sherds from each ware type and vessel form.

## Food Choices at Yunkaray and Cheqoq

The total number of identified faunal specimens (NISP) from Yunkaray was 1631 with a total weight of 3237.5 g. At Cheqoq, the sample analyzed here included a total of 5230 identified faunal specimens weighing 8992.8 g (Table 1). Local fauna found in diets on the Maras Plain in the late prehispanic period included domesticated camelids and guinea pig, as well as deer, small rodents, large rodents such as *viscacha*, and rare birds, reptiles, felids, and canids. Nonlocal fauna found in Maras Plain faunal assemblages include lowland peccary and monkey. Though fish bones persist in the local archaeological record since at least the Formative period two thousand years ago (e.g., Davis 2012), our excavations in Maras have not identified fish bone. At both Yunkaray and Cheqoq, faunal assemblages primarily consisted of camelids (of specimens identified to at least family level, using bone weight: 97.98 wt% at Yunkaray, 98.14 wt% at Cheqoq) and guinea pigs, as well as a large percentage of even-toed ungulates (which probably included camelids and deer).

Among non-domesticates, both sites yielded minor percentages of small rodents, canids (a possible domesticate), peccary, and bird (though some ducks are domesticated). At Yunkaray, we identified at least one reptile, a taxon not identified at Cheqoq, whereas Cheqoq produced Muscovy duck and *viscacha*, unlike at Yunkaray. Wild remains appeared infrequently and unevenly at both sites. Cheqoq’s retainer population might have violated Inka restrictions on hunting, or they might have enjoyed occasional hunting access in areas near their village or fields.

Although Yunkaray’s occupation (400 years) was much longer than that of Cheqoq (less than 100 years), species richness (Reitz and Wing 2008:110) was higher at

**Table 1** Taxonomic identifications at Yunkaray and Cheqoq

Taxon	Common Name	Yunkaray		Yunkaray		Cheqoq		Cheqoq	
		NISP	%	MNI	%	NISP	%	MNI	%
Rodentia	Rodents	6	0.4	4	4.3	86	1.6	25	10.2
<i>Cavia porcellus</i>	Domestic guinea pig	45	2.8	19	20.7	34	0.7	21	8.5
<i>Lagidium peruanum</i>	Viscacha	–	–	–	–	11	0.2	2	0.8
Canidae	Canids	1	0.1	1	1.1	1	0	1	0.4
Felidae	Felids	–	–	–	–	1	0	1	0.4
Platyrrhini	New World Monkey	–	–	–	–	1	0	1	0.4
Artiodactyla	Even-toed ungulates	136	8.3	18	19.6	357	6.8	91	37
Tayassuidae	Peccary	1	0.1	1	1.1	1	0	1	0.4
Camelidae	Camelids	235	14.4	44	47.8	593	11.3	99	40.2
Cervidae	Deer	1	0.1	1	1.1	–	–	–	–
Small Mammal uid	Unidentified Small Mammal	20	1.2	–	–	–	–	–	–
Mammal uid	Unidentified Mammal	1177	72.2	–	–	4135	79.1	–	–
<i>Total Mammalia</i>		<i>1622</i>	<i>99.4</i>	<i>88</i>	<i>95.7</i>	<i>5220</i>	<i>99.8</i>	<i>242</i>	<i>98.4</i>
<i>Cairinha moschata</i>	Muscovy duck	–	–	–	–	1	0	1	0.4
Aves uid	Unidentified Bird	7	0.4	3	3.3	9	1.7	3	1.2
<i>Total Aves</i>		<i>7</i>	<i>0.4</i>	<i>3</i>	<i>3.3</i>	<i>10</i>	<i>0.2</i>	<i>4</i>	<i>1.6</i>
Reptilia uid	Unidentified Reptile	2	0.1	1	1.1	–	–	–	–
<i>Total Reptilia</i>		<i>2</i>	<i>0.1</i>	<i>1</i>	<i>1.1</i>	<i>–</i>	<i>–</i>	<i>–</i>	<i>–</i>
<i>Vertebrata (weight in grams)</i>	Unidentified Vertebrate	<i>10.2</i>							
<b>Sample Total</b>		<b>1631</b>	<b>100</b>	<b>92</b>	<b>100</b>	<b>5230</b>	<b>100</b>	<b>246</b>	<b>100</b>

Unidentified remains were recorded as “vertebrata” and were collectively weighed without being counted. Italicized categories are those for which taxonomic identification was possible to the species level

Cheqoq. There were more types of faunal taxa, indicating more diversity in dietary choices at the Inka site, and greater use of wild, hunted fauna. Such a finding contradicts the assumption that retainers consumed restricted diets without wild fauna from nearby Inka lands. Household-level results suggest that faunal diversity does not correspond to other markers of status and identity. At Yunkaray, a seemingly lower-status hillside household (UE14; see Quave et al. 2018) held the largest number of identified taxa from wild fauna, with canid, peccary, and deer present. A high-status household (UE8) yielded bird, reptile, and guinea pig in a burned deposit over a human burial. Thus, it was not clear that Inka-affiliated households ate a more diverse diet. At Cheqoq, a household with few high-status goods and informal construction yielded the greatest species richness of faunal taxa (Area M), including *viscacha*, canid, and bird remains. While some of the faunal



remains may not have resulted from outright human consumption, they were most likely from ritualized food offerings (Salas Carreño 2016:825).

To compare the quality of meat consumed and to assess herd management autonomy and dietary preferences, we also examined age-at-death profiles and meat yields by skeletal portion at each site, heeding de France’s (2009:123) caution against placing too much weight on distinctions of skeletal portions, as cranial elements can be extra fatty and metapodials contain tasty marrow. An older age-at-death profile would indicate that camelids were utilized in various economic and social functions prior to consumption of their meat (as pack animals, for fiber, and for producing dung for fuel). A younger age-at-death profile would indicate camelids raised primarily for meat consumption, which would be a comparatively more wasteful use of the resource. We posit that higher status households would have access to larger herds and thus could, if desired, preferentially cull immature camelids for their tender, tasty meat. Differences in access to low-yield and high-yield elements of the camelid would also indicate husbandry autonomy and economic strategies at each site, as well as potential internal distinctions in each community.

At Yunkaray, a greater proportion of younger meat was consumed (38% juvenile and subadult) compared to Cheqoq (20% juvenile and subadult; Table 2), yet comparison of the distributions of juvenile, subadult, and adult camelids between the sites did not indicate statistically significant differences (Kolmogorov-Smirnov  $Z = 1.1, p = .17$ ; Klein 1978; Price et al. 2016). At both villages, we see an overall emphasis on secondary products, with more herd culling in adulthood than young ages when meat would be tenderer and animals would have yet to perform many economic functions.

In comparing households *within* Yunkaray, there are statistically significant differences in camelid age-at-death profiles when divided as young (juvenile and subadult) and old (adults) ( $\chi^2 = 13.46, df = 3, p = .004$ ). At Yunkaray, “lower status” hillside households (UE3 and UE14) consumed older camelids, whereas hilltop “higher status” households (UE2 and UE8) consumed younger, tenderer camelid meat. By contrast, at Cheqoq there were comparable mortality profiles across households ( $\chi^2 = 4.93, df = 4, p = .29$ ). These results suggest that within each site, there were distinct practices in herd management corresponding to distinctions in social organization relative to status. The retainers living at Cheqoq had consistent access to camelids, whether by maintaining communal herds or through regular Inka provisioning from royal flocks.

Assessment of meat yields by skeletal portion was completed with the measure MAU or minimum number of animal units (see above; Binford 1978). The purpose of calculating MAU rather than NISP for the analysis of meat yields was to eliminate the

**Table 2** Camelid age-at-death (NISP) profiles by site and household

Unit	Yunkaray				Yunkaray Totals	Cheqoq					Cheqoq Totals
	2 (hilltop)	3 (hillside)	8 (hilltop)	14 (hillside)		H	M	N	Q	R	
Juvenile	14	–	10	6	30 (33%)	21	13	16	4	4	58 (19%)
Sub-Adult	2	–	–	3	5 (5%)	2	2	–	–	–	4 (1%)
Adult	22	9	4	22	57 (62%)	70	54	60	17	41	242 (80%)
					92 (100%)						304 (100%)

biases of using NISP to study skeletal frequencies. Just as we found with camelid mortality profiles, we identified little difference in the meat yield proportions between Yunkaray and Cheqoq ( $\chi^2 = 1.69$ ,  $df = 1$ ,  $p = .19$ ; Table 3).

At Yunkaray, there are higher percentages of high-yield portions in hilltop higher-status houses and lower percentages in hillside lower-status houses, though these were not statistically significant differences ( $\chi^2 = 4.89$ ,  $df = 3$ ,  $p = .18$ ). At Cheqoq, intrasite differences are also not pronounced or statistically significant (Fisher exact = .211,  $p > .05$ ). The households at both Yunkaray and Cheqoq previously described as having the greatest taxonomic diversity are *not* those with the greater high-yield meat frequencies. In considering camelid herd management, it appears that both communities distributed meat fairly evenly across diverse types of households, although there are significant distinctions in the consumption of young, tender meat by high-status hilltop households at Yunkaray. Cheqoq's diverse retainers ate consistent diets from one household to another, even if some added wild animals from nearby lands to augment a diet that primarily consisted of camelid and guinea pig meat.

## Food Preparation and Serving at Yunkaray and Cheqoq

To further elucidate the performance of identity and status and to disencumber them from traditional notions of "acculturation" at these two villages, we examine meat preparation techniques and serving vessels. Having previously established that there were similarities in diets at the two settlements, we evaluate whether there are differences in methods of preparing and serving foodstuffs. Inka meals reportedly included more roasted meat and maize and a greater variety of dishes than the more quotidian stews and soups associated with highland Andean peasants. A shift from liquid meals to roasted, drier meals should involve a concomitant shift toward the use of plates rather than bowls in serving vessel assemblages. Moreover, an elevated food service would include greater emphasis on the communication of status and identity through visual presentation (Bray 2003b:21; Jennings and Duke 2018:311). Thus, an ideal Inka noble assemblage of the remains of food preparation and consumption would include burned bone, more plates than bowls, and decorated Inka-style serving vessels.

If burned bone is a good indicator of the portion of bones subjected to open fire for roasting, then there are differences in cuisine between sites. At Yunkaray, there are higher frequencies of burned bone (NISP burned = 786 [55.2%]; Table 4) compared to Cheqoq (NISP burned = 546

**Table 3** MAU of high- and low-yield elements by site and by household

Units	Yunkaray				Yunkaray total	Cheqoq					Cheqoq total
	2 (hilltop)	3 (hillside)	8 (hilltop)	14 (hillside)		H	M	N	Q	R	
Low yield	10	7	3	12	32	13	17	8	7	7	52
High yield	6	2	5	3	16	14	6	10	4	8	42
Total MAU	16	9	8	15	48	27	23	18	11	15	94
% High yield	37.5	22.2	62.5	20.0	33.3	51.9	26.1	55.6	36.4	53.3	44.7

**Table 4** Proportions of burned bone by site and household

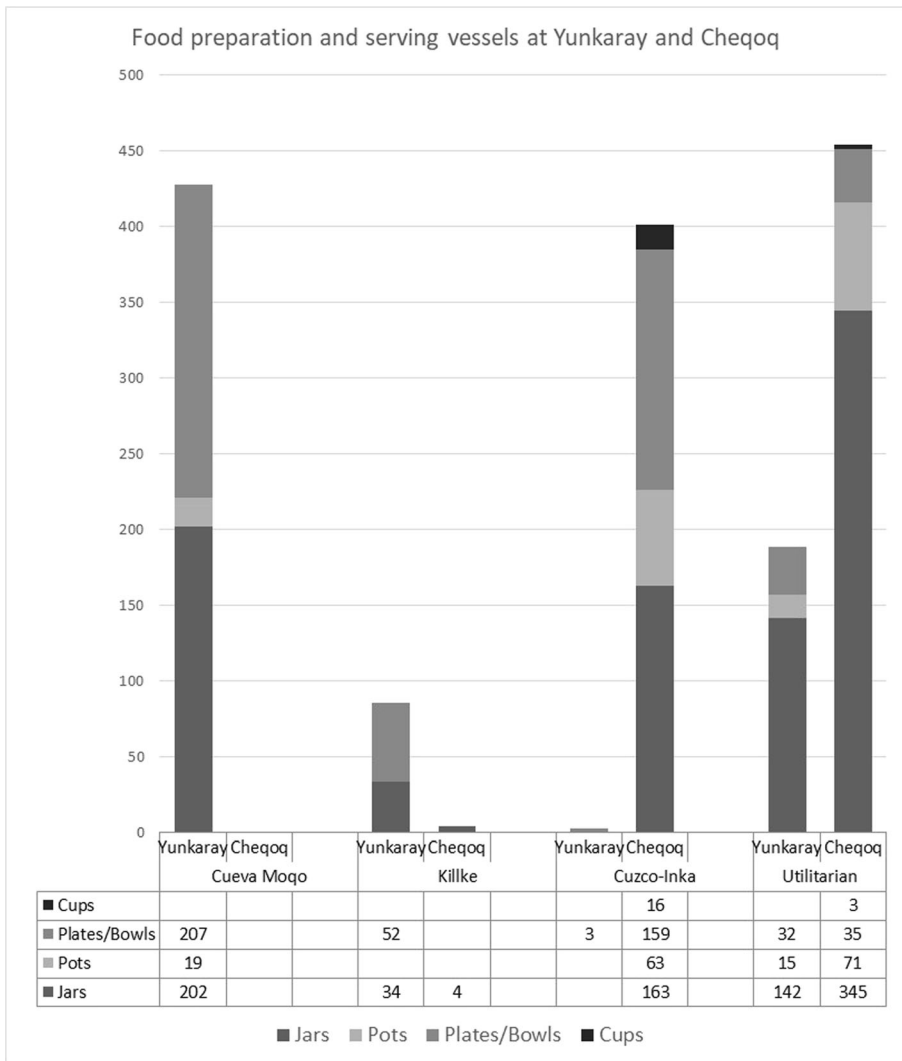
Units	Yunkaray				Yunkaray Totals	Cheqoq					Cheqoq Totals
	2 (hilltop)	3 (hillside)	8 (hilltop)	14 (hillside)		H	M	N	Q	R	
NISP burned	348	63	23	352	786	189	91	173	42	51	546
NISP total	672	205	100	448	1425	1842	1173	1265	562	372	5261
% burned of each UE	51.8	30.7	23.0	78.6	55.2	10.3	7.8	13.7	7.5	13.7	10.4

[10.4%]; Fisher exact = 0,  $p < .05$ ). Roasted meat was perhaps consumed with greater frequency at a site that privileged local practices in other respects, although we should also be wary of disposal practices perhaps influencing burning. A potential source of equifinality with burning might be found if abandonment of the site involved a burning event that resulted in these high frequencies (and we do have tentative evidence elsewhere for a terminal, selective burning event at Yunkaray [Quave et al. 2018:341]).

Proportions of burned bone can be correlated with the style and form of pottery used to serve and consume food, as Inka and local pottery types are highly visible materials that provide insight into daily performances of serving, sharing, and consuming (Bowser 2000; Bray 2003a:5; Pitts 2007). Decorated pottery style and form communicate social identity differences and integration (Hubert 2016) through daily life interactions (Robin 2013), whether households used local Cueva Moqo wares (Quave et al. 2018), Cuzco-Inka polychromes (Quave 2017; Rowe 1944), or less pronounced and less uniform non-local styles (as seen among some households at Cheqoq; Quave 2012:303–313). Serving vessels, in particular, provide insight into the “household consumption ritual” (Smith 1987:312–313) and the performance of identity. The cumulative picture of a household’s decorated serving wares reflects the multiple identities and statuses of a whole household and can at least be used to evaluate material affinities with Inka elites.

Among both decorated and undecorated vessels, the proportions of bowls and plates between Yunkaray and Cheqoq differ, which points to distinctions in food consumption. The higher proportion of bowls at Yunkaray (97% bowls and 3% plates;  $N = 310$ ) indicates greater emphasis on soups and stews and thus greater distance from ideal noble Inka food practices. At Cheqoq, there was a higher proportion of plates (39% bowls and 61% plates;  $N = 258$ ) among serving vessels in households, indicating more frequent consumption of dry foodstuffs such as roasted meat and maize (Fisher exact  $< .00001$ ,  $p < .05$ ), which is associated with elite Inka foodways.

Probing further into differences in serving and consumption practices, we review differences in styles of decorated serving vessels at each site. At Yunkaray, the distribution of vessel forms in highly visible decorated styles produced modest distinctions between households: hilltop households contained relatively more Cueva Moqo decorated jars, suggesting greater emphasis on storing and serving drinks like *chicha*, whereas hillside households yielded higher frequencies of Cueva Moqo decorated drinking bowls (see Quave et al. 2018; Fig. 6). We also found that houses atop natural mounds contained larger-scale serving vessels decorated with camelids. The lack of Inka pottery at Yunkaray



**Fig. 6** Frequencies of the most common pottery styles on the Maras Plain in all horizontally excavated households at each site, divided by vessel type. Jars were used for preparing, storing, and serving *chicha*, among other tasks; pots are related to heating, cooking, and serving soupy meals; and plates, bowls, and cups are used by individuals during daily and special household consumption events

contrasts markedly with the high fidelity to Inka serving vessel styles and forms at Cheqoq. The most frequently found style at Cheqoq was the Cuzco-Inka imperial style (71% of more than 5000 diagnostic sherds in households; Quave 2017:605).

## Discussion

Colonial Inka noblemen identified a population living on the Maras Plain that was reportedly linked to and subordinate to Cuzco through marriage alliances over a long

period before imperial expansion. However, at Yunkaray, the probable Ayarmaka center, we find no clear evidence linking high-status or low-status households to Inka elites. Rather, excavations at Yunkaray reveal the very local source of Ayarmaka identity, previously shown through the prevalence of a distinct and widely used ceramic style and an absence of trade goods typically found in places linked to the Inkas (Quave et al. 2018). The Ayarmaka appear to be more marginalized economically (*vis-à-vis* an absence of long-distance trade) and less influenced by Inka markers of identity than ethnohistoric sources claim. Many of the assumptions made about diet and cuisine in the households of Inka allies-cum-rivals were not confirmed through excavation.

At Cheqoq, we also find that the archaeological record contrasts with Colonial testimony. Although the consistency of diet across households meets expectations, the widespread and intense adoption of Inka tablewares suggests a high level of Inka material culture use among permanent retainers from populations who had recently resisted Inka domination. One important consideration is how to distinguish decisions made by consumers at these villages from the material signatures of state provisioning or social re-engineering (Belotti López de Medina et al. 2016), a salient issue at our sites, given the proximity to Inka storage facilities (Covey et al. 2016). However, we argue that residents of a site where pottery production took place had some degree of choice regarding whether or not to use Inka vessels.

Based on ethnohistoric data, we expected greater dietary diversity and more exotic, wild meats among higher status and more Inkanized households. At Yunkaray, there was representation of wild fauna in minor quantities in multiple households, yet there was greater species richness at Cheqoq, a retainer site. This dietary diversity provides another line of evidence supporting our finding that the retainers were more acculturated to Inka lifeways than was assumed prior to excavating the site. At Cheqoq, all identified wild birds and mammals were recovered in Areas M and N, except a possible peccary mandible fragment in Area Q. It is possible that retainer households at Cheqoq occasionally hunted wild species to augment their diet of local camelids and guinea pigs. Alternatively, the nobility to whom they were attached could have provided the meat in reciprocal acknowledgement of estate labor service.

Some predictions about camelid herding and meat distribution were met: the Yunkaray herd was butchered at a younger age, perhaps due to the animals serving fewer economic roles before an early death. However, the expectation that there be differences in meat quality between Cheqoq and Yunkaray due to differences in economic autonomy was not met; nor were there differences in meat yields by skeletal element within each settlement. The archaeological record indicates that assumptions about herd management based on status and identity must be adjusted. Maintaining one's own herds—as at Yunkaray—does not appear to result in differences in diet when compared with retainers to the nobility.

We had expected to find greater emphasis on roasted foods in places practicing elite Inka cuisine—specifically with regard to frequencies of charred bone and plates versus bowls. While the frequency of burned bone was higher at Yunkaray, there was a comparatively greater frequency of plates than bowls at Cheqoq. One possible explanation is that the Yunkaray diet emphasized both roasted meat and soups made without bones, while the Cheqoq diet featured some roasted meat and fewer soupy meals requiring bowls. In these ways, the retainers of Cheqoq appear to be more acculturated to Inka foodways than the Inka rivals at Yunkaray.

Residents of Yunkaray did not use Inka-style tablewares, perhaps because they did not engage in the same kinds of social interactions with Cuzco that brought Killke and Inka pottery to their contemporaneous neighbors beyond Maras. They either did not encounter Inka tablewares through cultural exchange or, if they did, they rejected them or were not allowed access to them. Had they desired to incorporate Inka tablewares, they might have imitated the style in local production loci, but they did not. The people of Yunkaray adopted a local identity and were not visibly engaged with the Inka economy, contrary to ethnohistorically based expectations (Quave et al. 2018).

The percentages of serving vessels and food preparation vessels decorated in non-Inka styles (unidentified types that may be non-local) were in the single digits across the entirety of Cheqoq's domestic excavations, while the majority of household wares were Inka imperial style. Frequencies of Cuzco-Inka pottery at nearby Inka period domestic sites were much lower: 18% at Pukara Pantillijlla and 24% at Ak'awillay (Quave and Covey 2015). Intensive and nearly exclusive use of imperial-style pottery within a settlement of foreign-born, forcibly migrated retainers indicates that, although Cheqoq's residents originated from non-Inka ethnic groups and were often from rebellious regions, they took on some aspects of Inka identity. We interpret the presence of Inka material culture at Cheqoq as a sign that Inka elites promoted a shared identity with those who served as an unfree source of royal labor, complicating ethnohistorically based models of retainer identity. With regard to the question of status, there are few indications of internal status distinctions at either site.

## Conclusion

At the advent of Inka imperial expansion, the economically marginalized people of Yunkaray had a community with a highly localized identity and strong internal ties, with weaker links to the Inkas of Cuzco than expected based on ethnohistory. The lack of cultural exchange with Cuzco indicates that the Ayarmakas emphasized an identity as local herders, which contrasts with Inka self-promotion of maize farmers possessing far-reaching socioeconomic ties. Generations later, the retainers forcibly resettled at Cheqoq were people who had resisted becoming Inka subjects and were thus brought into the heartland stripped of their identities and social networks. They experienced a process of becoming Inka in ways perhaps prescribed by their royal masters: they could not fully access Inka lifeways, but they did consume some Inka foods using highly visible emblems of the empire as tablewares. Furthermore, the residents of Cheqoq did not engage with diet and cuisine in diverse ways: there are few indicators of foodways from distinct places of origin. Retainers were brought to the heartland from the periphery and were assigned new identities that they had limited power to negotiate: they produced wealth for a royal kin group but did not have access to all the goods they produced (Quave 2012).

Households at these settlements generated similar practices under the conditions of resistance or differentiation (Yunkaray) and coerced acculturation (Cheqoq); acculturation at Cheqoq was coerced in the sense that the retainers were removed from their homelands and their social ties and obligated to enter into an unfair labor situation. Often studies of empires assume a lockstep progression toward an increasingly acculturated and "civilized" subject population (the "Romanization" critiqued by Woolf 1997; Ghisleni 2018). In the Inka empire, we must avoid committing the



same error in analyses of the distribution of Inka architecture and pottery as signifiers of a region's conversion to Inka identity. We should also avoid divorcing the study of identity from status, while being mindful we do not collapse those dimensions of lived experience onto a single axis. What we propose instead is to take a holistic and skeptical approach to acculturation. We must include foodways as an essential factor in identity formation, even though they are more difficult to study archaeologically, and we must consider that change is multidirectional and multi-causal. Foodways studies in imperial and colonial settings make the greatest contributions when they examine transitions and continuities at the level of specific households and situate food choices within larger social patterns. In particular, examination of how food can foster social cohesion through the acts of procurement, preparation, and consumption (e.g., Franklin 2001) provides fruitful avenues for reconstructing the larger picture of the formations and maintenance of status and identity vis-à-vis the dominant social forces of empires and colonizers.

Comparison of foodways in pre-imperial and Inka imperial Maras demonstrates that the people living near the Inka with marriage alliances (Ayarmakas at Yunkaray) and noble attachments (retainers at Cheqoq) do not conform neatly to archaeological expectations of domination and resistance. Maintenance of local forms of identity and status at Yunkaray reveal a continuity and cultural resilience in the face of a world changing dramatically around them during Inka development. The Ayarmakas, who supposedly maintained multi-generational alliances with Cuzco, were not those who most acculturated to the Inka identity. However, peoples conquered and forcibly migrated to the Inka imperial core and resettled at Cheqoq did adapt Inka foodways in ways limited by their Inka masters. Yet even the process of acculturation to Inka identity would never culminate in subjects "becoming Inka," which was a status reserved for the nobility of the Cuzco Basin (Kosiba 2012). Challenging the assumptions attendant in identifying the reach of empire rather than capacitates multifaceted understanding of the processes endured by diverse and marginalized populations. The results presented here support the recent push in culture contact studies to move away from top-down models of acculturation and bottom-up notions of resistance and instead toward a more multidirectional understanding of social identities and status categories within the development of pluralistic states.

**Acknowledgements** Regional survey work of the Maras area and nearby Urubamba Valley were funded by grants to the third author by the National Science Foundation (BCS-0342381) and the Heinz Grant for Latin American archaeology. The collaboration of co-directors Wilfredo Yépez, Miriam Aráoz Silva, and Brian Bauer is gratefully acknowledged. Excavations by the first author at Cheqoq were supported by the National Science Foundation (Dissertation Improvement Grant BCS-938453), the National Geographic Society Committee for Research and Exploration (Young Explorers Grant 8691-09), the Fulbright Institute for International Education, and Southern Methodist University. Excavations were permitted by the Instituto Nacional de Cultura-Cusco (Resolución Nacional 1579/INC, 2010). We thank Cheqoq co-directors René Pilco Vargas and Stephanie Pierce Terry. Dartmouth College provided support for the preliminary mapping of Yunkaray, while funding for the 2015 excavation season came in the form of grants to the first author from the National Geographic Society (9500-14) and the Curtiss T. & Mary G. Brennan Foundation. Beloit College, the Manger Family Fund, and the Anthropology Department Student Enrichment Fund supported the excavation and laboratory analysis. The University of Texas at Austin supported fieldwork and laboratory analysis, as well as radiocarbon dating excavation contexts. We thank co-director Karen Durand Cáceres and members of the community of Maras. Excavations were conducted under Resolución Directoral (permit number) 623-2015-DDC-CUS/MC and export of AMS samples was possible thanks to Resolución Viceministerial No. 006-2016-VIMPCIC-MC. We also thank Sarah Kennedy and Scotti Norman for their editorial work on this issue, and express appreciation for helpful reviewer comments from Tamara Bray and Carla Hernández Garavito.

**Publisher's Note** Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

## References

- Bauer, B. (1992). *The Development of the Inca State*. University of Texas Press, Austin
- Bauer, B. (2004). *Ancient Cuzco: Heartland of the Inca*. University of Texas, Austin.
- Brian, S., Bauer, R. and Covey A. (2002). Processes of State Formation in the Inca Heartland (Cuzco, Peru). *American Anthropologist* **104**(3): 846–864.
- Belotti López de Medina, C., López Geronazzo, L., and Otero, C. (2016). At the feet of the fortress: Analysis of Inka period (ca. AD 1430-1536) Archaeofaunal assemblages from residential unit 1 (RU1), Pucara de Tilcara (Jujuy, Argentina). *PLoS ONE* **11**(10): 1–24.
- Betanzos, J. D. (1996[1557]). *Narrative of the Incas*. Hamilton, R. and Buchanan, D, (trans.), University of Texas Press, Austin.
- Binford, L. (1978). *Nunamiut Ethnoarchaeology*. Academic Press, New York.
- Bowser, B. (2000). From pottery to politics: an ethnoarchaeological study of political factionalism, ethnicity, and domestic pottery style in the Ecuadorian Amazon. *Journal of Anthropological Method and Theory* **7**(3): 219–248.
- Bray, T. (2003a). Inka pottery as culinary equipment: food, feasting, and gender in Imperial state design. *Latin American Antiquity* **14**(1): 3–28.
- Bray, T. (2003b). To dine splendidly: imperial pottery, commensal politics, and the Inca state. In Bray, T. (ed.), *The Archaeology and Politics of Food and Feasting in Early States and Empires*. Kluwer Academic/Plenum, New York, pp. 93–142.
- Brubaker, R. and Cooper, F. (2000). Beyond "identity". *Theory and Society* **29**: 1–47.
- Cieza de León, Pedro de. (1864[1553]). *The Travels of Pedro de Cieza de León Contained in the First Part of his Chronicle of Peru*. Markham, C. (trans. and ed.). Burt Franklin, New York.
- Cobo, B. (1979 [1653]). *History of the Inca Empire: An Account of the Indians' Customs and their Origin, Together with a Treatise on Inca Legends, History, and Social Institutions*. Hamilton, R. (trans.). University of Texas Press, Austin.
- Cobo, B. (1990 [1653]). *Inca Religion and Customs*. Hamilton, R. (trans.). University of Texas Press, Austin.
- Covey, R. (2006). *How the Incas Built their Heartland: State Formation and the Innovation of Imperial Strategies in the Sacred Valley, Peru*. University of Michigan Press, Ann Arbor.
- Covey, R. ed. (2014a). *Regional Archaeology in the Inca Heartland: The Hanan Cuzco Surveys*. University of Michigan Museum of Anthropology, Ann Arbor.
- Covey, R. (2014b). Local populations, royal lineages, and state entities in the Inca occupation of the Xaquixaguana Plain. In Covey, R. (ed.), *Regional Archaeology in the Inca Heartland: The Hanan Cuzco Surveys*. University of Michigan Museum of Anthropology, Ann Arbor, pp. 153–174.
- Covey, R. (2015). Kinship and the Inca imperial core: multiscalar archaeological patterns in the Sacred Valley (Cuzco, Peru). *Journal of Anthropological Archaeology* **40**: 183–195.
- Covey, R. (2018). The spread of Inca power in the Cuzco region. In Alconini, S. and Covey, R. (eds.), *The Oxford Handbook of the Incas*. Oxford University Press, New York, pp. 55–69.
- Covey, R. and Amado González, D. (2008). *Imperial Transformations in Sixteenth-Century Yucay, Peru*. Museum of Anthropology. University of Michigan, Ann Arbor.
- Covey, R. and Elson, C. (2007). Ethnicity, demography, and Estate management in sixteenth-century Yucay. *Ethnohistory* **54**(2): 303–335.
- Covey, R., Araújo Silva, M., and Bauer, B. (2008). Settlement patterns in the Yucay Valley and neighboring areas. In Covey, R. and Amado González, D. (eds.), *Imperial Transformations in Sixteenth-Century Yucay, Peru*. Museum of Anthropology. University of Michigan, Ann Arbor, pp. 3–17.
- Covey, R. A., Quave, K. E., and Covey, C. E. (2016). Inca storage systems in the imperial heartland (Cuzco, Peru): risk management, economic growth, and political economy. In Manzanilla, L. R. and Rothman, M. S. (eds.), *Storage in Ancient Complex Societies: Administration, Organization, and Control*. Routledge, New York, pp. 167–188.
- Curet, L., and Pestle, W. (2010). Identifying high-status foods in the archeological record. *Journal of Anthropological Archaeology* **29**: 413–431.

- Cusick, J. (1998). Historiography of acculturation: an evaluation of concepts and their application in archaeology. In Cusick, J. G. (ed.), *Studies in Culture Contact: Interaction, Culture Change, and Archaeology*. Center for Archaeological Investigations, Southern Illinois University, Carbondale, pp. 126–145.
- Davis, A. (2012). *Yuthu: Society and Ritual in an Early Andean Village*, Memoirs of the Museum of Anthropology. Museum of Anthropology, University of Michigan, Ann Arbor.
- de France, S. (2005). Late Pleistocene marine birds from southern Peru: distinguishing human capture from El Niño-induced windfall. *Journal of Archaeological Science* **32**(8): 1131–1146.
- de France, S. (2009). Zooarchaeology in complex societies: political economy, status, and ideology. *Journal of Archaeological Research* **17**: 105–168.
- de France, S., and Hanson, C. (2008). Labor, population movement, and food in sixteenth-century Ek Balam, Yucatán. *Latin American Antiquity* **19**(3): 299–316.
- de Gamboa, Sarmiento P. (1907[1572]). *History of the Incas*. Markham, C. (trans., ed.). Dover, New York.
- Deagan, K. (2013). Hybridity, identity, and archaeological practice. In Card, J. (ed.), *The Archaeology of Hybrid Material Culture*. Center for Archaeological Investigations, Southern Illinois University, Carbondale, pp. 260–276.
- Dietler, M. (2010). *Archaeologies of Colonialism: Consumption, Entanglement, and Violence in Ancient Mediterranean France*. University of California Press, Berkeley.
- Espinoza Soriano, W. (1973). Colonias de mitmas multiples en Abancay, siglos XV y XVI: Una información inédita de 1575 para la etnohistoria andina. *Revista del Museo Nacional* **XXXIX**: 225–299.
- Espinoza Soriano, W. (1983). Los mitmas plateros de Ishma en el país de los Ayarmaca, siglos XV-XIX. *Boletín de Lima* **30**(5): 38–52.
- Franklin, M. (2001). The archaeological and symbolic dimensions of soul food: race, culture, and Afro-Virginian identity. In Orser, C. E. Jr. (ed.), *Race and the Archaeology of Identity*. University of Utah Press, Salt Lake City, pp. 88–107.
- Getty, R. (1975). *Sisson and Grossman's the Anatomy of the Domestic Animals, Volume 1, Fifth Edition*. WB Saunders, Philadelphia.
- Ghisleni, L. (2018). Contingent persistence: continuity, change, and identity in the Romanization debate. *Current Anthropology* **59**(2): 138–166.
- Guevara Carazas, L. (2004). *Informe Final de Investigación Arqueológica 2004: Conjunto Arqueológico Qolqas de Cheqoq-Maras*. Instituto Nacional de Cultura, Cusco.
- Hall, S. (1990). Cultural identity and diaspora. In Rutherford, J. (ed.), *Identity: Community, Culture, Difference*. Lawrence and Wishart, London, pp. 222–237.
- Hastorf, C. (2003). Andean luxury foods: Special food for the ancestors, deities and the élite. *Antiquity* **77**: 545–554.
- Hastorf, C. A. (2016). *The Social Archaeology of Food: Thinking about Eating from Prehistory to the Present*. Cambridge University Press, Cambridge.
- Hubert, E. (2016). Figuring identity in everyday life. *Journal of Anthropological Archaeology* **44**(Part A): 1–13.
- Jaffe, Y., Wei, Q., and Zhao, Y. (2018). Foodways and the archaeology of colonial contact: rethinking the Western Zhou expansion in Shandong. *American Anthropologist* **120**(1): 55–71.
- Jennings, J. and Duke, G. (2018). Making the typical exceptional: the elevation of Inca cuisine. In Alconini, S. and Covey, A. (eds.), *The Oxford Handbook of the Incas*. Oxford University Press, New York, pp. 303–322.
- Jones, S. (1997). *The Archaeology of Ethnicity: Constructing Identities in the Past and Present*. Routledge, New York.
- Kent, J. (1982). *The Domestication and Exploitation of the South American Camelids: Methods of Analysis and their Application to Circum-Lacustrine Archaeological Sites in Bolivia and Peru*. Doctoral dissertation, Washington University, St. Louis, MO.
- Klein, R. (1978). Stone age predation on large African Bovids. *Journal of Archaeological Science* **5**: 195–217.
- Klein, R. and Cruz-Urbe, K. (1984). *The Analysis of Animal Bones from Archeological Sites*. University of Chicago Press, Chicago.
- Kosiba, S. (2010). *Becoming Inka: The Transformation of Political Place and Practice during Inka State Formation (Cusco, Peru)*. Doctoral dissertation, University of Chicago, Chicago.
- Kosiba, S. (2011). The politics of locality: pre-Inka social landscapes in the Cusco region, Peru. In Johansen, P. and Bauer, A. (eds.), *The Archaeology of Politics: The Materiality of Political Practice and Action in the Past*. Cambridge Scholars, Newcastle upon Tyne, pp. 114–150.

- Kosiba, S. (2012). Emplacing value, cultivating order: places of conversion and practices of subordination throughout early Inka State Formation (Cuzco, Peru). In Papadopoulos, J. and Urton, G. (eds.), *The Construction of Value in the Ancient World*. Cotsen Institute of Archaeology, University of California, Los Angeles, pp. 97–127.
- Kosiba, S. (2018). Cultivating empire: Inca intensive agricultural strategies. In Alconini, S. and Covey, A. (eds.), *The Oxford Handbook of the Incas*. Oxford University Press, New York, pp. 227–246.
- La Lone, M., and La Lone, D. (1987). The Inka state in the Southern highlands: state administrative and production enclaves. *Ethnohistory* **34**(1): 47–62.
- Liebmann, M. (2013). Parsing hybridity: archaeologies of amalgamation in seventeenth century New Mexico. In Card, J. (ed.), *The Archaeology of Hybrid Material Culture*. Center for Archaeological Investigations, Southern Illinois University, Carbondale, pp. 25–49.
- Miller, G. (2003). Food for the dead, tools for the afterlife: zooarchaeology at Machu Picchu. In Burger, R. and Salazar, L. (eds.), *The 1912 Yale Peruvian Scientific Expedition Collections from Machu Picchu: Human and Animal Remains*. Peabody Museum of Natural History, Yale University, New Haven, pp. 1–64.
- Nair, S. (2015). *At Home with the Sapa Inca: Architecture, Space, and Legacy at Chinchero*. University of Texas Press, Austin.
- Niles, S. (1999). *The Shape of Inca History: Narrative and Architecture in an Andean Empire*. University of Iowa, Iowa City.
- Pitts, M. (2007). The Emperor's new clothes? the utility of identity in Roman archaeology. *American Journal of Archaeology* **111**(4): 693–713.
- Price, M., Wolfhagen, J., and Otárola-Castillo, E. (2016). Confidence intervals in the analysis of mortality and survivorship curves in zooarchaeology. *American Antiquity* **81**(1): 157–173.
- Quave, K. (2012). *Labor and Domestic Economy on the Royal Estate in the Inka Imperial Heartland (Maras, Cuzco, Peru)*. Doctoral dissertation. Southern Methodist University, Dallas, TX.
- Quave, K. (2017). Imperial-style ceramic production on a royal estate in the Inka heartland (Cuzco, Peru). *Latin American Antiquity* **28**(4): 599–608.
- Quave, K. (2018). Royal estates and imperial centers in the Cuzco region. In Alconini, S. and Covey, A. (eds.), *The Oxford Handbook of the Incas*. Oxford University Press, New York, pp. 101–118.
- Quave, K. and Covey, R. (2015). The material remains of Inka power among Imperial heartland communities. *Tribus* [Stuttgart], pp. 110–127.
- Quave, K., Pilco Vargas, R., and Pierce Terry, S. (2013). Las tierras reales del inca como economía noble: viviendas y obras de Cheqoq (Maras, Cuzco). In Kurin, D. and Gómez Choque, E. (eds.), *Investigaciones Arqueológicas y Antropológicas en Los Andes Sud-Centrales: Historia, Cultura y Sociedad*. Fondo Editorial de la Dirección de Investigación, Creación Intelectual y Artística Universidad Nacional José María Arguedas, Andahuaylas, Apurímac, Peru, pp. 110–145.
- Quave, K., Covey, R., and Durand Cáceres, K. (2018). Archaeological investigations at Yunkaray (Cuzco, Peru): reconstructing the rise and fall of an early Inca rival (A.D. 1050–1450). *Journal of Field Archaeology* **43**(4): 332–343.
- Reitz, E. (1988). Faunal remains from Paloma, an archaic site in Peru. *American Anthropologist* **90**(2): 310–322.
- Reitz, E. and Wing, E. (2008). *Zooarchaeology*. 2nd ed. Cambridge University Press, Cambridge.
- Rivera Dorado, M. (1971). La Cerámica Killke y La Arqueología de Cuzco (Peru). *Revista Española de Antropología Americana* **6**: 85–124.
- Robin, C. (2013). *Everyday Life Matters: Maya Farmers at Chan*. University of Florida Press, Gainesville.
- Rostworowski, M. (1970). Los Ayarmaca. *Revista del Museo Nacional* **36**: 58–101.
- Rowe, J. (1944). An introduction to the archaeology of Cuzco. *Papers of the Peabody Museum of Anthropology and Ethnology* **27**(2)1: 69.
- Russell, N. (2012). *Social Zooarchaeology: Humans and Animals in Prehistory*. Cambridge University Press, New York.
- Salas Carreño, G. (2016). Places are kin: food, cohabitation, and sociality in the southern Peruvian Andes. *Anthropological Quarterly* **89**(3): 813–840.
- Sandefur, E. (2001). Animal Husbandry and Meat Consumption. In D'Altroy, T. and Hastorf, C. (eds.), *Empire and Domestic Economy*. Kluwer Academic, New York, pp. 179–202.
- Shortman, E. and Urban, P. (1998). Culture contact: structure and process. In Cusick, J. (ed.), *Studies in Culture Contact: Interaction, Culture Change, and Archaeology*. Center for Archaeological Investigations, Southern Illinois University, Carbondale, pp. 102–125.

- Smith, M. (1987). Household possessions and wealth in agrarian states: implications for archaeology. *Journal of Anthropological Archaeology* **6**: 297–335.
- Superior Gobierno (1586), Legajo 1, Cuaderno 10, f. 3v-4. Archivo General de la Nación del Perú (AGN), Lima, Peru.
- Titulos de Propiedad (1557), Legajo 1, Cuaderno 3, f. 11–13v. Archivo General de la Nación del Perú (AGN), Lima, Peru.
- Valcárcel, L. (1934). Los trabajos arqueológicos del Cusco, Sajsawaman redescubierto, I-II. *Revista del Museo Nacional* **3**(3–36): 211–233.
- Valcárcel, L. (1935). Los trabajos arqueológicos en el Departamento del Cusco, Sajsawaman redescubierto, III-IV. *Revista del Museo Nacional* **4**(1–24): 161–203.
- VanDerwarker, A., Bardolph, D., Hoppa, K., Thakar, H., Martin, L., Jaqua, A., Biwer, M., and Gill, K. (2016). New world paleoethnobotany in the new millennium (2000-2013). *Journal of Archaeological Research* **24**: 125–177.
- Villanueva Urteaga, H. (1970). Documentos sobre Yucay, siglo XVI. *Revista del Archivo Histórico del Cuzco* **13**: 1–148.
- Voss, B. L. (2015). What's new? rethinking ethnogenesis in the archaeology of colonialism. *American Antiquity* **80**(4): 655–670.
- Wheeler, J. (1982). Aging llamas and alpacas by their teeth. *Llama World* **1**(1): 12–17.
- Woolf, G. (1997). Beyond romans and natives. *World Archaeology* **28**(3): 339–350.
- Zuck, T. (1938). Age order of epiphyseal union in the Guinea pig. *The Anatomical Record* **70**(4): 389–399.