

# Multiethnicity, pluralism, and migration in the south central Andes: An alternate path to state expansion

Paul S. Goldstein<sup>1</sup>

Department of Anthropology, University of California, San Diego, CA 92037

Edited by Linda R. Manzanilla, Universidad Nacional Autónoma de México, Mexico, D.F., Mexico, and approved June 11, 2015 (received for review January 20, 2015)

**The south central Andes is known as a region of enduring multiethnic diversity, yet it is also the cradle of one the South America's first successful expansive-state societies. Social structures that encouraged the maintenance of separate identities among coexistent ethnic groups may explain this apparent contradiction. Although the early expansion of the Tiwanaku state (A.D. 600–1000) is often interpreted according to a centralized model derived from Old World precedents, recent archaeological research suggests a reappraisal of the socio-political organization of Tiwanaku civilization, both for the diversity of social entities within its core region and for the multiple agencies behind its wider program of agropastoral colonization. Tiwanaku's sociopolitical pluralism in both its homeland and colonies tempers some of archaeology's global assumptions about the predominant role of centralized institutions in archaic states.**

## Ethnicity, Multiethnicity, and Diaspora in the Andes

Negotiating difference is one of the fundamental challenges of human society. Often, with the expansion of state societies, we envision dominant ethnicities imposing conditions of inequality and assimilation over subordinate groups. Can the past also offer models for sustainable multiethnic coexistence between diverse ethnic groups?

Discussing multiethnicity requires a definition of ethnicity, and I will here consider an ethnic group to be any segment of a larger society whose members are thought, by themselves and others, to have a common origin and who consciously share a common culture, values, interests, and goals (1, 2). Ethnic identity as defined by Weber is a belief in group affinity based on perceived ancestry, physical type, or custom or, of particular interest here, “memories of colonization and migration” (3). Although concepts of ethnicity carry some genealogical component (4), ethnic identity is historically and culturally contingent, and the focus here will be on groups that maintain self-ascribed corporate social identities within larger state political structures. Constructs of ethnic identity may be oppositional in nature (5), as an “intentional difference” that fosters group cohesion over long periods of interaction with other groups (6).

Unfortunately, because the expression of ethnic solidarity is neither uniformly emblematic, nor practice-based or genetic, no particular set of traits offers a perfect proxy for ancient ethnicity (1, 7). However, it is not unreasonable to believe that some patterned differences in the archaeological

and bioarchaeological record may track with some sense of social distinction among ancient peoples. If this is so, cases may best be built for ancient ethnic identity when multiple indicators of group-specific behaviors and practices (e.g., domestic and mortuary practices, culinary, dietary, dress, and residence patterns, body modification, and so forth) cohere in space and time, and biological distance measures covary with those material culture patterns (6).

Multiethnicity can be defined as the coexistence of multiple ethnic groups who maintain distinction over time. Multiethnicity is a relatively conservative solution to the problem of state frontiers, where indigenous and colonialist actors must negotiate power across allegiances and boundaries (8, 9) because multiethnicity permits distinct indigenous and colonizing settlements to coexist within a region over multiple generations. In the Pimampiro district of northern Ecuador, late Pre-Columbian colonies of the highland Pasto ethnic group maintained their distinctive language and trade relationships despite long-term residence amid indigenous groups in lowland regions in what Bray concludes constituted an enduring and stable multiethnic environment (10). Canuto and Bell propose a similar long-term division of space between autochthonous Maya communities of the El Paraíso Valley of Honduras and the Copan administrative enclave of El Paraíso during the late Classic (11). The maintained differences in architectural style and plan and material culture in this “paired center” pattern reflects a strategy of difference

used by Copan elites to cope with a rich multiethnic landscape of Maya identity politics.

An assumption of multiethnic coexistence is a prerequisite of the “diaspora” interpretation of migration and settlement. Diasporas are expatriate minority communities whose consciousness and solidarity are “importantly defined” by a memory, vision, or myth about, and a continuing relationship with, an original homeland and an expectation of return (12). As networks of migrant enclaves defined by their unwillingness to assimilate in host societies, diasporas can only exist in multiethnic societies in coexistence with indigenous communities and other diasporas. Equally important, diaspora enclaves resist assimilation and maintain the distinctions in identity and practice that connect them to distinct homeland communities. The shared identity between diasporic migrant and homeland groups may be self-ascribed and marked emblematically, or encoded in practices of daily life, such as family structure, agriculture, craft, labor, settlement planning, house construction, features and activities, cuisine, mortuary and ritual traditions, and in myriad stylistic choices.

In studies of present-day multiethnic transnationalism, diaspora communities are often seen to encompass smaller component communities in what has been described as “multiscalar networking” (13). In such cases, expatriate individuals' identities with diasporic

Author contributions: P.S.G. wrote the paper.

The author declares no conflict of interest.

This article is a PNAS Direct Submission.

<sup>1</sup>Email: psgoldstein@ucsd.edu.

networks are integrated recursively at multiple levels of scale, forming meaningful affiliations with specific groups and subgroups nested within the larger diasporic community. Thus, whereas present-day Peruvian immigrants everywhere maintain a solidary “Peruvian” national identity vis a vis other transnational groups, distinct regional and ethnic identities are celebrated and nurtured in larger Peruvian enclaves in places like Patterson, New Jersey or Lombardy, Italy. When present in numbers, migrants are not only Peruvian, but may simultaneously embody identities with specific regions, towns, linguistic, or social groups. These nested identities build group cohesion through a rich array of practices and institutions that represent particular constituencies through music, dance, and political organizations, patron saint orders, and so on (14, 15).

It should be emphasized that this model of ordered, nested, and enduringly multiethnic diasporas only exists in tension with countervailing currents of transculturation, hybridity, and ethnogenesis. Culture contact in frontiers juxtaposes diverse actors in an unruly landscape of temporality, social memory, practice, and materiality, and it is in these spaces that entirely new forms of communities are generated (16). This frontier dialectic pits the conservation of multiethnic distinctions against the reinvention of new hybrid identities, and each process may appear within the same frontier community in different contexts. Thus, although on one level the California frontier settlement of Fort Ross may be described as “multiethnic” (17) for its distinct neighborhoods of Native Alaskan, Native Californian, European, or Creole origin, intermarried households in the same site can be “interethnic” as foci of transcultural negotiation, Creolization, and ethnogenesis (18).

A final observation, then, would be that the logic of diaspora is diametrically at odds with the conception of ethnogenesis. Diasporic affinities are anchored to values and traditions rooted in places of origin and times past. Ethnogenesis is a process of transformative social change happening in place and in the moment. In frontier ethnogenesis, actors of diverse histories and backgrounds take advantage of an “institutional vacuum” to cast aside old distinctions, legal strictures, and rules of multiethnicity, to form new ethnic identities (19) and create intentional diachronic change (3). Ethnogenesis is reinvention, responding to interests and imaginations of the political moment by selecting, rejecting, and recombining elements from a range of traditions, creating new identities and meanings. Barbara Voss notes this

liberated and liberating quality of ethnogenesis in her discussion of the emergence of the “Californio” identity in Alta California in the late days of Spanish imperial control (20, 21). Californio families in San Francisco were originally recruited from diverse subaltern peoples from other parts of Mexico, whose life possibilities would have been limited under the *casta* designations of the Spanish empire. When freed of those constraints, Californios reimagined a new identity as an “original” colonial elite (ultimately, even proclaiming themselves “Spaniards”), positioning themselves in an attempt to retain privilege over both Native Americans and Anglo-Californians in the days between Spanish imperial control and early statehood. Unlike diasporas, who look back toward a homeland, frontiers in ethnogenesis find vibrancy on the frontier itself and disassociate from homelands that are perceived as stagnant or out of touch.

**Ayllu.** One specific model for conserving group cohesion over distance in the Andean highlands is the Aymara and Quechua conception of the *ayllu*. *Ayllu*, like diasporas, share a common ascriptive identity and conceptions of behavior, history, and ancestry. *Ayllu* may act as landholding groups (22) and labor collectives (23), enabling a communal mode of production (24), and they can sponsor ritual events and enact ceremonies that map social relationships and reinforce member affiliation through “social, political, economic, and ritual cohesion and action” (25).

As in diasporas, the structure of the *ayllu* may transcend territorial boundaries, forming extended communities across distance. Ethnographically and historically, *ayllu* tend to be multiscale, exhibiting “nested” or “recursive hierarchy” (26), and the term *ayllu* may apply to social units at levels of scale ranging from extended family groups to large ethnic federations (27–30). *Ayllu* membership is often ascribed according to genesis from idealized ancestral origin points, known as *wakas* or *malkus*, rather than strict attention to descent or residence within circumscribed territories (27, 29, 31–34). This distinction becomes important when we consider multiethnicity and state expansion, and suggests that *ayllu*, like diasporas, exist in a space defined more by social solidarity than either geography or genealogy.

**Archipelagos.** Archaeologically, much research on multiethnic coexistence in the south Central Andes has been inspired by ethnohistorian John Murra’s proposition of “vertical archipelagos” of settlements

sharing “multiethnic” colonized regions across an array of altitudinally defined ecological resource zones (35). Although the ecologically determinist implications of Murra’s model have been both overemphasized and critiqued (36), the multiethnic aspect of the archipelago model shares common ground with the concept of diasporas, and is of more interest here. From contact period ethnohistoric accounts, Murra inferred that highland Andean polities achieved access to lowland resource zones through a practice of long-term agrarian colonization, rather than regional annexation. Murra described each polity’s colonial system as an “archipelago” because settlement was dispersed in “islands” of settlement, rather than exclusive contiguous territories. Colonized resource zones were multiethnic in that regions could host coexistent colonies of multiple ethnic or social groups (37). Despite their proximity, each archipelago remained autonomous, relying on its own cooperative labor systems: maintaining close relations connecting it to its homeland community, and thus vigorously maintaining its ethnic identity and resisting assimilation with local or other colonial ethnicities. Murra further proposed that multiethnic colonization was likely under ancient Andean polities, and could be demonstrated by finding contemporary settlements of diverse material culture in close proximity, indicating colonies established by distinct ethnic polities (35).

### Tiwanaku and Multiethnicity

The Tiwanaku civilization of the south central Andes (A.D. 600–1000) is an example of an ancient-state society that achieved complex political development and regional expansion, yet maintained a profoundly multiethnic social structure over the long term (38). The eponymous-type site and its “altiplano” core region in the southern Lake Titicaca basin are, at 3,827 m above sea level, the homeland of the world’s highest ancient civilization. Tiwanaku achieved unprecedented public works and urban scale supported by a complex landscape of frost-resistant raised fields, arts and craft industries that impressed later Incas and Spaniards alike, and an elaborate iconographic system that helped spread a shared state ideology. Considering the massive scale and sophistication of the Tiwanaku capital and the agrarian and settlement systems of its altiplano core region, it is reasonable to envision Tiwanaku as a centralized state and political economy comparable to archaic states worldwide (39–43). And yet, while Tiwanaku surely functioned as a unitary state in many regards, it is a

matter of interpretation whether the dialectic of centralized power and factionalism in Tiwanaku was the same as that of other states (42), or whether Tiwanaku exemplifies a somewhat less-centralized variant of ancient states (38, 44–47). Alternate views pose Tiwanaku as a confederation of *ayllus* (31), as a phenomenon of “vertical integration” of otherwise autonomous localities and settlement systems (48–50), or as a “moral economy” (51) in which ritual, feasting, and reciprocity wove independent communities together into a political order (52).

Where these interpretations agree is that Tiwanaku culture was ethnically diverse, internally heterogeneous, and enduringly pluralistic. Social pluralism within the Tiwanaku core region is suggested historically in the continuity of linguistically and culturally distinct Aymara, Pukina, and Uru ethnic traditions in the altiplano, and this multiethnicity reflect the coexistence under Tiwanaku of ethnic groups occupationally focused on herding, farming, and fishing (39). Household archaeology at the Tiwanaku capital has identified walled barrios and residential compounds linked to occupational specialties (53–55), and neighborhood and plaza groups of ethnically distinct origins (47, 56, 57), as well as class distinctions (58), whereas Tiwanaku crafts encompassed distinct substyles that might reflect both regional and ethnic affiliations (59, 60). But to what extent was multiethnicity a significant political fact in Tiwanaku expansion?

**Tiwanaku Expansion.** The Tiwanaku civilization projected power and cultural influence throughout the south central Andes in the 7th through 11th centuries A.D. without leaving significant iconographic, bioarchaeological, or settlement pattern evidence of military force. In some distant regions, like San Pedro de Atacama in Chile, Tiwanaku’s influence was indirect, as a hegemonic ideology spread through proselytization, pilgrimage, trade in ritually associated objects, and local emulation (61–67). Elsewhere, enclaves of altiplano colonists brought Tiwanaku culture and practice with them to new regions, where temperate crops like maize and coca were cultivable. In some regions, like Chile’s Azapa Valley, and the Cochabamba region of Bolivia, Tiwanaku colonists coexisted with larger indigenous populations who came to emulate the Tiwanaku style and practice. Interpretations of the coexistence of Azapa Tiwanaku enclaves with indigenous populations have ranged from a “symbiosis” (68) to marked social stratification with Tiwanaku enclaves

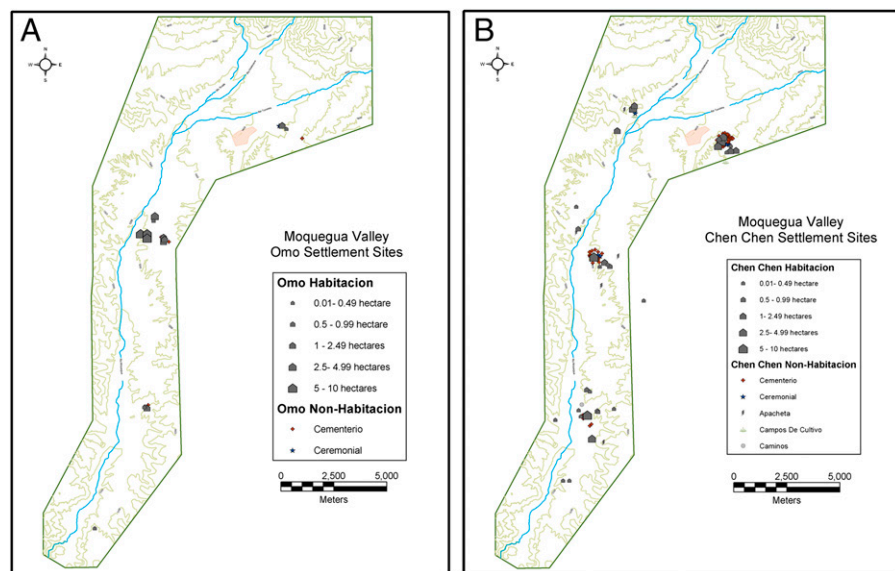
as nodes of elite control (69), but altiplano colonists do not appear to have ever become numerous in the region (70). Similarly, in the Cochabamba region of Bolivia, Tiwanaku colonists may have been few on the ground (71) yet exerted considerable cultural influence, transforming local material culture into a new Cochabamba-Tiwanaku style. A significant factor in the appeal of Tiwanaku practice may have been the popularity of Tiwanaku’s traditions focused on *chicha*, or maize-beer drinking, and Tiwanaku-style drinking vessels and maize cultivation and consumption increased markedly in many regions of Tiwanaku influence (72–74).

Tiwanaku also expanded through direct colonization on a massive demographic scale (45). Settlement pattern analysis, household archaeology, and mortuary archaeology point to a multiethnic model for Tiwanaku expansive colonization in the late first millennium A.D. Systematic regional survey coverage of the 150 km<sup>2</sup> of the Middle Moquegua Valley sector of the Osmore drainage (900–2,000 m above sea level) supports a large demographic presence of altiplano Tiwanaku colonists (46, 75, 76). Tiwanaku and Tiwanaku-derived settlement occupy over 141 ha of residential site area dated between the 7th and 11th centuries A.D., suggesting an aggregate population of between 10,000 and 20,000 settlers (Fig. 1). The Tiwanaku occupation was concentrated in four large town sites, with little settlement outside of these enclaves, suggesting insularity and separation

from the valley’s indigenous inhabitants in the surrounding countryside. Isotopic paleomigration studies of cemetery populations from the Rio Muerto site suggest that the Tiwanaku colonies comprised first-generation immigrants and multiple generations of their descendants, who maintained Tiwanaku practices and contact with parent communities through visits, return migration, and exchange of marriage partners (77). Like present-day diaspora communities, Tiwanaku colonists looked homeward and avoided transculturation with peoples of the local indigenous tradition, and local peoples likewise did not adopt Tiwanaku cultural practices nor, it appears, live or intermarry with Tiwanaku settlers (78).

### Coexistence Between State Cultures.

Multiethnicity in Tiwanaku’s colonies was more than coexistence between Tiwanaku colonial communities and indigenous peoples. Moquegua’s Tiwanaku colonies thrived only 10 km away from a smaller enclave of the Wari civilization in the upper Osmore drainage (79). Wari was a contemporary expansive-state society with its capital near Ayacucho, Peru, whose expansion has been described as classically imperial (80–82). In Moquegua, however, neither Wari nor Tiwanaku ever enjoyed absolute territorial control. The coexistence of the Tiwanaku and Wari enclaves in Moquegua was facilitated in part by a de facto partitioning of the region according to the two cultures’ distinct agrarian practices (76, 79). Wari colonists’ tradition



**Fig. 1.** Tiwanaku settlement distribution in the Moquegua Valley. (A) Omo settlement sites. (B) Chen Chen settlement sites.



**Fig. 2.** (A) Omo Tiwanaku style ceramic portrait heads, Omo M12 structure 2 excavations. (B) Chen Chen Tiwanaku style ceramic portrait head, Fahlman collection, Chen Chen site.

of terraced agriculture (83–85) allowed them to stake out lands in the steep upper-altitude valleys of the Osmore drainage, whereas the Tiwanaku preferred lateral canal irrigation in flatter middle-elevation areas (76).

Despite the proximity of the two colonies over three centuries of coexistence, intercultural contact between the Wari and the Tiwanaku enclaves in Moquegua was quite limited (45). Tiwanaku and Wari sites, some within sight of one another, show a proportion of items traded between Wari and Tiwanaku towns that was minuscule. Moreover, Wari and Tiwanaku sites are characterized by entirely distinct domestic architecture, utilitarian and decorated ceramics, lithic assemblages, and other household utensils and tools, reflecting assiduous maintenance of distinctive daily practices in the household setting over the long term. Distinctions in chemical composition between Tiwanaku and Wari ceramics further show that Tiwanaku and Wari potters in the Moquegua region had distinct technological styles, and used clays from different local sources (86). The Tiwanaku and Wari enclaves even maintained distinct tastes in favorite fermented beverages, with consumption of maize *chicha* a vital part of everyday and ritual life for the Tiwanaku colony (73, 74), whereas Wari settlers preferred to drink spicy *chicha de molle*, a fermented beverage made from seeds of the Peruvian pepper tree (79, 87, 88).

The remarkable and enduring differences between the adjacent Wari and Tiwanaku colonies in Moquegua speaks to a strong interest in maintaining the distinction between the two cultures. It seems unlikely that many Wari and Tiwanaku settlers came to intermarry, live, or work together in day-to-day interaction. Although both Tiwanaku and Wari agents interacted transculturally or approached hybridity with other populations (89, 90), the multiethnic coexistence of Wari and Tiwanaku in Moquegua depended on their spatial separation and an intentional and pronounced

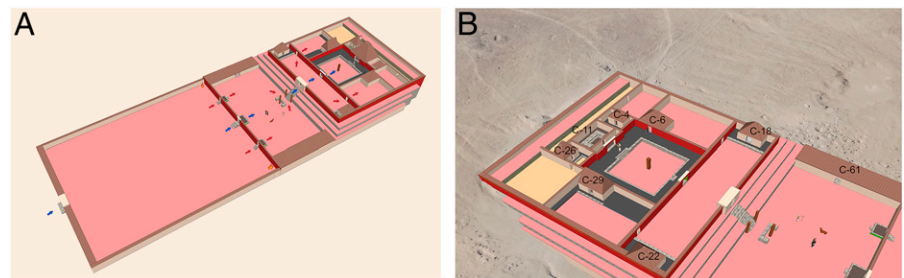
reproduction of cultural distinction over a prolonged history.

**Coexistence of Tiwanaku Ethnicities in Diaspora.** Multiethnicity may have been a characteristically Tiwanaku response to the colonial encounter with the Wari, in that Tiwanaku colonization itself was multiethnic. Within the Tiwanaku colony in Moquegua, we distinguish two contemporary migration streams from altiplano Tiwanaku. Migrants of each group established separate enclaves within each town site, and were associated with distinct ceramic substyles and settlement and occupational practices. The Omo-style occupation accounted for 15 site components covering a total of 28.7 ha in the middle Moquegua Valley. Omo-style settlements were not only marked by ceramics of the Omo style, but were also distinct in their ephemeral domestic architecture, the scarcity of storage features, large grindstones, and stone hoes, and a preference for settlement locations near caravan routes marked with llama geoglyphs, but distant from agricultural fields. This difference, along with the Omo-style population's higher incidence of intermittent paleomobility (77) and lower rates of paleopathologies indicative of upper body repetitive stress (91), suggest that Omo populations were less involved in agriculture than their Chen Chen-style compatriots, and that some Omo-style Tiwanaku colonists may have been caravan drovers, traders, or pastoralists, who deliberately located their camps away from the farmsteads of the floodplain. Aspects of the Omo ceramic assemblage, such as the prevalence of polished blackware and certain motifs, suggest a connection to altiplano parent communities and ceramic sources in the Copacabana peninsula and Lake Titicaca islands (46, 92).

In contrast, ceramics of the Chen Chen style suggest community origins at or near the Tiwanaku-type site. In Moquegua, Chen Chen-style sites covered a total of 54.6 ha of domestic area, with 48 known cemeteries (46,

76, 93). Chen Chen-style settlements are consistently closer to agricultural land, their *quincha* wattle and daub domestic architecture is more permanent in construction, and their mortuary pattern consists of subsurface burials without major surface structures. The Chen Chen-style settlements are also associated with canal and spring-fed irrigation systems and the residential sites have dense concentrations of cist storage features, industrial-size grindstones, and stone hoes, whereas macrobotanical and isotopic evidence all point to intensive production, consumption, and exportation of maize to the Tiwanaku-type site in Bolivia (46, 73, 74, 77, 94–97). This finding indicates that intensive maize agriculture was the primary productive goal of the Chen Chen-style colony. The coexistence of these two distinct archipelagos of settlement within the Tiwanaku occupation indicates that Tiwanaku colonists affiliated with two distinct corporate social entities, perhaps maximal *ayllus* or ethnic affiliations that were salient identities across the Tiwanaku sphere.

Tiwanaku's internal multiethnicity might be thought of as a model for the intercultural coexistence between the Wari and Tiwanaku enclaves, but it also differed in two ways. First, although Wari and Tiwanaku colonists were segregated in separate sites in distinct parts of the valley, the Omo and Chen Chen colonists coexisted within the same town sites (albeit in separate enclaves). The adjacent, open, and undefended nature of the settlements indicates a *modus vivendi* of close multiethnic coexistence between the Omo and Chen Chen networks. Second, the archaeological distinctions between Omo and Chen Chen household and mortuary assemblages are more subtle and less absolute than those between Wari and Tiwanaku (Fig. 2). This finding would seem to indicate a degree of economic, ritual, and social interaction, as might be expected between two complementary



**Fig. 3.** (A) Reconstruction of Omo M10 Tiwanaku temple showing access routes. (B) Detail of upper court of Omo M10 Tiwanaku temple showing sunken court, central altar room (C-11), and six autonomous patio groups (C-18, C-22, C-6, C-4, C-26, C-29).

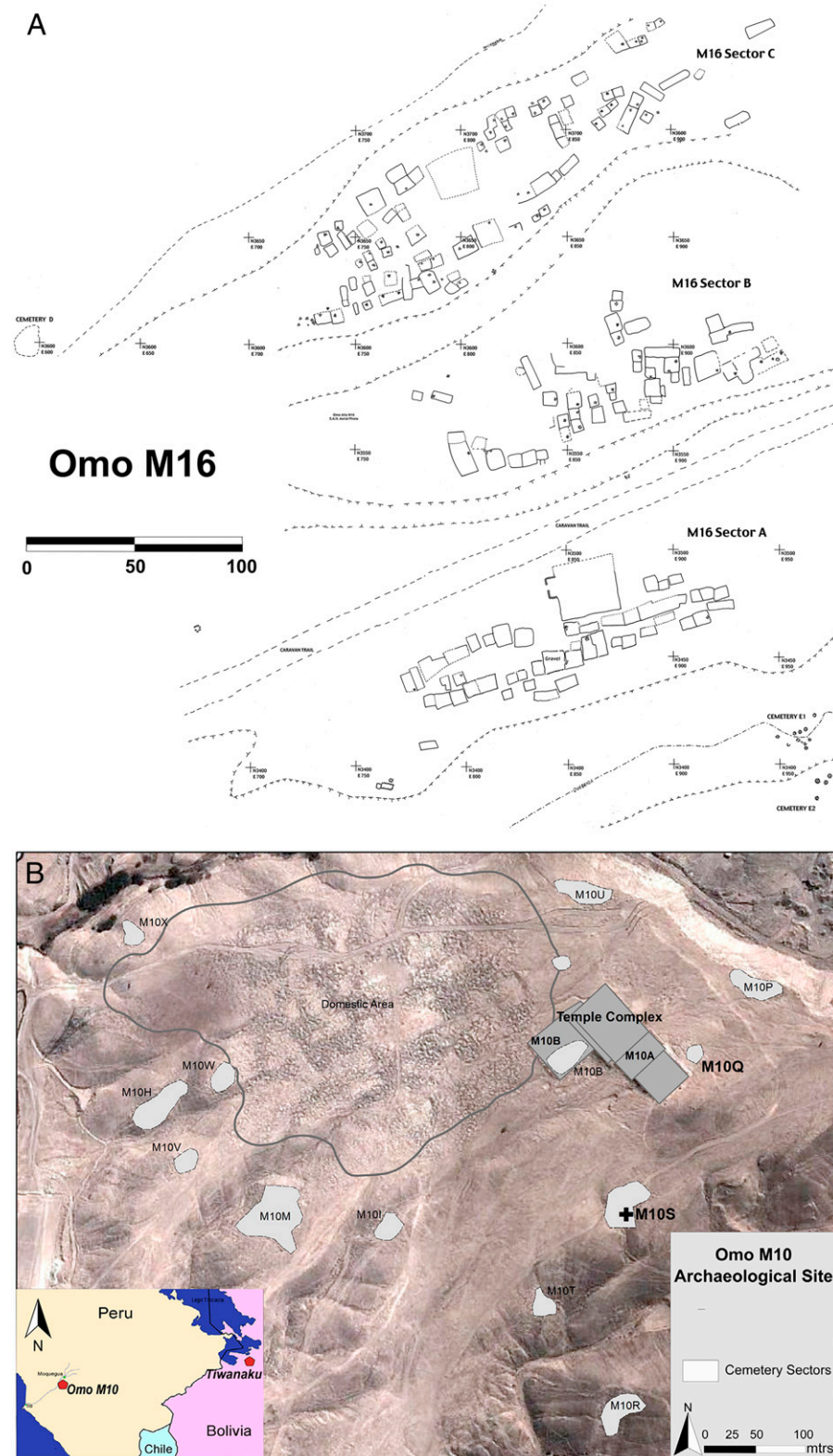
groups aligned with occupational ethnic or moiety divisions within a common culture. Nonetheless, although we can envision some degree of hybridity across two Tiwanaku ethnicities, patterns of structural separation were maintained over the long term of Tiwanaku occupation. At each town site the Omo-style sectors were consistently located to the northeast and nearest to caravan paths, whereas the Chen Chen sectors were located to the southwest, closest to agricultural lands. This pattern suggests both the occupational preferences hypothesized above and the geographic expression of binary spatial opposition that is typical of moieties within Andean *ayllus* (30, 98).

Mediating multiethnic interaction may also have been a major role of Tiwanaku public architecture. New findings in the Omo Tiwanaku temple still support prior interpretations of Tiwanaku monumental architecture as loci for the practice of a unitary state religion (99), with central liturgical action suggested by a U-shaped audience platform chamber (C-11 in Fig. 3) that faced the sunken court (100). However, access patterns and finds revealed by 2011–2012 excavations at Omo show that passage through the temple's portals and stairs may have enacted the union, separation, and reunion of two groups in processions (red arrows in Fig. 3A). A presence of polished blackware ceramics suggests that one temple doorway might be associated with the Omo-style subgroup (101), perhaps representing the processional path of one of the two major *ayllus* or ethnicities present in the Moquegua colonies.

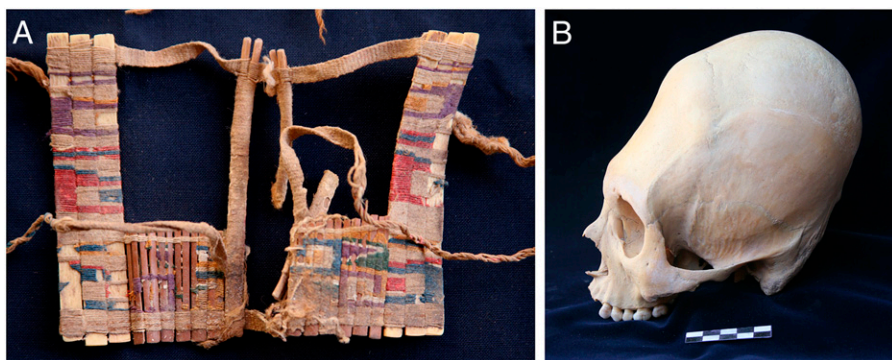
More complex ritual pluralism is also suggested by the delineation of six independent patio groups (see C-18, C-22, C-6, C-29, C-4, and C-26 in Fig. 3B) that surround the central court and audience chamber. The pattern is somewhat reminiscent of the multiple structures surrounding the Formative sunken court temples of Chiripa and Pukara (102). Each of the Omo temple patio groups was distinct in size, shape, construction details, and content, and showed no features or assemblages typical of domestic functions, and thus appears to have had distinct ceremonial affiliations, perhaps analogous to multiple chapels sharing a common church. Most surprisingly, the Omo temple patio groups were autonomous in that they had limited or no access to one another. This finding implies a segregation of ritual spaces within the confines of the temple that seems to echo the structural segregation of Tiwanaku residential and cemetery spaces.

**Coexistence of Communities.** A further observation on the multiscale nature of Tiwanaku multiethnicity is that multiple smaller community groups were nested

within settlements affiliated with each of the Tiwanaku culture's major ethnicities. In the Moquegua Tiwanaku colonies, surface mapping of architecture within each town



**Fig. 4.** (A) Omo M16 site map and aerial photograph, showing house platforms and community plazas. (B) Omo M10 site map showing distinct cemeteries. Reproduced from ref. 106, with permission from Elsevier.



**Fig. 5.** (A) Facial deformer mask, Rio Muerto M43 site, Moquegua, M43 tomb 52, M43 = 4515. (B) Cranium with fronto occipital deformation, Rio Muerto M70 site, Moquegua, Tomb 50, M70 = 2868.

site sector revealed multiple community residential groups, each separated from one another by unoccupied space and associated with its own plaza (Fig. 4A).

The community plazas were cleared spaces, centrally located within the residential groups, and each sufficient in size to accommodate all of the inhabitants of the surrounding residential sector. Plazas thus appear to have been loci for public assembly and celebrations central to the reproduction of small-scale community dynamics. Systematic surface collections and household excavations found subtle variations in assemblages between community groups, suggesting common ethnicity with differences in status and occupation between distinct communities or lineage groups.

**Multiethnicity, Death, and the Marked Body.** Mortuary archaeology offers particular insight into ancient identity and personhood, and the Tiwanaku mortuary record indicates both widely shared Tiwanaku mortuary practices and more subtle distinctions. Tiwanaku sites in Moquegua are notable for multiple spatially separated cemeteries (Fig. 4B) that display distinct variations on Tiwanaku mortuary tradition in tomb type (103, 104), dress (105, 106), offerings, and other cultural practices. Cemeteries at Omo-style sites, for example, like most Tiwanaku cemeteries, have individual-seated flexed, east-facing burials, but are uniquely marked by stone surface structures, variant tomb types, fewer within-tomb offerings, and more surface evidence of offerings and funerary activities than Chen Chen-style cemeteries. Distinctions in mortuary practice are complemented by bioarchaeological distinctions between cemetery populations in diet (107), biological distance (78), paleomobility (77), and life-history studies (108) that point to distinct lifeways and occupations.

Perhaps the most striking of these distinctions that mark Tiwanaku multiethnicity

is the nested variability seen in Tiwanaku cranial deformation. All Tiwanaku peoples practiced intentional cranial deformation, a stylistic behavior that leaves a permanent and unchangeable record on the human body. Few human practices seem a more deliberate marker of human affiliation than the intentional deformation of the head and face to a culturally pleasing shape. Cranial and facial deformation can only be practiced by parents on very young children, and the effects are lifelong, publicly visible, and irreversible. No other body modification shares this particular set of characteristics, making cranial deformation a stylistic statement, a bodily affiliation, and a societal covenant passed from parents to children. In the Andes, distinctive head shape and associated headgear were historically considered emblematic of ethnic affiliation (109).

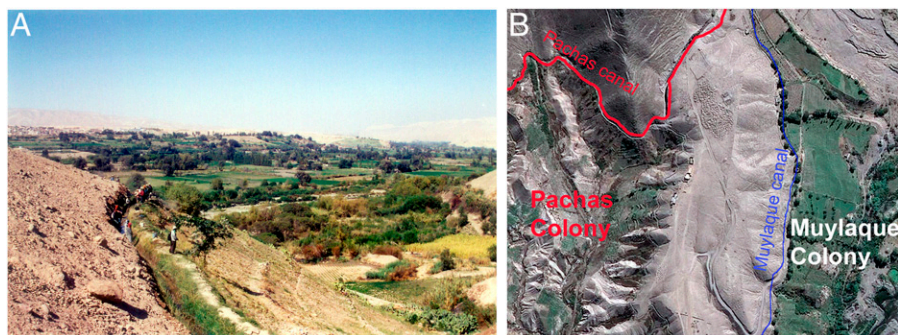
It is thus notable that cranial deformation was almost universally practiced by Tiwanaku peoples, with an incidence of at least 83% (78), yet no single “Tiwanaku style” of cranial deformation ever dominated. Deformation styles remained diverse across Tiwanaku-influenced regions, with annular deformation styles found in the Katari valley and tabular or fronto-occipital styles dominant in the

Moquegua region (Fig. 5), both styles present at the Tiwanaku capital (109), and even greater variability in the Tiwanaku-contemporary *ayllus* of San Pedro de Atacama (65). Within these general categories, more subtle variation in the use of deformation devices and techniques may mark variability in practice between ethnic, community, or lineage groups, such as those represented by distinct cemeteries at the Omo M10 site (110). The nested variability in cranial deformation indicates that the influence of Tiwanaku was not one of hegemonic acculturation, but just the opposite: a period of cosmopolitan diversity. Strolling through neighborhoods of the Tiwanaku capital or provinces would have been a constant reminder not of a Tiwanaku cultural homogeneity, but of indelibly marked identities passed from parent to child.

### Discussion: An Ethnographic Example

A present day example of multiethnic colonization may help bring into focus our archaeological interpretations of Tiwanaku multiethnicity. Since the late 1980s, the area of the Moquegua Valley that saw the densest Tiwanaku agricultural colonization has been recolonized by Aymara- and Quechua-speaking migrants from the highlands of Moquegua and the Department of Puno. In an ongoing ethnographic survey using historical aerial photographs, we can chart the progress of two present-day colonies who self-identify with specific highland towns that colonize vacant lands as agrarian collectives (Fig. 6) (111). Pioneer colonists of the group identified with the Aymara-speaking highland town of Muylaque appeared in the 1980s as squatters on the flanks of Cerro Trapiche. By the late 1990s, the Muylaque group, now consisting of seven related families from Muylaque and one unrelated family, had rehabilitated an ancient canal and reclaimed farmlands that had not been in use for many centuries.

In 2000, an unrelated association of colonists affiliated with the Quechua-speaking



**Fig. 6.** (A) Ayni (mutual aid) canal construction by the Pachas Association, Trapiche denuncia, Moquegua, 2005. (B) Aerial view of Muylaque and Pachas colonies, canals, and denuncias, Cerro Trapiche, 2008.

highland town of Pachas began work on the separate Estopacaje canal, built at a higher elevation. The Pachas canal and the land it waters lie parallel to the Muylaque system, forming what might be called a separate irrigation community. Both irrigation communities have built ambitious new canals, established land claims, negotiated for water rights, and succeeded as agrarian enclaves. Although the two groups have different economic goals and agrarian practices, each community's success owes much to its sense of solidary communalism, regularly reinforced through labor reciprocity, and each group also views its parent community as a preferred source of marriage partners, the place to find extra workers and ritual specialists when needed, and where to return if crops fail or in old age.

Notably, there is little contact between the Muylaque and Pachas expatriate communities, who remain autonomous in terms of hydrology, labor, exchange, and social life, with neither cause for direct competition nor motivation to integrate. Thus, the strong social relations and the ideology of return that links expatriates to parent communities also reinforce multiethnic coexistence: the distinction and separation of each expatriate colony from its neighbors.

## Conclusion

Considering multiethnicity in ancient-state frontiers, it is tempting to assume the goals of state hegemonic power to be in conflict with autonomous ethnic pluralism. However, it is important to distinguish multiethnicity from transculturation, hybridity, or ethnogenesis. In regions shared by multiple diasporic communities, multiethnicity instead can mean the maintenance, even accentuation, of plural ethnic identities as they coexist in close proximity. The example of Tiwanaku multiethnicity shows that the coexistence of diverse ethnic populations, maintaining strong corporate identities over multiple generations, was integral to one Andean state's success. Indeed, Tiwanaku state power flourished in the context of a shared culture that was ethnically diverse, internally heterogeneous, and enduringly pluralistic. Tiwanaku colonists could coexist with a Wari enclave because the Tiwanaku colonization itself was multiethnic, composed of diverse social segments accustomed to maintaining independence and autonomy. Perhaps the clue to the success and longevity of some ancient states lay in their multiscale norms of multiethnicity. Andean states' settlers in new lands brought with them a particularly refined toolkit for negotiating—and celebrating—social difference.

**ACKNOWLEDGMENTS.** I thank my many phenomenal collaborators and students, Linda Manzanilla, and the editors for the invitation to participate in this volume, and two reviewers for their helpful comments. Research

described in this article was funded by the Wenner Gren, HJ Heinz, and National Science Foundations, and supported by the Museo Contisuyo, Moquegua and the University of California, San Diego Archaeological field school.

- 1 Jones SR (1997) *The Archaeology of Ethnicity: Constructing Identities in the Past and Present* (Psychology Press, London).
- 2 Bowden G (2005) Ethnogenesis at Galindo, Peru. *Us and Them: Archaeology and Ethnicity in the Andes, Monograph*, ed Reyrcraft RM (The Cotsen Institute of Archaeology, Univ of California, Los Angeles), Vol 53, pp 12–33.
- 3 Hu D (2013) Approaches to the archaeology of ethnogenesis: Past and emergent perspectives. *J Archaeol Res* 21(4):371–402.
- 4 Emberling G (1997) Ethnicity in complex societies: Archaeological perspectives. *J Archaeol Res* 15(4):295–344.
- 5 Barth F (1998) Introduction. *Ethnic Groups and Boundaries: The Social Organization of Culture Difference*, ed Barth F (Waveland Press, Prospect Heights, IL), pp 9–38.
- 6 Stovel EM (2013) Concepts of ethnicity and culture in Andean archaeology. *Lat Am Antiq* 24(1):3–20.
- 7 Dietler M, Herbich I (1994) Ceramics and ethnic identity: Ethnoarchaeological observations on the distribution of pottery styles and the relationship between the social contexts of production and consumption. *Terre cuite et société: La céramique, document technique, économique culturelle*. (Éditions APDCA, Juan-les-Pins, France), pp 459–472.
- 8 Stein GJ, ed (2005) *The Archaeology of Colonial Encounters: Comparative Perspectives* (School of American Research Press, Santa Fe, NM).
- 9 Gosden C (2004) *Archaeology and Colonialism: Cultural Contact from 5000 BC to the Present* (Cambridge Univ Press, Cambridge).
- 10 Bray TL (2005) Multi-ethnic settlement and interregional exchange in Pimampiro, Ecuador. *J Field Archaeol* 30(2):119–141.
- 11 Canuto MA, Bell EE (2013) Archaeological investigations in the El Paraiso Valley: The role of secondary centers in the multiethnic landscape of Classic period Copan. *Anc Mesoam* 24(01):1–24.
- 12 Clifford J (1994) Diasporas. *Cult Anthropol* 9(3):302–338.
- 13 Andolina R, Laurie N, Radcliffe S (2005) *Multi-Ethnic Transnationalism: Indigenous Development in the Andes* (Duke Univ Press, Durham, NC).
- 14 Francesco MG (2014) Peruvians in Paterson: The growth and establishment of a Peruvian American community within the multiethnic immigrant history of Paterson, New Jersey. *J Urban Hist* 40(3):497–513.
- 15 Caselli M (2012) Transnationalism and co-development. Peruvian associations in Lombardy. *Migration and Development* 1(2): 295–311.
- 16 Silliman SW (2009) Change and continuity, practice and memory: Native American persistence in colonial New England. *Am Antiq* 74(2):211–230.
- 17 Lightfoot KG (1994) The archaeological study of culture change and continuity in multiethnic communities. *Proceedings of the Society for California Archaeology* 7:7–12.
- 18 Lightfoot KG, Martinez A (1995) Frontiers and boundaries in archaeological perspective. *Annu Rev Anthropol* 24:471–492.
- 19 Kopytoff I (1987) *The African Frontier, The Reproduction of Traditional African Societies* (Indiana Univ Press, Bloomington, IN).
- 20 Voss BL (2008) *The Archaeology of Ethnogenesis: Race and Sexuality in Colonial San Francisco* (Univ of California Press, Berkeley, CA).
- 21 Voss BL (2012) Status and ceramics in Spanish colonial archaeology. *Hist Archaeol* 46(2):39–54.
- 22 Rowe JH (1946) Inca culture at the time of the Spanish Conquest. *Handbook of South American Indians*, ed Steward JH (Bureau of American Ethnology 143, Washington, DC), Vol 2, The Andean Civilizations, pp 183–330.
- 23 Moseley ME (1992) *The Incas and their Ancestors: The Archaeology of Peru* (Thames and Hudson, New York).
- 24 Patterson T, Gailey CW (1987) Power relations and state formation. *Power Relations and State Formation*, eds Patterson T, Gailey C (American Anthropological Association, Washington, DC), pp 1–27.
- 25 Urton G (1990) *The History of a Myth: Pacariqtambo and the Origin of the Incas* (Univ of Texas Press, Austin, TX).
- 26 Urton G (1993) Moieties and ceremonialism in the Andes: The ritual battles of the Carnival season in southern Peru. *El Mundo Ceremonial Andino, Senri Ethnological Studies*, eds Millones L, Onuki Y (National Museum of Ethnology, Osaka, Japan), Vol 37, pp 117–142.
- 27 Abercrombie T (1998) *Pathways of Memory and Power: Ethnography and History Among an Andean People* (Univ of Wisconsin, Madison, WI).
- 28 Murra JV (1968) An Aymara kingdom in 1567. *Ethnohistory* 15:115–151.
- 29 Bastien JW (1985) *Mountain of the Condor: Metaphor and Ritual in an Andean Ayllu* (Waveland Press, Long Grove, IL).
- 30 Platt T (1986) Mirrors and maize: The concept of Yanantin among the Macha of Bolivia. *Anthropological History of Andean Politics*, eds Murra J, Wachtel N, Reive J (Cambridge Univ Press, London), pp 228–259.
- 31 Albarracín-Jordan J (1996) Tiwanaku settlement systems: The integration of nested hierarchies in the Lower Tiwanaku Valley. *Lat Am Antiq* 3(3):183–210.
- 32 Bauer BS, Stanish C (2001) *Ritual and Pilgrimage in the Ancient Andes: The Islands of the Sun and the Moon* (Univ of Texas, Austin, TX).
- 33 Allen C (1988) *The Hold Life Has: Coca and Cultural Identity in an Andean Community* (Smithsonian Press, Washington, DC).
- 34 Sikink L, Choque MB (1999) Landscape, gender, and community: Andean mountain stories. *Anthropol Q* 72(4):167–182.
- 35 Murra JV (1972) El “control vertical” de un máximo de pisos ecológicos en la economía de las sociedades andinas. *Vista de la Provincia de León de Huánuco en 1562 pro Iñigo Ortiz de Zuñiga, Documentos para la Historia y Etnología de Huánuco y la Selva Central*, ed Murra JV (Universidad Nacional Hermilio Valdizan, Huánuco, Peru), Vol 2, pp 427–476.
- 36 van Buren M (1996) Rethinking the vertical archipelago. *Am Anthropol* 98(2):338–351.
- 37 Pease F (1982) The formation of Tawantinsuyu: Mechanisms of colonization and relationship with ethnic groups. *The Inca and Aztec States 1400–1800*, eds Collier G, Rosaldo R, Wirth J (Academic, New York), pp 173–198.
- 38 Vranich A (2013) Visions of Tiwanaku. *Visions of Tiwanaku: Cotsen Institute Conference on Tiwanaku*, eds Vranich A, Stanish C (Cotsen Institute of Archaeology Press, Univ of California, Los Angeles), Vol 78, pp 1–10.
- 39 Kolata AL (2003) The social production of Tiwanaku: Political economy and authority in a native Andean state. *Tiwanaku and its Hinterland: Archaeology and Peleoeology of an Andean Civilization*, ed Kolata AL (Smithsonian Institution Press, Washington, DC), Vol 2: Urban and Rural Archaeology, pp 449–472.
- 40 Stanish C (2002) Tiwanaku political economy. *Andean Archaeology I: Variations in Sociopolitical Organization* (Kluwer Academic/Plenum, New York), pp 169–198.
- 41 Stanish C (2003) *Ancient Titicaca: The Evolution of Complex Society in Southern Peru and Northern Bolivia* (Univ of California Press, Berkeley, CA).
- 42 Stanish C (2013) What was Tiwanaku? *Visions of Tiwanaku: Cotsen Institute Conference on Tiwanaku*, eds Vranich A, Stanish C (Cotsen Institute of Archaeology Press, Univ of California, Los Angeles), Vol 78, pp 151–167.
- 43 Janusek JW, Kolata AL (2004) Top-down or bottom-up: Rural settlement and raised field agriculture in the Lake Titicaca Basin, Bolivia. *J Anthrop Archaeol* 23(4):404–430.
- 44 Janusek JW (2002) Out of many, one: Style and social boundaries in Tiwanaku. *Lat Am Antiq* 13(1):35–61.
- 45 Goldstein PS (2013) Tiwanaku and Wari state expansion: Demographic and outpost colonization compared. *Visions of Tiwanaku: Cotsen Institute Conference on Tiwanaku*, eds Vranich A, Stanish C (Cotsen Institute of Archaeology Press, Univ of California, Los Angeles), Vol 78, pp 41–63.
- 46 Goldstein PS (2005) *Andean Diaspora: The Tiwanaku Colonies and the Origins of Andean Empire* (Univ Press of Florida, Gainesville, FL).
- 47 Janusek JW (2008) *Ancient Tiwanaku* (Cambridge Univ Press, New York).
- 48 Bermann MP (1997) Domestic life and vertical integration in the Tiwanaku heartland. *Lat Am Antiq* 8(2):93–112.
- 49 Isbell WH, Burkholder JE (2002) Iwawi and Tiwanaku. *Andean Archaeology I: Variations in Sociopolitical Organization*, eds Isbell W, Silverman H (Kluwer Academic/Plenum, New York), pp 199–241.
- 50 McAndrews T, Albarracín-Jordan J, Bermann MP (1997) Regional settlement patterns of the Tiwanaku Valley of Bolivia. *J Field Archaeol* 24(1):67–83.
- 51 Bandy M (2013) Tiwanaku origins and the early development: The political and moral economy of a hospitality state. *Visions of Tiwanaku: Cotsen Institute Conference on Tiwanaku*, eds Vranich A, Stanish C (Cotsen Institute of Archaeology Press, Univ of California, Los Angeles), Vol 78, pp 135–150.

- 52 Seddon MT (2013) Tiwanaku ritual and political transformation in the core and peripheries. *Visions of Tiwanaku: Cotsen Institute Conference on Tiwanaku*, eds Vranich A, Stanish C (Cotsen Institute of Archaeology Press, Univ of California, Los Angeles), Vol 78, pp 113–134.
- 53 Janusek JW (2004) *Identity and Power in the Ancient Andes: Tiwanaku Cities Through Time* (Routledge, New York).
- 54 Janusek JW (2003) The changing face of Tiwanaku residential life: State and local identity in an Andean city. *Tiwanaku and its Hinterland: Archaeology and Paleoecology of an Andean Civilization*, ed Kolata AL (Smithsonian Institution Press, Washington, DC), Vol 2: Urban and Rural Archaeology, pp 264–295.
- 55 Rivera Casanovas CS (2003) Ch'iji Jawira: A case of ceramic specialization in the Tiwanaku urban periphery. *Tiwanaku and its Hinterland: Archaeology and Paleoecology of an Andean Civilization*, ed Kolata AL (Smithsonian Institution Press, Washington, DC), Vol 2: Urban and Rural Archaeology, pp 296–315.
- 56 Janusek JW (2013) Social diversity, ritual encounter, and the contingent production of Tiwanaku. *Visions of Tiwanaku: Cotsen Institute Conference on Tiwanaku*, eds Vranich A, Stanish C (Cotsen Institute of Archaeology Press, Univ of California, Los Angeles), Vol 78, pp 197–210.
- 57 Janusek JW, Blom DE (2006) Identifying Tiwanaku urban populations: Style, identity and ceremony in Andean cities. *Urbanism in the Preindustrial World*, ed Storey GR (Univ of Alabama Press, Tuscaloosa, AL), pp 233–251.
- 58 Couture N (2004) Monumental space, courtly style, and elite life at Tiwanaku. *Tiwanaku: Ancestors of the Inca*, ed Young-Sánchez M (Univ of Nebraska Press, Lincoln, NB), pp 126–149.
- 59 Young-Sánchez M, ed (2004) *Tiwanaku: Ancestors of the Inca* (Denver Art Museum, Univ of Nebraska Press, Lincoln, NB).
- 60 Anderson K (2013) Tiwanaku influence on the Central Valley of Cochabamba. *Visions of Tiwanaku: Cotsen Institute Conference on Tiwanaku*, eds Vranich A, Stanish C (Cotsen Institute of Archaeology Press, Univ of California, Los Angeles), Vol 78, pp 87–113.
- 61 Uribe M, Agüero C (2004) Iconografía, alfarería y textilera Tiwanaku: Elementos para una revisión del período Medio en el Norte Grande de Chile. *Chungará* 36(2):1055–1068.
- 62 Orellana RM (1985) Relaciones culturales entre Tiwanaku y San Pedro de Atacama. *Didlogo Andino* 4:247–258.
- 63 Torres-Rouff C (2002) Cranial vault modification and ethnicity in Middle Horizon San Pedro de Atacama, Chile. *Curr Anthropol* 43(1): 163–171.
- 64 Stovel E (2001) Patronos funerarios de San Pedro de Atacama y el problema de la presencia de los contextos Tiwanaku. *Boletín de Arqueología, Pontificia Universidad Católica del Perú* 5:375–396.
- 65 Torres-Rouff C (2008) The influence of Tiwanaku on life in the Chilean Atacama: Mortuary and bodily perspectives. *Am Anthropol* 110(3):325–337.
- 66 Torres CM (2001) Iconografía Tiwanaku en la parafernalia inhalatoria de los Andes centro-sur. *Boletín de Arqueología, Pontificia Universidad Católica del Perú* 5:427–454.
- 67 Goldstein PS, Rivera Díaz M (2004) Arts of greater Tiwanaku: An expansive culture in historical context. *Tiwanaku: Ancestors of the Inca*, ed Young-Sánchez M (Univ of Nebraska Press, Lincoln, NB), pp 151–185.
- 68 Rivera Diaz MA (1991) The prehistory of northern Chile: A synthesis. *J World Prehist* 5(1):1–48.
- 69 Berenguer JR, Dauelsberg HP (1989) El Norte Grande en la órbita de Tiwanaku (400 a 1,200 d.C.). *Culturas de Chile, Prehistoria Desde sus Orígenes Hasta los Albores de la Conquista*, eds Hidalgo LJ, Schiappacasse FV, Niemeyer FH, Aldunate Del Solar C, Solimano RI (Editorial Andrés Bello, Santiago, Chile), pp 129–180.
- 70 Sutter RC (2000) Prehistoric genetic and culture change: A bioarchaeological search for pre-Inka altiplano colonies in the coastal valleys of Moquegua Valley, Perú, and Azapa, Chile. *Lat Am Antiq* 11(1):43–70.
- 71 Higuera A (2001) El periodo intermedio (Horizonte Medio) en los Valles de Cochabamba: Una perspectiva del análisis de asentamientos humanos y uso de tierras. *Boletín de Arqueología, Pontificia Universidad Católica del Perú* 5(Huari y Tiwanaku: Modelos vs. Evidencias, eds Kaulicke P, Isbell W, pp 623–646.
- 72 Anderson K (2009) Tiwanaku influence on local drinking patterns in Cochabamba, Bolivia. *Drink, Power and Society in the Andes*, eds Jennings J, Bowser B (Univ of Florida Press, Gainesville, FL).
- 73 Goldstein PS (2003) From stew-eaters to maize-drinkers: The Chicha economy and Tiwanaku. *Pots as Political Tools: The Culinary Equipment of Early Imperial States in Comparative Perspective*, ed Bray T (Kluwer Academic, New York), pp 143–172.
- 74 Somerville AD, et al. (2015) Diet and gender in the Tiwanaku colonies: Stable isotope analysis of human bone collagen and apatite from Moquegua, Peru. *Am J Phys Anthropol*, 10.1002/ajpa.22795.
- 75 Goldstein PS (2000) Communities without borders: The vertical archipelago, and diaspora communities in the Southern Andes. *The Archaeology of Communities: A New World Perspective*, eds Yaeger J, Canuto M (Routledge, New York), pp 182–209.
- 76 Goldstein PS, Magilligan FJ (2011) Hazard, risk and agrarian adaptations in a hyperarid watershed: El Niño floods, streambank erosion, and the cultural bounds of vulnerability in the Andean Middle Horizon. *Catena* 85(2):155–167.
- 77 Knudson KJ, Goldstein PS, Dahlstedt A, Somerville A, Schoeninger MJ (2014) Paleomobility in the Tiwanaku diaspora: Biogeochemical analyses at Rio Muerto, Moquegua, Peru. *Am J Phys Anthropol* 155(3):405–421.
- 78 Blom D, Hallgrímsson B, Keng L, Lozada CMC, Buikstra JE (1998) Tiwanaku 'colonization': Bioarchaeological implications for migration in the Moquegua Valley, Peru. *World Archaeol* 30(2):238–261.
- 79 Moseley ME, et al. (2005) Burning down the brewery: Establishing and evacuating an ancient imperial colony at Cerro Baul, Peru. *Proc Natl Acad Sci USA* 102(48):17264–17271.
- 80 Edwards MJ, Schreiber K (2014) Pataraya: The archaeology of a Wari outpost in Nasca. *Lat Am Antiq* 25(2):215–233.
- 81 Williams PR (2002) Rethinking disaster-induced collapse in the demise of the Andean highland states: Wari and Tiwanaku. *World Archaeol* 33(3):361–374.
- 82 Schreiber KJ (2005) Imperial agendas and local agency: Wari imperial strategies. *The Archaeology of Colonial Encounters: Comparative Perspectives*, ed Stein GJ (School of American Research Press, Santa Fe, NM), pp 237–262.
- 83 Schreiber KJ (1992) *Wari Imperialism in Middle Horizon Peru* (Museum of Anthropology, Univ of Michigan, Ann Arbor, MI).
- 84 Schreiber KJ (2001) The Wari empire of Middle Horizon Peru: The epistemological challenge of documenting an empire without documentary evidence. *Empires: Perspectives from Archaeology and History*, eds Alcock SE, D'Altroy TN, Morrison KD, Sinopoli CM (Cambridge Univ Press, Cambridge, UK), pp 70–92.
- 85 Williams PR (2006) Agricultural innovation, intensification, and sociopolitical development: The case of highland irrigation agriculture on the Pacific Andean watersheds. *Agricultural Strategies*, eds Marcus J, Stanish C (Cotsen Institute of Archaeology, Univ of California, Los Angeles), pp 309–333.
- 86 Sharratt N, Golltko M, Williams PR, Dussubieux L (2009) Ceramic production during the Middle Horizon: Wari and Tiwanaku clay procurement in the Moquegua Valley, Peru. *Gearchaeology* 24(6): 792–820.
- 87 Goldstein DJ, Coleman RC (2004) *Schinus molle* L (Anacardiaceae) chicha production in the Central Andes. *Econ Bot* 58(4):523–529.
- 88 Green UM, Goldstein PS (2010) The nature of Wari presence in the Mid-Moquegua Valley: Investigating contact at Cerro Trapiche. *Beyond Wari Walls: Exploring the Nature of Middle Horizon Peru Away from Wari Centers*, ed Jennings J (Univ of New Mexico Press, Albuquerque, NM), pp 19–36.
- 89 Jennings J (2011) *Globalizations and the Ancient World* (Cambridge Univ Press, Cambridge, UK).
- 90 Jennings J, ed (2010) *Beyond Wari Walls: Exploring the Nature of Middle Horizon Peru away from Wari Centers* (Univ of New Mexico Press, Albuquerque, NM).
- 91 Becker SK, Goldstein PS (2015) Laboring in Tiwanaku's Moquegua Colony: A Bioarchaeological Activity Indicator Comparison Using Population-Based and Life Course Approaches. *80th Annual Meeting of Society for American Archaeology, San Francisco, April 18, 2015* (San Francisco, CA). Available at [saa.org/AbouttheSociety/AnnualMeeting/SAANAnnualMeetingAbstractArchive/tabid/1422/Default.aspx](http://saa.org/AbouttheSociety/AnnualMeeting/SAANAnnualMeetingAbstractArchive/tabid/1422/Default.aspx). Accessed July 6, 2015.
- 92 Daniels JF, Goldstein PS (2015) Establishing Chemical Signatures for Cabuza Style Pottery and the Tiwanaku Tradition Using Portable X-ray Fluorescence (pXRF). *80th Annual Meeting of Society for American Archaeology, San Francisco, April 17, 2015* (San Francisco, CA). Available at [saa.org/AbouttheSociety/AnnualMeeting/SAANAnnualMeetingAbstractArchive/tabid/1422/Default.aspx](http://saa.org/AbouttheSociety/AnnualMeeting/SAANAnnualMeetingAbstractArchive/tabid/1422/Default.aspx). Accessed July 6, 2015.
- 93 Owen BD, Goldstein PS (2001) Tiwanaku en Moquegua: Interacciones regionales y colapso. *Boletín de Arqueología, Pontificia Universidad Católica del Perú* 5:169–188.
- 94 Williams PR (1997) The Role of Disaster in the Development of Agriculture and the Evolution of Social Complexity in the South-Central Andean Sierra. Unpublished PhD dissertation (Department of Anthropology, University of Florida, Gainesville, FL).
- 95 Hastorf CA, Whitehead WT, Bruno MC, Wright MF (2006) Movements of maize into middle horizon Tiwanaku, Bolivia. *Histories of Maize: Multidisciplinary Approaches to the Prehistory, Linguistics, Biogeography, Domestication, and Evolution of Maize*, eds Staller JE, Tykot RH, Benz BF (Elsevier Academic, Amsterdam), pp 429–447.
- 96 Sandness K (1992) Temporal and Spatial Dietary Variability in the Osmore Drainage, Southern Peru: The Isotope Evidence. Unpublished MA thesis (Department of Anthropology, University of Nebraska, Lincoln, NB).
- 97 Gaggio G, Goldstein PS (2015) Plants of the Tiwanaku Gods: Results of a PaleoEthnobotanical analysis of the Temple of Omo M10A, Moquegua, Peru. *80th Annual Meeting of Society for American Archaeology, San Francisco, April 18, 2015* (San Francisco, CA). Available at [saa.org/AbouttheSociety/AnnualMeeting/SAANAnnualMeetingAbstractArchive/tabid/1422/Default.aspx](http://saa.org/AbouttheSociety/AnnualMeeting/SAANAnnualMeetingAbstractArchive/tabid/1422/Default.aspx). Accessed July 6, 2015.
- 98 Bouysson-Cassagne T (1986) Urco and Uma: Aymara concepts pace. *Anthropological History of Andean Politics*, eds Murra JV, Wachtel N, Revel J (Cambridge Univ Press, Cambridge), pp 201–227.
- 99 Goldstein PS (1993) Tiwanaku temples and state expansion: A Tiwanaku sunken court temple in Moquegua, Peru. *Lat Am Antiq* 4(3):22–47.
- 100 Goldstein PS, Palacios (2015) Excavaciones en el templete Tiwanaku de Omo, Moquegua Peru. *Nuevos Aportes para el Horizonte Medio: Sur de Peru, Norte de Chile y Bolivia*, eds Korpisaari A, Chacama J (IFEA, Lima, Peru), in press.
- 101 Sitek MJ (2013) Tappi, a View from the Middle (Court): Analysis of liminal space in provincial Tiwanaku monumental architecture (Omo M10A). MA thesis (University of California, San Diego, CA).
- 102 Hastorf CA, ed (1999) *Early Settlement at Chiripa, Bolivia: Research of the Tarco Archaeological Project* (Univ of California, Berkeley, CA), Vol 57.
- 103 Baitzel SI, Goldstein PS (2011) Manifesting ethnic identity in an ancient society: Evidence from a Tiwanaku cemetery in Moquegua, Peru. *Ethnicity from Various Angles and Through Varied Lenses: Yesterday's Today in Latin America. Proceedings of the First Conference on Ethnicity, Race, and Indigenous People in Latin America and the Caribbean, University of California, San Diego, 2008*, eds Hunefeldt C, Zamosc L (Sussex Academic, Sussex, UK), pp 30–44.
- 104 Buikstra JE (1995) Tombs for the living... or ... for the dead: The Osmore ancestors. *Tombs for the Living: Andean Mortuary Practices*, ed Dillehay TD (Dumbarton Oaks, Washington, DC), pp 229–280.
- 105 Plunger EM, Goldstein PS (2014) Women of the cloth: Outfits of a possible female specialist group from three Tiwanaku cemeteries in Moquegua, Southern Peru. *Textiles from the Southern Andes: Tiwanaku and Beyond Symposium. Textile Society of America, Proceedings of the 14th Biennial Symposium, "New Directions: Examining the Past, Creating the Future," September 10-14, 2014*, ed Oakland RA (University of Nebraska, Lincoln, NB).
- 106 Baitzel SI, Goldstein PS (2014) More than the sum of its parts: Dress and social identity in a provincial Tiwanaku child burial. *J Anthropol Archaeol* 35:51–62.
- 107 Somerville AD, Goldstein PS, Baitzel SI, Schoeninger M (2011) *Paleodiet in the Tiwanaku Periphery: Carbon and Nitrogen Isotope Data from Rio Muerto* (Society for American Archaeology, Moquegua, Peru).
- 108 Becker SK (2013) Labor and the rise of the Tiwanaku state (AD 500–1100): A bioarchaeological study of activity patterns. PhD dissertation (University of North Carolina, Chapel Hill).
- 109 Blom DE (2005) Embodiment borders: Human body modification and diversity in Tiwanaku society. *J Anthropol Archaeol* 24(1):1–24.
- 110 Hoshower LM, Buikstra JE, Goldstein PS, Webster AD (1995) Artificial cranial deformation at the Omo M10 Site: A Tiwanaku complex from the Moquegua Valley, Peru. *Lat Am Antiq* 6(2): 145–164.
- 111 Fortier J, Goldstein PS (2006) Agrarian diasporas past and present: Highland colonization in the South Central Andes. *American Anthropological Association 105th Annual Meeting*. Available at [www.aaanet.org/publications/anthrosource](http://www.aaanet.org/publications/anthrosource). Accessed July 6, 2015.