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Jacket Illustrations: (top) Confrontation between Moche supernatural creatures (Donnan and McClelland 1999:118), drawing by Donna McClelland; (middle) Battle scene from the Bonampak murals (detail from Room 2, south wall), illustration by Heather Hurst and Leonard Ashby, © Bonampak Documentation Project, 2001; and (bottom) Aztec Codex Mendoza, folio 64r; (back) Moche combat scene showing one warrior striking another and knocking off his helmet, while another grabs his opponent by the hair, drawing by Donna McClelland.

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Societies in the Andean highlands in the epoch before the Inca empire were engaged in frequent warfare with enemies both near and far. These societies pose an analytical puzzle to archaeologists because many of them were attributed more political complexity and internal coherence than the archaeological evidence indicates (see Covey 2008). Documentary sources from the earliest years of contact portray a patchwork of distinct señoríos étnicos (ethnic territories) conceptualized as chiefdoms that had had an autonomous existence before the Inca conquest. But even in señoríos that supposedly had acted as one against the Inca, and supposedly recognized a single leader, such as the “chiefdoms” or “kingdoms” around Lake Titicaca, recent archaeological work indicates political decentralization and limited social hierarchy (e.g., Arkush 2011; Bauer et al. 2010; D’Altroy and Hastorf 2001; Frye and de la Vega 2005). Settlement patterns make it particularly clear that violent conflict was common and not limited to the frontiers between señoríos; indeed, it is somewhat unclear exactly where those “frontiers” were.

This chapter considers how the concept of segmentary organization can illuminate conflict and political relationships in this prehistoric context. To clarify, the chapter draws not on models of the “segmentary state” (Southall 1956), which have been both utilized and critiqued in regions such as the Maya area (e.g., Chase and Chase 1996), but on the literature of nonstate segmentary organization and particularly on nested patterns of violent conflict. The societies of the Andean highlands in the Late Intermediate Period (ca. AD 1100–1450) were fundamentally shaped by acts of military opposition and confederation at multiple scales. In the face of threat, families aggregated into defensive towns and villages, and these communities were drawn together into local and regional confederations, yet small-scale conflicts between neighboring groups remained present and perhaps frequent. These patterns conformed to a nested social logic, familiar from ethnographies of nonstate segmentary
societies in other world regions. In those societies, warfare is central to the identity of groups at different scales—an observation that can be applied usefully to the Andes. Broadly, warfare was an arena that created communities and larger groups, both physically and conceptually.

“Nested” or seemingly segmentary organization is well attested in ethnographic and historical sources for the Andes, especially the southern highlands (Albarracín-Jordán 1996, 2003; Harris 1986; Platt 1986, 1987), and Andean archaeologists have often drawn on the concept. In particular, Axel Nielsen (2006) and Charles Stanish (2003:291–292) point out the importance of segmentary organization for understanding Late Intermediate Period society, and I follow their suggestions here. But while archaeologists have considered the concept in the light of decentralization and partition within Andean societies, they have rarely acknowledged the patterns of violent conflict at multiple scales that are typical of stateless segmentary societies and a central feature in classic ethnographies (e.g., Barth 1953; Boehm 1984; Leach 1940; Meggitt 1977; Sahlins 1961). Indeed, conflict and alliance are the primary fields in which segmentary organization has importance and meaning to actors. Raymond Kelly (2000:41) has identified segmentary social organization as a defining feature of frequently warring forager societies, for it involves the logic of “social substitution” that demands vengeance be exacted on any member of an offending group, not the offending individual in particular. These fundamental links between segmentation, conflict, and defensive confederation find a natural fit in the Andean region, where scholars have argued that groups have traditionally been defined by concepts and practices of structural opposition, including group violence (see Lau, this volume).

Here I apply these ideas to the northern Titicaca Basin, where I propose that warfare in a specific geography produced a nested pattern of polity and group identity. Relationships of defensive interdependence existed between families or minimal social segments in a site, between settlements in a local area, and between settlement clusters in the larger region. The particular pattern of political affiliation and social identity in the Titicaca Basin emerged in the context of frequent warfare (perhaps over resources) and was strongly shaped by a particular geography. In other words, I do not wish to claim that it was an inevitable outgrowth of a pre-existing segmentary structure. Instead, tendencies toward decentralization and confederation, which might be associated with segmentary organization, were likely either created or exaggerated by violent conflicts pursued within and between social units.

**Segmentary Organization and Conflict**

Segmentary organization was originally defined by E. E. Evans-Pritchard and Meyer Fortes (Evans-Pritchard 1940; Fortes 1945; Fortes and Evans-Pritchard 1940) as a nested form of kin, ethnic, and political affiliation, in which segments—small, equivalent units such as villages or minor lineages—group themselves with others along lines of genealogical relatedness to form larger affiliation blocs—clans and tribal confederations. Segmentary societies are understood to have an inherent tendency toward decentralization, for the primary loyalties are to the local level. Internal tensions can cause larger groups to fission, and intense conflict and factionalism may exist between segments. Nevertheless, these smaller groups have the capacity to band together into larger confederations, especially in the face of threats (Sahlins 1961). In classic ethnographies of nonstate segmentary societies, violent conflict is fundamental to the way loyalties are conceptualized and experienced (Barth 1953; Boehm 1984; Leach 1940; Meggitt 1977). Local feuds are common, and the segment is defined in part by the obligation of any adult male member to defend it or to avenge the death of his kinsman (Kelly 2000). Hence, reputation and security are collective responsibilities, and society members experience strong pressure for conformity. Neither individuals nor groups are wholly “free” to act militarily; they are embedded in a web of relationships that produce obligation and hostility. In larger conflicts, acts of wartime attack and confederation are channeled and conceptualized in genealogical terms. Indeed,
they may be the primary field in which such genealogical relationships between groups have relevance to people. The pattern of alliance and confederation is encapsulated in the frequently quoted Arab proverb, “I against my brother, I and my brother against our cousin, my brother and our cousin against the neighbors, all of us against the foreigner” (Salzman 1978:53). The manner of fighting is also affected by segmentary organization: conflicts between closely related segments are typically less intense, and more restrained, than wars between tribes or wars against those who are considered “outsiders” (Solometo 2006). For instance, rape, mutilation, trophy-taking, and large-scale killing may be considered appropriate in wars against outsiders, but not in wars between communities with strong social and kin ties, and participants explicitly recognize distinctions between these kinds of conflict (Boehm 1984; Harner 1972; Meggitt 1977). So, wartime decisions are strongly influenced by perceived relatedness.

In turn, wars reinforce and reproduce the community and the larger affiliation group as meaningful entities. In Simon Harrison’s (1993:20) treatment of warfare among the Sepik of Papua New Guinea, “it is not so much groups that make war, but war that makes groups.” Sepik village communities have historically been somewhat dispersed collections of households perched on ridgetops. Harrison argues that war among the Sepik, though it arose from disputes over land and resources, was pursued and valued by warriors because it was what maintained the identity of the community as a political unit in the face of multiple intercommunity ties. Roscoe (1996), in turn, proposes that Sepik villages themselves are the products of defensive pressures that forced households to congregate so that neighbors could come to each other’s aid in night attacks. Indeed, defense was the main or only way in which village members acted in concert; it was the entire point of the village. While they disagree on the mechanism, for both authors collective military action was integral to the formation and reproduction of communities.

The identification of segmentary organization and the larger kinship theory of which it was a part generated much vigorous critique (Lévi-Strauss 1969; Peters 1967; Schneider 1984; see Kuper 1982; Salzman 1978). While these critiques do not (in my opinion) utterly negate the usefulness of the idea of segmentary organization, they do raise important concerns. The main focus of critique is the gap between the ideal structure described by informants and the pragmatic ways that people actually behave. First, in practice, kinship and relatedness work in more complex ways than the strict logic of descent conveyed by Evans-Pritchard’s and Fortes’s models. Despite group narratives of descent, genealogy may be rewritten to respond to the exigencies of conflict (e.g., Posposil 1994), and relatedness is in part constituted by marriage, migration, collective ritual, and commensality (Carsten 2000). Second, segmentary structure does not rigidly determine patterns of alliance in the way that informants describe (Peters 1967; Salzman 1978). Realpolitik enters strongly into military decisions, and where wars are waged frequently, as was the case in Papua New Guinea, physical proximity plays a more important role than strict genealogy in making and keeping alliances (Paul Roscoe, personal communication 2011). These observations show that segmentary structure is in no way deterministic of human action; rather, it is an organizational ideal that informs action. At the same time, wartime events and decisions renew and modify the nested, territorial affiliations that constitute social structure in practice.

Andean Segmentary Organization

Andean societies of the early colonial period described themselves in broadly segmentary terms as having a nested system of kinship, social identity, territory, and political relationships in which alliances were based on descent or perceived descent, and social groups were underpinned by a basic principle of complementary opposition. The segmentary qualities of Andean society have been most fully explored by Juan Albarracín-Jordán (1996, 2003) and Tristan Platt (1986, 1987). The smallest unit of this social organization above the family is the ayllu.
The ayllu has been exhaustively discussed in the literature and needs only a brief summary here. In the ethnographic present, the ayllu is a group of households sharing an ayllu name, perceived descent, and rights to lands. Ayllus have a specific territory or group of territories, including lands that are collectively owned and managed. The constituent families of an ayllu engage in considerable communal and reciprocal labor and are often endogamous. The word *ayllu* might refer flexibly to small and large groups of the same population (e.g., Salomon 1991:22), and it is the nested, multiscalar quality of ayllu social organization that links it to non-Andean segmentary systems. A handful of small communities can comprise a minimal ayllu, several of which are nested into larger ayllus, several of which in turn might comprise a "maximal ayllu" or whole ethnic group (Platt 1986:230). Each level traces its descent from a common, focal ancestor. Andean ayllus at small and large scales are also frequently divided into two ranked halves or moieties.

Historical anthropology documents extensive nested hierarchies of ayllus tracing back to the Inca period (e.g., Astvaldsson 2000; Bouysses-Cassagne 1986; Izko 1992; Murra 1968; Netherly 1984, 1990; Platt 1987; Wernke 2007; Zuidema 1990), while ethnographies of contemporary Andean highland communities, as summarized by Albarracín-Jordán (1996, 2003), document segmentary organization that is especially clear among Aymara speakers of the southern Andes. For instance, Xavier Izko (1992) and Silvia Rivera (1992) both discuss Aymara social systems of the central and southern Bolivian altiplano, in which the maximal ayllu is divided into upper and lower moieties, each of which is composed of two or more ayllus. Each of the ayllus is, in turn, composed of several small rural communities.

The static vision of society implied by these descriptions—and by the schematic diagrams that accompany them—should not obscure the fact that ayllus and the relationships among them are constituted by practice. In festivals, communal work groups, and religious ceremonies, ayllu members define the collective and the place of individual experience within it (Goldstein 2005:31). Contemporary and historic Andean societies accomplish large collaborative endeavors by segmenting them into tasks for separate ayllus (Netherly 1984; Urton 1984). Traditionally, corporate groups at different levels were symbolically sustained by the worship and tending of ancestral ritual foci (Nielsen 2006:67) ranging from small hereditary household *conopas* to the mummies of founding ancestors, to powerful origin places in the landscape (Doyle 1988; Isbell 1997; Salomon 1995). Insofar as each segment traced its origin to a founding ancestor or a landscape deity, these entities were also genealogically related to each other in a nested hierarchy (e.g., Doyle 1988; Salomon 1991:6–9, 19–20). Tending to these ritual foci may have been a way of rewriting and confirming genealogical relationships.

Social divisions are also powerfully reproduced by being mapped physically onto communities and the larger landscape. Ethnographies attest to the physical division of highland villages into two or more sectors that correspond to moiety and ayllu divisions (e.g., Bandelier 1910:82; Métraux 1935–1936). Steven Wernke’s (2007) study of seventeenth-century landholdings in Coporaque in the Colca Valley shows that several ayllus consistently owned land, and probably lived, on only the left or right side of a central *quebrada*; some ayllu names even signified “right” or “left.” Group identities might be connected to other salient aspects of the anthropogenic landscape: *ceque* lines of shrines for Inca ayllus of Cuzco (Zuidema 1990) or irrigation networks as in the colonial Chicama Valley, with the hierarchical branching structure of the canal system mirroring that of society (Netherly 1984; see also Gelles 1995; Hayashida 2006; Sherbondy 1982). Most fundamentally, ayllu identity and membership is based closely on spatial facts of territory and coresidence, and ancestral origin is conceptualized in geographic terms.

But structural relationships are nowhere more emphatically practiced than at moments of conflict (Lau, this volume). In both high-stakes land disputes and festive rituals of battle (*tinku*), the segmentary pattern of defensive confederation is evident: smaller segments (ayllus or moieties) confederate into larger groups to fight against others (Izko
In t'nuq battles—ritualized annual fights between moieties, communities, or districts—the two sides are often confederations of smaller units. T'nuq delineates groups and their memberships, one against the other, even while it simultaneously defines the whole group of participants versus outsiders (Molinié-Fioravanti 1988; Sallnow 1987:141–142; Urton 1993). T'nuqs also reaffirm ayllu divisions and rankings within each side (Urton 1993). Distinctions between levels of segmentary conflict find an echo in Michael Sallnow’s (1987:141–142) contrast of “internal t'nuq,” relatively restrained fights between moieties that take place in the village plaza, with more violent “external t'nuqs” between larger and more distant social groups, who often fight out at the borders of their respective territories.

Segmentary confederation occurs at a larger scale in land wars (ch'ajwa). The worst land wars take place over contested borders between large groups who unite against their enemies (Platt 1987). For instance, Izko (1992) describes a long-term struggle between maximal ayllus over territory on the Potosí-Cochabamba departmental border in Bolivia between maximal ayllus, pursued sometimes in the courts and sometimes in open battle. Such interethnic clashes were far fiercer than internal conflicts. Denise Arnold and Juan de Dios Yapita (1996) treat bloody land wars in the Bolivian altiplano on the Oruro-Potosí border in the 1980s and 1990s. While some fighting took place between neighboring minor ayllus, the largest and most ruthless battles were waged over the contested borders between large ayllu groups (Arnold and Dios Yapita 1996:339). Alliance was critical in these fights and indeed the main mechanism of military strategy. Alliance took the form of reciprocal labor (ayni), and the failure to reciprocate the aid of an ally was cause for war (Arnold and Dios Yapita 1996:321). Thus, in the process of defensive confederation at various scales against their enemies (ritual or real), Andeans made explicit the membership of their corporate social groups and the relationships between those groups. Platt (1987) draws on such patterns to envision a pre-Inca origin for the historic Bolivian Aymara confederations. In Platt’s conjectural scenario, this social formation gradually emerged during the Late Intermediate Period as small social segments cohered into larger and larger federations through conquest and defensive alliance.

Andean archaeologists have primarily utilized the concept of segmentary organization to evoke partition and horizontal division: the idea that societies or communities with some political or cultural coherence were also composed of smaller social units that remained salient to social identity, labor organization, and ritual practice. In this vein are models for pre-Hispanic Andean polities based on Aidan Southall’s (1956) controversial concept of the segmentary state (Albarracín-Jordán 1996, 2003; Goldstein 2005; Janusek 2002) and studies of segmented labor organization (Hastings and Moseley 1975; Moseley 1975). Segmentary structure and dual moiety organization have also been used to explain the divisibility of ancient Andean spaces: civic/ceremonial complexes that appear to have been used simultaneously by two or more distinct groups, sites bifurcated into halves or sectors, and paired sites (Conrad and Webster 1989; Netherly and Dillehay 1986; Nielsen 2006; Parsons et al. 2000:183–186; Silverman 1993:305–311). While there has been almost no archaeological investigation of the relationship between violent conflict and Andean segmentary organization, one intriguing exception is Alexis Mantha’s (2009) study of late Pre-Columbian settlements in the Rapayán Valley in the Upper Marañón Basin of eastern Ancash. Mantha demonstrates a multiscalar, nested pattern of exclusive residential spaces whose outer edges in each case were marked both by walls and mortuary facilities for ancestors: the individual house, the “ward” or site sector, the site, and the site cluster defended by several nonresidential hill forts, each with a monumental mortuary tower. Mantha does not explicitly link this pattern to segmentary organization, but it is highly suggestive: groups at nested scales were apparently defined by residential location, ancestor worship at different levels of group membership, and collective defense.

As elsewhere, the concept of segmentary organization in the Andes should be used with caution. It should be demonstrated by archaeologists, not
assumed. In employing it, we must recognize agency and practice (in the ways identity, alliance, and kinship are negotiated) as well as dynamism and historicity (in the basic potentialities of fission-fusion processes and in specific developments over time). Finally, it would be both erroneous and impractical to use a narrowly genealogical definition. Nonstate segmentary organization in the Andes was probably always grounded more in territorial realities than strict descent. That is, a system of putative ancestry rationalized patterns of proximity, affiliation, and ranking between groups, patterns that had special salience in times of war. It is most helpful to think of segmentary structure in the Andes as a broadly and flexibly applied principle of nested affiliation in which ties were strongest at the local level and present, but much looser, above that. Those ties were forged by repeated friendly interactions: collaborative labor, intermarriage, the circulation of goods and animals, collective worship and festival, helping in times of need, and above all cooperative military action.

With these notions and cautions in place, let us turn to the archaeology of the Titicaca Basin to consider how groups within a particular geography were defined by conflict and confederation at different scales.

The Colla of the Lake Titicaca Basin

The Titicaca Basin is a high-altitude plateau in the south-central Andean highlands framed to the east and west by the two Andean cordilleras, with the great Lake Titicaca as its central feature. This region housed a series of early complex societies that culminated in the first-generation state of Tiwanaku on the southern shore of the lake. Throughout much of Andean prehistory and the first part of the colonial era, it supported relatively dense populations and was a central locus of power, wealth, and intersecting transportation networks.

One reason we have difficulty understanding society in the Titicaca Basin just prior to Inca
expansion is that, like a number of other regions of the highlands, it seems to have been attributed more complexity in textual sources than actually existed on the ground. In late pre-Hispanic and early colonial times, the basin was populated by several señoríos, distinct ethnic groups said to have been powerful polities before the Inca conquest (Figure 8.1). The largest of them in population and geographic extent was the Colla. The Colla are described in the chronicles as a centralized polity ruled by a paramount lord from a capital in Hatuncolla (e.g., Cieza de León 1984 [1553]:274, 279 [see volume I, chapters c, cii of the original], 1985 [1553]:15, 22, 110, 121 [see volume II, chapters vi, viii, xxxvii, xvi]). The original Colla lord had assembled his realm by conquering many neighboring lords. At the moment of first contact with the Incas, the Colla lord held a hereditary position and was so powerful that he could mobilize tens of thousands of warriors against his greatest enemies, the lord of the Lupaca.
to the south and of the Cana to the north (Betanzos 1996 [1551–1557]:94 [see volume I, chapter xx]; Cieza de León 1985 [1553]:121 [see volume II, chapter xii]). These texts have dominated our archaeological vision of the Titicaca Basin in the era before the Inca expansion, such that it is still quite commonplace to read of the “Aymara kingdoms” or reinos lacustres of the Titicaca Basin in general treatments of Andean prehistory. They have influenced popular versions of history as well. Re-enactment spectacles of the Qhapaq Quilla (Colla King) take place every year at the scenic ancient necropolis of Sillustani near Hatuncolla, sponsored by the regional government; in 2011, more than seven hundred costumed actors participated.

The extent of ethnic Collas is defined in an administrative document of the early Spanish colony (Capoche 1959 [1585]; see Bouysses-Cassagne 1986; Julien 1983; Spurling 1992). This source identifies an enormous portion of the northern basin as “Colla” (see Figure 8.1). Nevertheless, named sub-groups of Collas in the early sources—Hatun Collas, Puquina Collas, Capahancos, and Pocopocos (Spurling 1992:117)—and territorial subdivisions of the Colla area in the northern basin (Figure 8.2; Bouysses-Cassagne 1986; Capoche 1959 [1585]:140; Julien 1983; Spurling 1992) give the impression that Colla identity was far from monolithic.

From an archaeological point of view, the period just before Inca control—the Late Intermediate Period—was marked by significant transformations. The period opened with the collapse of Tiwanaku in the southern Titicaca Basin around AD 1000. Although groups to the west and north of the lake had not been tightly controlled by Tiwanaku, it is likely that the collapse of the great state utterly disrupted exchange routes, ideas of prestige and social hierarchy, and the conceptual order of the cosmos. Meanwhile, major environmental changes included a colder climate with highly variable precipitation and severe, prolonged droughts in which the lake dropped to perhaps 12–17 m below its modern-day level (Abbott et al. 1997; Binford et al. 1997; Thompson et al. 1986). The worst conditions did not endure throughout the entire period, but without doubt these climate changes affected agriculture severely in the Titicaca Basin.

In this context, momentous social changes took place (Stanish 2003), including a wholesale resettlement away from lower locations near richly productive lakeside fields to hilltops that were often fortified with thick walls. Populations became more dependent on cameld pasturing and what was probably a more extensive form of agriculture utilizing rain-fed terraces at different altitudes. The hill forts became the major population centers, with smaller hill-base settlements surrounding and perhaps supporting them. Religion and culture also underwent important changes. People ceased to build the ancient forms of ceremonial architecture—sunken temples with artificial platforms and monoliths—that for more than a thousand years had served as focal points integrating diverse populations in the Titicaca Basin. The iconography of ceramics and rock art became cruder, less figurative, and less clearly tied to religious themes. Aboveground tombs came into widespread use, both in the Titicaca Basin and elsewhere in the Andean highlands, making descent groups concretely visible through their tombs and cemeteries and pegging these groups to specific locations.

The physical geography of the northwestern Titicaca Basin conditioned settlement, subsistence, conflict, and social identity in the Late Intermediate Period. Optimal land for farming and pasture was patchy and irregularly distributed, making some areas more desirable to inhabit and control than others. Ranges of steep hills ideal for defense were separated by stretches of flat alluvial plains, vulnerable to attack and unattractive for cultivation because of heavy soils, poor drainage, and a high risk of frost. The arena of plains surrounded by hills with almost no tree cover resulted in excellent views of fields and field walls, paths, tombs, natural landmarks, and other communities near and far. This landscape was the board on which the Great Game of late Andean geopolitics was played.

Despite the accounts of a powerful Colla polity in the chronicles, a decentralized political landscape is suggested by the archaeology of the region, including some key findings of earlier investigations.
Catherine Julien’s (1983) excavations at Hatuncolla, the purported capital of the Colla señorío, found no pre-Inca layer of occupation. If a capital existed, we do not know where it was, although the area around Hatuncolla and Lago Umayo has dense Late Intermediate Period settlement. Máximo Neira’s (1967) work on hilltop settlements on the eastern side of the lake, south of Vilquechico, revealed significant stylistic differences from the rest of Colla lands to the north and west. Luis Lumbraeras and Hernán Amat (1968) propose that various ceramic styles in the Late Intermediate Period had restricted distributions in the northern basin, a finding strongly supported by my research. This stylistic discontinuity...
opens the possibility that documentary references to Colla subgroups reflected the presence of distinct social identities already present in the Late Intermediate Period.

My fieldwork has focused on hill forts, known in the Andes as *pukaras*, which were key features in the landscape in late pre-Inca times (Figures 8.3–8.4). The category of pukara includes a great variety of walled hilltop sites: refuges with no evidence of permanent habitation, small villages, and large towns with five hundred or more dwellings and evidence of intensive occupation, constituting the dominant political centers in the region. Over several field seasons from 2000 to the present, we identified and visited dozens of pukaras throughout the region, mapped their internal architecture, analyzed their artifact assemblages, and excavated test pits (Arkush 2008, 2011). A current project focused on Ayawiri/Machu Llaqt'a, a large pukara in the southern Colla area, has involved a full-coverage survey of the vicinity and more intensive excavations of structures, tombs, and exterior areas.

Pukaras became very prevalent in the Titicaca Basin toward the end of the Late Intermediate Period in a time frame of about AD 1275 or 1300 to 1450 (Arkush 2008), the century or two just before

![Figure 8.5](image)

*Figure 8.5*
Map showing the distribution of pukaras in the northwest Titicaca Basin, based on air photos, satellite imagery, and ground-truthing. (Map by Elizabeth Arkush.)
the Inca conquest of the area. The spread of carbon dates from pukaras shows that they were in use throughout the Colla area during an interval of six to eight generations, and this interval is the time when we may suppose warfare reached its height. Warfare may have originated because of resource stress associated with drought, but it continued for other reasons into a time of ameliorated climate (Arkush 2008). Pukaras are not convenient places to live, and the fact that numerous families felt it necessary to relocate to these cold heights, far from water sources, fields, and routes of travel, is telling. While settlement patterns just before this time (in the early Late Intermediate Period) are very poorly understood, populations may have been relatively dispersed, so large pukaras probably represent the defensive aggregation of many smaller groups of families. I consider the presence and prevalence of pukaras in the late part of the Late Intermediate Period as evidence that warfare did occur and that it genuinely threatened Colla populations.

The obvious question is, whom were the Colla fighting? Where were the frontiers, and where were the territories in this zone? Pukaras are very numerous in the northwestern basin (Figure 8.5), suggesting that nearly as much conflict occurred in the Colla heartland as on the probable borders with the hostile Lupaca and Cana. Rather than along distinct frontiers, the threat of attack appears present throughout the zone; no area was completely secure. I (2011) have argued that Colla society is best conceptualized as a set of defensive coalitions rather than an integrated territory. This chapter considers in more depth the segmentary or nested quality of Colla society and conflict by examining this region at three scales: the scale of the individual community, the local scale of sites located within a few hours’ walk of each other, and finally, the regional scale encompassing “Colla territory.”

The Defensive Community

Pukaras first demonstrate the power of fear to define community and enforce solidarity. They are clearly defensive sites. They inhabit rugged landforms. Their fortification walls are substantial, normally about 1.5 m thick, and built of two faces of fieldstones and boulders with an intervening layer of rubble and mud; the original height, where it can be determined, ranges from 1.5 to 5 m. Walls often include parapets, especially near entrances and accessible approaches, and at several sites they are associated with piles of river cobbles just inside the wall: stockpiled ammunition for slings. A given pukara has from one to seven concentric walls, with more and higher walls located on the sides that are easiest to approach. The walls range from short barriers connecting cliff faces to kilometer-long constructions; the largest pukaras have 3 to 5 km of walls in total.

These walls emphasize defensive community in ways as obvious to us as they would have been to ancient observers. While the walls would not have involved an extremely onerous labor investment given the size of most pukara settlements (Arkush 2011), they do represent what was probably the most organized and coordinated form of collective labor that pukara residents engaged in, apart from warfare itself. Fortification walls demarcated a collective that acted as a social unit, one whose constituent families were totally dependent on each other in wartime. The largest pukaras are big sites for this region and would have housed aggregations of several hundred to a thousand or more people (Arkush 2011). For instance, at Ayawiri/Machu Llaqt'a, one of the largest and most densely occupied pukaras known in the Colla region, the southern tip of a mesa is defended by three walls that protect more than six hundred houses and four hundred storage structures grouped in compounds (Figure 8.6). Building and maintaining the walls at such sites helped to affirm the defensive coherence of the community against the rest of a potentially hostile world. So did the fact that many fortification walls were highly visible, making statements of solidarity and strength legible from 20 or more kilometers away.

If fortification walls emphasized solidarity, then the internal architecture of pukaras emphasized conformity, at least to some extent. Even at the largest pukaras, we have little evidence of obvious
Figure 8.6
Map showing Ayawiri/Machu Llaqta (V2), located in the Vilque survey area. (Map by Elizabeth Arkush.)
hierarchy and usually find no central place or evidence of an elite sector. Horizontal divisions are more evident than vertical ones. Pukaras are commonly divided into small residential terraces or compounds defined by low, thin walls, each with several houses and, sometimes, small storage structures, perhaps belonging to an extended family. (For instance, Ayawiri/Machu Llaqtá encompasses more than ninety residential compounds.) The arrangement of residential components at pukaras usually does not appear planned, and the overall impression is one of rather haphazard aggregations of small coresidential groups that nevertheless followed common norms. For instance, Ayawiri/Machu Llaqtá, most houses are on the south and west sides of compounds, and most storage structures are on the north and east sides, leaving an empty central patio onto which house doorways faced. The repetitive nature of these residential groupings suggests that pukara populations were more concerned with defining groups and group membership than with celebrating particular elevated individuals.

Pukara communities may or may not have been conceptualized as descent groups. But in practice, the importance of the pukara community as a social unit rested in large part on its collective claim to certain improved (terraced) lands in the vicinity, lands that were probably the target of competition between local groups. The protective/territorial role of a pukara is illuminated by the definition of the term and associated words in Ludovico Bertonio’s (1986 [1612]) Ayamara dictionary, where pucara is defined as “fortress” and included in phrases for building, taking refuge in, surrendering, and destroying forts. Tellingly, the terms pucara and queyna (another word for “fortress”) are grouped together in metaphorical phrases for protection along with words for boundary cairns (quellinca and sayhua), so they seem semantically associated with the idea of the visible marking and claiming of territory.

In concert with defensive architecture and boundary markers, the tombs of deceased ancestors may have worked to claim, view, and defend the living and their lands. Chullpas—aboveground mortuary towers—and other kinds of tombs are often found in or above densely settled areas and their associated terrace systems in locations of unusually high visibility (Bongers et al. 2012). They may have marked rights to fields, pasture, and water sources (Hyslop 1977). In addition, many tombs are found in and around pukaras, especially at or just below their outer limits. Indeed, we know of an overall association in several parts of the central and southern Andes at the time between tombs and hill fort walls or the edges of hilltop sites (Moseley 1989:245; Nielsen 2009; Parsons et al. 2000; Wernke 2003). For instance, Nielsen (2009:233) notes that in the Bolivian altiplano in the same time period pukaras are surrounded by scores of chullpas, which were sometimes even built into the defensive walls. These chullpas are distributed on the more vulnerable sides of the sites, as though to strengthen their defenses. Michael Moseley (1989:245) notes a similar association between tombs and defensive walls in the upper Moquegua Valley, terming it a possible “symbolic defense”: communities were protected from hostile incursions not just by walls, but by tombs and the powerful ancestors they housed or represented. In the Titicaca Basin, such a protective role seems mediated by an emphasis on visibility. Tombs (both chullpas and more modest slab-cist tombs) are associated less closely with pukara walls than with good vantage points: they are located on the highest point of the site or just outside pukara walls on prominent ridgelines or facing outward in caves and rock overhangs located just below cliff-top pukaras. I would tentatively suggest that the protective role of ancestors and tombs may have been conceptualized here as specifically visual—in a word, vigilance. Regardless, if tombs and the ancestors inside them were meant to guard over lands and settlements, that role seems entirely consonant with the idea that pukara populations emphasized membership in a defensive collective (perhaps through perceived common descent). In this scenario, death did not relieve the people of the hill forts of their military duties to the group—they merely continued to defend them in a new way.

This discussion, however, gives a somewhat misleading sense of internal coherence in pukara communities. The need for defense brought together
large populations at pukaras, populations that previously had not been compelled to live cheek by jowl. Architectural divisions and separate cemeteries suggest the existence of smaller groups and group identities within the larger settlements. At large pukaras, long walled paths divide the residential areas into two or more sectors, each composed of many residential terraces or compounds. Most often, a path follows a central axis, creating two parts that could, rather speculatively, have corresponded to dual moieties. Elsewhere, walled paths sometimes cut through part but not all of the residential area, or multiple paths create a more complex set of subdivisions. Occasionally, natural features (rocky outcrops or ravines) separate two or more residential areas. While paths often do not appear to have been laid out straight in advance (instead, they may have been built piece by piece with the addition of new terraces and compounds placed alongside), we do know of exceptions. At Ayawiri/Machu Llaqt’a, wall abutments indicate that the central part of the main path and the intersecting east–west alleys were built first, cutting the central portion of the site into distinct sectors; only then were those sectors subdivided by internal walls into residential compounds—that is, the mesa in the central part of the site was divided first and then filled in. Such spatial divisions could reflect smaller corporate groups living together at pukaras. Similar divisions are apparent at the largest pukaras in Lupaca territory just to the south (Frye and La Vega 2005:178). Large pukaras such as Pukara Juli have several habitation areas separated by open spaces; internal walls divide residential sectors at Pukara Juli and at Cutimbo. Kirk Frye and Edmundo de La Vega (2005) interpret these spatial divisions as the possible segmentation of pukara communities into smaller corporate kin groups.

Another line of evidence comes from the grouping of tombs in cemetery areas, which are distinct from the residential area. Dual or multiple cemeteries are more common than single cemeteries at the Colla pukaras that have been surveyed. For instance, at the pukara of Cerro Monos (J0) near Juliaca, which is divided in two by a central alley, one group of tombs inhabits the bedrock peak while another is located on a knoll outside the walls. At Ayawiri/Machu Llaqt’a, the majority of tombs are found just north of the habitation sector, where they are grouped into several mounds. In addition, a small cemetery is located in the southeast part of the residential sector, more tombs are in the shallow caves and rock faces just below the site to the east, and at least three more cemeteries can be identified at the base of the hill. Here and at other pukaras, social subgroups may have kept their identities distinct partly by interring their dead in separate cemeteries.

The site of Apu Pukara (L6) near the modern town of Lampa is especially suggestive of segmentation into subgroups (Figure 8.7). This site has six distinct clusters of tombs, five corrals, six major and two minor clusters of storage structures, and somewhere between five and twelve rows or sectors of houses, depending on how they are grouped. The site layout suggests separate small social groups below the level of the site, managing mortuary and economic activities separately. Nevertheless, an environment of conflict obliged pukara subgroups to cohere in a defensive community.

The Local Area

Zooming out to the area within about 10 km of a pukara, one obtains a different impression. Pukaras were not isolated strongholds in a hostile world. Rather, they were included in groups of other nearby pukaras with whom they probably had friendly relationships most of the time—that is, the defensive confederation of separate elements, which is suggested within individual pukaras, also took place at a larger scale, between pukaras.

Two groups of pukaras can be examined here. The first is located on the Rio Lampa near the modern and colonial town of Lampa on the western side of the Titicaca Basin. Figure 8.8 shows fourteen pukaras found on the hills bordering the river valley on both sides. Since they are located in a single valley, they form a coherent and easily identifiable group. Unfortunately, this area has not been studied by full-coverage survey, so we do not know the whereabouts of contemporaneous unfortified
sites (pukaras are highly visible in air and satellite photos, so the figure does capture all pukara locations with some confidence). If settlement patterns here were similar to those in fully surveyed zones, such as the second area described, the Vilque area, smaller unfortified sites may have been found near pukaras at the foot of the hills, next to the best terraced land. Clearly, most pukaras were related to terrace systems; terraces in the valley are on average thirty minutes’ walk from the nearest pukara. Pukaras may have defended the fields themselves, but their principal role was to protect the people who worked those lands.

Pukaras in this group were interdependent rather than completely autonomous, for the size of the pukaras and their defenses vary a great deal.
Without a doubt the political center of the group was Lamparaquen (see Figure 8.3), the pukara with the greatest associated habitation area (9 ha), huge walls, and some other unusual characteristics. Other pukaras in the area vary in size from relatively large (K’atacha, 3.1 ha, over 200 houses) to medium (Apu Pukara, 2.8 ha, 150 houses; Figure 8.7) and small (Karitani, 1.9 ha, 46 houses; and Pichuni Yanapirqa, 1.7 ha, houses not detectable on the surface). Their defensive walls were proportionally smaller. While Lamparaquen had monumental walls faced with large dressed blocks, averaging...
3.8 m high on the external face and 2.1 m thick (and reaching up to 5.5 m high and 4.0 m thick), walls at K’atacha and Apu Pukara were smaller, about 2.0 m high and 1.5 m thick on average, and they were even smaller at Karitani (1.6 m high, 1.4 m thick). This pattern suggests relationships of hierarchy and dependency among the pukaras in the area. And, in fact, the general pattern is present throughout the Colla region among surveyed pukaras: the smaller sites were more weakly defended, suggesting they could not have survived if each pukara was wholly independent. (Both small and large pukaras are present in the final phases of the Late Intermediate Period, and we have no evidence that small pukaras gave way to large pukaras over time [Arkush 2008].)

Across the northwest Titicaca Basin, within local clusters of pukaras, we find both large, strongly defended pukaras that must have been the seats of political power and smaller satellites that must have held a subordinate position.

Pukaras in a group may have engaged in many different kinds of interaction. But we have reason to suppose that they were knit together in part by military interdependence, which is indicated not just by the variation in pukara defenses just described but also by the lines of visual contact that connected them. Pukaras have commanding views of the surrounding terrain, an obvious strategic asset when it comes to defense. They are located on hills with larger than average viewsheds compared to similar hills in the landscape at large and much better views of other pukaras than random sets of similar hills would have (Arkush 2011:157). This visual advantage would have been useful for sighting enemy war parties well in advance of an attack—it would have been nearly impossible to take a pukara by surprise during the daytime—and for generally monitoring the comings and goings of people and their camelids in the region, whether allies or enemies. But the panoramic views from pukara peaks also would have made it feasible to send visual signals quickly to allied pukaras, a useful trick in conflict situations (and exactly the reason why Sepik homesteads cluster within the range of audible nighttime shouts from each other, according to Roscoe 1996). A pukara under attack could signal its distress with fire even at night, allowing nearby allies to come to its aid. Two independent sources mention the use of fire signals in wartime among indigenous altiplano populations in the early twentieth century (Bandelier 1910:89; Chervin 1913:69; see also La Barre 1948:161; Tschopik 1946:548), and the Inca reportedly used smoke and fire signals to send rapid news of rebellion down the road system (Vega 1966 [1609]:329 [see volume VI, chapter viii]).

Partly because of their locations overlooking the bowl of the river valley, pukaras in the Lampa area have excellent views of each other (Figure 8.8), over both long distances and short spans that could be traversed in a few hours. This network is highly cohesive and redundant in visual terms and could have enabled the Lampa Valley pukaras to coordinate defensive and offensive action as a group. These patterns lead me to propose that most of the time, Lampa pukaras probably maintained cooperative rather than conflicting relationships, forming a defensive network. But relationships within the network were hierarchical—up to a point.

The second area of interest is located west of Puno, on the southern margin of Laguna Umayo, between the modern towns of Vilque and Tikillaca (Figure 8.9). This zone of 80 km² was covered in a complete pedestrian survey in 2009, so we have much more information about it. On the other hand, it is a considerably smaller area that falls within a wider group of pukaras around Laguna Umayo that might have had many social ties. Here we can only distinguish a portion of a larger arena of interaction. Nevertheless, that portion is instructive.

Eight pukaras are found in the survey zone, and again, they vary markedly in size and in the strength of their defenses. The largest by far is Ayawiri/Machu Llaqtu, with three times the habitation area and number of house structures as the next largest pukara. Also present are medium and small pukaras, as well as a fortified refuge with no evidence of permanent occupation (Figures 8.10–8.11). Here, full-coverage survey allowed us to identify several small sites without walls, located either
on hilltops or at the base of hills near a pukara (usually less than 1 km away).

The fact that most unfortified sites lie close to a pukara results in an interesting pattern: a gap in settlement between the two ends of the mesa where pukaras and their satellite settlements are found (see Figure 8.9). In the space between them on both sides of the mesa is good agricultural land that is (now) terraced, land that would be dotted with many small sites later on in the Inca and early colonial periods and that has many small farmsteads today. It was not settled in the Late Intermediate Period. Was it simply too risky to live so far away from a pukara? (But if so, why not build a pukara in the middle of the mesa?) Or was there, in fact, a buffer zone between Ayawiri/Machu Llaqta and the group of pukaras on the north end of the mesa, which, lumped together, could form a population counterweight to the great pukara? All these sites share ceramic styles and are no more than a few hours’ walk from each other. It is reasonable to assume they were often on friendly terms. Nevertheless, the bipolar settlement pattern on the mesa suggests the potential for social distance and perhaps, at times, hostility.

The visual network replicates this lack of integration (see Figure 8.9). Lines of sight link pukaras together in the south and in the north, but they do not span the space between these two subgroups. This microregion is not as visually well connected as the Lampa region, in part simply because of its topography. The difference in scale between the Vilque and

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**Figure 8.9**

Map showing the local area near Vilque. (Map by Elizabeth Arkush.)
Lampa areas examined here and the lack of complete settlement information about the Lampa area make it difficult to say whether affiliation between Vilque pukaras was, in fact, weaker than that between Lampa pukaras. But the Vilque micro-region highlights the potential for internal conflict in groups of neighboring pukara populations who surely had considerable contact with each other.

From the perspective of the local scale, then, pukaras existed within networks of other pukaras linked by ideas about how to make ceramics, houses, and tombs; by the circulation of goods; by some form of hierarchical relations; and by visual connections that could have allowed pukaras to communicate in times of danger. Nevertheless, the fact that “subordinate” centers within these

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zones are fortified is suggestive. The great centers like Lamparaquen and Ayawiri/Machu Llaqta were not sufficiently powerful to completely protect such settlements from attack or to enforce peace within their local vicinity, and the fortification of “subordinate” sites would have endowed them with a distinct identity and a measure of autonomy. Again, these groups were characterized not just by defensive cooperation, but also by decentralization, the persistence of smaller social identities, and the possibility of bad blood within the coalition.

The Regional Scale

At the scale of the northwest Titicaca Basin, covering the majority of Colla lands, decentralization is much more evident than confederation. Decentralization is indicated most obviously by the proliferation of pukaras in the late Late Intermediate Period (see Figure 8.5). It is also supported by stylistic fragmentation. Ceramic types are patchily distributed across the region and suggest that pots, potters, and traditions of manufacture circulated within a somewhat restricted range (Figure 8.12). Styles such as Pucarani and Asillo are found in relatively small zones. Sillustani pottery is more widely distributed throughout the southwest portion of the region—what was historically known as Colla Urcosuyu—and almost completely absent from Umasuyu. Pukara clusters in the Colla area typically shared ceramic types; for instance, the Lampa cluster was distinguished by the predominance of Sillustani wares, which are present in higher percentages there than anywhere else in the study region, while pukaras near Vilque used both Sillustani and Pucarani ceramics. Other ceramic attributes also display variation across the region. Zoomorphic rim attachments are much more common in the northern Colla area, suggesting connections to populations in the lowlands east of the Titicaca Basin, who made related animal attachments in the Mollo ceramic tradition. Hilltop settlements on the northeastern side of the lake, which uniquely use rectangular architecture, are associated with Kekerana, yet another ceramic style (Lumberas and Amat 1968; Neira 1967). Finally, while the tombs associated with pukaras are highly variable, chullpa tombs are much more common in the southern part of the region, near Puno and Lago Umayo, the same area with a significant presence of the Pucarani ceramic type. In this time of extensive fortification, it is hard to imagine that such stylistic rifts were not also marked at times by outright violence.

Nevertheless, it is unlikely that the local pukara cluster was the largest social unit that ever coalesced here in the Late Intermediate Period. Some ceramic styles include more than one local group of pukaras, suggesting broader interactions. Obsidian is present at almost every pukara visited and apparently came from the Chivay source, about 150 km away, based on portable X-ray fluorescence analysis (Nico Tripcevich, personal communication 2011), indicating rather large-scale exchange networks even in this time of heightened conflict. Of course, large-scale defensive confederation is described in the chronicles in accounts of an extensive Colla polity engaged in rivalry with the Lupaca and Cana polities and resistance to the Inca advance; the chroniclers also name populations joining together in the Colla rebellion against the Inca (Santa Cruz Pachacuti Yamqui Salcamaygua 1993 [1613]:234 [see 26v]).

When one maps all lines of sight between pukaras (Figure 8.13), it is clear that large areas were linked together by visual connections. But one can also identify local clusters that were especially tight-knit, such as the Lampa cluster to the west and the southernmost cluster around Laguna Umayo (the Vilque subregion covers the western portion of this group). Mountain chains form barriers to visibility so that the southern Colla area and the rest are completely visually disconnected, a division echoed in ceramic styles. This network appears to be nested or segmentary in that local groups are much more tightly linked together with sightlines than is the system as a whole.

In part, this nested quality is a simple product of distance over a specific terrain. Nearby sites will
naturally have better views of each other than of faraway sites. Defensible hills and good farming lands are patchily distributed in the Titicaca Basin, so one should not expect pukaras or even general human settlement to be continuous. Once populations started moving to the hilltops, spatial clusters and gaps were likely to emerge simply because of the geography—although the flat lands between hill ranges meant that travel and visibility were much less constrained than in many other parts of the highlands, thus creating the possibility of large-scale social networks. Nevertheless, more than geography was at work. Pukaras are more clustered than settlements randomly scattered on similar hills would be, and they have better views of each other (Arkush 2011:156–160). Nested patterns of clustering and visibility were in part the product of human decisions, not just chance.

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Discussion

Let us return to the issue of where the frontiers were and who was fighting whom. Numerous hill forts were built near major ethnic borders, especially the border between Colla and Cana. Division and almost certainly violent conflict existed within the Colla area as well. Groups of nearby pukaras, such as the one near Vilque, may even have experienced local hostilities. Conflict between major groups resulted in the need for massive fortifications at the largest centers (where allied populations could have gathered), while less impressive defenses, combined with networks of allies, were sufficient to protect most pukara communities from smaller feuds most of the time. Within single sites, we have no reason to argue for violent conflict, but social divisions were still marked to some extent. The decentralization visible in the larger Colla region is present within local pukara clusters and within individual settlements. Because groups could form at multiple scales, “frontiers” could form all over

Figure 8.13
Map showing visual connections among pukaras. (Map by Elizabeth Arkush.)
the place—some of them stronger and deeper, some lighter and more permeable. The region appears to have been characterized by a tension between confederation cemented by the need for defense and the persistence of smaller social identities with some level of autonomy: the defining feature of a segmentary system. Most telling is the distinctive pattern, strongly present in ethnographies of stateless segmentary societies, of pervasive violent conflict that occurs at multiple social scales, accompanied by defensive confederation at multiple scales.

There is no reason to consider segmentary confederation in the Titicaca Basin an a priori organizational principle. Rather, it is inseparable from warfare and geography. Endemic warfare was a centripetal force for defensive interdependence, but at the same time it resulted in a settlement pattern that defined and buttressed local identities and encouraged further conflict. The geography of the Titicaca Basin helped to channel this defensive settlement pattern into physical clusters and gaps that reinforced local allegiances and regional divisions. In the particular setting of the Titicaca Basin and in the context of escalating conflict in the Late Intermediate Period, a new kind of social and spatial order emerged, one replete with opposing tensions.

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Notes

1 Andean kinship is traditionally described as patrilineal and patrilocal, although maternal ties matter, and marital residence is rather flexible (e.g., Tschopik 1946:543–544). Because ayllus and moieties tend to be endogamous, ayllu members reckon common descent from a focal male ancestor along both male and female lines. This system is less rigid than the unilineal descent logic of the classic segmentary model.

2 In some cases single “minimal” ayllus are divided into moieties, in others two much larger moieties are composed of several ayllus each, and often both kinds of moiety organization pertain at once (see Albarracín-Jordán 2003; Gelles 1995). In some cases, moiety division at the largest scale seems to be an Inca administrative innovation resulting from the pairing of two formerly autochthonous native groups (Astvaldsson 2000; Gelles 1995).

3 For example, “Quellinca sayhua pucara quiyna” is translated as “Metaphoric: Amparo, defensor, refugio, padre, &c. son renombres o requiebros que dicen a uno en quien hallan todo amparo” (Metaphorical: Shelter, defender, refuge, father, etc., names or compliments they say to one in whom they find their whole protection) (Bertonio 1986 [1612]:2:288). Also, “Querari [shield], pucara, quellinca, sayhua, quinahatahua,” or “Tú eres todo mi amparo y refugio” (You are my whole refuge and shelter) (Bertonio 1986 [1612]:2:289).

4 Hyslop (1977:151–152) cites documentary evidence supporting this proposition: Lupaca native lords used a chullpa as a boundary marker when
defining land to support the new church of Chu-
cuito, and Cobo (1964 [1612]:273) remarks that
chullpas in the altiplano were placed on the fields
of the deceased.
5 This statement is based on a geographic informa-
tion systems (GIS) analysis of walking time
using ArcGIS 9’s pathdistance function on a SRTM
(shuttle radar topography mission) digital eleva-
tion model.

6 Unlike the other pukaras surveyed in this cluster,
Lamparaquen had only minimal occupation on
the walled hill itself, although some nonresidential
architecture was found. The associated habitation
area is just to the east at the foot of the hill.
7 Hyslop (1976) states that obsidian is absent at
Lupaqa sites, which suggests that obsidian may
have moved within the Colla zone but not across
this ethnic frontier.

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