# LATE INTERMEDIATE PERIOD POLITICAL ECONOMY AND HOUSEHOLD ORGANIZATION AT JACHAKALA, BOLIVIA

by

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To Mom, Dad, Colette, Dan and the rest of the Beaule and Simard clans

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ABSTRACT

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All households in prehistoric communities without well established sociopolitical hierarchies were concerned, first and foremost, with meeting their subsistence needs. Because the emergence of non-food producing elite households means that, at some point, they began to focus on other activities, the domestic economy is where complexity begins to develop. Participation in craft production and exchange activities can provide opportunities for some households to accumulate wealth and/or prestige; this is the basis for a model of political economy tested against data from a site in the Andean *altiplano*.

One objective of this dissertation project was to reconstruct the local history of Jachakala, a small village in the central Bolivian highlands occupied from ca. AD 170-1200. Artifacts from house floors, middens, and other features are divided into three chronological periods and grouped into three zones. Comparative inter-zonal and diachronic analyses are conducted to test models of the domestic economy and political economy derived from Kenneth Hirth's work in Mesoamerica.

The domestic economy model predicts a low degree of socioeconomic differentiation within a subsistence-oriented community. Patterns of staple and craft production, wealth inequalities, and supra-regional exchange are reconstructed to test this model against data from the first occupation, the Niñalupita Period.

I also test the hypothesis that differential participation in exchange and craft production activities underwrote the emergence of socioeconomic stratification, the central tenet of the Hirth model of political economy. There are significant inter-zonal differences in exchange goods and craft production refuse from the Isahuara and Jachakala Periods, but participation in these activities did not *cause* a political economy to develop, because some wealth inequalities predate this diversity.

Finally, I used Tiwanaku-style artifacts from Jachakala to assess relations with this pre-Inkan state. Results suggest that Tiwanaku's influence on local processes was minimal and indirect, and implications for models of inter-regional relationships are explored. Although this investigation focuses on one community in the central Bolivian *altiplano*, I hope that it will be of comparative value for archaeologists investigating domestic economy, household organization, the origins of complexity, and core-periphery relations in and beyond the Andes.

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# CHAPTER 1

## POLITICAL ECONOMY IN THE ANCIENT ANDES

Specific methods of developing and maintaining control over valued materials, facilities, equipment, or esoteric knowledge vary cross-culturally. In most models of the origins of social stratification, political systems grow via increasingly restrictive control over people and the products of their labor through the manipulation (conscious or not) of kinship relations, ritual activities, and various material goods. Resources of some type, whether food, luxury goods, or tools, are "required to underwrite the expansion, integration, and administration of political systems" (Hirth 1996:205). It is not enough, however, to identify those resources differentially distributed within a society and associated with the trappings of the wealthy and powerful. The recent theoretical focus on multiple complementary methods of increasing socioeconomic gaps between households makes clear the possibility that craft production, subsistence practices, exchange relations, ritual, and so on are not mutually exclusive provisioning strategies (Hirth 1996:207).

Hirth's definition of a political economy concisely describes one current political perspective on resource accumulation strategies. He writes, "Political economies emerge as individuals undertake the organization of production or the implementation of resource-accumulation activities within society," thus benefiting by increasing their social power through the selective distribution or use of their extra resources (1996:221). Resource accumulation, in his and similar models, refers to variable production and consumption practices by individuals employing accumulated goods in social contexts,

rather than for subsistence needs (Hirth 1996:220; Brumfiel and Earle 1987; Hayden 1990, 1993). In this way, wealth differentiation and inequalities in social or political power are linked in a single model, albeit one which fails to distinguish how or why the two (must) co-occur.

*The Context of Accumulation*

One way that archaeologists' models of the origins and development of wealth inequalities differ is in their choice of contexts within which accumulation takes place. For instance, resource accumulation within general or special purpose contexts such as community-level rituals, feasts, or storage often fail to materially benefit individual households in any direct or lasting manner. Short-term resource accumulation for the explicit purpose of hosting community-wide activities can promote differences of prestige (goods) or social status between households; these may not leave material traces behind.

On the other hand, the development of general-purpose accumulation strategies, within the socially acceptable context of community-wide functions, can create a framework of inequality for expanding differences in other, more personal ways (Hirth 1996:224; Earle 1997). Surplus accumulation and consumption on the household level may lead to direct and visible wealth differences such as those commonly referred to as elite/commoner distinctions, particularly as this economic differentiation is institutionalized over time.

*Types of Resources*

A second way of organizing models of political economies is to draw distinctions between the types of resources (and their uses) whose differential distributions constitute or are associated with economic inequality. Some archaeologists envision control over food surpluses in this role (Johnson and Earle 1987; Schurr and Schoeninger 1995), while others argue for the importance of non-utilitarian or luxury goods (Brumfiel and Earle 1987; Roscoe 1993) that justify and express political rank (Earle 1997). Production strategies of some sort, whether framed in terms of labor mobilization, agricultural intensification, tributary obligations, surplus mobilization, or controlled craft economies,

are usually fundamental variables in political economy models. These models are often presented under the rubric of service directed strategies, including political or religious justification for the accumulation of surplus resources, reciprocity for services rendered by elites and/or bureaucrats (Blanton et. al. 1982; Clark and Blake 1994; Earle 1990), interregional exchange (Schortman 1989), and tribute mobilization (Hirth 1996:215). Social institutions (as opposed to economic control) such as feasting traditions (Brumfiel and Fox 1994; Clark and Blake 1994), redistribution (Service 1962), and prestige-good distribution systems (Cobb 1991; Costin 1991; Helms 1993; Kristiansen 1991; Peregrine 1996; Steponaitis 1992) lie at the heart of elite redistribution models.

*Structural and Ideological Changes*

Such models emphasizing economic factors can be further contrasted with those advocating the key role of ideological forces in the advent of complexity. For example, Conrad and Demarest (1984) argue that political power is vested in social structures, so that differential power relations evolve through structural change. Johnson and Earle (1987) suggest that power based on exclusive access to luxury goods or esoteric knowledge is generally less stable and ineffective in implementing long-term structural changes, though it is less clear why that should be the case. The emergence of a political economy *requires*, however, a concurrent set of changes in what Hirth terms the "economic ideology" of a society (1996:225). This particular belief system is concerned with the ownership, usage, and relative conversion values of resources. The ownership or primary control of resources can be defined in terms of land tenure, labor rights and obligations, communal versus household resources, tributary relations, and so forth. Hirth's definition of resource usage, on the other hand, encompasses both resource accumulation rationales (more commonly referred to as justification) as well as the development of short- and long-term obligations such as ritual gifts or feasting (Hirth 1996:225).

The concept of resource conversion or equivalency indicates the value of goods that can be converted at some point to food or other utilitarian necessities (Hirth 1996:226). The social or political values attached to such things as ritual wares, long-distance trade items, or labor intensive craft goods, are thoroughly covered in the

literature on prestige goods (e.g., Demarest 1989). However, when these goods are viewed as potential sources of wealth or *economic* inequality, then they may function as symbolic capital. In other words, expressions of status differentiation cannot directly represent wealth inequalities until a system of resource conversions is established, in which those items' economic value (in terms of food, for example) can be roughly calculated. Even when the values of obsidian blades are established, for example, wealth inequalities will not necessarily emerge; but in order for these blades to function as sources of wealth in a social system, their economic value needs to be somehow defined or standardized. Emerging elites promote not only new means of increasing their own control over the goods produced and labor provided by others, but also new contexts in which those resources are expendable, and new ideas about the relative value of their material signs of prestige.

Furthermore, changes in economic ideologies can occur over time *with or without* strong political leadership (Hirth 1996:226). Bender (1990:254) points out that it is the ability to convert new systems of labor organization into symbolically viable differences of prestige that is the crucial threshold for developing political economies. Her point ties in nicely with Hirth's hypotheses regarding economic ideologies and external opportunities for the expansion of the domestic economy, because new systems of labor organization may result from households' differential participation in externally derived opportunities such as craft economies or trade.

The archaeological correlates of changes in economic ideology are sometimes more difficult to pin down. One might employ differential distributions of prestige goods relating social status and modes of wealth accumulation, an argument that figures often in case studies of the origins of complexity. Long-distance trade goods, commonly assumed valuable because of their associated transportation costs, may come to represent portable wealth instead of, or in addition to, local religious paraphernalia. Contexts of artifacts' deposition, in wealthy households, burials, and caches, can help archaeologists clarify just which types of goods were expressions of personal power or prestige and which items were ultimately for sale.

*The Role of External Ties*

Other models of political economy stress the role of exchange or external contacts in situations of growing inequalities (Rathje 1971; Renfrew and Cherry 1986; Schortman 1989). These include more current theoretical offerings set within the conceptual context of world-systems theory, or core-periphery relations (Chase-Dunn and Hall 1991; Schortman and Urban 1992; Schwartz and Falconer 1994; Stein 1999b; Wallerstein 1974). Whether interregional exchange networks function solely to provide raw materials for variably organized production systems, or whether their role in alliance formation and political justification is stressed, this sector of the political economy often figures prominently. Rare or exotic materials reflect and/or justify status in two distinct manners, including owners' direct access to wider interregional markets (Flannery et al. 1989) and through the high value of the goods themselves that derives from procurement costs (Helms 1979, 1993). To some extent, world-systems theory has changed (or perhaps polarized) the way exchange is approached, in refocusing attention on broader systematic relations as opposed to individual-centered agency.

Perhaps the most notable outcome of recent approaches to core-periphery (or, simply, interregional) relationships is the acknowledgement that cross-cultural contact may or may not alter the structure of local social systems. Contact and trade between centralized state systems and provincial societies can indirectly affect household organization without stimulating the localized growth of centralized, restricted production, storage, or procurement strategies (Hirth 1996:219). Even in terms of luxury goods' presumed/possible function as political justification for wealth differentiation, the iconographic import of ideological elements must be set into local structures, beliefs, and practices.

This point is especially relevant to research on the Andean state of Tiwanaku. In some models of state organization, the mere presence of sherds bearing Tiwanaku-style decoration was sufficient in the past to characterize sites such as Jachakala as outlying Tiwanaku colonies (Browman 1981). Depictions of Tiwanaku-periphery relations in rural areas have ranged from a highly centralized political and economic force collecting tribute from constituent populations in wide-ranging regions (Kolata 1993) to a loose confederation of independent polities who voluntarily adopted elements of Tiwanaku

ideology. Little fieldwork has been conducted at peripheral regions distant from the Titicaca basin with the goal of comparing pre-Tiwanaku and Tiwanaku patterns. Consequently, one objective of my work on the site of Jachakala is to establish the timing of the emergence of the political economy in order to definitively argue that changes there were or were not stimulated by contact with the Tiwanaku state.

*Scales of Differentiation*

The scale of analysis is another important factor in the formulation and testing of models of political economy. It is crucial to determining the point at which differences between groups of people indicate changes in social organization. Inter-regional, inter-community, and inter-household differences require three somewhat different kinds of analytical tools. Changes in the size and organization of communities, for example, can be explained by one set of variables (such as the development of craft specialization or the adoption of new agricultural techniques); these can and often do differ from variables that are used to explain inter-household variation (the formation of extended family households or a religious elite are good examples). The *kinds* of differences that emerged between groups of prehistoric people at the household, community, and regional scales are the same (differences can be social, economic, ideological, political, and so forth). However, the particular sets of variables attributed causation in models of incipient differentiation relate more closely to the scale of social change. This thesis is focused on describing and explaining changes through time within a single community; it must therefore take into account variables that affect or alter how people are organized on that social scale (i.e., within and between households and groups of households). Toward this end, intra-community changes at the site of Jachakala are tied into the domestic/household economy.

*Inter-Household Variability*

This focus on households or groups of households makes good sense when working in small agro-pastoral communities, where these are most often the basic decision-making units. As Hirth emphasizes (1993a:22), it is important to keep in mind that the domestic unit's primary goal is the basic accumulation of sufficient provisions to

at least minimally support its residents. Subsistence needs, though variably defined cross-culturally, take precedence over all others. From this perspective, the general long-term stability of agrarian households is directly attributable to their inability (because sizes of labor forces, subsistence needs, and social responsibilities are predetermined) to mobilize additional resources to experiment with extraneous socioeconomic opportunities to accumulate wealth or prestige. Therefore, the range of available economic strategies will directly determine the degree of variability in residential composition and form found within a community. This variation is usually minimal, however, due to the limited range and, more importantly, homogeneity of economic options available to agrarian household units within a community.

Differences, or rather the absence of differences, in the *kinds* of activities pursued by households is one source of variability explored by archaeologists. The origins of complexity within a society are usually described in terms of changes in the pursuits to which emerging elites devote time. When some members of a community begin to do different things than others, particularly if those activities bring participants prestige, surplus resources, and eventually power, we recognize incipient political economies. Within a domestic economy, on the other hand, the kinds of basic activities performed by each household should differ little from its neighbors.

A second source of inter-household economic variability is the level of intensification (of farming, herding, craft production, trade, and other production activities). Even in subsistence production, short-term intensification by some households relative to others should not necessarily construe wealth-creating surplus accumulation. Small-scale agrarian households vary subsistence production to produce surpluses to account for regular resource shortfalls, the growth of the basic co-residential unit, or similar internal factors, and do so without the stimulus of political intervention from above or outside. This flexibility in production levels is the basis for low-level economic differentiation in societies with egalitarian ideologies. To some extent, such economic differentiation is perhaps tied to the normal range of sizes of co-residential units (including nuclear and extended kin groups, households at various stages of their life cycles, those with social ties to other communities or regions, etc.).

These differences in household composition and the associated sizes of both material needs and labor forces manifest in archaeological patterns reflecting a range of economic strategies. Such differentiation should be reflected in a strong correlation between economic intensification and architectural features like diversity of house size or form. Inter-household differences subsumed under a domestic economy should not, however, be strong or significant enough to qualify as wealth differentiation as typically described in political economy models. In other words, economic differences associated with variable household needs should not result in differential distributions of status goods (i.e., *social* complexity, which might or might not further reflect differences in *political* power). Other classes of goods one would not expect significantly different distributions of in a domestic economy include imports, prestige goods, serving vessels, and the correlates of craft production activities. In such a system, economic variability should rather fall within the realm of moderate household-based intensification of production. When some households diversify their economy to incorporate a separate set of activities, and when those extramural activities translate into wealth differences, these changes reflect something different altogether: incipient socioeconomic complexity. If such categorical differences further extend to the realm of political power, then a political economy is born.

The distinction can be illustrated by the following scenario. Larger households will produce more agricultural implements to employ and feed their greater number of consumers. The higher frequencies of hoe debitage left behind do not constitute wealth differences compared to smaller neighboring households, because both produce and use their own tools. However, when some begin to manufacture tools for exchange (i.e., they produce many more tools than they use), this craft production signals changes in intra-community relationships.

*Types of Inter-Household Variability*

These two types of changes in a domestic economy correspond to those described by Bermann (1994). “Systemic changes,” or “changes in existing dimensions of the household system,” can be the basis for moderate levels of inter-household economic variability. Intensifying production to meet changing household needs is one example.

"Transformational changes," on the other hand, are "shifts in the rules or principles that govern domestic organization," and "imply changes in the household's role or function in larger systems" (Bermann 1994:24). This latter dimension involves the kinds of changes underlying long-term, broader scale shifts such as the emergence of elites. The trick, of course, is to correctly identify both the spatial and diachronic changes in household patterns that fall into each category. The long term, local perspective on the domestic economy of Jachakala households afforded by the site's multiple occupations provides an ideal framework for attempting to distinguish between these two kinds of household changes.

*The Three Sectors of the Domestic Economy*

It is crucial to distinguish between the two kinds of inter-household economic differences mentioned above, namely those in the kinds of activities undertaken by residents, and variations in the degree of (subsistence) intensification. I agree with Hirth, moreover, that the domestic activities of all households (regardless of their relative level of intensification) can be best approached through material residues related to the three sectors of an economy described below. These sectors include production, service, and exchange activities.

Most prehistoric households farmed, witnessed or perhaps hosted rituals, produced and consumed trade goods, and participated in a wide range of social, economic, and political activities. This range of activities together comprises the domestic economy. Access to a variety of resources, such as land, kin- or communally-based labor, raw materials, and individual talents and personalities, in addition to factors of a particular ecological setting, shape (to greater or lesser degrees) optimal strategic options for fulfilling each household's demands. Some researchers mistakenly focus on the most visibly prominent resource accumulation strategy, be it agricultural intensification or craft production, as typifying the entire domestic economy, rather than recognizing that a variable mix of resources will be employed through a combination of efforts to meet each household's basic needs. These efforts will intertwine the three sectors mentioned above (Hirth 1996:220-221).

Production involves the control of food and craft goods, and subsumes farming, herding, storage, processing, and manufacturing. The service sector specifically refers to payments rendered to elites for their support or as payment for their community-oriented functions within the context of a fully developed political economy. However, some communal activities, given the absence of an elite, can be grouped under the same heading insofar as they require either labor or materials on a supra-household level. Examples of such activities include periodic ceremonies at which large accumulations of goods are ritually consumed, or the construction of communal works such as meeting places and small-scale irrigation works; in these instances, centralized resources will typically have culturally proscribed uses. Finally, the distribution sector of the economy refers to strategies developed to control resources circulating through inter-household, inter-site, or inter-regional exchange networks (Hirth 1996:209).

*An Economic Focus*

This approach focuses most heavily on the economic activities of the households in a given community, though the social, political, and ideological dimensions of variability can be explored with the same data. This economic focus is reflected in the working definitions of domestic and political economies used in this project, and in the way these are tied together in the models I test. The dynamic, growth-oriented sphere of economic activities aimed at the maximization of wealth or surplus staple resources for the support of elite households is termed the "political economy". In contrast, the domestic economy or "subsistence economy" functions solely "to satisfy the basic needs of the family with minimum effort, [and] tends toward conservatism" (Johnson and Earle 1987:14). Johnson and Earle argue that the inherent tendency toward conservatism in a subsistence economy will prevail until some crucial stimulus interrupts former economic patterns and causes the reorganization of basic labor forces. This last statement is assumed in the models tested in this thesis.

As Hirth emphasizes, archaeologists studying the evolution of political economy tend to focus on "identifying the evolution of political organization rather than reconstructing the economic relationships that underscore them" (1996:203). This assumed equation of political development and *both* wealth and status differentiation has

contributed to a skewed literature on the origins of complexity (Hirth 1996:227). Among others, his work in Central Mexico and mine in Bolivia attempt to correct this situation with a revised focus on the economic processes underlying social differentiation. Most studies of political economy, he continues, emphasize either production (i.e. agricultural intensification) or exchange (Rathje 1971; Renfrew and Cherry 1986; Schortman 1989), rather than exploring all forms of resource control exploited in the creation of wealth and status differences between households (Hirth 1996:205). The emphasis on exchange relationships in some of these studies derives from the rise in popularity of world-systems theory (Chase-Dunn and Hall 1991; Kohl 1987, 1989; Schortman 1989; Schortman and Urban 1992). This dissertation accords with Hirth's assertion that in addition to exchange relations, "political organization, consumption patterns, and social development are also strongly influenced by how individuals control the production and service sectors of their economies" (1996:204). Again, Hirth's focus on the three sectors of the domestic economy integrates exploration of all of them to provide more powerful theoretical tools for looking at economic variability, as the next section explains.

## THE HIRTH MODEL OF DOMESTIC ECONOMY

### *Households' Economic Stability*

Household economic organization directly reflects subsistence practices and the range of socioeconomic opportunities available to its membership. Organizational variability among contemporaneous households will be predictably small, according to Hirth, where few opportunities for economic expansion exist (1993a:23). Hirth adds that prehistoric households would have had little opportunity to change, "except under circumstances of dramatic sociopolitical reorganization or environmental change (draught, famine, plague, etc.), resulting in long-term stability in form and composition." (1993a:23). Incorporation into a larger political system would also provide opportunities for economic reorganization. This is an important assumption underlying this approach to modeling the domestic economy of groups within a community. Organizational stability is more or less the norm; it is *upset* by some stimulant or change in the socioenvironmental setting of the household/community.

In the absence of such circumstances, the stability of the domestic economy stems from households' inability to procure sufficient resources to either create or take advantage of opportunities to fundamentally change their economic organization. While elite households in well established political economies could generally finance alternative adaptations, subsistence-oriented households cannot (Hirth 1993:23). Three factors responsible for the long-term stability of non-elite households' domestic economy include their preference for traditional production strategies, deep-seated beliefs about the social composition of households and the various roles of their members, and the limited range of economic opportunities in a given social and environmental setting. In the Hirth model relating the domestic and political economies, changes in household economic organization (the range of activities practiced by a household and the relative proportions of its limited labor devoted to different tasks) happen when the third factor is altered. Household membership and social organization are not part of this model.

*Constraints on Economic Diversification*

Given differences in the size of available labor forces and subsistence needs associated with stages in the household life cycle, some households will always produce and need somewhat more than others. In a society in which extended family groups are housed in small structures grouped around a common patio, for instance, subsistence, craft, and exchange activities should correspondingly increase or decrease with the number of occupied structures in each patio group. Similarly, larger households with both more mouths to feed and more workers should produce and consume somewhat more goods, though these differences will not necessarily extend to the realm of wealth (i.e., more serving or ritual wares, luxury items, and so forth). However, subsistence demand levels and the size of available labor forces simultaneously function as constraints on the growth and diversification of agrarian domestic economies because these needs are primary.

The second constraint on prehistoric economic growth is the poorly developed nature of distribution systems (Hirth 1996:222). Exchange networks are inherently limited in terms of the types and volume of goods that can effectively circulate over short or long distances (Drennan 1984). Distance, weight, preservation, the organization and

regularity of traders or caravans, and the cultural value placed on goods, all affect long-distance exchange. On a local level, the relationship between households' differential participation in exchange networks and wealth or prestige accumulation is not necessarily causal. Increased access to trade goods will not necessarily stimulate increased wealth or elevate status within a community, so this relationship must be subjected to rigorous testing.

These two sources of variability in a domestic economy - subsistence demand levels and limited distribution networks - together modify the view of prehistoric peasant households as being uniformly conservative. Constraints on economic growth at the level of the household or multi-household group do not preclude a degree of variability. In this sense, Chayanov's picture of peasant farmers who require external stimuli to intensify their subsistence production is far from the rule (cf. Netting 1993). Intensified domestic production in noncomplex societies may include increased agricultural production, part-time craft specialization, and increased participation in or reliance upon interregional exchange systems. Many archaeological and ethnographic case studies have documented such domestic intensification in the *absence* of external stimulants such as environmental or population pressure (Brumfiel 1994; Clark and Blake 1994; Hayden 1990; Strathern 1971). Because of this, it is important to test the central tenet of the Hirth model, namely that the potential for socioeconomic differentiation within a community rises with the introduction of economic opportunities outside the traditional agricultural sector, such as increasing the focus on craft production for exchange or wage labor pursuits. This approach, also advocated by numerous other researchers (Blanton et. al. 1982; Flannery and Winter 1976; Sanders et. al. 1979; Wilk 1984, 1990), complements models equating political development and elite means of controlling certain facets of the means of production.

*Land Tenure Systems and Domestic Structure*

The land tenure system is another important (albeit more difficult to reconstruct) factor shaping the domestic economy of non-elites, according to Hirth. In situations of unrestricted rights to land and other natural resources, he predicts "considerable variation in the [social] structure of domestic groups" (Hirth 1993a:28). On the other hand,

households will be more homogeneous in both form and size when access to land is highly structured or when there is insufficient land for unrestricted population growth. Furthermore, when "there are pronounced inequalities in the access to land and other resources, differences in household membership will often be the result of rank rather than economic adaptation" (Hirth 1993a:28).

Though land tenure systems are extremely difficult to reconstruct archaeologically, one can sometimes draw reasonable implications from observations of environmental settings and the relative homogeneity or variability in inter-household structural considerations. Hirth's assertion that the amount of accessible land and the quantity of labor available to cultivate it are important factors shaping non-elite households' economic organization accords well with his model of the domestic economy.

In this model, it is generally difficult for individual households to gather enough surplus resources to allow them to experiment with non-agricultural activities. Why this is so is not, I think, a question of defining surplus subsistence resources in relative versus absolute terms. Except under conditions of extreme population pressure or environmental stress, agrarian households have the ability to produce a bit more (and/or consume a bit less) food than they need. Similarly, the ability to store extra subsistence products long enough to accumulate a fund which can be spent in support of non-domestic pursuits (potential wealth-building activities such as cash crops, craft production, trade ties, etc.) is not necessarily a hindrance. In the Andean highlands, for instance, tubers are freeze-dried to make *chuño*, and meat may be stored as jerky. Preservation of stored subsistence goods elsewhere might be a bigger problem than in the arid *altiplano* environment. In theory, therefore, nothing much more than time is needed to accumulate extra food to allow for experimentation with non-domestic activities. However, the unpredictable nature of agro-pastoral resource bases, particularly in such marginally productive environments as the *altiplano* (because of high risks associated with overnight frosts) is well-known to anthropologists and peasants alike. This alone could make agrarian households unwilling to count on stores of extra food while they devote more time to non-domestic pursuits.

Given their subsistence orientation, the size and internal economic organization of households will vary mostly with the amount of land and labor available to each. One can frame the issue in terms of cultural conservatism, labor productivity and time allocations (Netting 1993:105-109), or domestic (subsistence-oriented) economy. The working assumption in this model is that in general, agrarian households are unlikely to expand or radically restructure their domestic economy to the extent that archaeologically recognizable wealth differences emerge in the process, without some reason to do so. Of course they do change over time in many cases, and these are the archaeological moments of interest to us. This long-term general stability in the domestic economy (and low levels of variability between households' activities in similar social, environmental, and economic circumstances) is further reinforced by highly structured land tenure systems; more than time is needed to intensify subsistence production if land is not readily available. In this way, ethnographic and archaeological conceptions of the agrarian household's structure and organization (e.g., Smith's (1987) description of the household life cycle) tie directly into Hirth's (1993a) point about land tenure systems.

*Stimuli for Change in the Household Economy*

The introduction of opportunities outside of the traditional agricultural sector can break this long-term pattern of economic stability and relieve constraints on socioeconomic diversification. Chances for some households or groups to dominate either long-distance trade or craft production mean that subsistence strategies may cease to be the primary factor dictating domestic organization for all households. The effects of trade and craft production, as well as later wage opportunities, on the domestic economy depends on the frequency, scale and organization of those activities (Hirth 1993a:28).

Hirth focuses on craft production in particular in his own work in Central Mexico. He concludes that it was not, in fact, an important economic alternative at the time of the Conquest thanks to pressure on rural households to maintain their commitment to agriculture. However, he argues that most craft specialization occurred in household contexts, and "economies of scale and specialization were achieved most often by the growth in household size rather than by the appearance of supra-level forms of economic organization" (1993a:30). Because changes in household form accompanied the evolution

of chiefdoms and states, much variation in domestic organization may be the result of changing social relationships rather than shifts in production strategies (1993a:32).

*Summary*

For these reasons, prehistoric households and groups of households are ideal contexts for studying long-term patterns in the domestic economy, including the production, resource ownership and consumption, and distribution sectors of socioeconomic relationships within communities. Given that, regardless of the level of intensification, the domestic economy's primary goal is to fulfill the basic subsistence needs of members, Hirth attempts to refocus attention on the economic underpinnings of the emergence of socioeconomic stratification.

Variation among agrarian households should be minimal in the absence of significant opportunities for expansion of the domestic economy, because it is difficult to collect surplus resources for experimentation. This difficulty derives from several constraints on economic diversification inherent in the domestic economy of Prehispanic households. First, the size of available labor forces and associated subsistence demand levels are both fixed, though not constant throughout the household life cycle. Secondly, distribution networks are poorly developed.

Hirth argues that long-term changes in the domestic economy leading to, in some cases, a political economy, stem from opportunities for some households to dominate non-agricultural pursuits such as craft production or trade. Such opportunities make inter-household wealth differentiation possible.

## THE JACHAKALA PROJECT: THEORETICAL CONTEXT

One goal of the project described in this dissertation was to reconstruct the domestic economy of one small community in the central Bolivian highlands in order to test Hirth's model of economic change. The site of Jachakala is a small village (6.72 ha in surface area) that was occupied from ca. AD 170-1200, including the Late Formative Period (ca. AD 150-800) and Late Intermediate Period (ca. AD 800-1200). Fieldwork conducted there from July 1997 through February 1998 both pre-Tiwanaku and

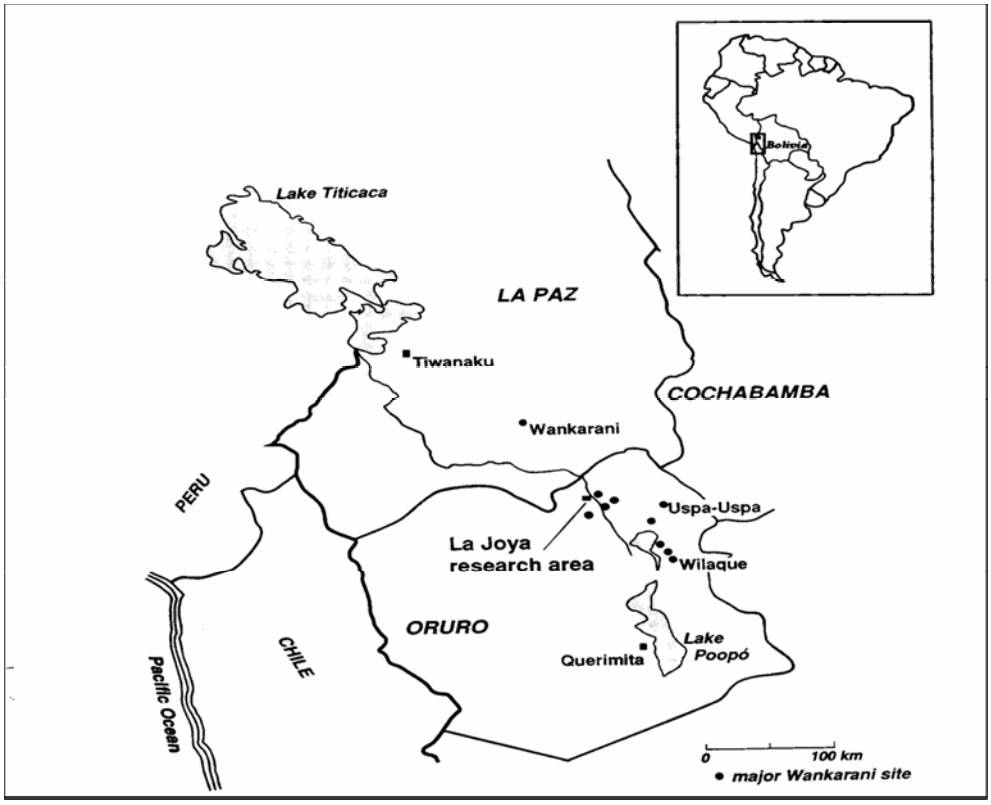


Figure 1. Map of the south central Andes showing the location of the La Joya research area (Bermann and Castillo 1993:312).

Tiwanaku-contemporary periods at a single site in the La Joya region, Department of Oruro, of the Bolivian *altiplano* (Figure 1). Changes through time in patterns of staple and craft production, wealth inequalities, supra-regional exchange, and material styles are explored extensively at the multi-component site of Jachakala in this study of local prehistory. In sum, the goal of my research was to test whether variability in the economic organization of households underwrote the emergence of social, political, and/or wealth differences between areas of the village.

In contrast to this localized approach, archaeological research on political economies in the south central Andean literature has primarily focused on the organization of the largest imperial systems, such as the Inca, Lupaca, and Tiwanaku

polities (Albarracin-Jordan 1996; Browman 1978b, 1980, 1981; D'Altroy and Earle 1985; Kolata 1985, 1986, 1993; Moseley 1992; Richardson 1994; Stanish 1992). These case studies provide a view of political economies at imperial cores and major prehistoric centers, typically emphasizing factors such as pressure to produce surplus goods by an emerging elite, and the evolution of part or full-time economic specialization (Costin 1991; Earle, D'Altroy, et al. 1980, 1987; Hastorf 1990; Whalen 1981). However, very little is known about the emergence of political economies outside of these large-scale systems, hence the need for studies in the periphery (Bermann 1994; Yoffee and Cowgill 1988).

Many of these smaller scale investigations, however, primarily focus the Tiwanaku-style materials found at the Tiwanaku-contemporary occupations of various sites; relations between a core site and other regions are described in terms of client-patron, elite-elite alliance, or colony models (Browman 1978b, 1980, 1981; Goldstein 1993, 2000a; Kolata 1985; Serracino 1980). These studies have sometimes lacked a local, dynamic perspective in that interaction with Tiwanaku itself is seen as the principal stimulus to the evolution of local political economies. The Jachakala project, in contrast, follows Bermann's (1994) work at Lukurmata in that interaction with Tiwanaku in particular is seen as just one factor (though one which holds much theoretical interest for me) in the emergence of wealth differentiation. Occupations that predate, and that are contemporary with Tiwanaku are contrasted to explore the local pre-contact origins and subsequent development of intra-site differences, as Jachakala passed into and out of the margins of a centralized state system. Because this work provides the first extensive look at the Late Intermediate Period occupation of the La Joya region, it focuses mostly on broad spatial and diachronic patterns rather than smaller-scale analytical units such as individual households.

## THE HIRTH MODEL OF POLITICAL ECONOMY

### *Wealth Differentiation and Sociopolitical Reorganization*

Given Jachakala's multiple occupational phases and the changes in the community's socioenvironmental setting (including, of course, the development and

subsequent expansion of Tiwanaku-derived ideology across the *altiplano* landscape), this site provided a good opportunity to reconstruct a long-term local history and test hypotheses for how and why differences would emerge. The model of political economy tested in Chapter 4 articulates the development of a political economy with changes in the domestic economy described earlier. One can explore diversity in economic activities at the household level through artifacts from house floors, adjacent activity areas, and associated features, to infer how a representative sample of households responded to and participated in broader long-term changes in a region's political and economic organization. As the basic unit of analysis, artifact assemblages left by groups of people within a community can be directly compared in order to reconstruct long-term changes in agricultural, trade, wealth, and tool production activities.

One group's control over the distribution of valuable exchange goods *or* the production of certain material classes does not by itself signify the emergence of a political economy. If unequal economic and political relations between households do emerge, then evidence for the differential distribution of wealth and prestige should accompany changes in the economic organization of the prehistoric domestic unit. For example, changes in the distributions of staple, wealth or prestige goods that followed from contact with the Tiwanaku state can only be identified as such by directly comparing pre-Tiwanaku with Tiwanaku-contemporary assemblages. Likewise, the comparison of Tiwanaku-contemporary and post-Tiwanaku assemblages could reveal whether the eventual collapse of the larger Tiwanaku system affected a community's or household's domestic economy.

While the specific method of resource control employed will vary from society to society, "resources in the form of food, tools and/or luxury goods are required to underwrite the expansion, integration, and administration of political systems" (Hirth 1996:205). Fieldwork was designed to test for the emergence of differential access to key utilitarian and non-utilitarian goods to determine which facets of the local economy, including the production, service, and exchange sectors, were exploited in the creation of hierarchical social divisions. Evidence for status differences might include differential distributions of luxury goods and prestige items such as Tiwanaku-style ritual

paraphernalia between households or sites, or differences in the size and quality of domestic architecture of high and low-status households.

*Diversification of the Household Economy*

The model of the emergence of a political economy from a domestic economy that will be tested below against the La Joya archaeological record is taken from Hirth's (1993a, 1993b, 1996) work in the Central Mexican highlands. The domestic economy of prehistoric agrarian households is characterized, he writes, by "two features: (1) households were the primary units of production and were organized to produce resources primarily for their own subsistence; and (2) most households, irrespective of the level of sociopolitical development, were engaged in agricultural activities on a full- or part-time basis" (1993a:27-28).

To reiterate, the Hirth model of political economy states that differential participation in activities such as trade and craft production can lead to increased variation in the domestic economy, organization, and size of households. This inter-household variability forms the economic underpinnings of the political economy. The consequent development of rank or status differences between households follows from differential access to key resources such as raw materials and long-distance trade goods. Although many have drawn strong connections between household composition (not addressed in my work) and subsistence strategies (see Netting et. al. 1984), Hirth's model suggests that variability on this level is more likely due to changes in non-subsistence pursuits. These in turn reflect changes in intra-community (differential involvement in craft production) or inter-community (inter-regional exchange) relationships.

## ARCHAEOLOGICAL TESTING OF THE HIRTH MODEL

For the La Joya region in particular, Hirth's model provides a number of testable hypotheses. The first task is to reconstruct the domestic economy at Jachakala, including production, service, and distribution activities. Some differences in the distribution of such materials as basalt debris from the manufacture of agricultural hoes are to be expected, because households at different stages of their life cycles will produce and

consume variable amounts of food. Hirth predicts that if analysis reveals no significant differences in the economic organization of households (including subsistence, trade, and craft production), size and structural differences between them will reflect rank or status inequalities. However, this structural variability might alternatively indicate differences in households' life cycles, size, and/or social connections.

Under the domestic economy model, all households will participate in a similar range of activities to more or less similar degrees. Small and large households alike will farm, herd or at least consume parts of a few camelids, produce and/or use a range of utilitarian tools, and so on. Because differences between them are ones of degree rather than kind of activities, the relative proportions (not quantities) of artifacts reflecting craft production pursuits, for example, will be fairly similar.

On the other hand, if strong economic differences between residents are identified, then the question arises whether those intra-community differences are strictly economic or whether they underlie inequalities in social status or political power. So, if differences *are* revealed, then the second task is to determine what kind they are: social (prestige), economic (wealth), and political (power) differences are three very different things. Differences in social status, for instance, should be archaeologically visible as restricted access to long-distance luxury goods (such as obsidian or marine shell) or prestige goods (such as ritual paraphernalia or perhaps Tiwanaku-style ceramics). Similarly, because wealth differentiation is not the same thing as political inequality, I would need to find evidence for political hierarchy, such as different facilities or location relative to non-domestic features or badges of office, in order to argue for an incipient political economy.

The Hirth model of political economy provides a third task: to test the hypothesis that evidence for wealth differences will accompany evidence for variable levels of participation in craft production and/or exchange activities (e.g., production of basalt tools or Tiwanaku-style ceramics) that serves to distinguish some households or areas of the site from the rest. This hypothesis is the central tenet of the Hirth model of social change.

In this way, three types of differences are being explored: social (household size, structure, and domestic economic organization), wealth (subsistence differences, access

to valued exchange goods), and political power (evidence for control over people or the products of others' labor). The Hirth model predicts that differentiation in terms of wealth and political power (*both* are implied in the term "political economy") should correspond to transformational household changes in craft production or exchange activities.

Hirth's readily testable hypotheses linking inter-household differences to variation in economic activities provide a direct means of exploring the broader economic processes that underwrite the development of a political economy, as defined earlier. (Note that some conceptual problems related to the treatment of social stratification, wealth differences, and political hierarchy will be discussed in Chapter 7; in fact, the model of "political economy" tested in this work focuses most heavily on economic differentiation, rather than political organization.) In sum, the model employed in this project asserts that the composition, organization, and range of activities of a domestic unit will be primarily structured by the mode of production and its access to various resources. Following Hirth, I explore the relative importance of changes in the production, service, and exchange facets of the local economy in the emergence of differences of some sort at Jachakala.

*Operationalizing the Hirth Models*

To operationalize the Hirth models of domestic and political economy, three sets of questions need to be answered in turn.

1. Degree of variability:

   What does the domestic economy look like for each period of Jachakala's history? Are there differences in the domestic economy of households or groups of people in the community beyond those moderate ones predicted by variations in the domestic life cycle?
2. Kinds of differentiation:

   Are those differences strictly economic, or are they spatially associated with differentiated distributions of artifacts that indicate wealth, prestige, or political power?
3. Hirth model of socioeconomic change:

Do these economic differences develop as some households participate to a much greater degree in either exchange networks or craft production activities?

## THE SITE OF JACHAKALA

This section is devoted to a preliminary "snapshot" overview of the general patterns derived from recovered artifacts and features dating to each of the three periods. It is intended to give the reader a brief descriptive introduction to the full range of features found in the archaeological record of the site, rather than a comprehensive overview of the spatial and diachronic patterns covered in later chapters. The earliest, Niñalupita Period will be addressed first as an antecedent to the Isahuara and Jachakala Period developments. Jachakala Period patterns are in turn divided into three short sections, each of which describes findings in one of the community's three spatially segregated areas or zones. The Jachakala Period description in particular focuses heavily on architectural remains, because the foundations of houses, public structures, and dividing walls are readily visible on the site surface. Figure 2 presents a map of the site, which includes both excavated structures as well as partial stone foundations untouched to date by a trowel. All pictured structural remains in this site map are visible on the surface. Figure 3 uses hatched areas to show the location and extent of excavations.

### *Niñalupita Period*

During the Niñalupita Period (ca. AD 150-500), Jachakala covered between three and four hectares. A single calibrated radiocarbon date from a well-preserved hearth in the deepest cultural level dates the site's initial occupation to 1720±60 years BP, between AD 170 and 290. Artifacts recovered from the deepest strata (120 to 200 cm below the surface) of pits taken to sterile soil include ceramic wares, basalt debitage, and faunal remains, with very small quantities of semi-precious stones or other non-utilitarian imports. While no complete residential stone foundations were identified deeper than a meter below the site surface, typical domestic features such as small, unlined hearths, ash-filled pits, storage pits, and a small number of possible activity areas are

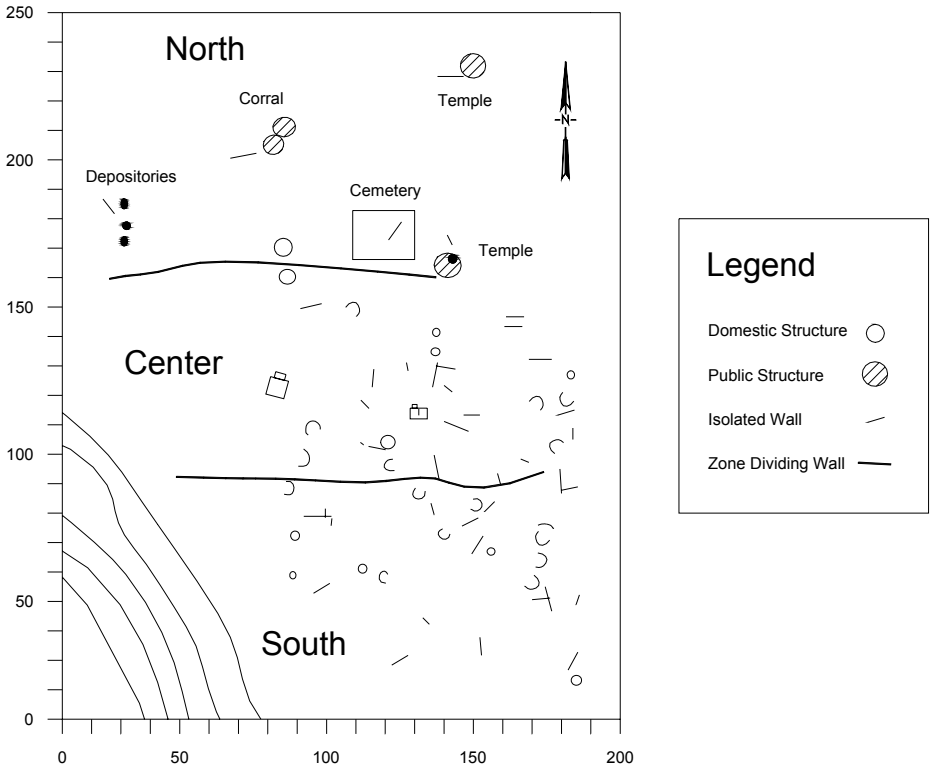


Figure 2. Map of the site of Jachakala, showing foundations of domestic and public structures and dividing walls visible on the surface. Contour lines in the southwest corner mark one-meter intervals.

scattered throughout the compact, silty clay matrix. This combination of artifacts and small features extends from the southernmost border of the site to the middle of the central zone. In other words, the initial occupation of Jachakala lies underneath the southern half or so of the area later covered by the final, Jachakala Period occupation.

The lack of Niñalupita Period house foundations poses little problem for this study of the domestic economy if one employs Flannery's theoretical approach to the household unit, or "household cluster" (Flannery and Winter 1976:45). This concept incorporates features such as middens, storage pits, and activity areas as well as residential structures associated with households (Bermann 1994:29). Material residues

from the household unit's range of domestic activities will be physically spread over a larger area than that enclosed by a foundation. This is a methodological dilemma acknowledged by archaeologists studying household processes and patterns, but one that is notoriously difficult, if not impossible, to address. In comparing remains from house floors and features immediately around the foundations, activity areas used by those residents are certainly missed. This is one reason why a number of units *not* adjacent to visible structures were excavated at Jachakala. Nevertheless, as Bermann argues for Lukurmata, only part of each household unit was exposed at Jachakala (1994:30). For the Niñalupita Period in particular, groups of domestic features associated, presumably, with the residents of various areas of the site (rather than particular domestic structures) must serve to represent household units in general.

Some 40 to 50 m to the north of this initial occupation, the site's residents had already begun to bury their dead in a small area that was to serve as the cemetery for the entire thousand or so years of the village's occupation. The well-preserved remains of three older males were excavated in Niñalupita Period levels of this cemetery. The physical orientation, position, and treatment these three received differed greatly; one underwent post-mortem mutilation, another was lain extended atop a small fire, and a third was interred in a fetal position. Other than large round stones and a small quantity of undecorated sherds, however, no grave goods accompanied any of these three individuals.

Although, as mentioned above, no distinguishable household units could be identified, artifact distribution patterns together with the small sample of recovered domestic features indicate that the site was founded as a small village of some three to four hectares in size. Statistical exploration of these patterns in Chapter 3 aims to reconstruct the Niñalupita Period domestic economy and to test for different kinds of variation in the quantity or quality of materials that groups of people in each area had access to, including both utilitarian as well as imported goods.

*Isahuara Period*

It is primarily in the centrally located strata (30 to 120 cm below the surface) of pits to sterile soil that the initial differences between households in different areas of the

site are evident. The community began to slowly expand to the north, growing in size to cover approximately 4 to 5 ha during this transitional period, from ca AD 500-800. Occupation continued in the southern area of the site, while the community expanded to include newly established households to the north of the Niñalupita Period settlement. Although the community is expanding to the north, the size of the site at the beginning and end of the Niñalupita occupation are only approximations. Only two identifiable household foundations were ever uncovered during this phase; site size estimates are strictly based on the depth at which randomly placed pits throughout the site reached sterile soil. Instead, a range of domestic features and artifacts similar to those from the Niñalupita Period were uncovered throughout the Isahuara Period strata at Jachakala.

*Jachakala Period*

Structures from the upper 30 cm of cultural materials date to approximately AD 800–1200, based on the recovery of Tiwanaku IV and V phase ceramic wares from within and around their foundations. Although the Isahuara and Jachakala Periods roughly correspond to Tiwanaku Periods IV and V, it appears that contact with Tiwanaku occurred only perhaps in the later half of the Isahuara Period. The deepest levels of that period contain no Tiwanaku-style ceramic wares outside of intrusive midden contexts. Nonetheless, the three-period chronology employed throughout this thesis relies on local economic changes through time, rather than on evidence dating the community's first contact with this external political entity. This is, of course, consistent with the project's emphasis on local history.

By the end of the Jachakala Period, the site had grown to cover 6.7 hectares, again expanding primarily to the north. The dense scatter of remains visible on the surface of the site date to this occupation. These include the stone foundations of numerous architectural units, which are spatially grouped into three zones or sectors of the site. A sample of structures in each zone was exposed in large, contiguous horizontal excavations that exposed an average of 24 $m^2$; a total of 340 $m^2$ of surface area was opened up in this manner. Figure 3 illustrates the placement and spatial extent of these horizontal excavations. Deep excavations to sterile soil were also conducted in units placed within those horizontal exposures and in a few randomly chosen locations. As

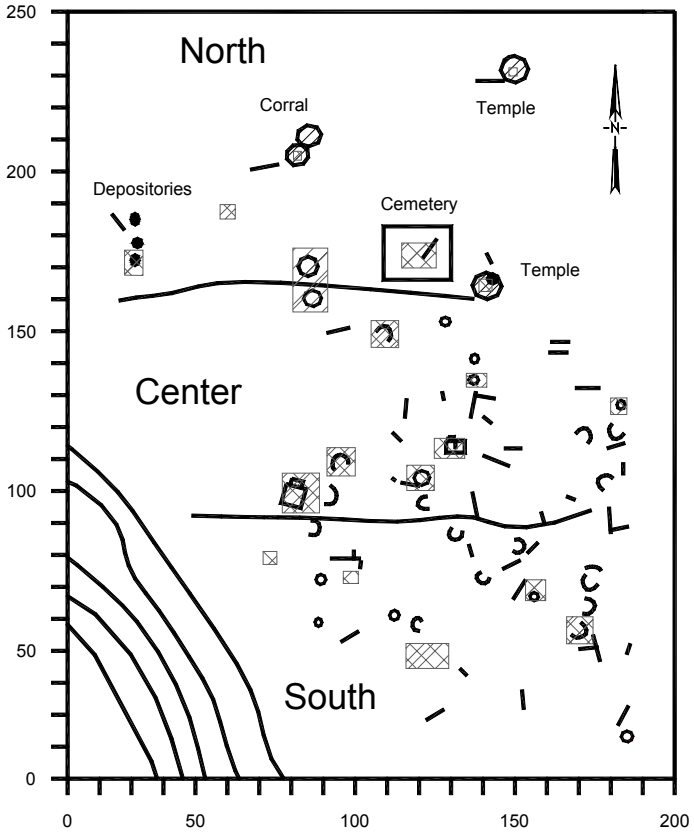


Figure 3. Map of Jachakala with locations of horizontal and deep excavations indicated by hatched areas.

shown on the site map (Figure 2), two large, east-west oriented, adobe mudbrick walls physically divide the community into three clusters. Many smaller, straight walls appear within each of the zones, perhaps once serving as windbreaks used for some measure of protection against the sudden strong gusts and mini-tornadoes that are such common features of the flat, high plains. Artifacts and structures in these three areas, which are spatially equal in area, are discussed separately because developments in each differ. A general description of Jachakala Period remains in the southern, central, and northern zones follows.

*The Southern Zone*

The southernmost zone of the site includes the least amount of architectural remains. It is possible that residents of the modern *hacienda* (the 19th century farm) whose now abandoned structures lay just over the southern border of Jachakala) harvested foundation stones from Jachakala surface remains in the south. Spatially, this zone covers a slightly smaller area than the original occupation of the site during the Niñalupita Period. Recognizable domestic architecture is confined, however, to the uppermost 60 cm of the area. The field crew excavated extensively in and around three houses in this zone, two of which were single-rowed circular foundations, and the southern half of a large rectangular foundation. Numerous small refuse and storage pits and a hearth were recovered within the foundations of these three households. A very large midden associated with the round house in the uppermost levels of one area cut into the northern half of the rectangular house that was buried some 50 cm below it. Within the ashy fill of this midden, a female bundle burial alongside an infant of unknown gender was deposited, accompanied by two ritual features.

In addition, six 2x2 m pits were randomly placed and excavated down to sterile soil within this southern zone, bringing the total surface area excavated in the south to 54 $m^2$. Generally speaking, residents here had access to some long-distance exchange items such as obsidian, seashell, and ópalo, as well as some types of Tiwanaku-style vessels. While a few small areas on the surface yielded large quantities of basalt microlithics, frequencies of basalt drop dramatically below the surface. Utilitarian ceramics of all vessel forms are ubiquitous, including a small quantity of the local decorated styles. Faunal remains are also found throughout units in this area of the community.

*The Central Zone*

Occupation of the central zone covered about 2 ha. A total of six house foundations were excavated in this area, one of which was square-shaped and five of which were circular. What at first appeared to be a seventh, partial circular house foundation turned out to be a short length of curved wall, which perhaps served as a shelter or windbreak of some sort. Also, five 2x2 m pits were excavated down to sterile

soil within this central zone. This brings the total excavated surface area in the central zone to 180 $m^2$.

Most household units in this part of the site yielded fairly diverse artifact assemblages, including ceramics, lithics, and faunal remains, but also Tiwanaku-style ritual vessels and other classes of imported goods. Individual structures can, more often than not, be assigned to either Tiwanaku IV or V, because decorated sherds from their associated middens will be slipped in the color associated with either one phase or the other. This helps to refine the chronological relationship between structures a bit. Most houses in the center also have evidence of household ritual activities in the form of offerings buried against an interior wall, often consisting of an undecorated Tiwanaku vessel form with ash and carbon remains of burned materials inside them.

Nearly all households in this zone had large and fairly deep middens immediately outside the southwestern corner of their foundations. These middens contained camelid remains, and basalt lithic debitage from all stages of manufacturing (including entire hoes and/or handaxes). The notably high concentrations of basalt debitage here in particular led me to test the hypothesis that the central zone was a possible center for stone tool manufacture, whether the finished products were eventually distributed throughout the community or the larger region. Small storage pits and sherds from large storage jars in the middens next to central zone households also set these units apart from their neighbors to the south. Most households further yield small to moderate amounts of long-distance trade goods such as semi-precious stones and marine shell. Finally, a dozen or so well preserved personal adornments and fragments of adornments of copper (including bow-shaped objects and *tupu* pins) were recovered from some domestic contexts along the northern edge of this central zone.

Architecturally speaking, central zone houses are no more stylistically diverse than those in the south, with large and small circular, as well as square or rectangular foundations in both areas. Most but not all of the structures in the center had short sections of adobe walls extending straight off their southwest corners, perhaps mimicking through this feature the large temple to the north (described below). Some but not all include narrow alcoves formed by secondary walls built partway around the primary foundation, thus extending the total square area covered by the roof while simultaneously

maintaining the circular shape of the interior room. A single square structure on the western margin of this zone also boasted a large stone bench, perhaps a sleeping or storage platform. The relationship between economic patterns and domestic architecture is investigated in Chapter 5.

The presence of long-distance trade items and evidence for household ritual offerings offer additional kinds of data to compare with assemblages from the southern zone. Storage pits in and around houses as well as decorated ceramic wares form two more points of inter-zonal comparison. Differences between these two areas of the site are tested in Chapter 4, including sets of materials related to subsistence, craft production, and exchange activities.

*The Northern Zone*

Jachakala's northern zone has evidence for numerous non-domestic functions. As the smallest of the three zones, it covers less than 2 ha, which are physically separated from the residential areas of the site by a large, double-rowed wall broken by two narrow doorways. The three small extramural depositories, both of the very large, circular temples, and a sizeable structure composed of two conjoined circular foundations (possibly a double llama corral) are located in this area. Additional units in the cemetery, also located here, were opened up to reveal two more burials. As with the Niñalupita Period burials mentioned above, these interments varied widely in their positions and post-mortem treatment. Also, a single circular household foundation was identified and excavated, next to the large dividing wall but still within the northern zone. Altogether, five 2x2 m units were taken down to sterile soil in this area of Jachakala, for a total of 106 $m^2$ of horizontal excavations.

## ORGANIZATION OF ARGUMENT

In conclusion, differences between groups of households in the central and southern zones are explored, with the broader objective of testing hypotheses derived from the Hirth models of domestic and political economy. Jachakala’s remains are divided up by period and zone, but the chapters that follow are organized in a somewhat

different manner. Chapter 3 presents evidence for a domestic economy during the Niñalupita Period, while developing intra-community differences are explored in Chapter 4 through remains dating to the Isahuara and Jachakala Periods. These two chapters, in addition to the discussions of architectural expressions of differentiation and inter-household comparisons in Chapter 5 and external ties in Chapter 6, together paint a local picture of the origins of inter-household sociopolitical differentiation that goes beyond studies of peripheral villages subsumed under Andean states.