ARCHAEOLOGICAL APPROACHES TO RITUAL IN THE ANDES: A CERAMIC ANALYSIS OF CEREMONIAL SPACE AT THE FORMATIVE PERIOD SITE OF CHIRIPA, BOLIVIA

by

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ABSTRACT

This study uses ceramic data to examine the function of two Middle Formative Period (800-200 BC) structures at the site of Chiripa, in the Lake Titicaca Basin, Bolivia. I investigate the activities that occurred in both domestic and ritual architecture. I also examine the nature of the Yaya-Mama Religious Tradition; a ritual tradition posited for the Lake Titicaca region and thought to be represented by the Chiripa architecture and associated artifact assemblages. The likelihood and nature of feasting and exchange at Chiripa during the Middle Formative Period are also investigated by classifying the ceramic data into both serving and non-serving groups. Previous researchers have suggested that Chiripa structures were used for ritual activity, but their exact nature remains unclear. Also, suggestions that large-scale feasting activity occurred at Chiripa are not supported by the data analyzed here. A general lack of ceramic imports suggests that the Yaya-Mama Tradition was a politically autonomous yet community inclusive tradition at Chiripa, and the site was not the center of a complex polity. I finish by situating my ceramic functional analysis within the context of ethnographic and ethnohistoric studies of ritual and the continuum of developing complexity in the Lake Titicaca Basin. This study demonstrates that the site of Chiripa, in the process of developing complexity, maintained consistent ritual cannons over four centuries of political change; an idea central to religious traditions.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

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INTRODUCTION

In this paper I examine the function of two structures from the Late Chiripa phase (800-200 BC) of the Middle Formative Period site of Chiripa in the Lake Titicaca Basin, Bolivia (Figure 1). Although there has been significant work on several Middle Formative platform mounds and enclosures in the region (Bandy 2001; Beck 2002; K.Chavez and Chavez 1996; Hastorf 1999; Lemuz Aguirre 2001; Paz Soria 2000; Stanish et al.1997; Stanish and Steadman 1994), the types of activities that they represent are little understood. A number of scholars interpret archaeological space as either 'ceremonial' or 'domestic', but no real data-driven analysis has attempted to touch on this issue. In order to address this problem, I use ceramics excavated by the Berkeley Taraco Archaeological Project (TAP) and those tabulated by Karen Mohr Chavez (1966) to conduct an activity area analysis.

Although activity area analysis has been criticized for ignoring the intricacies of the symbolic nature of architecture (Jonston and Gonlin 1998), it can be an important confirmatory approach in investigating prehistoric architecture. Functional analysis conventionally focuses on the form of architecture, presence and absence of particular features, and the nature of artifact assemblages within structures (Johnston and Gonlin 1998:150). Since the analysis of Chiripa architecture has been conducted elsewhere (K.Chavez 1988; Conklin 1991; Hastorf 1999; Bandy 2001), I will focus on the associated ceramic assemblage. Ceramics are an ideal way to look at the function of architecture as well as issues of interaction and exchange (Blinman 1989; Toll 1981); themes central to the development of complexity in the Formative Period (1450 BC-AD 400) in the Lake Titicaca Basin (Table 1).

Table 1: Chronology of the Titicaca Basin and approximate dates.

ANDEAN PERIODS	LOCAL/ TITICACA BASIN CHRONOLOGY	APPROXIMATE DATE (Mean Calibrated)
Early Formative	Early Chiripa	1450 BC – 950 BC *
Middle Formative	Middle Chiripa Late Chiripa	950-800 BC* 800-200 BC*
Late/ Upper Formative	L. Formative I: Kalasasaya L. Formative II: Qeya	200 BC-300 AD** 300 AD-400 AD**
Middle Horizon	Tiwanaku III-V	400 – 1000 AD

*From Whitehead 1999a
**Based on ceramic chronology

The need for such an analysis is apparent, as Chiripa, with its long history of archaeological research, is vital to discussions of a Yaya-Mama Religious Tradition. The Yaya-Mama Religious Tradition, first proposed by Chavez and Chavez (1975), encompasses a number of sites in the Titicaca Basin with similar archaeological signatures, including architectural components, iconography, special

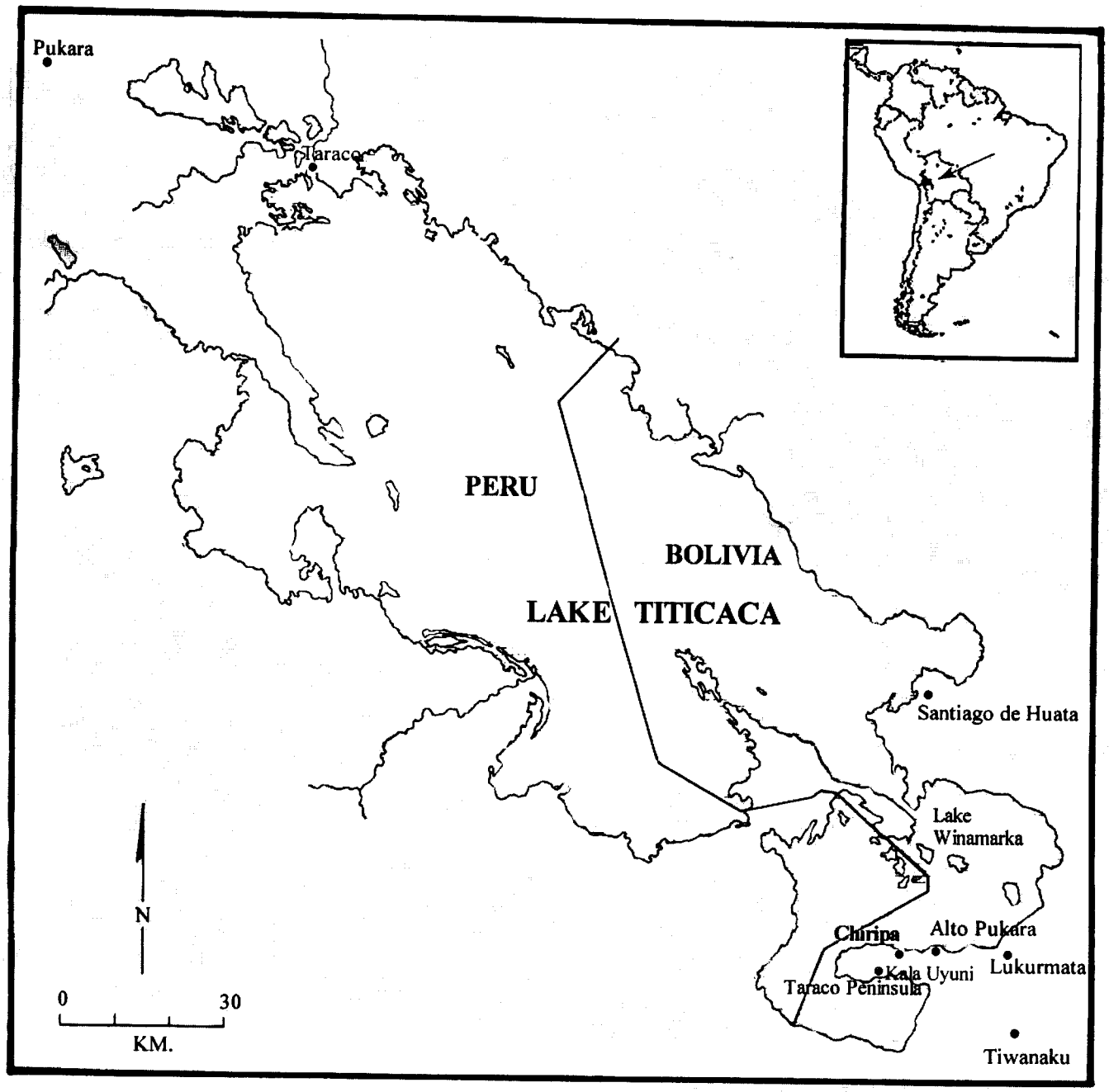

Figure 1: The Lake Titicaca Basin, with Chiripa and other sites mentioned in text.

ritual paraphernalia and specific ceramic types. Such a tradition implies ritual activity as well as a widespread underlying ideology. Ideology is difficult, indeed often impossible, to discern from the archaeological record, but investigation into ritual activity is possible. The concept of the Yaya-Mama Religious Tradition relies on the contention that the architecture – enclosures and platform mounds – represents ritual space. Ranging from Santiago, the earliest architecture at Chiripa (1200 BC), to Tiwanaku, the first urban site in the Basin (AD 400 –1000), the Middle Formative architecture supports longevity for such a tradition. Ritual has been the basis for many further (and sometimes unfounded) suggestions for early complexity at Chiripa, with some archaeologists discussing the presence of chiefdom-level polities (Stanish et al. 1997) and status-display activity such as feasting (Bandy 2001; Steadman 2002). However, there have been few excavations of domestic contexts in the early Titicaca Basin; in fact, researchers have yet to discover a clear domestic context at Chiripa for this Middle Formative Period, encouraging some to suggest the platform mounds are in fact domestic (Conklin 1991).

After an overview of the Chiripa site, I discuss how archaeologists examine ritual, and the definition and details of ritual traditions. This term is frequently used in the Andes, yet is ambiguous, and often is used without discussion of political and social ramifications. What do these ritual traditions represent in the past? I then address the function of the Chiripa structures, and present archaeological expectations for ceramic assemblages in both domestic and ritual contexts. I also confront, through my ceramic analysis, the possibility that different activities were conducted in the two structure types; *i.e.*, can different ritual or domestic activities be distinguished, and thus define the nature of the built space? Feasting expectations are also presented, and tested with the Chiripa ceramic data. These examinations allow for ceramic expectations for a Yaya-Mama Religious Tradition to be presented. I conduct my analysis by considering both "use" and "manufacture" variables, in order to fit the ceramics into conventional categories of serving and non-serving (cooking and storage).

After my analysis, I fit the Chiripa research into a cross-cultural ethnographic and ethnohistoric framework, to examine specific ritual activities in the Andes. I conclude this study with an examination of the ceramic artifact assemblage and the architectural forms within the longer period of development in the Titicaca Basin. The particular data analyzed here are not diachronic – although the expansive Late Chiripa Period studied here does encompass 600 years – I place the study into the broader context of socio-political developments.

BACKGROUND

The site of Chiripa (3840 m.a.s.l.) is located in the Ingavi Province of Bolivia, on the northern shores of the Taraco Peninsula, bordering on the smaller Lake Winamarka portion of Lake Titicaca (Figure 1). The site has been paramount in our understanding of the Formative Period (1450 BC – AD 400) in the South Central Andes.

A series of connections, through similar ceramic assemblages, have been drawn between Chiripa and the Wankarani complex of southern Bolivia (Bermann and Estevez Castillo 1995; Rose 2000; Sangines 1970), the Alto Ramirez tradition of the Northern Chilean Coast and the Huaracane tradition of the Moquegua region (Bandy 1998). The ceramics of Chiripa have been used to support a somewhat ambiguous Formative Period for both the Bolivian and Peruvian sides of Lake Titicaca. The ceramics have also been used to support interpretations of a far-reaching polity centered at Chiripa (Stanish et al. 1997; but see Bandy 2001).

The site of Chiripa consists of a series of architectural clusters, ranging in time from the Early Chiripa Period (1450-950 BC) to a Tiwanaku occupation (AD 400 – 1000). Both enclosure and mound architecture types are prominent at the site and are scattered over the 8 ha area (see Figure 2). The site has a long history of investigations; it was first excavated in 1933 by Wendell Bennett (Bennett 1936), and later investigated by Maks Portugal Zamora (Portugal Zamora 1940), Alfred Kidder (Kidder 1956), and David Browman (Browman 1978, 1980,1991). All of these excavations focused upon the central mound feature at Chiripa, the Monticulo (see Figures 2 and 3). In 1992, Berkeley's Taraco Archaeological Project (TAP), directed by Christine Hastorf, continued excavations on the Monticulo and conducted excavations on more peripheral areas of the site (Hastorf *et al.* 1997, 1998; Hastorf 1999). Hastorf's project was oriented around questions such as: "How did such a large and long-lived complex come about and what did it look like politically and socially? How did the ritual acts occurring at a center such as Chiripa relate to the economic activities of daily life?" (Hastorf 1999:2) The project also hoped to find domestic contexts that could be used for comparative purposes with other Formative sites in the South Central Andes (Hastorf 1999: 2). With these goals in mind, the project excavated more peripheral areas of the site, and discovered a series of enclosure structures, often in the form of sunken courts. The investigations, however, failed to reveal clear domestic contexts; instead the data raised further questions of ritual functions, specifically for the mound and enclosure architecture. What follows is an overview of both architecture types, in order to present the architectural conventions of a Middle Formative site in the South Central Andes.

Santiago, an area located 80 meters northwest of the Monticulo (see Figure 2) has both Early Formative use surfaces and later Middle Horizon Tiwanaku IV and V occupations. The Santiago stone enclosure, named *Choquehuanca*, consisted of four 14-meter long plaster-walled sides with a yellow floor. It is hypothesized that the structure also had a sunken court in the central area. The Choquehuanca structure was filled with Late Chiripa domestic midden (Whitehead 1998). Radiocarbon samples taken from an occupation surface dated the structure to the Early Chiripa Period, and ranged from 1374 -1131 BC, making it the earliest example of corporate architecture for the Titicaca Basin (Hastorf 1999: 2; Dean and Kojan 1999: 37; Bandy 2001: 81).

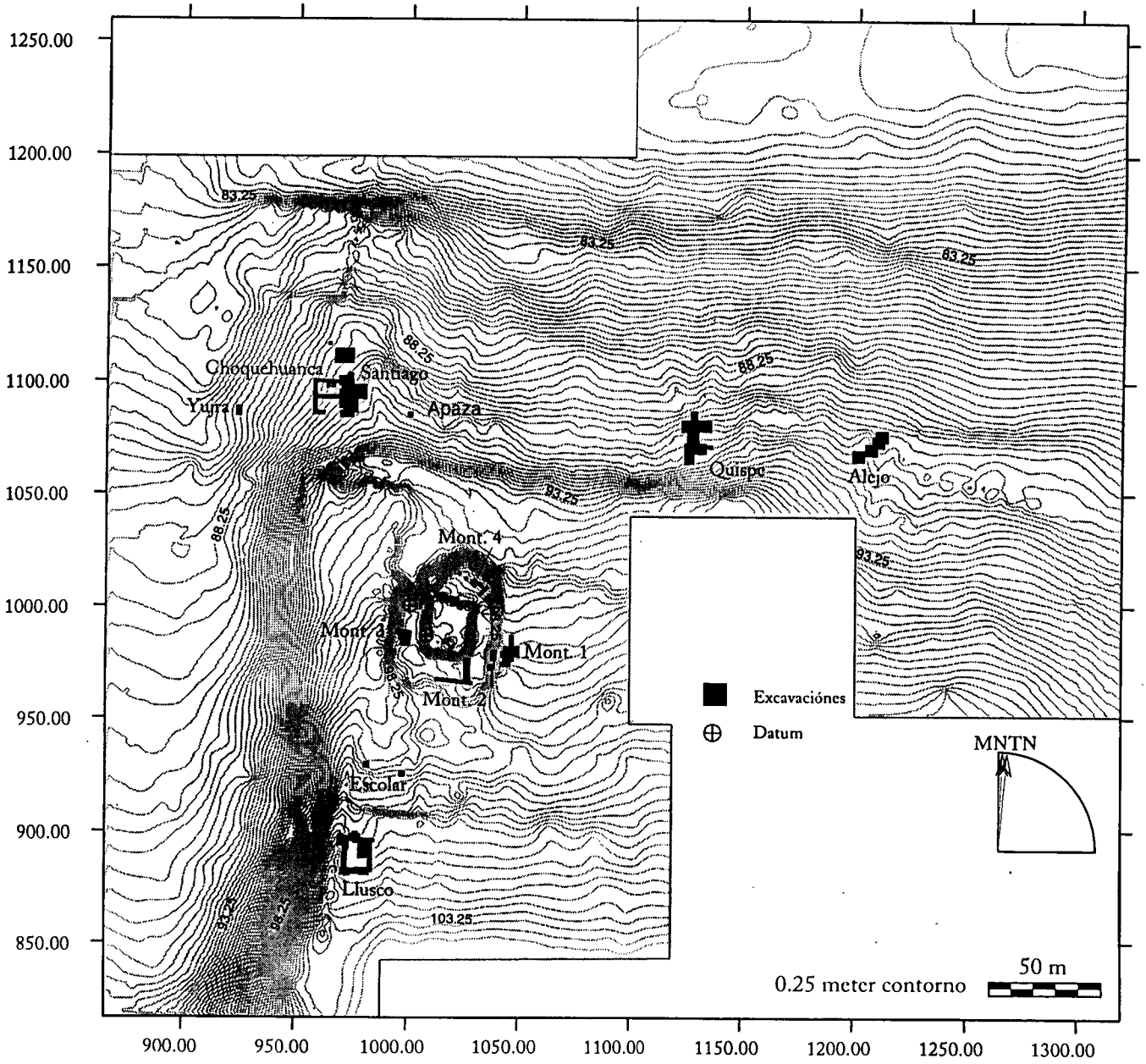

Figure 2: Plan map of Chiripa, with TAP excavations of 1992-1999 noted, showing locations of enclosures and mounds: Santiago, Alejo, Quispe and Monticulo (Hastorf 1999).

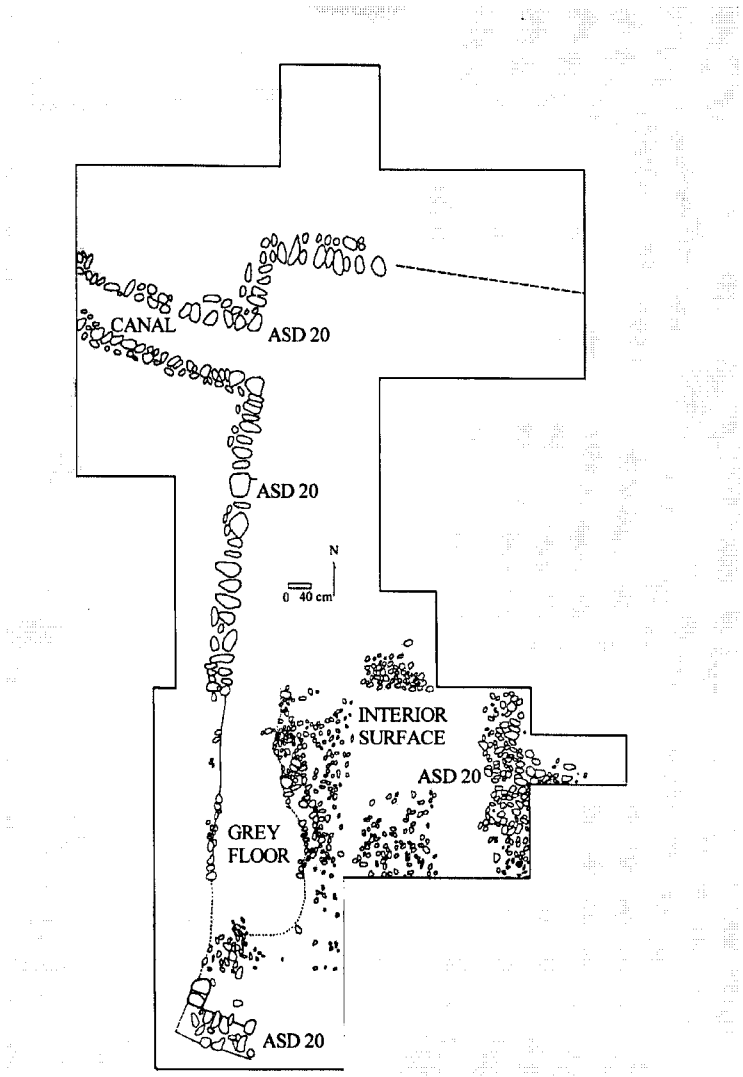

Figure 3: Plan map of Quispe with ASD 20 (wall) noted (from Hastorf et al. 1999)

Three other enclosures are found at the site. *Llusco* is a sunken enclosure located 200 meters south of the mound, and was excavated in 1992 (see Figure 2). This structure is approximately 13 meters by 11 meters in size, with a white clay floor. It was constructed of unworked alluvial cobbles set in a mud mortar. The structure, an early component of the Late Chiripa Period, was abandoned by 600 BC (Paz Soria 1998, 1999).

The *Alejo* enclosure is located 200 meters to the east of the Monticulo (Figure 2). The most noticeable aspect of the structure, although only limited excavations were conducted, is the presence of a canal which is 7.2 meters long, 30 cm wide, and at a slight inclination.

The *Quispe* structure represents another enclosure, and is located 124 meters east and 58 meters north of the Monticulo (Figures 2 and 3). Preliminary excavations show the walls to have been 12.8 meters long and constructed of cobbles and adobe. When the excavations revealed an occupation level, efforts were made to point-provenience every ceramic, and to obtain pollen samples, soil samples and micromorphology columns – evidence that is discussed in some detail below.

The Monticulo (Figures 2 and 4) has received the most archaeological attention of all structures, as the platform mound is quite prominent (at 60 meters x 60 meters wide and 6 meters high) with the longest occupation period – beginning with a Lower House level and ending with a Tiwanaku structure. The Lower House level, as it was termed by Kidder (Kidder 1956), consisted of three superimposed house structures. Bandy (1999: 47), who excavated the structural remains in 1996, suspects that these lower houses were in a ring around a sunken court, much like the Upper Houses (Figure 4; Bandy 1999: 47). The houses consisted of alluvial cobbles and adobe, separated by a thin cap of fill. A fire was set at each floor level and burned the surface clean, at which point a new floor of yellow clay was applied. This cycle was repeated 8 times, with a burning occurring for each new floor structure (Bandy 1999)[i]. The earliest structure has been dated to 600 BC to 400 BC (Bandy 1998).

The Upper House level was constructed over a final thick ash deposit on top of the last Lower House remains, creating the first example of platform architecture at Chiripa (Bandy 1999). These houses were first studied by Bennett (1936), who excavated two of the houses, and later by Kidder (1956). The houses, 14 in all[ii], are all quite similar in form - usually rectangular with a wall of rounded cobbles placed in mud mortar (see Figure 5). They are double-walled, with bin space between the inner and outer walls, and access to the bins was through windows or niches. The houses were plastered in red and yellow, and it is inferred that the courtyard was also surfaced with colored clay. It appears that the structures were equipped with sliding doors. Under the floors were human burials, as well as gold and copper items. Karen Mohr Chavez (1988) has noted that the trapezoidal nature of the structure is similar to those found at Pukara, another Formative site (see Figure 6). She thinks that the artifacts and presence of the bins suggest that the site had a ceremonial function and that the structures served as a temple storage complex (K. Chavez 1988: 18). The Upper Houses have been dated between 380 and 270 BC (Bandy 1998; Whitehead 1999a). Following the abandonment of the Upper Houses, which involved yet another burning episode, the early Middle Horizon Tiwanaku temple was constructed on the mound.

Although Kidder's excavations, conducted in the 1940's, were not published, one of his students analyzed his ceramic artifacts (Mohr 1966). Karen Mohr Chavez continued her research of the Formative Period in Bolivia and Peru, and eventually helped define a formative sculptural tradition termed the *Yaya - Mama Tradition* (S. Chavez and Chavez 1970; S.Chavez and Chavez 1975). Several archaeologists had previously noted the distributions of certain sculptural elements (Portugal Zamora 1967; Portugal Ortiz 1970, 1981, 1998), but the term Yaya-Mama was first coined by Sergio Jorge Chavez and Karen L. Mohr Chavez (S.Chavez and Chavez 1975). Although this style was initially linked to a fairly specific time period and region (S.Chavez and Chavez 1975: 57), it has now been extended to include much of the South Central Andes, and the entirety of the Formative Period (Burger *et al.* 2000). The sculptural style was quite well defined from the initial observations – indeed it is these elements that are perhaps the cornerstone of the tradition (Figure 7; S.Chavez and Chavez 1975: 57- 64).

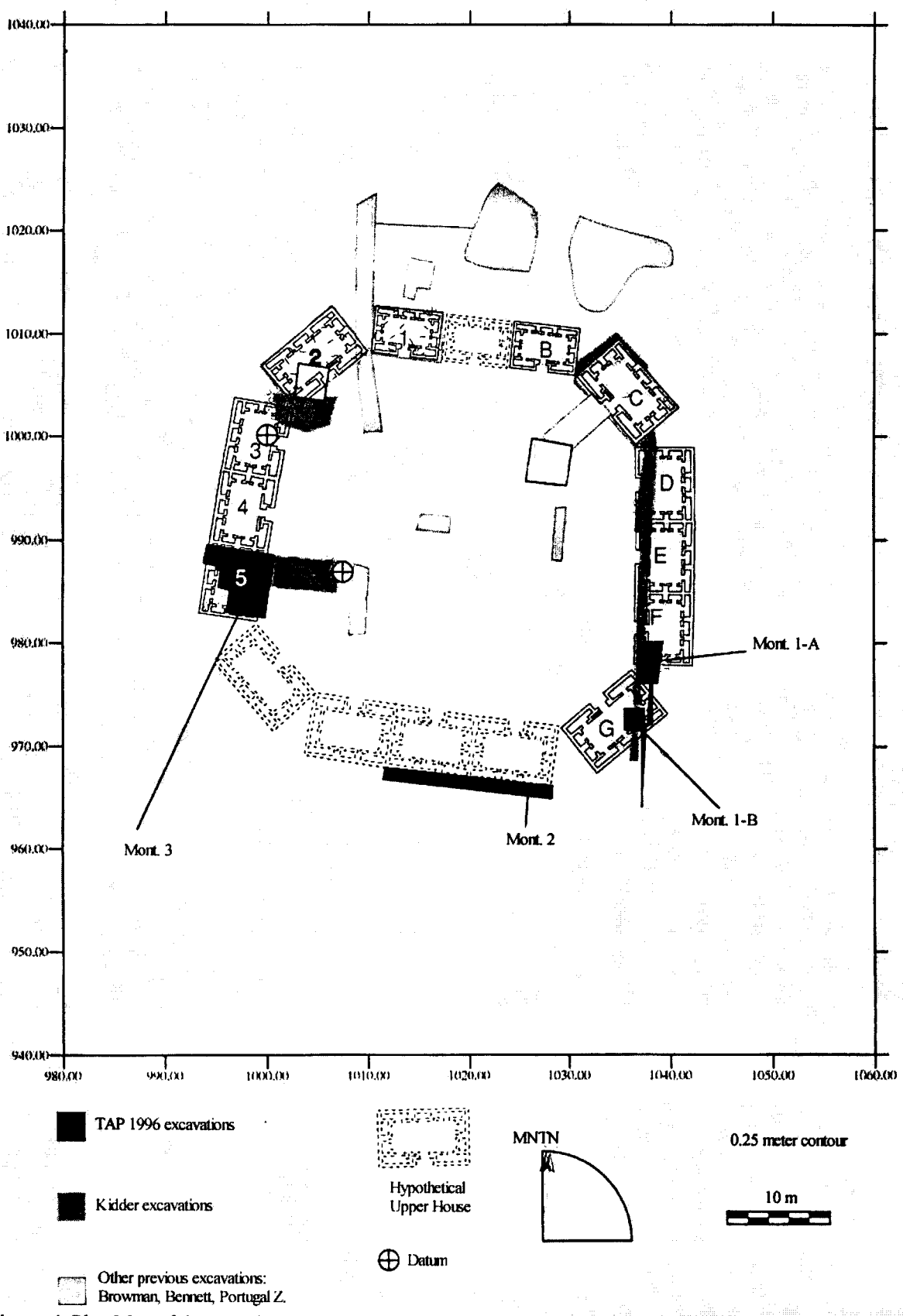

Figure 4: Plan Map of the Monticulo excavations (Hastorf 1999)

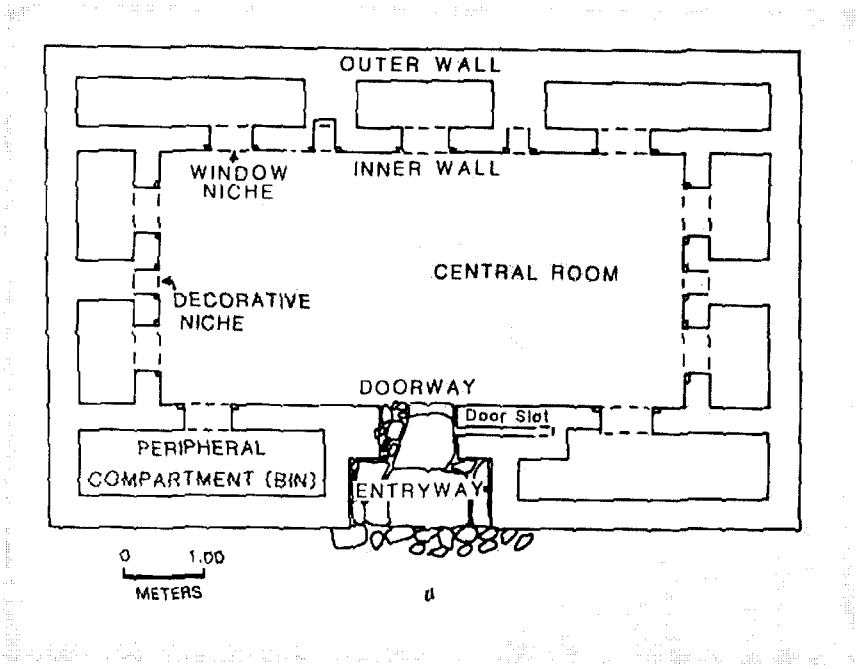

Figure 5: Plan of Bennett's House 2 (From Bennett 1936: Fig. 22; and K. Chavez 1988:18)

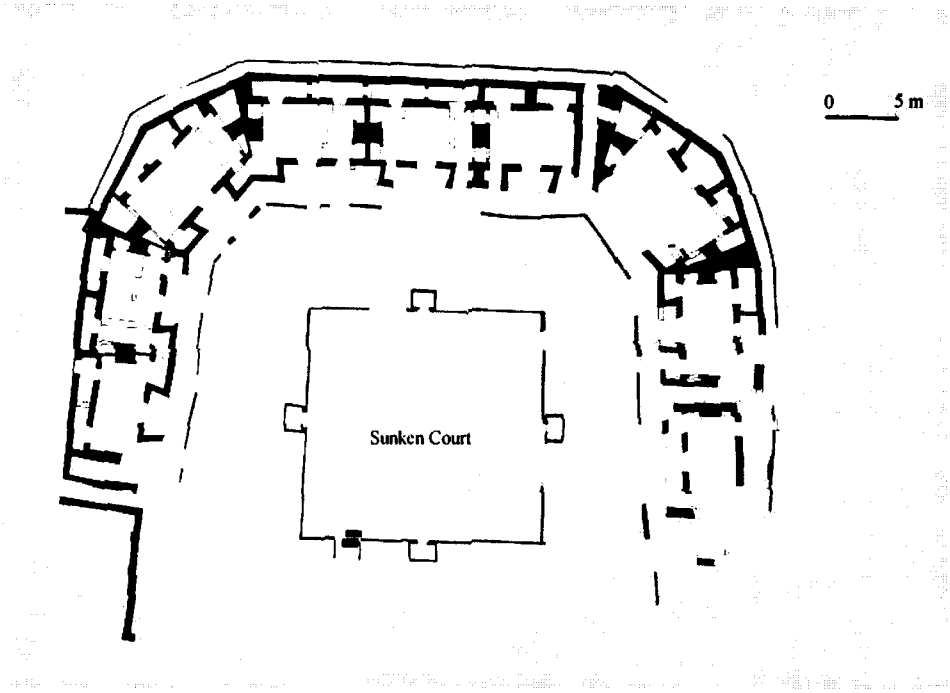

Figure 6: Plan of Enclosure 2 at Pucara (From Chavez 1988: 24)

The style was dated primarily by a comparison of design motifs and by association of early pottery to the sculptural representations.

> Chiripa was a significant part of a regional religious system, the Yaya-Mama Religious Tradition, that unified groups around and near Lake Titicaca who appear to have used different pottery styles. The site provides a unique opportunity to examine the development of this tradition from Late Chiripa, and earlier, to post-Chiripa times, a span of some 1000 years or more. Chiripa must have been a sacred center for hundreds of years, serving as a source for later, more centralized Pucara and Tiahuanaco developments... Storage of some significant kind, and high-status activities appear to have occurred at the temple complexes at both sites, and at Pucara at least six enclosures were involved. (K.Chavez 1988: 25)

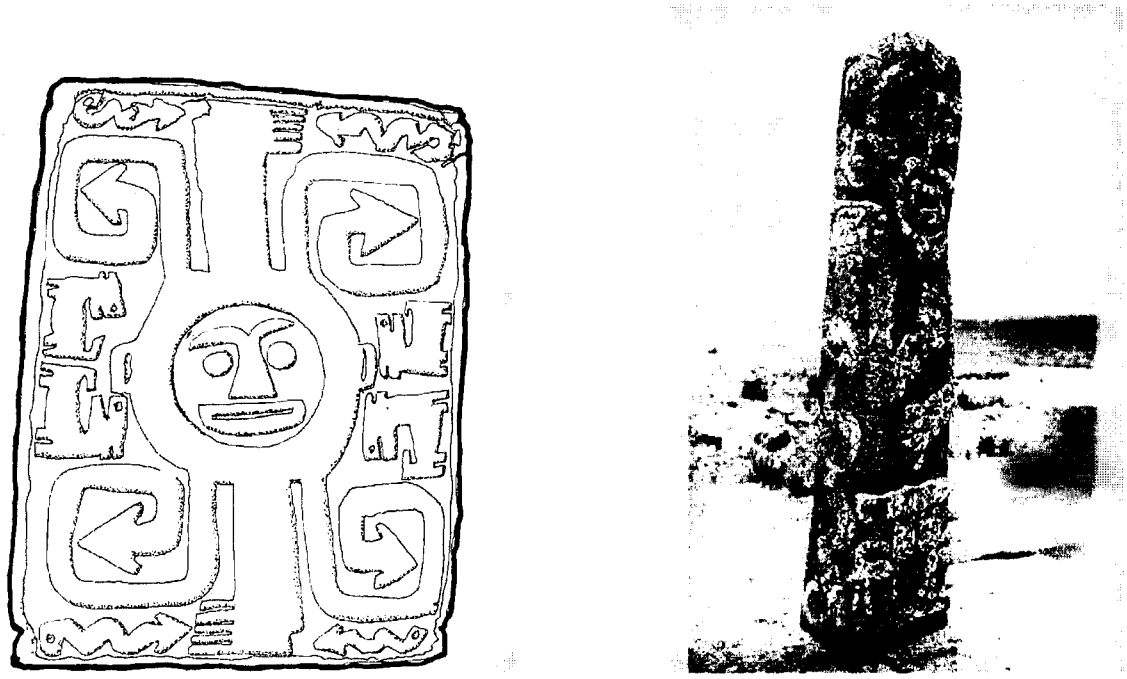

Figure 7: The Yaya-Mama Iconographic style. On the left is an example from Chiripa, on the right an example from the site of Taraco (see Figure 1 for locations of sites) (Images from Portugal Ortiz 1998).

By 1988 these elements, while not specifically dated, had taken on a new name – the *Yaya-Mama Religious Tradition*. The sculptural elements were thus linked with other archaeological manifestations including 'temple-storage centers' such as Chiripa, ritual paraphernalia such as ceramic trumpets, ceramic vessels with low ring bases, and supernatural iconography (K.Chavez 1988: 17). Throughout this development, however, no explicit artifactual analysis of the temple-storage area, if the Monticulo indeed is such a space, has been published. What makes these structures temples other than their architectural layout? Before addressing this major question, however, an overview of religious and ritual traditions will be presented.

Religious Traditions

Richard Burger first coined the term "religious tradition" for the Kotosh Religious Tradition in the Central Peruvian Andes (Burger and Salazar Burger 1980), although the concept had been used for quite some time for Chavin related material and the Andes in general. The Kotosh Religious Tradition and the closely related Mito tradition (Bonnier 1997), involve a similar group of traits as the Yaya-Mama Tradition (sunken enclosed plaza, mound architecture and distinct iconography) (Burger and Salazar Burger 1980, 1985). In fact, Richard Burger recently suggested that the notion of a Religious Tradition is more pertinent for the Titicaca Basin than the Central Andes, partly due to the close proximity of sites (Burger personal communication, 2002). But what does such a term really imply?

In their original article defining the Kotosh Tradition, Burger and Salazar Burger use the term to indicate that contemporary sites were connected in a network of ceremonial centers, through a shared ideological system. But rather than limited to one cultural time period, the religious tradition is a longer lasting phenomenon. The amount of variability (in artifacts or architecture) from center to center, so often found in religious traditions, is correlated with political and economic independence – an idea overlooked by some using the term[iii]. Burger and Salazar Burger (1980) further suggest that the similarities between Kotosh-type sites may imply the presence of religious specialists. Burger discusses how the similarities can be explained: "Perhaps the most plausible suggestion is that these centers shared a set of religious beliefs which entailed similar kinds of ritual activities and, consequently, required a similar type of ceremonial building" (Burger 1992:46). Bonnier, in a refutation of the concept, claims that a religious tradition refers to the types of ritual performed in the structures, while her discussion of the Mito tradition simply mentions "architectural forms and cannons" (Bonnier 1997:121). This seems beside the point, since both Mito and the Kotosh Religious Tradition emphasize factors such as the ritual importance of burning of floor surfaces.

Burger uses ethnographic and anthropological categories to look at the concepts that continue with the Chavin cult, and relies upon a division of local and regional cults (Burger 1988: 114). Victor Turner (1974: 184) first discussed this division in his examination of political cults and fertility cults Turner's political cults stressed exclusiveness, whereas fertility cults stressed inclusiveness (Turner 1974:18; also discussed in Moore 1996a). What is vital to the archaeologist, is that the regional, or political cults are associated with shrines located outside of the community. In fact, they are even maintained through political or economic boundary changes. The usage of the term "political cult", to describe a cult that is maintained through political changes is slightly confusing – the term, however, is helpful when one looks at Andean religious traditions. This concept of continuity through political change is supported at Huaricoto (Burger 1988:116), and there may also be evidence for it in the Titicaca Basin where ritual iconography and assemblages last for many centuries, through a range of social

changes. Additionally, Crown (1994: 214) has noted that such cults or traditions may come into reality because of an increase in inter-local exchange. Could it be that Andesite agricultural hoes (Bandy 2001) and obsidian (Burger *et al.* 2000), the few traded goods found at Chiripa, are integral products in the establishment of a religious tradition? Perhaps ceramics are another form of evidence for exchange with sites in the Titicaca Basin, and are a factor in the establishment of a ritual system.

The relationship between ritual and politics is a tricky one; and it is a relationship that must rely on forms of data other than simply architecture and artifacts; domestic contexts and burials for example. Recent studies in the Titicaca Basin suggest that a religious tradition will *a priori* include social and political ranking and the presence of elites (Stanish *et al.* 1997; Paz Soria 2000). Even though "rituals are potentially recoverable as distinct events in the archaeological record...[and] are fundamental instruments and theater of political relations." (Dietler 1999:135), we cannot assume that ritual activity implies a high level of social complexity. What is needed is a more solid proof for high levels of complexity by way of other forms of evidence – evidence that does not seem to arrive until the Late Formative Period on the Taraco Peninsula (Bandy 2001).

THEORETICAL BACKGROUND

My major question for this study centers on the activities that occurred within the Chiripa structures, "What were the functions of Chiripa's Middle Formative structures?" In order to frame this question, however, I need to discuss some of the conventional issues of function in archaeological architecture. Central to this theme is the domestic/ritual debate, so prominent in archaeological investigations (for a Mesoamerican case study see Lesure 1998, 1999; Lesure and Blake 2002; and Marcus and Flannery 1996:90-91). I must first, therefore, present the theoretical basis of this dichotomy, and the approach that archaeologists use to study ritual in the past. I will thus ask two questions, the first dealing with the general framework of ritual studies, and the second specifically oriented to archaeological investigations.

"How are archaeologists working the with concept of ritual, in general, and specifically in the Andes?"

Although many archaeologists deal with concepts of ritual and religion for prehistoric architecture, the interpretations are often presented in an obscure and simplistic manner. Indeed, many archaeologists see structures clearly divided into ritual and domestic functions based on certain classes of artifacts, or restrict their analysis to studies based on ritual or domestic architecture. (See, for example, the study of the highland Peruvian MITO tradition: Burger and Salazar Burger 1980, 1985, 1994; and critique by Bonnier 1997). The dichotomy of sacred and profane has been present in archaeology since early anthropological and religious studies. Before examining details of the archaeological approach to ritual,

I will briefly discuss its anthropological development. I will not conduct an entire overview of religious studies (for an anthropological overview see: Bell 1992, 1997; Hastorf 2001; and Walker 1995: 67-70), but I will present some of the basic issues surfacing from the research of several scholars.

> Confined to the religious sphere [ritual] has some minimal utility. But used in the wide manner of ethologists (the rituals of copulation), archaeologists (with their ritual objects), the sociologists (discovering rituals of family living) and the anthropologists (rituals, more rituals, yet more rituals), there is little to be gained either from the term itself or from further subdivision.
> (Goody 1977:26)

One of the most cited texts in anthropological studies of religion is that of Mircea Eliade and his division of the sacred and the profane. Coming out of a Durkheim perspective on the division of the sacred and the profane (Pickering 1975), Eliade saw the relationship of these two views as heterogeneous. Ritual and religion, he claimed, was "something of a wholly different order, a reality that does not belong to our world." (Eliade 1957: 11) As Astvaldsson points out (Astvaldsson 1994: 56), many anthropologists are working uncritically within a framework of Eliade's *hierophanies* – "that something sacred shows itself to us" (Eliade 1957: 11). Whereas this concept in itself may not be erroneous in certain cases, in others it clearly is.

The division of sacred and profane does not apply within the context of both ethnohistoric and ethnographic Andean belief systems. "It is virtually impossible to unravel the closely bound web of social relations in order to reconstruct the outlines of an [Andean] economic system, a political system, or a religious or ideological system (Spaulding 1984:23). The division is particularly problematic when it comes to the term *huaca* (Astvaldsson 1994:63; Garcilaso de la Vega 1985; Salomon 1991:19). The term *huaca* (or *w'aka*) is applied to both objects and ancestors and has been applied widely as a type of 'sacred' for Andean religion and cosmology. Few scholars have broken down the problematic connection of these terms (with the exceptions of Astvaldsson 1994, and Van de Guchte 1990), and often the correlation is directly applied to the archaeological record as an extension of the western anthropological dichotomy created by Durkheim and Eliade. Indeed they "fall short of considering the question of what exactly is meant by the 'sacred', *i.e.*, if this term in fact has the same meaning in different contexts, *e.g.*, 1) in the Judeo-Christian tradition, 2) in sociological and anthropological theories of religion, and 3) in the context of native Andean religion." (Astvaldsson 1994:54) This point is further supported by Isbell (1978:164), who discusses ritual as reinforcing the belief of closed bounded social space as "civilized" and the "savage" other; not one of sacred and profane.

I am not, however, willing to discard the term 'ritual' (as Goody 1977 calls for), nor am I willing to move too far away from past approaches (unfortunately, archaeologists are somewhat encouraged, by the constraints of material culture – and their research questions – to simplify their data to the popular dichotomy). I am, however, going to proceed with caution, aware that the relationship of 'sacred' to

other aspects of social life cannot be easily divided. I am going to conduct my interpretation informed by ethnographic considerations of ritual in the Andes.

"How are archaeologists addressing such questions?"

Archaeologists have analyzed ritual with a variety of different theoretical models from this sacred-profane dichotomy, ranging from contextualized approaches to ritual (Hodder 1988; Barrett 1991) to more sociobiological approaches (Aldenderfer 1993). Although general archaeological interpretations of ritual from architecture are also popular (Moore 1996a, 1996b; Donnan 1985), they are more difficult to apply to small-scale built space, such as the Andean Formative. The approach that is most helpful in Formative archaeology is that of activity area analysis. Activity area analysis allows for the function of spaces to be studied through careful excavation and the analysis of artifact assemblages.

Ritual space is no exception to this method of analysis. Ethnographic and archaeological literature has demonstrated that 'ritual formation processes' are a largely ignored facet of structure interpretations (Lamotta and Schiffer 1999:21). As Walker (1995) stresses, archaeologists must think of the possible activities that would result in ceremonial trash. Therefore, working within Schiffer's (1976) behavioural archaeology school and reacting to Staal's (1989) critique of ritual studies, Walker offers an approach that departs from symbolic interpretations of ritual architecture. He claims that symbolic interpretations "mask the cultural regularities of the ritual use and disposal of material culture so critical in reconstructions of prehistory" (Walker 1995: 67). Furthermore, an understanding of ritual can be reached by a behaviour-based approach; thus Walker (1995:72) offers several important hypotheses:

> 1) Ritual behaviours exhibit consistently patterned life histories in ongoing cultural systems. 2) Singularized pathways in these systemic contexts frequently lead to discrete or singularized depositional contexts in the archaeological record. 3) Ritual objects and spaces serve as material resources for ritual technologies. 4) These ritual technologies, like other technological traditions, can be organized for analysis in terms of their component artifact "performance characteristics". 5) Ritual resources and technologies vary in their distribution within communities, in terms of both use and control, which can lead to conflict, competition and social change.

I contend that these hypotheses are a useful step in the interpretation of ritual architectural space and their artifact assemblages. They allow for a more processual approach to artifact analysis, and encourage the use of relevant quantitative data, as well as the study of ritual in political processes. Pottery is an extremely helpful artifact class to address the issue of ritual. An activity area analysis based on ceramics permits an inter- and intra-site comparison of function, prior to assuming any type of meaning (symbolic or otherwise) to the artifacts or architecture[iv]. However, it is important to place all of this within the context of the broad Andean ritual framework discussed above, and to compare empirical data with Andean ethnographic ethnoarchaeological research such as that performed by Kuznar (2001).

HYPOTHESES

Structure Function

My study at the site of Chiripa asks the question: is there ceramic evidence that the structures were indeed used for ritual purposes (K. Chavez 1988), or were they created for domestic-oriented activity (Conklin 1991)? And what is the specific nature of this activity? Like those who tackle similar questions in the U.S. Southwest (Lekson 1988), I must first examine the notion of specialized ritual structures before discussing the nature of such ritual space. To do so, I address several assumptions about the correlation of ceramic material remains with particular activities. Rather than relying on commonly used ritual artifact classes (figurines, exotic lithics or marine shell), I will approach this question through ceramic sherds. Although these more "ritual" artifact types are present, they are not found in secure floor contexts and are limited in quantity during the Middle Formative. I, therefore, include in my analysis a variety of pottery forms, including two of the artifact classes that define the Yaya-Mama Religious Tradition – decorated serving ceramics and ceramic burning bowls (S. Chavez and Chavez 1975). Pottery provides an ideal way to test for function because of its ubiquity and its usefulness in both activity area analysis and larger socio-political questions – issues essential in analyzing a concept such as the Yaya-Mama Religious Tradition. As Blinman (1989) suggests, pottery reflects ritual activity in both function and exchange.

The first of these connections is concerned with function or, more precisely for this study, the relationship of ritual activity and food in the Andes: *i.e.*, "feasting" (Dietler and Hayden 2001). This association has been established in a range of both Andean ethnographic (Abercrombie 1986; Allen 1988; Isbell 1978; Johnsson 1986; Sillar 2000; Weismantel 1988) and archaeological research (Morris 1979; Arsenault 1992). These studies permit an analytical connection of fancy pottery types to serving and the presentation of food within the context of ritual activity. Indeed, several researchers have found that the vessels with the most labor input are used for the presentation of food in public areas (Lischka 1978: 231; Sillar 2000: 118).

I can therefore present my first hypothesis. Hypothesis 1: *An abundance of cooking and storage vessels, and an equal or lesser number of serving vessels, will suggest a domestic function, whereas a proportionally high number of serving vessels will suggest a more ceremonial, ritual function.* This hypothesis allows ritually important ceramics (both serving vessels and otherwise) to be recovered in domestic contexts, but limits their overall quantity and ratio vis-à-vis non-serving (and non-ritual) vessels in such contexts.

Once this general relationship has been confirmed, we can specify the quantitative ratios expected within ritual and domestic contexts. In order to gain a better understanding of ceramic percentages that may be found in either ritual or domestic space, I have created a table of expectations

for each of these types of architecture. This overview consists of both archaeological and ethnographic data, and is both Andean specific and cross-cultural. Tables 2 and 3 demonstrate some of the expectations for serving and non-serving ceramics for both domestic and ritual oriented architectural space. The archaeological interpretation of a structure's function, however, relies on more than ceramics; thus a general overview of some other expectations is present in Appendix 1. Appendix 1 lists some expectations for the presence of special ceramics, the condition of floor surfaces and the types of specific features. The cross-cultural and Andean examples indicate that (non-elite) domestic contexts should have few ceramic imports, an abundance of small domestic artifacts in the floor surface (organic materials and manufacture discard) and signs of cooking activity. These factors are important for the Chiripa structures, as there are no excavated cases of purely domestic contexts for comparison.

A number of ethnographic and ethnoarchaeological publications were consulted in creating these tables of expectations, and some come from Mesoamerican ethnographic survey and archaeological excavation. Mesoamerican cases were included because these researchers have long classified contexts as either ritual or domestic. The Andean comparative information is based on a variety of household and ritual excavations, but cases from the Middle Horizon Andean Tiwanaku (AD 400-1000) and Huari (AD 700-1000) sites were the most useful. The Tiwanaku and Huari examples should be relevant because of their proximity to Chiripa and the presence of similar architecture.

One may note some discrepancy between the ethnographic and archaeological quantities and percentages. This variation is beginning to be explained by ethnoarchaeological research (Hayden and Cannon 1983; Deal 1998; Arnold 1991), and such a difference is to be expected from the complex depositional processes that affect the formation of archaeological record. Vessels excavated from sites represent a distorted picture of their original systemic context (Deal 1998; Hayden and Cannon 1983; Schiffer 1985). This concept is reinforced when considering the use of outdoor space for storage, as noted by the above mentioned ethnoarchaeological studies, as well as the archaeology of *in-situ* sites (Brown *et al.* 2002; Inomata and Stiver 1998). The use of this outdoor storage space will scatter, and 'dilute' the quantities of vessel types; the averages will thus be skewed when the breakage rates are considered.

This model gives the ratios that are expected between these different types of architectural space. As Blinman explains, the ratio for different types of vessels is an important factor, especially as we would expect a higher accumulation of cooking vessels: "Cooking jars should have shorter life-spans than serving bowls, and jar sherds should accumulate at a faster rate in middens. However breakage of both forms should be a stochastic phenomenon, and in the context of large samples there should be consistent ratio of cooking jar to bowl sherds" (Blinman 1989: 116).

Table 2: Cross-cultural and Andean ceramic expectations for domestic contexts (Ethnographic studies in *italics*, Archaeological in **bold**).

Region / Culture and Period	% of Serving Vessels	% of Non Serving Vessels	Non Serving : Serving Ratio	Source
		CROSS-CULTURAL EXAMPLES		
Aguateca – Mexico	47 %	53 %	0.89	Inomata and Stiver 1998: 439
Mayapan – Mexico O – Ordinary E - Elite	O) 11 % E) 24 %	O) 89 % E) 76 %	O) 0.12 E) 0.32	Smith 1971: Table 20*
Vijayanagara – India	26.5 %	70.9 %	0.37	Sinopoli 1999
Gisiga	14 %	81 %	0.17	David and Hennig 1972: 17, Table 3 **
Huichol	19 %	58 %	0.33	Weigand 1969: 29, Table 3 **
Shipibo Coibo	36 %	49 %	0.73	DeBoer & Lathrap 1979: 17, Table 4.3 **
		ANDEAN SPECIFIC EXAMPLES		
Jargampata	40 %	40 %	1.0	Isbell 1988: 184
Tiwanaku – Akapana East	23 %	77 %	0.30	Janusek 2002a: 43
Tiwanku - Putuni	26 %	73 %	0.34	Janusek 2002a:43
Lukurmata – Mistion 1	23%	77%	0.30	Janusek 2002a: 43
		EXPECTATIONS		
General % and Ratios Expectations for Domestic Contexts	From 11 % in small households to 47 % in elite households	From 40 % in elite compounds to 89 %	From 0.17 – 1.0 for domestic contexts	

* The division here was initially utilitarian, ceremonial, but the general split fits the serving/non serving ratio.
** Compiled in Mills 1989: 138

Table 3: Cross-cultural and Andean specific ceramic expectations for ritual contexts (all archaeological examples).

Region	% of Serving Vessels*	% of Non Serving Vessels	Non Serving : Serving Ratio	Source
		CROSS-CULTURAL EXAMPLES		
Vijayanagara**	50%	50 %	1	Sinopoli 1999
Mayapan, Mexico. 1) Platform temple 2) Pyramid temple 3) Serpent temple	1) 70 % 2) 65 % 3) 78 %	1) 30 % 2) 35 % 3) 22 %	1) 2.3 2) 1.9 3) 3.5	Smith 1971: Table 20
		ANDEAN SPECIFIC EXAMPLES		
Jargampata (Huari): Three Phases	(1) 54.9 % (2) 55.3 % (3) 61.9 %	(1) 33.3 (2) 30.9 (3) 26.9	(1) 1.65 (2) 1.79 (3) 2.30	Isbell 1988: 184
Moraduchavyuc Compound (Huari)	70 %	30 %	2.3	Brewster-Wray 1988: 130
Tiwanaku – Akapana Phase A Averages	79 %	21 %	3.76	Alconini Mujica 1995: 233
Tiwanaku - Putuni	80 %	20 %	4	Couture and Sampeck 2002
		EXPECTATIONS		
General % and Ratios Expectations for Ritual Contexts	From 50 % – 80 %	From 20 % - 50 %	From 1.0-4.0 for ritual contexts	

* Special ritual ceramics such as incense burners were not included in these percentages or ratios.
** Transport/Storage vessels were removed from this comparison.

Cooking pots generally crack due to thermal shock, from being worn away by stirring, or because their base gets knocked as they are put on the floor for serving (Sillar 2000: 138). In support of this, Deal (1998: 97, 138-139) also found in his Maya ethnographic research that food preparation vessels have a much higher mean replacement than ritual vessels. Deal found in domestic contexts that there is an annual 74-80 % replacement of food preparation vessels, and a 15-21 % replacement of ritual serving vessels (Deal 1998: 97). Finally, Varien has used cooking pot accumulations to estimate the length of site occupation, due to their "relatively short use-lives, which result in the deposition of large

number of sherds and their general survival in the archaeological record" (Varien 1999: 66). Varien and Mills have found that in general, the cross-cultural use-life of cooking pots is approximately 1.7 years (Varien and Mills 1997).

All of the above suggests that domestic spaces ought to have a much higher density of broken cooking pots than serving vessels. Table 2 suggests the ratios should be less than 1 in domestic contexts and Table 3 suggests the ratio should be more than 1 in ritual contexts. A difficulty, however, arises when considering the intermediate values – the ratio of approximately 1.0 could be either ritual or domestic in function. This ambiguity is further compounded, by three factors: (1) The presence of elite households, especially in more complex state-level societies (for example see the Aguateca ratio, Table 2). (2) Structures with both domestic and ritual functions (Couture and Sampeck 2002). (3) Cases where the values are affected by diachronic factors, such as discussed for feasting below, or shifts in architecture function over time (Couture 2002). The first factor should not affect the Chiripa ratios, as there is no sign that there are high level elites during the Middle Formative. The second and third factors, however, will be addressed in the analysis. With these caveats, the ceramic ratios provide important baseline expectations that are extremely helpful in the Chiripa case study, and perhaps would be useful elsewhere.

Mound Vs. Enclosure

Building on my primary assumptions of the relationship of ceramics to architecture, I can now ask a functional intra-site question. Do the enclosed courts serve a different purpose than the platform mounds? Although there has been some question as to whether the Quispe and Monticulo structures are contemporary (Bandy 2001), the spaces can nevertheless be compared for function. Karen Mohr Chavez suggests that the Monticulo may have been a temple storage structure (Chavez 1988), while others have discussed plazas as public gathering spaces (Moore 1996b). Does the ceramic evidence support such claims? Hypothesis 2: *If the ceramic ratios and forms are substantially different between the Quispe enclosure and the Monticulo, they suggest different types of activity occurring in the respective spaces.* This hypothesis, however, comes with a cautious aside; if the ratios and forms are similar they may suggest a similar use of space, while not taking into account the variability between the spaces offered in other forms of data. As suggested above, ceramics should not be relied upon solely to demonstrate differences in functionality because serving ceramics may be used in a variety of ritual contexts, including communal structures, burials, and domestic structures (Crown 1994: 201; Plunket 2002). The use of a certain assemblage of artifacts in one context does not preclude it from being used in another domestic or ritual space elsewhere at the site. It may be possible, for example, that both areas were public spaces being used for different forms or levels of feasting activities.

Feasting Activity

Commensal politics, or the use of competitive feasting for political ends (Dietler 1999), is discussed quite frequently in the archaeological literature, and Chiripa is no exception (K. Chavez 1988:26; Bandy 2001:112; Steadman 2002). Feasts are a good example of political ritual activity, and are therefore important to examine during the Middle Formative period. Recent archaeological investigations have presented some expectations of shifts in vessel size and quantity through time and their relationship to feasting activity (Underhill 1990; Blitz 1993; Deal 1998; Mills 1999; Hayden 2001). As Underhill (1990: 66) explains, an increase in status competition, such as feasting, should encourage a higher expenditure of labor in making vessels, and translate archaeologically to an increase in quantity and size of vessels produced. Conversely, a decrease in status competition should result in a reduction in demand for large elaborate vessels (Underhill 1990: 66). Underhill's cross-cultural review of cases of status competition reveals interesting ceramic expectations. In a range of "display behaviours", a relatively high number of large cooking pots and a significant quantity of serving vessels were observed, often with a diversity of pot forms (Underhill 1990: 69, Table 8). Therefore, feasting activity should be reflected archaeologically in frequency of vessels, number of forms and vessel size.

Hayden, in his review of the archaeological correlates of feasting, also suggests that such activity should leave special 'feasting middens', containing high quantities of articulated joints and unprocessed bone (Hayden 2001:40). This other form of data is important to consider, as it is quite possible that changes in vessel size may be related to shifts in diet or household size (Mills 1999:105), or may represent variability in status (Nelson 1985), rather than being directly associated with large ritual gatherings.

Several cases in Tables 2 and 3 indicate that feasting activity was increasing through time in Lake Titicaca. Both the Tiwanaku and Huari cases demonstrate that feasting occurred on a large-scale during the Middle Horizon. Shifts in ceramic ratios over time, particularly in serving vessel percentages, seem to occur as settlements became more politically integrated into state-level centers (Brewster-Wray 1982; Couture and Sampeck 2002; Isbell 1988; Janusek 2002b). Janusek discusses this diachronic pattern and comments specifically on the significance of the change in ratios of serving to non-serving vessels. He notes that during the Late Formative Period, ratios of serving to non-serving vessels remained relatively low in domestic contexts relative to their ratios in domestic contexts after AD 500. Furthermore, Janusek suggests that cooking vessel style changes the least through time, while storage vessel types become slightly more elaborate. The most impressive change, however, is the shift in serving and ceremonial vessels, which Janusek explains in the context of increased importance of feasting and large ceremonies (Janusek 2002b). Similarly, Isbell notes a shift in ceramic ratios vis-à-vis feasting activity. He finds a 7 % increase (from 54.9 % to 61.9 %) in serving vessels over three periods at the administrative center of Jargampata (Isbell 1988: 184).

Feasting activity should also be reflected in the non-serving categories; specifically an increase in vessel size is expected. In the US Southwest, several diachronic studies have found an increase in vessel size and quantity through time (Crown 1994: 110; Mills 1999), and have related this to commensal politics. Mills (1999) finds a correlation of larger storage and cooking vessels associated with feasting behaviour. This relationship has also been noted for the Andean region, at the Huari site of Moraduchayuc, where an increasing number of large jar forms are associated with a high number of serving vessels, and the context interpreted as a feasting location (Brewster-Wray 1982).

It is possible that at Chiripa we are seeing the very beginnings of competitive displays of status through feasting (Bandy 2001), and that these activities are patterned in archaeological record. Although a diachronic study can not yet be performed, relative quantities, ratios and sizes of ceramic vessels ought to reveal feasting activity. The presence of feasting may subtly affect the ratios discussed for ritual and domestic space. I still expect high numbers of serving vessels, and fewer non-serving vessels; but the size of cooking vessels is paramount to this hypothesis. As cooking vessels have higher breakage rates, and these feasting vessels are larger, we would expect a slight increase in cooking vessel sherds. In conjunction with my past hypothesis I can now offer a ceramic 'signature' for feasting. Hypothesis 3: *I suggest that the recovery of a high number of serving vessels and the presence of large cooking and storage vessels is indicative of feasting activity within the Chiripa structures.*

Ceramic Imports and Religious Traditions

Finally, we can turn to Blinman's (1989) second ceramic indicator of ritual: the increasing use of exchange wares. Are there a high number of imported wares associated with the Chiripa structures, representing a non-local presence or interaction? The concept of a highly mobile ritual system has been hypothesized in the past under the guise of a Yaya-Mama Religious Tradition, but do the ceramics support such a tradition? If these structures were indeed storage temple complexes (Chavez 1988), for whom were they storing? These questions may be addressed by examining some ceramic expectations for ritual traditions.

If we maintain that religious traditions are a type of regional cult, we can consider two models of such cults and some ceramic expectations for each. Crown's interpretation of regional cults suggests that they "have their origins in several historical factors includ[ing] increased interlocal contacts through migration and long-distance exchange" (Crown 1994:214). We would thus expect the spread of a Yaya-Mama religious ideology to be reflected by material correlates; ceramically in either the presence of non-local ceramic types at Middle Formative sites or a uniformity of artifact types across the region. While these expectations are not necessarily mutually exclusive, previous excavations have demonstrated that the Middle Formative sites have heterogeneous assemblages, and as such non-local artifacts would be expected for this model. There has been some discussion of limited trade during the Middle Formative, consisting of andesite tools and obsidian (Bandy 2001; Burger *et al.* 2000). If this 'mobile model' of

Religious Tradition is appropriate for the Titicaca Basin, with its long-distance exchange, the Chiripa assemblage should include non-local decorated serving bowl forms.

The model of a religious tradition posited by Burger (1992; see above), however, suggests that participating sites may be politically and economically independent. The political nature of such a tradition, as implied by others (Stanish 1997; Paz Soria 2000), can be tested by the presence of ceramic types. This model permits similarities in ritual activities and architecture, while artifact assemblages may vary. A lack of non-local ceramics may suggest political and economic independence, and perhaps a localized storage system.

By examining both the distribution of the non-local ceramic types in these two structures, and the distribution of Chiripa style ceramics within the Taraco Peninsula and elsewhere in the Lake Titicaca Basin, I can evaluate the extent of Chiripa's involvement in the Yaya-Mama Religious Tradition. Indeed, I can touch upon the nature of the tradition itself. As many discuss the idea of an Andean religious tradition, the nature of such traditions may be explored through the presence or absence of imports at these Middle Formative sites. The presence of imported ceramics may suggest either exchange or non-local participation in activities within the structures. The lack of imports, however, may suggest that the Yaya-Mama Religious Tradition is a political cult with political and economic independence. Hypothesis 4: *I hypothesize that a high number of imported ceramics would support the idea of a far-reaching integrative religious tradition, whereas a low number of imports and forms would suggest a more autonomous yet community inclusive tradition.*

I will therefore, approach the Chiripa ceramic data with four hypotheses to test: 1) structure function, 2) variability between structures, 3) evidence of feasting, and 4) the nature of the ritual system. I will now present the variables essential for a ceramic study of the function of architectural space.

VARIABLES DEFINED:

The variables central to ceramic function can be grouped into two categories: manufacture and use. Both categories may hint at the activities that occurred within structures. *Manufacture Variables* include Vessel Form, Size, Decoration and Surface Treatment. The *Use Variables* include the presence and absence of Sooting, Frequency of Vessels, and the specific provenience of the sherds. These variables allow ceramic sherds to be divided into three functional categories: storage, cooking and serving[v](see Table 4). Smith (1994) recently examined these functional categories, and her comprehensive analysis ascertained the viability of these variables cross-culturally.

Table 4: Predicted archaeological correlates of functional vessel types. (After Howard 1981 and Rice 1987:238)

Functional Category	Form	Surface Treatment and Decoration	Frequency	Clues
Storage Vessels	Restricted Forms, Mouth for pouring; Handles for tipping	Variable for display or messages; slip to reduce permeability	Low Replacement	Residues of Stored Goods
Cooking Pots	Rounded, Unrestricted, lacking angles	Little to no decoration. Stucco for handling ease and thermal resistance.	High Replacement	Exterior sooting or blackening, and interior burned contents.
Serving	Unrestricted for easy access; flat base for stability	High decoration for display.	High Replacement	Size correspond to individual servings or group size

The Manufacture and Use variables are defined according to ceramic studies, both generally (Braun 1980; Deal 1998; Henrickson and McDonald 1983; Hally 1986; Plog 1980; Rice 1987; Smith 1985, 1994; Steponaitis 1983), and more Andean specific (K. Chavez 1984; Mohr 1966; Sillar 2000; Steadman 1996). As Lesure (1998: 20) points out, these forms of analysis are "powerful tool[s] for interpreting vessel function, especially when supported by other forms of data such as use-related alteration of pot surfaces, including abrasion, spalling, and sooting." Since this analysis includes variables of surface alteration, it ought to represent a well-rounded set of variables. Certain variables, however, have not been included, because of restrictions inherent in the Chiripa data set. These variables include vessel height, base angle, wall thickness, and detailed examination of burnishing and thermal resistance. Finally, I recognize that ethnoarchaeological research (*e.g.* Longacre and Skibo 1994) has revealed that the situation is much more complicated than implied by this simple list of variables; however, this does not negate the utility of the categories used here. What follows is an ethnographic and archaeological justification of these variables[vi], followed by an overview of the methodology used in this particular study.

Manufacture:

Vessel Form and Size:

Ethnographic and archaeological work has shown that vessel form and size are the most useful variables in the examination of ceramic function. Numerous studies of vessel form and function have been conducted (Birmingham 1975; Braun 1980; Hally 1986; Howard 1981; Lischka 1978; Morris and

Thompson 1985: 73-90; Robertson 1983; Skibo 1996; Smith 1985), however, two specific examinations serve a valuable comparative purpose here. Chavez (1984) and Henrickson and McDonald's (1983) work allows one to make certain conclusions about vessel form, size and function. Both studies found that *cooking vessels* tend to be short squat vessels, with large rounded basal surfaces, likely for effective heat transfer and to reduce the potential of breaking from thermal shock (Rye 1976). They often have restricted mouths and thick walls. Cooking vessels are usually unpainted, and may have handles to aid in lifting the vessels on and off the fire (Sillar 2000:138). In the Chiripa sample, cooking vessels included thick walled, non-painted, necked vessels. Chavez (1984) notes that large, wide mouthed containers were often used explicitly as *storage vessels* – or more precisely for fermenting *chicha*. Although it is noted that storage vessels are usually wide mouthed (Henrickson and McDonald 1983:633), jars are an exception, as they have narrow mouths and, frequently, two vertical handles (K. Chavez 1984:163). Chiripa storage vessels include the larger mouthed vessels, including the olla and the jar. Chavez notes that bowl forms are often used for serving food domestically or outside of the home (K. Chavez 1984: 164). Ethnographically, serving vessels tend to also be in the form of open bowls with flat bottoms, and are decorated. These vessels can range in size from 10 – 95 cm in diameter, depending whether vessels are for individual use or for family serving (Henrickson and McDonald 1983: 632). The serving vessels are perhaps the easiest to identify in the Chiripa assemblage, because of the distinctive lip treatment and the unique decoration.

Decoration:

Ethnographic and archaeological work has demonstrated that serving vessels are the most frequently decorated ceramics while cooking and other utilitarian vessels are usually undecorated (K. Chavez 1984: 164; Hally 1986: 276; Henrickson and McDonald 632; Plog 1980; Smith 1994: 104). Decoration has, as one of its functions, the communication of symbolic information (David *et al.* 1988: 379). Sillar found that *chicha* vessels are most heavily decorated, and *chicha* is consumed in the largest quantities in extra household relations, thus relating ceremonial pottery to painted sherds (Sillar 2000:118). Slipped and smoothed vessels are also easier to clean (Lischka 1978: 227), thus supporting a serving function.

I had initially hoped to analyze the iconography of Chiripa ceramics, but quickly discovered that the sherds were usually too small to preserve enough decoration for study. Furthermore, decoration in the Formative Period of highland Bolivia was restricted to fairly simple geometric designs, and as such, of limited use in iconographic analyses. However, the presence or absence of decoration is an important attribute in distinguishing serving vessels. It is important to note that analysis of decoration was often separate from the analysis of form – the diagnostics used to discuss shape were different than those used for decoration. Enough serving vessels have been examined, however, to suggest an association between decoration and form – decorated sherds represent serving vessels and most likely bowl forms (see Mohr 1966; Steadman 1999: 66).

Surface Treatment:

The Chiripa sample includes a number of sherds that were treated with a stucco finish. Thick-walled, clay-stuccoed vessels were used predominantly for cooking (Steadman 1995: 66-67). As Steadman (1995: 66) notes, the application of a stucco surface is an additive process to increase the efficiency of cooking:

> Stucco finishes have a rough, grainy surface achieved by applying a clay mixture, in broad strokes and dabs like stucco, onto the exterior surface of the vessel before firing. This mixture is made of the same clay as the vessel itself, without fiber tempering and with more of the mineral tempering material...stucco finishes are only found on the bases of fiber-tempered cooking vessels.

Several researchers have demonstrated that application of stucco, or corrugation, to a sherd surface acts in a thermodynamic fashion – a rough surface absorbs more heat than a smooth one (Heidke and Elson 1988; Rice 1987: 230; Schiffer et al. 1994). Once again, this data set was separate from the form analysis, as the sherd fragment, if stuccoed, was likely a base fragment.

Use

Sooting:

One of the best ways to identify the cooking function of vessels is by examining the crusted, charred material on interior vessel surfaces, or by soot which results from use over an open fire, and is often found on the exterior of the vessel (Hally 1993; Skibo 1992; Steadman 1995). In some cases sooting also occurs on the vessel interior, perhaps due to food remains in the interior. This does not mean *a-priori* that all fire-blackened surfaces represent food preparation activity, as discoloration can occur in reduction from vessel firing. Similarly, a lack of soot does not exclude the possibility that a pot was used for cooking (Lischka 1978:227). Studies have shown, however, that sooting rarely, if ever, is found on open vessels, where they would be "prone to boil dry" (Smith 1994: 99). The range of possible studies for sooted material is demonstrated in the literature – ranging from ethnoarchaeological work with different foods (Masashi Kobayashi 1994), to the advent of residue analysis of sooted material within vessels (Biers and McGovern 1990; Duma 1972; Skibo 1992). These types of analysis were not performed here, although samples have been collected by TAP, and such work may occur in the future. The presence or absence of soot is clearly a revealing attribute. A fire-blackened, sooted vessel suggests that a vessel was likely used in a cooking capacity, and certainly was not used as a specialized serving vessel.

Data Set and Methods

In the summer of 2001, I analyzed ceramics from four Late Chiripa phase structures at the site of Chiripa: Llusco, Monticulo, Alejo and Quispe (see Figure 2). A number of different contexts and depositional types were examined. Although I focused my attention upon floors and occupation levels, fill episodes were also examined in order to attain a larger sample. Architectural features were examined, termed here Architectural SubDivisions (ASDs). The non-architectural investigations are defined as loci and stratigraphic events. A locus "is an archaeological unit of provenience, formed by the manner and sequence in which the site is excavated", whereas an event is the "natural property of the matrix, resulting from the processes by which the site was formed" (Hastorf and Bandy 1999: 30).

After completing my initial analysis, I compared my classification with that produced by project ceramicist Lee Steadman. I soon discovered that the most robust data, in terms of size of excavation, number of ceramics and contemporaneity, were from Quispe and Monticulo. Both these structures seem to be ideal locales to examine the issue of ritual versus domestic function; the excavators themselves address similar questions, both during excavation and analysis (Paz Soria 1999:19).

The contexts examined from the Monticulo consist of those excavated by the Taraco Archaeological Project, and those excavated by Kidder and reported by Mohr in 1966 (Table 5). These contexts consist of excavations from the Lower Houses, Monticulo 1a, 1b, and from the Upper Houses, Monticulo 2. These excavations revealed a number of ASDs, and distinct depositional types. These included floor and occupation surfaces for the Lower Houses (Events D-52, D-56, D-58, D-60 and D-62), fill located directly on top of these floors (Event D-51) and some wall collapse from contemporary structures (D-33 and D-35). Several ASDs had no ceramic remains (see column labeled Comments in Table 5); however, these floor surfaces offered the opportunity for a micromorphology study. Most of the ceramic data analyzed for the Monticulo were from occupation surfaces or from fill. TAP excavated little floor surface from the Upper House levels (or Monticulo 2 area), and therefore I examine activities primarily by way of a deep stratified midden outside of House G and include Mohr's analysis of ceramics from Kidder's excavation of Houses 2, 3 and 5 (see Figure 4). The midden deposits (D134, D136 and D137) contained large quantities of ceramics, bone, lithics and ash. Totaling 100 cm in depth, this deep midden accumulated during occupation of the Upper Houses (Bandy 1998:12).

The samples from the Quispe structure were also recovered from a number of loci, events and types of deposition, although the enclosure offered far more ceramics from floor and occupation surfaces as Table 5 demonstrates (Events F-6, F-10 and F-16) and no midden has been excavated. There are important distinctions, however, between the Quispe floor and use surfaces. For example, several of these occupation levels are found near the canal areas, while others are outside of the structure itself. Similarly, some of the floor surfaces are in close contact with wall features, therefore may have been disturbed by wall fall. However, less intrusive activity occurred at the enclosure (as the enclosure lacks

Table 5: Overview of Chiripa Contexts Examined

Area	Description of Area	Architectural Subdivision	Event	Locus #	Non Ceramic Artifacts	Date (Ceramic L.C.= Chiripa T = Tiwanaku)	Comments
Monticulo 1a	Found 3 superimposed structures. These structures seem to have accumulated slowly over time. These are termed the 'Lower Houses" by Kidder and others. See Figure 3.	ASD 13	**D51**: Intentional fill placed over D-52 floor.	1351	Fish and llama bones, adobe bricks, lithics	L.C. (Radiocarbon: 480-390 BC)	No ceramics, floors very thin. Some plaster found in wall Micromorphology conducted.
			D52: Uppermost yellow plaster floor of ASD-13 structure.	1353	Low lithics and bone	(Radiocarbon: 410-210 BC)	
		ASD 14	**D56**: Uppermost yellow plaster floor of ASD-14	1357	No Associated Artifacts		No ceramics, very clean floor, homogenous clay.
			D58: Second-highest yellow plaster floor of ASD-14 Structure	1362	No Associated Artifacts		No ceramics, very clean floors, sterile yellow sand cap.
			D60: Third-highest yellow plaster floor of ASD-14	1366	No Associated Artifacts		
		ASD 15	**D62**: Uppermost yellow plaster floor of ASD-15	1371	No Associated Artifacts		No ceramics – Micromorphology conducted
Monticulo 1b	South of Monticulo 1a, on the same profile. Lower house level walls, with ASD 12 and ASD 16	ASD 12	**D33**: Rubble from structural collapse filling ASD-12 structure	1425	Few lithics and bone.	L.C.	
				1426	High carbon, some bone and lithics.	L.C.	Yellow clay present
			D35: Wall of Structure ASD-12	1427	Low lithics, bone and carbon.	L.C.	
		ASD 16	**D10:** Fill under house and rubble collapse	1349	Low lithics, bone and carbon.	L.C.	Heterogeneous soil.
Lower Houses	Unclear the exact proveniences of these excavations, but located under Monticulo 1	N/A	Sub houses 1 and 2 – Pit not for trash or burial, but perhaps fill for upper houses.	CH-B-9	Details of Kidder's excavations not available	L.C. and 1 T. sherd.	
			Sub houses 1 and 2 – Trash and fill, exterior of lower houses 1 and 2. Occupation refuse?	CH-B-6-H		L.C.	
			Sub houses 1 and 2 – Below floor of lower house 2. Material represents lower house material or earlier.	CH-B-6-J		L.C.	

Table 5: Continued.

Area	Description of Area	Architectural Subdivision	Event	Locus #	Non Ceramic Artifacts	Date (Ceramic L.C.= Chiripa T = Tiwanaku)	Comments
Monticulo 2	Basically the clearing of Browman's backdirt. Excavated to establish if any structures in the souther section of the mound. Evidence of rubble of and plaster floor.	N/A	**D134**: Highest level of garbage accumulated against House G.	2033	High density of bone and lithics.	L.C.	White plaster: cap on midden? Wall collapse?
				2034	High density of carbon, bone, and adobe brick samples.	L.C.	
			D136: Middle level of midden against House G.	2035	High density of lithics and bone, adobe and ash layer.	L.C.	
			D137: Lowest level of midden against House G.	2036	High # of adobes with yellow plaster on them.	L.C.	
Upper Houses	The exact nature of the excavated contexts is once again unclear. The house #s, however, are based on Bennett's original work.	Bennett's Upper House 5	**House 5** – Contemporaneous occupation refuse, but perhaps mixed fill.	CH-A-4	Details of Kidder's Excavations not available	L.C.	
				CH-A-4a		L.C. and 1 T. sherd	
				CH-A-4b		L.C. and 1 T. sherd.	
			House 5 – Just abover or at floor; contemporaneous occupation refuse.	CH-A-5		L.C.	
				CH – A-6		L.C.	
				CH-A-9		L.C.	
				CH-A-10		L.C.	
			House 5 – Ash pit (2 plain brown sherds)	CH-A-SF-6		L.C.	
		Occupation of Bennett's Houses 2 and 3	**Houses 2 and 3** – Debrise from house after fire, exterior of houses	CH-B-2	Details of Kidder's Excavations not available	L.C.	
			Houses 2 and 3 – refuse pit.	CH-B-3		L.C.	
			Houses 2 and 3 – Material between floors.	BH-B-6-E		L.C.	
			House 1 – Material contemporary with occupation of house	CH-B-7		L.C.	
				CH-B-7a		L.C.	
			House 2 fill.	CH-B-6-G		L.C.	

Table 5: Continued.

Area	Description of Area	Architectural Subdivision	Event	Locus #	Non Ceramic Artifacts	Date: (Ceramic L.C.= Chiripa T = Tiwanaku)	Comments
Quispe		ASD 20/22	**F10**: Possible occupation level	2301	Worked bone, low # of bones, lithics	L.C.	
				2311	Low lithics and bone	L.C. and 4 % T.	
				2356	Lithics, bone and adobe	L.C. and 3 % T.	
				3010	High lithics and bone	L.C.	
				3033	High lithics and bone	L.C. and 9% T.	
				3067	Low lithics and bone, burned earth.	L.C.	
				3071	Lithics and bone	L.C.	
			F15: Materials on floor of ASD 20.	3017	Low density of lithics and bone	L.C.	
				3037	High lithics and bone	L.C.	
				3050	High lithics and bone	L.C.	Disturbed, eroded stratigraphy
				3058	Bone, lithics	L.C.	
				3062	Low density of lithics, bone, burned earth	L.C.	
				3063	Low density of lithics and bone	L.C. and T.	
				3069	Lithics, bone.	L.C.	
				3073	Lithics, bone, carbon.	L.C.	
		ASD 20 – A fallen wall, with stones and old adobes.	**F6**: Floor	2352	Low lithics and bone	L.C.	
				3003	Low lithics and bone	L.C.	
				2313	Low lithics and bone	L.C	
				2354	Low lithics and bone	L.C	
		Below ASD 20	**F9**: Fill in Canal	2350	Few lithics, bone	L.C	
				2351	Few lithics, bone	L.C	
				2355	Few lithics, bone	L.C	

superimposed structures), and the Quispe sample is less disturbed by later events than the Monticulo sample.

I conducted my analysis primarily in the field: counting, measuring (with calipers and a standard rim diameter chart), drawing and photographing the Chiripa ceramics. The form analysis of the Chiripa ceramics followed Steadman's (1999) guidelines and relied on her comprehensive categories of vessel forms. This system was effective in that it allowed for forms to be categorized into increasingly more precise groups. The system classifies diagnostic sherds into categories according to both the investigator's own level of precision and the limitations set by individual vessel fragments. In some categories, these limitations translated into low form counts because the lack of rim remains limited the possible inferences[vii]. For example, a sherd from a small flaring rim bowl may have been recognized as simply a bowl fragment. An additional effect was observer variability: what one analyst may have defined as a vertical walled bowl, another may have seen as a flaring rim bowl. I decided not to adjust my form analysis, however; after comparing both Steadman's and my own data, the difference in broad form interpretation I found was negligible. The variability calculated for a random sample of loci ranged from 5-10 % (with Steadman noting, for example, a 1-5 % difference for red slipped sherds). This variability was considered to be within an acceptable range for this type of analysis.

I illustrated many of the rim diagnostics and decorated sherds on a separate form and noted more specific surface treatment, such as slip and luster. These sherds were photographed and drawn, for future analysis purposes. I also recorded the range of surface treatment on vessels, including vessel colour, the presence of slip and the specifics of the decoration. The total number of red slipped vessels was tabulated for each locus, as Mohr (1966: 21) notes that red slipped sherds may represent fragments of cream-on-red bowl forms (Steadman 1999:66). In addition, I tabulated stuccoed and sooted sherds for each locus, in order to address relative numbers of cooking vessels. In all cases where a significant portion of the rim sherd remained, the rim diameter was taken with the hope that patterns of vessel size could be examined. For a more general size categorization, I used 18 cm as the split between small and large bowls and 15 cm for the division between small and large-necked vessels. These categories were created by a histogram study of vessel size that demonstrated significant clustering of vessel sizes at Chiripa (Steadman ND). It should be noted, however, that a bowl of 18-cm diameter is not very large.

I counted vessel types for each archaeological event, and for each structure (see Appendices 2 and 3), and created more general categories for purposes of interpretation. These categories included decorated bowls, non-decorated bowls, necked decorated vessels, and necked non-decorated vessels. Next, I analyzed the number of sooted and stuccoed vessels for each event and structure. As the stuccoed and sooted sherds were usually bases and body fragments (and not rim sherds), forms could not be inferred for this analysis. Finally, I analyzed red slipped and decorated sherds for each event and structure. As we will see below, these analyses of surface treatment and sooting were useful to interpret the nature of the ceramic assemblages and ultimately, the functional interpretations of the buildings.

ANALYSIS AND RESULTS

Hypothesis 1: Structure Function

An abundance of cooking and storage vessels, and an equal or lesser number of serving vessels, will suggest a domestic function, whereas a proportionally high number of serving vessels will suggest a more ceremonial, ritual function.

The first question addressed through the ceramic data concerns the nature of the architectural space: do the ceramic artifacts suggest the presence of a ritually oriented area? In this analysis, I compared floor, midden and fill depositional contexts from each structure (see Tables 6 and 7), since I expected the ceramic assemblages to be quite different in each. To this end, I analyzed the data by deposit, as demonstrated in Figure 8 and Tables 6-10. This method of analysis was extremely useful, as I discovered that some deposits might in fact represent different original contexts. Although vessel form was analyzed by using diagnostic rim sherds (Table 6), I also examined the surface treatment of sherds (Table 7) and much of my analysis was based upon this data set due to a small recoverable sample size for vessel shape.

Only a small percentage of the rim diagnostics could be categorized into vessel shape categories (in some cases merely 10 %) and this resulted in a small 'vessel form' sample size (see Appendix 3). Form in this data set, therefore, is not a good representation of function at Chiripa. Nevertheless, the rim sherds were grouped into serving and non-serving categories: serving consisting of both decorated bowl and necked vessel types, and the non-serving the non-decorated forms. This gross simplification was performed in order to be certain of general vessel shape. The results of the form analysis show few clear patterns. Table 6 displays the percentages of Chiripa vessel forms by context in the three different deposit types, while Figure 8 graphically presents the individual loci (rather than event totals) from the events by deposit type.

Both Table 6 and Figure 8 show little clustering within any of the individual studied deposit types; the most patterned result displayed is the floor context, with clustering occurring in the 50 % range. To reiterate, the shape analysis was not helpful as the few forms identified in the analysis failed to indicate differences in function.

Next, the sherds were analysed by way of the surface treatment and sooting, by subdividing them into two categories: serving and cooking. Decorated and red slipped sherds were totalled to create the serving category, and tallying stuccoed and sooted sherds created the cooking category (see Table 7 and Figure 9).

Table 6: Vessel form variation by context and deposit type at Chiripa.

Context: Area and Event/Locus	Serving Vessels		Cooking/Storage Vessels		Total Diagnostic Rim Sherds* No. (%)
	Decorated Bowls No (%)	Decorated Necked Vessels No (%)	Non Decorated Bowls No (%)	Non Decorated Necked Vessels No (%)	
			FLOORS/OCCUPATION SURFACE DEPOSITS		
Monticulo House 5 CH-A	16 (38)	6 (14)	15 (36)	5 (12)	42 (100)
Monticulo Houses 2 and 3 CH-B	9 (36)	4 (16)	6 (24)	6 (24)	25 (100)
Monticulo Event D33 and D35	3 (43)	0 (0)	2 (28)	2 (28)	7 (100)
Quispe Event F10	13 (31)	8 (19)	11(26)	10 (24)	42 (100)
Quispe F15	20 (59)	5 (15)	0 (0)	9 (26)	34 (100)
Quispe Event F6	5 (28)	2 (11)	4 (22)	7 (39)	18 (100)
			MIDDEN DEPOSITS		
Monticulo Event D134	13 (45)	4 (14)	7 (24)	5 (17)	29 (100)
Monticulo Event D136	1 (25)	1 (25)	1 (25)	1 (25)	4 (100)
Monticulo Event D137	2 (25)	2 (25)	2 (25)	2 (25)	8 (100)
			FILL DEPOSITS		
Lower House 1 and 2 CH-B-9, CH-B-6-J	0 (0)	0 (0)	6 (86)	1 (14)	7 (100)
Monticulo Locus 1349	0 (0)	0 (0)	1 (50)	1 (50)	2 (100)
Monticulo Locus 1351	3 (100)	0 (0)	0 (0)	0 (0)	3 (100)
Monticulo House 2* CH-B-6-G	4 (31)	0 (0)	2 (15)	7 (54)	13 (100)
Quispe Event F9	3 (25)	2 (17)	2 (24)	5 (42)	12 (100)

*Note: This count consists of only those sherds large enough to categorize into one of these groups. In some cases, such as the midden contexts, many of the rims were very fragmented and impossible to categorize.

Table 7: Vessel surface treatment and soot evidence by context and deposit type at Chiripa

Context: Area and Event/Locus	Serving Vessels			Cooking			Total Sherds No. (%)
	Red Slipped Sherds No. (%)	Decorated Sherds No. (%)	Decorated + Red Slipped Sherds No. (%)	Sooted Sherds No. (%)	Stuccoed Sherds No. (%)	Sooted + Stuccoed Sherds No. (%)	
FLOORS/OCCUPATION SURFACE DEPOSITS							
Monticulo House 5 CH-A *	88 (22)	38 (9)	126 (31)				405 (100)
Monticulo Houses 2 and 3 CH-B *	78 (32)	40 (16)	118 (49)				242 (100)
Monticulo Event D33 and D35 **	12 (17)	10 (15)	22 (32)	0 (0)	0 (0)	0 (0)	69 (100)
Quispe Event F10	112 (9)	50 (4)	162 (13)	27 (2)	38 (3)	65 (5)	1203 (100)
Quispe F15	127 (23)	69 (13)	196 (36)	45 (8)	30 (5)	75 (14)	542 (100)
Quispe Event F6	127 (21)	69 (11)	196 (32)	45 (7)	30 (5)	75 (12)	603 (100)
MIDDEN DEPOSITS							
Monticulo Event D134	110 (10)	48 (4)	158 (14)	31 (3)	34 (3)	65 (6)	1094 (100)
Monticulo Event D136	26 (14)	10 (5)	36 (20)	4 (2)	10 (5)	14 (7)	180 (100)
Monticulo Event D137	40 (22)	20 (11)	60 (33)	9 (5)	8 (4)	17 (9)	179 (100)
FILL DEPOSITS							
Lower House 1 and 2* CH-B-9, CH-B-6-J	9 (8)	0 (0)	9 (8)				112 (100)
Monticulo Event D10	4 (7)	4 (7)	8 (14)	1 (2)	3 (5)	4 (7)	55 (100)
Monticulo Event D51	4 (27)	6 (40)	10 (67)	0 (0)	0 (0)	0 (0)	15 (100)
Monticulo House 2* CH-B-6-G	81 (38)	0 (0)	81 (38)				211 (100)
Quispe Event F9	15 (8)	4 (2)	19 (11)	4 (2)	34 (19)	38 (21)	177 (100)

* Mohr did not investigate Sooting or Stucco sherds, therefore no cooking data is available for these contexts.
** It is not clear if this Event is occupation surface or just wall fall.

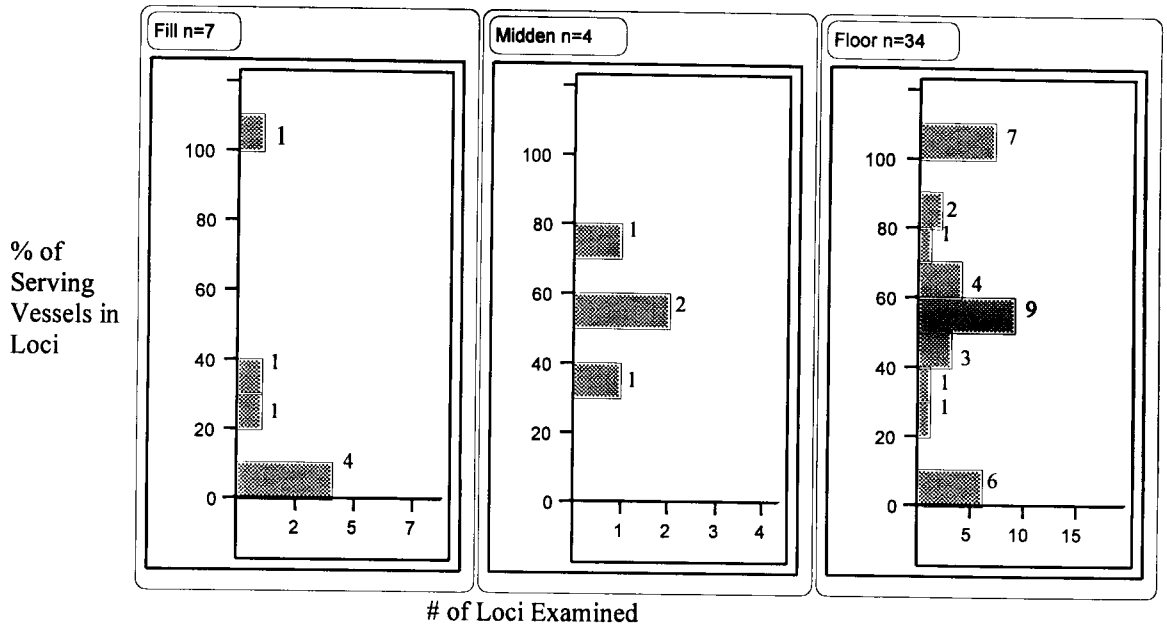

Figure 8: Serving Vessels, as defined by form, across depositional types in both Quispe and Monticulo structures

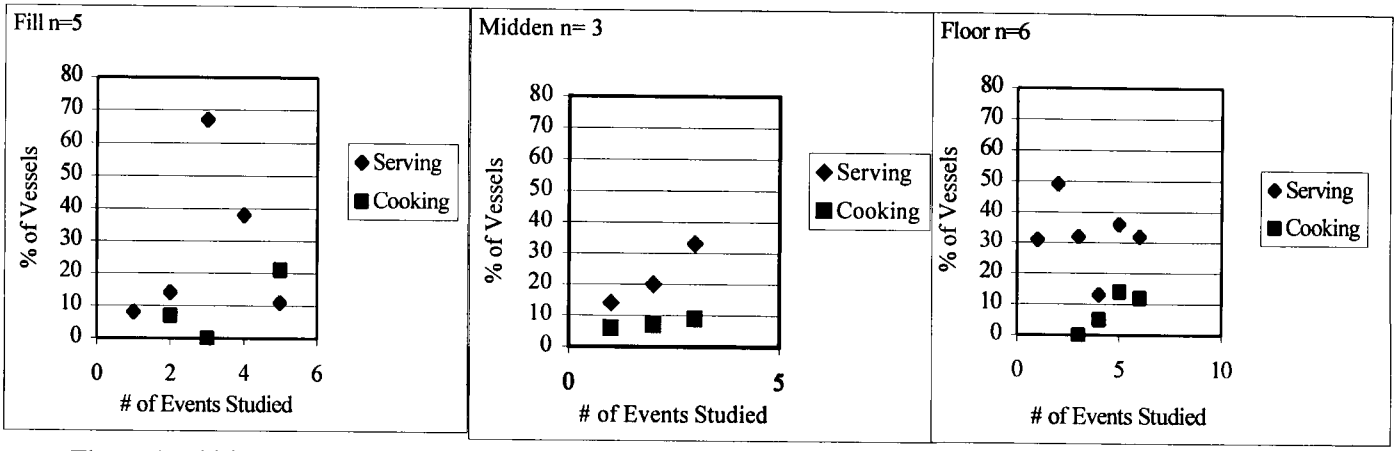

Figure 9: Chiripa serving to cooking vessels, as defined by vessel surface treatment in both Quispe and Monticulo structures.

Unfortunately Mohr did not conduct a detailed analysis of sooting or stucco, although she does briefly discuss sooting (Mohr 1966: 104)[viii]. The ceramic values that are available for Mohr's ceramic analysis, however, are quite similar, and thus do seem to fit with both Steadman's analysis and my own study. The results show that there are more than double the percentage of serving vessels for floor and midden contexts. There are no cases of cooking vessels outnumbering serving vessels. Fill episodes, however, show less of a pattern, and a greater diversity in percentages - Monticulo 1351 has no cooking vessels represented, while cooking wares for Quispe Event F9 are almost double the percentage of

serving sherds. The percentages calculated for non-fill categories, however, are much more standardized, and do suggest a ritual function.

Once the serving and cooking categories were created, I then calculated the ratio (Table 8), following Blinman 1989, of the serving to cooking vessels, in order to compare the Chiripa values to my cross-cultural ceramic models (Tables 2 and 3).

Table 8: Serving: cooking ratio categorized by deposit and context type in Monticulo and Quispe

Context	Event: Locus	Serving/ Cooking Ratio (Using Surface Sherds)
	FLOOR/ OCCUPATION SURFACE	
Quispe	F10	2.6
Quispe	F15	2.6
Quispe	F6	2.7
Monticulo*	D33	-
Monticulo*	D35	-
Average		2.6
	MIDDEN	
Monticulo	D134	2.3
Monticulo	D136	2.8
Monticulo	D137	3.7
Average		2.9
	FILL	
Monticulo	D10	2.0
Monticulo *	D51	-
Quispe	F9	0.52
Average		1.26

*Note: There is no evidence of sooted or stuccoed sherds in these contexts.

What is immediately apparent in Table 8 is that the ratio is 2.0 or greater (with the exception of Quispe F9)– as would be expected for ritual contexts. There is little ambiguity here, as the values are much above the 1 ratio that may have caused uncertainty. These values do not suggest that the structures represented elite households or that they served both domestic and ritual functions. The ratios support non-domestic ritual activities.

The variability between contexts is interesting to note here – while floors and middens are quite similar (an average of 2.8), the fill is slightly different, at a ratio of 2.0 and 0.52. A number of other archaeological and ethnoarchaeological investigations have found that such variability is to be expected due to site formation processes as well as post-use activities (Deal 1999). Smith (1971) defined midden types for the site of Mayapan as either house, service (from kitchens), or ceremonial types. Smith found a negative association between ceremonial middens and cooking jars, and found that ritual middens had a high quantity of 'ritual' artifacts (Smith 1971: 112, Table 22). Mayapan's ritual middens had a ceremonial to domestic ceramic ratio of 2.7, while the domestic midden had ratios of 0.1. The Chiripa midden ratio, averaged for the Monticulo structure, is 2.9 – surprisingly close to Smith's ratio. The similarity of floor and midden deposits suggests that these samples do represent activities within the structures.

The fill ratio, however, is perplexing; while still well within a ritual level, the consistency of values for fill contexts may be explained by their original context; in other words, the fill may not have originated within or near the Monticulo or Quispe. These fills may be coming from either nearby middens, or from slightly mixed domestic and ritual contexts (see Whitehead 1999b for a similar interpretation). In order to address this possibility, I chose to compare the data of different fill episodes from elsewhere on the site, to see if such percentages are a standard. As discussed above, breakage rates for cooking wares would be expected to accumulate much faster than serving wares, and thus should be found in greater number in domestic contexts (even if the original deposit is moved and used as fill). Table 9 shows sooted sherd percentages from random fill events vis-à-vis the Quispe and Monticulo finds, whereas Table 10 shows decorated and slipped sherds from other random fill episodes. I would have preferred to compare ratios, but unfortunately the complete sherd details were not available. I therefore compared sooted and decorated sherds from fill episodes of randomly chosen structures (both contemporaneous and earlier).

Table 9: Comparative events from random Chiripa fill deposits – cooking wares (sooted sherds).

Context	Event	Total # of Sooted Sherds No. (%)	Total Sherds No. (%)
Llusco – Fill	A30	8 (3)	299 (100)
Llusco – Fill	A14	15 (2)	788 (100)
Santiago sunken court – Fill	B10	22 (2)	1267 (100)
Alejo- Fill below rocks	E9	9 (3)	335 (100)
Total for Quispe and Monticulo Fill Episodes	D10, D51, F9	5 (2)	247 (100)
Average (%) Sooted Sherds from Monticulo and Quispe Fill Episodes		2 %	

Table 10: Comparative loci from Llusco and Choquehuanca fill deposits – serving wares

Context	Locus	Serving Wares			Total Sherds No. (%)
		Red Slip Sherds No. (%)	Decorated Sherds No. (%)	Decorated + Red Slip Sherds No. (%)	
Choquehuanca	2114	51 (16)	1 (.3)	53 (17)	310 (100)
Choquehuanca	2117	13 (10)	2 (1)	15 (11)	135 (100)
Llusco	61	16 (22)	0 (0)	16 (22)	73 (100)
Llusco	109	30 (8)	0 (0)	30 (8)	373 (100)
Llusco	1326	9 (6)	7 (5)	16 (12)	138 (100)
Total for Quispe and Monticulo Fill Episodes	All Fill Loci Studied	113 (20)	14 (2)	127 (22)	570 (100)
Average (%) of Quipse and Monticulo		18 %	10 %	28 %	

These tables demonstrate some standardization in the percentages of both cooking and serving sherds in the fill deposits. The fill episodes investigated offer similar values in terms of sooted sherds – approximately 2 %. This is exactly the same value as found for the Quispe and Monticulo fill episodes.

The decorated sherd percentages, however, nullifies the contention that both these fill episodes represent a type of domestic activity. The random fill deposits ranged between 8 % and 22 % decorated sherds (with an average of 14 % across these contexts) as opposed to the Quispe and Monticulo fill that had a range of 8 % to 67 % (with an average total of 28 %). The Monticulo fill episodes skew the averages significantly. When we compare these percentages to the surface (32 % average) and the midden (22 % average) there is not much of a case for the fill representing domestic contexts. If we only look at the Quispe fill episodes we find 11 % decorated sherds (and a combined sooted and stuccoed value of 22%). It is therefore possible that the fill episode in Quispe represents a re-deposit of a domestic midden, as supported by other forms of evidence (see below), whereas the Monticulo fill is more closely related to the ritual activities occurring near the structure.

Structure Function – Non-ceramic forms of data

The ceramic data indicate that the Monticulo and the Quispe structures do not represent domestic space. Although the morphology of ceramics are not overly convincing, the serving to non-serving ratio from sherds offers convincing evidence for the interpretation of the Monticulo and Quipse structures as the locale for ritual activity. The ceramic ratios match expectations derived from the Andean and cross-cultural ceramic model for ritual architecture, as seen in Table 3. Other types of analysis also support the interpretation that these structures were primarily ritual or public architecture. The TAP project has analyzed paleoethnobotanical evidence, faunal remains (see the feasting discussion for this evidence), and has conducted micromorphological analysis. These studies, in combination with architectural patterns, reaffirm some of the conclusions reached above with regard to the domestic/ritual question.

The paleoethnobotanical samples from Monticulo House 5 show little evidence of domestic activity. The low taxa diversity across the Monticulo contexts is more characteristic of storage activity than domestic activity (Whitehead 1999b). Although there have not yet been any detailed studies of the plant remains in the Quispe structure, the analysis from the Llusco structure suggests little domestic activity occurred within the enclosures. The floors were clean of plants, although the fill episodes had a higher density of material. Whitehead suggests the fill may have originated from a domestic midden area, and may not be directly related to activity within Llusco (Whitehead 1999b: 99), which supports my findings for Quispe.

Finally, micromorphological studies conducted by Melissa Goodman (1999) offer further evidence that the Monticulo was used for ritual activity. Goodman found a complete lack of

microartifacts within the floor surfaces, indicating that "these areas were scrupulously maintained, selectively used, or not used at all" (Goodman 1999:57). The cleanliness of floor surfaces supports the interpretation that the Monticulo was used for ritual activity, as such maintenance of ritual structures is found cross-culturally and elsewhere in the Andes (see Appendix 1).

In summary, the ceramic evidence, the paleoethnobotanical evidence, and the micromorphological examination support the conclusion that the structures were not domestic spaces, but were ritual spaces. What kinds of activity can we then infer from our evidence? Is there ceramic variability between the enclosure (Quispe) and platform (Monticulo) architecture types? Is there evidence for feasting so often discussed by archaeologists (Hayden and Dietler 2001)?

Hypothesis 2: Mound vs. Enclosure Analysis and Results

If the ceramic ratios and forms are substantially different between the Quispe enclosure and the Monticulo, they suggest different types of activity occurring in the respective spaces.

The second hypothesis suggests that different ceramic ratios indicate differences in activity. These two structures may not have been used at exactly the same time, or at a similar consistency. It may be that one structure was used for ritual gatherings only once or twice a year, while the other structure was used daily. The Monticulo has a long history of use, seemingly following a similar spatial pattern over time; a group of structures surrounding a sunken plaza. From a strictly stratigraphic perspective, it would appear that Quispe was used for a much shorter period of time, and perhaps not as extensively. The ceramics found in the Monticulo and Quispe suggest that they were contemporary, and therefore any differences should be functional.

The ceramic data (Tables 6-8) I examined indicates few functional differences between the Monticulo and Quispe. The ratios of serving to non-serving vessels are quite similar – in fact the values are almost identical. The only variation that can be found is in the fill deposits, as discussed above, which only suggests different origins for fill deposit materials, and not for functional difference. I can not effectively address Karen Mohr Chavez' proposal of the Monticulo serving a temple storage role (K. Chavez 1988). On the one hand, there is little to suggest large amounts of storage occurring, as the number of serving vessels far outweighs the non-serving (and thus storage) vessels. The micromorphological data also do not support this claim. This study, however, did not look at bin contexts, presumably the locale where all the storage would have taken place. Unfortunately it is impossible to elaborate further on activity differences here.

Hypothesis 3: Feasting Activity Analysis and Results

I suggest that the recovery of a high number of serving vessels and the presence of large cooking and storage vessels is indicative of feasting activity within the Chiripa structures.

In order to address questions of feasting, the size of serving vessels is of utmost importance. The findings discussed for the analysis of structure function suggest large numbers of individual serving vessels, forms essential for feasting contexts, but what about large feasting vessels? The analysis of vessel size depends on the same data used to discuss vessel form (Table 6 and Figure 8), and thus quantities of identifiable forms were low. A comparison between the two structures suggests that there was no distinctive difference in vessel sizes found in the respective spaces. Furthermore, when the results were combined they were not convincing for large-scale feasting. An analysis of the general structures (Figure 6) found that the largest percentage of vessels were in the form of 'large' bowls (47 % for Quispe and 43 % for Monticulo).

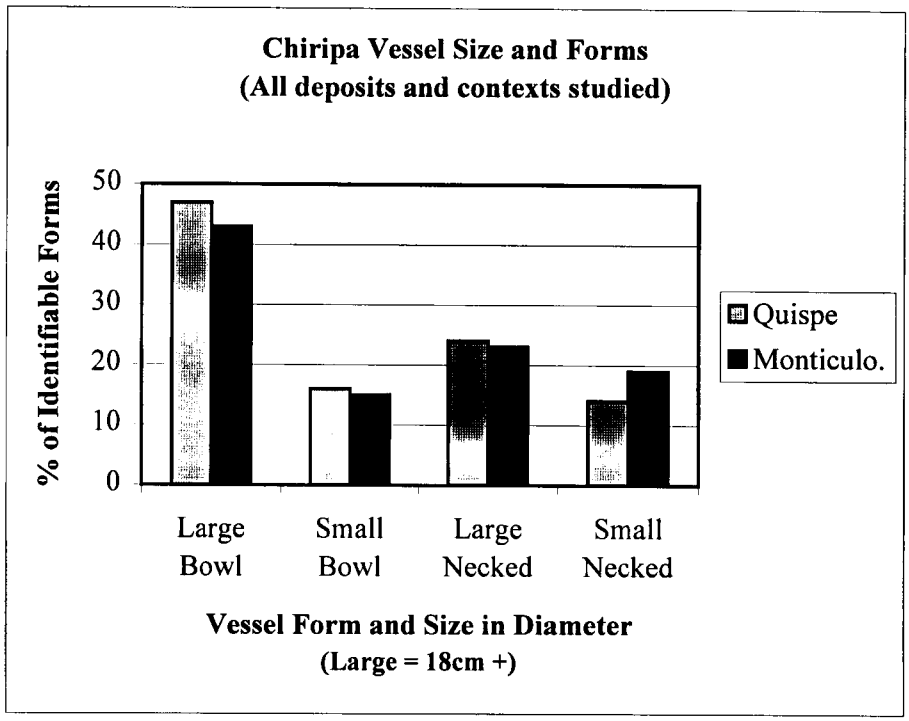

Figure 10: Chiripa vessel size and forms (All deposits and contexts studied)

As bowls are not usually used for cooking or storing functions, it is unlikely that these vessels represent the large feasting vessels discussed elsewhere in the archaeological literature (for example, Brewster-Wray 1982; Shapiro 1984; Underhill 1990). The large/small vessel dichotomy, as discussed above, was made on the 18 cm diameter mark. There were few vessels over 25 cm in diameter; indeed many of these 'large vessels' were between 18 and 25 cms in diameter (with the largest bowl measured

at 32 cm in diameter). These are not very large vessels, especially when considering feasting vessels elsewhere. Lathrap found fermentation vessels for the Shipibo of 40 cm in diameter (Lathrap 1970: 55). Tiwanaku and Huari storage vessels are found up to 1-meter in diameter (Couture and Sampeck 2002). And although bowl forms may be related to large group serving activity, the Chiripa bowls are quite modest when compared to many other examples (Henrickson and McDonald 1983: 632). The large vessels presented above simply represent the larger end of individual serving sizes. It is also important to note that the number of possible large cooking vessels (Non Decorated Necked Vessels), so integral to feasting activities, were quite low in number, at 22 % and 23 % of identifiable forms. This data gap may be explained, in part, by results discussed by other investigators, who have found cooking material elsewhere. Karen Chavez (1988:20) and Lee Steadman (2002) have both noted that sooted cooking wares were found behind the Monticulo platform, suggesting that cooking was occurring in an outside patio-like area. A discussion of commensal politics at Chiripa, however, cannot be supported with the ceramic data analyzed here.

Feasting Activity – Non-ceramic forms of data

Although the ceramics are not convincing for feasting activity, other forms of evidence ought to be discussed, specifically the presence of 'feasting middens', and the presence of faunal remains (Hayden 2001:40). The faunal analysis offers little significant evidence for the occurrence of feasting. The discard remains of large mammals have yet to be found, although fish remains were found in large quantities (Moore et al. 1999: 115). Recent research has been presented from other Middle Formative sites that links some of the earliest maize (2750 BP) to these ritual contexts (Thompson 2002). Could it be that this maize was used in feasting contexts, perhaps in the drinking of the symbolic *chicha*? A quantitative synthesis to these maize remains has not yet been published, yet the current recovered samples seem too small to support high levels of ritual *chicha* at Chiripa.

It would appear that some sort of activity similar to feasting, yet significantly smaller in scale, was occurring in the Monticulo. While there is evidence of a priority placed on serving food, the scale of such activity, and indeed the length and consistency of use of the Monticulo and Quispe structures is still in question. Convincing evidence for sizable 'corporate' feasting, similar in scale or even basic archaeological signature to that of the Huari and Tiwanaku examples, has yet to be found. However, the serving of food was clearly an essential activity, and such activity may have served various socio-political purposes.

Hypothesis 4: Ceramic Imports and the Yaya-Mama Religious Tradition

I hypothesize that a high number of imported ceramics would support the idea of a far-reaching integrative religious tradition, whereas a low number of imports and forms would suggest a more autonomous yet community inclusive tradition.

There were no non-local sherds in the ceramic analysis of the Quispe and Monticulo structures. Several fill contexts revealed Tiwanaku sherds (see Table 5) and showed some mixing – perhaps due to bioturbation – but no other Middle Formative ceramics were present. There were only two sherds of a clearly foreign nature in the initial broad sample (of the four structures) and these were from the Llusco enclosure. The paste types were all local, and the decoration of the vessels was recognizable as Chiripa type – almost entirely cream-on-red and black and cream-on-red. This suggests that the site in fact was a very locally-based community during the Middle Formative, was not a pilgrimage center or the center of a complex chiefdom level polity (Stanish 1997:115). This is supported by Bandy's (2001) survey in the Taraco Penninsula. He found that there were many local polities, all with this similar type of architecture. Although there is limited evidence for inter-regional trade, such as andesite hoes imported from the Northern Titicaca Basin (Bandy 2001) and obsidian exchange (Burger, Chavez and Chavez 2000), there are few signs of foreign ceramic imports.

Some suggest that the presence of grass tempered sherds, often a marker of Formative Period ceramics, implies a direct regional connection to Chiripa (K. Chavez 1988:24; Mathews 1992). Whereas the iconography of the Yaya-Mama style is found throughout the South Central Andes (K. Chavez 1988), I would refute the idea that the spread of similarly tempered pottery is related. Paz Soria (2000) and others discuss the spread of Chiripa forms elsewhere, but these vessels are usually in very small quantities, and the connection to Chiripa is often dubious. Robin Beck has recently directed excavations at the site of Alto Pukara, located 5 kilometers east of Chiripa on the Taraco Peninsula (Figure 1). Beck's excavations revealed several superimposed surfaces associated with Middle Formative platform architecture at Alto Pukara. These excavations revealed very few ceramics in direct association with floor contexts, and very few have surface decoration similar to those of Chiripa (Beck 2002). This is revealing, as we would expect a similarity in ceramics at a small-scale site in the Chiripa vicinity.

I can therefore refute the interpretation for regional cults for the Yaya-Mama Religious Tradition, as there is no significant evidence for migration or long-distance exchange. It may well be that Burger's suggestion for Religious Traditions are more tenable for the Titicaca Basin, with each autonomous settlement enjoying political and economic independence. It would appear that the notion of a complex chiefdom based at Chiripa is no longer viable.

DISCUSSION: RITUAL IN THE ANDES

Ethnographic Basis and Diachronic Process

This study has relied upon the conventional dichotomy between ritual and domestic, a dichotomy that I questioned for Andean archaeology. Indeed, any archaeologist conducting fieldwork in the area is well aware of the pervasiveness of ritual in all daily activity; the sacred and the profane closely intermingle. As Dean and Kojan (2001: 127) so aptly put it, "perhaps we should acknowledge the possibility of ceremonial households and domestic temples." There are, however, more ritually based places (Kuznar 2001), and less ritually oriented locales. This study has demonstrated that the Chiripa structures fit within expectations for a more ritually oriented space. But what does my analysis suggest were the roles of ritual and ritual architecture in the past? And what do my results indicate of the longer diachronic processes in the Titicaca Basin? Although the ceramics alone cannot answer these questions, ethnohistoric analogy indicates certain possibilities. I now turn to these questions in order to address the concept of ritual at Chiripa and the Yaya-Mama Religious Tradition.

> Ritual was socially defined as one of the factors that – properly carried out – maintained and augmented the means of production, i.e., the natural resource upon which the group depended, including the cooperative labor of its members. If, in this, there was also considerable room for the accumulation of goods and power, this is hardly surprising and also played a part in the maintenance and expansion of the society (Spaulding 1984: 24).

The architecture of raised platform mounds and plazas are conventions of great temporal length in the South Central Andes. Beginning with the Santiago structure at Chiripa (1200 BC) (Dean and Kojan 1999, 2001) to the present day sunken plaza on the island of Amantani on Lake Titicaca (Spahni 1971; Niles 1986), these forms are consistently oriented towards ritual activities. Recent ethnohistoric and archaeological analyses suggest that ritual in the Andes consistently was performed in certain architectural forms, although for distinct social functions (Moore 1996a: 121-167, 1996b). As Spaulding suggests above, ritual was a social mechanism that could be used in a variety of ways. Different enclosures and platforms reflect "different modes of interaction" (Moore 1996b: 792), and they don't simply represent social integration or sources of elite power. Ethnohistoric studies suggest that enclosures, as *huacas*, were locales for ritual activity, and had specific functional roles that may be represented at Chiripa.

Moore reminds us that the term *huaca* does not translate directly to sacred architectural space, but rather represents the religious ceremonies directed towards certain *huacas* (often natural landmarks) that were performed within these structures (Moore 1996a: 134). Ethnohistoric research demonstrates that the Spanish, upon encountering such structures, were given explanations of their function and meaning. Scholars have recently examined these accounts and have compiled analyses of architectural spaces that can be subsumed under the name *huaca* (Moore 1996: 134). The architecture called *illiapas*, or "the

places where embalmed ancestors were maintained and to the location where lighting struck" (Moore 1996a: 134), support interpretations that ancestors were located in and around the Chiripa structures (Hastorf and Steadman 2001). Similarly, we can correlate another form of *huaca,* plazas and enclosures called *usnus* (Moore 1996a: 134), to the archaeological enclosures at Chiripa. Spanish chroniclers recorded ceremonial feasting in these spaces at the time of conquest, and the wall niches, similar to those found at Chiripa (see Figure 5, contained offerings associated with animal sacrifice (Moore 1996a: 135).

These similarities to the Chiripa structures are striking, but Moore warns against assuming broad Andean continuity; enclosures from different Andean cultural contexts most likely served different functions. After a review of Inca and Chimu plazas, Moore comments specifically on the function of the Titicaca enclosures, including those at Chiripa, vis-à-vis ethnographic analogy:

> In the Titicaca plazas it is probable that ritual interactions occurred over relatively small distances in which one could hear a sentence spoken in a normal voice, see a facial expression, or inspect the placement of miniatures... Although similar modes of ritual communication are described for modern Aymara household rituals, it is important to realize that such communication was apparently the basis of *public* ritual in the sites around Lake Titicaca.
> (Moore 1996b: 797)

Using ethnohistoric analogy and spatial analysis, Moore interprets the Chiripa enclosures as important arenas for small-scaled community ritual activity. These interpretations fit with the results of the ceramic analysis and further help our interpretation of the Yaya-Mama Religious Tradition.

Public ritual can play a vital role in emerging complexity (Wheatley 1967; Adams 1966) and the Yaya-Mama Religious Tradition, in its long development, is no exception (K. Chavez 1988). The critical importance of ritual in the aggregation process has recently been pointed out by Reid and Montgomery (1998: 29), in "facilitating decision making by people who did not know one another well during a time of rapid, wrenching change in their way of life." In order to examine such levels of change, broader temporal investigations are needed; ritual ought to be studied, not as a "synchronic cultural phenomenon", but one that develops through time (Garwood 1991: 11). Similarly, Catherine Bell (1992: 118) notes that "theoretical approaches to the notion of 'tradition' particularly in relation to ritual activities, are structured around the familiar problem of continuity and change." It is this problem, as discussed above for political cults, between ritual continuity and political change that has caused significant variation in the interpretations of political complexity the Formative Andes. By focusing on continuity and change in the Titicaca Basin, we may better understand the place of Chiripa in its religious and therefore political tradition.

It is therefore essential to examine the site of Chiripa, and specifically the platform and enclosure architecture types, within its temporal context. The site is a significant point along the Titicaca cultural continuum (Table 1). The social structures that were related to the architectural space undoubtedly changed over time, as did the meaning and political motivation behind their construction. The results of

these changes are clearly visible at Chiripa at the end of the Middle Formative Period. By the Late Formative I Period (250 BC-300 AD) Chiripa's Upper Houses were burned and a large mound was constructed over the remains. Cut stone was imported to face this new mound, and a sunken stone-faced enclosure was created in the middle. Bandy notes that this architectural development at Chiripa was associated with a decrease in population (Bandy 2001: 174). The first signs of a site hierarchy on the Taraco Peninsula emerged during the Late Formative Period (Bandy 2001:190). By the end of this period the 'ritual assemblage' of Chiripa disappeared (Bandy 2001: 200) and the populations of Chiripa and other local polities abandoned their centers for Kala Uyuni (Figure 1). At this site the Chiripa architectural conventions continued for a short time until further settlement migration occurred on the Taraco Peninsula with the rise of Tiwanaku (Bandy 2001).

The development of the Chiripa platform mounds and enclosures were some of the earliest in the South Central Andes, but the architectural style did not fade away, as the cream-on-red pottery did. Bandy has demonstrated that these forms of architecture are found in abundance later in the Formative sequence on the Taraco Peninsula (Bandy 2001). Similarly, Lemuz has found many examples of Chiripa architecture throughout the nearby Santiago de Huata region (see Figure 1)(Lemuz 2001). Chavez and Chavez have continued to find sunken enclosures with Yaya-Mama components in the Copacabana Peninsula (Chavez 2002). Later in the Titicaca sequence, on the north side of the Basin, a number of similar structures were constructed, with the Pukara group being the most monumental (K. Chavez 1988; see figure 6). The forms are also present at the urban center of Tiwanaku: the Putuni Platform (Couture 2002), the Kalassassaya and the semi-subterranean temple, and a recently mapped structure almost identical in form to the Chiripa structures (Vranich 2001; see Figure 11).

These structures were probably imbued with deep meaning and significance that were used for different functions: both broad area ritual activities and local political agendas. As Hastorf (2001:5) has pointed out, "time and again, new political systems borrow legitimacy from the old by resurrecting the old ritual forms, redirected to new purposes." Although we do not know what these new purposes may have been, we do know that these architectural forms began with the Santiago structure at Chiripa, where the distinction between domestic and ritual truly were not clear. This ambiguity early on in the sequence later developed into something much more pronounced. "Where we see what was once a living area and temple at 1300 BC being utilized as a burial ground several hundred years later. The meaning and function changed, but the special nature of the place remained" (Dean and Kojan 2001: 113). Is it possible that, like elsewhere (Kirch 2000), domestic-like structures took on more significance through special household ritual activity such as the internment of ancestors (Hastorf and Steadman 2001)? Perhaps the architectural sequence in the South Central Andes can be compared to the Southwest, as Burger once claimed (Burger 1992:46). The development of protokivas, kivas and plazas in the Southwest make it an enticing option for analogy (Walker and Lucero 2000). My results demonstrate that by approximately 800 BC, specialized ritual platform mounds and enclosures were present on the

Taraco Penninsula, reflecting the initial stages of a Religious Tradition throughout the South Central Andes.

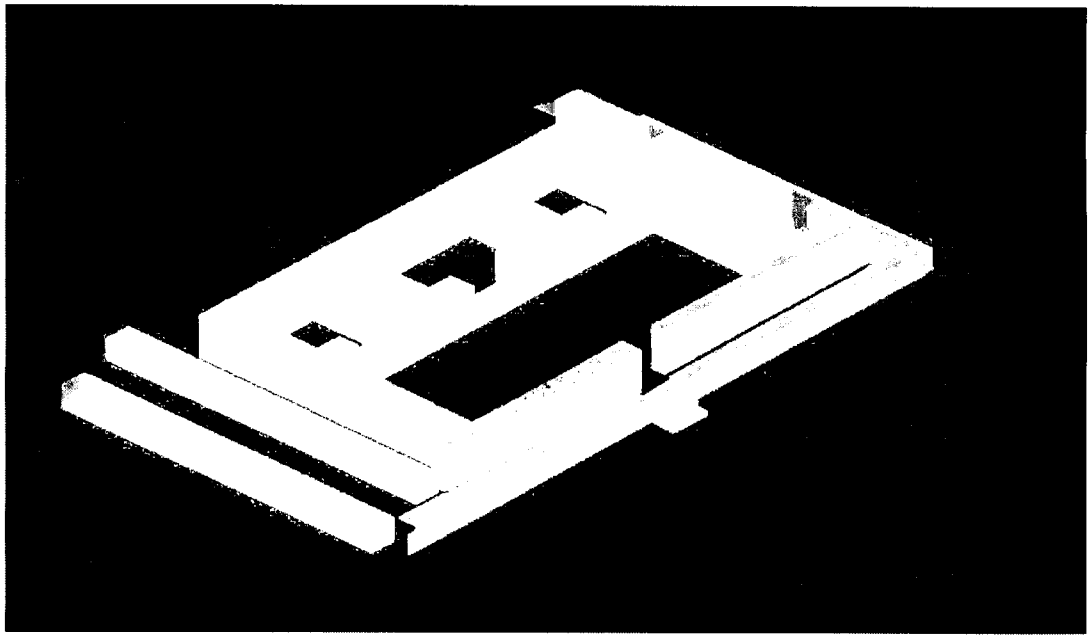

Figure 11: Model of Tiwanaku structure located 2 meters west of the ceremonial Kalisasaya (From Vranich 2001). * Note the similarity to Monticulo structures (Figure 5) and Pucara structures (Figure 6).

CONCLUSIONS

Using a functional ceramic analysis, this study has taken an artifact-based approach to architecture at the site of Chiripa, Bolivia. Working within a conventional archaeological framework – that of domestic and ritual – I have approached issues of structure function for two architectural types. The approach taken here simplifies activity areas into either domestic or ritual categories. I have attempted to balance this (explicit) simplification by discussing ethnographic and cross-cultural evidence for its usage. While a functionally oriented approach may not deal with meaning and symbols effectively, it allows for integral, primary issues to be discussed. I also considered Andean ethnohistoric evidence to present the long-term, regional nature of the architecture. I have shown, by way of ceramic analysis, that specialized ritual activity occurred in both the Monticulo platform mound and the Quispe enclosure. By testing expectations for ceramic assemblages, I found that the structures likely functioned as spaces for ritual activities.

The ceramic remains have also put to rest many of the common misconceptions of the Chiripa polity: 1) there is no sign of a far-reaching chiefdom (as Bandy 2001 reiterates), 2) it was not a pilgrimage center and 3) there is little sign of intensive trade. While these concepts have been discussed

(and proven) for later developments, the Middle Formative Chiripa polity was busy within its own sphere of influence on the Taraco Peninsula. We may indeed have evidence of commensal politics as Bandy has suggested (Bandy 1999: 158, 301), but only detailed analysis will aid in interpretations of ritual feasting as it relates to political activity. Feasting, while popular in the archaeological literature, does not seem to be an appropriate term for the ceramics studied in the area. Perhaps a more accurate description would be "designated serving space" – this way avoiding all the associated notions of large-scale activity associated with feasting.

Although there are only hints of domestic activity (in the fill), future excavations will continue to search for these types of archaeological remains in the hope that details of those who used these ritual structures may be better understood. We can fit the Chiripa structures, through ceramic comparison and ethnographic or ethnohistoric comparison, into a ritual framework, but the specific nature of the ritual activity and the ideology Yaya-Mama Religious Tradition remains somewhat obscure. As archaeologists, we will never truly know the range of meanings embedded in such architectural space, but we now may begin to question the *local* political significance of such ritual gatherings. The review of archaeological perspectives on religious traditions (or political cults) implied that such networks are regionally broad, long-lasting ideologies based on similar ritual activity, and do not indicate a singular political entity, such as a complex chiefdom.

NOTES

[i]See Bandy (2001) for an interesting discussion of the ritual implications for this.

[ii] The discrepancy with Figure 4 is discussed in Bandy's synthesis of archaeological investigations; the enclosure was open to the north and the south, and the assumption of 16 houses is no longer correct (Bandy 2001:144-145).

[iii] Sergio Chavez recently defined the Yaya Mama Religious Tradition as a shared ideology, with economic, social and political aspects (Chavez 2002). This is certainly not a criticism of his usage, but rather a comment on the fact that others have used it almost in a strictly political sense.

[iv] I believe that this type of analysis does not negate the importance or possibility of performing a more structuralist approach to architecture (Johntson and Gonlin 1998:144-150). It is simply an alternative, independent step.

[v] Not included here are specialized forms that are perhaps not so simple to categorize – such as the ceramic trumpets. This is in part due to their absence in this specific sample.

[vi] Specific provenience and frequency are not discussed here, as the nature of the contexts is found in the discussion of the sample, and frequency is discussed above in the hypothesis section.

[vii] The total number of unknown forms was not tabulated, but it is suspected that if these totals were calculated, this category would undoubtedly be the largest.

[viii] An interesting note on sooting; Mohr (1966:104) found some painted sherds with presence of sooting. In my study, I found no such cases.

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APPENDIX 1: Some General Expectations for Domestic and Ritual Architecture
Cross Cultural and Andean Specific (Ethnographic in *Italics*)

Region	Imported/ Special Ceramics?	Floor/Occupation Surface Condition	Associated Features	Source
		DOMESTIC ARCHITECTURE		
US Southwest		Burned Floor		LaMotta and Schiffer 1999
Maya Highlands		Many small artifacts trampled into floor		Deal 1998
	Rare imports…few domestic ritual finds.			Plunket 2002
Andes – Potosi Formative		Compacted Soil, Carbon, organic refuse	Hearths and small storage pits inside structures	Lecoq 1996
Andes – Bolivian Altiplano: Wankarani	Clay Figurines and Ceramic tubes ("trumpets"),	Compacted Soil, ash deposits, organic refuse,	Much higher artifact density outside structure, Hearths (small indoor, large outdoor), refuse pits	Bermann 1993: 118; Bermann and Estevez; Rose 2001
Andes – Tiwanaku (Akapana East)	Very Few Imports – but presence of ceramics for domestic ritual "Sahumadores"	Many domestic artifacts (manos/metates)	Most activity outdoors (patios)	Janusek 1994: 138
		RITUAL ARCHITECTURE		
Cross cultural generalization	Special Ritual ceramics – first appearance of highly decorated pottery			Hayden 2001: 40
		Often Burned at abandonment		Seymore and Schiffer 553
Southwest	Miniature ceramic vessels		Clay lined fire pit	Reid and Montgomery 1999
Mito – Piruru		Red Earth	Hearths	Bonnier 1997
Huaricoto		Relatively clean of artifacts	Canals and Hearths	Burger 1982: 129 Burger and Burger 1982:115
Tiwanaku -	Tazons and other 'feasting vessels'	Relatively clean of artifacts		Janusek 1994: 106,112

APPENDIX 2: Surface Examination of Chiripa Vessels

Area	Locus / Lot #	Context Type	Serving Vessels			Cooking Vessels			Unidentifiable Forms No. (%)	Total Sherds No. (%)
			Red Slipped No. (%)	Decorated No. (%)	Decorated and Slipped No. (%)	Sooted No. (%)	Stuccoed No (%)	Sooted and Stuccoed No (%)		
Mont. 1a	1351	Fill	4 (27)	6 (40)	10 (66)	0 (0)	0 (0)	0 (0)		15 (100)
Mont. 1b	1425	S.Rubble	0 (0)	2 (14)	2 (14)	0 (0)	1 (8)	1(8)		13 (100)
Mont. 1b	1426	S.Rubble	8 (24.2)	4 (12.1)	12 (36)	0 (0)	0 (0)	0 (0)		33 (100)
Mont. 1b	1427	S.Rubble	4 (17.4)	4 (17.4)	8 (35)	?	?	?		23 (100)
Mont. 1b	1349	Fill	4	4	8	1	3	4		55
L.H.	CH-B-9	Fill	4 (6.7)	0(0)	4 (6.7)					60 (100)
L.H.	CH-B-6-H	Floor	0 (0)	0 (0)	0 (0)					10 (100)
L.H.	CH-B-J	Fill	5 (9.6)	0 (0)	5 (9.6)					52 (100)
Total for Lower Houses										
Mont. 2	2033	Midden	39 (7)	18 (3)	57 (10)	9 (1.5)	20 (3.4)	29 (5)		591 (100)
Mont. 2	2034	Midden	71 (14.1)	30 (6)	101 (20)	22 (4)	14 (2.8)	36 (7.2)		503 (100)
Mont. 2	2035	Midden	26 (14.4)	10 (5.5)	36 (20)	4 (2)	10 (5.6)	14 (7.8)		180 (100)
Mont. 2	2036	Midden	40 (22.3)	20 (11.2)	60 (33.5)	9 (5)	8 (4.5)	17 (9.5)		179 (100)
U.H.	CH-A-4	Floor (?)	47 (26.4)	10 (5.6)	57 (32)					178 (100)
U.H.	CH-A-4a	Floor (?)	0 (0)	3 (100)	3 (100)					3 (100)
U.H.	CH-A-4b	Floor (?)	0 (0)	9 (100)	9 (100)					9 (100)
U.H.	CH-A-5	Floor (?)	6 (15.8)	6 (15.8)	12 (32)					38 (100)
U.H.	CH-A-6	Floor (?)	5 (15.6)	7 (21.9)	12 (37.5)					32 (100)
U.H.	CH-A-9	Floor (?)	4 (12.9)	1 (3.2)	5 (16)					31 (100)
U.H.	CH-A-10	Floor (?)	26 (23.2)	2 (1.8)	28 (25)					112 (100)
U.H.	AH-A-SF-6		0 (0)	0 (0)	0 (0)					2 (100)
U.H.	CH-B-2	Floor (?)	40 (35.7)	26 (23.2)	66 (59)					112 (100)
U.H.	CH-B-3	Floor (?)	2 (11.1)	2 (11.1)	4 (22)					18 (100)
U.H.	CH-B-6-E	Floor (?)	9 (53.0)	4 (23.5)	13 (76)					17 (100)
U.H.	CH-B-7	Floor (?)	9 (15.8)	2 (3.5)	11 (19)					57 (100)
U.H.	CH-B-7-A	Floor (?)	18 (47.4)	6 (15.8)	24 (63)					38 (100)
U.H.	CH-B-6-G	Fill	81 (38.4)	0 (0)	81 (38.4)					211 (100)
Total for Upper Houses			424 (18.3)	155 (6.7)	579 (25)					2311 (100)
Quispe	2301	Occ.Level	2 (9.5)	0 (0)	2 (9.5)	0 (0)	2 (9.5)	2 (9.5)		21 (100)
Quispe	2311	Occ.Level	4 (15.4)	0 (0)	4 (15.4)	0 (0)	0 (0)	0 (0)		26 (100)
Quispe	2356	Occ.Level	10 (12.6)	3 (3.8)	13 (16.4)	3 (3.8)	10 (12.6)	13 (16.4)		79 (100)
Quispe	3004	Occ.Level								
Quispe	3010	Occ.Level	10 (9.3)	0 (0)	10 (9.3)	1 (0.9)	0 (0)	1 (0.9)		108 (100)
Quispe	3033	Occ.Level	2 (0.7)	31 (10.5)	33 (11)	1 (0.4)	12 (4.1)	13 (4.4)		295 (100)
Quispe	3067	Occ.Level	65 (13.2)	13 (2.6)	78 (15.8)	14 (2.8)	12 (2.4)	26 (5.3)		492 (100)
Quispe	3071	Occ.Level	19 (10.4)	3 (1.65)	22 (12.1)	8 (4.4)	2 (1.1)	10 (5.5)		182 (100)
Quispe	3017	Floor	1 (14.3)	2 (28.6)	3 (43)	0 (0)	0 (0)	0 (0)		7 (100)
Quispe	3037	Floor	26 (18.2)	22 (15.4)	48 (33.6)	8 (5.6)	17 (11.9)	25 (17.5)		143 (100)
Quispe	3050	Floor	7 (12.7)	1 (1.8)	8 (14.5)	5 (9.1)	2 (3.6)	7 (12.7)		55 (100)
Quispe	3058	Floor	1 (6.25)	4 (25)	5 (31)	2 (12.5)	0 (0)	2 (12.5)		16 (100)
Quispe	3062	Floor	9 (16)	9 (16)	18 (32)	3 (5.4)	3 (5.4)	6 (11)		56 (100)
Quispe	3063	Floor	26 (35.6)	6 (8.2)	32 (44)	9 (12.3)	1 (1.4)	10 (14)		73 (100)
Quispe	3069	Floor	13 (19.1)	8 (11.8)	21 (31)	11 (16.2)	0 (0)	11 (16.2)		68 (100)
Quispe	3073	Floor	44 (23.8)	17 (9.2)	61 (33)	7 (3.8)	7 (3.8)	14 (7.6)		185 (100)
Quispe	2352	Floor	8 (13.1)	1 (1.6)	9 (15)	0 (0)	6 (9.8)	6 (9.8)		61 (100)
Quispe	3003	Floor	9 (24.3)	1 (2.7)	10 (27)	1 (2.7)	0 (0)	1 (2.7)		37 (100)
Quispe	2313	Floor	12 (19.7)	2 (3.3)	14 (23)	5 (8.2)	4 (6.6)	9 (15)		61 (100)
Quispe	2354	Floor	5 (8.9)	0 (0)	5 (9)	2 (3.6)	1 (1.8)	3 (5.3)		56 (100)
Quispe	2350	Fill	12 (17.4)	2 (2.9)	14 (20.3)	4 (5.8)	9 (13)	13 (19)		69 (100)
Quispe	2351	Fill	3 (6)	1 (2)	4 (8.2)	0 (0)	14 (28.6)	14 (28.6)		49 (100)
Quispe	2355	Fill	0	1 (1.7)	1 (1.7)	0 (0)	11 (19)	11 (19)		59 (100)
Total for Quispe			288 (13)	127 (5.8)	415 (19)	84 (3.8)	113 (5)	197 (9)		2198 (100)

*Note: L.H. = Lower House Level, U.H. = Upper House Level (Mohr 1966)

APPENDIX 3: Form Examination of Chiripa Vessels

Area	Locus / Lot #	Context Type	Serving Vessels		Cooking/Storage		Unidentifiable Forms No. (%)	Total Sherds No. (%)
			Decorated Bowls No. (%)	Decorated Necked Vessels No. (%)	Non Decorated Bowls No. (%)	Non Decorated Necked No. (%)		
Mont. 1a	1351	Fill	3 (20)	0 (0)	0 (0)	0 (0)	12 (80)	15 (100)
Mont. 1b	1425	S.Rubble	2 (15.4)	0 (0)	1 (7.7)	1 (7.7)	9 (69)	13 (100)
Mont. 1b	1426	S.Rubble	1 (3)	0 (0)	1 (3)	0 (0)	31 (94)	33 (100)
Mont. 1b	1427	S.Rubble	0 (0)	0 (0)	0 (0)	1 (4.3)	22 (96)	23 (100)
Mont. 1b	1349	Fill						
L.H.	CH-B-9	Fill	0 (0)	0 (0)	3 (5)	1 (1.6)	56 (93)	60 (100)
L.H.	CH-B-6-H	Floor (?)	0 (0)	0 (0)	0 (0)	0 (0)	10 (100)	10 (100)
L.H.	CH-B-J	Fill	0 (0)	0 (0)	1 (1.9)	0 (0)	51 (98))	52 (100)
Total for Lower Houses			6 (3)	0 (0)	6 (3)	3 (1)	191 (93)	206 (100)
Mont. 2	2033	Midden	2 (0.4)	2 (0.4)	3 (5)	4 (0.6)	580 (98)	591 (100)
Mont. 2	2034	Midden	11 (2.2)	2 (0.4)	4 (0.8)	1 (0.2)	18 (96)	503 (100)
Mont. 2	2035	Midden	1 (0.5)	1 (0.5)	1 (0.5)	1 (0.5)	176 (98)	180 (100)
Mont. 2	2036	Midden	2 (1.1)	2 (1.1)	2 (1.1)	2 (1.1)	171 (95)	179 (100)
U.H.	CH-A-4	Floor (?)	5 (2.8)	3 (1.7)	6 (3.4)	4 (2.2)	160 (90)	178 (100)
U.H.	CH-A-4a	Floor (?)						3 (100)
U.H.	CH-A-4b	Floor (?)	5 (44.4)	1 (11.1)	1 (11.1)	0 (0)	2 (22)	9 (100)
U.H.	CH-A-5	Floor (?)	1 (2.6)	0 (0)	0 (0)	0 (0)	37 (97)	38 (100)
U.H.	CH-A-6	Floor (?)	2 (6.25)	0 (0)	0 (0)	0 (0)	30 (94)	32 (100)
U.H.	CH-A-9	Floor (?)	2 (6.45)	0 (0)	0 (0)	0 (0)	29 (93)	31 (100)
U.H.	CH-A-10	Floor (?)	0 (0)	2 (1.8)	2 (1.8)	2 (1.8)	106 (95)	112 (100)
U.H.	AH-A-SF-6							2 (100)
U.H.	CH-B-2	Floor (?)	5 (4.5)	2 (1.8)	4 (3.6)	2 (1.8)	99 (88)	112 (100)
U.H.	CH-B-3	Floor (?)	0 (0)	0 (0)	1 (5.5)	0 (0)	17 (94)	18 (100)
U.H.	CH-B-6-E	Floor (?)	1 (5.9)	0 (0)	0 (0)	0 (0)	16 (94)	17 (100)
U.H.	CH-B-7	Floor (?)	1 (1.7)	0 (0)	1 (1.7)	0 (0)	55 (96)	57 (100)
U.H.	CH-B-7-A	Floor (?)	3 (7.9)	2 (5.3)	1 (2.6)	2 (5.3)	30 (79)	38 (100)
U.H.	CH-B-6-G	Fill	4 (1.9)	0 (0)	2 (0.9)	8 (3.38)	197 (93)	211 (100)
Total for Upper Houses			45 (1.9)	17 (0.7)	28 (1.2)	26 (1.0)	2195 (95)	2311 (100)
Quispe	2301	Occ.Level	0 (0)	0 (0)	1 (4.8)	0 (0)	20 (95)	21 (100)
Quispe	2311	Occ.Level	0 (0)	0 (0)	1 (3.8)	0 (0)	25 (96)	26 (100)
Quispe	2356	Occ.Level	2 (2.5)	0 (0)	1 (1.3)	1 (1.3)	75 (95)	79 (100)
Quispe	3004	Occ.Level						
Quispe	3010	Occ.Level	1 (0)	0 (0)	0 (0)	4 (0.9)	103 (95)	108 (100)
Quispe	3033	Occ.Level	2 (0.7)	7 (2.4)	4 (1.3)	1 (0.3)	281 (95)	295 (100)
Quispe	3067	Occ.Level	6 (1.2)	0 (0)	2 (0.4)	3 (0.6)	481 (98)	492 (100)
Quispe	3071	Occ.Level	2 (1.1)	1 (0.5)	2 (1.1)	1 (0.5)	176 (97)	182 (100)
Quispe	3017	Floor	0 (0)	0 (0)	0 (0)	0 (0)	7 (100)	7 (100)
Quispe	3037	Floor	2 (1.4)	2 (1.4)	0 (0)	2 (1.4)	137 (96)	143 (100)
Quispe	3050	Floor	1 (1.8)	0 (0)	0 (0)	0 (0)	54 (98)	55 (100)
Quispe	3058	Floor	0 (0)	1 (6.25)	0 (0)	1 (6.25)	14 (87)	16 (100)
Quispe	3062	Floor	3 (5.4)	1 (1.8)	0 (0)	1 (1.8)	51 (91)	56 (100)
Quispe	3063	Floor	2 (2.7)	1 (1.4)	0 (0)	0 (0)	70 (96)	73 (100)
Quispe	3069	Floor	3 (4.4)	0 (0)	0 (0)	1 (1.5)	64 (94)	68 (100)
Quispe	3073	Floor	9 (4.9)	0 (0)	0 (0)	4 (2.2)	172 (93)	185 (100)
Quispe	2352	Floor	2 (3.3)	0 (0)	1 (1.6)	2 (3.3)	56 (92)	61 (100)
Quispe	3003	Floor	0 (0)	0 (0)	1 (2.7)	1 (2.7)	35 (94)	37 (100)
Quispe	2313	Floor	1 (1.6)	1 (1.6)	0 (0)	2 (3.3)	57 (93)	61 (100)
Quispe	2354	Floor	2 (3.6)	1 (1.8)	2 (3.6)	2 (3.6)	49 (87)	56 (100)
Quispe	2350	Fill	0 (0)	0 (0)	2 (2.9)	3 (4.3)	64 (93)	69 (100)
Quispe	2351	Fill	1 (2)	1 (2)	0 (0)	1 (2)	46 (94)	49 (100)
Quispe	2355	Fill	2 (3.4)	1 (2.5)	0 (0)	1 (2.5)	55 (93)	59 (100)
Total for Quispe			40 (1.8)	17 (0.8)	17 (0.8)	30 (1.4)	2094 (95)	2198 (100)

*Note: L.H. = Lower House Level, U.H. = Upper House Level (Mohr 1966)