UNIVERSITY OF CALIFORNIA, SAN DIEGO

Woven Connections: Group Identity, Style, and the Textiles of the "A" and "B" Cemeteries at the Site of Río Muerto (M43), Moquegua Valley, Southern Peru

A Thesis submitted in partial satisfaction of the requirements
for the degree Master of Arts

in

Anthropology

by

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2009

The Thesis of Elizabeth Marie Plunger is approved, and it is acceptable in quality and form for publication on microfilm and electronically:

Chair

University of California, San Diego

2009

DEDICATION

To my parents, who have never faltered in their love and support for me; and for Evan, whose love and humor sustained me through the tough bits.

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ACKNOWLEDGEMENTS

I would like to acknowledge many individuals who have helped me in numerous ways throughout the writing and editing process of this thesis.

First and foremost, I would like to thank my advisor and committee chair, Dr. Paul Goldstein, under whose project (Proyecto Río Muerto) the research described herein was conducted. Dr. Goldstein also provided critical support, advice, and constructive criticism without which this thesis would not have been possible. I would also like to sincerely thank my first reader, Dr. Guillermo Algaze, for his feedback and advice on my drafts.

I would like to thank Lic. Patricia Palacios F., co-director of Proyecto Río Muerto, for her support in the project and for allowing me access to the collections and facilities at Museo Contisuyo.

There are a great number of other people that deserve mention here. My labmates Alicia Boswell, Sarah Baitzel, Tara Carter, and Ulli Green, gave help, advice, and friendship was critical to both my writing and my sanity. I would like to thank Andrew Somerville and Barbara Carbajal S. for their ideas and feedback, as well as for being good friends during the 2008 field season and beyond. More thanks go to the students of the 2008 UCSD Peru Field School as well as to the staff of the Museo Contisuyo.

I would like to thank William J. Conklin and Dr. Amy Oakland for their enthusiasm, encouragement, and advice on sources.

Lastly, I would like to thank CILAS at UCSD, the office of the Dean of Social Sciences, and the Anthropology Department at UCSD for making this research possible.

ABSTRACT OF THE THESIS

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by

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Master of Arts in Anthropology

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Textiles serve as an important medium for the communicating socio-cultural information in societies throughout the world, including those of Andean South America. Archaeological studies of pre-contact textiles from the Andean region usually involve pieces from museum or private collections, which are often looted and rarely have associated provenience data. This study, on burial textiles from two cemeteries at the site of Río Muerto (M43) in the Moquegua Valley of southern Peru,

is among only a handful of studies on archaeological Andean textiles that involves scientifically excavated garments and items with carefully recorded context data. The burial textile assemblages of 43 individuals from the pre-Inca Tiwanaku culture (approx. A.D. 300-1000) are analyzed here in order to better understand social roles and group identity in the coastal valleys of southern Peru during the Middle Horizon (A.D. 500-1000) period. The Tiwanaku people of M43 conveyed multiple messages about the identity of community members in the treatment of their dead. These messages, as they are encoded in textile style, suggest a group with some status differences based on age and gender, and a possibility of inherited status. The clothing buried with individuals from M43 also suggests that they were immigrants (or descendants of immigrants) from the highlands who wished to maintain their identity despite their relocation to a coastal valley.

INTRODUCTION

Textile goods play and have played an important role in societies all over the world. Cloth can function as a display of power or wealth, or a visual and metaphorical representation of ties between people and groups. The production of cloth, from fiber cultivation and animal husbandry to weaving and embellishment, is a rich domain of symbolism for agriculture, the life cycle, time, and countless other facets of human experience (Schneider and Weiner 1991: 1-29).

Clothing is an extremely important aspect of textile art. Clothing has obvious purposes, such as warmth and protection from the elements, but it also has much deeper meaning to human societies. Items of clothing can be used to reveal or conceal aspects of identity and values (Schneider and Weiner 1991: 1). Janusek (2004:82) asserts that the most important events for any social unit are those that "involve decorated human bodies and valued objects in lively contexts that stimulate group identity[…]." Certainly, some of the most important rituals in today's society, marriages in North America, for example, involve a great deal of specific culturally proscribed and visually striking clothing.

Ethnographically, indigenous Andean groups are known for having coded messages about identity, on obvious and subtle levels, placed in both ceremonial and everyday clothing. This was also true for Andean societies known through the ethnohistorical and archaeological record. The Tiwanaku culture of the south-central Andes created beautiful and well-made garments that doubtlessly conveyed myriad messages about their wearers. However, the Tiwanaku garments that have been most

extensively and widely studied are spectacular tapestry tunics that are often without provenience. This study seeks to take a more detailed look at Tiwanaku clothing, both the ordinary and the extraordinary, through the study of the burial textile assemblages of 43 individuals (including adults of both sexes, infants, children, and adolescents) from two cemetery sectors at the Chen Chen-style[1] site of Río Muerto (M43).

The object of this study is to describe and analyze the large and well-preserved textile assemblage interred with these 43 individuals. Within the sample collection, possible differentiation between the sexes and between adults and children is examined, as well as a comparison between the textiles of the two distinct cemetery sectors. The garment style of well-preserved specimens will be considered, with an emphasis on comparisons within the collection and to garments from other known Tiwanaku textile assemblages from throughout the culture's area of influence. On a larger scale, textile style will be explored as a way for a group of people to represent their identity as a cohesive unit as well as to distance themselves from neighbors or contacts who identify differently. Although the intention in this study was to examine the clothing buried with the "everyday" denizens of M43, two exceptional burials emerged in the course of fieldwork: the largely intact interments of a possible ritual specialist and an infant or small child buried with an unprecedented assemblage of prestige items (including a rare and priceless tapestry tunic). These burials are considered in some detail, due to the significance of these finds. It is hoped that the data given here, both qualitative and quantitative, will contribute to a growing body of

[1] Chen Chen style is one of two Moquegua Valley variants of Tiwanaku (along with Omo style) (see below)

knowledge not only about Tiwanaku textiles, but about the social workings of Tiwanaku society in life and death. It is also hoped that this analysis may contribute to a larger literature about the role of cloth in life, death, ritual, economics, and socio-political dynamics in societies both contemporary and ancient.

1. BACKGROUND

1.1 Andean Textiles

Since at least the Preceramic period of Andean prehistory (3000-2200 B.C.) (Bird 1963a) textiles and other woven arts have been an extremely important practical and artistic aspect of every society in the region. In fact, the importance of the fiber arts in the Andes has been referred to as "textile primacy": textiles precede even fired clay implements in the archaeological record of the region (Stone-Miller 1992a:13). The importance of clothing is certainly evident in ethnographic accounts from the Andes today (e.g.: Dransart 1995; Dransart 2002; Flores-Ochoa 1968; Goodell 1968; Meisch 1984; Vreeland 1984; etc.). This is also known to be true for the area (southern Peru's Osmore drainage) where the archaeological research for the present study was conducted (Sharratt and Williams 2008). It would appear that this importance was just as pronounced in pre-contact times as in the present: King (1975:11) states that: "the intimacy of man's association with his textile production is far greater than that with pottery, tools, or other items he manufactures. Clothing becomes an extension of the body and the personality."

Textiles are known from every large-scale Andean society and iconographic complex up to and after European contact. The finest weaving produced by these ancient groups is comparable in quality to machine-produced textiles today (D'Harcourt 1962:3). This level of labor and resource investment highlights the importance of woven products and clothing in these societies.

The pre-contact Andean society for which there is the most information on textile production and significance is the Inca, thanks to both Spanish and native chroniclers. Archaeological and ethnohistorical information attest to the importance of cloth in Inca society. The Inca so valued fine woven products (particularly interlock tapestry items) that the production of prestige textiles was regulated by the state. Some of the finest works of Inca-style weaving were done by a special class of sacred women called the *acqllacuna*. The acqllacuna, or "chosen women," were a group of women who were taken from their family at a young age and either sacrificed, married to high officials, or kept sequestered as "sacred virgins," where they spent their lives producing the finest cloth in the Inca domain (Guaman Poma de Ayala 2006 [1613]:83) Not just these specialists, but families throughout the empire owed the state a certain amount of cloth per year as a formal tax (Costin 1993: 129-134; Murra 1962, 1991).

Not only the production of cloth, but the properties of the woven items themselves were an important part of the functions of the Inca state. The Inca burned fine textiles as an offering to the gods (Cobo 1653, and Santillán 1563-1564, both cited in Murra 1963:714). They even held fine cloth in higher esteem than precious metals- the Spanish were surprised to see the Inca leave behind their animals and stores of gold and silver, but the retreating armies burned textile storehouses to keep the woven goods out of the hands of the conquistadores (Murra 1975:159).

In the Inca sphere, textiles in their everyday use as clothing also served important social purposes. They were a declaration of the wearer's sex, age, ethnicity, rank, and sometimes profession (Costin 1993:126; Graubart 2000:540) (see Figures 1

and 2). As noted above, this use of clothing to declare one's socio-political roles continues in groups from across the Andean sphere. It does not seem unreasonable, given the plentiful ethnographic, ethnohistorical, and archaeological evidence, to project this back onto at least some pre-Inca groups. Clark (1993), for example, whose dissertation study is one of the few works on archaeological textiles that does not center on prestige textiles, found clear associations between different types of textiles and the age, sex, and status of the individuals with whom they were interred at the Late Intermediate Period site of Estuquiña in the upper Moquegua valley. The present study focuses on another culture with a significant manifestation in the Moquegua valley, the Tiwanaku culture.

1.2 Tiwanaku

"Tiwanaku" is the name given to a polity which appeared as a complex society around 400 A.D., in the Titicaca Basin in present day Bolivia (Bermann 1997:93). The Tiwanaku culture is best known for the monumental city in the basin from which its name is drawn. The site features huge monumental buildings and sculptures carved from multi-ton blocks of andesite stone. These carved stones show geometrically precise workmanship as well as detailed iconography (Posnansky 1945).

Despite the grandeur of its remains, Tiwanaku culture remains little understood. This is due, in great part, to the fact that the Tiwanaku did not develop a writing system. Also, early researchers focused on prestige goods and monumental architecture and therefore missed many seemingly ordinary objects of great scientific value in their excavations. The wet conditions of the Altiplano, which destroy most

perishable archaeological remains relatively quickly, also destroy many valuable indicators of past lifeways. There are multiple other factors at play, including historical change and conflict directly after the abandonment of Tiwanaku, the geographical nature of the Tiwanaku heartland, and the ever-shifting political and social dynamics of the region that continue today (Goldstein 2005:50-51).

Sociopolitically, Tiwanaku has been variously called a warlike empire (e.g.: Posnansky 1945), a patrimonial state (e.g.: Kolata 1993), or a loosely confederated segmentary state largely held together by ritual ideology and iconography (e.g.: Albarracín-Jordan 1999). Whatever Tiwanaku was, its expanded influence throughout the south-central Andes is evident in the archaeological record beginning after roughly 550 A.D (Goldstein 2005; Williams 2002). Tiwanaku settlements are found in the Moquegua valley in southern Peru. Areas with less certain associations with Tiwanaku, including Tiwanaku style artifacts such as ceramics and textiles, include the Cochabamba valley of central Bolivia, parts of northwestern Argentina, the coastal Azapa valley of northern Chile, and the oasis of San Pedro de Atacama in the northern Chilean desert. These sites may not have been Tiwanaku enclaves, but perhaps trading partners or areas where Tiwanaku religious beliefs had taken hold (Goldstein 2005: 90-112) (see Figure 3).

Tiwanaku's manifestation in the Moquegua valley is composed of two groups typified by variations in material culture and architectural and household consumption patterns: the Omo and the Chen Chen. The two groups lived in distinct residential sites, and constructed separate cemeteries of distinct style, although they occupied many of the same areas of the valley. Sites of both Omo and Chen Chen style also

have segregated living areas within them, as well as cemeteries with spatially distinct sectors. Omo style habitation sites are typified by a somewhat shallow deposit of household debris (only a few centimeters at some sites) and evidence of a tent-like house structure (Goldstein 2005). Omo-style fineware ceramics are painted in somewhat "freehand" fineline style, with motifs and forms identical to those found in the altiplano. Much of the assemblage of serving ware produced at Omo-style sites consists of blackware serving vessels, which require a great deal of time and skill to produce. The Omo-style site of M10 has the distinction of being home to the only Tiwanaku temple complex currently known outside of the Altiplano (Goldstein 1989:148-160).

Chen Chen style sites are typified by a denser, more permanent occupation compared to Omo settlements, as Chen Chen domestic sites such as that at Río Muerto M43 display an impressive depth of household debris punctuated by multiple floor levels. As would be expected for a denser occupation, the lithic and botanical debris at Chen Chen sites also indicates more intense agricultural cultivation. Aspects of Chen Chen material culture, particularly ceramic serving vessels, display a somewhat more homogenous and standardized quality than those of Omo sites, perhaps reflecting greater demand. Like Omo serving ware, Chen Chen serving vessels are practically identical to altiplano examples. Interestingly, the labor- and skill- intensive blackware serving vessels found at Omo-style sites are practically absent from Chen Chen style ceramic assemblages. It was once thought that the Omo and Chen Chen Tiwanaku were separated temporally. Some calibrated radiocarbon dates for Omo sites are significantly earlier than those for Chen Chen sites, but it now appears that the two

groups were largely contemporary. Data from some sites, including the mid-valley Río Muerto site complex, indicates possible trade in material goods such as ceramics, and possible exchange of ideas (Goldstein 2005).

1.3 Tiwanaku Textiles

The familiar material emblems of Tiwanaku are its fine polychrome ceramics and (most of all) its monumental stone architecture and sculpture, mentioned above. Tiwanaku tapestry textiles, the height of their artistic and technical weaving expertise, have been excellently treated in several works (e.g.; Bergh 1999; Cassman 1997; Conklin 1983; Oakland 1986, 1984; Oakland Rodman 1992; Sawyer 1963; Stone-Miller 1992b). There is also an extensive body of work on Wari tapestry pieces, which survive in much greater numbers than their Tiwanaku counterparts (e.g.: Bird and Skinner 1974; Conklin 1970; Stone-Miller 1992c) However, more ordinary textiles are often equally fascinating feats of technology and artistry, as well as perhaps being more revealing about general sociopolitical patterns in a given society. Tiwanaku non-prestige textiles have rarely been studied (for a few notable exceptions see Minkes 2005; Oakland Rodman 2000; Wassén1972).

One reason that Tiwanaku textiles in general are less comprehensively understood than other classes of material culture such as ceramics is that, as mentioned above, the Tiwanaku cultural sphere encompasses a large area of the Altiplano that is not conducive to the preservation of perishable artifacts. The highland environment is too wet, and the fabrics decay, although there are a few examples recovered from caves in the Altiplano as well as more easterly regions such as

Cochabamba (e.g.: Oakland 1986: 54-82; Wassén1972). The vast majority of Tiwanaku and Tiwanaku-style textiles are found in the desert coastal regions of Peru and Chile (e.g.: Conklin 1983:8-14; Minkes 2005; Oakland 1986:82-110; Sawyer 1963:27; Young-Sánchez 2004). However, there are few Tiwanaku textiles (prestige or otherwise) with provenience data that have been thoroughly analyzed. A great number of the known examples are tapestry pieces in private collections or museums, which were taken from their original context by *huaqueros* (looters or grave robbers), and then put on the international art market. International laws now prohibit the sale of these antiquities, but there are problems with enforcement, loopholes for items acquired before the laws went into effect, and a number of other problems too detailed for discussion here. The best known textiles from the Moquegua valley in the Osmore drainage (the area of interest for this study) are the examples of tapestry textiles found in the currently existing literature on Tiwanaku tapestry tunics (e.g.: Conklin 1983:12-14). However, the provenience data for these is limited, as they too were taken from their original (probably funerary) contexts by modern huaqueros. The textile collection from the 2007-2008 excavations at the M43 cemeteries is all the more important because of the limitations and difficulties detailed above.

The collections used most extensively for comparison in the study are the most thorough studies on Tiwanaku-style textiles from sites with a well-documented connection (either through direct association or migration or through trade) to Tiwanaku. These include the collection from the Niño Korin collection from the cordillera east of Lake Titicaca (Wassén 1972); the work of Amy Oakland (1986) on decorated Tiwanaku textiles from the cemeteries at San Pedro de Atacama, as well as

her analysis of Tiwanaku textiles from Casarones at Tarapacá in northern Chile (2000); and Minkes's 2005 work on Tiwanaku burial textiles from the site of Chen Chen in the Moquegua valley (see Figure 3). Also considered is Vicki Cassman's (1997) analysis of the textiles from three cemeteries at Azapa that slightly post-date the collapse of the Tiwanaku expansive polity.

2. THE SETTING

2.1 The Osmore Drainage and the Moquegua Valley

The Osmore drainage of southern Peru is a river valley that runs from the western slopes of the Andes down to the Pacific Ocean (see Figure 4). The length of the Osmore valley has a long cultural history, with cultural developments spanning from the Paleoindian period to the Inca, through the European conquest and up to modern times. Throughout its history of human occupation the region was attractive to settlers because of the agricultural opportunities offered by the river and other water sources (Minkes 2005:78-79). The middle part of the drainage, known as the Moquegua valley, is made habitable by a small strip of arable land and land amenable to irrigation along the river. Not far away from the river, the sharp contrast of the Atacama Desert begins with arresting suddenness. The Moquegua middle valley is a region once home to a significant number of people affiliated with Tiwanaku. Various lines of archaeological and bioarchaeological evidence suggest that the first generation of people at Moquegua sites with Tiwanaku material culture may actually have migrated to this area from the Titicaca Basin itself (see Blom et al 1998; Goldstein 2005; Knudson and Price 2007; etc.).

The Tiwanaku-affiliated people who settled extensively in the mid-valley were not the first or the last people to live there (see Figure 5). The timeline for this valley is more complicated than was once believed, and the picture presented below is by no means comprehensive. Archaic hunter-gatherers lived in temporary settlements in the upper valley as part of their seasonal round, and camelid herders were using the valley

for pasture with the advent of pastoralism around 2500 B.C. The first permanent agriculturally-supported communities were established by a people known as the Huaracane (for their type-site at Pampa Huaracane), who also established the first ceramic tradition known for the valley. The Huaracane tradition appears to be locally developed, and established a substantial presence in the valley, with many small settlements throughout the floodplain and a number of cemeteries. The calibrated dates for Huaracane sites given by Goldstein (2005: Figure 5.8) show a long occupation that preceded the advent of Tiwanaku settlements (400 B.C.- A.D. 250), but it is possible that there is some overlap between the two traditions, particularly for the later Joyeros phase of the Huaracane occupation (see discussion of M43 cemetery sector "C" below) (Goldstein 2005:122-132).

Settlers affiliated with the highland Wari culture moved into the Moquegua valley in the seventh and eighth centuries A.D. Wari was an expansive and warlike political entity centered at the site of Huari near modern-day Ayacucho, Peru. The Wari share a great deal of material culture with Tiwanaku, including some iconography that is nearly indistinguishable, similar textile technologies, and some ceramic forms, but their settlement patterns and architecture are markedly different. The Moquegua valley is the only place for which there is extensive evidence for an intersection of people affiliated with Tiwanaku and Wari. The Wari occupation of the Moquegua valley was centered on the upper valley area, with some settlements in the middle valley (the sites of Cerro Trapiche and possibly one component of the M70 site at Río Muerto) (Goldstein 2005; Green 2005). Oddly, there are only a few known Wari burials from the Moquegua valley. The Wari occupation of the valley seems to

have ended around the same time that Chen Chen and Omo-style Tiwanaku sites were abandoned: between 1000-1100 A.D, perhaps partially driven by socio-political changes in the Wari heartland (Goldstein 2005:149, 165-167; Williams 2002:364-366)

Despite the abandonment of major centers, the Tiwanaku may not have disappeared from the valley (Owen 1995:2). The Tumilaca culture (A.D. 1000-A.D. 1250 [Clark 1993: Figure 1.6]) shows much continuity in aspects of material culture such as ceramics, as well as mortuary patterns, domestic architectural patterns, and bioarchaeological aspects such as cranial deformation forms. This suggests that they could be descendants of the earlier Tiwanaku culture residents of the valley, although it appears this group was not in close contact with the altiplano as their predecessors were. The iconography, however, diverges from Tiwanaku, as major figures such as the front-face god and the profile staff-bearers disappear. They also used domestic terraces, which were introduced to the area by the Wari. The Tumilaca overlap somewhat with Tiwanaku and then with the Late Intermediate Chiribaya culture, and settled in some of the same areas, although their smaller population expanded into previously unoccupied zones increasingly far from irrigable land. Their settlements also tended to be smaller, more scattered, and more easily defensible than Tiwanaku sites (Goldstein 2005:171-176)

The señorio of Chiribaya dominated the middle and lower areas of the drainage during the Late Intermediate Period (1000-1400 A.D.) (Goldstein 2005:176). This cultural entity appears to have been structured as a number of different sites in different ecological zones within the valley which, although some practices varied between the sites, shared a close economic relationship and a common material culture

(Tomczak 2003). The Chiribaya are best known for their polychrome ceramics, decorated textiles, and the well-preserved remains found in cemetery areas throughout the drainage (Owen 1995:8).

The Estuquiña culture existed at the same time as the señorio of Chiribaya, but instead populated the upper valley area (Goldstein 2005:177). Estuquiña sites are small and fortified, with no major administrative and only minimal possible ceremonial structures. The type site of Estuquiña has the remains of structures and a cemetery with preserved ceramic and textile material (Clark 1993:103-104). The Estuquiña persisted into and after the period of Inca domination in the valley (Owen 1995:2).

The Inca expanded their rapidly-growing empire into the Moquegua valley, but did not invest much into the depopulated area despite its agricultural value (Goldstein 2005:178).They did, however, establish several settlements in the upper valley and at least one on the coast, as well as an administrative center called Moquehua near the remains of Chen Chen. They seem to have been chiefly interested in the area for its maize production capacity (as summarized in Minkes 2005:111-112).

The remains of these past cultures are in many cases spectacularly preserved, as the desert environment in the Moquegua valley offers some of the best preservational conditions an archaeologist could ask for. Items from cobs of maize to human hair and fingernails survive in excellent condition for over a thousand years beneath the sand. This also means that textiles survive at a large number of sites from different cultures and periods in the valley, including the many Tiwanaku sites (Goldstein 1989; Goldstein 2005:249; Minkes 2005; Owen 1997).

2.2 The Site of M43 at Río Muerto

The site of M43 is part of the Tiwanaku-affiliated Río Muerto archaeological complex in the mid-valley area of the Osmore drainage (see Figure 6). M43 is a Chen Chen style Tiwanaku site. M70, an Omo-style site with domestic and mortuary components (see Baitzel 2008), is also part of this complex and is less than 150 meters away from the limits of M43. M43 has domestic and cemetery components, as well as a small possible ritual structure near the cemeteries. Only a tiny fraction of the domestic sector has been excavated over the 2007 and 2008 seasons, as the density and depth of material from the household middens examined thus far have proven extremely complex and time-consuming to excavate and process (Boswell 2008). There is also a geoglyph on a hillside nearby, which was accompanied by at least one ritually smashed puma incensario vessel. The geoglyph appears to depict a camelid[2]

Although there is a great deal of fragmentary textile material from the midden excavations in the domestic sector (see Boswell 2008), the work done for this study chiefly concerns the assemblage recovered from the cemetery sectors. At least five distinct groups of tombs are arranged around a small hill. There are also isolated tombs situated around and on top of the hill, but because of their visibility, these appear to be heavily disturbed. The two largest groups of tombs, cemeteries "A" and "B," are situated in depressions that cut into the slope of the hill. These cemeteries contain closely packed tombs of various types. Some are simply holes in the sand with

[2] The aforementioned and all following data on M43 and M70 and the recovered materials are taken from Goldstein and Palacios F. 2007 and 2008 unless otherwise noted.

a few rocks incorporated into the structure, others have a full ring of stones around the opening or some stones incorporated into the structure, and a few are fully stone lined. These tombs contain the seated, flexed burials of single individuals of both sexes and all ages. The conditions at Río Muerto are extremely dry, and because of this desiccation the materials in many of the graves are extremely well preserved (Goldstein 2007b, 2008).

2.3 The Textiles of the "A" and "B" Cemeteries at M43

Over the 2007 and 2008 field seasons at M43, 63 tombs were excavated (Goldstein 2007b, 2008). Of these 63 tombs, 43 were contexts that were undisturbed before the eruption of the Huayna Putina volcano (near Arequipa) in A.D. 1600 (see Table 1). At least one of these may have been disturbed before this date (R52, see below). These tombs contained largely complete individuals with grave goods ranging from ceramics to wooden spoons to one with a complete rapé (hallucinogenic snuff) kit. The individuals and every item from their tombs were catalogued and documented throughout the recovery process. All of the interred individuals had modified crania (all in the fronto-occipital style [Lozada Cerna 1998]). All of them also were accompanied to the grave by at least one textile item, although most have more than one. Textile types represented in the assemblage of 127 total items include tunic-style shirts, blankets, bags, hats, handkerchief-like small cloths ("pañuelos"), belts, cords, and threads.

As noted by Goldstein (2005:250), Tiwanaku burials in the Moquegua valley are generally accompanied by camelid fiber textiles, despite the warmer climate of the

valley compared to the Titicaca Basin and the availability of cotton fiber. Cotton textile production did occur in Chen Chen Tiwanaku households, as is clearly evident from the domestic debris recovered at Chen Chen habitation sites (Boswell 2008; Goldstein 2005:222). This is mostly true at M43 as well, although the sample from the "A" and "B" cemeteries includes 10 (out of 127 total) items made of cotton (see Table 6). This will be discussed in greater detail below. Ropes made of braided or twisted vegetable fiber were also found with each fardo. Due to time constraints, these ropes were not included in the present study.

The textile collection used for this study included the burial garments and items of 43 total individuals, as mentioned above (see Table 2). This sample includes the wrappings and garments found on the interred individual, any textile goods placed in the tomb, such as hats or bags, and textile fragments (usually from the wrappings or other textile goods) recovered from the 1 mm screen used to sift the fill from the tombs. Of these 43 individuals, four were adult males, four were adult females, two were adults of indeterminate sex, and 26 were subadults whose sex could not be determined. The large number of subadults in the sample may be due to the fact that adult tombs were the most frequent targets of huaqueros. Of the large numbers of bleached bones on the surface in both the cemetery sectors, the vast majority appeared to be the remains of adults. The large numbers of child burials also could be due to high infant and childhood mortality rates, or perhaps to a more complex demographic pattern in the cemeteries that has yet to be determined. It is also possible that the people who lived in the large domestic sector of M43 ideally returned to the Tiwanaku homeland in the altiplano after death, and this treatment was not regularly extended to

children (see Baitzel 2008). However, this latter possibility seems unlikely, as the extent of Chen Chen style cemeteries in the valley compared to domestic sectors suggests possible postmortem migration from other areas (perhaps the altiplano). It seems likely that the people who lived so near the desert cemeteries, cemeteries that held both their family members and the dead of other cultures from long before, would have had at least some idea of the extraordinary preservative properties of the desert (see Goldstein 2005:242-243). Since the ancient people of this area interred objects from life for the use of the dead in their tombs, it is not unlikely that they believed that the preservation of the physical body was beneficial to the dead individual in some way.

Cemetery sector M43 "A" (henceforth referred to as 'cemetery "A"') is located in a small depression on the southeast side of the hill southwest of the M43 domestic area (M43 "F"). The textile assemblages of 23 burials from the 2007-2008 excavations in this sector were included in this study (see Table 2). Of these 23, six were identified as adults, and 17 as subadults. Of the six adults, three were identified as probable males (R30- approx. age 50-59, R37- approx. age 35-39, R75- approx. age 25-28) and two as probable females (R70- approx. age 33-46 and R73- approx. age 13-15). The sex and age of the sixth adult (R47) could not be determined, as the individual was still tightly wrapped. The subadults range in age from infancy to adolescence (age and sex data: Baitzel n.d. and Simon n.d.).

Twenty of the 43 burial textile assemblages included in the study come from cemetery "B", which is located less than thirty meters northwest of cemetery "A" in the next small depression on the side of the cemetery hill (see Table 2). Of these 20

individuals, four were identified as adults. Of the four identified adults, one was identified as a probable male (R6- age unknown), two as probable females (R2- approx. age 50, R40- approx. age 25-31), and the sex of one adult was indeterminate due to its tightly wrapped state (R53- age unknown). The 16 subadults from this cemetery also range in age from infant to adolescent (age and sex data: Baitzel n.d. and Simon n.d.).

3. THE RESEARCH

3.1 Textiles: Style and Diasporic Identity

Style is defined by Weissner (1983:256) as "formal variation in material culture that transmits information about social and personal identity." From ethnographic, ethnohistoric, and archaeological information, it is abundantly clear that textiles in the Andean region were clearly distinguishable by style. Textiles from different groups and regions in the pre-contact Andes exhibit many visual differences in material, structure, shape, color, and many other characteristics.

One might wonder why there would be such a strong trend of variation between large social groups. Weissner notes that groups use style as a means of expressing their similarity or dissimilarity to other groups of which they are aware (1983:257). People as individuals use textiles to both state and reinforce their membership in the group (and possibly a smaller subgroup, such as a status, age, or gender category) constantly through the visual message of their clothing (Clark 1993). The Inca are known to have used these marks of likeness and difference in Andean communities to their advantage. Guaman Poma de Ayala (2006[1613]:67), among other chroniclers of colonial period Peru, reports that the Inca were well aware of the differences that existed in clothing styles throughout their domain. The state went so far as to decree that is was illegal to wear clothing other than that appropriate to one's own ayllu, under penalty of one hundred lashes. This was probably a measure to help the Inca keep control of subdued groups and maintain the distinctness of groups within the empire (Costin 1993:123). However, the Inca were enforcing an existing set of

styles of dress among the diverse groups of their empire rather than creating new distinctions.

Clark (1993:44-45) summarizes the archaeological implications of textile research for the identification of social groups: "Therefore archaeologically, given textiles associated with their users, we should be able to identify separate (major) social groups (and eventually, maybe ethnic groups) to the extent that this differentiation was overtly practiced by the population and symboled with textile style." Given the ethnohistoric information we have about groups like the Inca, as well as the extensive ethnographic record of indigenous Andean societies, it is clear that clothing and other textile goods in this region were and are an important medium for identification within and between groups (as summarized in Franquemont 1986). The archaeological record of pre-contact Andean textiles and other artwork that depicts textile goods (e.g. Cook 1992, 1996; Oakland 1986:20) would also lead the researcher to believe that this can be reasonably projected backward to ancient groups in the region as Clark suggests.

As will be discussed further below, the textile sample from the M43 cemetery sectors shows a great similarity to the provenienced collection from the Tiwanaku site of Chen Chen, which is also in the Moquegua Valley (Minkes 2005). It also shows similarities to textiles identified as Tiwanaku-style from other sites in the south central Andean region (Oakland 1986; Oakland Rodman 1992; Wassen 1972). However, the textiles from M43 show many differences in style from other groups (possible contemporaries and otherwise) in the valley, such as the Huaracane (Goldstein 2000:349), Wari (Green 2005), Chiribaya (Minkes 2005), Estuquiña (Clark 1993), and

Inca (Murra 1962; Guaman Poma de Ayala 2006[1613]; Rowe 1979). These differences exist not only in highly visible characteristics of clothing, but on subtle structural levels as well. Why would the Tiwanaku people at sites in the Moquegua Valley wear clothing most like that of groups that were relatively far away, rather than like that of their close neighbors in the valley?

As mentioned above, bioarchaeological evidence as well as the styles of many categories of material culture suggest a Titicaca Basin origin for the Tiwanaku populations that lived in the Moquegua Valley during the Middle Horizon period. Goldstein (2005) calls the manifestation of Tiwanaku people outside the Titicaca Basin a diasporic phenomenon, in which part of the population of a cohesive cultural unit leaves their homeland, but maintains ties to that homeland through interactions such as trade and migration as well as through material and cultural tradition. If this diasporic relationship proved to be the case, one would expect textile style to adhere to this pattern. Indeed, Oakland Rodman (1992:318-319) notes that textile style was an important way for immigrant populations to maintain a highly visible, portable, and personal connection to homeland populations far away. The stylistic differences (or similarities) between assemblages are the direct result of many very conscious choices (in material, thread production, weaving technique, dye, decoration, etc.) made during the production of the object in question (Clark 1993:14). As will be demonstrated below, the style of the mortuary textiles from the M43 A and B cemeteries clearly show a desire to exhibit this unbroken link to the highlands through conscious choices in the stylistic attributes and production of these garments and objects.

3.2 An Archaeological Approach to Textile Analysis

As noted above, most previous studies of pre-contact Andean textiles are object-oriented studies or surveys with an art historical approach that focuses on prestige textiles such as tapestry tunics. The pieces in these studies may have context, but are more often items of uncertain provenience. Such studies typically focus on the style, technique, and/or iconography of such pieces. As noted by Clark (1993:7), these scholarly works are extremely useful, and have contributed much, not only to the study of Andean textiles and their technique, but to other areas, such as the study of iconography, architecture, cosmology, and social structure in pre-contact cultures. However, they largely miss many patterns that are inaccessible in assemblages of one or a few pieces with largely unknown associations, such as gendered or age-related clothing patterns, group affiliation across particular locations as manifested in textile and clothing style, and the revelation of status (beyond the highest status individuals) and other social roles in clothing.

In the present study, the author seeks to answer some of these larger questions about the role of clothing in pre-contact Andean society, and in Tiwanaku groups in particular, by taking a systematic archaeologically-oriented approach to textiles. This approach is largely based on that used by Clark (1993). The sample studied here is from a mortuary context, a highly ritualized space marked by activities of those laying the deceased to rest, but the secure contexts of the burials discussed here provide the possibility of reconstructing something of the social relationships that played out within the community (Clark 1993:50).

The study at hand was planned and executed with a goal in mind: the implementation of a methodology (largely based on that used by Clark [1993:121] for textile recovery, documentation, curation, restoration (when time permitted), and analysis that would produce a database with the potential for both qualitative and quantitative comparison with other studies (from the past and future) and that would be useful in examining both large and small scale questions about the role of textiles in societies of the past and present. The approach above all emphasized as thorough of knowledge of context and association as possible.

3.3 Mortuary Theory: The Clothing of the Living and the Dead

A study of clothing that involves grave goods must take into account possible differences between the attire of the living and the dead. For example, in regard to the Inca, chronicler Polo de Ondegardo (1559, cited in Murra 1962:713) states that the dead were dressed in new garments before burial. This may have been the case with other Andean groups. However, the evidence from Tiwanaku and other textile traditions of the Moquegua valley suggest that this is not the case. Minkes (2005: Tables 8 and 9) found evidence of wear or repair in all but two of the 25 garments she examined from the Chen Chen collections. Clark (1993: Figure 5.99) reports evidence of extensive wear and repair in many of the burial garments from Estuquiña.

The garments from the M43 cemeteries exhibit some evidence of wear and repair, but difficulties of analysis of these characteristics prevented their extensive documentation.

Despite the possible complications of working with burial textiles in assessing the social patterns of the living, the burial context provides the only sure connections between garments and their owners (Clark 1993:45). Although it is known from the ethnographic record that the social dynamics apparent in burial are not always a direct reflection of those in the lives of living members of that society, it is likely that they at least correspond to these community and group dynamics (David and Kramer 2001:406). In the ritual of disposal of the dead, the living are reinforcing their own relationships, both inter- and intra- community, by constructing the identity of the dead in relationship to themselves (Clark 1993:45-46). For this reason, it seems reasonable to make preliminary conclusions about group associations, family/clan membership, gender/age roles, and status roles when sufficient systematically collected textile data from graves can be considered (in conjunction with other relevant mortuary data such as bioarchaeological data).

3.4 Storage and Condition of the M43 Cemetery Textiles

Sixteen of the 43 bundles ("fardos") were deemed to be already loose or decayed enough to be taken apart, while 27 remained intact bundles and so were not unwrapped (see Figures 7 and 8). The order of the wrappings of the disassembled fardos was ascertained where possible, while the intact bundles were examined as thoroughly as possible from the outside, as time did not permit the delicate and time-consuming process of unwrapping them.

The bundles recovered during the 2008 season were analyzed within days or weeks of their excavation, while the intact bundles and/or bags of unwrapped textiles

from the 2007 season were analyzed in 2008 following their accession to the collection at Museo Contisuyo, in the city of Moquegua.

The textiles analyzed for this study were in various states of preservation. Some garments were nearly complete, while others proved to be highly deteriorated. The condition of the textiles, as well as that of the bodies and the other perishable grave goods, appears to be dependent on several factors, including intrusion of water into tombs, the depth of the tombs below the surface, the intrusion of animals (such as rodents) into the tomb, and whether the tomb was disturbed by humans at any point after initial interment. The possible correlation between the locations of tombs within the cemetery sectors and their level of preservation is discussed further below.

3.5 Textile Analysis

Each fardo (or the set of textiles from an unwrapped fardo) was examined separately, and the number of separate textile specimens associated with each individual was determined. In the case of wrapped bundles, the number of textiles visible without unwrapping the fardo was determined. Most fardos had a designated specimen number for the associated textiles, and each identifiable item was given a sub-specimen designation (e.g.: the three textile items from Rasgo 6 are designated M43=3186a, M43=3186b, and M43=3186c). Complete or unique items from outside the fardo bundle itself were given their own specimen number where possible. For those from the 2007 excavations that did not have a designated specimen number for the textiles, the number used for the interred skeletal remains was used, with the remains designated as subspecimen “a” and the textiles beginning with subspecimen

"b." The subspecimen designations are not given in any order, but the locations of the textiles on the bundle are noted if known. Each designated subspecimen was then analyzed using one of two forms. The forms used to record the specimens were adapted from textile recording forms and analysis methods used by Oakland (1986), Clark (1993), Cassman (1997), and Bergh (1999). Embroidery and finishing stitch techniques were identified using data from Seiler-Baldinger (1994) and Minkes (2005). Most of the textiles in this study were recorded on the shorter "basic" textile form (see Figure 9), but a few especially complete or unusual pieces were recorded using a longer, more detailed version of this form. Details of the material, structure, appearance, type, and quality of each subspecimen were recorded on the paper forms in the field and later transferred to a Microsoft Excel worksheet for easier quantification and analysis. Digital photos were taken of each subspecimen as well as the intact fardos.

4. THE RESULTS: The Textile Style of the Garments from the M43"A" and "B" Cemeteries and Comparison to Other Tiwanaku-style Textiles

4.1 Representation of Garments and Other Textile Items

The textiles recovered from the intact contexts at cemetery sectors "A" and "B" at Río Muerto M43 show a great deal of diversity. The assemblage contains many types of garments with a great variety of color and decorative techniques. However, there are a number of unifying factors that tie this group of textiles together and place them within the Tiwanaku textile tradition.

Of the 127 separate textile specimens in the assemblage, 97 are woven products. The other 30 items are braided or knotted cords, knotted hats (or hat fragments) or single plied threads. Of the 97 woven products, 72 are known to be warp-faced, meaning that the warp threads initially strung up on the loom are those that are visible on the finished woven product (see Figure 10). Another 19 items are assumed to be warp-faced, but this cannot be known for certain as they do not have any intact selvedges. Of the other six woven items in the collection, two are so deteriorated that the weave type cannot be determined, two appear to be balanced weaves, one is a loose set of woven threads, and one is woven in the single-interlock tapestry technique, which is weft-faced (see Figure 11). The dominance of warp-facing in this collection is what would be expected for a Tiwanaku textile assemblage, based on analyses of Tiwanaku-style textiles from other sites in the Moquegua valley (Goldstein 2005:224-225; Minkes 2005); the collection analyzed by Anker (of the

Gothenburg Ethnographic Museum) for Wassén from the Niño Korin cave site (1972); and the textiles from Casarones analyzed by Oakland (2000).

The fardo of the fictional "average" interment at M43 contains 3 garments (127÷43). This fardo would be likely to contain a shirt, a blanket, and perhaps a bag or feather holder thread (types of items are described further below). However, this varies greatly when age (adult versus subadult) and sex (for the few adults identifiable by sex) are considered (see Table 3). This will be discussed further below.

Because so many of the interred individuals were still tightly wrapped at the time of the study, the only garments that could be securely evaluated for their form and dimensions were those from unwrapped individuals. These individuals were less well-preserved in general, and so many of the textiles interred with them are highly fragmented. The garment types for which there were relatively complete examples available for measurement were four shirts, six bags, two small cloths called "pañuelos" and one blanket.

Shirts (also referred to as tunics or *uncus* in Andean textile literature) are readily visible on the wearer, and so are an important communicative medium. Most Tiwanaku-style shirts are constructed of one piece of rectangular fabric with the warps strung vertically to the wearer (see Figures 12 and 13). The warps are approximately twice as long as the wefts. The neck slit, in the center, is created through the use of discontinuous wefts (see Figure 14). All four of the garment's selvedges are finished on the loom, and when the garment is removed from the loom, the piece is folded in half (forming an approximate square) and the two sides (weft selvedges) are sewn up, leaving a space for the arms (Minkes 2005:123). Thirty-seven garments in the M43

"A" and "B" assemblage were determined to be shirts (see Table 3). Four relatively intact shirts included in the sample analyzed for this study were compared to the typology of shirt styles from the later Azapa assemblage used by Cassman (1997:95-101). All have extensive polychrome warp-striping and embroidered neck plaques, and they appear to correspond to Cassman's shirt types VIAd (M43=3425b and M43=4146a) and VAd (M43=3274b and M43=4887b) (see Figures 13 and 14). These shirt types are also represented in the textile collection from the Chen Chen cemeteries (both Omo and Chen Chen style) analyzed by Minkes (2005), and other examples of polychrome warp-striped shirts are described from other Tiwanaku sites in the Moquegua Valley (Goldstein 2005:225) as well as the site of Casarones (Oakland Rodman 2000). The woven designs of all shirts, including less complete examples, are summarized in Table 4. One weft-faced tapestry tunic was recovered from the M43 "A" cemetery. This is discussed further below in the section on the more unusual and unique textiles recovered from the cemeteries.

A total of eleven bags were recovered from the two cemetery sectors (see Table 3). Six of these were complete enough for a determination of their types and dimensions. These items represent three different broad categories of bags: four are the small, decorated coca bags known by modern Aymara people as *ch'uspas* (M43=3027, M43=3418, M43=4843, M43=4516) (see Figure 15), one is a net bag (M43=3417) (see Figure 21), and one is a unique item not described in any literature known to the author (M43=3028). This last bag was a small warp-striped bag which was square-shaped, possibly in order to accommodate the wooden pigment box found within it.

These bags (typical forms for Tiwanaku, excluding the net type) are constructed with a piece of rectangular warp-faced fabric that finished on all four sides. This piece of fabric is then doubled and the weft selvedges are sewn shut. The seams and opening are often reinforced by embroidery (Minkes 2005:129).

Cassman's 1997 bag typology has somewhat limited application with this sample, as it is largely based on the woven design in the bag's structure. It does not appear that Cassman's sample includes any bags with cross-knit loop stitch embroidery, which is ubiquitous on the bags described above for M43 with the exception of the net bag (see Table 8). Oakland (1986:168-172) describes Tiwanaku-style cross-knit loop stitch embroidered ch'uspa bags nearly identical to both those from the M43 cemetery sample from the Coyo Oriental and Solcor 3 cemeteries at San Pedro de Atacama. The bag from Solcor 3 (see Oakland 1986:169,172, Figure 37) has "checkered stripes" and an embroidery layout that make it nearly identical to M43=4516. Minkes (2005) did not find any of these bag types in the collection from Chen Chen, which may be due to the heavy disturbance and looting that has occurred at that site. Wassén (1972), however, recovered a collection of bags from Niño Korin that appear very similar to the more complete examples from the sample used for this study. The Niño Korin collection includes five ch'uspa type bags and one net bag (Wassén1977:56-61, Figures 48-55) (see Figures 16-20). Four of the Niño Korin ch'uspa bags (70.19.20a, 70.19.52a, 70.19.53, 70.19.58a) are of similar shape (10-17 cm in warp direction x 14-21 cm in weft direction) to three of the ch'uspa bags found in the Río Muerto M43 cemetery sample (M43=3027, M43=4843, and M43=4516; 15-21 cm in warp direction x 26 cm in weft direction), although the bags from Niño Korin

are slightly smaller. The woven bags from both sites are all of warp-faced construction. The M43 ch'uspas tend to have at least some striped decoration while the ch'uspas from Niño Korin tend to be plain. There is one striped ch'uspa from Niño Korin (70.19.58a), although the stripe design on this bag does not closely resemble the designs on any of the bags from M43. The most striking similarity between the two sets of ch'uspa bags is their embroidered embellishment. Five of the six of the Niño Korin ch'uspas and three of the four M43 ch'uspas considered for this part of the analysis have decorative multicolored embroidery executed in cross-knit loop stitch on the top openings and/or weft seams. The embroidery on the Niño Korin ch'uspas tends to be more extensive, with figurative designs incorporated in three examples, but they also have geometric embroidered designs that are nearly identical to those from the less-elaborate examples in the M43 cemetery collection.

The net bag from M43 (M43=3417) (see Figure 21), the rapé (hallucinogenic snuff) kit it contained, and the net bag found at Niño Korin will be discussed further in the chapter on the unique items from this cemetery assemblage.

Pañuelo cloths are simply a squared or rectangular piece of woven fabric with or without a woven design. The selvedges are all finished on the loom, and are often reinforced with embroidery (Minkes 2005:129) (see Table 8).Only one largely intact "pañuelo" cloth was found in the assemblage of textiles from the 43 burials sampled (M43=4146c- see Figure 22), although there were fragments of four more (Table 3). It is plain light brown, and corresponds to Type 1 in Cassman's 1997 classification system (Cassman refers to the cloths with the Aymara term *tari*), although this accounts for the woven portion and does not take into account the cross-knit loop

embroidery forming a border along the selvedges (see Figures 23 and 24). From the analyzed Chen Chen assemblage, Minkes (2005) reports five similar pañuelos of which one is nearly identical to the M43 example (see Minkes 2005:137, Figure 8.5). Minkes classifies them as type 1A, building on the categorization devised by Cassman and adding a notation ("A") for the embroidery. To the author's knowledge, no cloths of this type are known from the few analyzed highland assemblages.

Although thirty-three garments identified as blankets (see Figure 25) (often called mantles or mantas in Andean textile literature) were found in the M43 assemblage (see Table 3), only one had enough of the selvedges intact to ascertain its exact form and dimensions (M43=3274a). It is simply a rectangle of warp-faced material, woven from course yarn, with wide, irregular stripes in natural camelid colors. The warp selvedges form the two longest sides. Most other Tiwanaku-style blankets described in Andean textile literature are woven in an interlock or dovetail tapestry technique (chiefly examples from San Pedro de Atacama) (Oakland 1986:119-124) and are weft-faced, but the construction, shape, and dimensions are similar to this courser example from M43. This blanket does, however, correspond to the coarser types described by Cassman (1997:111) in the Azapa textile assemblage, and is exactly alike in color, design, and construction to the plain warp-faced blankets described by Minkes (2005:155-157) for the Chen Chen collection.

One distinctive group of textile items found in the M43 "A" and "B" assemblages were hats. Tiwanaku hats have been amply described in art historical and object-oriented studies of four-cornered hats (e.g.: Rowe 1996) as well as in analyses of Tiwanaku and Wari stone and ceramic depictions of persons (e.g.: Bergh 2004;

Cook 1992; 1996). Tiwanaku hats are constructed of knotted camelid fiber yarn and are made in one piece. The hats currently described in literature and found in museum collections usually have a polychrome design and four points sticking up from the top corners.

The persons shown wearing hats in Tiwanaku and Wari art are usually assumed to be elite males (perhaps lineage founders or ritual specialists) (Couture 2004:130-133; Goldstein 2007a; Kolata 2004:123). The stone figures lack any distinctive sexual characteristics, but are wearing and holding items such as tapestry tunics and keros that are usually associated with males in burial (Goldstein 2007a:5; Young-Sánchez 2004:35). Ceramic portrait vessels depicting individuals with hats often show mustaches and therefore can be said to represent male individuals with some degree of confidence (Goldstein 2005:299, Figures 7.6, 7.9;Young-Sánchez 2004:55). This evidence would lead the researcher would expect to find these four-cornered hats in male burials.

The hats from M43 consist of two brown and yellow knotted box-shaped hats (see Figure 26) (M43=4158, M43=4445d), and one fragmentary polychrome four-pointed hat (M43=4505a) (see Figure 27). One non-diagnostic knotted camelid fiber fragment (M43=3186c) is also most likely a piece of a hat (see Table 3). The fragmentary polychrome four-pointed hat is similar to many other examples in museums and private collections (e.g.: Couture 2004: Figures 5.8 and 5.9; Goldstein and Rivera 2004: Figures 6.16, 6.24 and 6.25), with its shape, the use of many colors, and what appears to be a design of geometric shapes and stylized faces. The brown and yellow hats appear to be simpler versions of the same thing, as their knotting

technique is similar. These hats also have a pattern of decorative slits in their sides. The small fragment is also done with a similar knotting technique, but is a dark brown color with a more open structure of knots.

There was one more set of items that appeared with a large number of individuals (14 of 43). This was not a woven or knotted item, but a simple thread, usually in blue (but sometimes in a cream color) wrapped several times around the head of the individual (these are referred to in the tables as "Feather Holder Thread" or F.H.T) (see Table 3, Figure 28). These threads were sometimes found holding small cane tubes in place, which sometimes had preserved orange feathers placed in them. These items were found with both sexes and with both adults and children. The author suspects that more of these items have not been recovered because of preservation issues: a single thread would easily disappear if the head coverings of a mummy bundle were to experience decay (as many of the examples from M43 clearly did). The only other examples of these items known to the author are those recovered from the Ilo-Tumilaca/Chiribaya sites of La Cruz and El Descanso in the lower Osmore drainage (Minkes 2005:176). However, the sole Tiwanaku assemblage in Minkes's study is that from Chen Chen, and this group of textiles is generally poorly preserved and probably affected by looting (Minkes 2005:81, 153, 157). The fact that these items appear only at later sites in Minkes's study may also indicate that either the threads and feather holders/feathers on the heads of the deceased was a tradition that was adapted from Tiwanaku practices by later groups influenced by their style.

One of these feather holder threads is counter-spun/plied (see above) (M43=4454d). This is the only counter-spun/plied item in the assemblage aside from

the net bag (M43=3417) (see below) and some loose threads associated with that bag. This thread was found wrapped around the head of an adult of unknown sex (R53).

The last category of items used in this study was broadly labeled "other," and included braided cords, belts, tassels, rolls of thread, and isolated threads or groups of threads that did not appear to be feather holder threads. This group contains a total of twelve items (see Table 3).

4.2 Textile Material

As noted above, the vast majority of the textiles (115 out of 127: 91%- see Table 1) in the samples from M43 cemeteries "A" and "B" are made from camelid fiber. Camelid fiber may be derived from any of the four species of extant camelids in the Andean region (llamas, alpacas, guanacos, or vicuñas). The time and equipment limitations of this study did not permit the kind of fiber analysis that could determine from which camelid the fibers came.

Ten out of 127 textile items examined were made of cotton (8%) (see Table 6). This group contains a diverse set of items: two possible blankets (M43=4199b, M43=4853c), four small items that may be pañuelos (M43=3262c, M43=3262d, M43=4264c, M43=4853c), two sets of small rolls of cotton thread (M43=4505b, M43=4839d), one set of loose threads (M43=4505d), and the net bag (see above) (M43=3417) that contained the rapé kit from R30. With the exception of the net bag and two rolls of cotton thread found with an adult female (R70), all these items are found with subadults. The net bag is the only cotton item that is counter-spun/plied (see below).

As stated by Oakland (1986:35, 171), Tiwanaku tapestry garments are always made completely with camelid fiber. This also seems to be largely true for the items with woven designs (such as warp stripe) and embroidered embellishments in the M43 cemetery sample. The only cotton item with any embellishment is M43=4264c, a small item covering the head of a subadult fardo. This item has a fragmentary embroidered border (stitch type undetermined) of blue camelid fiber thread.

As mentioned above, cotton items are found in the domestic assemblage from M43 (Boswell 2008; Goldstein and Palacios F. 2007, 2008). Fragmentary cotton textiles are also found in domestic debris recovered at Chen Chen habitation sites (Goldstein 2005:222). However, to the author's knowledge, neither of these excavations recovered an identifiable garment. It is entirely possible that cotton garments were produced and worn, but, evidently, they were usually not taken to the grave.

No cotton items are included in the Niño Korin assemblage (Wassén 1972). Minkes (2005:153) reports one cotton pañuelo (out of 61 total garments) from Chen Chen. Oakland Rodman (2000) does not report any cotton textiles from burials at Casarones, Tiwanaku-style or otherwise. Given the availability of cotton on the south coast of Peru, it is interesting that the fiber is not found extensively in burials. This may be because cotton does not hold dye colors as well as camelid fiber (Feltham 1989:20). It also may partly be a preservation issue, as the cotton items found in the M43 cemeteries were among the most delicate and deteriorated textile items. Another possibility may be that the people at Tiwanaku-influenced and affiliated sites may have wanted to make their connection to the highlands and the Titicaca Basin more

clear at burial through the use of the fiber most readily available in the Altiplano[3] (Goldstein 2005:250).

Two items from the M43 cemetery assemblage are not made of cotton or camelid fiber. These are two possible belts or binding cords made of what appears to be human hair. These items consist of several small braids or plied yarns of hair. One of these (M43=4146f) was found stuck to a shirt (M43=4146b). It is possible that it was tied around this highly fragmented shirt as a belt. Minkes (2005) reports no items made of human hair from the Chen Chen collection, although Clark (1993:Figure 5.15) found several human hair cords in the Late Intermediate Period assemblage from Estuquiña.

4.3 Decorative Woven Designs (Warp-Faced)

A surprisingly high percentage of the assemblage of textiles from M43 cemeteries "A" and "B" are decorated. Only 28 of the 97 woven items recovered from the 43 interments (29%) were items without any decoration (including both woven designs and polychrome embroidery).

Several types of decorative woven designs were found to be well-represented in the sample. Warp-stripes seem to be the most popular form of decoration: 38 of the 97 woven items (39%) have a warp-striped pattern with anywhere from one stripe in one color near a weft selvedge to scores of stripes in 10 different colors (see Figure 13). The warp striped garments from the M43 cemeteries are summarized in Table 7.

[3] Despite its relative absence from burials, cotton textiles are common in Chen Chen style domestic areas (including the excavated midden at M43), and may have been worn in life (Goldstein 2005:224, 250).

These striping patterns correspond to many of the types reported by Cassman (1997) for Azapa, and to those found in the Chen Chen assemblage by Minkes (2005: plate 3). There is one warp-striped scrap found by Wassén (1972) at Niño Korin, but it features a design formed by transposed warps (Oakland 1986:187), a technique not found in the M43 cemetery textiles considered here. The striped bag found at Niño Korin also has a stripe pattern unlike any found in the M43 textiles, although its technique is not unusual.

A large number of the woven items from the M43 cemetery sample (23 of 97-24%) have what appears to be extensive warp darning or decorative supplementary warps (see Table 8, Figure 29). This appears as a pattern or random distribution of thicker threads in the fabric which may be of a slightly different color than the main body of the garment. In some cases it appears to have been used in areas where there may have been wear on the fabric, but in many cases it appears to be decorative. Nothing like this is reported in Wassén (1972). Minkes (2005:297) reports finding sometimes extensive warp darning in 20% of the shirts from Chen Chen, some of which may have been decorative.

These decorative techniques do not appear to be limited to any gender or age group.

4.4 Embroidery (Cross-Knit Loop Stitch)

Most of the woven garments in the sample used for this study have some kind of stitched reinforcement at their remaining selvedges. These included plain solid overcast stitching, blanket stitching, or cross-knit loop stitching (see Figure 23).

Cross-knit loop stitch embroidery, as noted above, is a technique used in many Tiwanaku style garments from across the south central Andes (see Figure 24). Thirty-one of the 97 woven items from the M43 sample (32%) exhibit this embroidery technique (see Table 9). It does not appear to be limited to any one garment form, but is found often on shirts and bags. Most of these examples have only one row of the cross-knit loop stitch as a technique for finishing a selvedge, neck slit, or arm hole. However, 11 garments out of these 31 (11% of the total 97 woven items) have cross-knit loop stitched embellishment with two or more rows of stitches that often form a pattern. This more extensive embroidery appears on several different types of garments (shirts, bags, pañuelos, and one blanket). It forms several highly textured and colorful compact rows of stitches (see Figure 30). As can be seen clearly in Table 9, these items seem to be found largely with subadults and females. Perhaps this form of decoration was an identifying emblem of women (including female subadults) or of women and children.

These garments with extensive (defined as 2+ compact rows) cross-knit loop stitch decoration include three examples with embroidered corners: two pañuelos (M43=3083b, M43=4586c [see Figure 30], and one blanket (M43=4540). There are two shirts with deteriorated cross-knit loop stitch at the neck slit: M43=4839a and M43=4463; and one shirt that appears to have an embroidered weft seam (M43=3386b). Five ch'uspa bags also have extensive cross-knit loop stitch embroidery (see above). Unlike the bags described from Niño Korin (Wassén 1972) and many of the embroidered garments from Casarones (Oakland Rodman 2000) or San Pedro de Atacama (Oakland 1986), none of the cross-knit loop stitch embroidery

in the M43 collection textiles shows recognizable figures (such as animal, human, or zoomorphic figures). The designs in the M43 sample are linear or geometric patterns, much like those found in some shirts and pañuelos from the Chen Chen assemblage by Minkes (2005:plate 4.1, 154-158). Minkes also reports single files of cross-knit loop stitching as reinforcement for selvedges in the Chen Chen garments. The locations of the embroidery are also consistent with the findings of Wassén, Oakland, and Minkes. Cassman (1997) does not report any cross-knit loop stitch embroidery in the garments from Azapa.

4.5 Unusual and Unique Textile Items from the M43 "A" and "B" Assemblages

4.5.1 The Net Bag and Rapé Kit from M43 "A" R30

Unique among the collection of bags from the M43 cemeteries is a net bag (M43=3417, see Figure 21), which was found in the tomb of an adult male (R30) and held a rapé (hallucinogenic snuff) kit that included a wooden snuff tablet, a mortar and a bone spoon. The net bag from Niño Korin is nearly identical to the M43 net bag (see Figure 20), except for one important distinction: the net bag from Niño Korin is made of camelid fiber, while the example from the M43 cemeteries is made of cotton. This reason for this difference is difficult to assess, but it is possible that it may simply be based on availability: cotton is well known from Tiwanaku domestic contexts in the temperate Moquegua valley while it is possible that it was more difficult to obtain (and less practical to wear) in the colder altiplano.

Other than the difference in material, however, the two net bags are practically identical. Both are knotted in the same square-knot technique. Both are also constructed of a tube of netting closed at both ends by drawstrings. The two bags are also close in size (the Niño Korin bag is 16.5 cm long, and the M43 net bag is 18 cm long). It is likely that the two net bags came from similar contexts. Wassén, unfortunately, never beheld any of the artifacts from the Niño Korin in their original context. The collection was already in the possession of the Bolivian National Archaeological Museum, and it seems there was no available documentation of the state in which it was found (Wassén1972:11). However, the net bag (70.19.54) was found not only with the other bags mentioned above, but with a number of other items, including a skull with annular deformation (likely that of an adult male, according to Hjortsjö's analysis of the facial structure), wooden snuff tablets, a snuffing tube, a bone spoon, several mortars, and other items. This suggests that the net bag was an important component of the rapé kit in both the highlands and in the Chen Chen site of M43.

Perhaps the most interesting thing about the net bags from both the M43 "A" cemetery and from Niño Korin is that the yarns that compose them are S-spun and Z-plied (S2Z). This is the opposite of the usual spin and ply used in the highlands and the south coastal region of the Andes (Z2S), both in the archaeological record and in the more recent ethnographic record (see Figure 31) (Conklin 1975b:80; Dransart 1995; Goodell 1968:7; Kerner 1968:32; Meisch 1984; etc.). The net bag is the only textile item in the Niño Korin collection that is S-spun and Z-plied. The net bag from the M43 cemetery collection is one of three items from the total sampled assemblage

(n=127) that are not Z2S. The other items include cords found inside the net bag that are S3Z (three S-spun threads plied in the Z direction) (also under the number M43=3417), and the feather-holder thread wrapped around the head area of the mummy bundle of one adult individual of unknown sex (R53; M43=4454d). Reverse spun/plied elements have been reported by informants in Andean ethnographic literature to have magical or protective properties (Dransart 1995; Goodell 1968; Kerner 1968; Meisch 1984:249-250; Minar 2000), and its rarity in the both the Niño Korin and the M43 cemetery assemblage would make sense if reverse-spun/plied yarns were not something used for everyday items. The bag containing a rapé kit would seem to be a reasonable candidate for an item made of sacred thread. Hallucinogenic experiences are an important component in Andean spirituality throughout the archaeological record, and this importance continues among some groups today. This is certainly known to be true for the Tiwanaku, as rapé kits with intricately crafted components are known from throughout the polity's sphere of influence (Torres and Repke 2006: 25-52). The spin/ply of both these bags lends credence to the theory that the qualities associated with reverse spun/plied yarns in more recent Andean groups carries back into the Middle Horizon. It also lends support to the possibility that both the man from Niño Korin and the man buried in the tomb (R30) with the rapé kit at M43 cemetery "A" were ritual specialists. Goodell (1968:7) reports, in her study of people from the rural Quechua-speaking communities near Casco, that the people told her that "…everywhere in the mountains the medicinal and religious lore employing lloq'e [reverse spun/plied yarn- in this case, S2Z] is rich,

diverse, and very strong. Sometimes only brujos (medicine men) can spin lloq'e…" This hypothesis will be further pursued with future research on the R30 assemblage.

4.5.2 The Interlock Tapestry Tunic from M43 "A" R52

As mentioned, Tiwanaku interlock tapestry is the best-known type of textile for that culture. Its style and technique has been well-defined (Oakland 1986), and its iconography has been thoroughly analyzed in several works (Conklin 1983; Bergh 1999).

Like most other Tiwanaku shirts, tapestry tunics are typically woven in one large piece (Oakland Rodman and Cassman 1995:37), and are made with camelid fiber only, as opposed to Wari tapestry tunics which may have cotton or cotton/camelid fiber warps. Tiwanaku tapestry tunics also have completely finished selvedges on all four sides (Oakland 1986:230-231, 269).

The design of a Tiwanaku tapestry tunic is woven in with single interlocked wefts. In effect, the design is woven in one color area at a time, rather than in rows across the warp. These wefts each interlock once with the warps in the adjoining color areas of the design, by wrapping around them, alternating with the wefts of the edge of the other color area (see Figure 11). Where the divide is diagonal, the wefts build progressively across the warps. Clearly, this is a very labor-intensive method of weaving, especially with finer yarns (Oakland 1986:118-122). When this is considered alongside the planning and designing of the textile, it is clear that this is a highly-regarded prestige product that was produced by dedicated specialists, as is known for

Inca interlock-tapestry garments (Bergh 1999; Bird 1963: Plate 20; Conklin 1975a:22; Conklin 1983; Oakland 1986; A. Rowe 1978; J. Rowe 1979).

The tunic from M43 cemetery "A" that will be discussed here clearly corresponds to the technical description of a Tiwanaku tapestry tunic, as would be expected from the other data at the site. This tunic (M43=4507, from Rasgo 52) is an exceptional example of Tiwanaku tapestry for two main reasons: it is one of the very few Tiwanaku tapestry tunics with complete provenience and excavation data, and it was buried with a child between the ages of 1.2 and 2.7 years (Simon n.d.). Although miniature Tiwanaku tapestry tunics are known (e.g. Young-Sánchez 2004: Figure 2.29), no example of tapestry of any size has never actually been found with a child's body. It has been assumed that Tiwanaku (as well as Wari) tapestry tunics were garments associated with elite males, perhaps state officials (see above). This assumption is supported by depictions of clothing in both ceramic and stone artwork as well as a very few intact burials in which Tiwanaku and Wari tapestry tunics were found with interred adult males (Bergh 1999:69-71; Goldstein 2007; Oakland 1986:104; Ubbelohde-Doering 1967:141). One such burial was excavated during the 2007 field season at the Río Muerto site of M70. This adult male burial contained a tapestry tunic that was approximately 50% complete. The tunic's colors were well-preserved, and its design featured an avian-headed staff-bearing figure (Goldstein and Palacios F. 2007; Plunger n.d.).

Although it is possible that the child was male, the absence of soft tissue on the body and its young age prevent the determination of its sex. The adult-sized tunic wrapped around its body (the tapestry tunic is, incidentally, the only garment that was

wrapped around the body) is a magnificent example of Tiwanaku interlock tapestry. It is more finely and densely woven than anything else in the M43 textile sample except one pañuelo found in the same tomb (judging from fabric counts[4]). The design of the tunic, executed in bright colors, is a pattern of plain yellow vertical stripes dividing vertical stripes showing a fierce sacrificer figure (see Figures 32,33). This arrangement is typical of Tiwanaku tapestry tunics (Bergh 1999; Oakland 1986; Young-Sánchez 2004) (see Figure 34). The sacrificer, an adaptation of a common figure in Tiwanaku, Pukara, and Wari iconography, appears to be an anthropomorphic camelid or perhaps a human wearing a costume intended to mimic that creature (Bergh 1999: Figures 62-64, 82; Stone-Miller 1992) (see Figures 35-38). The creature is winged and holds a staff with a dead human body hanging from the end.

Not only was the child buried with the tapestry tunic, but it also was the post-mortem recipient of several other textile items including an extensively embroidered ch'uspa bag (M43= 4516- see above) and a polychrome four-pointed hat (M43=4505a), a string of greenstone beads, a wooden spoon, a zampoña (panpipe), and a wood and thread artifact that has yet to be identified. The tomb itself was a carefully constructed stone-lined cist. Clearly, this child was not old enough to be a major contributor to the community, but the richness of his or her burial implies that he or she inherited high status from a parent or other caregiver. Interestingly, his or her head was removed from the burial some time before A.D. 1600 (as evidenced by a layer of ash from the 1600 Huayna Putina eruption above the level of the burial). This

[4] Fabric count for a woven item is found by multiplying warps/cm by wefts/cm, and is expressed as "number of elements/cm^2" (Clark 1993).

is also true of the burial of the abovementioned adult male from the Río Muerto M70 cemetery who was interred in a tapestry tunic. It is possible that the removal of these heads connect to some kind of curation and ancestor veneration ritual, since the valuable tapestry garments were left in the tombs. Modern Andean populations such as the Bolivian Chipaya use the skulls of ancestors in ritual (Wachtel 2001) and it is theorized that the Wari and Nasca cultures may have venerated ancestor heads (Carmichael 1994). Clearly, this burial alone requires further research both on the artifacts and textiles it contained and on the remains of the child itself.

4.6 Textiles and Age

As noted above, the sizes of most of the garments from the M43 cemetery samples used here are unknown due to either poor preservation or the fact that they are still wrapped tightly around a fardo. Knowledge of whether child-size or adult-size garments were interred with subadults would be a useful consideration in this assessment of age-based assemblage differences. The garments from the unwrapped fardos of children are largely too incomplete for a size determination. Initial observation suggests that blankets for individuals of all ages are of similar size, and that the shirts interred with children may be of smaller size than those interred with adults. For simplicity, this part of the study will be based on the textiles interred with adult and subadult individuals (see Tables 3 and 10).

From the 43 interred individuals whose burial textiles were included in this study came 127 textile specimens. The textiles and the burials with which they are

associated, as well as the cemeteries from which the burials were excavated are summarized in Table 1. These data show several interesting trends in the two cemeteries (considered together here) regarding the assemblages buried with adults versus subadults. Ten of the 43 interments considered here were the burials of adults. These ten adult individuals comprise 23% of the population of the two cemeteries, and yet they have 33% of the total textile items (42 of 127). Adult burials average 4.2 garments each. Subadult individuals have a mean count of 2.6 textile items per burial. When the especially rich burial of the child in R52 (a child interred with eight separate textile specimens- see above) is excluded, the mean number of textile items per subadult comes out to 2.4.

In terms of fabric count, there also appears to be a difference between subadults and adults: woven items interred with adults have a mean fabric count of 184 elements/cm^2, while woven items interred with all subadults have a mean fabric count of 183 elements/cm^2, but a mean of 159 elements/cm^2 when the burial of R52 is excluded. Minkes (2005:288) provides estimated time and material requirements for a warp-faced tunic (La Cruz 1998 #99305) from the lower Osmore site of La Cruz with an average fabric count of 182 elements cm2. This tunic is of similar size (121 cm x 100 cm when assembled) to the more complete examples of warp-faced tunics from the M43 cemeteries (see above). Minkes estimates that this tunic required 18.4 km of yarn and over 300 hours to create (Minkes's estimate does not include the time required for finishing seams with embroidery or creating a neck plaque). This data clearly conveys the labor intensivity involved in creating even a common type of garment.

The types of garments found with individuals of different ages are also different (see Table 3). Sixteen of 37 shirts (43%) in the sample are found with the 10 adults (who make up 23% of the 43 individuals in the sample). Subadult individuals were more commonly found with blankets (29 of the 33 blankets in the sample, or 88%, are found with subadult individuals). Shirts, since they require the sewing of seams, the reinforcement of selvedges, the creation of neck slits, and sometimes the creation of embroidered neck plaques, are more labor intensive to produce than a blanket, which is simply a woven rectangle that may or may not have reinforcing stitches at the selvedges, and appears to typically have been about half the size of a shirt (Minkes 2005:155-157). The blankets from the M43 and Chen Chen collections are also made of much coarser thread than shirts (Minkes

As noted above, the number, quality, and labor intensivity of garments in a burial is at least some indication of that individual's status in the community in life (Clark 1993:45-46). Thus, the above evidence of garment count, quality, and production time and effort suggests that adults enjoyed higher status at M43 than (most) children.

These findings are difficult to compare to the data collected by Minkes (2005:214-217), as the Chen Chen textile assemblage did not come with corresponding data on the remains of the individuals interred with the textiles. Adult versus subadult tunics were assessed through analysis of garment size for the Chen Chen collection. Out of 25 total tunics, Minkes found six (24%) that appeared to be sized for a child. Unfortunately, this data is not comparable to the data for subadults from M43, as Minkes is not able to subdivide age categories due to the lack of tomb

data for the pieces. Therefore, it would be impossible to address which segment of the M43 sample would be wearing small tunics (perhaps only the smallest children?).

Cassman (1997) does not address age specifically as a variable in her analysis.

4.7 Textiles and Sex

Little is known about gender roles in Tiwanaku society. This may be because of the focus on ceremonial space and monumental architecture in much of the archaeology that has been done on Tiwanaku sites. These spaces do not always have clear gender associations (although there are exceptions- see Goldstein 2007:7-13). There are also few identifiable females in Tiwanaku art and iconography to give additional clues about their roles, although some figures of women may be found on small numbers of plainware vessels and items (Goldstein 2007).

Bioarchaeological and mortuary sources (chiefly from sites in the Moquegua Valley) provide some clues to status: the cranial modification practiced in the Tiwanaku world was the same for females and males in areas where various types of modification were used. Mortuary treatment appears to be similar for both sexes, although the tombs with the most offerings and goods tend to be those of adult males. Some grave goods seem to have gendered associations: spindles and ollas appear to be associated with females and subadults, while keros and panpipes tend to be associated with males (Goldstein 2007:5). Some gender-based dietary distinctions are suggested by isotopic evidence from burials at Omo. Sandness (1992) found that males had higher $\delta^{13}C$ and $\delta^{15}N$ values in their bones, suggesting higher consumption of maize (some in the form of chicha beer) and meat for men.

Because the sample considered here contains so few adult individuals (10 of 43), and only eight of these had sufficient visible skeletal elements to allow a guess at their sex, it is difficult to make any assertions about the association of any clothing items or decorative styles with sex or gender roles. From the available individuals with likely or tentative sex assignments, some very basic observations can be made (see Table 3).

The four adult individuals that may be female (R2, R40, R70, R73) have 14 garments, or a mean of 3.5 garments per female individual. The four possible males (R6, R30, R37, R75) have 20 garments, which comes out to a mean of 5 garments per individual. As stated above, evidence from cultures that span the Andes geographically and temporally show clearly the amount of clothing interred with an individual at death is some indication of their status in the community in life (Clark 1993:45-46). Therefore, the evidence from this small sample of adults suggests that adult males enjoyed higher status than adult females. This is also supported by the fact that the average fabric count for woven items interred with males (197 elements/cm^2) is slightly higher than that for woven items buried with females (171 elements/cm^2).

The garment types buried with each individual and their decorative techniques vary widely from burial to burial, and most do not appear to have an exclusive distribution based on sex (see Table 3). This is consistent with the findings made by Cassman with the Azapa cemetery assemblages (1997:112).

There are some garment types in this assemblage thought from evidence in iconography to be exclusively male (tapestry tunics, knotted hats) but the only person in the sample of 43 with a tapestry tunic is an infant or small child (R52- to whose

skeletal remains a gender cannot be assigned), and the three individuals with hats (see Table 3) include the aforementioned child (R52), one male (R37), and one adult of indeterminate sex (R47). Clearly, the small size of the sample of adults with assignable sexes makes this impossible to assess.

4.8 Inter-Cemetery Comparison for M43

There are some differences in the textiles assemblages in cemeteries "A" and "B," such as prevalence of different garment types in each cemetery (see Table 11). There is also a difference in the number of items per individual between the cemeteries and the average quality (as measured by fabric count) of the woven garments in the two cemeteries. For the overall sample population of cemetery "A", the mean number of textile items is 3.35, while for cemetery "B" the mean number of textiles per individual is 2.5. The mean fabric count for the woven items from M43 "A" is 209 elements/cm^2, while the mean fabric count for the woven items in M43 "B" is 163 elements/cm^2. This may be affected by several factors. There is a larger sample of shirts, bags, and pañuelos from M43 "A" than from "B," and these garments have higher average fabric counts than blankets, which are the dominant garment type in cemetery "B" (see Table 10). There are also more adults in cemetery "A" (n=6) than in cemetery "B" (n=4), and the sample of adult garments has a slightly higher average fabric count than that for subadult garments (see above).

However, the prevalence of the same basic textile structures, techniques, forms, and patterns in both cemeteries, the number of nearly identical garments, and other material evidence such as the similar cranial deformation style between the

cemeteries, make it seem that the two sectors do not represent separate ethnic groups. The differences noted above may very well be due to the nature of the samples themselves. These samples are relatively small, and as mentioned above, the samples from the two cemeteries are of different sizes, and contain different proportions of adults versus subadults. There may also be other unknown factors at play, such as sexes of the subadults, which cannot be accessed with the data available. However, the style of the textile assemblages, even if it does not reveal differences between the two cemetery sectors, still reveals important cultural information about the individuals who were laid to rest in the M43 cemeteries.

As stated by Wiessner (1983:257-258), a well-defined style in any vein of material culture is an effective marker of boundaries between cultural groups. The lack of detectable difference in style between the textile samples from cemetery sectors "A" and "B" suggests that the people buried in both areas shared an overarching social affiliation. The reason for the geographical segregation of these two cemetery sectors may have some other basis, such as status or an ayllu-like family or clan membership within their larger social identity as Tiwanaku people. Other Tiwanaku sites of both Chen Chen and Omo affiliation in the valley have distinct spatial segregation in both their habitational and cemetery sectors (Goldstein 2005:190), and it is possible that further excavation in the M43 domestic area will reveal a similar layout of separate habitational sectors. These would provide a basis for a re-examination of the cemetery sectors to determine if they correspond to distinct domestic areas. There is also a possibility that the separation is simply a matter of spatial necessity- there are a finite number of burials that may be placed in each depression in the hillside, and it is

possible that one cemetery sector may have simply been the next logical place to begin burying the deceased when one depression filled with burials. Additional excavation and dating of the M43 cemeteries will likely clarify the likelihood of these possibilities.

Another cemetery on the M43 hill, cemetery sector "C," may also help clarify the reason for the spatial distributions of the cemetery sectors. A small excavation (one 4 x 4 m unit) was undertaken in cemetery "C" during the 2008 season. Nearly all the tombs in the unit were heavily disturbed sometime before A.D. 1600 and perhaps again after, as materials from at least seven tombs was scattered over the surface as well as throughout the unit fill beneath the ash layer from Huayna Putina. One intact burial was found in this unit: a tiny fosa holding the mummified remains of an infant. The one textile item (a coarse brown and gold item that is likely a blanket) visible on the infant was not significantly different from the textiles found in cemeteries "A" and "B." However, a preliminary examination of the textiles and ceramics from this excavation unit reveal that there is something different at work in this sector. The ceramics include both Tiwanaku forms and forms more commonly known for the Joyeros culture, a late phase of the Huaracane whose habitation and cemetery sites are found throughout the valley. The unit contained fragmentary fabrics that resembled those found in cemeteries "A" and "B," but there were also long gold tassels and a coarse black and white brindled cloth woven from bichrome black and white plied yarns. These items do not resemble any of the textile goods retrieved from the "A" and "B" cemeteries. The reason for these differences is currently unknown, but further

excavation and analysis will likely clarify the relationship of this sector to the rest of the M43 complex.

5. CONCLUSION

5.1 Textiles, Homelands, and Group Identity

The style found in the "A" and "B" cemeteries bears an uncanny resemblance to the Tiwanaku-style garments known from the Casarones site near Tarapacá, northern Chile (Oakland Rodman 2000), the few Tiwanaku-style garments known from the cemeteries at San Pedro de Atacama (Oakland 1986; Oakland Rodman 1992), garments from other well-known Tiwanaku sites in the Moquegua valley (Goldstein 2005; Minkes 2005), and items known from the cave burial at Niño Korin in the Dept. of La Paz, Bolivia (Wassén1972). Their forms, structure, materials, and decorative elements (noted above) make it impossible to deny the fact that the people buried in these cemeteries at M43 wished to connect themselves to the makers of the Tiwanaku-style garments found in these other areas of the south-central Andes. Although the demographic associations of the textiles from M43 are uncertain, the trends they appear to reveal seem to correlate with those in these other sites.

Based on material culture and bioarchaeological studies (see above), it is likely that the many of the people of Chen Chen and other Osmore Drainage Tiwanaku sites were immigrants from the Titicaca basin area and/or descendants of immigrants from that area (Knudsen and Price 2007) . The textiles from Chen Chen analyzed by Minkes (2005) are nearly identical to those found at Río Muerto M43. This also holds true for other forms of material culture such as ceramics. Body modification such as cranial deformation also is similar between the sites in the Moquegua valley and the Titicaca basin: all Tiwanaku sites in the Moquegua drainage show the use of the fronto-

occipital type of cranial deformation, and this is one of the forms known to have been used at Tiwanaku and nearby sites (Blom et al 1998:251). Additional archaeological and bioarchaeological studies of the people of M43, such as oxygen and strontium ratio studies, as well as simply creating a larger body of work for mortuary and domestic comparisons, would be needed to come to a more definite conclusion. However, from the information available, it seems possible that these people may have been altiplano immigrants and/or descendants of altiplano immigrants. If this is the case, their textile artwork may have been one way of distinguishing themselves from other groups living in the valley, such as Huaracane populations or Wari populations. It is also likely that textile style was a vital way for immigrant populations (and their descendants) to maintain a highly visible, portable, and personal connection to distant homeland populations (Oakland Rodman 1992:318-319).

The textiles from the highland site of Niño Korin (Wassén 1972) are of special interest here. As mentioned, there are very few textiles known from the highlands near the Titicaca Basin, therefore there is no comparable assemblage to those known from M43 and other sites with Tiwanaku-style textiles in the desert regions near the coasts. The small assemblage from Niño Korin is far too limited to provide definite answers about the Moquegua/Titicaca connection, but it does show some basic and some very specific similarities, as noted above. The forms, structures, and decorative elements employed in the textiles, particularly the bags, are nearly exactly the same as those of the bags in the sample from the M43 cemeteries. The decorative techniques used in the Niño Korin assemblage, including fabric patterning and embellishment (specifically the use of nearly identical embroidery) are also found in a huge proportion of the M43

cemetery sample. The possibility of importing this large quantity of garments from the altiplano to Moquegua does not appear to be a practical hypothesis. The idea of the textiles being exports from Moquegua to the altiplano is not impossible. Further testing, such as strontium or oxygen isotope tests on the camelid fiber of both textile assemblages (see Koch 2007:114-116; Frei et al 2008) would be one useful step in the further pursuit of this hypothesis. This information would also be well-supplemented by additional studies of individuals and their grave goods, particularly weaving implements such as spindle whorls.

Goldstein (2005) proposes that these Tiwanaku people held on to this connection with their homeland through contact and trade, along with their practices, rituals, and material culture. When the textile tradition evident in the sample from the M43 "A" and "B" cemeteries is considered in light of the nature of other archaeological and bioarchaeological evidence regarding the Moquegua-Altiplano relationship, it seems that this diasporic dynamic is what is manifested. Thus, a reasonable preliminary conclusion regarding the similarities between the textile assemblages is that the garments were produced by weavers who were trained (or whose ancestors were trained) in the Titicaca Basin. Clothing is an item that is always kept close to the body, and so has intimate associations for the wearer. Its style is on constant view to both the wearer and others. The choices (material, shape, weaving technique, color, design, and embellishment) of the weavers of the garments in the M43 mortuary assemblage discussed here shows a desire to create garments that are nearly exactly like those from other Tiwanaku sites, such as Niño Korin and Chen Chen, and to Tiwanaku-style garments found throughout the south central Andes. This

clearly shows that their clothing was an important way to keep this altiplano connection visible and close to the self.

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APPENDIX

Table 1. Summary of Tombs From M43 "A" and "B" Considered in the Present Study

Rasgo (feature #)	Site/Sector	Year excavated	Age (if known) (by SIB and SKBS 2007-2008)	Sex (if known) (by SIB and SKBS 2007-2008)	Textiles in tomb (specimen or subspecimen numbers)
2	M43 B	2007	50	Possible female	M43=3083a,b
5	M43 B	2007	5-6	Unknown	M43=3019, 3027, 3028
6	M43 B	2007	Adult	Male	M43=3186a,b,c
11	M43 A	2007	7-11	Unknown	M43=3162a,b
12	M43 A	2007	5.5-6.5	Unknown	M43=3118a,b,c
14	M43 B	2007	2-4	Unknown	M43=3234a,b,c
15	M43 A	2007	2-4	Unknown	M43=3470
20	M43 A	2007	7-10	Unknown	M43=3393b,c
21	M43 B	2007	1-2	Unknown	M43=3274a,b,c
24	M43 A	2007	Young subadult	Unknown	M43=3379
25	M43 B	2007	4-6	Unknown	M43=3448a,b
27	M43 B	2007	2-4	Unknown	M43=3408
28	M43 A	2007	.5-1.5	Unknown	M43=3535a,b,c
29	M43 A	2007	7-11	Unknown	M43=3386a,b
30	M43 A	2007	50-59	Male	M43=3415a,b,c; M43=3417,3418
31	M43 A	2007	2-5	Unknown	M43=3478a,b,c
33	M43 A	2007	2-5	Unknown	M43=3462b,c,d,e
36	M43 B	2008	0-1.5	Unknown	M43=4291a,b
37	M43 A	2008	35-39	Male	M43=4146a,b,c,d, e,f; M43=4158
40	M43 B	2008	25-31	Female	M43=4236a,b
41	M43 A	2008	Infant	Unknown	M43=4199a,b,c
42	M43 A	2008	Subadult	Unknown	M43=4264a,b,c,d
44	M43 B	2008	Subadult	Unknown	M43=4281a,b
45	M43 B	2008	3-8	Unknown	M43=4311a,b
47	M43 A	2008	Adult	Unknown	M43=4445a,b,c,d
48	M43 A	2008	1-3	Unknown	M43=4463
49	M43 B	2008	3-5	Unknown	M43=4440
51	M43 B	2008	0-.5	Unknown	M43=4482

Table 1. Cont'd.

Rasgo (feature) (#)	Site/Sector	Year excavated	Age (if known) (by SIB and SKBS 2007-2008)	Sex (if known) (by SIB and SKBS 2007-2008)	Textiles in tomb (specimen or subspecimen numbers)
52	M43 A	2008	1.2-2.7	Unknown	M43=4505a,b,c,d,e; M43=4507, 4510, 4516
53	M43 B	2008	Adult	Unknown	M43=4454a,b,c,d
57	M43 B	2008	.75-1.25	Unknown	M43=4540a,b,c,d
58	M43 A	2008	Subadult	Unknown	M43=4586a,b,c
63	M43 B	2008	Subadult	Unknown	M43=4746a,b,c
65	M43 B	2008	8-12	Unknown	M43=4751a,b
66	M43 B	2008	Subadult	Unknown	M43=4738a,b,c
67	M43 B	2008	2-5	Unknown	M43=4732a,b,c
68	M43 B	2008	Subadult	Unknown	M43=4886a,b,c
69	M43 A	2008	1-3	Subadult	M43=4800
70	M43 A	2008	33-46	Possible female	M43=4839a,b,c,d,e,f,g; M43=4843
71	M43 A	2008	Subadult	Unknown	M43=4812a,b
72	M43 A	2008	6-8	Unknown	M43=4853a,b,c
73	M43 A	2008	13-15	Possible female	M43=4887a,b,c
75	M43 A	2008	25-28	Male	M43=4879a,b,c

Table 2. Basic Information on the M43 Textile Sample from Cemetery Sectors "A" and "B"

Specimen #	Site/Sector	Rasgo	Textile Type	Material (Main)	Fabric Count (Max)
m43=3083a	m43 B	2	shirt	camelid fiber	196
m43=3083b	m43 B	2	panuelo	camelid fiber	n/a
m43=3019	m43 B	5	blanket	camelid fiber	196
m43=3027	m43 B	5	bag	camelid fiber	180
m43=3028	m43 B	5	bag	camelid fiber	320
m43=3186a	m43 B	6	shirt	camelid fiber	280
m43=3186b	m43 B	6	blanket	camelid fiber	120
m43=3186c	m43 B	6	hat	camelid fiber	n/a
m43=3162a	m43 A	11	blanket	camelid fiber	160
m43=3162b	m43 A	11	blanket	camelid fiber	21
m43=3118a	m43 A	12	shirt	camelid fiber	208
m43=3118b	m43 A	12	blanket	camelid fiber	154
m43=3118c	m43 A	12	blanket	camelid fiber	110
m43=3234a	m43 B	14	shirt	camelid fiber	224
m43=3234b	m43 B	14	shirt	camelid fiber	224
m43=3234c	m43 B	14	cord	camelid fiber	n/a
m43=3470	m43 A	15	blanket	camelid fiber	238
m43=3393b	m43 A	20	blanket	camelid fiber	144
m43=3393c	m43 A	20	cord	camelid fiber	n/a
m43=3274a	m43 B	21	blanket	camelid fiber	24
m43=3274b	m43 B	21	shirt	camelid fiber	224
m43=3274c	m43 B	21	?	camelid fiber	238
m43=3379	m43 A	24	?	camelid fiber	72
m43=3448a	m43 B	25	blanket	camelid fiber	80
m43=3448b	m43 B	25	shirt	camelid fiber	156
m43=3408	m43 B	27	shirt	camelid fiber	210
m43=3535a	m43 A	28	shirt	camelid fiber	224
m43=3535b	m43 A	28	bag	camelid fiber	100
m43=3535c	m43 A	28	shirt	camelid fiber	224
m43=3386a	m43 A	29	blanket	camelid fiber	20
m43=3386b	m43 A	29	shirt	camelid fiber	196
m43=3415a	m43 A	30	blanket	camelid fiber	156
m43=3415b	m43 A	30	shirt	camelid fiber	192
m43=3415c	m43 A	30	thread, feather holder	camelid fiber	n/a
m43=3417	m43 A	30	bag	cotton	n/a
m43=3417	m43 A	30	cord	camelid fiber	n/a
m43=3418	m43 A	30	bag	camelid fiber	154
m43=3478a	m43 A	31	shirt	camelid fiber	168
m43=3478b	m43 A	31	shirt	camelid fiber	96
m43=3478c	m43 A	31	thread, feather holder	camelid fiber	n/a
m43=3462b	m43 A	33	blanket	camelid fiber	240
m43=3462c	m43 A	33	?	cotton	256
m43=3462d	m43 A	33	?	cotton	432

Table 2. Cont'd.

Specimen #	Site/Sector	Rasgo	Textile Type	Material (Main)	Fabric Count (Max)
m43=4291a	m43 B	36	blanket	camelid fiber	216
m43=4291b	m43 B	36	thread, feather holder	camelid fiber	n/a
m43=4292	m43 B	36	blanket	camelid fiber	84
m43=4146a	m43 A	37	shirt	camelid fiber	161
m43=4146b	m43 A	37	shirt	camelid fiber	336
m43=4146c	m43 A	37	panuelo	camelid fiber	480
m43=4158	m43 A	37	hat	camelid fiber	n/a
m43=4641d	m43 A	37	cord	camelid fiber	180
m43=4641e	m43 A	37	shirt	camelid fiber	n/a
m43=4641f	m43 A	37	belt	human hair?	n/a
m43=4236a	m43 B	40	blanket	camelid fiber	180
m43=4236b	m43 B	40	bag	camelid fiber	180
m43=4199a	m43 A	41	blanket	camelid fiber	288
m43=4199b	m43 A	41	blanket	cotton	208
m43=4199c	m43 A	41	belt	human hair	n/a
m43=4264a	m43 A	42	shirt	camelid fiber	180
m43=4264b	m43 A	42	blanket	camelid fiber	128
m43=4264c	m43 A	42	?	cotton	160
M43=4264d	m43 A	42	?	cotton	360
m43=4281a	m43 B	44	blanket	camelid fiber	266
m43=4281b	m43 B	44	thread, feather holder	camelid fiber	n/a
m43=4311a	m43 B	45	blanket	camelid fiber	60
m43=4311b	m43 B	45	shirt	camelid fiber	60
m43=4451a	m43 A	47	shirt	camelid fiber	180
m43=4451b	m43 A	47	shirt	camelid fiber	216
m43=4451c	m43 A	47	cord	camelid fiber	n/a
m43=4451d	m43 A	47	hat	camelid fiber	n/a
m43=4463	m43 A	48	shirt	camelid fiber	168
m43=4440	m43 B	49	shirt	camelid fiber	272
m43=4482	m43 B	51	blanket	camelid fiber	108
m43=4505a	m43 A	52	hat	camelid fiber	n/a
m43=4505b	m43 A	52	rolls of thread	cotton	n/a
m43=4505c	m43 A	52	bag	camelid fiber	360
m43=4505d	m43 A	52	thread	cotton	n/a
m43=4505e	m43 A	52	panuelo	camelid fiber	900
m43=4507	m43 A	52	shirt	camelid fiber	858
m43=4510	m43 A	52	bag	camelid fiber	70
m43=4516	m43 A	52	bag	camelid fiber	210
m43=4454a	m43 B	53	shirt	camelid fiber	210
m43=4454b	m43 B	53	blanket	camelid fiber	384
m43=4454c	m43 B	53	shirt	camelid fiber	342
m43=4454d	m43 B	53	thread, feather holder	camelid fiber	n/a
m43=4540a	m43 B	57	blanket	camelid fiber	150

Table 2. Cont'd.

Specimen #	Site/Sector	Rasgo	Textile Type	Material (Main)	Fabric Count (Max)
m43=4540b	m43 B	57	thread, feather holder	camelid fiber	n/a
m43=4540c	m43 B	57	?	camelid fiber?	84
m43=4540d	m43 B	57	panuelo	camelid fiber	168
m43=4586a	m43 A	58	shirt	camelid fiber	252
m43=4586b	m43 A	58	thread, feather holder	camelid fiber	n/a
m43=4586c	m43 A	58	panuelo	camelid fiber	168
m43=4746a	m43 B	63	blanket	camelid fiber	20
m43=4746b	m43 B	63	blanket	camelid fiber	72
m43=4746c	m43 B	63	thread, feather holder	camelid fiber	n/a
m43=4751a	m43 B	65	blanket	camelid fiber	110
m43=4751b	m43 B	65	blanket	camelid fiber	84
m43=4738a	m43 B	66	blanket	camelid fiber	108
m43=4738b	m43 B	66	thread, feather holder	camelid fiber	n/a
m43=4738c	m43 B	66	blanket	camelid fiber	20
m43=4732a	m43 B	67	?	camelid fiber	180
m43=4732b	m43 B	67	blanket	camelid fiber	20
m43=4732c	m43 B	67	thread, feather holder	camelid fiber	n/a
m43=4886a	m43 B	68	shirt	camelid fiber	300
m43=4886b	m43 B	68	blanket	camelid fiber	18
m43=4886c	m43 B	68	thread, feather holder	camelid fiber	n/a
m43=4800	m43 A	69	shirt	camelid fiber	80
m43=4839a	m43 A	70	shirt	camelid fiber	160
m43=4839b	m43 A	70	bag	camelid fiber	168
m43=4839c	m43 A	70	tassel	camelid fiber	n/a
m43=4839d	m43 A	70	rolls of thread	cotton	n/a
m43=4839e	m43 A	70	?	camelid fiber	108
m43=4839f	m43 A	70	thread	camelid fiber	30
m43=4839g	m43 A	70	shirt	camelid fiber	168
m43=4843	m43 A	70	bag	camelid fiber	168
m43=4812a	m43 A	71	?	camelid fiber	n/a
m43=4812b	m43 A	71	?	camelid fiber	n/a
m43=4853a	m43 A	72	shirt	camelid fiber	180
m43=4853b	m43 A	72	shirt	camelid fiber	100
m43=4853c	m43 A	72	blanket	cotton	30
m43=4887a	m43 A	73	shirt	camelid fiber	180
m43=4887b	m43 A	73	shirt	camelid fiber	340
m43=4887c	m43 A	73	thread, feather holder	camelid fiber	n/a
m43=4879a	m43 A	75	shirt	camelid fiber	36
m43=4879b	m43 A	75	shirt	camelid fiber	308
m43=4879c	m43 A	75	thread, feather holder	camelid fiber	n/a

Table 3. Textile Items by Age and Sex (Counts)

	Shirt	Blanket	F.H.T.	Bag	Hat	Pañuelo	Other	Unknown	**Total**
Adult males (N=4)	7	2	2	2	2	1	3	0	**19**
Adult Females (N=4)	5	1	1	3	0	1	3	1	**15**
Adults (sex unknown) (N=2)	4	1	1	0	1	0	1	0	**8**
Subadults (N=33)	21	29	10	6	1	3	5	10	**85**
Total	**37**	**33**	**14**	**11**	**4**	**5**	**12**	**11**	**127**

Table 4. Shirt design by Age and Sex (Warp-faced unless otherwise noted).

	Polychrome striping (50+% of garment		Brown/gold striping (entire garment)		Some striping		Plain (natural colors)		Figurative (tapestry) (weft-faced)		Totals
Adult male (N=4)	5	33.33%	0	0.00%	0	0.00%	2	20.00%	0	0.00%	**7**
Adult Female (N=4)	2	13.33%	2	25.00 %	0	0.00%	1	10.00%	0	0.00%	**5**
Adult-Unknown sex (N=2)	2	13.33%	0	0.00%	2	66.67 %	0	0.00%	0	0.00%	**4**
Subadult (N=33)	6	40.00%	6	75.00 %	1	33.33 %	7	70.00%	1	100.00 %	**21**
Total	**15**		**8**		**3**		**10**		**1**		**37**

Table 5. Cotton Items by Age and Sex

	Blanket	Bag	Thread/ roll of thread	Unknown	**Total**
Adult male (N=4)	0	1	0	0	**1**
Adult female (N=4)	0	0	1	0	**1**
Adult- sex unknown (N=2)	0	0	0	0	**0**
Subadult (N=33)	2	0	2	4	**8**
Total	**2**	**1**	**3**	**4**	**10**

Table 6. Warp-Striping by Garment Type, Age, and Sex

	Shirt	Blanket	Bag	?	Total
Adult male (N=4)	5	0	1	0	6
Adult female (N=4)	4	0	2	0	6
Adult- sex unknown (N=2)	2	1	0	0	3
Subadult (N=33)	13	4	5	1	23
Total	24	5	8	1	38

Table 7. Warp Darning by Garment, Age, Sex

	Shirt	Blanket	**Total**
Adult male (N=4)	1	2	**3**
Adult female (N=4)	3	1	**4**
Adult- sex unknown (N=2)	0	1	**1**
Subadult (N=33)	6	9	**15**
Total	**9**	**13**	**23**

Table 8. Cross-Knit Loop Stitch Embroidery (2+ rows) by Garment, Age, Sex

	Shirt	Blanket	Bag	Pañuelo	**Total**
Adult male (N=4)	0	0	0	0	**0**
Adult female (N=4)	1	0	3	1	**5**
Adult- sex unknown (N=2)	0	0	0	0	**0**
Subadult (N=33)	2	1	2	1	**6**
Total	**3**	**1**	**5**	**2**	**11**

Table 9. Subadult Garments by Mean Estimated Age (Counts)

	Shirt	Blanket	Feather holder thread	Bag	Hat	Pañuelo	Other	Unknown	**Totals**
Infant (up to 1 year) (N=4)	2	4	2	1	0	1	0	1	**11**
1-2 years (N=4)	4	1	0	3	1	1	2	1	**13**
3-5 years (N=8)	7	4	3	0	0	0	1	3	**18**
5.5-7 years (N=4)	4	5	0	2	0	0	0	0	**11**
8-10 years (N=4)	1	6	0	0	0	0	1	0	**8**
Unknown (N=9)	3	9	5	0	0	1	1	5	**24**
totals	**21**	**29**	**10**	**6**	**1**	**3**	**5**	**10**	**85**

Table 10. Textile Items by Cemetery

	Shirts	Blankets	F.H.T.	Bags	Hats	Pañuelos	Other	Unknown	**Total**
Cemetery A (N=23)	25	13	6	8	3	3	11	8	**77**
Cemetery B (N=20)	12	20	8	3	1	2	1	3	**50**
Total	**37**	**33**	**14**	**11**	**4**	**5**	**12**	**11**	**127**

Figure 1: Guaman Poma de Ayala's illustration of Sapa Inca Wasqar, showing the distinctive costume of a ruler versus those worn by military generals (Guaman Poma 2006 [1613]:115)

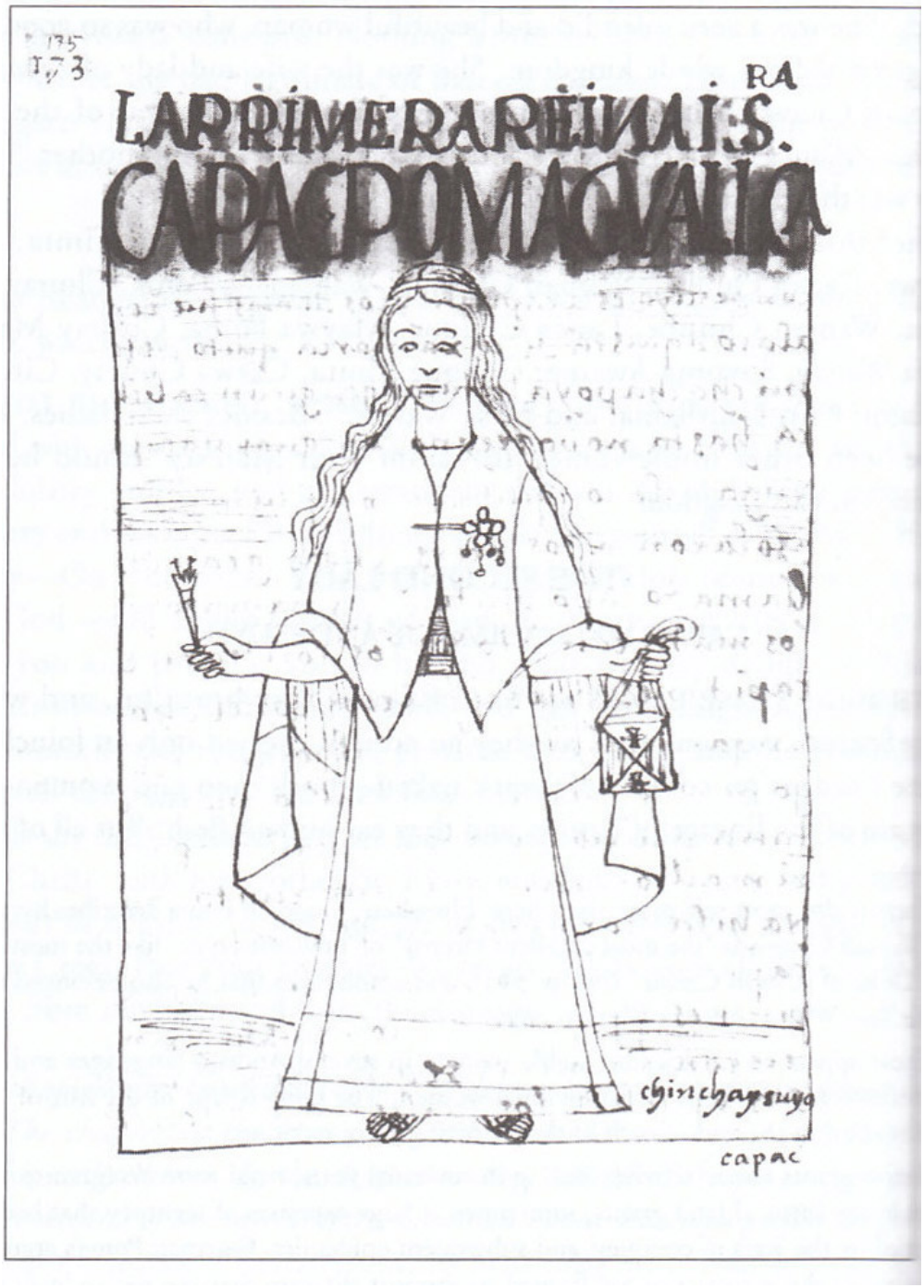

Figure 2: Illustration from Guaman Poma de Ayala showing the dress of an elite Inca female (Guaman Poma 2006 [1613]:175).

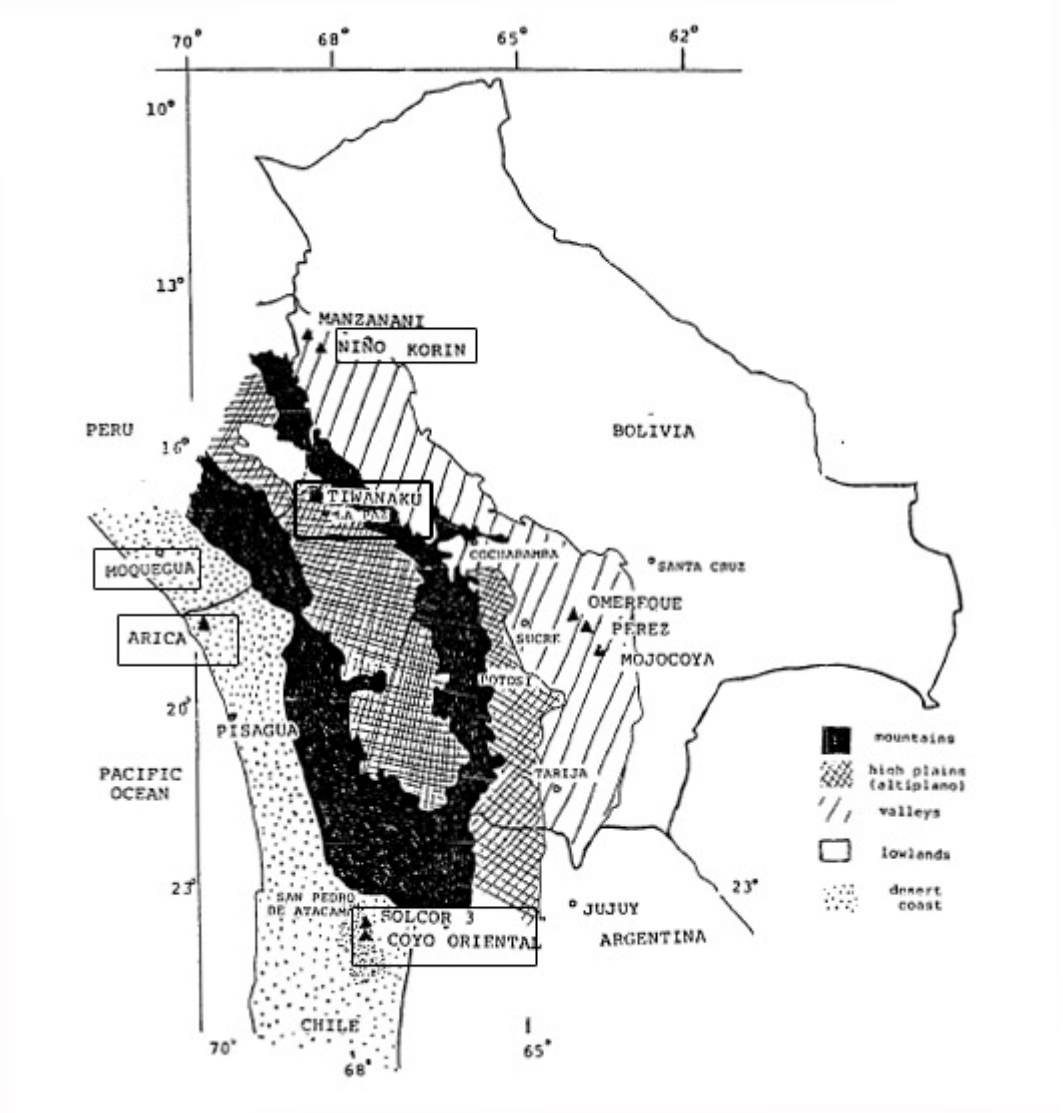

Figure 3: Tiwanaku and other sites discussed in the text (after Oakland 1986:Figure 1)

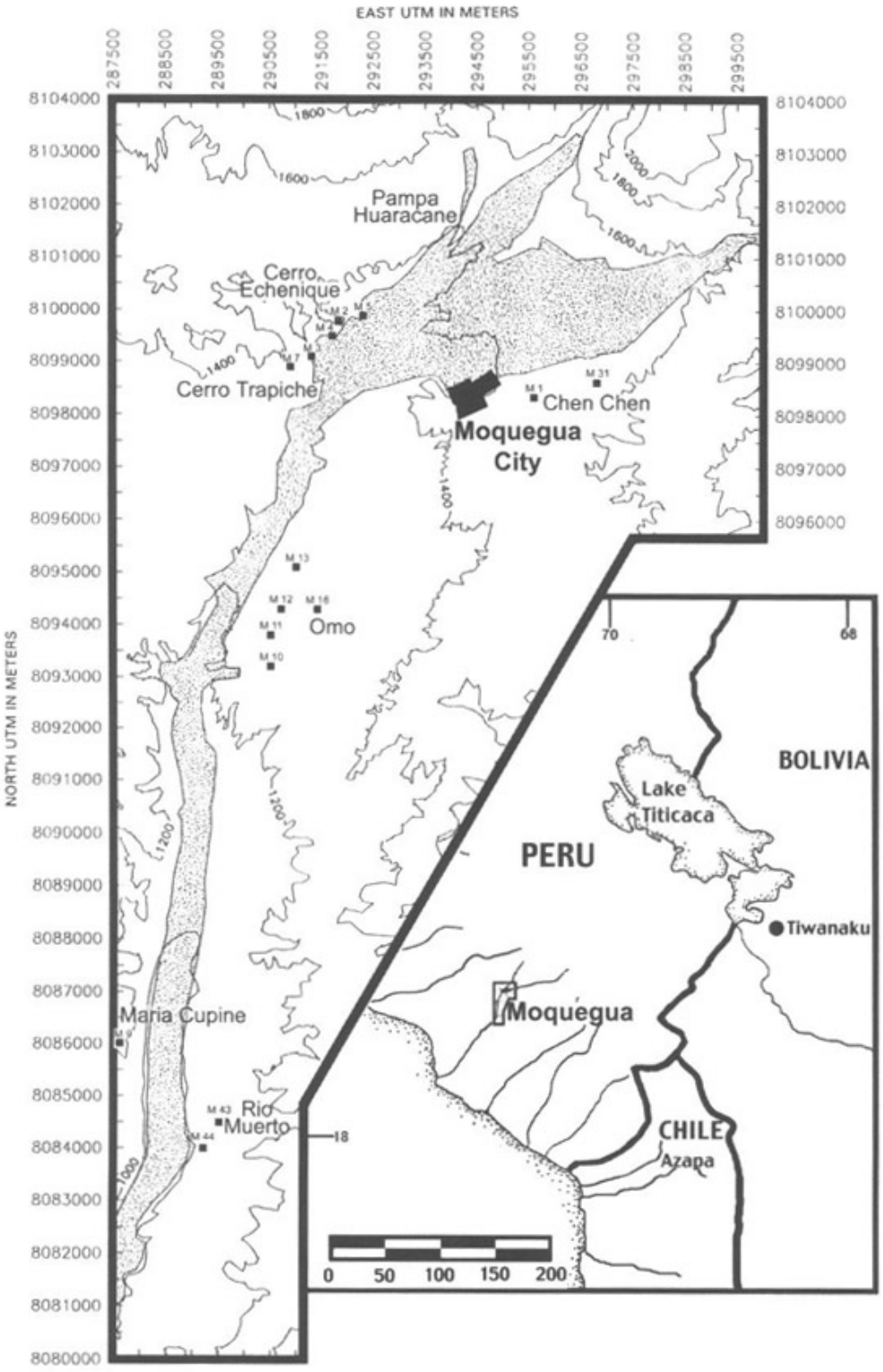

Figure 4: Major site groups of the Moquegua Valley (after Goldstein 2005: Figure 5.1)

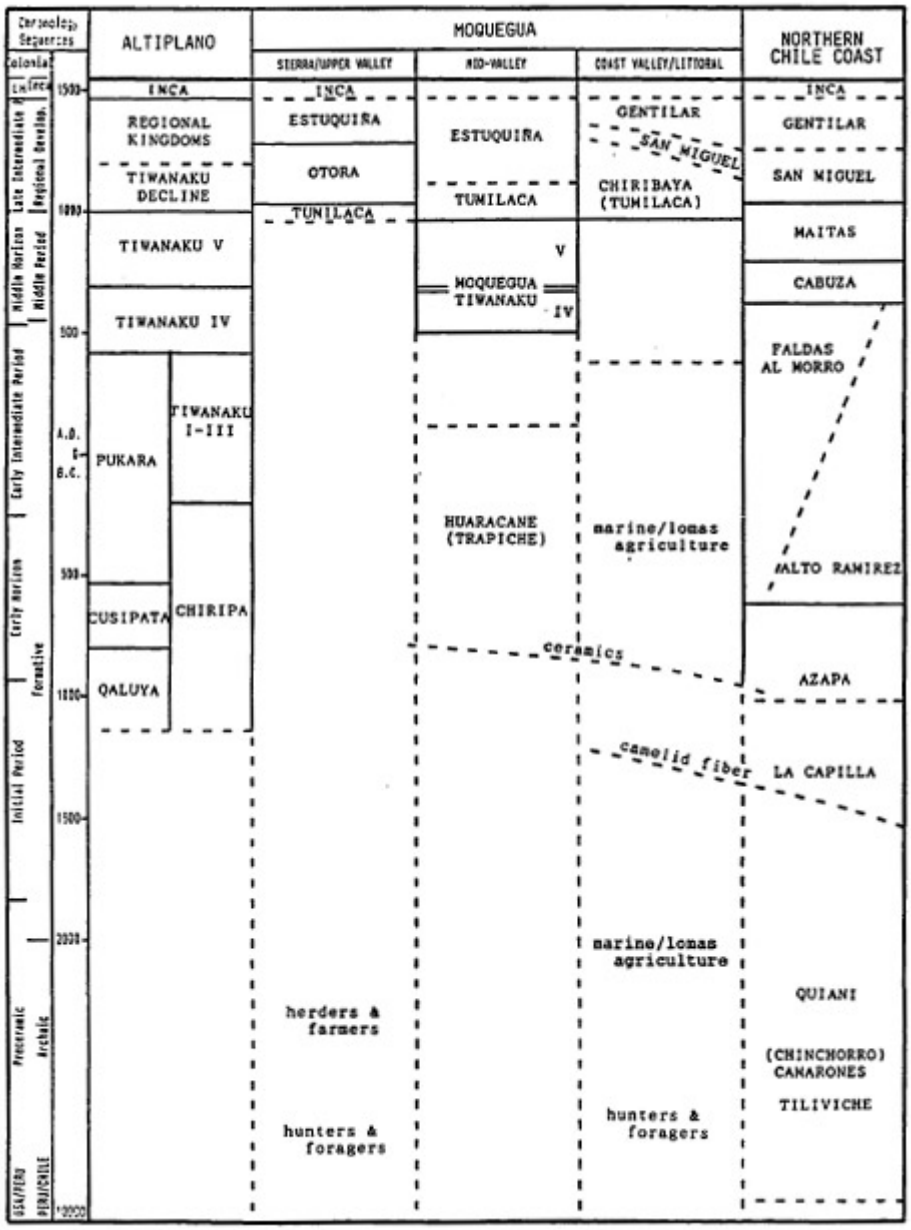

Figure 5: Timeline of cultural developments in the Moquegua Valley and nearby regions (after Clark 1993: Figure 1.6)

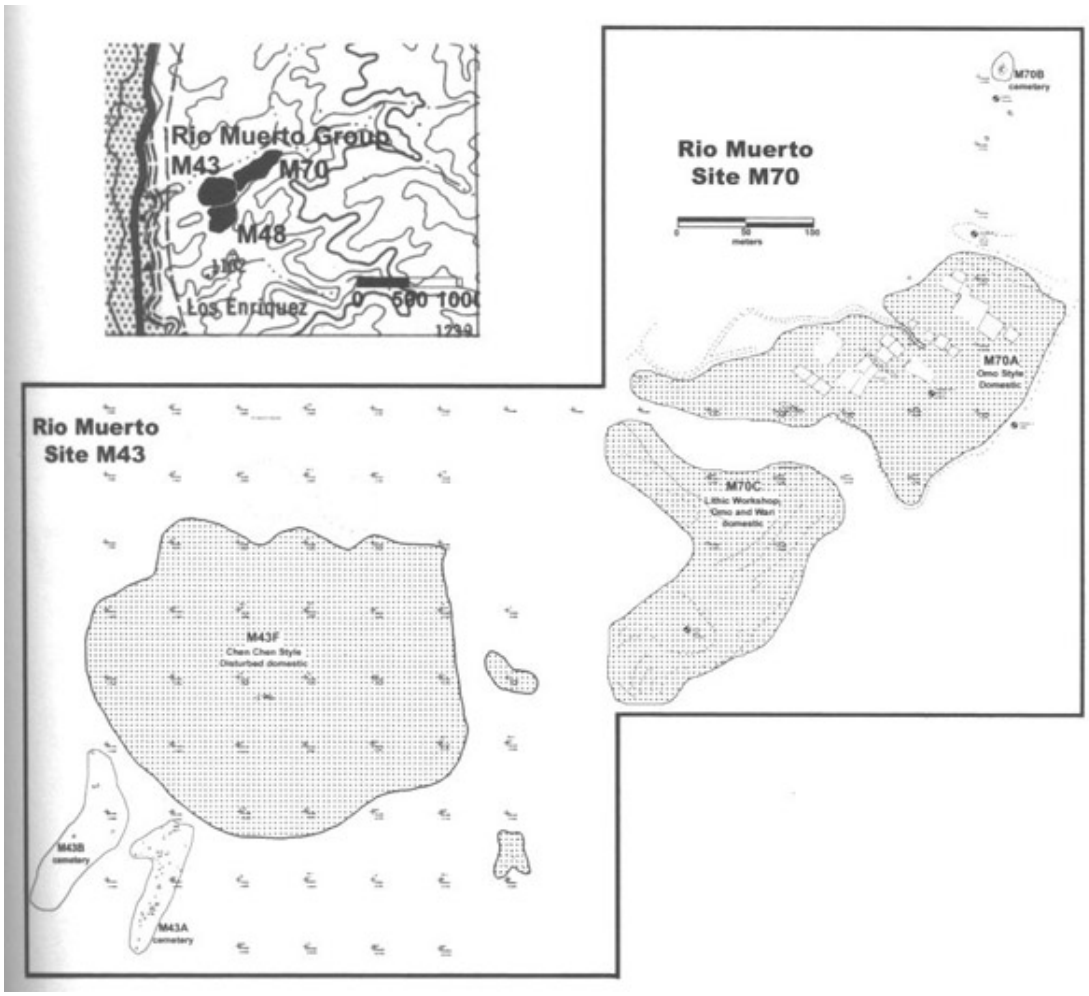

Figure 6: The Río Muerto site group (after Goldstein 2005: Figure 5.14)

Figure 7: An unusually well-preserved adult mummy bundle from the M43 "A" cemetery (tomb R47) (sex unknown) (photo by the author).

Figure 8: The complete mummy bundle of a child (age unknown) from the M43 “A” cemetery

Proyecto Río Muerto 2008 (Beth Plunger's Master's)

Textile Analysis Form -After Oakland 1986; Clark 1993; Cassman 1997; Bergh 1999. (Attach copies of relevant forms and drawings)

Specimen # (#'s):_____
Site/Sector:_____
Rasgo/Level:_____
Provenience:N_____E_____
Date (Recovery/Analysis):_____/_____
Initials:_____

Textile Type (if known):
_____
_____
_____
Warp Material:_____ Weft Material:_____
Other Material?:_____
Max Length (Warp-wise):_____ Max Width (Weft-Wise):_____
Warp Spin/Ply:_____ Weft Spin/Ply:_____
Warp Diameter:_____ Weft Diameter:_____
Warps/cm:_____ Wefts/cm:_____
Fabric Count (Warps/cm x Wefts/cm = Elements/cm^2): _____
Weave Type:
_____
_____
_____
_____
Color/Pattern/Design:
_____
_____
_____
_____
_____
_____
Other Observations/Comments (sketches may be placed on back of sheet):
_____
_____
_____
_____
_____
_____
_____
_____

Figure 9: Basic Textile Analysis form

Figure 10: Guaman Poma de Ayala's illustration of an upright Inca loom. Note that the warps are strung vertically to the weaver (Guaman Poma 2006 [1613]:661)

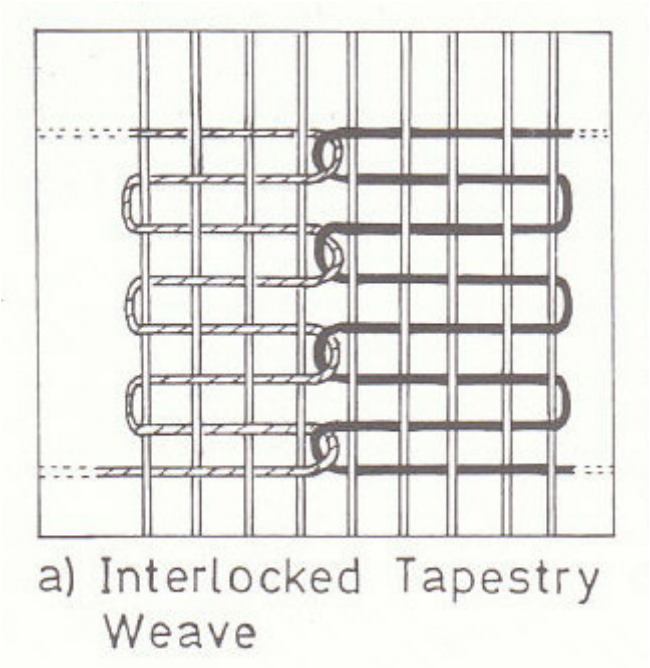

Figure 11: Interlocked Tapestry Weave (after Feltham 1989: Figure 13)

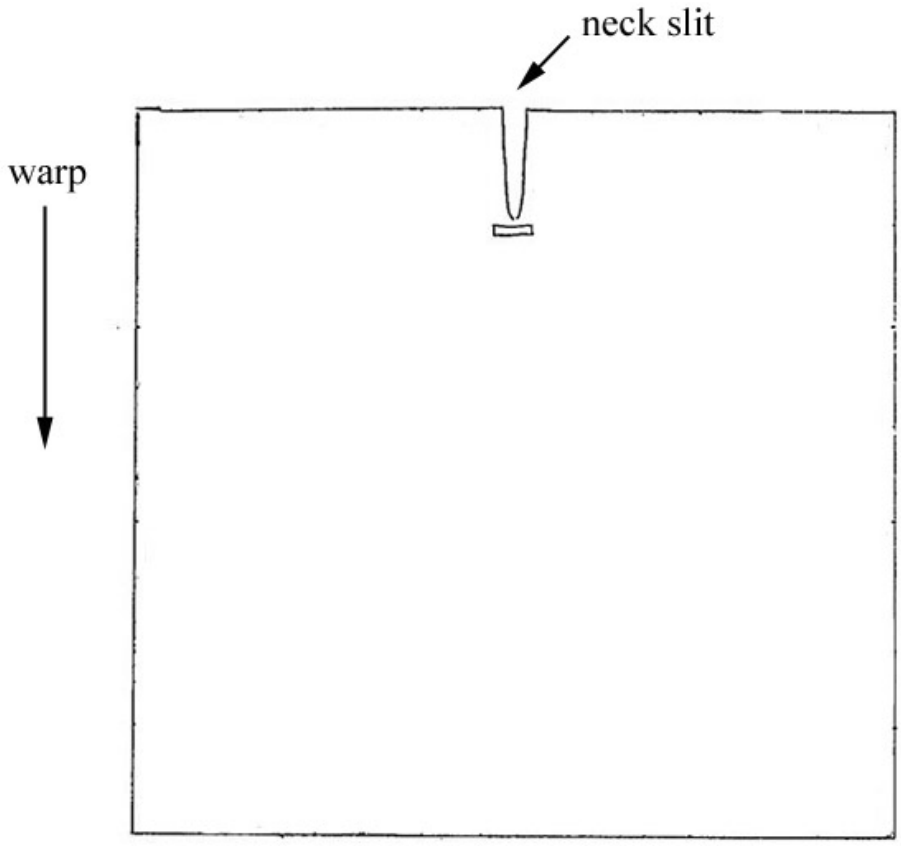

Figure 12: Tiwanaku shirt (shown folded and assembled) (adapted from Oakland 1986:Figure 22)

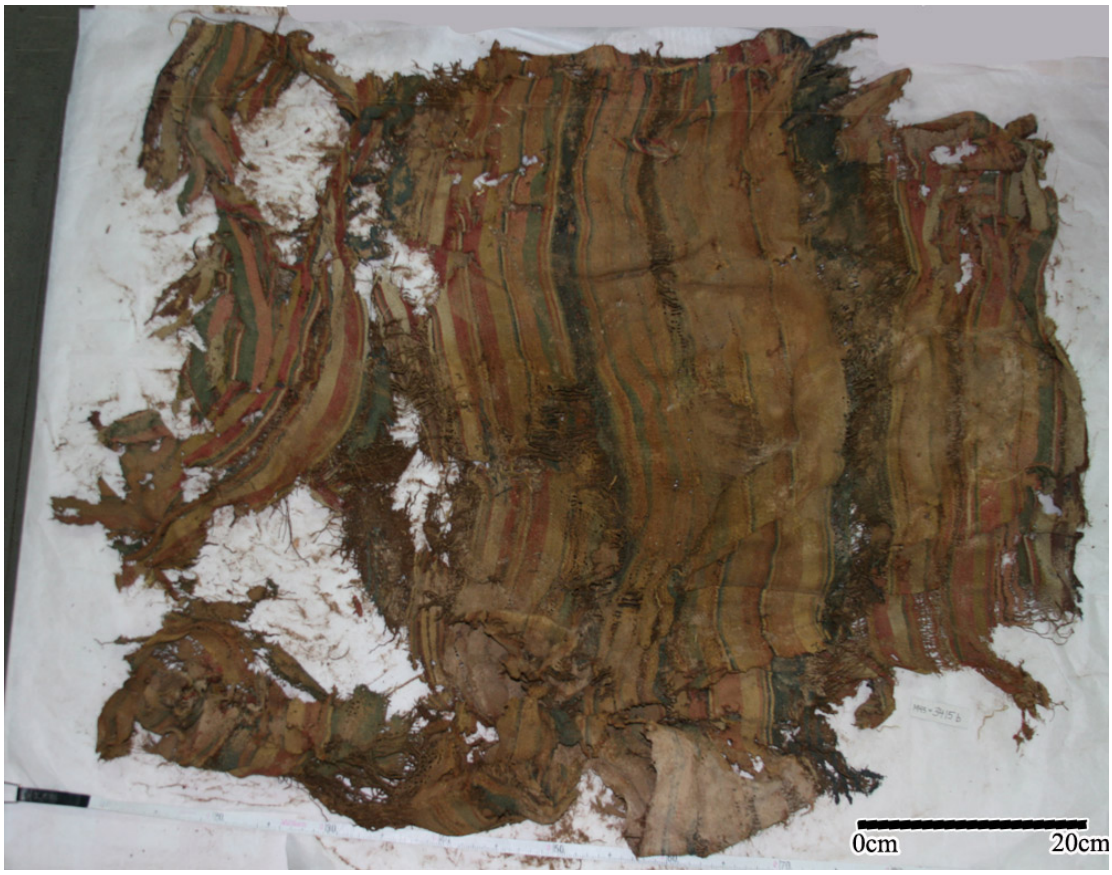

Figure 13: A nearly complete warp-striped shirt (M43=3415b) recovered from the tomb of an adult male (possible a ritual specialist) (R30) (photo by the author).

Figure 14: A close-up shot of the neck slit and embroidered neck plaque of a warp-striped shirt (M43=4146a) found with an adult male (R37) (photo by the author).

Figure 15: Ch'uspa bag from tomb R52 (M43=4516) (photo by the author)

Figure 16: Ch'uspa bag (70.19.20a) from Niño Korin (after Wassen 1972: Figure 48)

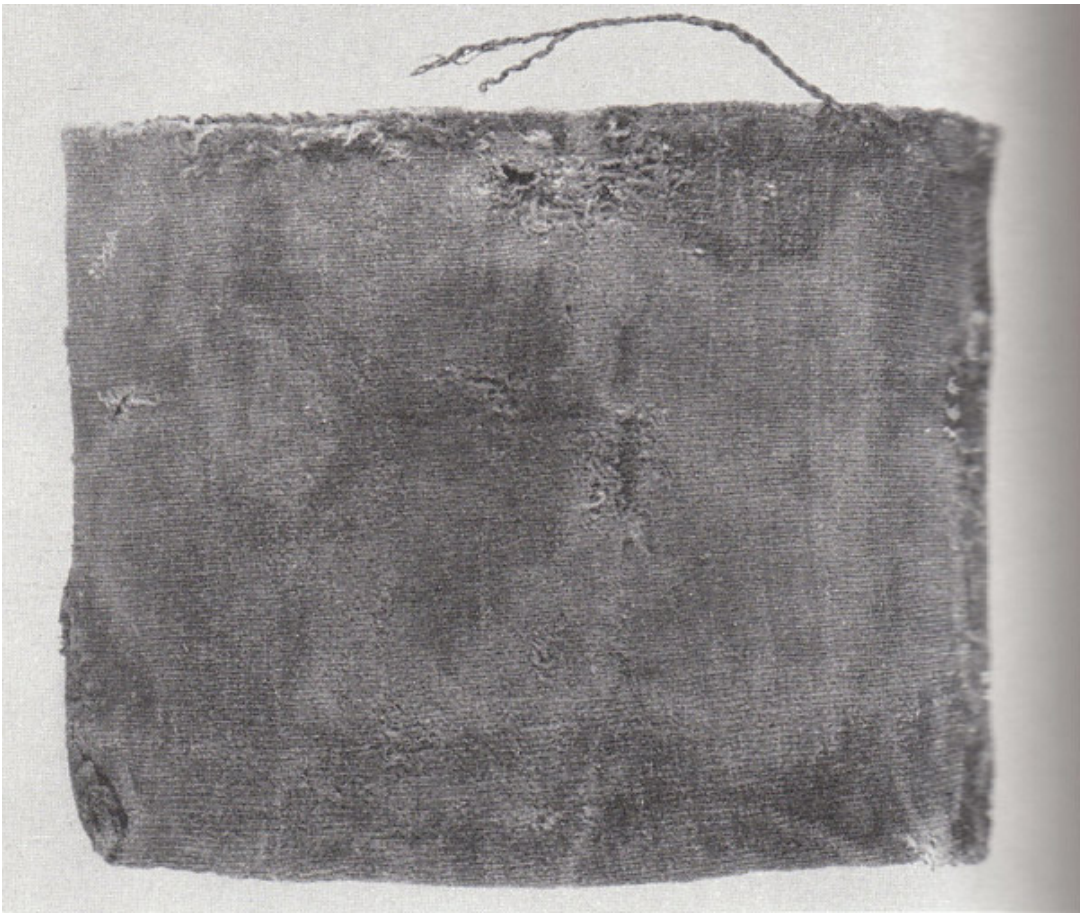

Figure 17: Ch'uspa bag (70.19.52a) from Niño Korin (after Wassen 1972: Figure 51)

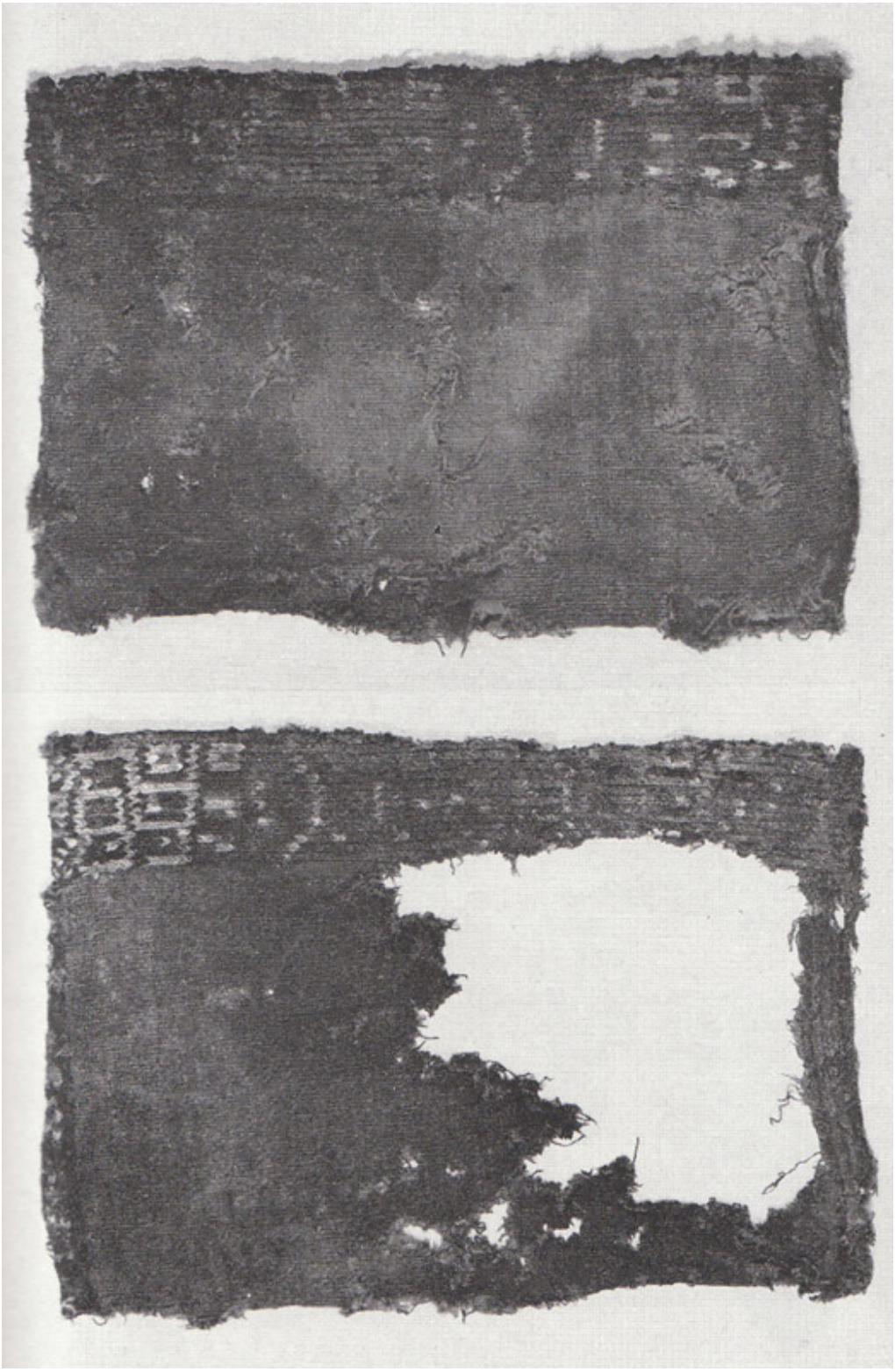

Figure 18: Ch'uspa bag (70.19.53) from Niño Korin (after Wassén 1972: Figure 52)

Figure 19: Ch'uspa bag (70.19.58a) and smaller bag (70.19.22) from Niño Korin (after Wassén 1972:Plate 3)

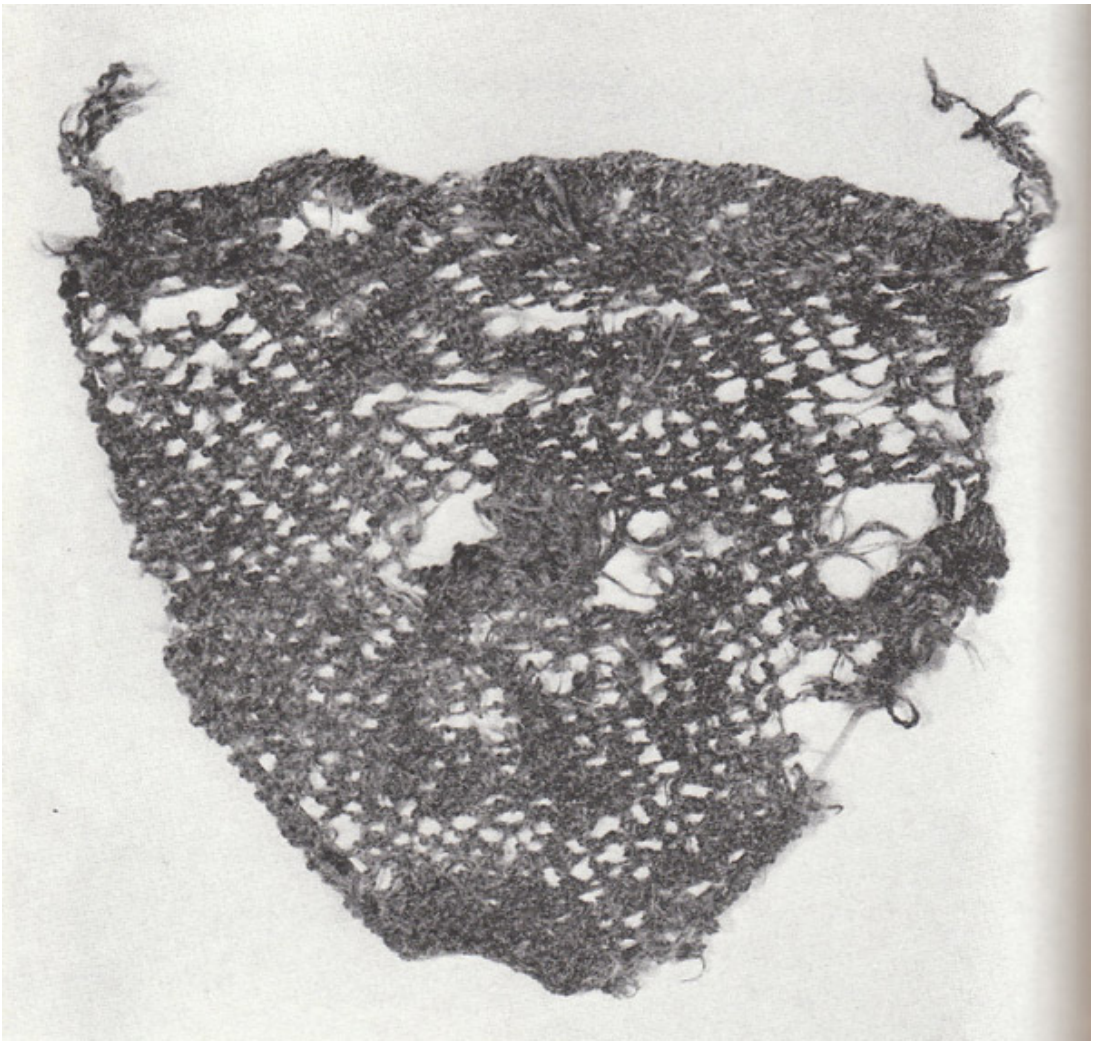

Figure 20: Net bag (70.19.54) from Niño Korin (after Wassén 1972: Figure 53)

Figure 21: Net bag from R30 at M43 "A" (M43=3417) (photo by the author)

Figure 22: Pañuelo cloth from R37 (M43=4146c) (photo by the author)

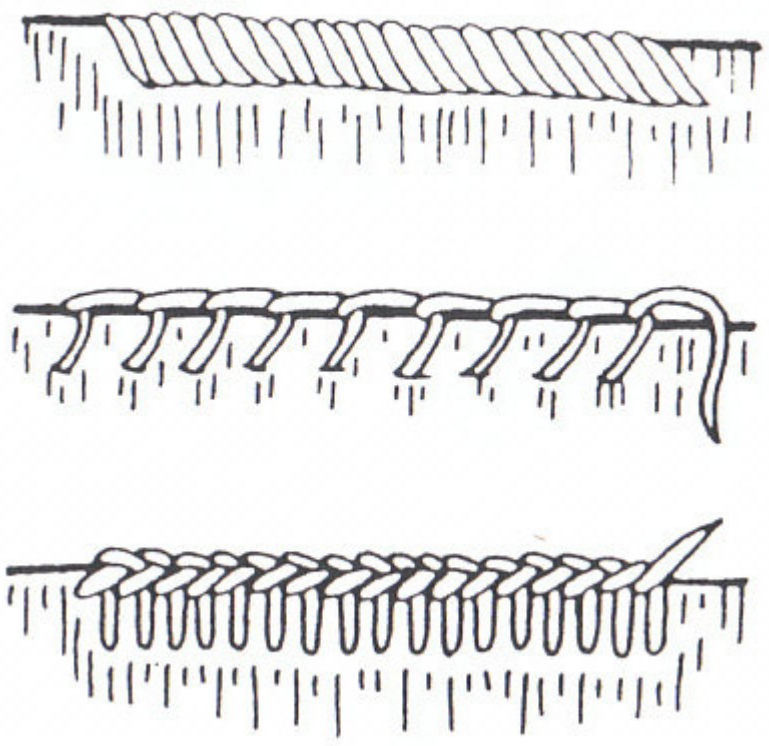

Figure 23: Methods used to reinforce the selvedges of Tiwanaku-style garments (After Minkes 2005: Figure 3.14)

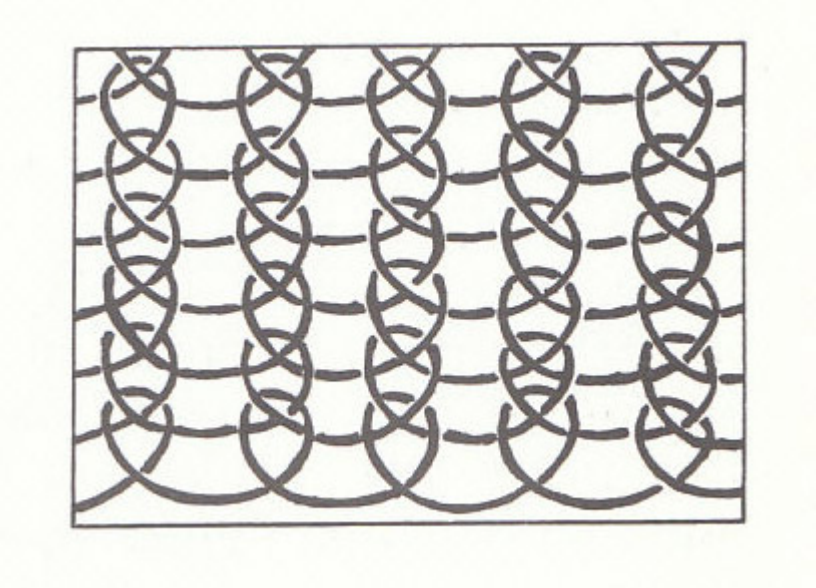

Figure 24: Cross-knit loop stitch (after Feltham 1989:Figure 25)

Figure 25: Partially intact blanket (M43=3415a) from the tomb of an adult male (R30) in M43 "A" (photo by the author)

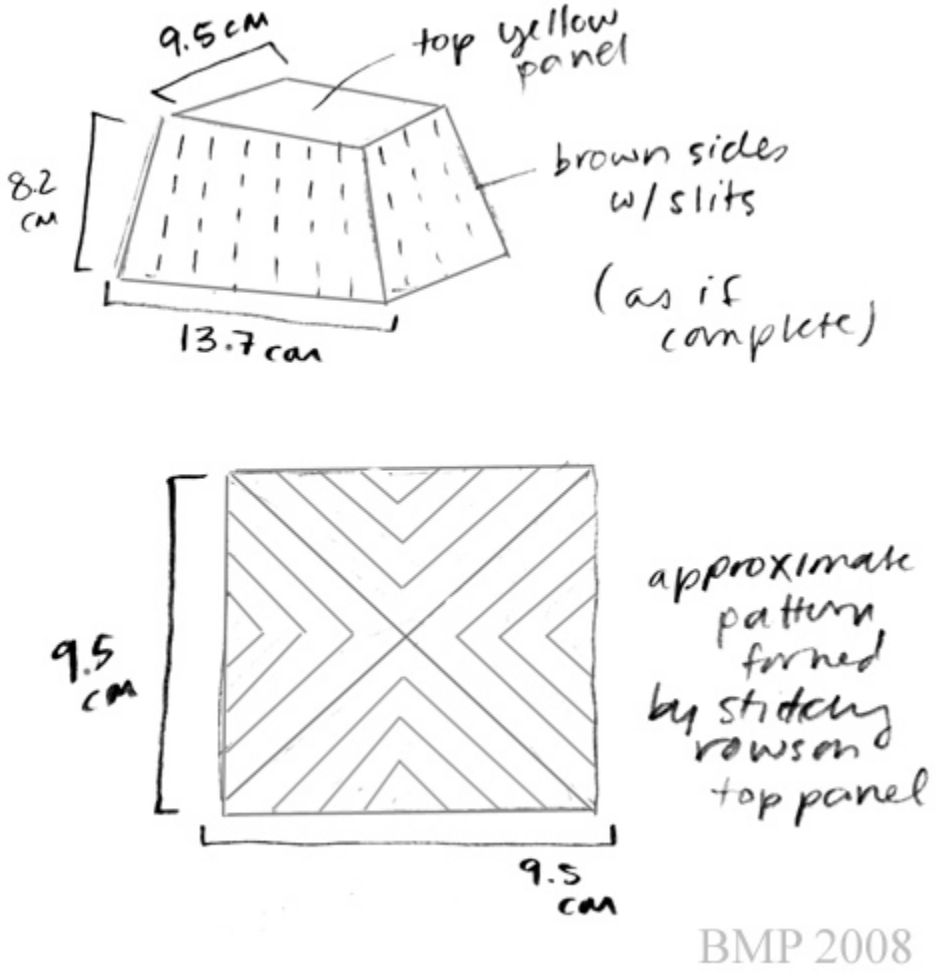

Figure 26: Drawing of a hat (M43=4158) found in the tomb of an adult male (R37) in M43 "A". The hat was only partially complete, which is not indicated in the drawing (drawing by the author)

Figure 27: Fragments of a colorful four-pointed hat (M43=4505a) found in the tomb of a child (R52) in M43 "A" (photo by the author)

Figure 28: The head of the mummy bundle of a child (R58) from M43 "A", showing fragments of blue "feather holder thread"(M43= 4586b) still holding cane feather holders in place (photo by the author)

Figure 29: Close-up of a shirt (M43=3118a) found with the remains of a subadult (R12) in M43 "A" showing the presence of either warp darning or decorative supplementary warps (photo by the author)

Figure 30: The cross-knit loop stitch embroidered corner of a possible pañuelo (M43=4586c) from the tomb of a child (R58) in M43 "A" (photo by the author)

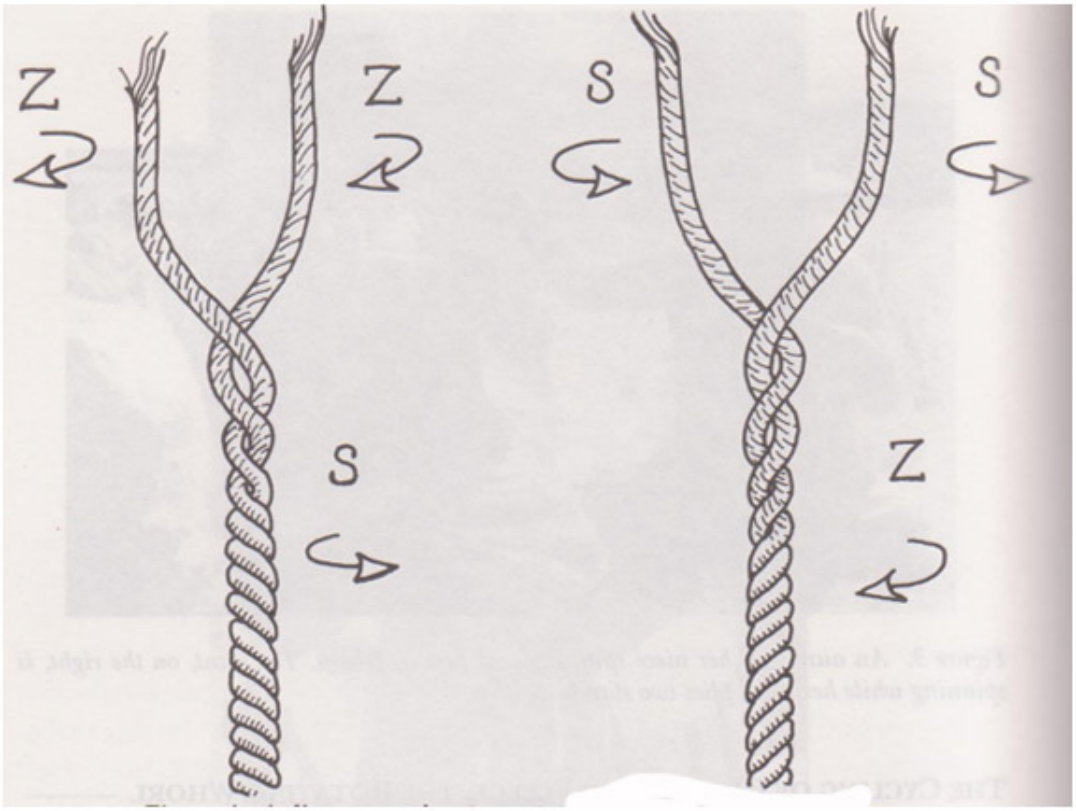

Figure 31: Spin and ply directions (After Dransart 1995:Figure 4)

Figure 32: Photo showing motif on the tapestry shirt (M43=4507) recovered from the tomb of a child (R52) in M43 "A" (photo by the author)

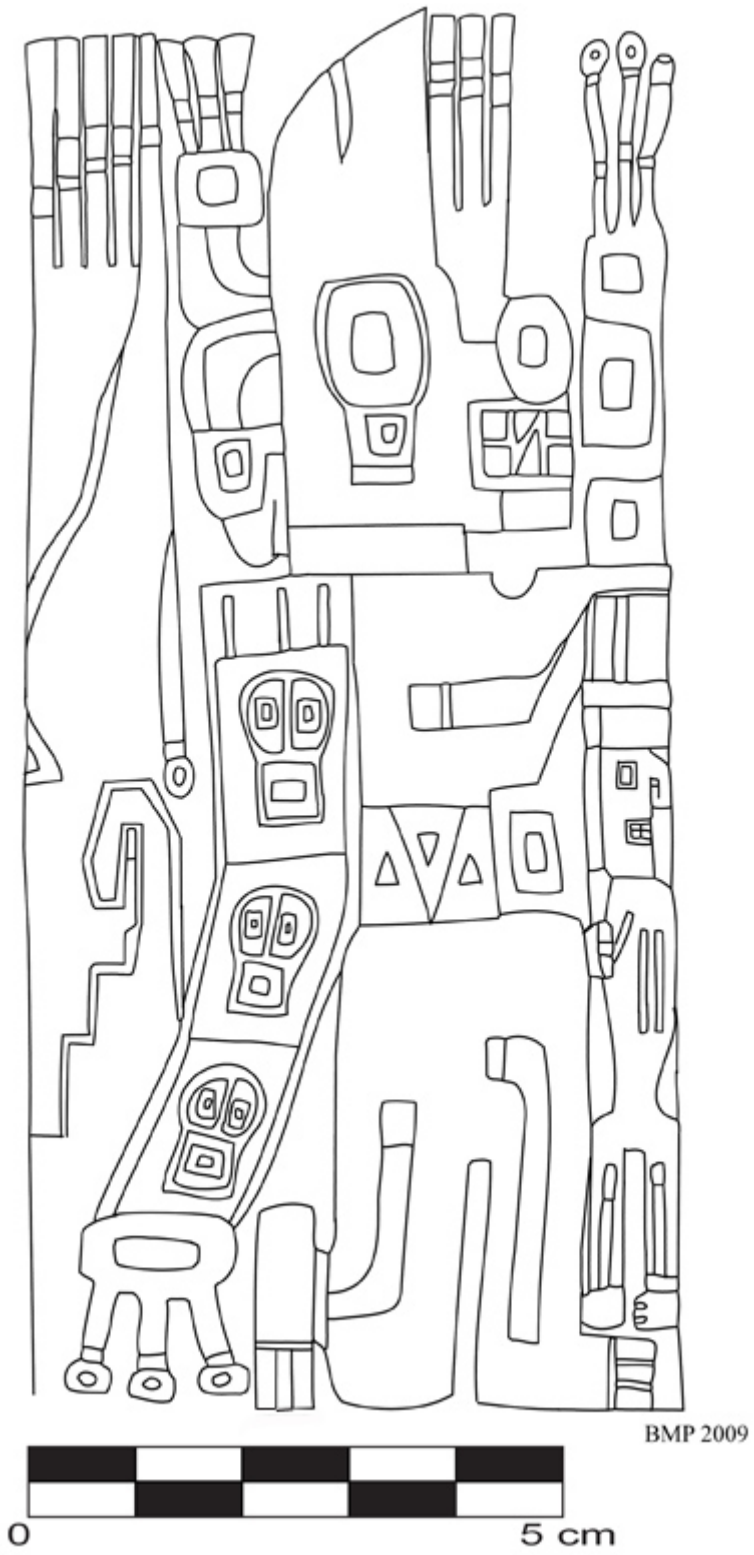

Figure 33: Sacrificer figure from R52 tapestry tunic (M43=4507) (drawing by the author, from photographs)

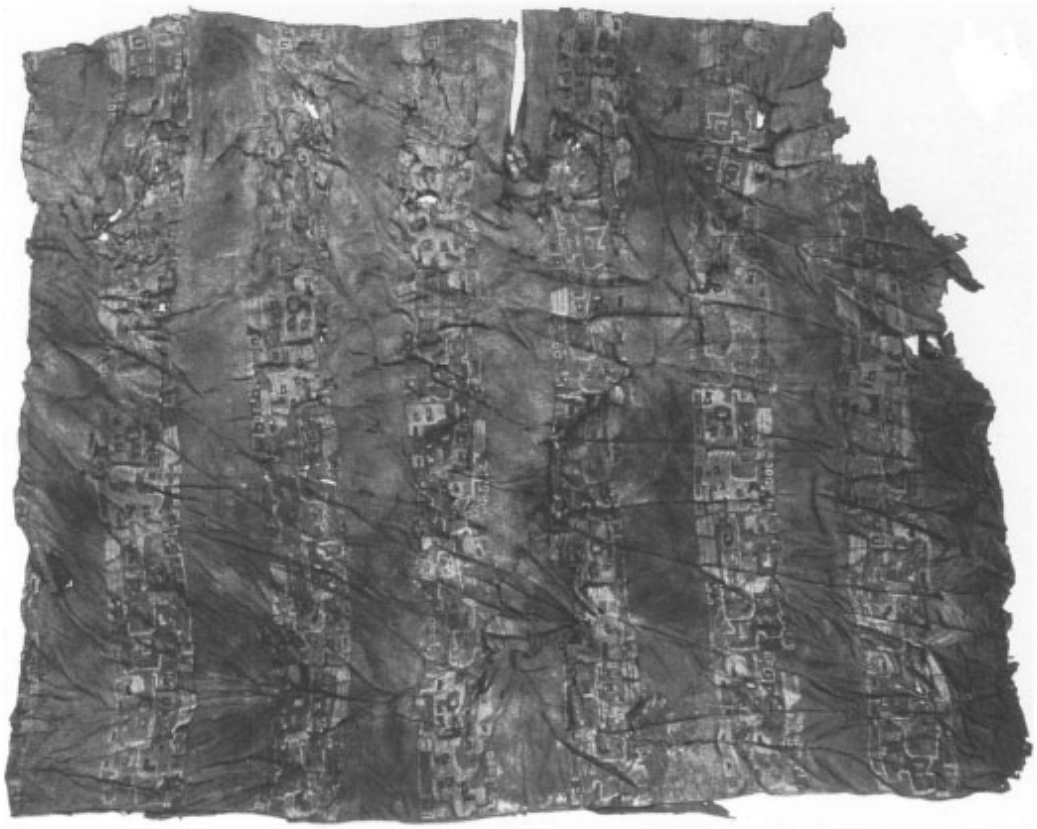

Figure 34: Tiwanaku tapestry tunic from the Coyo Oriental cemetery at San Pedro de Atacama (After Oakland Rodman and Cassman 1995: Figure 4)

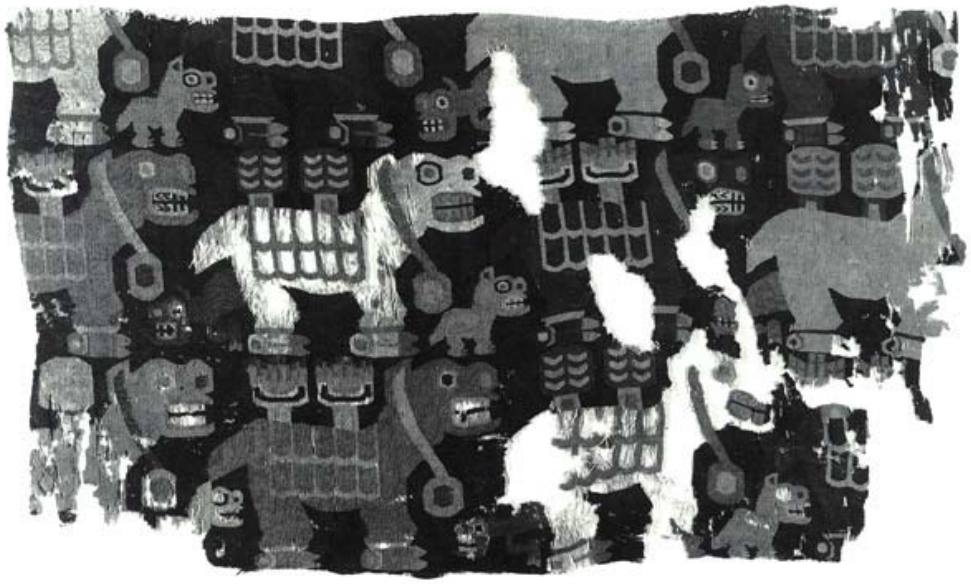

Figure 35: Wari tapestry fragment showing camelids giving birth (after Stone-Miller 1992:Figure 11.12)

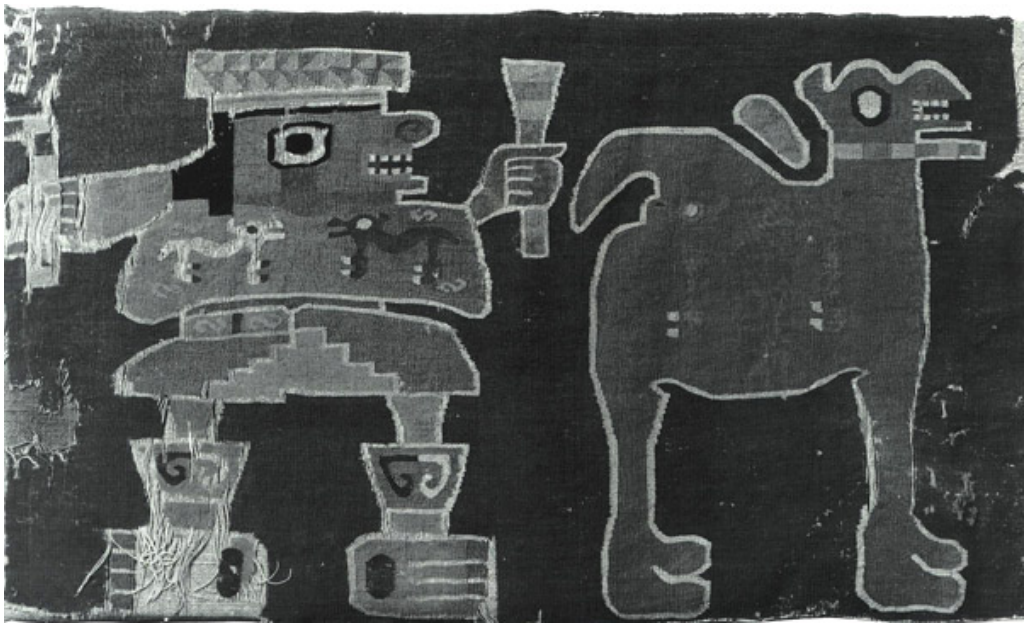

Figure 36: Wari tapestry fragment showing a pregnant female camelid and its caretaker (after Stone-Miller 1992:Figure 11.12)

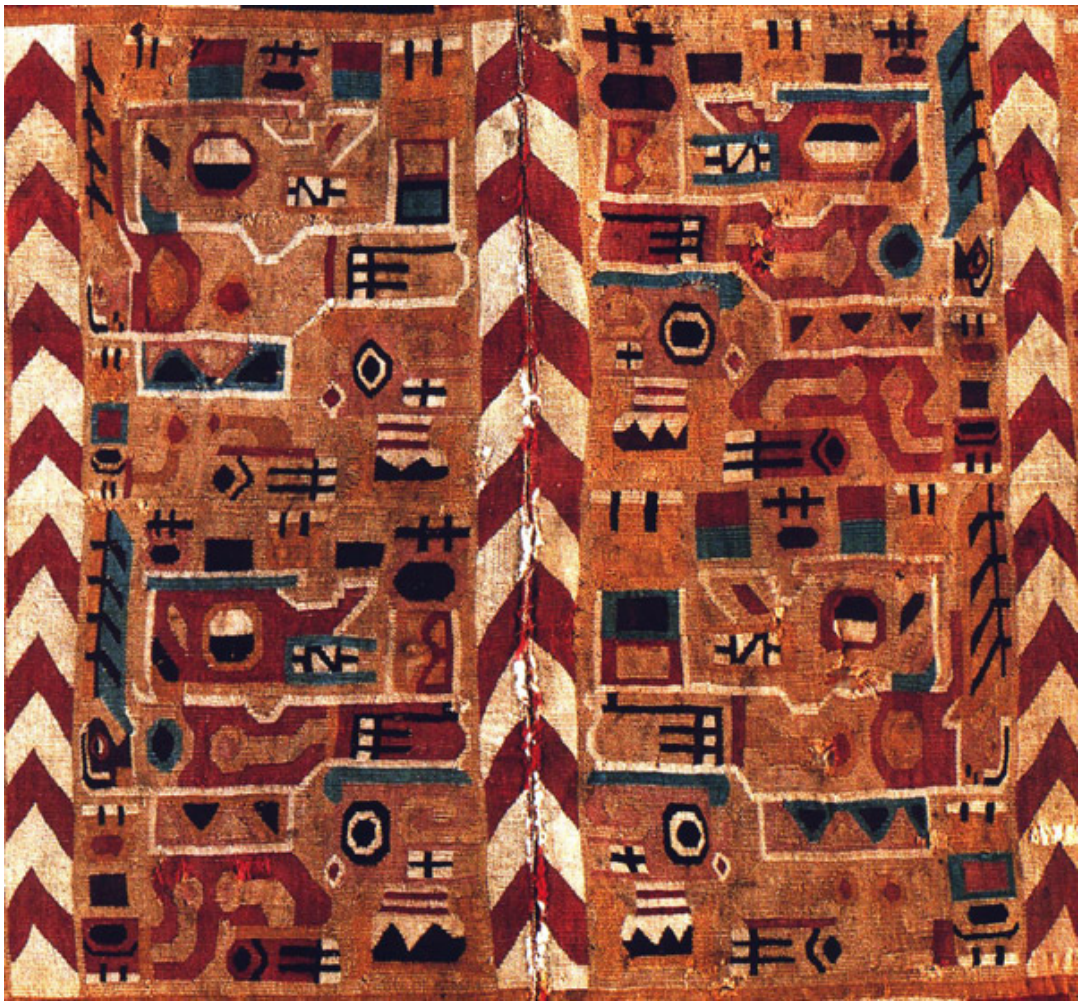

Figure 37: Wari tapestry fragment showing camelid sacrificer figures (after Stone-Miller 1992: Figure 11.10)

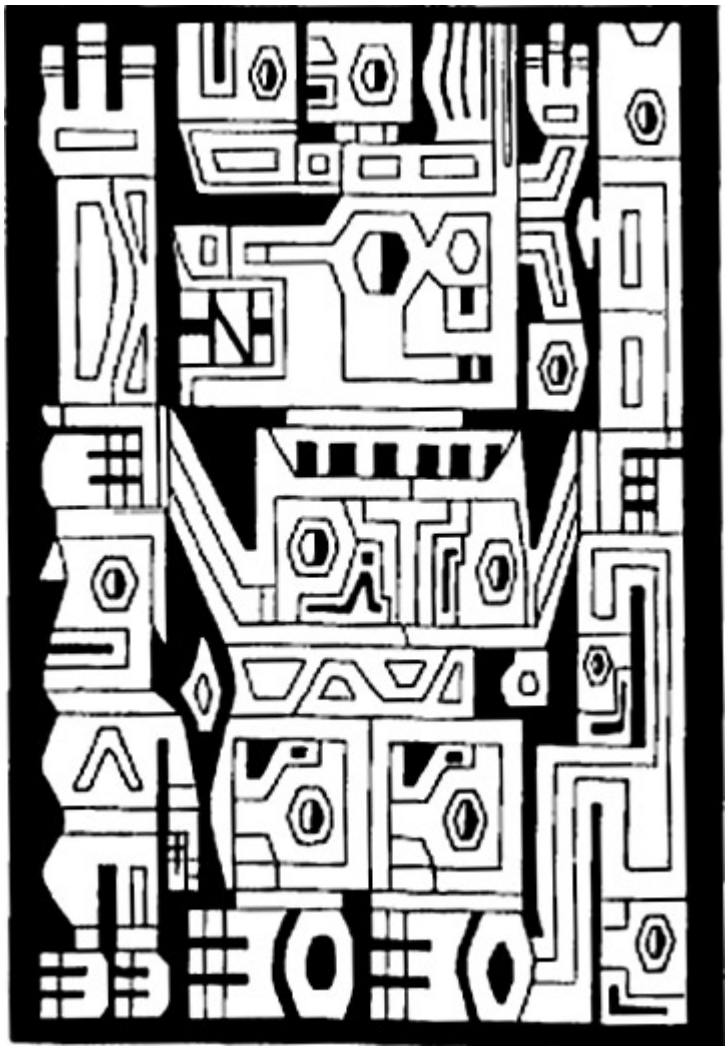

Figure 38: Camelid sacrificer figure from a tapestry tunic (provenience unknown) (after Sawyer 1963:28)