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Warp the Loom – Wrap the Dead
Trapezoid shaped textiles from the Chiribaya culture, South Peru, AD 900-1375

Wynne Minkes

Trapezoid shaped garments are not common in the Andean Pre-Columbian cultures. Generally, men and women wore sleeveless tunics made from the whole woven fabric without cutting and sewing it into any shape as did the Europeans for instance. The lengths of these tunics ranged from chest to ankle. Often the shorter tunics were complemented by loincloths or skirts. The number of fabrics needed to make these garments would vary: one web folded in half or two or more webs sown together. The warps were hardly ever cut from the loom bar and wefts would be inserted up to the heading cord with the use of a needle. Thus, in order to make a flaring garment, the fabric itself had to be woven into a trapezoidal shape. In the Chiribaya culture (AD 900-1375) in the extreme south of Peru, the flaring tunic was a well known garment shape that would become ever more common and more flaring over time.

While studying a part of the archaeological textile collection from the Osmore valley in the extreme south of Peru (1999-2002), the author found two different methods of creating such flaring form. Two textiles had been found wrapped around the body of an adult man buried at the Chiribaya section of the site La Cruz. One was a loincloth that had been worn around the groin as it would have been in life; the other, wrapped around the man in a seated, fetal position and also covering his arms and feet, was a tunic, secured by wool ropes. A second flaring tunic, made with entirely different structural and decorative devices, was found at the coastal Chiribaya site of Boca del Río. This second tunic is included here because it seems to form a link between the two textile traditions found in this area.

Chiribaya-style loincloth

The loincloth¹ had been made of two webs, each woven in a trapezoidal shape. It had been woven in warp-faced plain weave with all selvages finished on the loom – which implies that a loom was used that itself had a trapezoidal shape. The most likely type of loom would be a (mobile) horizontal one fixed into the ground by pegs, with its outer bars placed obliquely in a trapezoidal shape. As a result of the shape of the loom, the warps have different lengths at both weft selvages (Fig.1). Modern Quechua weavers to the northeast of Lake Titicaca still use such a trapezoid-shaped horizontal loom to make a two-web poncho. The weaving procedure started parallel to the loom bar, but soon discontinuous wefts were added to fill up the prolonged corner until the wefts finally can be inserted perpendicular to the warp elements (Minkes 2000).

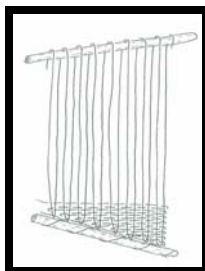


Figure 1. Oblique loom with trapezoidal shaped web (drawing by author).

¹ This specimen is currently stored in Centro Mallqui in the Osmore Valley (00/799-1000.03); originating from the Chiribaya section of the burial site at La Cruz, tomb 1, mummy 1000.

The loincloth's webs had been sewn together at the longest warp sides, creating a hexagonal shape measuring 118 x 60 cm at its widest. The loincloth would have been tied around the waist by means of the strings attached to its sides, with the outer weft selvages left to hang at the front and back (Fig.2). The loincloth was decorated with solid warp stripes with an outer band of rhomboid figures. This pattern was achieved by using a set of warp elements repeated in the weft-twined finishing of its warps' ends. Loincloths were quite common in the Chiribaya culture and are always found in association with adult male burials (Clark *et al* 1993, app.1-13), but such hexagonal loin cloths appear to have been uncommon in this area.

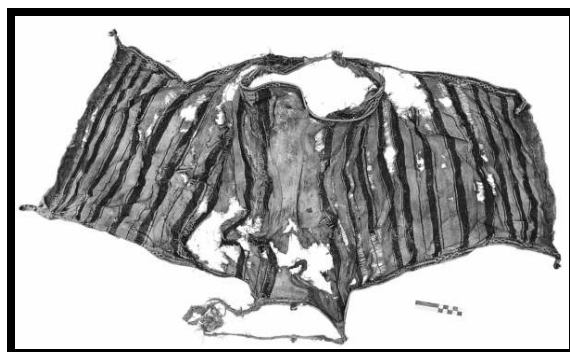
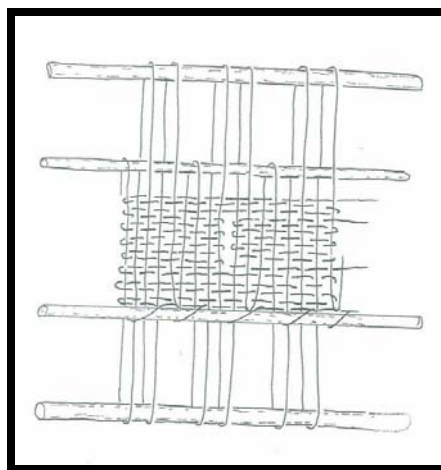


Figure 2. Loincloth made of 2 trapezoidal shaped webs (photo by author, courtesy of Centro Mallqui, Ilo, Peru).

Chiribaya-style tunic

The Chiribaya tunic was made of a single web in warp-faced plain weave². It measures 85.5 x 105 widening to 175 cm at the shoulders when worn, and would have been double this length when woven on the loom. The fabric had been folded horizontally along the shoulders, with a vertical neck slit woven into it by discontinuous wefts. The arm openings had been left open when the lateral sides were stitched together. Thus, in order to produce the flaring shape of the garment, the web had to have a hexagonal shape on the loom (Fig.3). The shape was achieved by adding discontinuous supplementary warps to the fabric at chest level to the front and back of the garment. Some garments were found with this technical device repeated twice or thrice, which made the garment much wider at the shoulder: whereas the bottom may have been rather tight around the hips or thighs, in contrast, the shoulder line might have reached all the way down to the wrists.



² This specimen was found in the same tomb as the loincloth, La Cruz, tomb 1, mummy 1000; also stored in Centro Mallqui (00/799-1000.02).

Figure 3. Loom with extra bars and discontinuous supplementary warps (drawing by author).

Experienced Aymara weaver Rosa Choque from Centro Mallqui in Ilo experimented with inserting the supplementary discontinuous warps during the warping procedure as well as during the weaving procedure. Though both options were found to be possible, the most plausible (easier and faster) method of inserting these warps was found to be adding during the initial warping of a horizontal loom, as all discontinuous warps eventually need to be added to the heddle rod, between the looped continuous warps.

The warping moves in a figure-8 movement around the two outer bars and then, at a regular interval, discontinuous warps are added by returning the warp over two extra bars placed in the middle. Next, one of the extra loom bars is replaced by an external loom bar, lashed with spiraling cord to the warps – including the single or doubled heading cord. This heading cord forms the scaffold weft around which the discontinuous warps turn. Since it is the continuous warps that endure the main tension of weaving, the scaffold first weft does not need to be extra thick. The weaving of a trapezoidal shaped fabric starts between the extra loom bars and is finished with a needle as if it were an independent fabric, before the weaver moves on to the two extensions without the discontinuous warps. The transition between the widened middle section and the narrower ends is made fluent by adjusting the length of the wefts pulled through the shed. When the garment is finished, the addition of discontinuous warps is only visible in the warp density.

This particular tunic had been decorated with the characteristic Chiribaya patterning of a few broad outer stripes (the exact number and sequence of stripes may vary) in bright to dark red with a reddish to blackish purple, flanked by thin stripes in repeating colors, with a centre in the light shade of natural brown alpaca wool (Fig.4). Typical of these lateral stripes is that the right and left side repeat the color sequence instead of mirroring it, resulting in a subtle asymmetrical appearance. Sometimes these stripes change color at the shoulder by use of discontinuous warps, although that is not the case in this specimen.



*Figure 4. Trapezoidal shaped tunic made of a single web.
Photo by author, courtesy of Centro Mallqui, Ilo, Peru.*



Figure 5. Tunic made of two trapezoidal shaped webs. Photo by author, courtesy of MNAAH, Lima, Peru.

Trapezoidal shaped tunic from Boca del Río

A third type of trapezoidal shaped garment from the Osmore valley (Fig.5) is a tunic found at Boca del Río (also known as San Gerónimo), a late-Chiribaya site that specialized in maritime exploitation³. Though the adult-sized tunic from Boca del Río flares at the shoulders like the tunic described above, this specimen is manufactured in an altogether different way: it is made of two webs with seams running along the shoulder line and lateral sides. It measures 109 cm in length x 75.5 cm at the bottom widening to 97.5 cm at the shoulder. In addition, this garment is woven in dovetailing tapestry structure. The warp elements are oriented horizontally when worn, and the neck split and arm openings placed vertically, the neck split made by discontinuous warps. The shape and structure imply that a trapezoidal shaped loom had been used to create this garment. Though found in a Chiribaya context and having a trapezoidal shape, this tunic is a unique specimen: the Chiribaya are not known to have used tapestry structure in any type of weavings, nor are they known to have applied the Tiwanaku-style designs found here. The Tiwanaku was a great culture with its centre in the Titicaca Basin and agricultural colonies and trade partners in the higher reaches of the Osmore Valley around AD 550-950. After its collapse, Tiwanaku colonists moved toward the water sources higher up the Osmore Valley, as well as toward the coast, where they are stylistically known as Ilo-Tumilaca/Cabuza.

Nonetheless, if this tunic represents a Tiwanaku heirloom, that fact does not explain its trapezoidal shape – which was unknown among this highland people. This discrepancy may suggest that this specimen was a locally made copy of an older Tiwanaku-style dovetailed tapestry fabric (which indeed had been present in the Tiwanaku colony upriver) in the new fashionable trapezoidal shape. Or vice versa, it may represent a tunic from a related but unknown highland population that did know flaring tunics, inspiring the Chiribaya to create their trapezoidal shaped tunics in their preferred warp-faced plain weave structure.

³ This specimen is currently stored in the MNAAH in Lima, #3479 (#01352), 04-CS-02-03.

The manufacturing of this tunic would have required a combination of the Chiribaya trapezoidal loom and discontinuous warps and scaffold wefts for the neck slit; with the Tiwanaku dovetailing tapestry structure and its large scale figurative designs. The two mirrored personages on this tunic represent two creatures with an anthropomorphic body and zoomorphic head, wearing tunic and hat, each holding a spear thrower in one hand and a trophy head in the other. Minkes (2005, 179-185) identified the zoomorphic head as an aggressive leading llama, based on the shape and position of its teeth, nose, ears, and eyes, and the bell around the neck still worn by leading llamas.

Chiribaya versus the Tiwanaku/ Ilo-Tumilaca/Cabuza textile tradition

The agro-maritime Chiribaya are believed to have lived in the narrow Osmore valley for many centuries before the agro-pastoral Ilo-Tumilaca/Cabuza arrived (Lozada 1998, 105-109, 176; Owen 1993, 108-113, 334), rather than being descendants of the Tiwanaku as suggested by Boytner (1998, 332-333), Clark (1993, 99) and Stanish (1992, 91, 106). Beyond doubt, many Chiribaya traits were derived from the highland Tiwanaku and Pukara cultures: a preference for alpaca wool versus locally grown cotton despite the warm coastal climate, for 2-ply warps and wefts of medium to tight twist, warp-faced plain weave structure, and the use of vertical stripes with a repetition of figurative designs contained within blocks in opposite color combination and mirrored postures (Jessup 1991; Owen 1993, 110-112, 334; Stanish 1992, 91, 106),

However, the smallest details of the Chiribaya and the Ilo-Tumilaca/Cabuza textile traditions yield subtle but valuable clues about the distinct origin of these two groups, one from the other. For instance, the Chiribaya were found to spin and ply thicker warp and weft elements than the Ilo-Tumilaca/Cabuza, suggesting that spinners learned the skill within their own group. The latter generally used dyed yarns with smaller diameter than the natural colored yarn, implying that dyed yarns had been imported from somewhere else. Analysis of the dyestuffs of Ilo-Tumilaca/Cabuza and Chiribaya fabrics reveals a different dye tradition. For instance, the Ilo-Tumilaca/Cabuza red and orange dyes were obtained from the *Relbunium* plant (*Relbunium microphyllum* or *Relbunium hypocarpium*), whereas the Chiribaya had obtained red and purple dye stuff from the cochineal shield louse (probably *Dactylopius confuses*, or *D. ceylonicus* or *D. tomentosus*) (Wallert and Boytner 1996, 854-860).

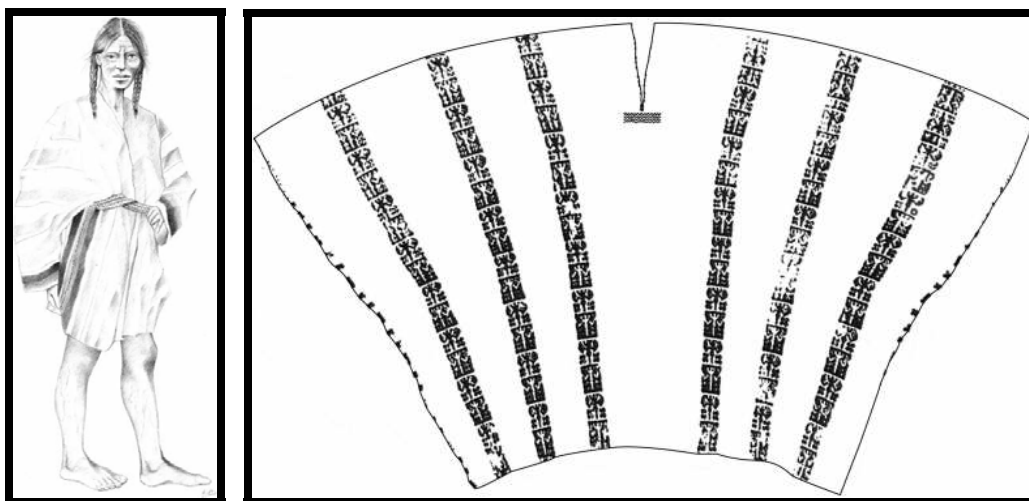


Figure 6 (left). Man wearing Chiribaya-style trapezoidal tunic.
Drawing by Erick van Driel, Leiden University, Netherlands.

Figure 7 (right). Chiribaya-style trapezoidal tunic with patterned stripes (after Adelson and Tracht 1983, 51).

Although the Ilo-Tumilaca/Cabuza and Chiribaya both wore plain or completely striped tunics – especially the children – they mainly wore clearly distinct garments: the Chiribaya wore the typical tunic described above (Fig.6) plus trapezoidal tunics of red or purple colour, with vertical, patterned stripes (Fig.7). This decoration layout was probably copied from the Tiwanaku interlocked tapestry tunics, but the Chiribaya chose to make them with two complementary sets of warp elements in warp-faced weave. Such decoration by complementary warps was first found in the coastal Paracas culture around 100 BC (Rowe 1977, 69) – which further strengthens the theory of Chiribaya's coastal origin and trade relationships. One set of warp elements would be white, while the complementary set is either plain red or polychrome striped (using red, purple, dark green, and light brown colours). The designs include abstract geometric, zoomorphic, anthropomorphic, or oritomorphic designs, unique to their culture and completely different from Tiwanaku's motifs.

The Ilo-Tumilaca/Cabuza continued wearing the type of garment worn by their Tiwanaku ancestors: either a plain and often rather long tunic of light brown wool color with colorful embroidery covering the lateral seams, using multiple rows of cross knit looped stitches and geometrical designs (Fig.8); or brightly colored tunics with a central area in natural (dark) brown or dyed red shade, flanked by stripes of various widths and colors, their sequence mirrored on both sides (Fig.9). Both types of tunic were square to rectangular or flaring somewhat around the shoulders where the warps were allowed to spread. The choice of the Tiwanaku tunic's colors was soon limited to shades of red, green, blue, yellow and dark brown, with a preference for broad greenish blue stripes in the middle, and two broad stripes at the selvages. Some stripes contained ladder motifs by floating warp elements derived from plain weave, warped in two colors. Various tunics had these two outer stripes changing color at the shoulders by discontinuous warps.



Figure 8. ITC tunic with cross knit looped embroidery. Photo by author, courtesy of Centro Mallqui, Ilo, Peru.

Figure 9. ITC tunic with multiple lateral stripes. Photo by author, courtesy of Centro Mallqui, Ilo, Peru.

The textile collection and the reconstruction of its social-political organization.

The natural mummification in this desert environment, as well as excellent conservation of the textile evidence and its contextual data has allowed a reconstruction of the social-political organization of the Chiribaya people.

The Chiribaya individuals display some gender differentiation in their funerary tradition: the women were usually buried dressed in one or more tunics with a wide belt wrapped around their waist, and another tunic or mantle wrapped around their seated body and covering their heads. They often wore their hair long and either hanging loose or worked into two simple braids. Only female burials were found to contain artefacts related to textile production, such as combs, needles, bone picks, spindle whorls, and looms. This fact suggests that textile production was an exclusive female task in Chiribaya society.

The males, on the other hand, had been buried in one or more trapezoidal tunics, the majority decorated with asymmetrical or figurative stripes. Most males had been buried with their faces exposed, their hair in multiple braids, and often they were wearing a looped hat. Some males had their multiple braids interworked into one broad braid at the back, and these were also the individuals buried with some of the finest and most decorated textiles. This was especially true at Chiribaya Alta, where one male was even found buried with two female attendants. Most males had been buried with a number of cocabags, and some with a fishing kit, miniature boat, ritual axe and the like (Buikstra 1995, 259; Clark *et al.* 1993, 3-6, 25-27). The Ilo-Tumilaca/Cabuza, on the other hand, appears to have lived in a rather ungendered society (Minkes 200, 256-257).

In time, the Chiribaya settlements grew in size and their interments show an increase in quantity and quality of grave goods. The Ilo-Tumilaca/Cabuza, on the other hand, shows a general impoverishment of textile and ceramic material and decrease of habitation sites. Around A.D. 1250 their settlements disappeared altogether as they probably had assimilated into the Chiribaya group through marriage, adoption, or other forms of personal alliance – supposedly attracted by the increasing status and quality of life of the Chiribaya (Owen 1993, 209-214).

The Chiribaya's final century shows an increase of social stratification and economic specialization. They established colonies in the middle and higher reaches of the Osmore drainage, and increased their trade and cultural interaction with the coastal Maytas people to the south. The Chiribaya and the Maytas would develop a near identical artistic tradition that reveals close contacts, similar ideological intentions, and supposedly even a sense of shared ethnicity (Stanish 1990, 154-156).

The Chiribaya culture seems to have come to an abrupt end when the coastal Osmore valley was hit around A.D. 1350 by the largest El Niño event yet identified in the southern Andean region (Reycraft 1998, 27-28, Satterlee 1993, 351-353). Disastrous flooding and mudslides wiped away the majority of their settlements and cultivated fields. The Chiribaya moved towards the coast and higher up the valley. And as they left, they also left behind their proud, colorful clothing and ceramics.

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