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Fist-Braided Bands Used as Headgear in Pre-Hispanic Peru

Geographical and Hierarchical Affiliation through Clothing

In the present day Indian communities in Central and South America, geographical affiliation is most often expressed in traditional clothing and especially in the headgear worn. It was no different in pre-Columbian Peru. In Inca society (*c*. 1460-1532), much of the higher status clothing was produced in central workshops. These textiles (*chombi*) all belonged to the Inca king, who distributed the clothing as rewards or bribes. The clothing therefore also indicated hierarchical position. Headgear, on the other hand, apart from indicating hierarchical position also demonstrated geographical affiliation. Several Spanish chroniclers noted that headgear varied among the various ethnic groups in the Inca Empire. The archaeological information available suggests that most of the braided slings and bands discussed in this article probably date to or around the period of the Inca Empire.

Pre-Columbian Ornamental Slings Used as Headgear

A variety of long braided bands and cords were produced in pre-Columbian Peru. Many are in the form of slings, with a central cradle and a cord on each end, with or without a loop on one end. Although they are in the shape of slings traditionally used as weapons, many were intended solely to wrap around the head. In addition, structurally similar rectangular braids without a central cradle were also used to wrap around the head, and larger examples may even have been used as belts. The American archaeological textile collection in the Ethnologisches Museum, Berlin, Germany, includes a large collection of such bands that enable us to study their wide variety, including several types that have not previously been analyzed.

Headbands

The Ethnologisches Museum has about 500 slings, most of which were probably used as headbands: 222 are stated to be from Pachacamac, 60 are from Chuquitanta and 22 from other places around Lima, all on the central coast of Peru, while further 190 have Ica Valley provenience, on the south coast. Most were collected by Wilhelm Gretzer - a German textile merchant living in Peru from 1872 to 1905 - and entered the museum in 1899 and 1906-07. Fifteen of the Ica slings were collected by Eduard Seler, the founder of Mesoamerican studies in Germany and an employee of the Museum für Volkerkunde in Berlin, and registered in the museum in 1910. Unfortunately there is no information concerning the context in which most of the slings were found, but seven 'false' mummy heads (a stuffed cushion arranged on top of the mummy) and six real mummy heads in the collection are wearing a sling as a headband (Fig. 1). Ceramics from both the central and south coasts also frequently show slings used as male headgear (Fig. 2). One sling in the Ethnological Museum collection (V A 66521) has a silver sheet cradle decorated with stamped geometric patterns identical to the braided sling cradles, but is obviously unsuited for use as a weapon.

The use of slings as headbands was recognized at least as early as 1954 by Junius Bird, who noted that "Others [other slings] from late period graves in the Nasca-Ica region, are elaborately designed and prepared, sometimes found as joined pairs, and as such completely non-functional except as headbands" (Bird 1954, 45). Adele Cahlander described the use of elaborate slings in modern Peru as dance accoutrements: "In Incan-style dances in the Cuzco area, fancy slings are sometimes worn at the waist as belts, and sometimes they are swung high in the air between the hands. Elsewhere some are doubled and held between the hands, some are worn from the shoulders, and others are held in one hand" (Cahlander 1980, 7-8). The same author also noted

Fig. 1. Mummy bundle with an ornamental sling around the "false" mummy head. The mummy bundle measure 75 x 50 cm. Ethnologisches Museum, Berlin (V A 28464, Chuquitanta).
Photo: Martin Franken.

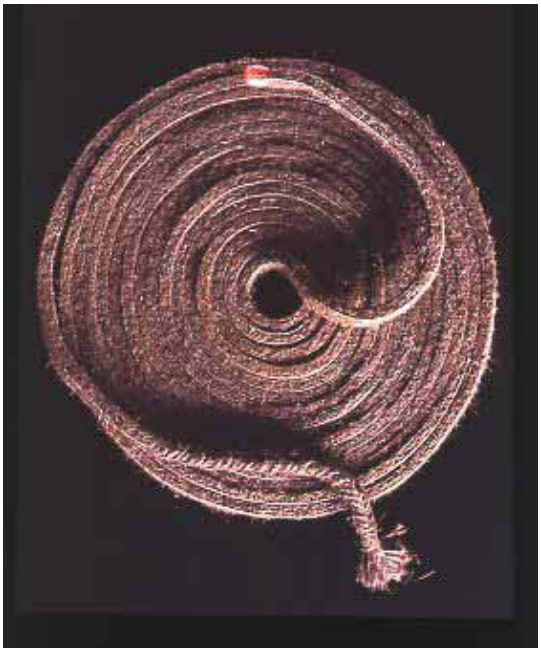

Fig. 3. Inca nobleman's headgear: *Llawt'u*. Made of camelid hair in a regular SZ twist, 2-span float fist-braid. It measures 535 x 1 x 0.5 cm. Ethnologisches Museum, Berlin (V A 21670, Pachacamac).
Photo: Martin Franken.

Fig. 2. Ceramic vessel, 40 cm high, with a sling used as headband. Ethnologisches Museum, Berlin (V A 50930, Pisco). Photo: Martin Franken.

Fig. 4. Coarse headband with 2- and 3-span floats and geometric designs, measuring 140 cm. Ethnologisches Museum, Berlin (V A 47195, Ica).
Photo: Martin Franken.

that the traditional young women's costume in Huancavelica still includes an ornamental sling worn diagonally over the shoulder. These latter uses cannot be verified in the archaeological record, but must be kept in mind as a possibility.

A sling has a central cradle, often made by interlacing over a small number of warp yarns, but sometimes braided or made of a piece of leather. On either end of the cradle there is a round cord that is usually braided, but in some cases is made with tubular interlinking, wrapping, tubular weaving, or is embroidered. Sometimes there is a tassel on both ends. In other cases one end has a loop. In a functional sling used as a weapon, the loop would be slipped over one finger while the other end grasped in the hand. The presence or absence of this loop does not correlate with its function as a sling or a headband, however.

Other types of braided headgear lack a central cradle. The Inca man's *llawt'u* was a long braided cord with a loop on one end but no cradle (Fig. 3). In her article on Inca weaving and costume, Ann Rowe (1980) presents the available information from early Spanish chronicles on the *llawt'u*. Cobo describes it as a braided wool band, the thickness of half a finger and the width of a finger, wound many times around the head, to the width of one hand. Only Incas by descent (belonging to one of the royal lineages) and Incas by privilege (conquered Inca-speaking groups in the vicinity of Cuzco) were allowed to wear it. Garcilaso states that a black *llawt'u* was worn by most Inca men, while the emperor wore a multicolored one. Guaman Poma says that the imperial *llawt'u* was red or green in color. Inca nobles wore a metal plate tied over the *llawt'u* as well as at least sometimes a feather ornament, and for festivals they might wear a flower in their *llawt'u*.

Few actual examples of these headbands are known archaeologically, but the German archaeologist Max Uhle (1903) found several heads with spirally wrapped black braided cords in an Inca context at Pachacamac. The Ethnologisches Museum is fortunate to have two examples, one made in black camelid hair (Fig. 3) and the other in undyed cotton. Both are from Pachacamac and were collected by Gretzer. The archival information states that they both were associated with a mummy head which unfortunately is no longer in the collection.

The third type of headband seems to have no direct relationship to a sling (Fig. 4). These bands have wide and long center sections (60-67 x 3-4.5 cm). They have a round usually braided cord at both ends (which could have been used to tie the band), making their total length 1.20-2 m. These cords end in tassels. The smaller ones were probably headbands and the larger ones belts. Such a band, with a center section only 30 cm long, is wound around the head of a mummified skull in the Ethnologisches Museum (V A 2601). Uhle (1903) refers to Inca style woven bands among the grave finds of the sacrificed women at Pachacamac that are 43-46 cm long as headbands and larger bands as belts. Similar textiles with thick woven bands and round braided cords with tassels at either end have also been found, used as women's belts on Inca figurines and on Inca mountaintop human sacrifices.

Technique and Structure

The round and rectangular braids were first analyzed by the French scholar Raoul d'Harcourt in the 1940s. He accurately described the interworking of the yarns without actually knowing the technique with which these bands were produced. The technique, however, still survives in the highlands of modern Peru and Bolivia where it is used for the round braids on either side of the cradle of herding slings as well as for dance slings. In the late 1970s, Elayne Zorn (1982) managed to learn it in the Macusani area of southern Peru. The technique and structure are wonderfully explained by Adele Cahlander (1980). At about the same time, the Swiss scholar Noémi Speiser learned the technique from a Tibetan herder (Speiser 1983), and she has suggested the name "fist-braiding" for this technique.

Fist-braiding is a simple and ingenious technique done without using any extra tools (Fig. 5). The work is held in the fist, and proceeds upwards – the braided band hangs under the fist and the loose strands over the fist. It employs units of four yarns, two hanging down on one side of the braid and the other two on the opposite side. In each movement, one of these yarns on each side is grasped; the two are twisted and laid down so that one of them is crossed over the top edge of the braid. Then the other two are grasped, twisted and laid down so that one is crossed over the top edge of the braid in the opposite direction from the first. When yarns from each of the parallel groups on two opposite sides of the braid have been similarly treated, those at right angles are then manipulated in the same way.

The basic technique produces a twined structure (Fig. 6). A major group of twining units (of four strands each) is at right angles to another major group of twining units. The elements of one major group enclose those of the other major group and vice versa. As in normal four-strand twining, the elements float over two opposing elements at a time. Although no concise structural term has previously been proposed, Ann Rowe now suggests four-strand 2/2 twin-

Fig. 5. The technique of fist-braiding. Top, four layers of strands are arranged alternately crosswise on top of each other to start the braid. Centre, one set of strands is pinched in the hand while the 8 strands of the other group are loose and ready to be worked, bottom. The loose strands are crossed over the pinched strands. Drawing by Noémi Speiser 1983.

ing at right angles (pers.comm.). If the same number of twining units is used on all sides, a square or round braid is produced, such as are common on the round braids on either side of a sling cradle. Rectangular braids can also be created, however, using one, two, or three twining units in the narrow dimension and a larger number of such units in the wide dimension.

Round and Square Fist-Braided Cords

Round braids made by fist braiding have the same number of strands or twining units on all sides. The braids are continuously rotated in the hand after each group of strands has been twined. For a square braid the direction of twining twist is changed on each side of the braid, between each major group of strands: Z, S, Z, S.

Changing the direction of twining twist at other intervals either horizontally or vertically creates geometric zigzag or diamond patterns (Fig. 7 left and centre left). Changing direction vertically after every second row untwists the yarns and causes the twined structure to disappear so that it more closely resembles interlacing. Further color and design variations are obtained by exchanging elements between adjacent twining units or even between major groups. Some braids have a core running through the center of three by three twining units. Patterns are then created by exchanging twining strands with core strands (Fig. 7 centre left). The round braids may have many colors, and they measure between 1 and 1.5 cm in diameter. They may be made of camelid hair or cotton or both. The cotton is s-spun and the camelid hair 2-plied s-spun, but all yarns are used in bundles to create about 2 mm thick strands.

Flat Braided Sling Cords

One style of sling has flat braids of the same twined structure on either side of a woven, split cradle. These braids have only one twining unit on the narrow sides, while they have 8-30 twining units on the wide sides, for a width of 2-6 cm (Fig. 8). The braids are black and white and made of coarse (about 2 mm diameter), 2-plied s-spun camelid hair yarns. The patterning of the braids is created using the same techniques as for the round braids, alternating the colors and changing the direction of twist at intervals both horizontally and vertically.

The Ethnologisches Museum has six slings of this style, all said to be from Ica. Similar examples in the Musée de l'Homme in Paris were analyzed by Raoul d'Harcourt (1975), and seven examples in The Textile Museum in Washington D.C. were analyzed by Ann Rowe (Cahlander 1980). All the Textile Museum

Fig. 6. The basic structure of a fist-braiding. The strands of the narrow side are stretched horizontally on either side of the braid, and the four-strand units of the wide side are left to illustrate the twined structure of the braid. Photo: Lena Bjerregaard.

Fig. 7. Three examples of patterned round cords and a llawt'u. The patterning is based on 2-span floats and SZ twist. From left: V A 47195, Ica; V A 23146, Huaco; V A 44693, Pisco; V A 21669, Ethnologisches Museum, Berlin. Photo: Martin Franken.

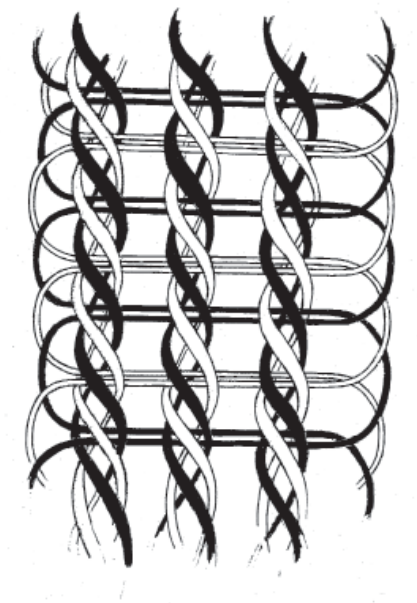

Fig. 8. Structure of a flat fist-braid with only one twining unit on the narrow side and three twining units on the wide side. Drawing by Ulrich Gebauer.

Fig. 9. Two fine slings with rectangular braided cradles in plant fibre and camelid hair. Top, unpatterned 2/2 twining with alternate SZ twist, 221 cm long. Ethnologisches Museum, Berlin (V A 24920, Chuquitanta), bottom. Sling with 2- and 3-span float patterns 211 cm long. The sling ends at one end with a loop for the finger and at the other in a plant fibre tassel. Ethnologisches Museum, Berlin (V A 47216, Ica). Photo: Martin Franken.

examples are said to be from Chiquerillo, near Palpa in the northern part of the Nazca drainage.
Most of the examples in the Ethnologisches Museum have the end cords started at the ends of the patterned fist-braided sections, but one has the same yarns going through all the way from one end of the sling to the other.

The *Llawt'u*
Two headbands in the Ethnologisches Museum are made by fist-braiding and can be identified as *llawt'u* braids. They have not been analyzed previously. The black camelid hair example (Fig. 3) has ten twining units in the wide dimension and five twining units in the narrow dimension, resulting in 60 strands altogether. The cotton example (Fig. 7 right) has six twining units in the wide dimension and three in the narrow dimension, resulting in 36 strands altogether. The zigzag texture is obtained by alternating the direction of the twining twist of the strands on the wide side of the braid: S, Z, S, Z.
The black camelid hair example is complete: 535 cm long, 1 cm wide, and 0.5 cm thick. At the beginning, it has a 1 cm long red loop, and at the end a 14 cm long oblique interlaced braid of four strands made with the ends of the yarns used to create the rest of the *llawt'u*. The undyed cotton example is in two pieces, together measuring 425 cm. The smaller piece has a 1 cm loop at one end and the larger piece a 16 cm oblique interlaced braid of four strands at one end. A piece is evidently missing between the two fragments, since the catalog card states that the band was originally 605 cm long.
The yarns in both examples are fine (0.5-0.8 mm diameter) 3-plied and s-spun. The manufacture of these braids must have been extremely difficult, since there are no color changes to help determine the succession of the many long thin strands. d'Harcourt (1975, 56) shows an unfinished *llawt'u* in the collection of the Musée de l'Homme in Paris with 42 long yarns wound up in small bundles. Possibly, each bundle was originally marked somehow, so the succession of the yarns was kept evident to the braider as the work was proceeding.

Rectangular Headbands and Belts
The rectangular headbands and belts that are braided are made with camelid hair yarns and have geometric patterning created by changing the direction of the twining twist (Fig. 4). Every other strand is black and is continuously twined with its opposite black strand in two-span floats. In between are two-color diamond-shaped patterns in red, white, or yellow yarns. These patterns are made with three-span floats formed by crossing the upper yarns over the braid instead of the lower ones, as is more common. The diamonds come out in a different color on each side of the braid. After about 2 cm, the colors are interchanged and appear on the opposite side of the braid from before. The band in Figure 4 has two twining units on the narrow sides, which are also worked in a two-color pattern. The outermost twining units in the wide dimension are red.

Plant Fiber Slings with Braided Cradles
Fifty slings in the Ethnologisches Museum have small braided cradles, 1.5-2 cm wide, 0.5 cm thick, and 22-25 cm long, with the twined structure typically created by fist-braiding (Fig. 9). Six are monochrome or have monochrome areas, made of undyed plant fiber, most likely from the leaves of *Furcraea andina*, a South American plant related to agave. These examples, which are from Pachacamac, have a zigzag pattern created by alternating the twining direction with every twining unit (like the *llawt'u*). The yarns also alternate in direction of twist so that those that are s-spun are Z-twined, and vice versa. Each half of the cradle has four twining units in the wide dimension and two in the narrow dimension. Two of the six have completely monochrome cradles as in Figure 9 top, while two others have patterns in camelid hair on the narrow sides, and the remaining two examples have a patterned section inserted between the two monochrome sides of the cradle.
The remaining slings with braided cradles have more elaborate color patterns using at least some camelid hair yarns (Fig. 9 bottom). The sling shown in Figure 9 bottom has a two-color pattern, but other examples have three-color patterns similar to those found in the rectangular bands discussed above. The use of two twining units in the narrow dimension and red twining units on the outer edges of the wide dimension are also similar to the rectangular bands. It is therefore possible that the two types of objects are similar in date.
Twenty-three additional slings are similar but are composed of two, three, or four such slings joined together by a stitch every 4 or 5 cm along the cradles, and at the finger loops, making a wider sling with two, three, or four finger loops (Figs. 10 and 11). These multiple slings can definitely only be used as adornment, as noted by Junius Bird (1954, 45).
All of these slings often have a short length (3-5 cm) of camelid fiber cord on one end of the cradle, usually fist braided in a round braid with diamond patterns (as in Fig. 9 top). The juncture between the cradle and this colored cord marks the starting point of the sling. In 48 examples, the yarns for the cradle and

Fig. 10. Camelid hair sling with wrapped cradle and fist-braided side bands with patterns created in 2-float braiding with SZ twists. It measures 280 cm. Ethnologisches Museum, Berlin (V A 47185, Ica). Photo: Martin Franken.

those for the cord are folded in half over each other, and the two braids are worked in opposite directions. Nineteen examples are similar but have some yarns continuing from the cord into the cradle. Of these, ten have only the red yarns on the narrow sides of the cradle continuing into the cord, while the other nine have some also from the wide sides of the cradle continuing through. The remaining slings have about 5 cm next to one end of the cradle wound around with a cotton yarn, on which camelid hair yarns are worked in a progressive wrapping motion (like soumak), presumably with a needle (Fig. 9 bottom). Of these, the wrapping covers the beginning of the sling in at least six examples, but it seems to cover the end in one example.

The remainder of this cord with the decorated section and the entire cord on the other end are of undyed plant fiber, 3-5 mm in diameter and about 80-90 cm long, braided as a four-strand square or tubular braid (Fig. 12). The end with the decorated cord next to the cradle has a finger loop normally interlaced on two warp yarns in red or black camelid hair yarns. At the other end is an approximately 20 cm long tassel made with the loose ends of the braided plant fibers.

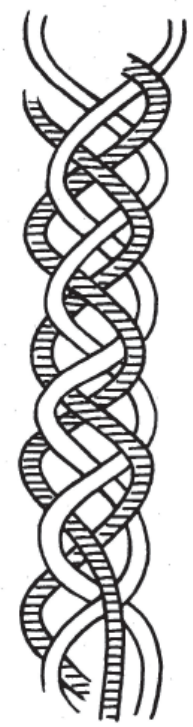

Fig. 12. Square braid with 4 strands. Drawing by Ulrich Gebauer.

Sling Cradles with Three-Span Float Patterns

Sixty-seven of the most elaborate slings in the Ethnologisches Museum have cradles that are exquisitely made with a structure combining two-span and three-span twined floats (Fig. 11). Both d'Harcourt (1975) and Cahlander (1980) described them as if the structure were interlaced in complementary warp weave with three-span floats in alternate alignment, but neither scholar understood the technique by which they were made. As in preceding examples, however, the structure can easily be reproduced with the fist braiding technique, and described as four-strand 3/1 twining in alternate alignment. The cradles are made with undyed 2-plied s-spun plant fiber yarns and red and black 3-plied s-spun camelid hair yarns, both with a diameter of about 0.5 mm. In most other pre-Columbian textiles from Peru, the camelid hair yarns are 2-plied s-spun, but in these braids obviously a stronger yarn was desired. The slings are listed in the catalogue cards of the Ethnologisches Museum, Berlin, from both central and south coast sites: Pachacamac, Chuquitanta, Ica, Pisco, or "by Lima".

The cradles consist of bands about 2 cm wide, 0.5 cm thick, and 20-30 cm long (Fig. 11). These braids normally have 16-20 twining units (always an even number) on the wide dimension and two (occasionally three) twining units on the narrow dimension. Since there are four strands in a twining unit, the braid has a total of 72-92 strands to be manipulated. Only a few consist of one solid braid; most are split in the middle for 15-20 cm. The cords are made in the same manner as for the other braided cradles discussed previously. In many specimens the black camelid hair has disappeared, probably due to the heavy use of an iron mordant for dyeing the fiber. Where the black strands of the wide dimension of the braid are now gone, the strands from the narrow dimension are visible across the braid, greatly confusing the analysis of such bands.

The narrow sides of the cradles are twined in the usual way, either continuously in the same direction,

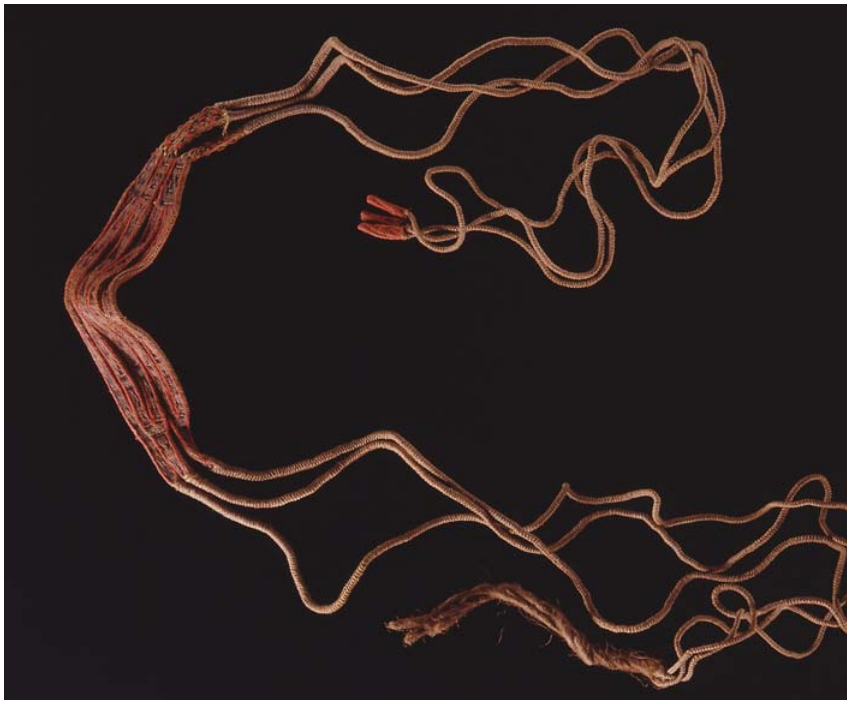

Fig. 11. Three two-and three-span float patterned fine slings joined together. Notice the three finger loops. Altogether this sling is 217 cm long. Ethnologisches Museum, Berlin (V A 42096, Pachacamac). Photo: Martin Franken.

or countered, resulting in a V-shaped pattern. Most of the braids have a red stripe along either edge of the wide sides, which is also twined. The central part of the wide sides have two-color patterns, some created in twined two-span floats, and others in three-span floats in alternating alignment as described above. The direction of the twining twist is only changed in order to change the slant of the design. Figure 7 shows the different kinds of design.

Using the start suggested by Speiser, the strands of the wide side are arranged so that the lower yarns are all one color and the upper ones of the other color (Fig. 13). Using Adele Cahlander's (1980) notation (Fig. 14), this can be diagramed as in Figure 15. Thus the crossings are all the same color (black in Fig. 13 left), and in the next crossing they are the opposite color (white in Fig. 13 right). With this setup, working in the normal fist-braiding technique (crossing the lower strands over the top of the braid), horizontal stripes one two-span float long are created.

To create stripes two floats long, the strands must be rearranged so that those of the same color are all on one side of the braid (Fig. 16 left). To accomplish this, the upper yarns on one side are crossed over the top of the braid, alternately with lower yarns from the other side (Fig. 17a). Once this setup has been done,

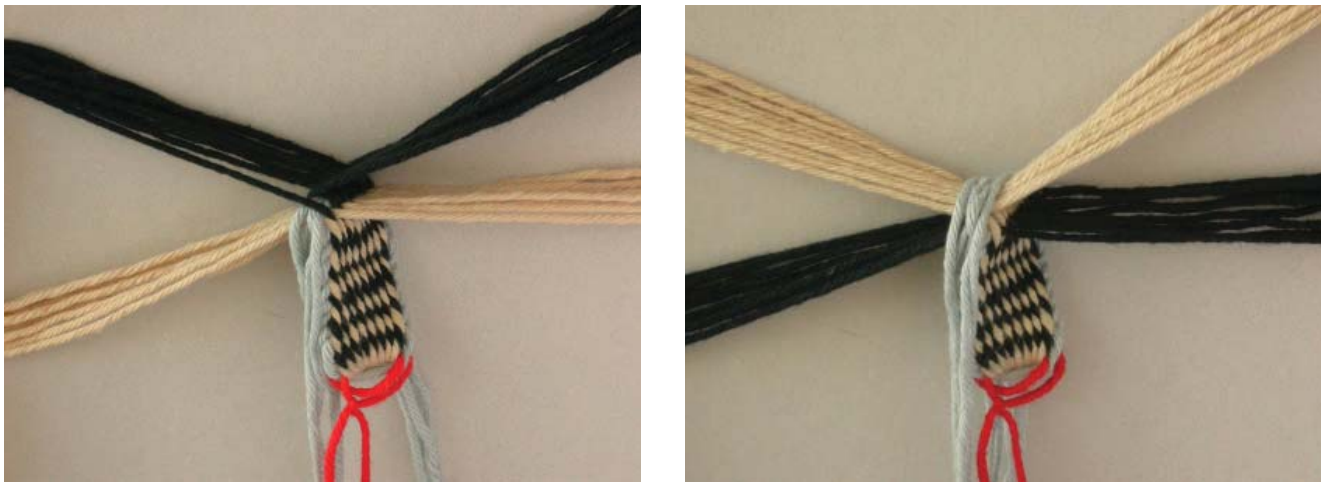

Fig. 13. Braiding with single stripes. The dark and the light strands of the wide side of the braid stay in the same layer across the narrow-side strands in the middle. Photo: Lena Bjerregaard.

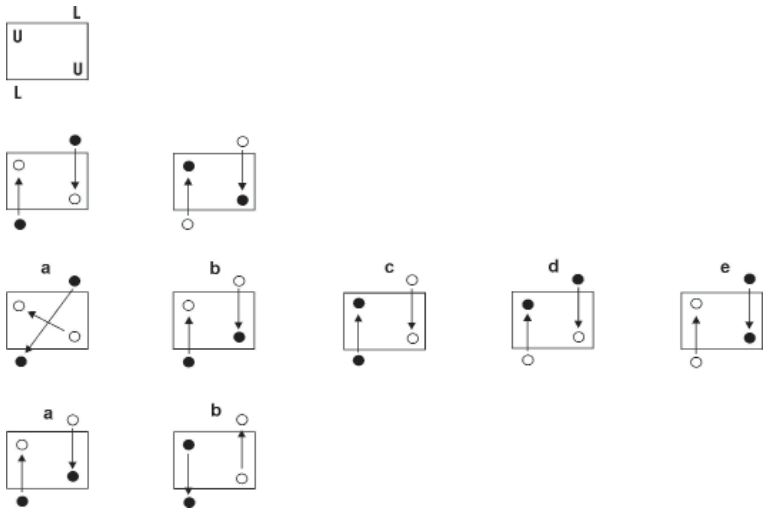

Fig. 14. The movements of strands as presented according to Adele Cahlander's system. U: upper layer of strands. L: lower layer of strands. Black dots: dark strands; Circles: light strands. Drawing after Cahlander 1980.

the two-float long stripes are formed automatically if normal braiding procedures are followed, crossing lower yarns from each side alternately over the braid (consistently in the S direction). The color change occurs by means of the moves illustrated in Figure 17c and 17e, when yarns of the same color are gathered on the same side of the braid (as in Fig. 16 left and right).

The slings, however, are not started using Speiser's technique. Instead, as noted, yarns for two braids are folded in half over each other, back to back. No extra yarn is needed to tie the yarns together. The yarns of each major group in the cradle are divided in half side to side by the yarns emerging to form the cord (or vice versa). Such a start can be clearly seen in the upper sling in Figure 9 and those in Figures 11 and 18, at the ends with the camelid hair braid. While the yarns of the wide sides may begin at a lower point than those for the narrow sides, the upper and lower yarns on each side need to be picked and so one can arrange the yarns in the configuration shown in Figure 17b, without needing to go through the motion illustrated in Figure 17a.

In order to make the patterns in these cradles, when a single color is wanted over a wider area, three-span floats are formed using the technique illustrated in Figure 19. The setup for this technique is the same as for the stripes two floats long (Fig. 17b is the same as Fig. 19a). In Figure 19a the lowers cross the braid in the S direction, while in Figure 19b the uppers cross in the Z direction. The crossing of the lowers (Fig. 19a) forms the binding rows of the three-span complementary floats, while the crossing of the uppers (Fig. 19b) forms the pattern rows.

The interchange of the colors between the two faces of the braid is done the same way as the exchange of colors in the two-float long stripes. That is, the step in Figure 19a is followed by that in Figure 17c instead of Figure 19b. Then the process goes back to Figures 19a and 19b with the colors in their new positions. Thus, there is a row of two-span floats in each color along the line of color change.

The use of three-span floats permits the different colored strands to be manipulated at will. Not only geometric patterns but also free figurative patterns can be created, showing up on either side of the braid in alternate colors (Fig. 18). The examples in the Ethnologisches Museum have geometric or bird designs and one is decorated with llamas.

An additional eight multiple slings joined from three-five slings with narrow cradles (four complete and four fragmentary) are similar to the cradles just discussed but their overall format is slightly different (Fig. 20). The cradles of these slings start with a round, patterned fist braid. The strands are then divided into four groups that two by two are interlaced using plant fiber yarn as weft. This interlacing creates the middle split part of the cradle, about 17 cm long. The strands are then gathered in a square braid of 10-12 cm. These braids are more square than in the other slings discussed, having 6-8 strands on the wider sides and 4-6 on the narrower sides.

After the square set of patterned braids the number of yarns are gradually reduced and covered by a round plant fiber braid of some 65 cm in length, ending in a finger loop. At the other end (*i.e.* the round fist-braided patterned area at the beginning) of the cradle, the yarns for the cord are folded through the start of the patterned cords and braided in the

Fig. 15. Diagram for the movements to create single stripes (2-span floats). Repeat these two moves. Drawing by Ulrich Gebauer.

Fig. 16. Braiding with double stripe. Left: The strands of one colour are gathered on one side of the narrow-side strands. Centre: In the next move the strands of the same colour make a cross through the centre of the braid. Right: In the third move all the strands of one colour are gathered on the other side of the centre of the band. Every second time the strands of the same colour are together in one side – every second they cross. Photo: Lena Bjerregaard.

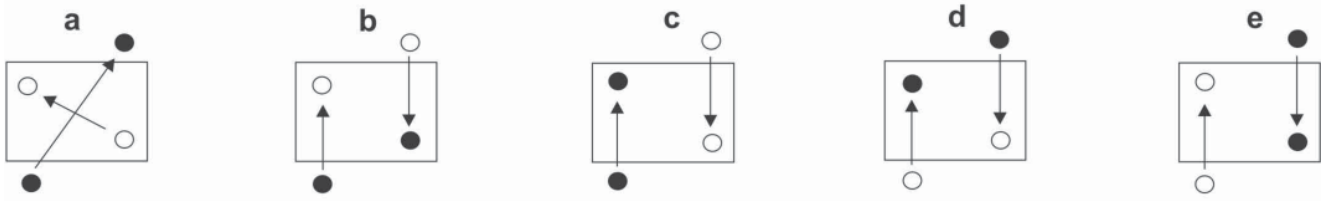

Fig. 17. Diagram for the movements to create double stripes (2-span floats) like in Fig. 16. After these five moves proceed with b, c, d, e, b, *etc*. Drawing by Ulrich Gebauer.

Fig. 18. The fine two- and three-span float cradles have the same figures on both sides but in different colours. Ethnologisches Museum, Berlin (V A 47221, Ica). Photo: Martin Franken.

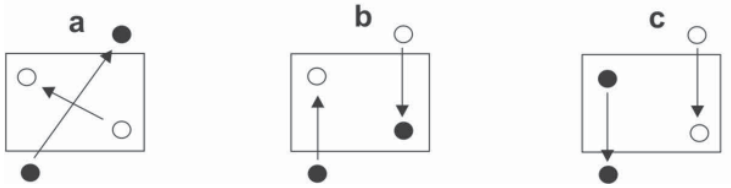

Fig. 19. Diagram for the movements to create three-span floats for continuous colour on one side of the braid. After these three moves proceed b, c, b, c, *etc*. Drawing by Ulrich Gebauer.

Fig. 20. Sling sewn together from five slings. The braids are more square than in the other slings discussed, having 6-8 strands on the wider sides and 4-6 on the narrower sides. Ethnologisches Museum, Berlin (V A 37775, "around Lima"). Photo: Martin Franken.

Fig. 21. Fine two-and three-span float cradles. The weft is visible where the black camelid hair yarns have disintegrated. The fragment measures 38 cm. Ethnologisches Museum, Berlin (V A 42105, Pachacamac). Photo: Martin Franken.

opposite direction, as described for the simpler slings. The plain cords on this end are around 85 cm long, and all the cords are gathered into a single tassel between 5 and 10 cm long. Thus complete length of the pieces is 190-210 cm.

Three to five of these narrow slings are sewn together along the fist-braided parts of the cradle. The wider sides of the square braids of these cradles all have

geometric designs (triangles) in two- and three-span floats. The yarns are natural plant fiber and black and red camelid hair. The black camelid hair yarns are, however, almost or completely disintegrated on all specimens, leaving the horizontal strands from the narrow sides visible (Fig. 21).
One additional fragmentary example is similar to the other eight except that the round and square patterned braids follow each other without any interlacing in between.
These examples illustrate that the versatility of the fist braiding technique, which can form figurative as well as geometric designs, is even more remarkable than had previously been supposed.

Conclusion
The pre-Columbian cultures in South America had no writing system, so what we know about them derives entirely from archaeological items and colonial written sources. The colonial sources inform us as to who wore the *llawt'u*, and we are fortunate to have a match in our collection. Exactly who wore the other types of slings and bands is still not clear. Those described above are of course not the only kind of headgear found in pre-Columbian Peru. The collection in the Ethnologisches Museum includes many unpublished items worthy of extended study. The collection of reed-plaited, turbaned and feathered Ica hats has recently been the topic of a dissertation written by Katalin Nagy, for instance. In her thorough analysis, in which she makes extensive comparisons with ceramic vessels depicting musicians, she suggests that musicians wore at least one type of these hats. My own on-going examination of a collection of exquisitely knotted hairnets from Pachacamac and Ancon indicates that they may have been worn by male weavers (Bjerregaard 2002). Analysis of textiles in museum collections can provide us with a great deal of knowledge about the world's past cultures - from textile crafts to social structures.

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