

## The Agency of Textile Technology in Some Archaeological Ritual Contexts of Northwest Argentina<sup>1</sup>

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### Abstract

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I concentrate here on the *agency* of textiles, through certain technical features, to produce a range of social actions and effects when they intervene in the contexts of specific cultural practices. This “power” (in terms of the transformative capacity) or “magical efficacy” is made manifest visually in the textile artifacts, and they intervene in, and modify the specific social contexts in which they participate. The technical features I examine here include: the direction of thread twist, the use of contrasting tonalities and intense colors, the presence of knots, and the material basis of the textile object. These features are illustrated in a set of textile artifacts proceeding from archaeological contexts in the micro region of Antofagasta de la Sierra, in Northwest Argentina, and that cover an extended chronological sequence from about 3800 to 200 years BP. I appeal to interpretative frameworks which are supported by historical and anthropological data, and which I consider closer to the archaeological communities I am analyzing than our contemporary reality. I also take the necessary precautions so as to avoid using direct analogy, and I leave open the possibility for putting forward and checking hypotheses in specific contexts through the use of independent archaeological data.

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**Keywords:** textile technology - textile agency - funerary rituals - fertility rituals - South America - NW Argentina

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## 1. Introduction

As archaeologists, we seek to reveal the links between objects, subjects, and the social dimensions of pertinent cultural practices. The specificity of our discipline, with relation to other sciences dealing with human societies, is that our *métier* has as its point of departure the first of this triad of relations: the material remains that have survived over time, so we are inescapably involved with any theoretical stance dealing with the concept of “materiality” (Miller, 1994, 2005). While recognising the value of these extensive (and still open) debates, I focus in this paper on “textile materiality” as a set of technological products framed within social systems of representation (Lemonnier, 1992). These products are generated within social networks expressing cultural identities, cross-cut by particular sociocultural and historical dynamics, and organised on the basis of the transformation of certain raw materials into artifacts, mediated by sets of technical gestures and specific knowledges that are transmitted through social processes of learning (Desrosiers, 1997; Fischer, 2005).

I concentrate here specifically on the “capacity” of textiles, through certain technical features, to produce a range of social actions and effects when they intervene in the contexts of specific cultural practices. I take the view that this efficacy attributed to textiles can be assimilated under the concept of agency (Dobres & Robb, 2000). Although agency was initially considered as a capacity exclusive to humans, from some perspectives agency can also be viewed as a quality of non human beings, including objects (Gell, 1998; Latour, 1999). The attribution of the capacity of agency to objects refers to ways in which these affect people, mobilising emotional reactions, generating ideas and provoking a variety of social processes and actions, but always in function of the social matrix of relations in which these are inscribed. Although objects are not intentional beings, they often provide the media through which human intention is realised and made manifest (Gell, 1998). So the “social power” of objects derives from the kinds of emotional reactions provoked (Gosden, 2005). In this sense, the situation of Andean garments is highly complex, due to their “animated nature” and their consideration as “living beings”, conceived as totalities from their very beginnings to their culmination (Arnold, 2000; Desrosiers, 1997; Zorn, 1987).

## 2. Textiles, Agency and Power

I interpret the agency of some textile artifacts to refer to this quality of power (power in terms of the transformative capacity) or magical efficacy when they participate in particular social contexts. This power is realised in practice through certain technical features or attributes that derive from technological process. These are made manifest visually in the textile artifacts, and they intervene in, and modify the specific social contexts in which they participate. Their presence provokes in their receptors particular interpretations and actions that, at the same time, facilitate their own possibility of exercising agency as these objects are appropriated, used or reproduced, as a part of social life. I describe this process in terms of what Gell (1992, p. 44) calls "the process of enchantment of technology", referring to the magical power generated by certain technical procedures in some societies, in other words the "power" that has been "captured" in certain material properties of objects, on the basis of the technical processes used in their making.

The technical features I examine here include the following: the direction of thread twist, the use of contrasting tonalities and intense colors, the presence of knots, and the material basis of the textile object. These features are illustrated in a set of textile artifacts proceeding from archaeological contexts in the micro region of Antofagasta de la Sierra, in Northwest Argentina, and that cover an extended chronological sequence from about 3800 to 200 years BP.

Approaching these textile materialities challenges my position as an outside observer, distanced culturally and in time from their producers, and faced with social practices and products that would have involved experiences, forms of perception and modes of affronting the world quite different from those we know now on a daily basis. Therefore I appeal to interpretative frameworks which are supported by historical and anthropological data, and which I consider closer to the archaeological communities I am analyzing than our contemporary reality. In no way do I underestimate the numerous and complex transformations (environmental, economic, political, social, symbolic) that have taken place between prehispanic Andean societies and present-day ones. I also take the necessary precautions so as to avoid using direct analogy, and I leave open the possibility for putting forward and checking hypotheses in specific contexts through the use of independent archaeological data.

### 3. The Two Sides of Textile Agency: Power in Ritual Contexts Concerning Death and Life

As Arnold (2009) has shown, the complex process of making a textile is conceived by weavers as analogous to the act of giving life to something apparently inanimate. In this context, practical weaving tasks convey ties to past ancestors as well as to the new offspring of generations to come, and within this category of offspring are included beings of a human, animal and vegetable nature. It is possible that these strong ties that link textiles to life and death, are founded in part on their active and recurrent participation in the numerous ritual aspects of Andean communities. As I shall show, this intervention is recorded during the course of ceremonies related to the ancestral dead, and in propitiatory rituals related to fertility and the generation of new life.

#### 3.1 Textiles and Some Aspects of Andean Funerary Rituals

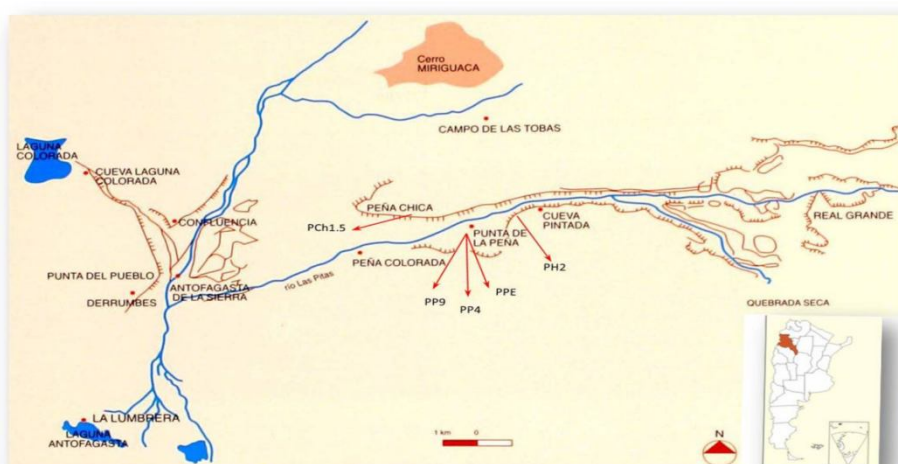
##### 3.1.1 Two Archaeological Funerary Contexts in the South Highlands (*Puna*) of Argentina

With respect to the participation of textile products in funerary rituals, an enormous range of historical and ethnographic information documents the manifold forms of interaction of textiles during different stages of these rituals, indeed far beyond the scope of the present chapter. So I concentrate here on a more restricted set of textile features in Andean funerary contexts documented in numerous modern communities, and for which I have a set of archaeological referents proceeding from two burial contexts: that of an infant (in the Punta de la Peña 9 site) and that of a female adult funerary bundle (in the Punta de la Peña 4 site).

Both sets of funerary remains were recovered in the archaeological locality of Punta de la Peña (PP), within the micro region of Antofagasta de la Sierra, included in the geographical sector of the Southern highlands or *Puna* of Argentina (around the Puna Salada). The altitude of this micro region ranges between 3600 to 4200 masl (meters above sea level).

Antofagasta de la Sierra, despite its biogeography corresponding to that of highland desert, with intense solar radiation, scarce precipitation, highly unstable rain patterns with long periods of drought, and the occurrence of frosts and strong winds, constitutes a succession of “oases” in this *Puna* environment, based on an endorreic basin and a series of permanent narrow water courses (Aschero, 1999). The Las Pitas River stands out among these tributaries, near to whose bank sat mid river are located the two archaeological sites I shall examine briefly (Figure 1).

The first of these, Punta de la Peña 9 (PP9), constitutes a multi-component open air settlement at 3600 masl, whose successive re-occupations reveal a complex formation history, dated to between *ca.* 2000 and 400 years BP (Cohen, 2005; López Campeny, 2000; Somonte & Cohen, 2006). There are three sectors distinguishable in the site. The first (I) is composed of a set of dispersed sub circular structures on the high terrace of the Las Pitas River (Babot et al., 2006). The second (II) consists of large rocky blocks, with multiple grinding mortars and diverse examples of rock carving located in the rubble at the base of the slope (Aschero, Martel, & López Campeny, 2006). And the third sector (III), also at the base of this slope, corresponds to a set of residential and productive structures of sub circular form, located near an ignimbrite outcrop that forms the eastern limit of the site (Cohen, 2005; López Campeny, 2000; Somonte & Cohen, 2006).



**Figure 1; Map of the Micro Region of Antofagasta de la Sierra, Catamarca, Southern highlands (Puna) of Argentina, and the Location of the Archaeological Sites Referred to in the Text (Source: Modified by the Author from Aschero, 1999, p. 98)**

The first funerary context I shall examine comes from the interior of the residential structure (E2) belonging to this last sector (III), with an approximate dating of *ca.* 1450 years BP (Table 1), and whose remains are those of an infant accompanied by a set of woven garments<sup>3</sup>, plant elements (mainly of a non-local origin), and products of diverse functions made from ceramic, plant, malacological (mollusk-based) elements, and animal fibre (López Campeny, 2000).

The second funerary context was recovered from the Punta de la Peña 4 site (PP4), a rock shelter with vestiges of stratified archaeological deposits, and signs of rock art, located on a great ignimbrite outcrop (3650 masl), at the foot of which is the site PP9. The occupational levels of this site cover an extended sequence during the Holocene, with two marked discontinuities: the first between *ca.* 8900 to 4100 years BP, and the second *ca.* 3800 to 960 years BP (Aschero, 2005; López Campeny & Aschero 2006). The burial to which I allude is associated with the late occupation levels of the overhang, in component IV, between *ca.* 740 and 460 years BP. I could determine this dating range based on the absolute dating of a sample of textile fibre<sup>4</sup>, which gave a radiocarbon dating of *ca.* 600 years BP (López Campeny, 2006-2007).

In the following section I shall first describe the set of textile features whose active participation during the rites of typical funerary ceremonies have been documented repeatedly for numerous communities in the Andean area, from historical times to the present day. I shall focus on those with comparable referents to those of the materials associated with the burials on Punta de la Peña.

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<sup>3</sup> The pieces recovered from the tomb in PP9 include, besides an important set of spun elements, a small decorated coca-bag or *chuspa*, an Andean tunic or *unku*, a large mantle (Sp. *manto*), two possible funerary bags, a belt and a dozen undifferentiated fragments of cloth of varied dimensions (López Campeny, 2000).

<sup>4</sup> The dating was obtained from a sample of fibres taken from the textile element that had the function of "tying" the funerary bundle (López Campeny, 2006-2007). The remaining textile set consists of a tunic or *unku* that clothed the body, a large domestic bag (Sp. *costal*) placed over the head, and a third less identifiable garment that might be a striped tunic or bag (López Campeny, 2010).

**Table 1: Archaeological Findings and Dating (Source: Author's Elaboration)**

Site	Unit	Level	Element and/or textile attribute	Dating references <sup>1</sup> Conventional date and Calibrated date	Dated material and associated context	Bibliographic references
Peñas Chicas 1.5	Overhang below block	---	<i>Moliné</i> yarns with left-plied twist (2SZ)	(UGA 15097) 3830±50 YBP 1737 to 1617 cal BC	Camelid bone Intentional deposit of objects	Aschero, Izeta & Hocsmán (2014)
Punta de la Peña 9 (III) (P.P.9)	E2	3	<i>Moliné</i> yarns with left-plied twist (2SZ) Knots in elements of cordage, and Yarns in human hair in funerary bundles	(UGA 9069) 1480 ± 40 YBP 548 to 614 cal AD	Chañar seeds ( <i>Geoffroea decorticans</i> ) Funerary context	López Campeny (2000)
		2	tie-dyed spun elements, with a second plying (6Z3S Z y 4Z2S Z)	(UGA 9260) 600 ± 50 YBP 1308 to 1390 cal AD	Plant carbon remains Rubbish area or of intentional deposition	
P.P.9 (I)	E3	2	<i>Moliné</i> yarns with left-plied twist (2SZ)	(LP 1473) 1410 ± 70 YBP 567 to 667 cal AD	Plant carbon remains Intentional deposition in residential area	Babot et al. (2006, 2007)
Piedra Horadada 2	E1	4	Various yarns, camelid fibre and animal mandibles deposited in the wall and in areas around the monolith	(LP 1572) 690 ± 60 YBP 1265 to 1371 cal AD	Plant carbon remains Ritual structure of monolith- <i>huanca</i>	López Campeny (2009)  Urquiza, Romano, & López Campeny (2013)
		3		(LP 1620) 580 ± 60 YBP 1311 to 1401 cal AD		
		1		(CAIS 15100)	Grasses	

				220 ± 30 YBP 1654 to 1794 cal AD	Ritual structure of monolith- <i>huanca</i>	
Punta de la Peña 4	K8	2 (IV)	<i>Moliné</i> yarns with left- plied twist (2SZ) Knots in elements of cordage, and Yarns in human hair in funerary bundles	(LP 1870) 570 ± 80 YBP 1309 to 1413 cal AD	Animal fiber (bundle cord tie) Funerary context	López Campeny & Aschero (2006) López Campeny (2006-2007)
P.P.E	---	---	Yarn with left-plied twist (2SZ) as the seam in the fabric deposited in the ceramic vessel	---	---	N. Chiappe (pers. com., 2012)

<sup>1</sup> **Dating references:** UGA: *Center for Applied Isotope Studies (CAIS)*, University of Georgia, EE.UU. LP: *Laboratorio de Tritio y Radiocarbono (Tritium and Radiocarbon Laboratory) (LATYR)*, Universidad Nacional de La Plata, Argentina.

### 3.1.2 Four Powerful Technical Attributes: Inverse Twist, Knots, Tonal Contrast and Woven Substance

Of four powerful technical attributes, first I shall examine inverse twist. In Andean conceptions of the world, the cardinal points are charged with meaning. For example, there are recurring associations between the direction east and the sense of living, and the direction west and the mortuary sphere and these associations infuse certain practices. So a circular movement towards the East expresses the positive energy of life, and is often present in festive dances, as well as “in the spindle movement in spinning wool” (Mostny, 1954, p. 38, as cited in Grebe Vicuña & Hidalgo, n.d., p. 7).



In the opposing sense, a movement towards the West or leftwards “represents the lack of energy of death, being used in the spinning of wool for funerary bundles” (Grebe Vicuña & Hidalgo, n.d., p. 7), or is related to the orientation of tombs, or else the bonfires where the belongings of the dead are burned after the wake.

These general conceptions help us understand this first textile feature to be examined, where compound threads with a first plying<sup>5</sup> having a leftward twist (2SZ)<sup>6</sup> are known traditionally as *hilado zurdo* in Spanish or else *llak'e*, from the Quechua *lluq'i*. Among Aymara speakers, Dransart (2002a, pp. 115-117) records that this left-plied yarn, as opposed to the normal ply, has the name *ch'iqach'anika*. She also mentions that it is employed as a structural element (warp) and non structural one (in stitching), but that it is always found in limited sectors of the terminations (in selvages or borders) of certain garments. Dransart interprets this as having a practical sense in “helping to keep the corners of a textile from curling up, since the opposite spin direction counteracts the tendency of the corners to twist back on themselves found in a warp-faced textile with yarns firmly plied in only one direction” (Dransart 2002a, p. 117).

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<sup>5</sup> With the term “spun” (Sp. *hilado*) I refer to all products obtained through the technical process of spinning (Sp. *hilar*). I call spun elements the set of grouped fibres, stretched and twisted to form a continuous structure, which can be used for different ends from a textile point of view. I decided to follow similar criteria to that of Emery (1966) when she defines the concept of “textile structure”, and designates yarn in terms of the number of elements and quantity of twistings or plying of which it is composed. So I call “a simple yarn” or first twisting/spinning, that formed by the simplest union of spun fibres, in which the twist can be undone in a single operation of untwisting. This unified set of twisted fibres is called “thread” (Sp. *hebra*) or “strand” (Sp. *cabo*). A “compound yarn” with a first plying is that composed of two or more simple yarns (strands), replied in order to be used as a single unit. In Spanish, it is common to use the term “cordel” (*plied yarn*) to refer to this type of yarn with a first plying. Yarns composed of a second plying are those formed from plying together two or more plied yarns or in Spanish *cordeles*. We designate these with the term “cord” (Sp. *cordón*), although other terms with a similar structural sense are “string” or “rope” (Sp. *cuerda*) and “cable” (Sp. *cable*).

<sup>6</sup> There are two possible twist directions: rightwards (clockwise) or leftwards (anticlockwise). Each of these directions is designated conventionally by the system of letters S and Z respectively (Emery, 1966, p. 11, diagram 1), where the inclination of the central part of each one of these letters (S\ (Z/) indicates the twist direction of the fibres. The successive directions of twist and plying are usually the inverse of each other, although distinct types of exception to this rule have been documented. Although there is agreement on the use of this basic notation, there is not a generalised consensus on how to describe the successive directions of twist. So I make explicit that the notation I use here alludes in the first term to the twist direction of the set of fibres that make up the strands, and then the first plying, second plying and so on, anteposing the letter that designates the direction (S or Z) by the number of strands, cords, etc. involved in the twisting. So for example 6Z 3S Z is read as six strands spun leftward and then twisted in pairs rightwards forming three cords or double yarns that are plied again in the inverse direction, forming a cord with a final leftwards direction.

However, she also alludes to the fact that weavers use this kind of thread in the borders of their garments in the belief that it is more resistant and protective than a thread with a normal twist.

As I mentioned in previous works (López Campeny, 2000, 2006-2007), in other present-day contexts of the Southern Andes, innumerable works refer to the magical and ritual “power” of these left-plied yarns (*llok'è*) with respect to their active participation in a multiplicity of situations in which they have a protective and/or curative role. Moreover, there are references to their symbolic power from prehispanic times (Poma de Ayala, 1615/ 1980, p. 193).

Besides participating as independent threads, or those forming an integral part of certain woven garments, in the course of distinct Andean ceremonies (to the *Pachamama*, in the *Señalada* or Marking, and so on), left-plied yarns also fulfill a “defensive” or “curative” role in the face of the manifold precarious situations of everyday life, including illnesses of distinct origins and natures, complications during pregnancy, and preparations before travel, among others. Their curative or protective effect benefits humans and animals, as well as the garments themselves, and the beings that wear them (García & Rolandi de Perrot, 2000; Llanke, 1995; Platt, 2001; Rolandi de Perrot & Jiménez de Pupporeli, 1983-1985). Another of their spheres of participation is that of Andean funerary rituals. There, left-plied threads (*llok'è*) constitute elements made with the objective of accompanying the dead in their journey to the other world, as well as being used by kin and close ones. In all these examples, the agency of this particular twist direction is always related to the active role of protector in relation to the potentially “dangerous” circumstances that can surround the death of a family member.

The second relevant technical feature I shall examine concerns how left-plied yarn made during funerary rituals is usually made from strands of fibre of two contrasting colours (black and white), in an attribute called in Spanish *hilado overo*, meaning literally “spun the color of a bay horse.” As this tonal contrast tends to be a feature of yarns made for funerary purposes, there are frequent allusions to the combination of black and white as representing the dead symbolically<sup>7</sup>.

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<sup>7</sup> For a deeper analysis of the Andean connotations of the tonal contrast called *allqa*, see the work of Verónica Cereceda (1990).

The third textile attribute I examine tends to be associated with yarns with a final leftwards twist (*lluq'i*) in contrasting strand colors (the black and white *moliné* or *overo* yarn), that also includes the presence of knots in variable numbers. Knots with these additional technical features are made on the cord that kin usually tie to the waist of a dead person, and which are known as miracles (Sp. *milagros*), sign (Sp. *signo*), symbol (Sp. *símbolo*) or rosary (Sp. *rosario*) in different places in South America. This cord of miracles is made by family members with the aim of helping the dead person avoid difficulties in their voyage to the other world, although this cord is becoming replaced by a miniature “ladder” in some modern-day contexts. The cord is buried tied to the hand of the dead person, while its other end is attached to the animal companion (dog or llama) chosen to help them cross rivers on their final journey; this same cord is generally used to strangle the animal companion beforehand (Acosta Veizaga, 2001; Cipolleti, 1987; De Hoyos, 2001; Hoces de la Guardia & Rojas, 2000; Mamani, 2001; Martínez, 2012; Ortega Perrier, 2001; Rolandi de Perrot & Jiménez de Puppareli, 1983-1985; Van Kessel, 2001).

The fourth and final technical attribute of textiles in funerary settings is the actual textile material or substance used. Various researchers have shown a marked relation between textile making, funerary rites, and the act of braiding human hair. This braiding of human hair is considered a form of protection against supernatural or diabolical forces; hence it is customary to braid hair in the case of death or warfare. On the basis of all these ideas, human hair is considered a very powerful raw material with a high symbolic content, and with the power of representing a person and preserving their thoughts in their absence, including after death, as it holds their knowledge (Arnold, 2000; Arnold, Yapita, & Espejo, 2007; Rosenzweig & Artzi, 2011).

This kind of information leads me to consider that some of the textile elements identified in the two archaeological funerary contexts presented here can be interpreted within the framework of the more general agency held by these “powerful” technical attributes in Andean mortuary ritual contexts.

### 3.1.3 The Participation of Certain Technical Attributes in the Textile Elements of Funerary Rituals

#### 3.1.3.1 The Direction of Thread Twist and the Use of Contrasting Tonalities

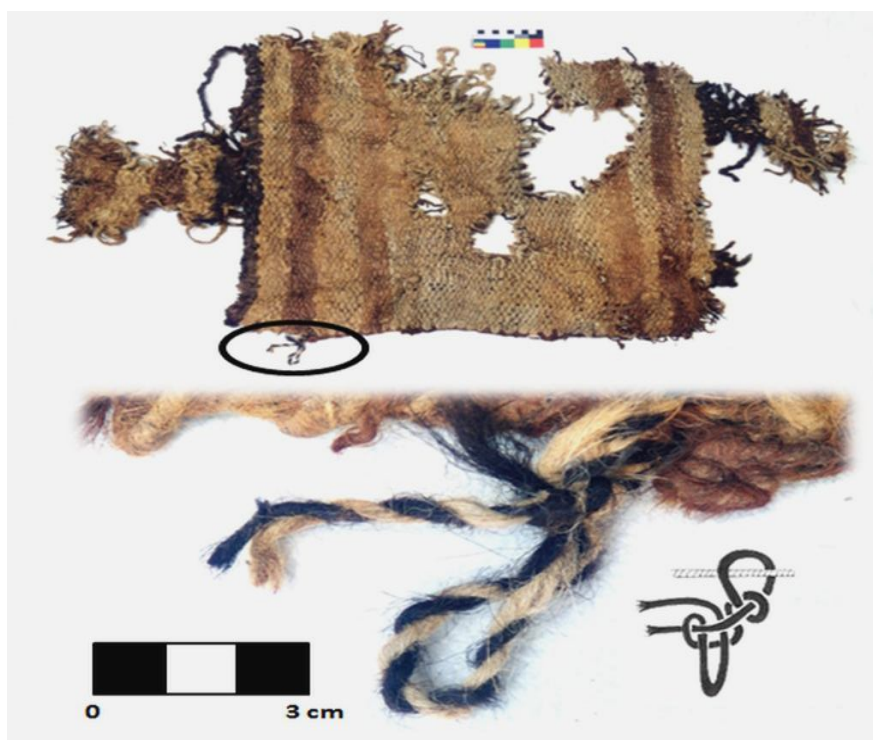
The first examples of the participation of technical attributes in textile pieces of archaeological funerary rituals concern various sets of left-plied yarns, in some cases made with bi-colored strands, which were registered as distinct non-structural elements of textile garments in archaeological contexts. I argue that these features, where we are dealing with elements that do *not* form part of the actual textile structure, reinforce their interpretation as something added after the initial making of the garments, and their use "in life". This lets me defend the claim that these features were added to the garments within the framework of their participation during mortuary ritual.

The relevant cases where these technical attributes are present are the following:

a) A *moliné* or bicolored compound thread (2SZ)<sup>8</sup>, attached (by knotted looping) to one of the warp borders of a textile piece, was identified as a large mantle (Sp. *manto*) in PP9 (Figure 2). This is the only compound yarn with a left-plied twist that we registered in all the textile samples from this funerary context, and the only bichrome yarn that formed part of a visible element in the garments. This point about *visibility* is particularly pertinent, as it is markedly differentiated from the frequent registering in this textile sample of the use of *moliné* threads as *hidden* structural elements (López Campeny, 2000), just as they are among present-day weaving populations (Dransart, 2002a, p. 115).

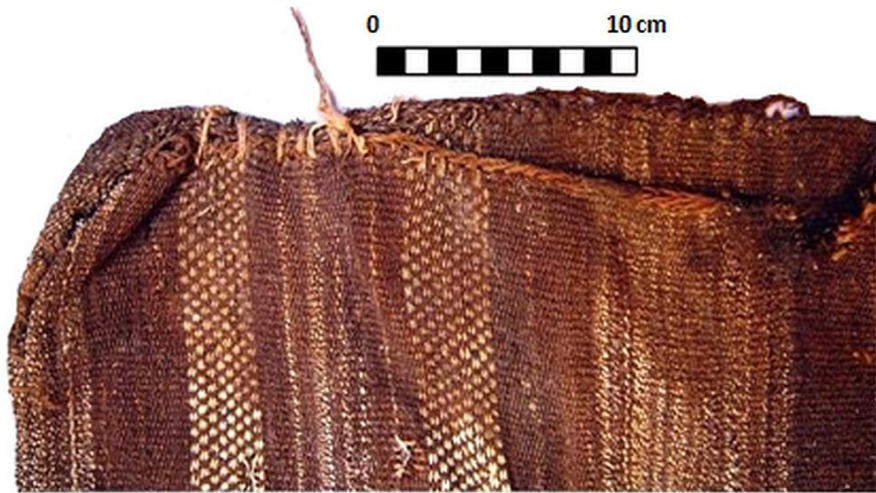
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<sup>8</sup> The term *moliné* is applied to those yarns formed of strands in markedly different tonalities, which produces a visual effect by the contrasting colours.



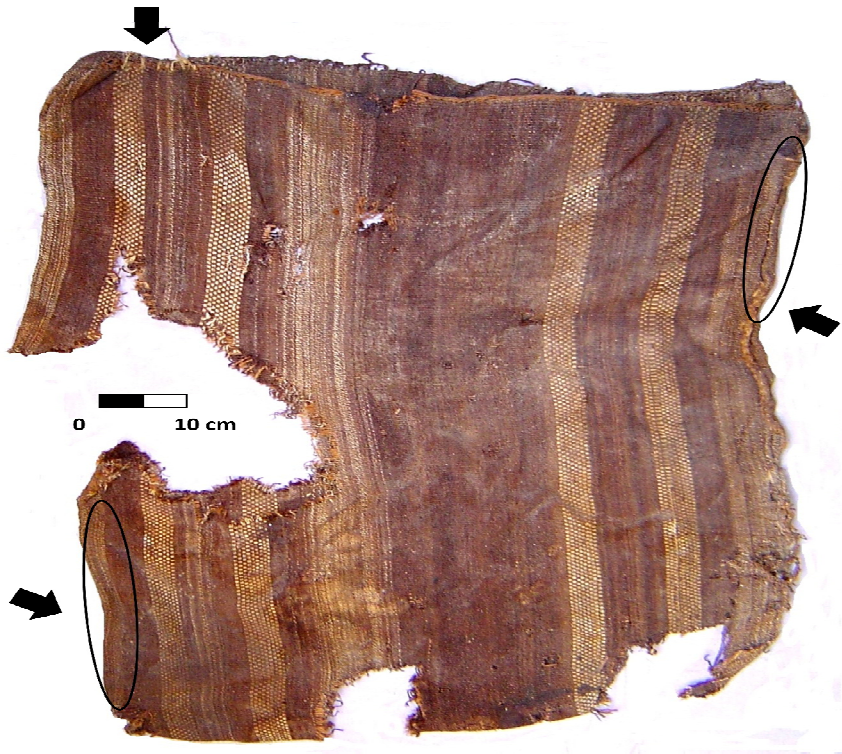
**Figure 2: Yarn Plied Leftwards (Final Z Twist) Recovered in Funerary Contexts: General View, Detail and Drawing of the Moliné Cord on the Warp Border of the Large Mantle (Sp. Manto) (PP9 III). (Source: Photos and Drawing by the Author)**

b) A seam (in running stitch over worked with double stitch) partially closes the mouth of a bag that covered the head of a female adult burial in PP4 (Figure 3). The extension (7 stitches in 5 cm) is original, as it has a knot at the beginning and end. Besides the leftward twist (2SZ) of the yarn used as a seam element, I consider that the meaning of its particular location (which renders useless a key functional part of the bag's mouth) could be interpreted as a "symbolic death" of the bag, as has been suggested in similar contexts (Cases, 2003; Rolandi de Perrot, 1979). Finally I should add that, inserted into the successive stitches of this seam, there is a double thread (2ZS) made from human hair, introduced in the warp direction although it is hidden on the cloth surface.



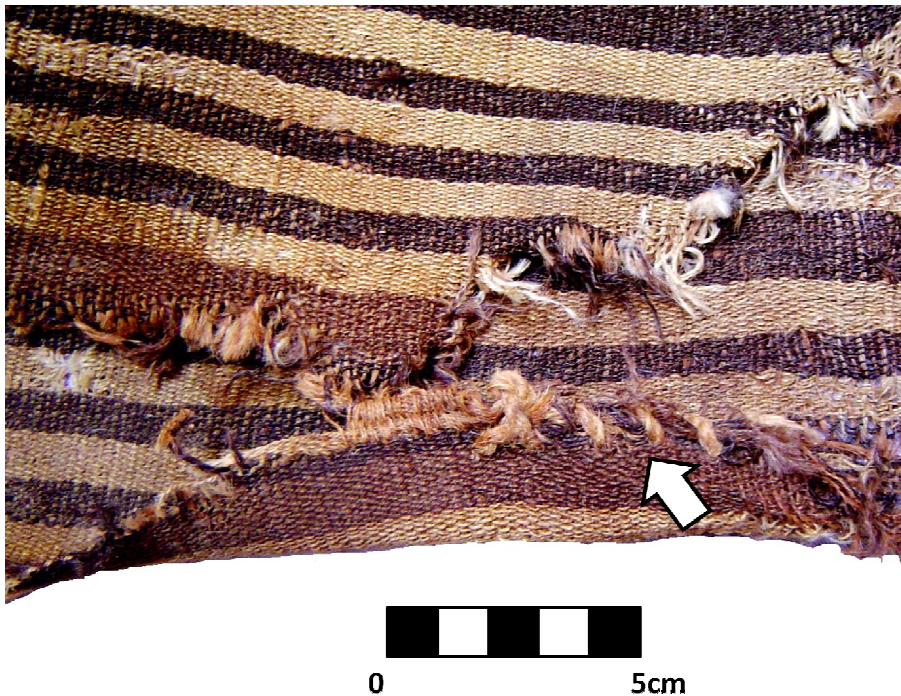
**Figure 3: Yarn Plied Leftwards (Final Z Twist) Recovered in Funerary Contexts: Detail of a Partially Stitched Mouth Opening of a Food Sack (Sp. Costal) (PP4). (Source: By the Author)**

c) The same bag (a food sack or Sp. *costal*) has two other seam lengths (both in overworked running stitch) with stitching carried out with left-plied yarn (*moliné* in one case and monochrome in the other). In this case, they concern partial seams of the long weft borders, and each one is found on an opposite border of the piece (right and left), and in counter posed positions (above and below). With respect to this point, it is suggestive that the contrasting colors of the left-plied yarns, as defensive and protective elements, are also placed on “crossed” parts of the body, such as the ankle and wrist, also opposed laterally (on right and left) during rituals to the *Pachamama*, as well as in funerary rituals (García & Rolandi de Perrot, 2000). The placing of these yarns is particularly striking as the seams are made from within the garment, so it was necessary to turn the bag *inside out* to make these stitches. This indicates a marked series of “inversions” associated with these particular seams, which were partially superimposed on to the usual seam stitching with threads in a rightward twist (2ZS) that covered both lateral borders along their whole length, and that were made with the bag in the normal position of use (Figure 4).



**Figure 4: Yarn Plied Leftwards (Final Z Twist) Recovered in Funerary Contexts: General View of A Partially Stitched Mouth Opening and Sides of a Food Sack (Sp. Costal) (PP4). (Source: By the Author)**

d) Finally the use of left-plied yarns (2SZ) was also registered in a seam (in wrapped running stitch/*punto corrido envuelto*) between the two lateral borders of a possible bag or tunic from a funerary context, in PP4. This has a knot at the beginning that extends for only a short length, which is then integrated into the longer seam made with normal right-plied yarn (2ZS). In this example it is also possible that we are dealing with an element added after the original making of the garment, as throughout a certain length it is superimposed on to the “normal” border seam of the cloth (Figure 5).



**Figure 5: Yarn Plied Leftwards (Final Z Twist) Recovered in Funerary Contexts: Lateral Seam in a Possible Bag or Tunic (PP4). (Source: By the Author)**

3.1.3.2 Presence of knots series. Similarly, a series of knots associated with archaeological funerary garments in both sites was registered in relation to three items:

(a) A composite cord (or rope) with a second plying (8S, 4ZS) is from the funerary context of PP9. This cord is thick (11 mm in diameter) and long (nearly 5 m in length). It has three half-knots in distinct sectors of its length, and a fourth knot that forms a complex loop at one end. Besides this, a *moliné* or bicolor yarn has been inserted along a short length of the cord and a second *moliné* thread was registered at one extreme of the cord, which is its beginning.





I think that this second *moliné* yarn could have been used to hold the set of double threads at a fixed point, so that the final re-plying could begin until the whole cord was made (Figure 6).

**Figure 6: Series of Knots on Funerary Garments: Drawing of a Cord Composed Of Knots and a Loop (PP9) (Source: Drawing by the Author)**

(b) A possible funerary bag (also from PP9), in a sector of the border lacking some weft threads, has a set of six knotted warp elements knotted together by a seventh yarn with the same structural role. There is a notable succession of ten half knots a short distance apart (1-2 cm) along its length. This is another striking feature, as making this series of knots cannot be attributed to repairing the garment. Added to this, these knots have a negligible visibility in the textile because of their reduced length, and the fact that these knots were superimposed on the main warp and weft threads of the piece. Based on ethnographic information about the role of knots in similar contexts, I would say, tentatively (and in the absence of opposing evidence), that these are related to ritual aspects, and/or a certain sense of agency, developed within a funerary ceremonial context (Figure 7).



**Figure 7: Series of Knots on Funerary Garments: Knotted Set of Warp Elements on the Border of a Possible Funerary Bag (PP9). (Source: By the Author)**

(c) A series of four successive half-knots have been made along a set of yarns belonging to a textile from the burial in PP4. The garment is a monochrome tunic (*unku*) in warp-faced weave that dressed a female body. The knotted threads hang from one end of a polychrome seam or band, located transversally on the border of the *unku's* collar opening. It is striking that the knots are only present in one of the sets of lateral threads that forms the finishing technique at each end of the embroidered band, so we are not dealing with a feature made with decorative aims.

### 3.1.3.3 The Material Basis of the Textile

The final technical attributes concern textile elements made with human hair that were registered among the pieces that made up two archaeological funerary contexts. The first of these, as we already mentioned, is a yarn of human hair registered in association with the seam of the partially sewn mouth of the bag that covered the head of a woman buried in PP4 (see Figure 3).

The second example is of yarns of human hair used to make a seam uniting two textiles recovered from the funerary context of site PP9. One corresponds to the funerary bag exhibiting a series of knots in the warp elements that we already mentioned, and the second is a smaller rectangular woven piece (20 cm in the warp and 14 cm in the weft) that has notable technological and representative attributes in the context of the whole set of woven pieces<sup>9</sup>.

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<sup>9</sup> This piece has a variant of the textile structure for which we have no referents in the local archaeological sample, or in the region of Northwest Argentina. The textile structure observed in the sectors adjacent to the central band of ladder designs can be defined as crossed-warp weaves (Emery, 1966, pp. 180-188; Rowe, 1977, pp. 99-105), and more specifically (López Campeny, 2000) as corresponding to a variant of transposed warp weave (Emery, 1966, p. 188; Rowe, 1977, p. 103), found recurrently in archaeological pieces in the Southern Andean Area (Rolandi de Perrot, 1973, 1979). However the final design is different from the more characteristic examples, especially in the fact pointed out by A. Rowe (1977, p. 103) that after making the crossed on the warp in a diagonal direction "these warps cross back in the opposite direction almost immediately..." By contrast, in the fabric recovered in the tomb of site PP9, the warps are progressively displaced a little, to the right or to the left, in each weft pass in a continuous matter, that is to say without ever changing direction, until it reaches the corresponding lateral border. Besides this, the design of both warp borders is symmetrical with respect to the centre of the cloth, as if it were woven from both extremes simultaneously. In this sense, the structure achieved is similar to that obtained with the technique known as "double plaiting" (d'Harcourt, 1962, p. 79, fig. 51) or "sprang" (Bjerregaard, 2002, p. 26; "interlaced sprang" *sensu* Seiler Baldinger, 1994, pp. 53-54, fig. 97 a-c), where each crossing produced in the upper part of the warps is reproduced in the lower part, but in the inverse direction, as the crossings are developed simultaneously in both extremes, approaching each other in successive rows, towards the central sector of the piece when the fabric ends. The most notable feature to differentiate this from "sprang" in this case is the presence of a second group of transversal elements or wefts. The textile piece also exhibits other unique features within the same set, such as a small circular bead of a valve united by a seam, and the insertion of yarns made with human hair that we already mentioned (López Campeny, 2000).



Two compound yarns (2ZS) made of human hair are located next to each warp border of the smaller cloth, which they cross along the weft length in a simple running stitch. Only one of the yarns has the function of forming a link between each garment (Figure 8)<sup>10</sup>.

**Figure 8: General View and Details of Cords Made With Human Hair Used as Seam Elements in a Possible Funerary Bag (PP9 III). (Source: By the Author)**

<sup>10</sup> For other references to the register of human hair integrated as an element of a seam in textiles recovered in funerary contexts, see Michieli (2000) and Torres & Conklin (1995).

### 3.2 Productive Rituals in the Andean Region: Generating New Life

I leave aside now the question of funerary rituals to focus on a quite different context of community practices in the propitiatory rituals of farming and herding fertility. In this context, too, innumerable studies document the active and manifold participation of diverse textile elements during the unfolding of these ceremonies. So I shall concentrate only on those aspects for which I have archaeological referents that can be interpreted in this same sense.

In the first place, one of the most relevant attributes in this sphere of propitiatory practices is the color of the textile material. The dominant tones of textile garments in funerary contexts are those obtained from the contrasts between natural colors of fibre (which have their own symbolic and mythical significance, as J. L. Martínez, 1992 shows). By contrast, in Andean productive rituals more vibrant colors, obtained by dyeing the fibres, play a preponderant role. In relation to this, I call attention to the animal marking ceremony known as *señalakuy* in Quechua, and *wayñu*, *k'illpa* (or *k'illpha*) or *uywak'illpaña* among Aymara populations (Dransart, 2002a, 2002b; Van Kessel & Llanque Chana, 1995). This concerns a ritual for revitalizing the fertility of the animals that make up the livestock; in Spanish it is called the *floreo* (blooming) or *marcaje* (marking) of the domestic animals (details of this ritual and its regional variations are found in Flores Ochoa, 1975; Inamura, 1988; Lecoq & Fidel, 2000; Palacios Ríos, 1988; Zorn, 1987 and others). During its performance, yarns made from dyed fibre (*cunti*), generally in left-plied (*llok'ø*) or else unspun fibre (*ch'impu*), but always in "strong and lively" colors (red, green, blue and its different tonalities), are used to "adorn" the animals during the ritual. These are used for making the collars (*agnu*) tied around the male leaders (Sp. *delantero*) of the troop, the fringed "flowers" (*t'ikas*) that decorate the animals' ears, and the borders of coca-bags (*chuspa*) or other small bags used during this ceremony. It is also common to use yarns dyed with intense colors to adorn the miniature sculptures, called *illa*, that represent the herd animals symbolically. Spun and woven elements are also placed on the ritual altar (Sp. *misa*) located near the animal pen (*kancha*) during the marking ceremony, where the presence of these textiles has agency in relation to the propitiation of herding fertility.

In other cases, the yarns are buried, together with other objects deposited as offerings, in cavities excavated in residential and productive areas, as well as inside “niches” in the walls or ceremonial nooks, a point we shall return to later (Arnold, 1994; Cereceda, 1987; Dransart, 2002a; Lecoq & Fidel, 2000; Martínez, 1992; Rolandi de Perrot & Jiménez de Pupporeli, 1983-1985; Van Kessel & Llanque Chana, 1995).

Another function of the twisted elements registered in the course of these ceremonies is their use in making small enclosures, or “symbolic pens”, in the interior of which are deposited to the fragments of ear-pieces from the livestock during the “marking” (Spahni, 1962, p. 32, as cited in Dransart, 2002a, p. 94). Göbel (2000-2002, p. 281) also mentions that during the rituals for reproducing the animals, the officiating shepherdess ties yarns of different colors to form a “nest”, which represents materially the livestock pens. Inside this ‘nest’, are placed coca leaves, the pieces of ears from the marked animals, and the heart or blood of the animal sacrificed in the pen. In association with the formation of these “symbolic pens” with yarns, it is very common to refer to the protagonism during herding rituals of the *mojón* (a rocky marker), at the foot of which the “nests” are buried.

The *mojón* alludes to a large stone or conical rocky hummock that represents the reproduction of the family’s herd animals, and is associated with residential herding sites. Each year during the marking ritual (Sp. *señalada*), stones are added to this rocky hummock, so that this *mojón* “grows” with the increase of the herds. In this way, the *mojón* documents, in a socially visible manner, the growth of a family’s herds. This lithic feature has been noted in relation to the ritual sites frequented by llama caravans, the most frequent findings associated with the boundary elements called *mojón* in these contexts being pieces of minerals and beads made of copper and other minerals such as malachite, chrysocolla (copper pitch ore, a copper silicate), turquoise etc. (Berenguer, 2004; Carrizo, 1934; García & Rolandi de Perrot, 2000; Göbel, 2000-2002; Lecoq & Fidel, 2000; Merlino & Rabey, 1983; Nardi, 1964-1965).

Within this framework of supporting documentation from historical and contemporary sources that refer to the symbolism of certain elements used recurrently during these ceremonies, I consider that certain archaeological contexts, which I shall now examine, can be related to these kinds of productive ritual practices.

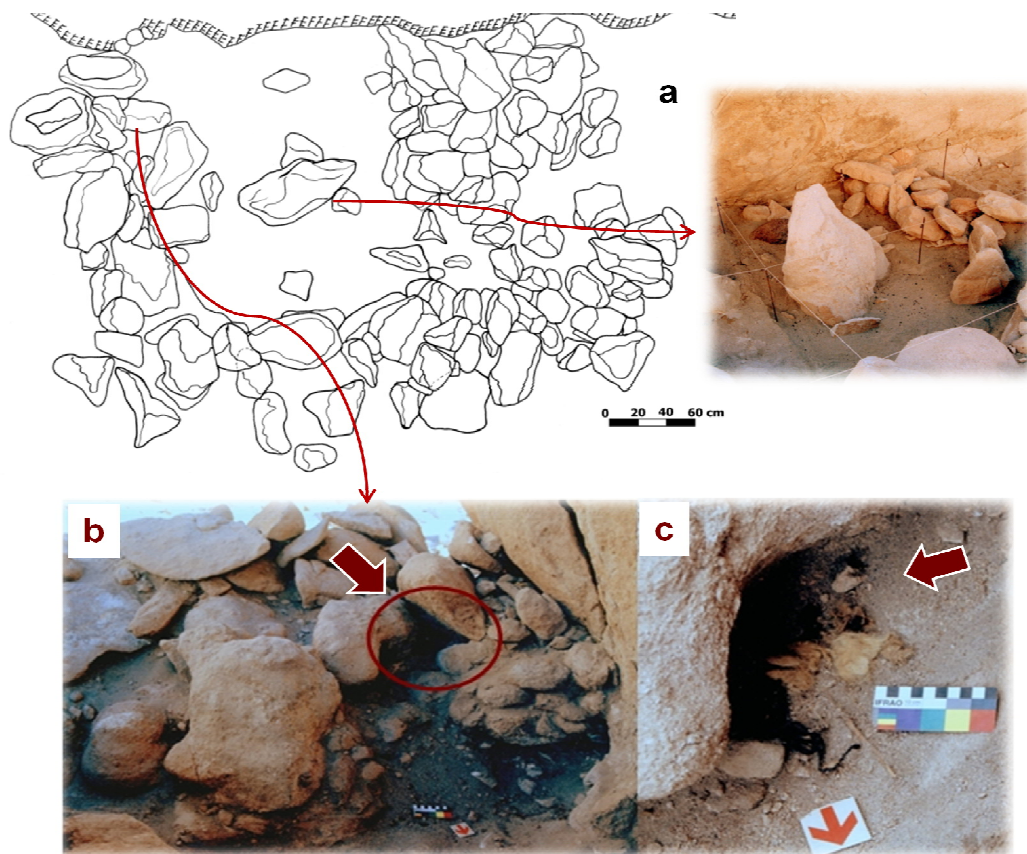
### 3.2.1 Andean Fertility Rituals: Herding and Farming Technology in Action

#### 3.2.1.1 The Piedra Horadada 2 Site: Monoliths, “Apachetas” And Rituals

The first of these archaeological contexts is a deposit, or intentional holding, of objects united by elements of rope work, camelid fleece, and fragments of equine mandibles (*Equus sp.*)<sup>11</sup>. One grouping was registered in the interstices or niche of a wall that formed part of an enclosure (E1) located at the site of Piedra Horadada 2 (PH2) (Figures 9a, b and c). This site was found at a distance up water of some 600 m from PP9, near the southern bank of the Las Pitás River, and its dating is *ca.* 1900 to 200 years BP (López Campeny, 2009). The enclosure with the intentional deposit of objects corresponds to a more recent occupational period at the site, with a chronology between *ca.* 700 to 200 years BP (Table 1). This is characterized by a rather peculiar feature in its interior, consisting of a huge and heavy block of rock (a monolith), shored up at its base by a pile of rocks that form an *ad hoc* foundation. Nearby is a mound of rocky debris whose formation reminds me of the so-called *apachetas* or *mojones*, as similar mounds of stones acknowledged ritually in the Andes until today (López Campeny, Del Bel, Rodríguez Curletto, & Romano, 2005).

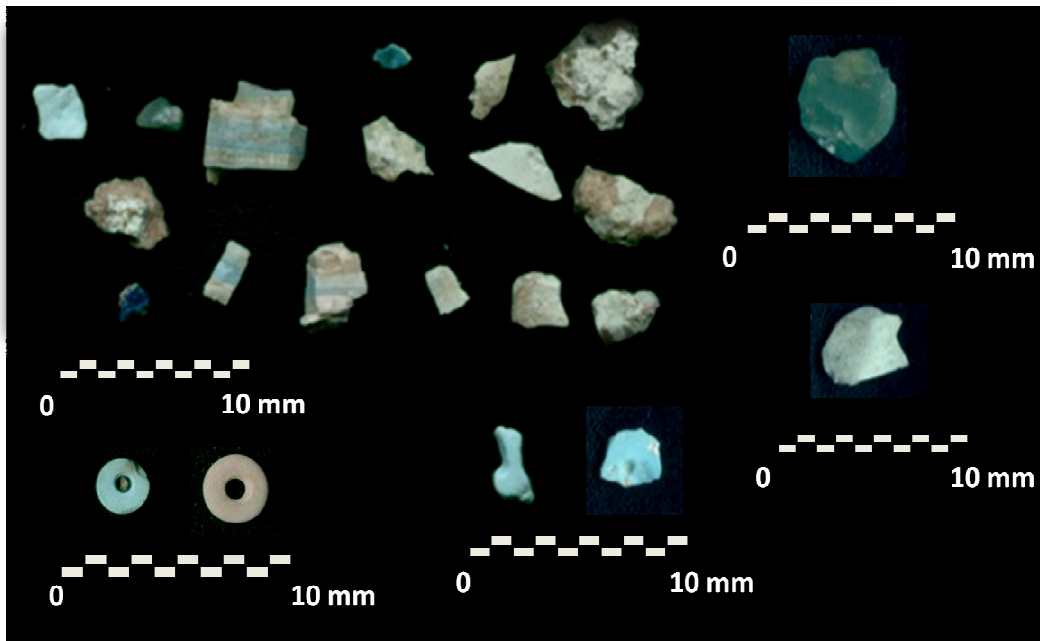
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<sup>11</sup> As modern horses (*Equus sp.*) were only introduced into the American continent in the fifteenth century, during the European invasion, its presence in the walls of structure 1 of site PH2 supposes a continuity in the use of the archaeological site during the Hispanic period. This fact has also been corroborated with the dates obtained recently for the site, around *ca.* 200 years BP for the most superficial levels of occupation (see Table 1).



**Figure 9: Plan View of E1, Site PH2. The Photos Show: A) The Monolith or Huanca, B) and C) an Intentional Deposit of Cords and Faunistic Faunal Bone Remains in the Wall. (Source: Photos and Drawing by the Author)**

More cords (with a first and second plying) were recovered in the interior of the enclosure, in the space around the monolith and in association with the stones that form the walls, together with a set of copper beads and minerals (turquoise) from a non-local provenance (Figure 10).



**Figure 10: A Set of Minerals (Nodules, Matrixes and Beads) Recovered in Association with the Monolith. (Source: By the Author)**

With respect to this deposit of yarns and animal remains in the wall (E1-PH2), Dransart (2002a, pp. 84-95) registered the presence of a niche (Aym. *t'uju*) in the centre of one of the walls of the *kancha*, where libation offerings were deposited during the marking ceremony in Isluga (Chile). In other recent contexts in the North of Chile, Berenguer (2004, p. 243) points out that among herding populations is customary to place llama heads in the walls of pens, in “ceremonial nooks”, as a part of ritual practice. He also registered the fact that during butchering activities in herding hamlets: “The heads of the animals are taken and stored in separate places with ritual objectives.”

Much further back in time, a historical document from the sixteenth century, associated with the process of extirpation of idolatries in Huamachuco, Peru, records ritual practices in the interior of the animal pens or large enclosures. The document mentions that in the walls of these enclosures numerous niches could be seen, inside which were deposited the remains of llamas and other animals sacrificed during the ritual (Augustinians, 1560/1865, pp. 14-15, as cited in Moore, 1996, pp. 134-135).



By integrating the evidence concerning contents (artifactual and ecofactual), as well as architectonic, stratigraphic and contextual features, I propose that the E1 enclosure was associated with rituals centered on monoliths (called *wanka*), that indigenous herding populations practiced until after some time after Spanish contact (López Campeny, 2009; Urquiza, Romano, & López Campeny, 2013), and where textiles also held a notable agency in the associated symbolism.

### 3.2.1.2 The Punta De La Peña 9 Site: A Ritual Deposit of Objects

Another textile example related to the sphere of propitiatory practices was recovered in association with a context interpreted as an “intentional deposit of objects” (Babot et al., 2007), identified with the site PP9. It deals with a series of wells excavated in the ground, specifically in the sector immediately against the plinth of a semi-subterranean enclosure (E3) located in sector I of this settlement (Babot et al., 2006). A varied set of elements was found inside these wells, including plant remains (maize, chañar and carbonized plants), wooden artifacts, mineral beads of diverse colors, a red pigment, plaques of mica and other minerals, animal remains of camelids (bone and fibre), feathers, grinding artifacts and worked stones, twisted elements in plant and animal fibre, among others. Their nature means they cannot be simply dismissed as waste material or accumulations of rubbish. Rather these authors have proposed that they are related to domestic rituals developed by farming and herding groups from the first moments of occupation of E3, around 1400 years BP (Babot et al., 2007). In support of this hypothesis, among the textile elements analyzed there was a set of cords in animal fibre, united by a central half-knot. This set of elements also included a length of left-plied yarn (*llok'ə*) made on the basis of a *moliné* cord of two-colored strands. I already considered both these attributes (tonal contrast and a leftward final twist) in terms of their protagonism in different ritual contexts in the contemporary Andes.

### 3.2.1.3 The Peñas Chicas 1.5 Site: The Power of Left-Plied Yarns

A third context of intentional depositing is striking for including a high concentration of animal and plant fibre and twisted elements. Among the latter were registered left-plied yarns, in some case made from *moliné* or bicolor yarns in contrasting colors (M. A. Schmitz, pers. com., 2011).

These were found at the Peñas Chicas 1.5 site (PCh 1.5), located at the archaeological locality of the same name (3578 masl) at a distance of a little less than a kilometer from Punta de la Peña, but on the opposite bank of the Las Pititas River (Hocsman, 2006). This is a small rocky outcrop, in whose shelter is an archaeological context formed by a stone circle where diverse material is deposited: twisted elements in plant and animal fiber, both dyed and undyed, fleece, and a set of animal bones dated to *ca.* 3800 years BP (Aschero, Izeta, & Hocsman, 2014). Besides the size of this concentration of textile elements, the context is remarkable because some yarns (including those plied leftwards) were recovered associated with a rock of intermediate size, which they wrapped around completely. There is a suggestive and consistent association between these twisted elements and certain rocks that symbolically represent the herd animals, whether the miniature stone *illas* or the boundary *mojones* which are decorated during the herding rituals. It is also significant that the bone specimens identified correspond to camelids, assigned by osteometric evidence to the morphotype "intermediate llama" (Aschero et al., 2014). Taken together with the early chronology, corresponding to a transitional moment between hunter-gatherer economies and farming and herding ones, I infer possible ties between this context, the ritual deposits associated with the initial moments of the process of camelid domestication, and the earliest register of left-plied yarns in animal fibre known so far for this micro region of Antofagasta de la Sierra.

#### 3.2.1.4 The Punta De La Peña 9 Site: Dyed Spun Elements and Propitiatory Rituals

Finally, I mention another finding which might form part of these practices. This is a concentration of compound spun elements with a second plying (6Z3SZ and 4Z2SZ) that have been tie-dyed using an *ikat*-like technique (Sp. *reserva, negativo* or *atado*; Qh. *qhawata*) in tones of an intense blue on a ground of beige fibres (Figure 11).



**Figure 11: Yarns Tie-Dyed By the Technique of "Ikat" (Sp. Reserva) (PP9 III).  
(Source: By the Author)**

The set (n: 17) was recovered in the same enclosure, but at a higher stratigraphic level (level 2) than the funerary context of PP9 already mentioned. The associated dates at each level (see Table 1) are almost a millennium apart (being *ca.* 600 years BP for the most recent level corresponding to the dyed fibres). The elements form a highly homogenous set from a technical point of view (successive directions of twist, number of component elements, diameter, tension, color, etc.). It is also striking that some of those elements recovered included a simple structure (in looping and a half-knot) reminiscent of the "collars" (Qu. *axnu*) used to adorn the herd animals, especially the male lead-llamas of the troop (Sp. *delanteros*), and whose structure is also rather like that of knotted *kipus* (Cereceda, 1987).

A similar adornment used during the marking ceremony in the Aymara-speaking community of Isluga (Chile) is called *wistalla* by Dransart (2002a, p. 84), which she describes as “a neck piece which consists of a series of colored yarns in tones of pink, green and orange hanging from a thick cord which will be tied round the neck of the camelids.” The author points out suggestively that the *wistalla* is made with a particular type of yarn called *anku*, which corresponds to a yarn with a double plying in the formula ZSZ, made with dyed fibres of intense colors. Then the *anku* is cut into small segments that are tied with a longer thread in the twisting technique called *mismiña* (Dransart, 2002a, p. 117).

So we can now integrate the available data (ethnographic and archaeological) for the Andean region with regard to the use of dyed and spun elements in different ceremonies, into the interpretation I proposed previously that linked this particular set of yarns dyed by *ikat* with elements that had a particular agency in the ritual plane for these populations, in relation to the propitiatory rituals for multiplying the livestock (López Campeny, 2006).

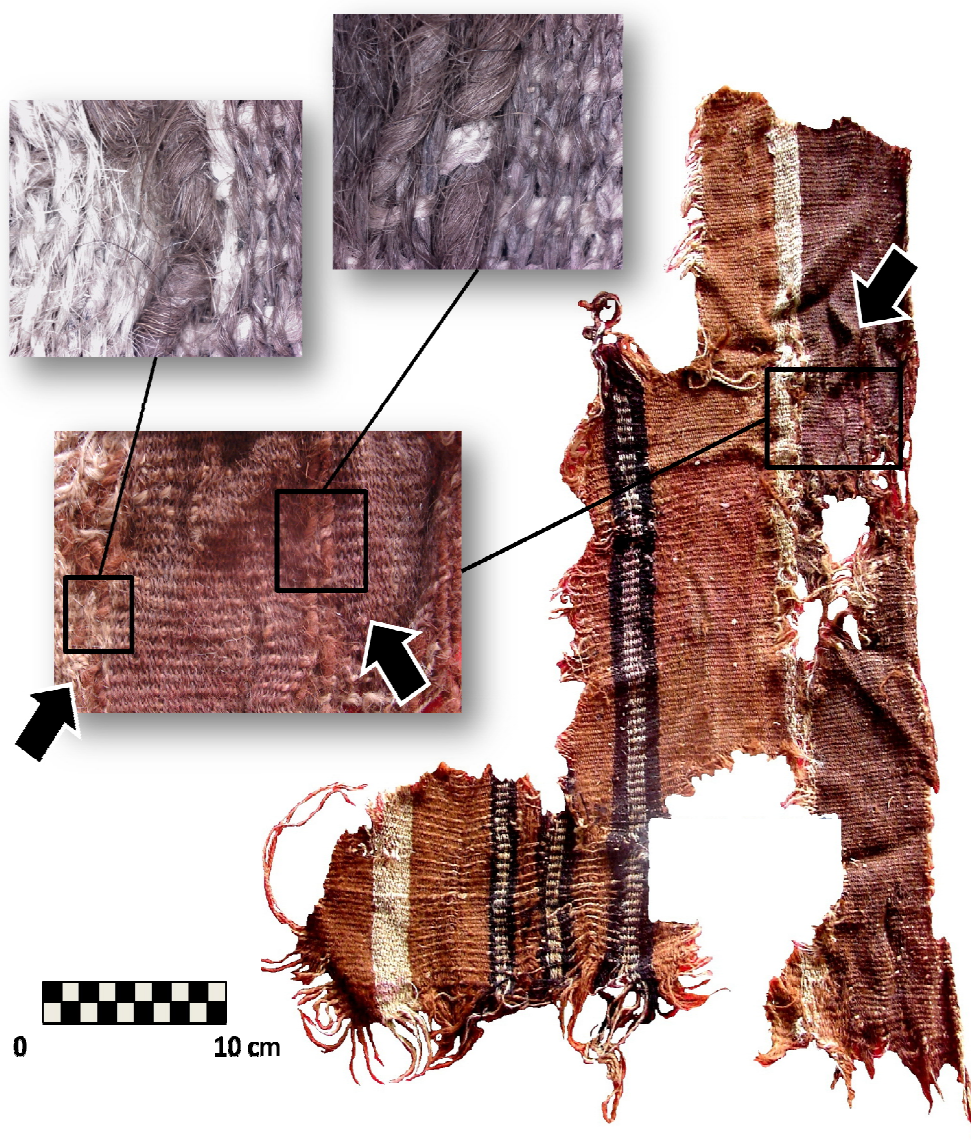
### 3.2.2 Farming Rituals: The Generation of New Seeds

Others archaeological contexts are more difficult to interpret and we need to study them more. I mention the case of a striped textile fragment in warp-faced weave, recovered within a ceramic piece (in site PPE)<sup>12</sup>. The fabric, previously folded, was deposited in the interior of a ceramic vessel, then covered with a stone, and finally covered completely with sandy sediment. In the sediment fill inside the vessel, a high level of tiny quinoa seeds (*Chenopodium quinoa*) was recovered (Babot et al., 2013). This sedimentary fill material had an intense red-colored pigmentation (its compositional analysis is still in progress), the same as that of the internal walls of the vessel, which were marked by the presence of this same red pigment that must have been added to the sedimentary component.

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<sup>12</sup> The recovery in this context was carried out by the archaeologist Natalia Chiappe Sánchez, researcher in the Museo de Antropología of the Universidad Nacional de Córdoba and a doctoral student financed by the *Consejo Nacional de Investigaciones Científicas y Técnicas* (CONICET), in the research project directed by Lic. Carlos A. Aschero. Each of these has kindly ceded woven material for analysis.

The most interesting point for the purpose of this contribution is that we observed the insertion in the warp direction of a set of left-plied yarns (2SZ) incorporated into the textile structure after it was made on the loom, in a sector of the cloth near a weft selvedge that has been preserved (Figure 12).



**Figure 12: General View and Details of a Fabric with Insertions of Left Spun Yarn in the Sector of the Weft Border (PPE). (Source: By the Author)**

The distribution of these stitches, and the surface covered by them, does not seem to be related to any kind of reparation of the piece. A second relevant point is that these seams have a diameter notably greater than that of the warp threads, and added to this, the fibre color does not coincide with that of the adjacent structural elements, which is usually a condition sought in the regular repair of garments when suitable raw materials are at hand. As a result, the left-plyed yarns are clearly visible on the fabric surface. I conclude that the most striking technical feature of this set of yarns is the final leftward direction of twist, because of the very particular agency this attribute has in the Andes.

Although it is not possible to relate the textile in a firm way with any particular garment, owing to its fragmentary state, I point out that the design achieved in warp-faced weave by alternating contrasting colors in natural tones, organized in bands of different thicknesses, together with the presence of ladder designs within the bands, link this textile visually with a group of Andean domestic bags<sup>13</sup>. The food sacks (Sp. *costal*) above all have a particularly constant design, with a marked uniformity in their aesthetics that seems to transcend ethnic frontiers, showing a great continuity in their representative aspects from the pieces recovered in archaeological contexts to those made in the present day (Cases, 2003, 2005; Cereceda, 1978, 1990; Hoces de la Guardia & Rojas, 2000). In this sense, I think that the presence of the quinoa seeds found in the sediment could add to this functional interpretation of the textile deposited in the ceramic vessel.

Returning to the available ethnographic references on the contexts of participation of leftwards twist in southern Andean populations, it is pertinent to remember their presence in different ceremonies related to fertility (Rolandi de Perrot & Jiménez de Pupporeli, 1983-1985). Something similar could be said with respect to the fecundating power associated with the color red, which in many Andean communities is associated with blood flow as the generating material of life, and often tends to allude to female creative capacity and fertility on general (Arnold, 1994; Dransart, 2002b; Mege, 1992).

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<sup>13</sup> Domestic bags are named differently depending on their size, morphology, and functions: *wayuñas*, *talegas* (*wayajas*) and *costales* (Sp. *kustalas*), although all of these are related to food production, storage and transport.

Based on these antecedents, I think that the presence of the stone laid over the textile, together with the quinoa grains, has sense in relation to the use of certain stones (such as the *piña*) placed on top of the grains in the household deposits, that are associated with the reproduction of the crops, in the same sense as they are placed in the animal pens, with the objective of augmenting the herds (Arnold, Jiménez, & Yapita, 1998, pp. 151-152).

No less relevant in my search for an interpretation of this context is the particular placing of the finding recovered in a sector of the *pampa* or platform on top of the rocky outcrop of the Punta de la Peña, at the foot of which residential and productive sites were found. This leads me to interpret such findings not as a throwing away but rather as an intentional (and carefully executed) episode of deposition. Considering the set of evidence outlined here, and their particular agency in the ritual sphere, I propose that we are dealing with some type of offering related to the propitiation of the food crops.

#### **4. Final Reflections: The Agency of Leftward Twist and its Survival over Time**

I analyzed here a series of archaeological cases that I interpreted as material manifestations of a set of social practices possibly related to Andean ritual contexts of a diverse character (funerary, productive etc.). My interpretations were based fundamentally on a contextual and integral analysis of the evidence (stratigraphic, tafonomic, associative, architectural, technological, etc.) recovered with the methodologies of archaeological work. Similarly, I based these interpretations on documentary information proceeding from diverse historical and modern-day sources, especially from the micro region of study and other nearby regions of the South Andean area, related to the participation of textile elements and certain technical features of these in different contexts of a ritual character.

To conclude, I reiterate the notable survival over time of certain textile features associated with the contexts of ritual practice, such as the case of left-plied yarns. If we consider the archaeological referents presented here, and integrate the available present-day information for the study area, we can register a long standing continuity for the micro region of Antofagasta de la Sierra, Catamarca, of almost four thousand millennia of the participation of this “inverse” twisting of yarns in different sphere of activity that always draw on a particular sense of agency in the power of protection and/or curing.

I hold that the long duration of these practices affirms their ancestral character, and that as forms of collective commemoration, these practices (productive, ritual) trace out ties with the past and the ancestors founded in their very continuity, as the sustenance of generational transmission to reaffirm family rights over their territories and resources.

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