The Intersection between Art, Non-Linguistic Symbol Systems, and Writing: The Case of the Wari, Tiwanaku, and Inka Iconographies

Tomi S. Melka & Robert M. Schoch

Abstract. The present study focuses on iconographic aspects of Wari-Tiwanaku (who occupied portions of modern Perú, Bolivia, and Chile, *circa* 100 BCE to 1100 CE) artifacts. The hypothesis that the graphic Wari-Tiwanaku elements constituted a cogent semiotic system is explored. Many of the Wari-Tiwanaku elements reminisce (or evoke) the later classic Inka (= Inqa / Inca; *circa* late 15th to early 16th centuries CE) geometric-like / stylized *t'oqapu* patterns which it has been argued formed a visual system based on mnemonic-like principles with possibly emerging logographic elements per various scholars. Selected models, fundamentally from a number of textile and pottery samples of the Wari (+ Wari-Tiwanaku) and Inka cultures, have been retrieved and subjected to iconographical and comparative analyses. The results vouch for the continuity of cultural patterns among these highland pre-European Andean states, separated temporally by hundreds of years, with the Inka having possibly adopted and refashioned an unspecified number of motifs in agreement with their ideological and aesthetic agenda.

1. Introduction

This article focuses on iconographic aspects, present in some Wari-Tiwanaku and Inka artifacts, in particular, in tapestry tunics. The discussion of the Middle Horizon iconography hinges on the meaning, chronology, spatial extension, plus the Wari-Tiwanaku imagery interaction (cf. Stone, 1989 [1987]; Cook, 2004, p. 150; Isbell, 2008, pp. 732–739). These topics have been around for a long time in the mainstream research, yet they are not fully understood.

The target corpus, square or rectangular-like units often repeating themselves across vertical bands in Wari or Wari-related tunics, are

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arranged or distinguished by color sequencing, and by a number of recurrent motifs in the greater part of the artifacts (cf. Stone-Miller, 1992, pp. 342–343; Conklin, 1996b; Bergh, 1999; Oakland Rodman and Fernandez, 2000, p. 121; Frame, 2001, pp. 128–130). They are compared with other quadrangle structures organized vertically, diagonally, or horizontally in a modular fashion, displaying embedded colors, sundry patterns in a bipartite or quadripartite manner, and found in Inka or Inka-related tunics. Such geometrically conceived structures answer in our time to the name of *t'oqapu* (Rowe Pollard, 1978; Rowe, 1999 [1979]; Dransart, 1997 [1992], p. 159; Silverman, 1994, pp. 13–14; Stone-Miller, 2002 [1995], p. 212; Phipps, 1996, p. 153; Arellano, 1999, pp. 253–260; Frame, 2001, pp. 132–135; 2007; Heckman, 2003, p. 49; Stone, 2007; Clados, 2007).

For analytical and comparative purposes, a number of non-Andean artifacts coming from different cultures and eras are referred to in this essay. Technically, however, the non-Andean artifacts are not included in the Wari-Tiwanaku and Inka sampling(s).

These ancient Andean designs are not limited to textiles, being observed additionally in ceramic (urns, jars, beakers), wooden, and metal objects. Examination of the fabrics' iconography shows a notable resemblance in concept of design. However, ancient Andean images are known to reciprocate the internal textile structure, i.e., the very act of weaving creates images, and are metaphorically used to codify social thought and relations (see Frame, 1994, 2001; Conklin, 1996a, pp. 325–326; Paul, 2004; and Franquemont, 2004). The two combined aspects turn into communicative messages of sacred and secular content, in the Middle Horizon context, and in the next cultural context, the Inka.[1] Given the precedents, and due to the later *t'oqapu*[2] expanding phenomenon (Rowe Pollard, 1978, pp, 19–25), it is suggested that Inka — or better, the segment of Inka population in charge of the designing and weaving processes — benefited, and/or altered and reformatted to their advan-

1. During the *t'oqapu* analysis of the royal tunic of Dumbarton Oaks, Washington DC, Stone (2007, p. 401) thinks that "… *some of the non-Inka patterns may refer in an appropriate sense to the past of other traditions*". Other traditions refer to Nazca, Wari, or Tiwanaku.

2. Since the time when the Peruvianist Victoria de la Jara (1967, 1970, and 1975) raised the question of Inka *t'oqapu* motifs as elements of a writing system—and with their increased documentation over time—, the scholarly debate around them has not abated. Whereas the related literature is sufficiently rich (see e.g., Barthel, 1971; Rowe, 1999 [1979]; Arellano, 1999; Desrosiers, 1992; Quispe-Agnoli, 2002, 2006: 180–185; Phipps et al., 2004; Frame, 2007; Stone, 2007; Clados, 2007; Gentile Lafaille, 2010; Cummins, 2011; Silverman, 2011), the interpretative theories offered fit the range from *rational* and *plausible* to *unwarranted* speculations. For the etymology and the successive semantic shifts of the word <*t'oqapu*> one should consult Cerrón-Palomino (2005, and also 2008, pp. 99–109).

tage a selection of Wari, Wari-Tiwanaku, or pre-Wari patterns. This hypothesis may also permit searching for semantic values throughout the patterns. Similarly, we should be realistic and admit that the study cannot fully cover the Middle Horizon and Late Horizon periods.

Here we mention that the area of *t'oqapu* studies is far from being conventionalized due to both the lack of evidence and disputed putative evidence, caused especially by the not-so-well coordinated work of specialists of different areas, and by sometimes questionable (or questioned) estimates of the underlying mechanisms of *t'oqapu* compatible with assumed linguistic or pre-linguistic (= mnemonic-like) values.

Exhaustive mention will not be made in this essay of weaving techniques and processes, already discussed by scholars (Stone, 1989 [1987], pp. 71–74; Desrosiers, 1992; Frame, 1994, pp. 330–334, 2001, pp. 128–131; Stone-Miller, 1992, p. 336; 1994c, pp. 36–41; Oakland Rodman and Cassman, 1995; Conklin, 1996a, pp. 325–326; Bergh, 1999; Brinckerhoff, 1999); the technique features of Wari-style tunics compared to the Inka ones (Rowe Pollard, 1978, p. 8; Oakland Rodman and Cassman, 1995, p. 34); and dyeing techniques and colorants regarding the tapestry of Wari tunics (Stone, 1989 [1987], pp. 61–66; Conklin, 1996b), all standing for relevant, yet distinct subject matters from our own. At any event, attending comments based on the mentioned sources occur.

The term *pattern/s* used here is based on Washburn (2004, p. 47),

> By *pattern*, I mean an arrangement of marks that repeats in systematic fashion. Such patterns can be distinguished by the geometries that are used to repeat the marks.

Finally, the consistency of spelling has been enforced on certain assumed native terms, opting for the lexical forms *Wari*, *Tiwanaku*, *Inka*, *t'oqapu* and *unqu* ["a *knee-length sleeveless tunic*"]; see Rowe Pollard (1995–1996, p. 24). Exceptions in this sense would include their different use in the referenced sources. In a similar way, the caption "CE" is placed after the provided dates for the artifacts, while the acronyms "W-T" and "MH" are alternatively used with Wari-Tiwanaku, and Middle Horizon. Regarding the Inka civilization, the terms *Inkario* and *Tawantinsuyu* refer interchangeably to the land or realm of the Inka in their apogee, pointing to the Late Horizon period of the Andean culture, 1476–1532 CE, in keeping with the chronological scheme set by John H. Rowe (1965). Consistency in Inka terminology is attempted throughout the article, unless sporadic alternative variations are cited from original sources. This terminology may be contested by other experts on spelling, cultural, and individual grounds (Niles, 1999, pp. xi–xii; Steele and Allen, 2004, p. xv). Making use of such spellings does not affect their semantic content, being in the end the same units. Among the parallel (or *ad hoc*) forms present in the literature are [*Inca*, *Ynga*, *Inga*, *Incca*], [*t'oqapu*, *tokapu*,

tukapu, *ttocapu*; *tocapu*, *toccapu*, *tocapo*, *toqapu*, *tokhapu*, *t'uqapu*], and [*uncu*, *unccu*, *unku*]. Similarly, drawing on terms such as the *diamond waistband*, the *Inka key* (= "percent signs"), the *black-and-white checkerboard*—describing the basic motifs across the *t'oqapu* arrangements—is meant as a neutral and technical terminology of convenience. It should be clear that such descriptions do not imply by any means to "readings" or "translations" on our part; from the Inka perspective, we believe that these code-names—most likely—are blatant misnomers.

The term *camelid fiber*, a natural, protein-based fiber coming from animals such as alpaca, llama, or others, is employed instead of *wool*, perceived as connected with sheep's fleece (Stone, 1989 [1987], pp. 55–60). On herding and pastoralism in the Andean highlands, and techniques of preparation of fibers for weaving, see Flores Ochoa (1986, pp. 137–148), the subsection *Camelids* in Stone-Miller (1992, pp. 337–342), and Dransart (2002).

2. The Corpus Sampling Issues in the Wari and Wari-Tiwanaku Corpus

Regarding the extant textile record of Wari (= Huari) and Wari-Tiwanaku (= W-T) artifacts appropriate for a scientific analysis, Stone-Miller (1992, p. 336) states,

> Because of the primacy of fiber and the number of roles it played, the Middle Horizon textile record is fairly diverse in terms of function, technique, and style. It encompasses a number of object types, including, but not limited to: tunics... mantles... hats... quipus... and what appear to be hangings... as well as headbands, bags and belts.

The data for analysis are confined by and large to the accessible tapestry tunics, wherein individual or groups of geometric and (incidentally) non-geometric patterns are searched for. The authentic material is deposited in public and private museums and private collections, retrieved directly through *archaeological excavations*, for instance, mummy bundles wrapped in mantles or wearing tunics (Figure 1; Conklin, 1996b, p. 405, Fig. 151; Pasztori, 1998, p. 124; Kaulicke, 2000, p. 315, Fig. 1; pp. 316–317, Figs. 2, 3, 4; Longhena and Alva, 2007, p. 108; Museo Larco, 2022a); acquired through *purchases*—typically detached from an archaeological context—, see e.g., Lothrop and associates (1959 [1957]); or received as *gifts* (Rowe Pollard, 1978, p. 5; Stone-Miller, 1994a, p. 98, Plate 20; p. 129, Plate 128).

Assessing the characteristics of the W-T tapestry tunics offers a better grasp and appreciation of the analysis. Rodman and Cassman (1995, p. 37) described the common features Wari and Tiwanaku tunics share, as well as some of their clear differences. The W-T imagery, layout,

(a) (b)

FIGURE 1. (a) A Wari (Huari) funerary bundle (Museo Larco, 2022a; https://www.museolarco.org/en/exhibition/permanent-exhibition/masterpieces/huari-funerary-bundle/); inventory no. ML800001; style: Wari; chronology: Middle Horizon (600 CE–1000 CE); Region: Sierra Sur [Highlands of southern Perú]. The mummy is decorated with a golden mask, a feather headdress, and a tapestry tunic displaying geometric motifs with curlicues. (b) Lateral view (left side) of the funerary bundle described in (a) (Museo Larco, 2022b; https://www.museolarco.org/catalogo/ficha.php?id=44102).

and repetition patterns are quite similar, the shape and size being the same. In contrast to Tiwanaku, Wari tunics have two different rectangular webs seamed down to the tunic center. According to Oakland Rodman and Cassman (1995, p. 37), "*…this construction eliminates the need for a cumbersome scaffold… with the neck formed in the embroidered finishing, not within the original construction as in Tiwanaku and Inca tunics*". Tiwanaku tunics are woven from the finest camelid fibers, whereas the Wari ones contain a variety of fibers in the warp: *cotton*, *camelid*, or *cotton and camelid* plied together. Given the parallels, the Wari and Tiwanaku iconographies are here generally treated as one category when compared to Inka tapestry.

It is reasonable at this stage to question if the Wari-Tiwanaku specimens are *randomly chosen*, and if the current number of textiles is *representative* of the corpus in the W-T areas of extension and influence. Wari-styled tapestries appear in larger numbers and are better-known than those of the Tiwanaku (Stone-Miller, 1992, p. 336; Oakland Rodman and Fernández, 2000, p. 124). The answer is proportional to: (a) the high-quality sources available to the present authors, (b) their significance and association with the Late Horizon Inka patterns, basically found in *t'oqapu*, e.g., the *Greek key*, or the *stepped-diamond*, (c) the lack of a full range of variability through time and space in Wari-Tiwanaku motifs, evidently related to the criterion of corpus representativeness (see e.g., Biber, 1992). The existence of any MH artifact is evidently due to acts of randomness, supplying us, however, with needed evidence. In former times, the Andeans did not think of other people, especially not of those

living in the distant future on different landmasses, taking up studies to learn and advocate for their culture. The objects—what is left and retrieved to date using legitimate or (unfortunately) illegitimate means—are non-intentional time-capsules. Considering the vicissitudes of time, climate factors, the ingrained warfare in these states and in later cultures that expanded over their territories (e.g., Inka), the policies imposed by the Spanish conquistadores and settlers, plus the systematic looting carried on by a mixture of adventurers and *huaqueros* [grave robbers, shrine robbers][3] alike, modern scholarship is fortunate to have a substantial number of artifacts from the MH period. Studying a (much) larger corpus, apart from being an outsized employment for two researchers in terms of time and finances, will inevitably face the ensuing problems:

- *Are all the occurrences (or samples), central to the W-T iconography, whether finely preserved or damaged?*[4]
- *Do they stand regularly for extended and sequential periods of time in the assumed chronology of Wari,*[5] or *of Tiwanaku? Is the dating of the artifacts, as indicated in the cited sources, credible or somewhat credible?*[6]
- *What about the reliance on samples of private collections lacking dating information or even provenance* (Ángeles and Pozzi-Escot, 2000, p. 410)?
- *What is the margin of error if results are generalized and used in new studies, assuming always that accidental bias is part of an incomplete quantitative approach?*

The difficulties are of a major scale and can be counteracted through a diligent study that aims at integrating the internal textile structure,

3. *Huaquero* derives from *huaca* (see Rostworowski, 2007, p. 171), "*...el término huaca, voz quechua y aymara, para señalar lo sagrado, el ídolo y el santuario*" [...the term huaca, a Quechua and Aymara word, to indicate the sacred, the idol, and the shrine]. An English equivalent of the word *huaquero* could be *treasure hunter*.

4. Specifically, a fragment of Wari tapestry tunic, Middle Horizon, 500–800 CE, camelid fiber, 92 × 55 cm, *Museum für Völkerkunde, München* [Munich], inventory No. 58-1-1 (see Paternosto, 2001, Plate 6), appears to be reasonably well-preserved. On the other hand, a deteriorated fragment of a Wari tunic, 31 × 54 cm, salvaged from the site known as *"El Castillo" de Huarmey* is illustrated in Prümers (2000, Fig. 19). Despite the atrocious physical condition, the main theme of the *staff-bearer* is still recognized in its upper section. A careful examination shows a striking affinity in terms of iconography with the textile fragment in Paternosto (2001, Plate 6). Following this context, Oakland (2012, p. 3, Figures 3 and 4) illustrates a Tiwanaku tapestry tunic found in a funerary bundle, inventory no. 5382, held at *Museo R. P. Gustavo Le Paige*, San Pedro de Atacama (Antofagasta, Chile). The physical condition of this six-banded tapestry leaves much to be desired; however, one is able to discern repeating images that include animal-headed *staff-bearing figures*. Partially damaged pieces are similarly illustrated in Bergh (2013, p. 176, Figure 165) and Bergh (2013, p. 178, Figure 167).

5. Benavides (1999, p. 398) mentions three great moments in the development of Wari society: the formative process 500–700 CE, the expansive period 700–1000 CE corresponding to the Wari Empire, and 1000–1100 CE related to its decline and decay.

6. For issues related to radiocarbon dates in South American archaeology, see Silverman and Isbell (2008, p. xix).

comparative iconography, and selective radiocarbon dating. We shall return to these matters in the forthcoming sections as well.

Given the immensity of the task, we wish to respond to some of the listed problems: the approximation in dating, e.g., a piece of tapestry belonging to a time period 600–900 CE, or 600–1000 CE, is not of much assistance in verifying developmental trends; or worse, the absence of dating may affect the analysis in keeping with rigorous scholarly standards (Stone, 1989 [1987], p. 27; Bergh, 1999). Hence, scholarship has by default to depend on the textile structure itself to define plausible guidelines. In theory, any projected size of MH samples is idiosyncratic and never perfect, since it is based on a finite number of objects, and reflects the sampling criteria and physical possibilities of a researcher or of a group of researchers, and finally, it lacks precise chronology. The present corpus is an open one, meaning, more artifacts could be possibly retrieved through archaeological excavation sites, e.g., *Huamachuco*, see Topic (1991, pp. 141–164); *Wari*, see Isbell and associates (1991, pp. 19–55); *Huaca Malena*, see Ángeles and Pozzi-Escot (2000); *Conchopata*, see Isbell (2000); *Cerro Baúl*, see Williams (2001); *Moquegua*, see Owen and Goldstein (2001); *Pulacayo*; see Agüero Piwonka (2007); *Pikillacta*, see McEwan (2005, pp. 147–165) and Ligmond (2021), or unknown, new centers. Items that may appear in the future—plus the iconographic analysis—may validate (or not) the conclusions of this study. The expansive character of the W-T corpus invites other scholars to take previous and current iconographic studies into account and move forward. Establishing the degree of arbitrariness in the devised corpus may be problematic, since no thorough control or adjustment can be diatopically and/or diachronically set. Hence, caution should be exercised: it is advisable to make studies of a similar nature and look forward to verification from experts rather than to slow down the research. At this stage, the following technical points clarify that: (a) In various cases, slight modifications, i.e., isolation and/or rotation of elements, are made for ease of perception. Similarly, the patterns are not disjointed on purpose, but rather isolated for the specific analysis and comparison, plus the practical effect: image amplification and saving space. In any case, to avoid the misconception of gestalts, the complete images are more often than not printed separately, given that *the appearance of any element depends on its place and function in an overall pattern* (Arnheim, 1997 [1974], p. 5). In contrast, the retrieval of the full context (= "textile syntax") giving meaningful association to the patterns must be done by consulting the literature. (b) The provenance, or cultural links to the artifacts are consistently identified, unless they are inadequate, or omitted in the original references.

3. Sampling Issues in the *t'oqapu* Corpus

Since the scholarly accounts differ regarding understanding and explaining the *t'oqapu* motifs, a few remarks on sampling may help in better coping with the situation. The careful and accurate retrieval of data from genuine sources as an essential step for a succeeding scientific survey and feasible reconstitution of past phenomena is noted in various studies (Bouissac, 1994, p. 357; Baena Preysler et al., 1994, pp. 160–170; Meyer et al., 2006, pp. 1605–1606; Melka, 2008). Accordingly, the study and assessment of the pre-Colonial textiles are "plagued" down to our day in large measure by cultural, geographical, and historical gaps due to illegitimate diggings, or plundered and vandalized archaeological sites (Sawyer, 1961, p. 269; 1979, p. 129);[7] Rowe Pollard, 1979, p. 185; Young-Sánchez, 2006, p. 77; Gentile Lafaille, 2008, p. 10).[8] Another closely related problem, rising however above the specific Inka studies is the *sample bias*, considered "... *a danger in every research field*" (Good and Hardin, 2003, p. 7). Due to uncontrollable factors, mostly of an historical nature, the data size, i.e., the number of artifacts displaying varieties of *t'oqapu*, is not sufficiently large (cf. J. H. Rowe, 1999 [1979], pp. 604–648);[9] Heckman, 2003, p. 51). As a result of the (a) *scarcity*; (b) of *tunics and other items that fall short regarding their preservation state*; and (c) *given their diatopic and diachronic randomness*, distortion and evaluation errors may be expected even in the most rigorous inspections, and probably in later generalizations and/or replications. Modern scholars may not know if the number of the remaining *t'oqapu* textiles stand for a *substantial* or *insignificant* part of the total number of these artifacts. However, we may be inclined for the second choice, because the *unqu* corpus in the late days of the Inkario (i.e., Inka empire) was reportedly enormous, consisting of "countless" pieces, amassed in storehouses,[10] and circulating across its territory as distinctive outfits or redistributed as praised gifts (see

7. Sawyer (1979, p. 129), "Researchers dealing with ancient Peruvian textiles are faced with a number of major problems in establishing the date and function of specimens under study. Most of the Peruvian fabrics in the world's collections lack provenience and grave-association information".

8. "Muchos objetos andinos prehispánicos, *descontextualizados mediante el huaqueo...*" [Many pre-Hispanic Andean objects (are; *our note*) removed from their context through plunder...].

9. See the former assessment by Rowe (1999 [1979], p. 648), "It must be remembered that we are dealing with a very small sample, *made up in large part of tunics published with very inadequate information and illustrated with black-and-white photographs. Because of the limitations of the sample, we have been able to discuss mainly certain aspects of patterning and size*".

10. Such as in the sites of Huánuco Pampa, Hatún Jauja, Pumpu, Valle Calchaquí, Huamachuco, Mantaro Valley (see D'Altroy and Hastorf, 1984; D'Altroy and Earle, 1985; LeVine, 1992).

especially Murra, 1991 [1962], for Inka diplomacy regarding the finely woven textiles).

It should be noted that the collection of data is straightforward. Samples are extracted and investigated from published sources (in printed and electronic forms). Nonetheless, as John H. Rowe (1999 [1979], p. 648) notes, there should be further, untapped exemplars accommodated in a number of museums, private collections, or in the custody of auction houses and antiques stores (see H. A. Galleries, 1999–2010). Such genuine tunics with *t'oqapu* compositions remain unpublished and undescribed due to researchers' ignorance of their existence (see in particular Rowe Pollard, 1978, p. 5), or "because they are considered to belong to '*well-known*' *types*" (Rowe, 1999 [1979], pp. 648–649). With due attention and in time, they may resurface and potentially serve the interests of scholarly study. Incorporating additional textiles—primarily tunics and other garments—, will increase the reliability of the work. The integrity of inferences and conclusions will correlate with the nature and condition of the targeted samples (*v. supra*); some tunics and other artifacts bear *t'oqapu* that are blurred, scraped, or disfigured beyond recognition. By the same token, personal variables, concomitant idiosyncrasies, sloppy or deviant behavior in Inka textile manufacturing should be anticipated. It may be assumed hereafter that the Inka weavers were not copying *ad litteram* the entire time from *t'oqapu* designs of prior, or of other, exemplars. Despite what they were taught, it is likely the *qumpicamayoc* (= a class of selected expert weavers) might have developed on occasion their own styles and practices in creating the tapestry tunics. Weaving styles or identities apart, they do not interfere with the classification of some of the basic *t'oqapu* motifs discussed below.

4. Overview of the Wari, Tiwanaku, and Inka Empires

Researchers have described and commented upon the Wari polity in a number of publications: the beginnings, expansion from its heartland Wari, near the modern city Ayacucho, through coastal and highland areas of present day Perú, and the later weakening and decline (Menzel, 1964; Gonzáles Carré and Gálvez Pérez, 1981; Isbell and Cook, 1987; Kolata, 1993; Knobloch, 1993; Stone-Miller, 1994c, p. 35; Cook, 1994, 2004, pp. 149–150; Benavides, 1999; Schreiber, 2001; Bauer and Jones, 2003; Isbell and Vranich, 2004, pp. 167–181; D'Altroy and Schreiber, 2004, pp. 271–278; McEwan, 2005; Janusek, 2008, pp. 291–292; Isbell, 2008; and Figure 2). Differences and similarities between the major cult centers Wari and Tiwanaku, coexisting and interdependent as peer-polities deriving in a bicephalic "socio-political organism," or probably as sovereign forces vying for dominance, are explored elsewhere (Stierlin, 1984,

pp. 131–132; Stone, 1989 [1987], pp. 20–25; Cook, 1994; Conklin, 1996b, p. 375; 2004, p. 180; Bergh, 1999; 2004, p. 154; Isbell, 2000, pp. 12–15; 2008, pp. 738–753; Williams, 2001, pp. 67–83; Schreiber, 2001, p. 92; Williams León, 2001, p. 59; Young-Sánchez, 2004a, pp. 66–69; McEwan, 2005; Janusek, 2008, pp. 250–289; Isbell, 2008; Ligmond, 2021). In our opinion, since the interrelation Wari-Tiwanaku remains a matter of contention (see Bergh, 1999), assumptions are not taken for granted. There is, however, a partial consensus among scholars regarding the nature of the Wari state (see also Isbell, 2008, p. 753),

> Most researchers agree that Wari was an expansive state, an empire that consolidated power rapidly. Cook (2004, p. 146)

As for the timespan, there are still differences of opinion, although the main idea is distilled when one refers to four different sources. Hughes (1995, p. 106) discussing the Middle Horizon period, claims that it spans approximately four centuries from 600–1000 CE. Benavides (1999, p. 398) remarks on three great moments in the development of Wari society, the formative process 500–700 CE; the expansive period corresponding to the Wari empire 700–1000 CE; and the decline and decomposition 1000–1100 CE. Bauer and Jones (2003, p. 1) on the other hand state that *the Wari began to expand from their traditional power base in the Ayacucho region of Peru sometime after 550 AD and that state expansion continued through at least 900 AD., after which the state appears to have suddenly collapsed*. Cook (2004, p. 158) in turn, follows along the lines of Benavides (1999, p. 398), "Instead of a *200-year span* (*approximately 650–800 AD*) *during which time the* [Wari; *our note*] *empire flourished*, *the time frame has doubled* (*approximately 550–1000 AD*)."

The understanding of the social dynamics, the religious and military strategies (provided we are dealing with a true imperial expansion, or with something more than a religious proselytism, cf. Stierlin, 1984, p. 134; Isbell, 2000, p. 12) and its final decay are nevertheless beset with difficulties, as explained by Schreiber (2001, p. 70),

> For the earlier Wari empire we can rely only on archaeological data. We have no literary record of the words or thoughts of the people of Wari; we do not even know what they called themselves.

The situation, nonetheless, should not prevent scholars from bringing together their efforts toward additional material evidence; see especially Isbell (2000, pp. 10–11).

Now we turn our attention to the other ancient Andean civilization: that of the Inka. Regarding the mythological universe and sociocultural-economical profile, the rise and fall of the largest political and military structure of the pre-Conquest Americas, there are a number of essays and books, e.g., Murra (1991 [1962]); Rowe (1999 [1979]);

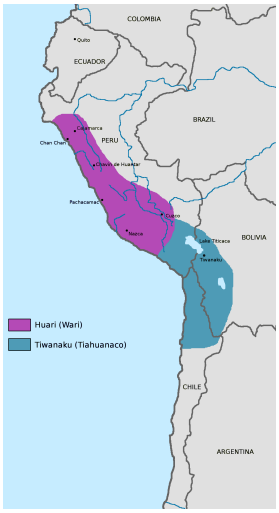


FIGURE 2. Expansion area of influence of the Wari (Huari) and Tiwanaku (Tihuanaco) cultures. File: Huari-with-tiahuanaco.png. Author: Zenyu~commonswiki - Own work. Public Domain; Created: 18 December 2004. https://upload.wikimedia.org/wikipedia/commons/0/00/Huari-with-tiahuanaco.png (accessed 22 March 2022).

Urton (1990); Centro Cultural de la Villa de Madrid (1991); Pärssinnen (1992); Morris and Von Hagen (1993); Pease, G.Y. et al. (1999); D'Altroy (2001, pp. 201–226; 2005 [2002]); MacCormack (2001); Cummins (2004, pp. 2–16); Steele and Allen (2004); D'Altroy and Schreiber (2004, pp. 261–270); McEwan (2006); Rostworowski (2007), Stone (2007), Covey (2008, pp. 809–830) — to name a few of them. According to scholars, the expansion of Inka imperial order began around 1400 CE (D'Altroy and Schreiber, 2004, p. 261; Covey, 2008, p. 814). Though shrouded in between history and mythology, an important figure appears: the ninth Inka sovereign, Pachacuti, or Pachacutec Inka Yupanqui (*ca.* 1440–1450 CE), promoter of conquest campaigns and founder of Tawantisuyu [in Quechua] "The Land of the Four Quarters," with Cuzco as the capital (see D'Altroy, 2005 [2002], p. xiii; McEwan, 2006, p. 3l; and Figure 3).

The Inka Empire saw the onset of its destruction upon the arrival of a Spanish expeditionary force in 1532, succeeded by the conquest and imposition of the outsiders' rule. Such a short timespan matches up to some extent with the Late Horizon period, 1476–1534 CE, per John Rowe's (1965) scheme. Before Francisco Pizarro's arrival, the Inka realm included large tracts of the coast and highland areas corresponding to what currently is a portion of southern Colombia, Ecuador, the greatest

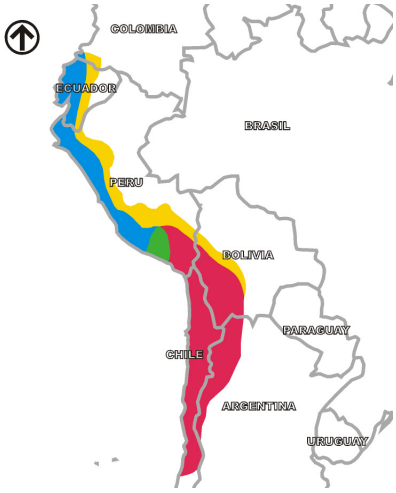


FIGURE 3. The four *suyus* (provinces / quarters) of the Inka Empire, respectively *Chinchaysuyu* (I) (Northwest); *Condesuyu* (IV) (Southwest); *Antisuyu* (III) (Northeast); and *Collasuyu* (II) (Southeast); see Zuidema (1991, p. 155). Author of the diagram: *Wonnie~commonswiki*; 2 October 2005; last edited on 6 November 2021. CC BY-SA 3.0. `https://commons.wikimedia.org/wiki/Atlas_of_the_Inca_Empire\#/media/File:Inka_Provinces.jpg` (accessed 22 March 2022).

part of Perú, and considerable sectors in Bolivia, and in northern Chile and Argentina. The statecraft and other singular feats of the Inka civilization continue to captivate modern scholars. Seen in this light, it may be said that the future holds room for more research, in particular, regarding issues that still remain elusive and complex; e.g., communicative systems (notational or not) and correlated devices, historical chronology, i.e., the pre-imperial to imperial system, cultural contact and interface with pre-Inka civilizations (especially with Wari / Wari-Tiwanaku), analysis and interpretation of sacred and secular imagery, astronomical observations, etc.

5. Writing Systems in the Andean Area and the Definition of Writing

The mainstream belief among scholars is that pre-European South American cultures did not have *writing systems* in the sense that such are conventionally perceived outside the Inka area of control; to be precise, they did not have writing systems composed of *physical signs* able to fully *express* and *represent speech* (Stierlin, 1984, pp. 190–191; Franquemont, 1986, pp. 81–82, 84; Mignolo, 1994, pp. 234–237; J. H. Rowe, 1996,

p. 463 in A. P. Rowe, and J. H. Rowe, 1996; Mitchell and Jaye, 1996, p. 16; Quispe-Agnoli, 2006). Some scholars privilege *phonetic writing* as the climax of socio-cultural development, whereas pictorial-like and "logographic" forms / systems characterized as "partial" / "limited / "emblematic" / or even "pseudo-" / "non-writing" are ("inherently") related with less sophisticated and archaic human communities (aka *the oral societies*); cf. e.g., Boone (1994b) on the Aztecs. Although dealing specifically with the context of Mesoamerican scripts, the comments of Carlo Severi (2019) also apply to South America:

> The relationship between picture-writing and 'real' (phonetic) writing is usually understood in terms of a temporal sequence: picture-writings, regularly defined as rudimentary drawings used in oral traditions to represent basic ideas, are said to precede in time the invention of writing. They are also, very often, seen as unstable and unreliable means of storing knowledge. In studies devoted to the history of writing, it is often stated (Cohen, 1958; Diringer, 1937; Gelb, 1952) that 'true writing,' once invented, is soon recognized as a better tool for recording and transmitting information. Consequently, the use of a writing system rapidly replaces old, rudimentary picture-writings and extends to cover the totality of a spoken language.

Many scholarly estimates of notation systems of a numerical and non-numerical nature that existed in pre-European South America present them as being as efficient as phonetic scripts or perhaps even more efficient, their differences being part of a divergent "evolution" [= developmental tendency] in the way of thinking and representation (Métraux, 1963; Naville, 1966; Paternosto, 1996 [1989], p. 171; Zuidema, 1991, p. 151; Prada Ramírez, 1994; Boone and Mignolo, 1994; Phipps, 1996, p. 154; Sassoon and Gaur, 1997; Grube and Arellano Hoffmann, 2002, pp. 51–52; D'Altroy, 2005 [2002], pp. 15–19; Cummins, 2002b, p. 190; Quispe- Agnoli, 2002, 2005, pp. 264–265, 2006; Heckman, 2003, p. 41; Fedriani Martel and Tenorio Villalón, 2004; Salomon, 2004; Steele and Allen, 2004, pp. 36–40; McEwen, 2006, pp. 182–185; Kulmar, 2008, 2010, p. 139; González and Bray, 2008, pp. 1–4; Melka, 2010b; Bergh, 2013; Severi, 2019; Clados, 2020). At present, these systems are thought to be *largely mnemonic*-like and *semasiographic* (Sampson, 1985), although logographic or rebus-like elements cannot *a priori* be ruled out. For this reason, it may be said that we are dealing here qualitatively with a different *literary model* (Franquemont, 1986, p. 83; Boone and Mignolo, 1994; Quispe-Agnoli, 2006, pp. 145–180), where the textile motifs (or various *quipu* arrangements, for instance, in another context) did not articulate continuously the information in clear-cut words, but rather, they stood for the *real meaning* in view of their structure (= the "syntax" of concatenation of motifs / symbols), material, colors, and weaving processes applied in the whole practice.

In contrast to the hypothesis that most or all notation systems that existed in ancient South America were *largely* mnemonic-like and se-

masiographic, some researchers propose that some of these systems involved logo-syllabic coding, or whole / partial phonetic components; examples suggested include the cases of *quipu*, *t'oqapu* geometric patterns, the Moche Lima beans, and the religious texts of the indigenous Aymara; see Ibarra Grasso (1953); V. de la Jara (1967, 1975); Barthel (1970, 1971); Totten (1985); Laurencich Minelli (1996); Burns Glynn (2002); Salcedo Salcedo (2007). If such claims are to be carried further in the serious scientific agenda, hard evidence should be searched for and properly documented (cf. Barthel, 1976, p. 27). Mitchell and Jaye (1996, p. 16) address bluntly such suggestions by writing, "The arguments and evidence of these authors, *however*, *tend to be speculative and not very vigorous*."

6. What is Writing?—An Important Digression

In *A Study of Writing*, Gelb characterizes writing as, "a system of human intercommunications by means of conventional visible marks" (Gelb, 1963 [1952], p. 12). Gelb (ibid., p. 190) suggested that *phonography* is the stage of representation in which writing expresses language, while *semasiography* (colloquially, "writing" using symbols, iconic signs, or pictures) is an earlier, less developed stage in which *pictures* (aka *pictographic representations*) convey meaning. The key issue regarding Gelb's definition is that the system must be *conventional*; the signs must be understood in the same way by all users and not need the intervention of the "writer" to interpret the message. One can argue that this approach rules out things such as *cave paintings*, in which the creator may use conventional signs but does not necessarily follow rules that are understood in the same way by all people—but if the cave painter's audience did consistently understand the conventions and rules, would it / should it be considered writing? Additional views on writing assist us in dissecting and reconstituting the discussed notion:

> What is writing? To 'write' might be defined, at a first approximation, as: to communicate relatively specific ideas by means of permanent, visible marks. (Sampson, 1985, p. 26)
>
> Because writing is use of conventional signs in a conventional system as instruments in mental processes, writing is a form of thinking. Certain kinds of writing enable certain kinds of thinking. (Powell, 2009, p. 54)

In either definition (Sampson, Powell), there is some perceived ambiguity as we may deem it entirely possible to remove *writing* from the conservative context of recording spoken language. After all, various mnemonic devices resort to permanent, visible marks, conventional signs, and they reflect the mental processes of their creators, similar to the logo-syllabic or alphabetic systems. In turn, Daniels (1996, p. 3) states that,

> ... writing is defined as a system of more or less permanent marks used to represent an utterance [= speech] in such a way that it can be recovered more or less exactly without the intervention of the utterer.

What may be considered the conventional or conservative standpoint holds that *writing* must be tied to the human spoken language: "Writing is a direct symbolic record of the speech act, or '*visible speech*'" (after John DeFrancis, 1989).

Rogers (2005, p. 2),

> We can define writing as the use of graphic marks to represent specific linguistic utterances. The purpose of a definition is to distinguish a term from other things [= non-linguistic types of communication].

However, we should consider that writing in "early stages" did not necessarily or always record continuous and explicit oral communication / utterances through the signs used; cf. Egypt, Mesopotamia, or Mesoamerica. This apparent fact renders *problematic* the exacting definitions. A "solution" in this context is offered by Peter Damerow (2006 [1999]), introducing the term *protowriting* to describe the systems that display "weak connections to *oral language*" or are connected with the "nascent" stages of writing. This is not to suggest that *proto-writing* is in some way inferior or primitive; it is simply more dependent on the reader or chanter being aware of the context of the document, and having the ability to fill in the missing information. Robinson (2009, p. 4),

> We can call them 'proto-writing': permanent visible marks capable of partial / specialized communication. Some scholars limit proto-writing to the earliest forms of writing, but in this book the term is applied much more widely. Thus there are endless varieties of proto-writing.

Other scholars may be inclined to argue that there is no such thing as *proto-writing*. If the so-called proto-writing includes confirmed phonetic units even to a small degree (say, rebus-like devices) then it is *writing*, conservatively (or not) speaking.

A different approach is represented in Elizabeth Hill Boone (among others); as Boone (2000, p. 29) writes,

> Writing is not merely a type of notational system, but an entire cultural category. It has been used to distinguish literate people from preliterates, people with history from those without, and even civilized people from barbarians or primitives... Given these meanings, how can we deny that the Aztecs and Mixtecs had writing?

The key idea of Boone is to develop a co-"evolutionary" model of writing, in which phonetic and "pictorial" / "pictographic" / "non-linguistic" systems are taken to be developmentally equivalent and in a "hybrid"

mode, each functioning to fulfill the need to communicate with an audience who may not speak a common language or may have inconsistent literacy skills. Earlier, Boone (1996, p. 314)—regarding the broad definition of writing—was aware however that "…, *the distinction between writing and nonwriting carries, unconsciously or not, certain value judgments that raise phonetic writing above other forms of communication*".

A number of scholars of non-Western subject-matter are proponents of a reassessment of writing as recorded speech. Albertine Gaur, in *History of Writing* (1987 [1984]) argues for a functional concept of writing defined as any form of "information storage" that properly fulfills its purpose for the society that implements it. This role is adequately carried out, Gaur proposes, by mnemonic devices, winter counts, knotted cords, or the alphabet. "Evolutionary" approaches to non-alphabetic information systems may be uninformative, and instead, approaches that treat scripts individually as complex and contextually developed devices may better answer questions regarding their function (Gaur, 2000, p. 3). Furthermore, Boone (1996, p. 313) notes "… *situations where language writing does not effectively serve a culture or a group within it and the members develop alternative forms of graphic communication to serve their record-keeping needs*".

7. What is Art? Wari, Tiwanaku, and Inka Iconographies—Are They Art?

Beyond questions of how an ancient symbol system may develop, with progressive abstraction from naturalistic shapes, into a linguistic system and a form of writing (whether referred to as pre-writing or protowriting; terms to be used without a subjective overburden of judgment values, as the level of sophistication of some such systems is extraordinary; cf. Gelb, 1963 [1952]; Daniels and Bright, 1996; Garrod, Fay, et al., 2007), the study of the Wari, Tiwanaku, and Inka iconographies is of more general interest in terms of art, language, and writing. Arguably the abstract visual art of these pre-European Andean cultures equaled (or even surpassed) the work of the Cubists, Expressionists, and other avant-garde artists of the late nineteenth and early twentieth centuries (see Golding, 1988 [1959]; Reid, 1986; Blotkamp, 1995 [1993]; Janssen and Joosten, 2002; Shiff, 2004; Hess and Grosenick, 2005; Aichele, 2006; Pasztory, 2010; Hughes, 2019). Another line of study is analyses of similarities and differences among Wari-Tiwanaku iconographic elements, the Inka *t'oqapu*, and modern emojis and related symbols that have become part of modern visual, written, and digital communication (Melka and Schoch, 2021). Studies of these symbolic systems lead to such penetrating questions as *how a language conceptualized in iconographic terms becomes* "art"? and *what is* art *after all*?

The 'Lima Tapestry' (Figure 4a) is a Middle Horizon Wari-Tiwanaku artifact; *Dimensions*: 100 × 92.3 cm; made of camelid fiber and cotton, and stored in the collection of the *Museo Nacional de Antropología, Arqueología e Historia del Perú* (T.01650); see Benavides (1999, p. 355); cf. Paternosto (1996 [1989], p. 228; 1999, pp. 10–11); Stone-Miller (2002 [1995], p. 148, Figure 119); Bergh (2013, p. 182, Figure 174). It appears to be the culmination of the process of geometric formalism. The original zoomorphs / anthropomorphs — the staff-bearing creatures, known as "staff god" and "profile attendants" — are rearranged in pure angular and rectangular shapes, producing a "masterfully abstract interpretation…" of the motif; see Stone-Miller (2002 [1995], p. 148, Figure 119). One is tempted to think that the initial figure (cf. Figure 7a, b) has "faded away" and yields an abstractionist and cubist-like modern painting of the 20th century; see Janssen and Joosten (2002); Aichele (2006). It comes as no surprise that the Wari tapestry geometric designs have gained notability and admiration in their own right among modern researchers and artists. Pasztory (2010, pp. 11–12) is very explicit in this context,

> *So it was that with the emergence of Cubism in the West, many Andean things became 'beautiful' and 'interesting' works of art.* Subsequent developments in Western abstraction, especially Conceptual art of the second half of the twentieth century have brought out many hitherto unappreciated aspects of Andean art and culture. [Emphasis added by the present authors.]

Dynamic, geometric patterns—characterized by a strong abstract and synthetic stylization—are equally observed in the middle section of a tapestry tunic held at *Juan B. Ambrosetti Ethnographic Museum*, Buenos Aires (Argentina); Figure 4b. The decomposition of patterns carried out by Iriarte (1999, p. 416; Plate 2) clearly shows the elements integrating the geometric designs.

Serial imagery in the Wari-Tiwanaku tapestries, that is, *the recurrence of modular designs* essentially swapping colors and symmetries, possibly emphasized prominent symbols, related to the cult personality (*staff-bearer* / "decapitator") and cult objects (e.g., *step fret*, *step and volute combined*, or the *rhombus*). A similar technique is noticeable in Andy Warhol's portrayals of some high-profile personalities of the 20th century related to assertive power, wealth, or iconic sex appeal, that included Marilyn Monroe (1926—1962; see for instance, Shanes, 2005, p. 43, Photo 34); Elvis Presley (1935—1977); Mao Zedong (1893—1976); Elizabeth Taylor (1932—2011), and others; see Reid (1986, pp, 16–17). Despite the differences in the underlying motives of these cross-cultural creations, the end *per se* in both premises is possibly *mass consumption*. Indeed, the Wari-Tiwanaku state ideologues laid emphasis through weaving on the cosmic / spatial order and divine forces (Stone, 1989 [1987], pp. 193–196; Stone-Miller, 2002 [1995], p. 148), sanctioned or imposed all over their sphere of influence, whereas we may note that Warhol was engaged

(a) (b)

FIGURE 4. (a) A MH Wari-Tiwanaku artifact made of camelid fiber and cotton known as the "Lima Tapestry" is stored in the collection of the *Museo Nacional de Antropología, Arqueología e Historia del Perú* (inventory no. 01650); see Benavides (1999, p. 355). (b) The central section of an incomplete tapestry tunic, made out of camelid warp and weft, 204 × 98 cm, inventory no. 23054, held at Juan B. Ambrosetti Ethnographic Museum, Buenos Aires (Argentina; Iriarte, 1999, p. 416; Plate 2) shows geometrical designs. The sobriety of designs in both tunics, combined with the subtle and refined tone of the dies, displays a skillful balance; see Hughes (1995, p. 120). The applied aesthetics seems to reflect a tendency toward deconstruction and minimalism, where bare lines and crisp shapes marry with colors to form something very intellectual and surreal alike, see also Pasztori (1998, p. 145), "*In the Tiahunaco/Huari tradition the image was already greatly reduced to a few canonical forms, and broken up by weavers into intellectually complex fragments. As time went on, the fragmentation proceeded further, such that the earlier logic of the design was completely dispersed; designs were now mixed together in a way that was pleasing but non-systematic.*"

in a billboard-like propaganda of secular and materialistic symbols, intended to feed the minds of the public by proselytizing the pop culture (Reid, 1986, pp. 16–17).

Some sober and crisp geometric features in the Middle Horizon tapestries are reminiscent of certain paintings of *avant-garde* artists of the stature of Piet Mondrian (1872—1944; see specifically "Composition (Checkerboard, Dark Colours)" 1919, in Blotkamp, 1995 [1993], p. 123; Plate 95); Paul Klee (1879—1940; see specifically "Einst dem Grau der Nacht enttaucht," 1918 [Once Emerged from the Gray of Night, 1918], in Hamburger, 2011, p. 252, Figure 3, and Hughes, 2019, pp. 40–41); Joaquín Torres García (1874—1949; see e.g., Hughes, 2019, pp. 16–17); Barnett Newman (1905—1970; see specifically Hughes, 2019, pp. 44–45); or Mark Rothko (1903—1970; see specifically Hughes, 2019, pp. 64–65); cf. Reid (1986, p. 22); Conklin (1996b, p. 378); Pasztory (1998, p. 125);

Paternosto (1999, pp. 15–16; Plate 4 and 5); Janssen and Joosten (2002); Shiff (2004, pp. 45, 89); Hess and Grosenick (2005, pp. 40–41, 72–73); Aichele (2006); for a critical view see Bergh (2013).

Compared to European and North American conceptualizations and rationalizations of Art, ancient South Americans (or other pre-industrial people) had different notions regarding the concept of Art. It is worthwhile to quote Esther Pasztory (*Inka Cubism*: *Reflections on Andean Art*, 2010, p. 10).

> Although the book is about 'art' in the vernacular meaning of the term, it is understood that the concept of art is a Western concept and does not correlate with anything Andean. Over the years, scholars, collectors, dealers, museum curators, and others selected objects that, from the Western point of view, exhibited superior form and craftsmanship and fitted within Western styles of art. Although anthropologists designate all objects as 'material culture,' they have tended to accept the 'art' designations created by the art world. As I discussed in Thinking with Things, there is no indwelling quality in objects that make them 'art'—individuals and societies decide what is art for their own reasons. For my purposes, art objects are things made or found that seem to have communicated on a visual or cognitive level among ancient Americans as well as with us.

It in an earlier work, Esther Pasztory (1990/1991, p. 110) pointed out the biases involved in some of the standard Western distinctions made regarding art of different peoples and cultures:

> Major unspoken distinctions are made between the abstractions of Western and so-called primitive peoples. For the modern artist an important aspect of abstraction is the reaction against the naturalistic classical tradition. In the case of Picasso in particular, there is proof in his early career that he could work in a naturalistic vein. Yet the assumption is that Eskimo artists, for example, cannot produce a realistic image, that abstraction alone is accessible to them. In other words, for the modern artist abstraction is a choice, but for the non-Western artist it is a given. Moreover, for the modernist artist abstraction is a great achievement, while for the non-Western artist it is merely an inadequate attempt at representation. This point of view has been expressed most forcefully by Gombrich (1960) who argued that 'conceptual' abstract art predates the development of 'perceptual' naturalistic art, and that the creation of abstraction is easy and comes naturally, while the development of realism is a slow and difficult process comparable to the successive discoveries in Western science. Although Gombrich has been refuted by Bryson (1983) and others, his developmental model is still the dominant one.

8. Naturalistic *versus* Geometric-like Models in Wari Iconography

The section deals with the question of stylization and abstraction,[11] common in the MH artifacts, in particular in the Wari-style tapestry. The main concern here is an archetypical figure with supernatural looks—a rather complex subject that merits a separate comprehensive study (see e.g., Makowski, 2001, pp. 337–373; Isbell and Knobloch, 2006, pp. 307–351). Yet, the extent and effects to which it assists the understanding of the abstract-geometric model in the studied artifacts make it an obligatory reference.

The central character around whom seems to orbit much of the Wari patterned imagery is a mythical being—the *Staff God*—flanked by attendant winged entities carrying similarly a *staff*, all being carved on the frieze of Tiwanaku's Gateway of the Sun (see Figures 5 and 6) The archetype of *staff-god*[12] (*front-face deity*) and the *attendants* have been repeatedly commented upon and illustrated in the literature, being perhaps the most popular image/s of the pre-Conquest Andes; see Wiener (1880); Lehmann and Doering (1924, Plate 2); Stierlin (1984, p. 133, Figs. 125 and 126); Kolata and Ponce Sanginés (1992, p. 325, Fig. 11); Stone-Miller (1992, p. 336; 1994c, p. 35; 2002 [1995], pp. 132–133); Pasztory (1998, p. 125); Paternosto (1999, p. 10); Makowski (2001, pp. 339–341); Williams León (2001, p. 59); Isbell (2001, pp. 120–121; 2008, pp. 734–737); Young-Sánchez (2004a, pp. 36–37); Cook (2004, p. 147); Longhena and Alva (2007, p. 36); Viau-Courville (2014, p. 12, Figures 3 and 4; pp. 14–15); Bergh (2017, p. 25, Figure 1a); Baitzel and Trigo Rodríguez (2019, p. 3). The generally held view of scholarship is noted in Stone-Miller (1994a, p. 117),

> … the staff-bearing figure, [is the; *our note*] hallmark of the Wari and Tiwanaku states of the Middle Horizon period
>
> … is commonly seen in two forms: the winged profile attendant figure *and the frontal deity*….

The significance and frequency of occurrence of this symbolic deity, and especially of the secondary winged figures in the examined Middle Horizon textile corpus, see Stone-Miller (1992, p. 336), may be compared to some extent (though arbitrarily) with the Western tradition of

---

11. See Stone-Miller (1994b, p. 23), "Abstraction by definition seeks the essence of a shape, *reducing it to its most fundamental character, which often in Andean art assumes a geometric appearance…*".

12. The designation "Staff God" was first proposed by John Howland Rowe (1967, p. 85) to describe the central figure of the Chavín Raimondi Stele; see, e.g., `https://commons.wikimedia.org/wiki/Category:Estela_de_Raimundi?uselang=it`.

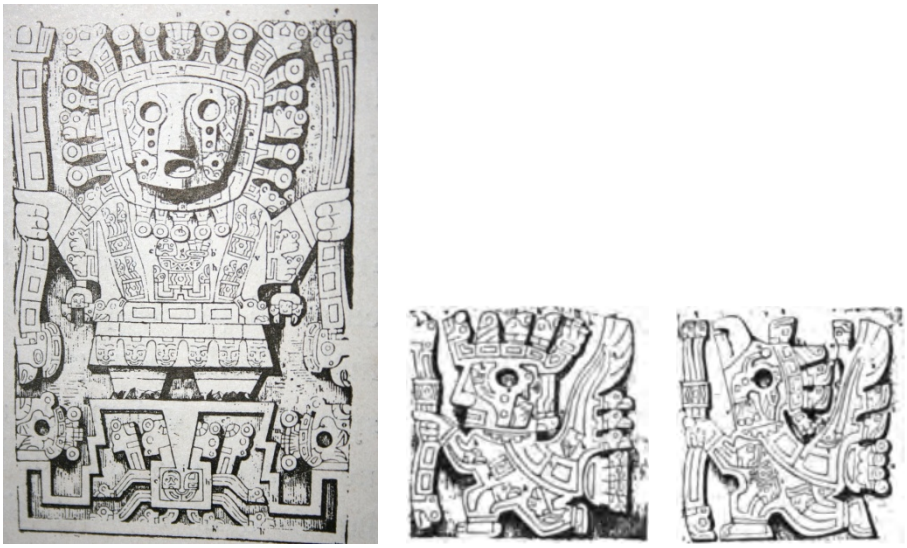
art from 13th up to 19th centuries, where the Christian theme and its ramifications and variations were the leitmotiv of much artistic expression (cf. Reid, 1986, p. 14).

FIGURE 5. *Gateway of the Sun* [Puerta del Sol]. File:*Puerta del sol Tiwanaku.jpg*. author: Marek Grote. Creado el: 28 de septiembre de 2013, 12:01:13. CC BY-SA 3.0 https://es.wikipedia.org/wiki/Puerta_del_Sol_(Tiahuanaco)\#/media/Archivo:Puerta_del_sol_Tiwanaku.jpg

Upon long-term observations of the tapestry tunics inventory and other textile pieces, we may consider the possibility of a naturalistic style in an early phase in the Wari culture, later typified in conventionalized (or distorted) forms with a strong geometric content; see Sawyer (1963); Paternosto (1996 [1989], pp. 226–228); Stone-Miller (1992, p. 336; 1994b, p. 41); Hughes (1995, p. 106); Conklin (1996b, p. 396); Manrique P. (1999, pp. 54–56); Bergh (1999, 2017); Benavides (1999); Iriarte (1999); Oakland Rodman and Fernández (2000, p. 121); Jiménez Díaz (2006, p. 111); Viau-Courville (2014, pp. 12–13).

The term *naturalistic* implies the ability of the image to be satisfactorily recognized by random viewers given its primordial shape. The gradual metamorphosis of the *staff-bearer* is not yet firmly established: it is certainly difficult to determine (1) *when* the turning point occurred, (2) *when* the changes signaled specifically a break with the naturalistic tradition, (3) or if (ultimately) the advancing geometricization is related to ordered chronological stages. Susan Bergh (2013, p. 183, note 50) aptly points out, "*The so-far unproven implication of some of these views is that distortion registers chronology, that its effects became more profound through time as weavers pushed the system to its extreme and logical conclusion*".

When facing uncertainty in the context of sense-making, one has to look for additional evidence regarding the metamorphic process observed in the W-T tapestry tunics. Henceforth, a meticulous chrono-



(a) (b1) (b2)

FIGURE 6. (a) Sun god, central low relief of the monolithic *Gate of the Sun*, Tiwanaku; drawing by Charles Wiener (1880); see also Longhena and Alva (2007, p. 36); Clados (2007, p. 94, Figure 30); Bergh (2017, p. 26, Figure 1b); Baitzel and Trigo Rodríguez (2019, p. 3); Genotte (2019, p. 238, note 49). The roots of this deity, plus the surrounding pantheon, are traced back in several early South Andean cultures (see Rowe, 1967). However, the transition and adaptation period of this iconography by the Wari-Tiwanaku polities / communities, remains mostly unclear (see Isbell, 2008, p. 736). (b1) (b2) Staff-bearing figures (aka *attendant angels*, or *profile attendants*) from the frieze of Gateway of the Sun, Tiwanaku, modern-day Bolivia. Drawings by Charles Wiener (1880); see also Paternosto (1996 [1989], p. 227); Hughes (1995, p. 120); Paternosto (1999, p. 10); Makowski (2001, p. 350); Isbell (2008, p. 737); Bergh (2017, p. 26, Figure 1b); Baitzel and Trigo Rodríguez (2019, p. 3).

logical study of the samples would require accuracy in dating, which, if we refer to the cited bibliography, is *rather approximate*, or in other cases, in particular to various artifacts pertaining to private collectors, is *absent*. To compensate for this, a complementary approach combining the iconographical analysis of a large number of samples, the textile analysis of the structure of tunics, plus the "evolutionary" assessment of Wari pottery style, are required. More easily said that done, the proposed task would require the commitment of several international experts for considerable periods of time. The argument is also submissive to *stylistic changes*, i.e., variants of the accepted core format (see Figures 7a and 7b), linked with improvising by weavers and workshops that very likely happened during the process. Oakland Rodman and Cassman (1995, p. 39)

possibly identified in "…*separate work sections*…" of Wari tunics, "…*a variety of hands*," attributable to the presence of lazy lines (see Stone, 1989 [1987], pp. 86–88). Quite expectedly, and in a more general context, among the dexterous Wari weavers, more than one awkward hand may have been present. It is likely then, that weavers working in a wide loom applied on occasion their individualistic style and perception, aside from the learned conventional rules; see Stone-Miller (1994b, pp. 11–13; 2002 [1995], p. 146). Nonetheless, from a pragmatic standpoint, the discovery and classification of such specifics as "improvising weavers and workshops" begs for further substantial investigation. Under the circumstances, a comparative study based on the formal iconography of different examples is liable to shed light on the subject-matter.

So far as we know: *abstract*, see Stone-Miller (1992, p. 341, Fig. 8, 13; 1994a, p. 119); *human*, see Stone-Miller (1992, p. 342, Fig. 12; 1994a, p. 117); *animal*, see Stone-Miller (1992, p. 336, Fig. 3, 11, 12; 1994a, pp. 113, 116); and *other natural elements*, appear to have been rendered in the W-T textiles the way they were conceived by the genius of their creators, and imbued with symbolism and communicative power. The sharp, severe, and essentially rectilinear and angular designs, arrayed in band-like or grid-like sections, are mostly executed in a bilateral symmetry with the antithetical parts tending to attract and/or complement each other. On the other hand, undulating lines and curlicues are by no means absent in Wari-Tiwanaku tapestry; see Stone-Miller (1994a, p. 105); Bergh (2013, p. 178, Figure 161 and ibid., p. 181, Figure 172). As mentioned above, the *staff-god* character (known for longevity in the ancient Andes; see Jackson, 2008, p. 27) or other similar composite figures, i.e., falcon- or condor-like and/or jaguar-like, bearing the indispensable staff (the embodiment of a power instrument), appear initially in a naturalistic shape; see Figure 7. Supposedly, at some chronological stage, it is suspected that the familiar naturalistic patterns began to be discarded while undergoing dynamic variations at the different hands of Wari weavers. Proceeding on these continual improvisations and alterations the end results were quite often highly stylized, fractioned, and nonfigurative shapes and designs, a virtual tribute to minimalist forms. Similar to the claim of Garrod et al. (2007, p. 963) about the transition from iconicity to symbolism (geometric- / cursive-like forms) of the sign inventory of real-world scripts,

In particular, we will argue that during the evolution [= development] *from iconic to symbolic graphical representation, structural complexity migrates from the sign to memory representations in sign users.*

We believe that the ingenious and punctilious Wari (or Wari-Tiwanaku affiliated) weavers / designers had already memorized the correlates of the original naturalistic shapes prior to conveying the *complex geometric patterns*.

For all intents and purposes, such creations, reminiscent of *t'oqapu*-like structures and difficult to be "unpacked" by an untrained eye, seem to become mainstream in the tapestry weaving tradition. These remarks strongly reflect Stone-Miller's (1992, p. 336) and Hughes's (1995, p. 106) statements respectively,

> (a) the iconography of Tiwanaku sculpture, particularly to the secondary figures on the Gateway of the Sun...; but the Huari style demonstrates a marked progression away from the legible communication of the religious figures....
>
> (b) ... [MH; *our note*] weavers squeezed, stretched, split, abstracted, recombined block units as well as varied their spatial and color sequencing. The resulting transposition of elements is such that one must be familiar with the prototype motif [the staff-bearer figure; *our note*] to have any inkling of what is meant.

The selection of "readable and abstracted versions of the staff bearer" (Stone Miller, 1994b, p. 41), anthropomorphic or not, for analyses is dependent on the artifacts currently available for any specific study, including our current work. A reasonable concern for any single paper and accompanying discussion is the available space, since not every piece of tapestry can be subject to examination—thus, for additional details, we direct the reader to: Reid (1986, Plate 30, pp. 31, 32); Stone-Miller (2002, [1995], pp. 136–137, Figure 109); Ángeles and Pozzi-Escot (2000, p. 421, Fig. 12); Oakland Rodman and Fernández (2000, Fig. 5); Paternosto (2001, Plate 6, Plate 7), Bergh (2017, p. 29, Figures 5 and 6). A specialized monograph garnering samples on the order of hundreds, would probably serve better the purpose; see Stone-Miller (1989 [1987]); Bergh (1999).

At the outset, it should be stated that in both versions of the *staff-bearer* symbol, bodily parts like eyeballs, teeth or fangs, beaks, hands or claws, staffs, tails, are widespread within the examined grid, some of them more perceptible than others. The discernment (= "legibility") of images is always dependent on the performed degree of abstraction or transformation; see Multi-Figure 7 herein. Gayton (1978, p. 296) conveys the idea very clearly,

> ... the textile decoration of the Tihuanaco Huari [W-T] style shows a change in the whole pictorial representation of the figures of the deities to an abstract style composed of fragmentary elements, distributed in rectangular divisions: principally eyes, nose and teeth. *This disintegration of a total and coherent design is one of the most fascinating transformations in art*.

The increasingly used distortion and abstraction in the *staff-bearer*'s "continuum" (7a) → (7h), is neither the result of an iconoclastic drive nor misunderstanding of the component elements; neither are these last ones slavishly put together. The patterning derives from a deep percep-

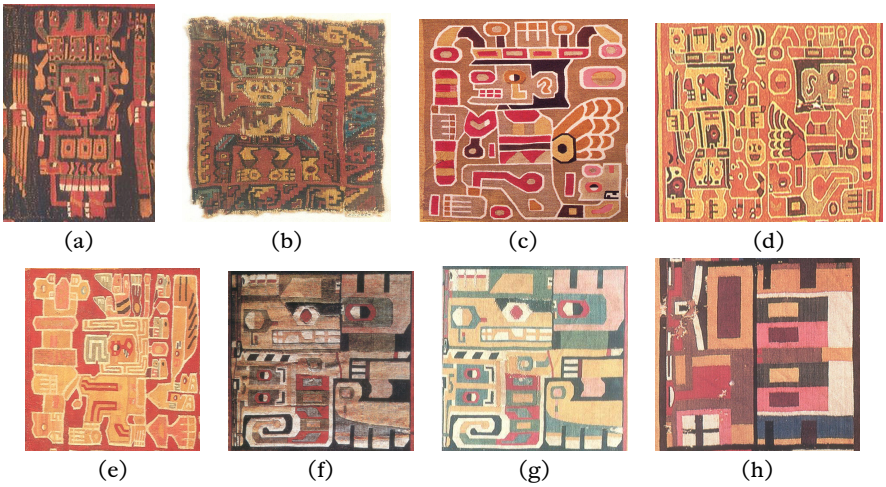


FIGURE 7. In Multi-Figure 7, a frontal figure similar to that found on the Gateway of the Sun (Tiwanaku) is portrayed in this fragment of tapestry tunic (a) of early Tiwanaku style, 200–400 CE, Perú or Chile, camelid fiber, private collection; see Young-Sánchez (2004b, pp. 46–47) and also Figures 5 and 6. (b) Likewise, the figure with staff is easily observed in another fragment showing a recognizable *staff-bearer* figure; see Stone-Miller (1994a, p. 117). (c) The staff, eye, wings, and other components of a slightly abstract but overall recognizable depiction of a *staff-bearer* are readily distinguishable in this fragment; see Benavides (1999, Plate 6; pp. 375; 408). (d) The wings, the head and body, the bisected eye, and the staff of an avian-anthrope, a "bird"-man, are distinctly visible, if stylized, in this depiction; see Benavides (1999, Plate 7; 377). (e) The staff, the eye, the wings, and the overall form of a bird-like figure are noticeable in an isolated square pattern; see Manrique P. (1999, Plate 13; p. 55). (f) The eye and the mouth with teeth, along with the tail, of an abstracted feline creature are evident in an isolated square pattern; see Benavides (1999, Plate 11; p. 387). (g) A Wari tapestry tunic fragment from Perú, 600–1000 CE; see Pasztori (1998, p. 125); 500–800 CE; see Stone-Miller (1992, p. 344, Fig. 14). The tunic is made of camelid fiber and cotton; *dimensions*: 103.5 × 50.5 cm, and is held at the Metropolitan Museum of Art, New York. A staff-holding feline is identified sitting on its tail, being a color variant of Figure 7(f). The last image (h) is part of the 'Lima Tapestry', a Wari-Tiwanaku artifact made of camelid fiber and cotton, stored in the collection of the *Museo Nacional de Antropología, Arqueología e Historia del Perú* (inventory no. T.01650); see Benavides (1999, p. 355). One view is that such an "evolving" / multi-phase model leads to the climax of the abstraction, with the subject itself, i.e., the primordial *staff-bearer*, having "lost" against the artistic creation, made of a mixture of pure bars and rectangles; see Stone-Miller (2002 [1995], p. 146). One wonders if the artistic and intellectual potency of Pablo Picasso or Juan Gris could have done better under the premises (cf. Figures 7g and 7h). On the other hand, given the absence of a proven chronology regarding the "distortion" / geometricization process observed in several Wari tapestry tunics, Bergh (2013, p. 183, note 50) urges caution.

tion of the underlying textile structure and an act of aesthetic recreation, through the assembling and disassembling of shapes and colors, which ultimately embody the *staff-bearer* himself on another level (see Stone-Miller, 1994c, pp. 35–36). Apparently, the MH weavers needed to express their cultural ideas and relationships in a form that transcended the "look-like" images, assuming non-representational shapes, yet able to be a powerful vehicle of communication (Washburn, 2004, pp. 53–54). Despite the acknowledged variability, the fundamental shape of the *staff-bearer*, acted as a "universal" badge or insignia, reinforcing the religious identity and its veneration among the Wari and Tiwanaku populations, or among other subdued / proselytized ethnic groups. The perceived visual experience is very dynamic (cf. Arnheim, 1997 [1974], p. 11), a product of the interplay of the elements in the portions of the square unit itself. In the larger scale of the whole tunic, this experience is amplified and often produces a strong intellectual stimulation, nearing some type of *psychedelic bedazzlement*.

9. Description of *t'oqapu*

A cursory look may describe *t'oqapu* as small, multi-colored, square units set in a band- or grid-like structure, having mostly a recurring character and running lengthwise (horizontally and/or vertically) on the most common artifact: an Inka-made or Inka-inspired fine tapestry tunic (Figures 8 and 9), or on other support materials (such as wood, metal, ceramic, and masonry). A closer look at tunics and other artifacts upholds the previous observation, and reveals a few additional details as reported over the decades (see Markham, 1969 [1910], p. 122;[13] Bankes, 1977, p. 172; Rowe, 1999 [1979]; Feltham, 1989, p. 57; Zuidema, 1991, p. 151; Delgado Pang, 1992, p. 291; Silverman, 1994, pp. 13–14; Stone-Miller, 2002 [1995], p. 212; Phipps, 1996, p. 153; Dransart, 1997, p. 159; Arellano, 1999, p. 257; Roussakis and Salazar, 1999, p. 276; Manrique P., 1999, p. 65; Frame, 2001, pp. 132–135, 2007; Cummins, 2002a, Fig. 4.3, 2011; Quispe-Agnoli, 2002, 2006; Heckman, 2003, p. 49; Steele and Allen, 2004, pp. 36–37; Stagnaro, 2005; Clados, 2007; Gentile Lafaille, 2008, p. 2; Williams, 2008, pp. 48–50; Femenías, 2017; Beaule, 2018, pp. 19–20).

13. The description of Markham (1969 [1910], p. 122), although genuine, is most likely based on limited observations of one or two *t'oqapu* types, "The later Incas wore a very rich kind of brocade, *in bands sewn together, forming a wide belt. The bands were in squares, each with an ornament, and as these ornaments were invariable there was probably some meaning attached to them. The material was called* tocapu, *and was generally worn as a wide belt of three bands. Some of the Incas had the whole tunic of* tocapu".

Researchers seem to agree at this point on the following: the squares (or rectangles) arranged in rows bear a strong, abstract geometrical content[14] of a conceptual and bipolar nature; there is a simplicity or diversity of motifs according to the status of the tunic-wearer, with the modular units revealing plain or varying colors and topological orientations (see Cummins, 2011; and Figures 8 and 9). Likewise, depending on the type and function of the *unqu* (Rowe, 1999 [1979]), a sense of linear and/or diagonal order, or otherwise of apparent disorder and random variations (Rowe Pollard, 1978, p. 21; Paternosto, 1996 [1989], p. 170; Stone, 2007, p. 399), are discerned. Although the message is conveyed—as often as not—in a linear fashion, which hints at a writing system (cf. Jean, 1998 [1989], p. 25; Sproat, 2013), this feature is by no means liable to generalizations regarding the *t'oqapu* system. Ignoring the linearity in other symbolic systems is misleading,[15] and may risk objectivity.

The entry *unqu* in Gisbert (1980, pp. 120–121) under "Atributos y Signos Distintivos de los Reyes Incas" [Attributes and Distinctive Signs of Inka Kings] reads:

> *Uncu……túnica o camiseta corta* (*Arzans, Siglo XVIII, la vestimenta real*)
>
> [Uncu……tunic or short blouse (Arzans, 18th century,[16] the royal garment)]

On the other hand, Ann Rowe Pollard (1995–1996, p. 24) describes it succinctly as "… *a knee-length sleeveless tunic*…" (see also Phipps, 2009, pp. 239–240), with Pillsbury's (2002, p. 69) characterization running parallel to the above authors, "Unku, *the principal male garment in the Inka culture of the Late Horizon* (*1476–1532*) *in Peru, was a sleeveless garment that extended to the knees of the wearer and was worn over a* wara [= huara] (*loincloth*)…". Although it essentially reflects the former reports, Marta Ruiz's (2002, p. 207) description offers more details,

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14. It appears that the ancient inhabitants of the Andes either were fond of the celebration of geometrical designs or displayed a real obsession regarding them, rarely matched in the history of humankind. The extremely common *geometrical principle* crops up in a variety of ways in the explored Inka tunic or non-tunic exemplars in our current review.

15. The Kuna "pictography" of the indigenous population of the region of San Blas, Panamá (Nordenskiöld, 1928, pp. 276–282; Jean, 1998 [1989], p. 29; Howe, 2009, p. 156), or the so-called Cretan "hieroglyphs" (Brice, 1992, pp. 21–24, Olivier et al., 1996) are systems characterized by linearity; yet, they are not fully-fledged phonetic writing systems, strictly speaking.

16. Possibly Gisbert (1980) is referring to the work of Bartolomé Arzáns de Orsúay y Vela (1705), "Relatos de la Villa Imperial de Potosí" [Narrations on the Imperial City of Potosí]. The book was reprinted in 2000 by PLURAL Editores in La Paz (Bolivia).

> El unku (ccahua *en aymara*; camiseta *o* túnica *en español*) *es una prenda formada por una sola pieza y de esa manera es sacada del telar, la pieza concluida se dobla sobre sí misma cosiéndose en los costados, dejando así la abertura para los brazos. La abertura del cuello es ya considerada en el tejido. Pueden encontrarse con mangas, aunque no es lo más frecuente* (Gisbert et al., 1992)
>
> [Unku (*ccahua* in Aymara; shirt or tunic in Spanish) is a one-piece garment, and is extracted from the loom in this manner; the finished piece is folded over itself being sewn in the flanks, leaving an opening for the arms. The neck opening is already made in the fabric itself. You could also find pieces with sleeves, although they are not the most frequent ones].

We should make clear the idea that researchers—with various degrees of self-confidence and insight—perceive in the *t'oqapu* patterns compressed information of a semantic quality reflecting a different form of literacy (basically visually-driven), and not inert or inferior records (see Frame, 1994, p. 295; 2001, pp. 113,[17] 135; Silverman, 1994, pp. 14, 18–19; Quispe-Agnoli, 2006, pp. 183–184;[18] Stone, 2007; Williams, 2008, p. 49; Gentile Lafaille, 2010). Such ideas are explored further in the course of the present study.

10. *T'oqapu* Patterns in Other Textile Formats and Other Media

A great number of Inka artifacts—many far removed from the classic tunic-format—reveal that *t'oqapu* or *t'oqapu*-like iconography was transmuted, appearing in different manners and on diverse material supports across the Inkario.

Among the vehicles for their transmission were woven bags and pouches, widely diffused among Andeans and non-Andeans over time as plausible carriers of *coca* leaves (= *chuspa*/s), and intended also for other uses (Taullard, 1949, Láminas [Plates] 176–182; Vanstan, 1967, pp. 3–15; Stone-Miller, 1994a, p. 96, Plate 18; 1994a, pp. 143–144, Plate 47;[19] Roussakis and Salazar, 1999, pp. 264, 274–275, 291; Agüero Piwonka, 2000,

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17. "Pattern, *particularly in the art of non-literate peoples, reflects systems of classification and modes of cognition of their makers… Pattern is given its fullest expression in the Andes on large, flat expanses of fabric, although abbreviated versions of the same patterns occur on smaller objects in other media*".

18. "Al parecer los textiles y los trajes andinos fueron depositarios de información y de una posible *literalidad prehispánica*" [The textiles and the Andean garments were apparently repositories of information and of a possible pre-Hispanic literacy].

19. A "bag with abstract interlocked birds (?)" credited to the Nazca culture, is assigned to the Early Intermediate Period, *about* 500 CE (Stone-Miller, 1994a, p. 96, Plate 18). A *double-cloth bag with animal and geometric motifs*, belonging to the Chancay culture of the Central Coast, is assigned to the Late Intermediate Period, 1000–1476 CE (Stone-Miller, 1994a, pp. 143–144, Plate 47).

(a) (b)

FIGURE 8. (a) An Inka tapestry weave tunic displaying the "key motif" style (zigzag pattern), reportedly found in the Ica valley, Perú, Late Horizon, ca. 1460–1534 CE, held at *The Textile Museum*, Washington DC (2010), with inventory no. 91.147. *Dimensions*: 88.9 × 73.7 cm; acquired by George Hewitt Myers in 1932; Public Domain; see Zuidema (1991, p. 173, Figure 9d) and MetMuseum, 2022; `https://www.metmuseum.org/exhibitions/listings/2011/the-andean-tunic-400-bce1800-ce/photo-gallery`. A similar Inka *unqu* exhibiting the monotonous alternation of the "key motif" pattern is found in *Museo de Lima*, Perú (Taullard, 1949, Lámina [Plate] 16). Figure b illustrates in all probability a royal *unqu* (see Pasztory, 1998, pp. 152–153, Fig. 111; Kelly, 2001, pp. 44, 48, Figure 4; Pillsbury, 2002, p. 73, Fig. 7; Stone, 2007, p. 394; Cummins, 2014 [2009], p. 226, Figura 1; DeMarrais, 2017, p. 658, Figure 1; Dumbarton Oaks Research Library and Collections, Pre-Columbian Collection, Washington DC at `http://museum.doaks.org/objects-1/info/23071`), a rich and precious apparel according to Inka standards, showing *corner to corner* a mixture of *t'oqapu* motifs. At first glance, the complexity of the visual space and color vibrancy in this *unqu* is overwhelming, hinting at the status and aesthetic choices of the noble wearer. Looking at the distribution of motifs across this all-*t'oqapu* tunic it is hard to tell *a priori* if they encode speech (or not)—although, on the other hand, it is difficult to dismiss the possibility that each motif (symbol) had "[...] *a well-defined* [socio-] *cultural function*" (see Sproat, 2013).

pp. 12–13; Finley Hughes, 2010). Rowe Pollard (1978: 13, Fig.14) illustrates a self-styled bag made from a cut-off diamond band, featuring a single stepped rhomboid design. The piece is held at *The Textile Museum*, Washington DC, and the specified measurements are 12.5 × 11.5 cm. Next, Rowe Pollard (1995–1996, p. 31) reproduces an item also deposited in *The Textile Museum*, filled with bands of "key motifs". Vouka Roussakis and Lucy Salazar (1999, p. 274) replicate the "checkerboard pattern," inserted in lateral and vertical stripes of *t'oqapu*, found in a bag at *Museo Na-*

cional de Antropología, Arqueología e Historia del Perú (MNAAHP), Lima. Given the patterns' significance, a higher status may be inferred, being that of the imperial court, of elite individuals, or military personnel (Steele and Allen, 2004, p. 37; see especially Finley Hughes, 2010). Because of the limited examples featuring standard *t'oqapu*, it is difficult to take a broad and deep view on their use.[20] Yet, given the available pieces, it may be suggested the main *t'oqapu* patterns are successfully applied along this textile format.

(a) (b) (c) (d)

FIGURE 9. Picture (a) shows an Inka tunic held at *The Textile Museum*, Washington DC., featuring the structured "black-and-white checkerboard" pattern combined with a stepped yoke (see Rowe, 1999 [1979], p. 606, Figure 2); (b) Inka tunic, Perú, ca. 1400–1532, *black-and-white checkerboard* style; camelid fiber weft, 88.3 × 80 cm; inventory no. 1995.32 MCD; Dallas Museum of Art, The Eugene and Margaret McDermott Art Fund, Inc., in honor of Carol Robbins (see Pillsbury, 1992, p. 72, Fig. 5, and the color image in Finley Hughes, 2010, p. 170, Figure 17); (c) the pattern of "black-and-white checkerboard" with a stepped yoke appears on another Inka-styled *unqu*, held at *Museo de Arqueología de Alta Montaña*, Ciudad de Salta (Argentina); MAAM (2021). *The Field Museum* (2010) in Chicago, Illinois, has a similar designed tunic, sporting in addition a number of butterfly motifs. *The Museum of Fine Arts*, Boston (William Francis Warden Fund [inventory no. 47.1097]) also holds a Man's tunic (*unqu*) with "checkerboard" design pertaining to "Inca, *late fifteenth–early sixteenth century*" (see Zuidema, 1991, p. 173, Figure 9c, and Phipps, 2018, Figure 6.4.1). (d) A checkerboard *Inka* tunic dated 16th century, belonging to the geographic area of modern Argentina, Perú, or Bolivia; inventory no. 2017.674. Medium: camelid fiber; Dimensions: height 87 × width 76.5 cm. Credit Line: Purchase, Fletcher Fund, Claudia Quentin Gift, and Harris Brisbane Dick Fund (2017); Public Domain; see MetMuseum at `https://www.metmuseum.org/art/collection/search/751901`. It is evident that the iconic interface (wearer ↔ observer) is minimal and direct: we can speculate that the visual display was not meant so much (if at all) to be pleasing, rather than to deliver an outspoken message in terms of authority, militancy, or imposing masculinity.

20. Various *coca bags* (cf. Finley Hughes, 2010), on the other hand, feature *llamas* as an emblematic figure among the Andean Inka.

A miniature tunic (*unqu*)[21] with checkerboard design, property of a private collector, is published in Phipps et al. (2004, pp. 141–142). The given dimensions for this 16th century small tunic are 27.3 × 20.3 cm. The purpose of such a reduced item was *ritualistic*: adornment of figurines intended as offerings (in burial or burning contexts), or for dressing statuettes and other natural sacred objects (see Figures 10–12). It certainly comes as no surprise that this small-sized tunic (Phipps et al., 2004, pp. 141–142) is not the only one that has survived to date. Another miniature (Inka) tunic of 14th–early 16th century (The Metropolitan Museum of Art, 2000–2021a; and see Figure 11 below) is another addition to the corpus of such items. In terms of tangible *t'oqapu* motifs, this tunic (*unqu*) shows one occurrence only: the "stepped-diamond"-like design which eventually goes down almost perfectly with other artifacts / structures characterized by this motif (see e.g., Figures 11, 14, 22, 36, 37). Furthermore, Margarita E. Gentile Lafaille (2010) referring to the work of Bárcena (1988) and Ceruti (2003)—among others—concerning archaeological remains found on some of the highest peaks of the Andes, *cerro Aconcagua* and *cerro Llullaillaco*, comments on small statuettes (*figurita de oro / figuritas de mullo*—made of *Spondylus* shell) and on miniaturized *unqu*, displaying *t'oqapu* motifs No. 1, and No. 49 to 52 according to Victoria de la Jara's (1967, p. 242) taxonomy. The retrieved material was connected with sacrificial rituals involving children or youth and assorted votive objects (= *capacocha*[22] / Besom's 2009, p. 25 rendition along this context is *Qhapaq Hucha*); for extensive information regarding the several ritual offerings located and retrieved across the high Andean mountain-range and elsewhere; see Pasztory (1998, p. 151, Fig. 110); Schobinger (1999); Ceruti (2007, 2015); Besom (2009); Abal de Russo (2010); Rein-

21. More "doll"-size (= small) shirts, are described in detail in Vanstan (1967, pp. 16–19), though the greater part of them are plain / undecorated, while the remainder lack the patterns under scrutiny.

22. Schobinger (1999, p. 17) lays out the term as follows, "... *una* capacocha (*o*, *en escritura más correcta*, capac hucha), *es decir*, *el sacrificio ritual de un niño de menos de 12 años* (*que según las crónicas debían ser 'hermosos*, *puros y sin manchas'*), *o de 14 años*, *en el caso de mujeres*, *en ceremonias que eran dirigidas por el poder del Estado* [... a *capacocha* (or in a more correct orthographical form, *capac hucha*), meaning, the ritual sacrifice of a child less than 12 years old (who according to the chronicles had to be 'beautiful, pure and spotless'), or 14 years old in the case of young women, in ceremonies presided [over] by the State power]; otherwise, Gentile Lafaille (2010) renders *capacocha* as, "Conjunto *de objetos ofrecidos por el Inca o la Coya en circunstancias especiales*; *podía incluir una o varias personas jóvenes, cuyo oráculo se consultaba periódicamente*" [Collection of offerings bequeathed by the Inca emperor or the Coya (emperor's consort in this context; *our note*) under special circumstances; it (= the ritual; *our note*) could include one or several youths, whose oracle was regularly consulted]. Lau (2019, pp. 162–163) offers a comprehensive depiction of the terms currently discussed, plus a number of relatable bibliographic sources.

hard (2016); Lau (2019); Carbonell (2020 [2019]); Socha, Reinhard, and Chávez Perea (2021).

FIGURE 10. Two miniaturized *unqu* (= tunics): the one on the left shows the "black-and-white checkerboard" pattern; the other one relates to the "Inka key" pattern (see also Figure 31 below). These textiles, used to dress small anthropomorphic statuettes, were recovered from sacrificial offerings that took place on Llullaillaco volcano (at the modern border between Argentina and Chile); see B. Carbonell (2020 [2019], p. 165, Figura 8a; Archivo MAAM [*Museo Arqueológico de Alta Montaña*], Ciudad de Salta, Argentina); see MAAM (2021b).

Next, Phipps et al. (2004, pp. 276–277), mention that mini-garments were produced in the Andes since ancient times; therefore, the above miniature *unqu* with "*checker-board*" design or the one with the "Inka key" motif seem to have precedents. In Young-Sánchez (2004a, p. 52) is reproduced a beautiful exemplar of a miniature tunic of Tiwanaku style, 600–800 CE, coming from Southern Perú or northern Chile. A small sleeved tunic (ca. 800–850 CE) featuring a design of winged, staff-bearing attendant figures, a common motif in Wari imagery, is illustrated in Figure 12.

Furthermore, in Stone-Miller (1994a, p. 159, Plate 56) *a miniature tunic with bird motifs*, probably belonging to the Rimac Culture (?) of the Central Coast, is dated to the Late Intermediate Period, 1000–1476 CE. The author (Stone-Miller, 1994a, p. 159) also shares the opinion that the diminutive versions of tunics were "… *apparently made expressly as burial offerings*" as substituting the life-sized ones, whose manufacture was costlier and more time-consuming.

The status of *t'oqapu*-like motifs as important conveyers of the Inka / Andean cultural lore is also evidenced by the outer textile wrapping of a mummy bale—held rigid by a basket framework; see Fleming (1986, p. 42, Figure 5); Reinhard (2016, p. 12). The textile features patterns in tricolor checkered structures with opposite / complementary

(a) (b)

FIGURE 11. (a) The front side of a miniaturized Inka tunic (*geographical area*: Perú) pertaining to 14th–early 16th century is illustrated. *Material*: Cotton, camelid hair; *Dimensions*: Height 4-1/2 in. *Credit Line*: Bequest of Arthur M. Bullowa, 1993; *Accession Number*: 1994.35.114 (see The Metropolitan Museum of Art, 2000–2021a). (b) Back-side of the miniaturized tunic is shown for effects of comparison. A single "stepped-diamond"-like *t'oqapu* unit features on both sides of the tunic.

FIGURE 12. A miniature tunic with staff bearer entities, ca. 800–850, south highlands of Perú; Wari style. *Material*: camelid hair, cotton; tapestry weave. *Dimensions*: 16 × 26 cm. Private Collection. Most surviving Wari tunics lack sleeves, but evidence suggests that some early examples had sleeves that were later removed; see The Metropolitan Museum of New York (2022a)

stepped-diamond-like designs, suggestive of *t'oqapu* No. 175 in de la Jara's (1967, p. 243, Figure 2) original inventory; see below Figure 13a. An additional Inka-related mummy bundle exhibits the "black-and-white checkerboard" technique combined with a red stepped yoke (cf. also Figure 9); the tunic (= *unqu*), of sufficient size for a full-grown man, wraps the bundle where a sacrificed boy was cocooned (Figure 13b). In symbolical terms, we think, this life-size *unqu* was the garment of preference the boy-child would have worn in adulthood. We could be looking

at a plausible assumption herein, since the "black-and-white checkerboard," plus the upper red area (the color red, most likely representing the human circulatory fluid), was associated with military expeditions, warfighting skills, and other affairs of a similar nature.[23]

Whether in contexts dealing with *the living* or *the sacred realm of the beyond*, the Inka admittedly reveled in and venerated the animated actors and related non-animated artifacts by means of textiles infused with *t'oqapu* motifs.

In architectonic samples, models affined to *t'oqapu* are not absent. In Lehmann and Doering (1924, Collotype Plate 7) and in D'Altroy (2005, p. 137, Plate 6.8) under the legend "Pink rhyolite monoliths in the unfinished temple complex at Ollantaytambo," we see *stepped-diamond patterns* in the fourth monolith (going from left-to-right), still traceable despite the unmitigated natural elements and resultant effacing. In a subsequent publication (Hogue, 2006, p. 115, fig. 17) is displayed a lingering wall of the *Temple of the Sun* at *Ollantay-tambo* where "[...] *only vestiges of the three stepped diamond shapes remain*". To that effect, Paternosto (1996 [1989], p. 140, Figure 20) and Hogue (2006, p. 115, fig. 18), refer to an earlier illustration of Ephraim George Squier (1877) and show the pattern undamaged. Another instance (Gisbert, 1980, Figura 190) depicts the frontage of an *acllahuasi*[24] (= *house of the sun virgins / cloistered virgins*) of Coatí Island, with stepped-diamond patterns similar to those observed in *unqu*(s) and empty niches. In like manner, an elaborate quadruple jambed niche at Iñaq Uyu (on the eastern shore of *Isla de la Luna* [= Coatí Island], Lake Titicaca, Bolivia) is shown in Jean Pierre Protzen (2018, p. 638, Figure 6.3.6); the upper section is reminiscent of the diamond-like (waist)band, a standard *t'oqapu* motif (see also Figure 14). Marianne

23. M. C. Ceruti (2015, p. 4, Figure 2) illustrates a mummy from Mount Chuscha (over 5300 meters high) in northwestern modern Argentina, corresponding to a young female. Among the retrieved associated offerings, the *cumbi* tunic she is wearing relates to the "black-and-white checkerboard" technique combined with a red stepped yoke. The odds are that this sacrificial victim was the daughter of a provincial official / military commander, or of a *curaca* (local ruler) who willingly accepted the sacrifice as an imperial obligation, a great social honor, or as an act of expiation in response to local conditions (e.g., an uncontrollable natural disaster).

24. Regarding *acllahuasi*, see also Pasztory (1998, p. 154), "Young women, *the so-called 'chosen women' were collected into 'nunneries' where they spent their time weaving until they were given away as wives*"; and McEwen (2006, p. 207), "Quechua Word for the house of the chosen women"; see also Ceruti (2015, p. 7) "The Inca *Empire institutionalized a system of selection, seclusion, and redistribution of 'chosen women' or* acllas, *who were taken from their homes prior to the onset of puberty and kept in special houses or* acllahuasi. *Here they were kept under the close surveillance of consecrated women known as* mamacona *who would teach the young girls to weave and to prepare chicha* ([62, Murúa], 333). *At the age of 14, the young women were taken out of the acllahuasi and some would be selected to be given as secondary wives to nobles while others would be consecrated to serve as priestesses or Wives of the Sun*".

(a) (b)

FIGURE 13. Figure 13. (a) The caption in Fleming (1986, p. 42, Figure 5; see also Niu [Penn Museum Blog] (2011; https://www.penn.museum/blog/museum/mummy-of-the-month-pachamac-mummy-bale-no26626/attachment/baleperu/) reads, "Mummy bale of a child, *held rigid by a basket framework set up just beneath its beige, black and red-checkered outer shroud and a plain inner cotton shroud. The small pouches of the necklet contain dried-out leaves and stems from the kinds of plants that are now thought to have figured strongly in early Peruvian folk medicine* (*coca, quinoa, mucuna, etc.*) *and dye-making* (*annatto, taya, chica, etc.*). *The University Museum, no. 26626. H*(eight) *0.94 m*"; (b) the caption in Shaw (2019; https://www.apollo-magazine.com/mummies-secrets-life/) reads, "Inca mummy bundle, *dressed in the tunic of an Incan officer but containing the mummy of a boy, from* c. *1480–1560, Museum der Culturen, Basel* [Switzerland]".

Hogue (2006, p. 115) deems that such an architectural design *would have the same iconographic implications in the textile medium*.

This hallmark motif is also commented upon in Cummins (2014 [2009], p. 256, p. 237, Figura 10) regarding a different geographic location, "En este sentido, *Teresa Gisbert* (*1996*) *señaló que las* chullpa[25] *de la cultura Caranga, en la región del río Lauca en Bolivia, están pintadas con diseños incas dispuestos en una banda horizontal de formas adiamantadas que igualmente son de tipo* tocapu (Figura 10) [In this sense, Teresa Gisbert (1996) pointed out that *chullpa*(s) belonging to the Caranga culture, situated in the region of river Lauca (Bolivia), are painted with Inka designs along an horizontal strip in the guise of diamond-like shapes that equally fit the *t'oqapu* type (Figura 10)]". The discussion is supported by Duccio Bonavia (1985 [1974], pp. 155–157, 170–172) who—among other ancient

25. *Chullpa*(*s*) are stone towers related to burial practices in the Inka tradition.

(a) (b)

FIGURE 14. (b) Frontage of an *acllahuasi* (= Aqlla Wasi) [House / Nunnery / Temple of the Sun Virgins] located on *Isla de la Luna* [= Coatí Island], Lake Titicaca (Bolivia); cf. wikimedia.org (2021b); (a) the layout of an empty niche / window of the *acllahuasi* (wikimedia.org, 2021a) is reminiscent of the diamond-like (waist)band, a customary *t'oqapu* motif.

Peruvian cultures—collected data on mural paintings across the former Inka territory. It is significant that the Inka rendered paintings with an intense geometrical content similar to *t'oqapu*, e.g., at Huaca de la Centinela,[26] Chincha Valley (1985 [1974], p. 157, Fig. 114) with *triangle*, *rhomboidal*, and *meander-like hook* patterns (see below Figure 15), or at the Fortress of Paramonga where remains of a *checkerboard* design are visible on one of the inner walls (Bonavia, 1985 [1974], p. 172, Fig. 122). Clados (2007, p. 98, Fig. 37) has a drawing based on a ceramic Inka artifact[27] of a man that features a horizontal band characterized by meander-like hook patterns or z-formations in a "key"-fashioned pattern, slightly similar to the reproduction of Bonavia (1985 [1974], p. 157).

In this sub-section we also reference M. Ruiz (2002, pp. 202, 203, Figura 1). The author (2002) takes us to the archaeological complex of *El Pukara de Rinconada* [= Fortress of Rinconada], located on the high-plateau of Jujuy (Province of Jujuy), in the most extreme part of the Argentinean Northwest, which borders on Chile and Bolivia. Ruiz (2002, p. 202) reports that on one side of the Pukara is found "*El Cerro o Mesada de las Pinturas*," the western slope of which has "[...] *aleros o chullpas que han sido utilizados como soporte de las manifestaciones pictóricas* [flanks or chullpas (= funerary stone towers / tombs) that are used as a support for pictorial manifestations]. Upon one of the flanks (the so-called *Boman Panel* because it was initially documented by Eric Boman in 1908), across the various sections of the panel there are groups of painted anthropomorphic figures displaying (among other paraphernalia) Inka tunics of dif-

26. See also Dwight T. Wallace (1998).

27. The artifact is held at *Staatliches Museum für Völkerkunde*, *München* [Munich].

(a) (b)

FIGURE 15. (a) Here is illustrated a reconstruction drawing of a mural on walls of an Inca (= Inka) structure as seen by the archaeologist and anthropologist John Howland Rowe in 1958; Inka style, Late Horizon (Bonavia, 1985 [1974], p. 157). The walls, part of the pyramid of Huaca de la Centinela, are located in the province of Chincha (Ica region, modern-day Perú). (b) The meander-like hook patterns embedded in mirrored-like rectangular designs are attested on a fragment of an earlier Wari-styled tunic (http://www.latinamericanstudies.org/wari/wari-tunics.htm).

ferent designs and colors, including "unkus ajedrezados blanco y rojo" [white-and-red checkerboard tunics]. Ruiz (2002, p. 203) assesses the situation by drawing eventually attention to, "Boman (1908) *concluye la descripción del panel diciendo que puede ser un cuadro conmemorativo, un acontecimiento, una asamblea, una gran fiesta o el retorno de una expedición guerrera* [Boman (1908) concludes the description of the panel by noting that it was perhaps a commemorative tableau, an event, an assembly, a great celebration, or the return from a military expedition].

Qero (= quero / kero) and *aquilla* (ceramic, wooden and metal cups / beaker-like vessels), destined for *chicha de maíz* [fermented corn / maize beer] libations, and symbols of reciprocity,[28] homage, and imperial obligation in the Inkario, are another format where *t'oqapu* or *t'oqapu*-like motifs emerge quite frequently (Rowe, 1999 [1979], p. 606; Zuidema, 1991, p. 151; Arellano, 1999, p. 257; Frame, 2001, Plate 22; Cummins, 2002a; Heckman, 2003, p. 51; Phipps et al., 2004, pp. 135–136; Mulvany, 2004; Phipps, 2005, p. 85; Meisch, 2006, p. 381; Ziółkowski et al., 2008; Gentile Lafaille, 2010; The Ohio State University (OSU), 2015; Prieto-Olavarría and Tobar, 2017, p. 153, Figura 6; and Figure 16 herein). The items under description (and other types of ceramic objects) find a clear reflection in Prieto-Olavarría and Tobar (2017, p. 138),

28. See e.g., The Ohio State University [OSU] (2015), "Chicha was also important due to its effects of intoxication. *For the Inca, as well as many other cultures, drunkenness was a way to communicate with otherworldly beings, spirits, or even gods. The act of getting drunk also represents aspects of togetherness and community—to the Inca, sharing drink with another person was seen as an act of friendship and understanding*".

> *La cerámica inca fue un importante medio de difusión ideológico, ya que se distribuyó ampliamente desde los centros productores a todo el Imperio, vinculándose a actividades relacionadas con los alimentos y la política. Más que un indicador del Estado, su importancia radicó en articular la producción, el consumo, la identidad y los procesos políticos del imperialismo inca* (Bray 2003, 2004). *Su carácter ceremonial y político se evidencia en que las formas más representadas se relacionan con el almacenamiento, el servicio de la comida* (*aríbalos, platos y pucos*) (D'Altroy et al. 1994), *la entrega de regalos y el brindis ritual* (*kero y aquillas*) (Cummins 2002)"
>
> [The Inka pottery was an important medium of ideological transmission, since it was amply distributed from the producing centers to the whole Empire, linked to activities concerning sustenance and politics. More than an indicator of statecraft, its importance rested on articulating the production, the consumption, identity, and political processes of the Inka imperialism [...]. Its ceremonial and political character becomes evident in the fact that the most representative forms are related to storage, food service (pitchers, plates and bowls) [...], gift offerings and ritual toasting (keros and aquillas) [...].

T. B. F. Cummins (2002a, Fig. 4.4.) references an Inka *qero* displayed at *Staatliche Museen zu Berlin, Preussischer Kulturbesitz, Museum für Völkerkunde, Berlin, acc. No. VA1603.* A band with zigzag or meandering motifs in a serpentine-like fashion is viewed, resembling the repeated "key *motif*" of the *t'oqapu*; see also Figure 8a. Likewise, in Cummins (2002a, Fig. 4.5) we see an *Inca quero with concentric rectangles, zigzag bands, and diamond shapes organized into five horizontal registers.* The receptacle preserved at Phoebe Apperson Hearst Museum of Anthropology and the Regents of the University of California (Cummins, 2002a, Fig. 4.7a; see also Figs. 4.7b, 4.7c), acquaints us with an *aquilla with embossed design of schematic arms and head*, reminiscent of a snaking strip following the "key motif" in the *t'oqapu* tradition. Phipps et al. (2004, pp. 135–136), while examining a number of Inka beakers highlight this motif as consistently used in these types of objects.

In J. H. Rowe (1999 [1979], p. 606) the occurrence of *t'oqapu* is also reported on generic pottery, "Also, *the Inka key* [see Figure 17 herein] *though primarily a textile design, is also occasionally found on Inca pottery* (*Museo Arqueológico, Cuzco, u. 1881, no provenience*) *and on provincial Inca pottery* (*Robert H. Lowie Museum of Anthropology, University of California, Berkeley, 4-3936, from the Chincha Valley, Tomb E 5*; *Kroeber and Strong 1924a*: *Fig. 1e*)". Tamara L. Bray (2000, pp. 169–178, Figure 8) analyzes the imagery of a number of storage jars—alternatively called *urpu* or *aríbolas* [pitcher-like vessels]—finding in them, rhomboid, quincunx, and other designs, closely resembling the *t'oqapu* elements, and suggesting insignias of the Inka dynasty and statecraft (see an excellent amphora-like pot in Katz, 1983, p. 310, Catalog entry 186; and Figure 18 herein). In another geographical setting, yet culturally of the same orbit, Williams (2008, p. 49) compares some of the Inka imperial symbols—*t'oqapu* designs—in ceramic and tex-

FIGURE 16. An Inka wooden *qero* of the 15th–early 16th century shows the diamond / rhomboidal-like pattern alongside its bottom strip (The Metropolitan Museum of Art, 2000–2021b). https://www.metmuseum.org/art/collection/search/317791. The middle strip depicts what appear to be a series of fox-like creatures (possibly the Andean fox, aka the Andean wolf) moving forward one after the other.

tile artifacts recovered in the northwestern part of (modern-day) Argentina.

The possibility that these out-of-standard tunic patterns are value-laden (as they are meant to be intentional and interrelated) cannot be dismissed. The persistence in replicating such a dynamic in ordinary and high-quality manufactures suggests we are not witnessing some casual or rampant pastime. It would seem rather a socially and mythologically-driven activity in accord with Inka logic, and the conception of time and space in their universe (cf. Estermann, 1998; Cummins, 2011). In this sense, the evidence encountered so far also calls for concerted work, especially from art historians, anthropologists, textile experts, local informants, semioticians, and linguists, so as to verify or clarify their encoded meaning (cf. Quispe-Agnoli, 2006; Cerrón-Palomino, 2008; Florio, 2013). Now, the fact that some *t'oqapu* motifs appear regularly, e.g., *the diamond waistband*, *the Inka key*, *the black-and-white checkerboard*, reveals not only their diffusion in Tawantisuyu, but also their simple "statement/s" and their high-frequency use in terms of significance and other conventions along this semiotic system. A similar occurrence is noticed in other pre-industrial societies. Payne (1987, p. 55) in discussing the heraldic practices of the 13th to 15th centuries in England, mentions that some symbols were used extensively, "The range of pictorial images was not large; *but subjects like the symbolic lion*, *the eagle and the cross were popular*".

FIGURE 17. In this figure, the undulating Inka *key pattern* in a textile fragment (Taullard, 1949, Lámina 16 [Plate 16]) produces optically the effect of a *snaky stripe*; cf. Clados (2007, pp. 72–73, Fig. 1a). Structurally, however, the external image responds to the technique of twisted fibers as applied by the Tawantisuyu's weaver/s; see Frame (2001, p. 119), "The serpent metaphor is often applied to twisted strand imagery, *a natural connection given the sinuous quality of snakes and cords*". The patterns of Inka textiles are related to the perception and construction of space and motion, found at the very core of the weaving process. Such serial patterns, initially found in rope and cordage manufactured items, plus fabrics, were transferred later onto other media and contexts (Frame, 2001, pp. 114–115). Alternatively, considering the statistical distribution of this motif across some Inka-styled tunics (cf. Figure 8a; or Carbonell, 2020 [2019], p. 166, Figura 9), one might ponder whether there is a text in the original Quechua or Aymara language that show a corresponding repetitive statistical distribution in terms of a *morpheme* or *syllable*.

(a) (b)

FIGURE 18. (a) Storage bottle / storage jar (*aríballus*); Inka Horizon, Late Period, 1470–1532 CE; inventory No. PE-313; (Museo Chileno de Arte Precolombino, 2021). Notice the bipolar and complementary nature of the design along the horizontal band. (b) The repetitive quadri-partite diamond-like motif is noted in a similar Inka storage jar held at MAAM (Museo de Arqueología de Alta Montaña, Ciudad de Salta, Argentina, 2021). An additional fine print of an Inka "aríbalo" is found in DeMarrais (2017, p. 661, Figure 5).

11. Guamán Poma de Ayala's Drawings: *t'oqapu* Motifs as Indicators of Royal Status

For the prospective *t'oqapu* scholar, looking for Inka or immediate post-Inka sources of information is based on reason and sagacity. The earliest chronicle with some credible records which laid unnoticed until 1908 in the Royal Library at Copenhagen, Denmark (see Markham, 1969 [1910], p. 16; Montell, 1929, p. 176; Steele and Allen, 2004, p. 46), is that of the Peruvian Amerindian Felipe Guamán Poma de Ayala. The indigenous colonial writer wanted to do justice to the Inka social values and the mythic traditions he related to Felipe III, then king of Spain (see Poma de Ayala, 1980 [1615]; Quispe-Agnoli, 2006; Frame, 2007; Ossio Acuña, 2008). While it is not known if the work is truly fact-filled, it still adds up to a major source of data, in particular in view of his line-drawings.[29] Markham (1969 [1910], pp. 16–19); Montell (1929, pp. 176, 198); Rowe Pollard (1978, p. 6; 1995–1996, p. 5); J. H. Rowe (1999 [1979], pp. 582–587); Anton (1987 [1984], pp. 188–189); Zuidema (1991, pp. 151–152); Niles (1994, p. 59); Phipps (1996, p. 147; 2005, pp. 84–85); Dransart (1997 [1992], p. 159); Silverman (1999, p. 810);[30] Roussakis and Salazar (1999, p. 276); Cummins (2002b, p. 190); Heckman (2003, p. 51); Eeckhout and Danis (2004, pp. 309–311); Quispe-Agnoli (2005, 2006); Pillsbury (2006, p. 129); Clados (2007, pp. 86–88); Frame (2007); Stone (2007, pp. 394–397); Gentile Lafaille (2008, p. 2); Trever (2011, pp. 40–41, 48, 50–51); Carbonell (2020 [2019])—inter alia—draw on his manuscript "*El Primer Nueva Corónica y Buen Gobierno*" [The First New Chronicle and Good Government] in which appear graphic depictions of twelve Inka overlords garbed in clothes with full or partial woven designs, bearing a striking resemblance to *t'oqapu* patterning; see Figure 19. The royal dresses were manufactured of *the finest tapestry-woven cloth*, while the *standardized sets of abstract and geometric designs* were possibly *imbued with cultural and political significance* (Phipps, 2004, p. 73). As we look through the pages of *Nueva Corónica*, *t'oqapu* motifs come into sight in waistbands of women's clothes—unrelated however to Inka nobility (Quispe-Agnoli,

29. See e.g., an assessment in Trever (2011, pp. 54–55), "His illustrations [Guamán Poma's; *our note*] *are rich visualizations of religious forms in colonial perspective and they express varying degrees of ethnographic detail and Christian rhetoric depending on the demands of their ideological contexts. These images constitute neither a linear development of pictorial practices nor a single unfolding of increasing cultural understanding, but rather a complicated, and at times contradictory, path through the artist's often ambivalent attitudes toward the religious traditions of the pre-Hispanic Andean past*".

30. "Guaman Poma (1980) *has left us drawings of the clothes worn by the Inca nobility decorated with* tocapus. *The seventh Inca, for example* (*Guaman Poma* 1980: 75), *wears a sleeveless tunic* (uncu) *decorated with* tocapus *on the upper half of this garment. Geometric motifs which include a diamond, stars, circles, the letter Z and the numbers 3 and 4 are represented.* (*Plate 11*)".

2006, p. 182). Still, it may be concluded that (as a rule) *t'oqapu* drawings laid special emphasis on the upper-class personages, contextualized in social rituals dealing with cyclic events and in military scenes (Eeckhout and Danis, 2004; Quispe-Agnoli, 2006, pp. 182–183).

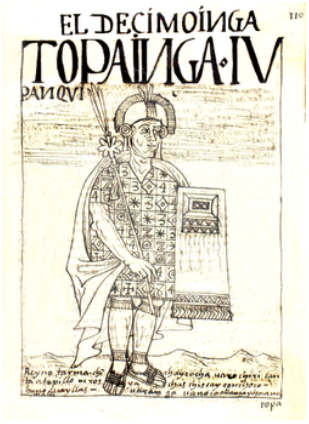

FIGURE 19. A drawing from Guamán Poma de Ayala (1980 [1615], Folio 110; see also Zuidema, 1991, p. 157, Figure 2 (10); Eeckhout and Danis, 2004, p. 314, Fig. 5; Quispe-Agnoli, 2005, p. 290, Figura 14; Clados, 2007, p. 87, Fig. 19b) shows the tenth ruler Thopa (Tupac) Inka Yupanqui (reigning *ca.* 1471–1493) of the Inka dynasty in an all-*t'oqapu unqu*, regarded as a token of the uppermost social rank. We consider that the *unqu* exhibiting *t'oqapu* designs throughout (plus the other particular accoutrements) helped the ruler/s to codify and project his / their authority in the inner circle and beyond it.

12. Plausible and/or Random Meanings Assigned to Ancient Iconic and Iconographic Systems

The destruction of the Inka civilization by the Spanish invasion and subsequent colonization, along with the shortage of historical documents conveying evidence on the function and meaning of *t'oqapu par excellence*—the tapestry tunic special designs—(Rowe Pollard, 1995–1996, p. 9; Cummins, 2002b, p. 190; Phipps, 2005, p. 85; Quispe-Agnoli, 2006, p. 184), would remind us of possible present-day misconceptions. In a similar manner and along the same chronology, selected *quipu* arrangements would mostly hold their secrets as long as their encoded data would largely respond to mnemonic-driven data, *barely known to* or *still*

eluding modern researchers (Barthel, 1976, p. 27; Stierlin, 1984, p. 192;[31] Conklin, 1996a, p. 327; Kulmar, 2008, pp. 138–140; for recent work on *quipu*, see Hyland, 2017; Medrano and Urton, 2018). As a matter of fact, the authors pointing at the dangers of assigning values to symbols and iconographic representations of a long-extinct human community or culture are as extended as they are convincing in their ideas. George Herbert Mead (1934, pp. 47, 71–72, 268–269) indicated nearly a century ago, *significant symbols have an arbitrary meaning conventionalized to the members of a specific society. If the society is dead and no recognizable cognitive bridges survive, then by definition, the meaning of the icon is lost* (cf. also Franquemont, 1986, p. 84;[32] Jean, 1998 [1989], pp. 11–28; Heckman, 2003, pp. 36, 41). In real historical terms it is next to unknown if such a symbolism—articulate, however, to its former users—had a univocal value or multi-vocal values in a given context; hence, any gullible estimation may be prone to exaggeration. In this line, additional examples include the rock art records in Arizona, New Mexico, and California (Brandt et al., 1975, p. 48);[33] the *Mi'kma'q* "hieroglyphs" attested on the Atlantic seaboard island of Newfoundland (Hewson, 1988 [1982], pp. 60–61);[34] the *rongorongo* signs of pre-missionary Easter Island (Routledge, 1919; Melka and Schoch, 2020); heraldry in the Plantagenet England of 1200–1400, many aspects of which may be difficult to comprehend centuries later (Payne, 1987, p. 55); the textile iconography of Paracas (Perú), inaccessible and out of date for current observers (Paul, 1992, p. 289); the motifs of *the painted / incised Lima beans* of Moche polities (Melka, 2010b), and so forth. With the demise of those who commanded such expressions and with the loss of the accurate cultural background, it is nearly to entirely impossible to summon clear and convincing scientific arguments. In the absence of a substantial corpus and other telling ethnographic information, proving or disproving theories will (most likely) amount to a constant conundrum.

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31. "The quipu, *in short, admirable though it was for book-keeping purposes and for the transmission of concrete, quantitative information, could not be used to convey ideas or abstract philosophical and historical concepts. Its interpretation depended on an oral code which has failed to survive, and no matter how many* quipus *may be found in coastal cemeteries, the information they were intended to convey will never be revealed to us*".

32. See Franquemont (1986, p. 84) in a more specific context, "Most of the secrets of the ancient Andean textiles will never be unraveled for us—*the system is too elaborate, the societies too distant, and the concerns of the people who made them too foreign to us*".

33. "It should be noted that the interpretation of ancient rock art is a very uncertain subject, *beset with pitfalls and inherently subjective*".

34. "Obviously, *this form of writing is not very profitable, since* [it] *would take a long time to master, and one needs to know the text first, so that the hieroglyphics are only a reminder of a text that is already known: it would be difficult to read a text that had not been seen or known before*".

Apart from the contextual and the comparative studies of the existing data and the pursuit of new evidence, there is no certain way regarding how to reverse this unfavorable situation. Pinpointing each *t'oqapu* design and isolating the variants is most helpful. Comparing the pre-Colonial with Colonial *t'oqapu* and compiling a catalog with the shared features as well as the disparities, plus any assumed developmental process, is another bonus in seeking out results (see a tentative effort in http://tocapu.org/tocapu/, 2020). The study of John H. Rowe (1999, pp. 571–629 [1979, pp. 239–264]) bears witness to a systematic model of approaching the description, sorting and standardization of *t'oqapu* patterns and tunics (see also Phipps et al., 2004, p. 137; Pillsbury, 2006, p. 124), whose dispersion across the museums of the world has hampered research. In theory, among the many hypotheses, the best-formed and the most plausible ones, founded on archaeological, ethnographical, and structural data would appear to gain ground. In any event, we are inclined to think that the unsuspecting examination of the literature regarding *t'oqapu*, though certainly helpful, and heuristic, alone may not yield the answer to the meaning or to the final decoding of *t'oqapu*.

13. Parallel Cultural Environments

The Inka *t'oqapu*, presumably based on *a level of cognitive association on the part of the audience* (Brown, 1998, p. 14), are not the only recorded system—all the way through the history of humankind—where mnemonic or quasi-mnemonic conventions bear significance, if not a built-in attribute (see e.g., Sassoon and Gaur, 1997, pp. 18–19). However, it is worth noting that any attempt to draw on similarities among far-flung systems (in geographical and/or chronological terms) intending to reveal the meaning of the *t'oqapu*, may be *settling down in complacency*, if not *arbitrary constructions*.

In view of the efforts of Ibarra Grasso (1953), Barthel (1976, p. 28) estimated the picture-writings of *Christian-religious texts produced by the Aymara and Quechua Indians* and notes that such documents were *condensed* (fewer signs than the actual words of prayer) *with the aid of cues*, making *the mnemonic goal especially obvious*. On the other hand, Gillow and Sentence (1999, pp. 50–51) turn to the raised patterns of cables found in woolen Aran sweaters, serving to local fishermen as silent identifiers or reminders of their home ports. In a like manner, Michelle Brown (1998, p. 14) cites Kurdish rugs and Welsh love spoons carrying *all sorts of meaning in their abstract decoration, but you need to have been told how to interpret them*. In another somewhat similar context, Ann Payne (1987, p. 55) remarks on heraldic practices in Plantagenet England (1200–1400), characterized by clear conventions in their geometrical shapes. The author (ibid., 1987, p. 55) points out that such *heraldic device*[*s*] were *displayed in ways*

in which they could be seen by all in more than a few surroundings. Payne (1987, pp. 55–57) contends that *heraldry was more than simply ornamentation*; it signaled *allegiance*, *commitments and alliances*, *dominance and subservience in social orders*, *pride and dignity concerning ancestry*, *ownership*, *individual 'signatures'*, and so forth. Her explanations (ibid.), realistic in their logic and socio-historical background, incidentally echo the contributions of several Andeanists regarding *t'oqapu* functions. Even so, we should allow for universal commonalities in traits and behaviors arising from the human condition; thus, conveying *marks of distinction* or the *depiction of lineages* is one of the most frequent aspects in symbolic or graphic representations across the globe. As Ignacio Bernal (1975, p. x) wrote, "Genealogies, *authentic or embroidered on*, *were a political weapon just as history was*".

If not studied within the context of their cultural premises, any assumptions regarding these systems involving shared features across time and space may be taken on various occasions as misinterpretations of the data, or—possibly—as reckless pontificating.

14. *T'oqapu* in the Eyes of Modern Researchers

The bulk of the literature, first and foremost, deems the *t'oqapu* examples as expressions of a visual-symbolic system used in the Inka-dominated territories, otherwise known as Tawantinsuyu.[35]

While lacking empirical certainty, the description of theories may ensure a better grasp of the topic. By extension, distinguishing assumptions from facts is vital to the subject. We focus at this point on Christiane Clados (2007, pp. 78–79, subsection '*4. Forschungsgeschichte* [4. Research Background]')—the author offers an interesting collection of efforts aimed at the understanding and decoding of *t'oqapu*-patterns, covering a period of 38 years, 1964–2002. More to the point, various researchers have offered various hypotheses regarding *t'oqapu* placements and their meaning, while a few others have hypothesized an underlying phonetic code. As noted previously, pre-planned analyses (or not) concerning the positional order of patterns are not absent (see Barthel, 1971; J. H. Rowe, 1996, pp. 457–463, in A. P. Rowe and J. H. Rowe, 1996; Stone, 2007; Silverman, 2011). As we shall see, there have been alternative treatments on "ideographic" (= logographic) elements built in *binary* or *complementary oppositions* in the examined system (Victoria de la Jara, 1975, was the most determined in this sense). In any event, it should

35. The place-name Tawantisuyu is translated / rendered in English as "*The Land of the Four Quarters*" (Stierlin, 1984, p. 224; Frame, 2001, p. 127; McEwan, 2006, p. 3; Kulmar, 2010, p. 138); "*... the unit with four quarters...*" (see Bouysse-Cassagne, 1986, p. 201); "*The Four Parts Together*" (see D'Altroy, 2005, p. xiii), or "*The Inca empire was called Tawantinsuyu* (*Q* [echua]. *the four sectors together*)"; see Meisch (2006, p. 385).

be pointed out that de la Jara's (1975) assessment is viewed as *dubious* by many scholars, and no general agreement yet exists regarding precise "readings" or interpretations. The most severe shortcoming in *t'oqapu* studies, according to some, is the lack of associated information between the pre-Colonial and Colonial times (Cummins, 2002b, p. 190;[36] Phipps, 2005, pp. 84–85; Quispe-Agnoli, 2006, pp. 180–184); though A. P. Rowe and J. H. Rowe (1996, p. 453) were inclined to entertain a more optimistic approach, "the technical and design characteristics of Inca tunics are *relatively well understood, both because the evidence is relatively abundant and because it has been studied*". In principle, Thomas's (1999, p. 87) axiom[37] is by and large valid, although a reciprocated nexus between Inka individuals and their artifacts needs further examination.

The various scholarly proposals are structured along the following lines, assuming that *t'oqapu* horizontal and vertical groupings were designed for a variety of purposes, retaining and conveying "*... critical cultural information*" (Pillsbury, 2006, p. 126).

Line (1) follows the hypothesis of *t'oqapu* as a visual, diagrammatic system of communication that, aside from aesthetic (or emotion-inducing) motivations, was used perhaps to send out diverse messages surpassing linguistic, ethnic, and spatial boundaries.

Line (2) follows the hypothesis of *t'oqapu* as some sort of "writing system," basically of a logographic nature, in analogy with *logograms* found in other real-world known scripts.

(1) Given the fact that *unqu* were luxurious garments, the standard assumptions and evaluations focus on the high social status / hierarchy and places of origin. The schematic designs of *t'oqapu* were considered to silently convey information comparable to a visual book—that is, no speech was implied given the fact that they were unvoiced symbols—understood by the Inka members of any nearby audience, who seemingly also took delight in their beauty. The argument here deems the actual size of *t'oqapu* in tunics—especially if they were multi-patterned—and their artistic quality as important. Hence, it can be estimated that they could be truly and distinctly seen *only* in

36. "No se registrado ningún interés de los españoles para especificar el sistema de significado de los tocapu *y los andinos no tuvieron ninguna razón para querer explicar de qué manera los operaban, motivo por el cual no se entiende completamente el sistema hasta hoy. Así, carecemos de cualquier comprensión precisa de los* tocapu *como la de cualquier otra marca gráfica incaica, tenga ésta una forma figurativa o abstracta*" [There was no interest on behalf of Spaniards in specifying the system of meanings of *tocapu*, whereas the Andeans did not have any reason in wanting to explain in which manner they functioned, hence the system remains poorly understood to this day. Thus, we lack any precise comprehension of the *tocapu*, as well as of any other Incan graphic markings, be that figurative or abstract].

37. "*... understanding the person behind the artifact is more compelling than the artifact itself*".

close proximity to be safely recognized. In this sense, the discussed context would remind us of the properties of a notational system,[38] such as a musical, mathematical, or a chemical one, *et cetera*, or in another extended case, of the figurative imagery on the stained-glass windows in varied Christian churches (see e.g., Jean, 1998 [1989], pp. 27–28). A reason for such an estimation is that, at present, in the era of widespread information and social communicative platforms, the phenomenon of writing and texts in all conceivable formats and media, is such a common practice in (developed) countries that some of us forget to raise significant questions or doubts about them. However, in the past (in pre-medieval or medieval times, for instance), in the absence of massive literacy,[39] human memory is expected to have been trained in different ways regarding accessibility, flexibility, ease of recombining and processing patterns, and storage space (see Camille, 1987, p. 33, and also the excellent treatise on mnemotechnics of Carruthers and Ziołkowski, 2002).

Below, the authors are sorted into six broad categories according to their concrete proposals. Readers are advised to consult them relative to their own interest and possible inquiry.

(a) For *specific* and/or *mythical places of origin* (= paqarina), *locations*, *local distinctions*, and *ancestry*; see Harrison (1989, p. 60); Zuidema (1991, p. 192); Classen (1993, p. 30); Grube and Arellano Hoffmann (2002, p. 57); Cummins (2002b, p. 190); Phipps (2005, pp. 84–85).

(b) For *ethnic*, *political*, and *religious status*, *as indicator of social hierarchy*,[40] *prestige* and *power*; see Rowe (1999 [1979], p. 648); Feltham (1989, p. 57); Harrison (1989, p. 60); Zuidema (1991, p. 192); Delgado

38. For more, see Jiménez Borja (1999, p. 22), "These [textile; *our note*] *designs do not form sentences. They are like notes of a melody. They allude to the time in which they were made, to the status of the owner, whether he was single or married. To the property, the animals and the fruits of the field, etc.*".

39. See especially Claridge (2008, p. 248), "The majority of the population before the (*late*) *19th century was illiterate and thus could not produce any linguistic sources* (*with the exception* e.g., of *witness depositions and letters taken down by scribes*): *illiteracy in particular affected the lower and middle segments of society, so that historical corpora to a large extent reflect the language of social and educational elite—which in earliest times mostly overlaps with the religious elite*".

40. The notions of *hierarchy* and *stratification* were deeply rooted in the Inka society. According to Demarest and Conrad (1983, p. 388), such notions laid down during Sapa Inka Pachakuti's reign, were bolstered in the course of time, "Under the guidance of *Pachakuti and his advisors*, elaborate *hierarchies were constructed to channel the heightened ambitions of the Inca nation. As the empire grew through conquest, this governmental structure grew with it, supervising the growing labor taxes that supported the ruling class and the state religion. Not surprisingly, this accelerated political stratification was reinforced by a reworking of oral history and traditional social codes… The revised myth and history also claimed that Inca militarism and imperialism were both the traditional way of life and a sacred obligation of Inca leadership*".

Pang (1992, p. 291); Dransart (1997 [1992], p. 159); Silverman (1994, p. 12); Cummins (1994, p. 198); Stone-Miller (2002 [1995], p. 212); J. H. Rowe (1996, p. 464, in A. P. Rowe and J. H. Rowe, 1996); Arellano (1999, p. 257); Manrique P. (1999, p. 65); Phipps (2005, pp. 84–85; 2009, pp. 239–241); D'Altroy (2005, p. 294); Quispe-Agnoli (2005); Gentile Lafaille (2010).

(c) For *mythological ideas*, *heavenly origin*, and *cosmogony*; see Dransart (1997 [1992], p. 155); Classen (1993, p. 31); Roussakis and Salazar (1999, p. 274); Heckman (2003, p. 35).

(d) For *royal functions*, *control*, *dominion*, and *war strategies*; see Stone-Miller (2002 [1995], p. 212); Arellano (1999, p. 257); Cummins (2002b, p. 190); Stone (2007, p. 394); for an *expansionist message*, see Stone (2007, p. 399); for *conquests*, see Stone (2007, p. 407); Hogue (2006, p. 111) condenses the proposal, "Another way in which the Inca demonstrated their *rulership over a territory*, *its goods*, *and its inhabitants was with textiles*. *Garments such as the royal tunic* (Figure 8b above; → of the Robert Woods Bliss Collection; *our note*) *served as woven signifiers of the* vastness *of the Inca empire*".

(e) For *heraldic* and *calendaric information*; see Rojas y Silva (1981); Zuidema (1991, p. 195); Delgado Pang (1992, p. 291); Eeckhout and Danis (2004); and Figure 20.

(f) For proposals regarding the connection between staple products (i.e., *maize*) and patterns in Inka textiles; see Meisch (2006, pp. 385–386); for the identification of *t'oqapu* motifs based on *agricultural technology*; see Silverman (2011).

(2) The inquiries of Victoria de la Jara (1967, 1970, and 1975;[41] see also later sources commenting on her work, e.g., Anonymous, 1970; Stierlin, 1984, p. 191; Harrison, 1989, p. 60; Rostworowski de Diez Canseco, 1994, p. vii; Silverman, 1994, p. 18; J. H. Rowe, 1996, p. 463 in A. P. Rowe and J. H. Rowe, 1996; Arellano, 1999, p. 257; Jiménez Borja, 1999, p. 22; Manrique P., 1999, p. 65; Paternosto, 2001, p. 55; Eeckhout and Danis, 2004, p. 307; Cummins, 2014 [2009], pp. 227; 2011; Melka, 2010b, pp. 94, 102) highlighted the active principle of the *t'oqapu* system, where sound / phonetic values could have been included to a small or large extent essentially via logograms, similar in some ways to the Maya calligraphy. Thomas S. Barthel (1970, 1971), the German investigator of the Maya script and Easter Island *rongorongo* script (see also Anonymous, 1970; Stierlin, 1984, p. 191; Anton, 1987 [1984], p. 190; Liebscher, 1986, pp. 81–88; Harrison, 1989, p. 60; Delgado Pang, 1992, p. 291; J. H. Rowe, 1996, pp. 464–465, in A. P. Rowe and J. H. Rowe, 1996; Rowe, 1999 [1979], pp. 644–

41. Victoria de la Jara (1975, p. 32), "La escritura de los inkas es un sistema logográfico, *y como consecuencia*, *no tiene* 'letras'." [The Inka writing is a logographic system, and as a consequence, it does not possess "letters" (= alphabetic characters; *our note*)].

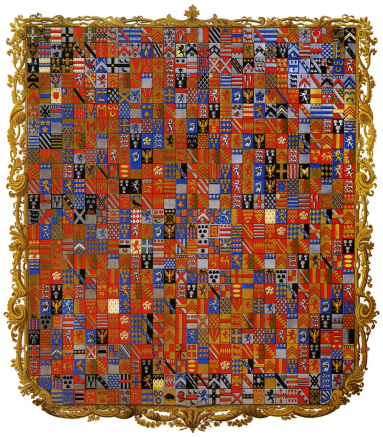


FIGURE 20. The *Stowe Armorial* coat of arms is the centerpiece of the Gothic Library at Stowe Temple-Grenville, 1st Marques of Buckingham, between 1805 and 1807 (Wikimedia.org., 2021c). The armorial is a 1.4 m diameter heraldic painting of the 719 quarterings of the Temple, variations of the English Royal arms, the arms of Spencer, De Clare, Valence, Mowbray, Mortimer and De Grey (see Wikimedia.org., 2021c, Author: Tilman, R. [2018]). The layout of the "quarterings" reminds us of the grid-like structure of the *t'oqapu* found in the royal *unqu* held in the Bliss Collection at Dumbarton Oaks, Washington, D.C. (cf. Pasztory, 1998; Kelly, 2001; Pillsbury, 2002; Stone, 2007; Clados, 2007, p. 75, Fig. 4; DeMarrais, 2017, p. 658, Figure 1; and see Figure 8b above). Generally speaking, and to express some caution, no equivalence between the Inka and the English armorial traditions is sought after at the present juncture. The contents of each cited specimen are individually and culturally devised / curated, having *no meeting point* whether in temporal or locative terms.

648; Paternosto, 2001, p. 55; Grube and Arellano Hoffmann, 2002, p. 52; Eeckhout and Danis, 2004, p. 307; Stone, 2007, p. 397; Cummins, 2014 [2009], pp. 227, 229), based on the research notes of V. de la Jara (1967, 1970), studied her proposition and offered a complex account, unverified to this day, on the meaning of the Bliss Collection royal *unqu*'s *t'oqapu* (Rowe, 1999 [1979], pp. 640–641); J. H. Rowe, 1996, pp. 463–464, in A. P. Rowe and J. H. Rowe, 1996; Stone, 2007; Cummins, 2011, pp. 307–308). This specific *unqu* (Lothrop et al., 1959 [1957], Plate CLXI), is described as a welter of *t'oqapu* patterns (Stone, 2007, p. 399) since, as maintained by modern researchers (see Lothrop et al., 1959 [1957], p. 292; Phipps et al., 2004, p. 153), they do not follow a logical, mathematical, or a clear syntactical order. Indeed, the Inka masters did not attempt *in illo tempore* to endorse "disorder" and "mystery" in that piece of royal garb, and much less, to exercise modern Andean scholars' minds. Recall that *t'oqapu* was a culturally-specific phenomenon and the intrinsic "accidental noise"

in them, in line with information theory (Shannon, 1948), causes the loss or distortion of information from the source up to the decoding process. Consequently, the "readings" thus far call for further research. Despite their originality, the work of V. de la Jara and T. S. Barthel is regarded as *unproven* and *problematic*, if not downright farfetched, by many authors (see Eeckhout and Danis, 2004; Cummins, 2011). It was criticized by John H. Rowe (1996, p. 463, in A. P. Rowe and J. H. Rowe, 1996), "… *from time to time someone with more enthusiasm than judgment decides that there must have been ancient writing in the Andes. One such enthusiast was Victoria de la Jara in Lima*," whereas, "Barthel's 'decipherment' [= of 1971] *was pure guesswork, and he did not know enough about Inca culture or the Inca language to make plausible guesses*". At present, a suggestion to be tendered is that further progress on this issue depends on logical analyses of reliable data with the added hope that there might be some consensus regarding potentially useful approaches to this often-divisive issue.

15. The Concepts of Duality and Complementary Oppositions in Textiles as Mirror Images of Spatial Organization and Mythology

Scholars of Peruvian antiquity (moderate or extreme in their claims) have demonstrated that *duality*, *oppositions*, and *harmony* are important qualities in the basic arrangement of *t'oqapu*. In a similar vein, following personal observations regarding direction, color inversion, interlocking, and possible hidden meanings of *t'oqapu*, we note the importance of the attribute of *yanantin* (= *binary patterns*) which is present in many samples (Stone-Miller, 1994a, p. 161; Frame, 2001, p. 135; Stone, 2007, p. 385;[42] Florio, 2013; Carbonell, 2020 [2019], pp. 165–166). Andrea Heckman (2003, p. 51) in a cautious report, points toward "… *the juxtaposition of many of the units in the Inca tocapu demonstrates concepts of repetition, inversion, and reversal, while the use of black and white and color expresses duality and balanced opposition, and, the use of red accents to denote the Inka, the color generally associated with him*," while Victoria de la Jara (1967, p. 247)—in a dashing statement over the nature of *t'oqapu*—specifies, "… *l'écriture inca est fondée sur des groupements dualistiques*" [the Inka script is founded on dualistic groupings]. In

42. See e.g., Stone (2007, p. 385), "Completing dualities—*the wet and dry seasons, the light and the dark portions of the night sky, upstream and down—define the Andean environment and condition human responses thereto. Movement along continua between such poles constitutes the principle of order, sanctioned by the circling planets but constantly mirrored in wild animal migrations, human transhumance, and many types of economic and aesthetic changes of goods. Within such a dynamic system, art often serves to echo, create, and perpetuate this endemic restlessness…*"

a following booklet, Victoria de la Jara (1975) goes into more details and applies to her satisfaction her methodology. Thus, making use of the principle of fusion (i.e., "ligaturing" / compounding),[43] de la Jara (1975, p. 47; see also Figure 21) offers two symmetrical *t'oqapu* rectangles "Apu (Señor [= Lord])" + "Illapa (rayo [= lightning])," that after recombination yield = "Apu *Illapa* (Dios Rayo [= Lightning God])." In another parallel case, "Apu (Señor [= Lord])" + "Capac (grande [= great]),"[44] produce = "Capac *Apu* (Rey [= King / Supreme Ruler])".

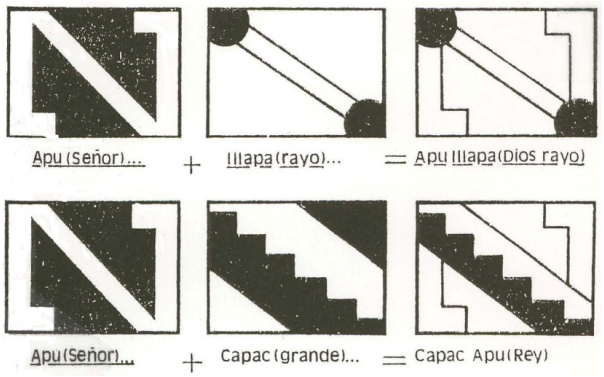


FIGURE 21. Logographic "readings" offered by de la Jara (1975, p. 47), based on the merging of two distinct *t'oqapu* units. Whether or not the correct readings, compounding or "ligaturing" is a script-like property observed in several real-world writing systems.

Examining various bibliographic sources, we realize that these concepts and thoughts are as ancient as the very inhabitants of the Andes. William G. Gartner (1998, p. 262, citing Guillet, 1992), speaks of "... *the architectural manifestations of dual social and territorial organization*," found in the pre-ceramic period (*ca.* 3000–2000 BCE) sites of Río Seco, La Galgada, and Kotosh. In a similar fashion, the structural design and art of the Chavín de Huántar temple, plus the iconography of the area, give us an idea about *the principle of dual organizations*; see Burger (1992, pp. 273–274). Next, Gordon F. McEwan (2006, p. 34) also points out that Chavín canons and compositions are infused by a *bilateral symmetry* and *reversibility*, suggesting the idea of balance and the bringing together of opposites.

43. de la Jara (1975, p. 48), "... *se amplió el repertorio de formas básicas por fusión de signos o adición de emblemas, símbolos de jerarquía o distintivos divinos*" [(...) the inventory of basic forms was expanded by way of sign fusion or addition of emblems, hierarchy symbols, or divine insignias].

44. See Lau (2019, p. 162), "Capac *is a Quechua honorific* ['*supreme*', '*royal*,' '*grand*'] *and title given to lords and things deserving utmost regard*".

Divisions in a twofold and fourfold fashion organizing the social and symbolic space at Tiwanaku are reported by Kolata and Ponce Sanginés (1992, p. 324). These authors (ibid., 1992, p. 325) describe also "… *the dual division of Cuzco into* hanan *and* hurin *segments, this partition*…" reflecting "… *patterns of social, economic, political, and religious organization*" (see in addition Cerrón-Palomino, 2008, pp. 225–243, for a significant assessment of the duality in the Andean societies and the terms *hanan* and *hurin*). In turn, Jane W. Rehl (2006, p. 20) sees "balance and reciprocity (relationships) *in the ancient Andes*" as an adaptation strategy, "… *as a way of life*" (ibid., 2006, p. 21) in the harsh environment of the highlands and lowlands of Perú.

In this schema, expanding a little more on the subject, four particular reports merit our attention (see Classen, 1993; Estermann, 1998; Regalado de Hurtado, 2000; Rostworowski, 2007). Written at different time periods, all of them coincide on a *central argument*: the existence of pairings in conjunction with the existence of real or symbolical opposing matters, entities, parties, or forces that need each other for the final balance, control and order, while pursuing oneness. Constance Classen (1993, p. 3) analyzes the structures of the human body and its dualities—*of right and left, high and low, male and female*—, which corresponded to the fundamental structures of Inka cosmology. In a further comment, the author elaborates (1993, p. 12), "The most basic expressions of Andean dualism—*male / female* (urco / china), *right / left* (paña / lloque), *high / low* (hanan / hurin), *external / internal* (hahua / ucupi), *and so on—originate in the structure of the human body* (ucu). (*pages 12–13*)". Joseph Estermann (1998) reiterates through Chapters 5 and 6 the "relacionalidad cósmica" [cosmic relationship] imbuing the Andean worldview with the principles of *correspondence* and *complementarity* as the main vectors. In a like manner, Liliana Regalado de Hurtado (2000, pp. 68–70) breaks through the "cosmovisión" [the Andean view of the universe] and reveals the fundamental ideas and mechanisms governing it: *duality along with further subdivisions in a double* way, and *complementary opposites* typified by *opposition* and *complementary parts*. Accordingly, such notions are to be understood as powerful "… *engines of the cosmic and social dynamics of the pre-Hispanic Andean world*" (Regalado de Hurtado, 2000, p. 71). On the other hand, María Rostworowski (2007, pp. 27–28, 172) evaluates the Andean mythology, and detects several twin patterns, for example, major and minor masculine deities organized in conflicting and complementary pairs or double pairs. Her remarks meet Platt's (1978) explanation, "Estos conceptos andinos están muy de acuerdo con el pensamiento indígena de mitades antagónicas y adversas que sin embargo se complementan y necesitan" [These Andean concepts agree completely with the indigenous thought of adversary and antagonist halves, which however are complemented and needed]. Studies of modern- day Aymara communities in Bolivia, Perú, and Chile, conclude in a similar manner. Cereceda (1986, pp. 167–

169), commenting on patterns and designs found in *talegas* (cloth bags or sacks) of the people of Isluga, an Aymara township on the Chilean altiplano in the province of Taracapá, discerns dichotomies in the form of paired oppositions or conjugal pairs, "*Each* chhuru [= small arable patch] *is given its precise and complementary opposite*: *a wide*, *light* chhuru *receives a narrow*, *dark* qallu; *a dark band is issued a light stripe*. *Equilibrium is thus achieved through an exchange of differences*". Bouysse-Cassagne's (1986, p. 213) message simply runs alongside that of Cereceda (*v. supra*), "... *Aymara space and socioeconomic relationships are governed by a double dualism*...".

Two opposing geometric structures, where "the ... *nature of the technique also points up the fundamental notion of complementarity*..." (Stone-Miller, 1994a, p. 161), follow (see Figures 22 and 23). Despite time-factored considerations, a degree of affinity is evidenced in the subsequent contexts.

FIGURE 22. A bisected "stepped-diamond"-like pattern appears on this pre-Inka textile fragment (pre-Late Horizon), retrieved during excavations at the necropolis of Ancón (Lima region, central coast of Perú) by Reiss and Stübel (1880–1887, Vol. 2, Tafel 54 [Plate 54]; cf. Beatrix Hoffmann, 2017, p. 181, Fig. 3, bottom left). The multicolored pattern upholds the principle of opposing and complementing forces. The image is rotated 90 degrees for a better evaluation. A photographic snippet depicting a similar "stepped-diamond"-like pattern is reproduced in Frame (2014 [2009], p. 273, Figura 30). The related caption reads, "Un diseño infinito con cuadrados y tres elementos escalonados en la parte superior de una túnica. *Staatliche Museen zu Berlin*, *Ethnologisches Museum VA 16618* [An endless design with squares and three stepped elements in the upper section of a tunic. State Museum, Berlin. Ethnological Museum, inventory no. VA 16618]. Likewise, another pre-Inka specimen (see Stone-Miller, 1994a, pp. 160–161) displays a double-cloth fragment with felines and birds, of the Late Intermediate period; culture of Rimac province; origin Central Coast, 1000–1476 CE.; 28 × 20.3 cm; plain weave double cloth; inventory no. 35.1126; part of the Samuel Putnam Avery Fund. The author in question (1994a), while analyzing the technique of weaving, concludes that the "*two layers of cloth*, *exchange of threads*, *and color reversals are all aspects of the principle of complementarity*...".

16. Are *t'oqapu* Designs Evocative of Wari-Tiwanaku and Other pre-Inka Cultures?

The analysis of *t'oqapu* and other Inka iconographic forms would indicate some shared structural features with various designs attested on pre-Inka artifacts (see Delgado Pang, 1992, p. 291; Stone-Miller, 1994b, p. 35; Roussakis and Salazar, 1999, p. 267; Clados, 2007; Bjerregaard and Von Hagen, 2007, p. 49; Gentile Lafaille, 2008, p. 2). Mary Frame (2001, p. 135) identifies geometrical structures overlaying tenaciously (in part or in whole) various Andean objects found in ancient pre-Inka horizons, "Elements and ordering principles evident in the t'oqapu *suggest there is a continuation in the tradition of embodying pattern and meaning in accordance with the logic of fabric geometry*". Despite circumstantial observations and the admitted belief that visual symbols *have old roots in Perú* (Heckman, 2003, p. 40), researchers cannot claim a compelling cultural relation in the all-Andean domain. In the absence of historical records regarding pre-Inka statecraft and polities, such hypothesis must be pursued through more archaeological evidence. The query—given the advantage of carefully organized excavations and the assessment of first-class material *in situ* and *ex situ* (= in major and peripheral museums and other collections)—would require a cautious study to validate it on multiple cultural levels across time and space. Still, authors Conklin and Moseley (1989, p. 147) offer a good starting point, "... *where pattern configurations can be related to earlier or later ones, they are presumed to reveal cultural continuity*". The term "pattern" is treated here following Schürmann's (1996, p. 1) statement that:

> [...pattern; *our note*] means something exhibiting certain regularities, something able to serve as a model, something representing a concept of what was observed. A pattern is never an isolated observation, but rather a collection of observations connected in time or space or both. The pattern exhibits, as a whole, a certain structure indicative of the underlying concept.

In the history of ancient Perú, there were predecessors expanding and projecting influence beyond their cultural and physical loci, the foremost being those of Chavín de Huántar in the central-north part of Perú (see Anton, 1987 [1984], pp. 37–47; Burger, 1992, p. 277; 2008, pp. 681–707;[45] Gartner, 1998, p. 271; Pasztori, 1998, pp. 103–109; Cordy-Collins, 1999, pp. 133–135; Thomas, 1999, pp. 313–319; Steele and Allen, 2004, p. 9; D'Altroy, 2005 [2002], p. 39; McEwan, 2006, pp. 33–34), of

45. "The acceptance of the temple's *role, first by local groups and later by more distant highland and coastal communities, had a profound impact on Peruvian prehistory. By about 400 BC, the symbol system of the Chavín temple spread over a vast area and was used, with some local variation, to decorate pottery religious paraphernalia, jewelry, and other items among groups that previously had shared few, if any, cultural features*...".

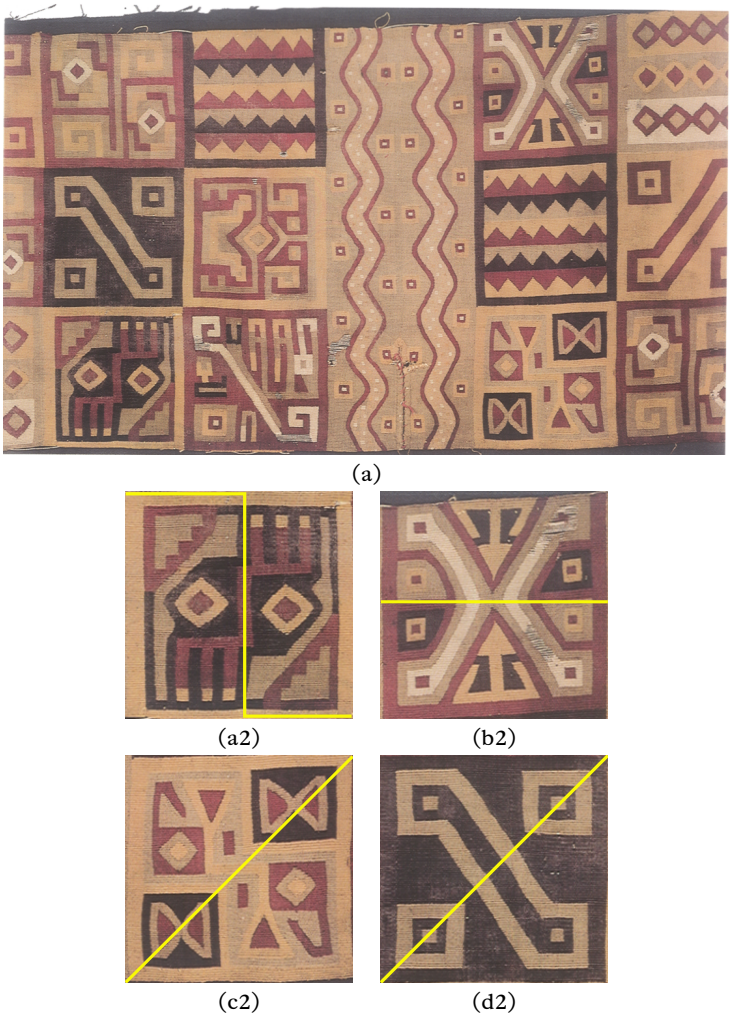


FIGURE 23. The exemplar (a) is extracted from CDMT's (2010) database at http://imatex.cdmt.es; see also Solanilla i Demestre (1999, pp. 254–255, inventory No. 157). The fragment is of a pre-Hispanic Inka fabric made of cotton and camelid fiber, referenced with inventory No. 02573, held by *Centre de Documentació i Museu Tèxtil*, Terrassa, Catalonia (Spain). Given the incompleteness of the piece (60.5 × 24 cm), it is not possible to estimate its original size. Possibly a tunic section, this exemplar reveals compartmentalized and well-structured antagonistic geometric units. See especially in (a2, b2, c2, and d2) the four bisected individual *t'oqapu* below the larger piece of (a).

Tiwanaku, south of Lake Titicaca (see Stierlin, 1984, pp. 141–146; Anton, 1987 [1984], pp. 101–111; Kolata and Ponce Sanginés, 1992, pp. 317–334; Gartner, 1998, pp. 279–282; Pasztori, 1998, pp. 121–127; Manrique P., 1999, p. 54; D'Altroy, 2005, p. 41; McEwan, 2006, pp. 37–39; Isbell, 2008, pp. 731–759), and of Wari in southern highland Perú—its heartland being near modern Ayacucho (see Stone-Miller, 1994c, p. 35; Cook, 1996; Manrique P., 1999, p. 58; González Carré and Mesía Montenegro, 2001, pp. 35–38; Schreiber, 2001, pp. 80–92; Glowacki and Malpass, 2003, pp. 432–434; D'Altroy, 2005 [2002], p. 41; McEwan, 2006, pp. 39–42; Isbell, 2008, pp. 731–759). Detailed speculations on the complex nature of these inadequately known cultures is avoided here since the data are far from complete; even so, a few remarks can be made. In times of war, any flow of patterns and related objects from the afore-mentioned trio would seem to have been imposed through raw power on succumbed, affected, or inhabited regions. On the other hand, it is very likely that during the absence of hostilities and outside the temporal and spatial perimeter of natural cataclysms, the phenomena of (a) *cult expansion*, (b) *exchange of goods*, plus *intended transport*, and (c) *human travel* would have additionally brought these important centers in contact with various unrelated ethnic groups. Therefore (at best) motifs,[46] architectural features, and objects (see Gartner, 1998, p. 282; Cordy-Collins, 1999, pp. 134–135; Schreiber, 2001; Frame, 2001, Plates 21 and 23) could have been dispersed to the benefit and intelligence of those who needed and appreciated them, or (at worst), in times of conquest, a forced diffusion—in the case of the Wari imperial culture, and possibly of the religious proselytizer Tiwanaku—may have caused disruption in the fabric of other indigenous societies.

Regardless of cross-cultural stylistic affinities, *only* the general setting will be captured in the artifacts described herein. In this manner, various authors mention observed similarities, in particular between Wari and Inka iconography (cf. Barthel, 1970, p. 96;[47] Delgado Pang, 1992, p. 291; Stone-Miller, 1992, p. 337; 1994c, p. 35; 2002 [1995], p. 212; Rowe

46. See Lanning (1967, p. 146), "Weaving was obviously a skill of high prestige, *as it had been at the Paracas Necropolis and in the Middle Horizon and as it was to be under the Incas. Artistic standards remained high, as witnessed by the predominance of Late Intermediate Period pieces in museum exhibits of ancient Peruvian textiles. Although each region had its own style, as it did in pottery, the differences from region to region were less marked and many motifs were spread over very large areas*".

47. "*Wohl mag es Wurzeln für einige Grapheme in nichtinkaischen Kulturen—sei es auf dem Horizont von Tiahuanaco-Huari, sei es im Reiche von Chimor—gegeben haben; die Synthese und der Ausbau zu einem verbindlichen System war eine spezifische Inkaleistung des 15. Jahrhunderts*" [Probably, some graphemes (= *t'oqapu* motifs; *our note*) were derived from non-Inka cultures—as from the horizon of Tiwanaku-Wari, and also from the kingdom of Chimor (= Chimú culture)—whereas the synthesis and the development toward an obligatory system was a specific Inka outcome of the fifteenth century].

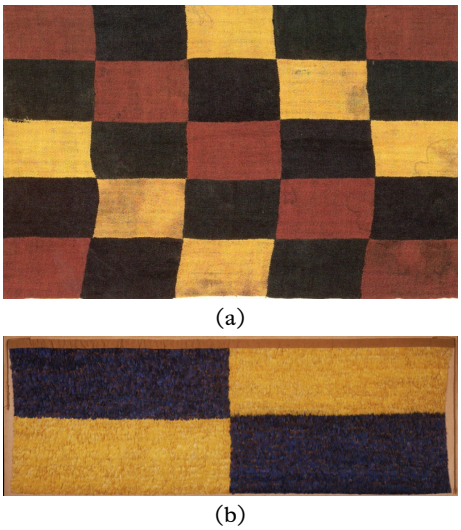
Pollard, 1978, p. 8, 1996b, p. 410; Conklin, 1996b; Cook, 1996, p. 86; Schreiber, 2001, p. 92; Steele and Allen, 2004, p. 37; Hoobler, 2018, p. 55; Clados, 2020). Shared geometrical shapes are assumed in and described also from the Nasca [= Nazca] culture (see Arellano, 1999, p. 257, citing Stone-Miller, 1992).

It should be reaffirmed however that the "evolutionary" schemes in Wari textiles are pursued, yet they are sketchy due to heterogeneous provenance, or worse, due to unprovenanced material and lack of a fixed chronology. Fine tapestry-woven textiles with beautiful designs have been basically uncovered in dry coastal cemeteries (Stone, 1989 [1987], p. 27; Oakland Rodman and Cassman, 1995, p. 37; Conklin, 1996b, p. 375). Textile preservation is not common in the highlands because of the rainy climate, yet Oakland Rodman and Fernández (2000, p. 123, Figures 9a and 9b), report on findings of tunic fragments in Vegachayoc Moqo, in the heartland of the Wari state. Such discoveries, if repeated, will influence the nature and direction of research in Middle Horizon tapestry tunics, by resolving the geographical "anomaly" of the disproportionate recovery of the artifacts. Consequently, the corpus will be more balanced, prompting scholars to respond to this new reality. Modern technical studies, i.e., the piecemeal structural analysis of the existing iconography, combined with the study of archaeological data related to Wari ideology and cosmology, are essential (Isbell, 2000; Ángeles and Pozzi-Escot, 2000; Oakland Rodman and Fernández, 2000; Prümers, 2000; Kaulicke, 2000).

Now we review a number of earlier artifacts, Wari-Tiwanaku or otherwise, sharing in part or in whole elements and motifs with the latter Inka ones. Lapiner (1968, Fig. 22) comments more specifically upon a "ceramic cup decorated with alternating panels of geometric steps and mice," belonging to Nasca [Nazca], *ca*. 100–400 CE. Next, Hughes (1995; and see below Figure 24a) offers a partial image of a man's tunic dating back from 300–600 CE. Although the Nazca style tunic flaunts a tricolor checkerboard motif, the structural similarity to the *black-and-white checkerboard* motif of the Inka timeframe is apparent. Following this line, in Figure 24b, is illustrated a "Blue and Yellow Panel," from the Wari culture, Middle Horizon *ca.* 810–970 CE. The "Panel" flaunts rectangular units made of feathers and cotton in opposing colors; see Dumbarton Oaks Research Library and Collection, Pre-Columbian Collection (2021b). Furthermore, Martell (1999, p. 18) published the figure of a Nascan [Nazcan] seated woman (on pottery) displaying opposed pairs of stepped designs.

In another case, Lapiner (1968, Fig. 43) presents a ceramic female figure with upraised hands of Chancay, Central Coast, *ca*. 1300–1500 CE. Repetitive geometric patterns are noticed on the headband of this ceramic sample. Kolata and Ponce Sanginés (1992, p. 333, Figures 18 and 19) reproduce the images of two ceramic cups (*qero*) belonging to

the Tiwanaku culture, with geometric and *t'oqapu*-like sequential designs at the bottom section areas. In Stone-Miller (1994a, pp. 153–154; Plate 53) there is an illustration of a *fringed tunic with interlocked birds* of Late Intermediate Period, 1000–1476 CE, attributed to the Chancay culture of the Central Coast. In the middle area, a stepped diamond-shaped structure is featured.



(a)

(b)

FIGURE 24. (a) The image rotated 90° rightwards for effects of convenience shows a Nazca styled *checkerboard* tunic (half). *Material*: camelid fibers; balanced interlocking plain weave discontinuous warp and weft. *Provenance*: Far south coast of Perú (300–600 CE). *Dimensions*: 72″ × 61″ (Hughes, 1995, Figure 19). The key structural / visual concept is rooted in a recurring combination of tri-color squares resulting in an appealing *checkerboard* design layout. (b) "Blue and Yellow Panel"; Wari, Middle Horizon ca. 810–970 CE; *dimensions*: 69.6 cm × 198.8 cm; *material*: (macaw) feathers, cotton; inventory no. PC.B.522; see Dumbarton Oaks Research Library and Collection, Pre-Columbian Collection, Washington D.C. (2021a).

Solanilla i Demestre (1999, pp. 250–251, catalog No. 156) published a fragment of a strip of clothing made of cotton and wool (= camelid fiber), found in the Central Coast of Perú, referenced as MDHN 4015, and residing at *Museu Darder d'Història Natural* (2010), Banyoles, Catalonia (Spain). The examined piece is of the Intermediate Late Horizon and pertains to the Chimú-Inka culture. A repetitive stepped-diamond pattern is visibly patent. Such a pattern is typical of many Inka *t'oqapu* units, as stated in Rowe (1999 [1979]). Christiane Clados (2007), in her turn, describes a number of Wari patterned artifacts scattered in

a range of worldwide museums, apparently precursors of Inka motifs (Clados, 2007, pp. 85, 90, 92–93). The designs and symmetries on a four-cornered pile hat of Wari culture (Paternosto, 1996 [1989], p. 164; Plate 99), are in the same way reminiscent of the Inka *t'oqapu*. Along the same lines, Ellen Hoobler (2018) studied another Wari man's four-cornered hat (600–900 CE; camelid fibers with corners; *dimensions*: 9.5 × 15.1 × 14.6 cm), and concludes,

> This changing of colors in a checkerboard pattern, as well as the geometricization and simplification of images within those squares, recalls the Inca tunics known as unku, with patterned squares at their waists known as tocapu. These were described by [historical; *our note*] Spanish sources as being akin to coats-of-arms [of] different provinces of the Inca empire. (ibid., 2018, p. 55)

Caution needs to be exercised, however. As aforesaid, attempting to give full credence to particular patterns spreading through the ancient Andes since early periods to the Late Horizon Inka times, should *not* be forthrightly taken without supporting evidence, i.e., on grounds of diachronic and spatial representation.

In light of current knowledge, it is difficult to determine if these patterns underwent semantic modifications not strictly through time, but also throughout the geographical area of Inkario (see Figures 25 through 28 herein). By *semantic modifications* we understand the possible "recycling" and reinterpretation of a *basic sign / motif*, in line with the prevalent cultural and social codes in a segment of the Andean pre-history, enriching it with new layers of meaning (see, e.g., Jean, 1998 [1989], pp. 125–127). A guardedly scholarly view on such possibilities is suggested now; although the Inka, as a driving and imposing force during the Late Horizon period, would have appropriated, manipulated, and put to their service the socio-cultural concepts of other communities, we think. J L. Pino Matos's (2004, p. 309) observation echoes similarly along the context,

> *Al hacer uso de ideas que existían en los territorios conquistados, y usarlas para legitimar su posición de Imperio, aseguraban también la dominación ideológica*
>
> [By exploiting the ideas that existed across the conquered lands, and in using them to legitimize their Imperial status, (the Inka; *our note*) also ensured their ideological domination].

17. Concluding Remarks

There can be no advancement in learning about ancient societies and communities without studying their correlated symbolic practices. Irrespective of any speculation about their semantic / linguistic values,

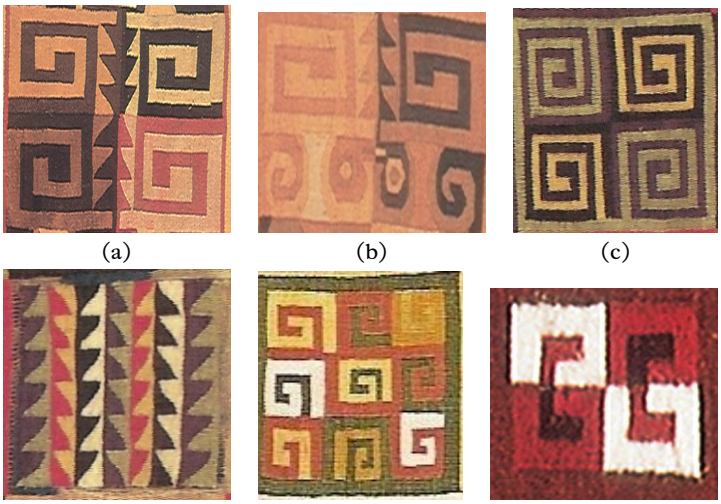


FIGURE 25. In this figure, pattern (a) is "cut off" from the upper left front part of a Late Wari tunic 900–1100 CE, cotton and camelid fiber (Reg. 91 533), at *The Textile Museum in Washington DC* (see Benavides, 1999, p. 395; Lámina 15 [Plate 15]. In contrast, pattern (b) is "cut off" from a Wari *unqu*, from the southern area, 500–1100 CE (CCEM, 2001, pp. 456–457; Petit Palais, 2006, p. 122). Patterns or *t'oqapu* (c) and (d) are "cut off" from the front part of the *unqu* found on the Island of Lake Titicaca and acquired by Adolph Bandelier in 1895. It is said to be mid-to late 16th century, and it is deposited at the present time in the *American Museum of Natural History*, New York (Lehmann and Doering, 1924, Plate 158; Rowe Pollard, 1978, p. 17; Phipps et al., 2004, pp. 156–157). *T'oqapu* (e), for the meantime, is "cut off" from the tunic of Bliss Collection at Dumbarton Oaks in Washington DC. (Rowe 1999 [1979], pp. 642–647). *T'oqapu* (f) is "cut off" from a Peruvian mantle of Late Inka to early Colonial period, about 1550 CE, made of camelid fiber. The mantle is held at *The Museum of Fine Arts*, Boston, Massachusetts (Tuchscherer, 1988, p. 37; Stone-Miller, 1994a). In another extra-context, Stone (2007, p. 402) reproduces the image of a Nazca tunic, 300–500 CE, bearing the *Greek key*, or *L-motif*, similar to the pattern (c) from the Dumbarton Oaks' royal tunic. The similarities in these patterns, distanced by some 500 or more years, are striking, with emphasis in the purported *Greek key* motif (complex or simplified), see (a), (b), (c), (e), (f), and the triangular serrations, aka *saw-teeth*, see (a), (b), (d). While discarding the idea that patterns are *accidental*, the permanence of tradition may be a plausible answer. Apparently, the Inka or their direct descendants were not mere imitators of previous productions, but rather blended and recreated former cultural conventions (including textiles) at the benefit of their ideology and mythology (see e.g., Bákula, 2000 [1992], p. 220).

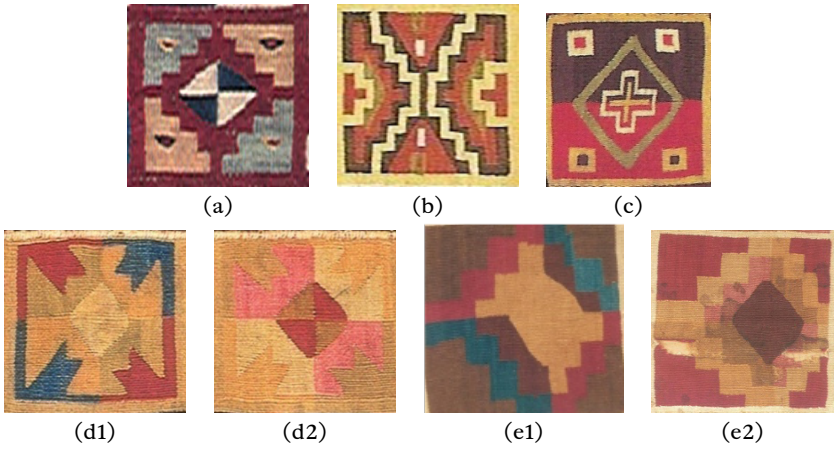


FIGURE 26. In this figure, *t'oqapu* (a) originates from the front part of a post-Inka *unqu* said to have been found in Ancón, Perú, probably late 16th century, and to this day kept in *Staatliche Museen zu Berlin*, *Ethnologisches Museum* (Arellano, 1999, p. 258; Phipps et al., 2004, p. 167; Ramos Cárdenas, 2005, pp. 58–59). *T'oqapu* (b) derives from the tunic of the Bliss Collection at Dumbarton Oaks in Washington, DC (Rowe, 1999 [1979], pp. 642–647; Stone-Miller, 2002 [1995], p. 212; 2007, pp. 386, 394; Phipps et al., 2004, pp. 153–155). *T'oqapu* (c) derives from the post-Inka *unqu* deposited in the *American Museum of Natural History*, New York (Lehmann and Doering, 1924, Plate 158; Rowe Pollard, 1978, p. 17; Phipps et al., 2004, pp. 156–157). Patterns (d1 and d2, still discernible in the color format), viewed as plain color variants, draw from a Wari-Tiwanaku small rug made of cotton and wool, 600–900 CE (Benavides, 1999, p. 367, Lámina 4 [Plate 4]; Leyendas [Captions], p. 408). The *stepped-diamond* patterns (e1, e2), also variants, correspond to a Wari tapestry tunic of Middle Horizon, probably from South Coast 500–800 CE, housed at *The Museum of Fine Arts*, Boston; see Stone-Miller (1994a, pp. 101–103). The similar quadripartite configurations, the symmetrical perception, the use of colors in a contrastive fashion are noticed in some Wari-derived and Inka patterns. The idea that the majority of the Inka *t'oqapu* came into existence out-of-nothing, begs for reluctance (Melka, 2010a; 2010b). General and particular patterns appear to have endured through time by imitation and further elaboration, while cementing in the Andean collective memory. Despite the common balanced and paired designs, the issue that these motifs had an identical value in cultures far removed from each other, i.e., Wari and Inka, is contested. Symbols generally contain more than one meaning, which can be *psychological*, *religious*, or *moral* (Julien, 1996), corresponding to the ethnic and social background that produced them. It is quite possible that the coded Wari information in the guise of textile patterns, sacred or not, was subsumed in the Late Horizon period by new meanings ascribed to similar or identical shapes. We have to restrain ourselves in asserting the solution to the meaning while searching for more comparable and analyzable cross-cultural patterns.

(a1) (a2) (b) (c1) (c2)

FIGURE 27. In this figure, *t'oqapu* (a1) (a2) are isolated from the royal tunic of the Bliss Collection at Dumbarton Oaks in Washington, DC (Rowe, 1999 [1979], pp. 642–647; Stone, 2007, p. 386). *T'oqapu* (b) is retrieved from a cotton-made Inka fragment of fabric, currently at the *Centre de Documentació i Museu Tèxtil* (Terrassa, Catalonia, Spain, with inventory no. 157, CDMT 2573); see Solanilla i Demestre (1999, pp. 254–255). Due to the fragmentary condition, the examined *t'oqapu* was reconstructed for technical purposes by affixing the conceivable missing portion. Design-patterns (c1, c2) are isolated from a colorful checkerboard Wari-influenced tunic, 700–850 CE, property of a private collector (Frame, 1999, Lámina 25a [Plate 25a], p. 339). The units have been grouped in view of a common feature: the lozenge-like, or the diamond-like chain traversing lengthways all their extension. A dichromatic Wari *unqu*, red and orange, of the Southern Region, 500–1100 CE, shows a succession of rhomboidal designs, very similar, if not almost identical to the design-patterns (c1, c2) (CCEM, 2001, pp. 458–459).

the symbols—as the calling cards of these societies and communities—, require scholarly attention in order to grasp many of their social, ideological, cognitive, and historical aspects. In this sense, the analysis of the relatively and/or highly abstracted imagery in pre-European Andean textiles—in relation to the textile structure—are both challenging and intriguing for modern researchers. The nonfigurative images of Wari or Inka textiles, compared, for example, with the patterns of Coptic textiles,[48] or the images of *La Dame à la Licorne* [The Lady and the Unicorn],[49] show the contrast between the Middle Horizon reductionist-geometric and the European and non-European pictorial-like and ornamental textile models. A number of patterns, topological configurations, and the structural relations in Wari or Inka iconographies may qualify *prima facie* for *a visual language* and reflect a different way of communication based on relational thinking and without recourse to spoken language (Boone, 1994a; González and Bray, 2008, pp. 1–4). Another option that we cannot neglect is that logographic values were embedded across various discussed patterns (with some of the researchers claiming this with

48. "*...textiles from Egyptian finds dating from the Late Roman period into Islamic times*" (Thompson, 1971, pp. 1, 3).

49. A series of six tapestries of the end of fifteenth century held in the *Musée National du Moyen Âge* (*Musée de Cluny*), Paris, France (MNMA, 2009).

FIGURE 28. A continuous meander-like motif (b), resembling a "two-*eyed snake*" is enfolded in the middle of an Inka fragment of fabric (a); see CDMT's (2010) database at http://imatex.cdmt.es and Solanilla i Demestre (1999, pp. 254–255). The meander-like motif is also spotted alongside the modules of this fragment of a Nazca-Wari (c); *ca*. 700–850 CE, two-panel garment for a woman. The section under consideration is originally set sideways and the tunic itself is preserved at *The Textile Museum*, with inventory no. 91 281; see Frame (1999, p. 333, Lámina 20 [Plate 20]; p. 348). (d) The meander- or snake-like motif attains its full stature and representation as a lifelike design in a tunic with serpents; *ca*. 800–950 CE; South Highlands, Peru; Wari-related style; *Material*: camelid fiber, cotton; *Technique*: tapestry weave; *Dimensions*: 74.6 × 101.6 cm; private collection (see The Metropolitan Museum of New York, 2022b). The related commentary of MetMuseum (2022b) follows, "This tunic, *though of typical Wari construction and color, is aberrant in both technique and design, perhaps as a result of a provincial influence. The snake design is unknown in other Wari-style tunics, but the small spotted cats and bird-headed figures can be found on a few other pieces. Areas of reweaving are present and the lower edge is missing, but the original effect of the design can still be seen*".

remarkable assuredness and other ones being more guarded along the context).

Similarly, all of the discussed symbolism in these semiotic systems was not created in an *ideological vacuum* (Chaplin, 1994, pp. 63–65), rather than reflecting the dominant ideology of their time, with the patterns working as a political and aesthetic apparatus in achieving the goals Wari and Inka establishments had in their agendas.

A number of visual / structural coincidences that surpass the likelihood of *mere chance* are noticed among some Wari-Tiwanaku—or Wari-affiliated—and Inka iconographic patterns. In this vein, bearing in mind the spatial and temporal vastness, independent and fortuitous developments would have been unlikely; e.g., the ancient Greek motif of the "Greek key," a recognized and widely diffused Wari design. Elsewhere, Givenchy's logo—the French cosmetic and leisure company–, or likewise Versace's logo—the Italian-based high fashion company—most probably Greek or Roman-inspired, would point to the importance of the symbolic patterning across times and cultures.

Our findings support the assumptions of previous researchers, sanctioning the idea that the Inka inherited from former Andean models and lifestyles, adopting to their needs and aesthetical canons many artifacts and their corresponding iconography. Very likely, the Inka sovereigns, the nobility, the religious practitioners, and even a non-negligible number of commoners, must have been aware of and responsive to different degrees to the long-ago Peruvian cultures of Nazca, Tiwanaku, Wari (Reid, 1986, p. 18; Bonavia, 2000 [1992], pp. 135–137; Morris and Von Hagen, 1993; Hughes, 1995; D'Altroy and Schreiber, 2004, p. 255; McEwen, 2005, p. 164; Covey, 2008, p. 825; Ligmond, 2021), and also to the earlier culture of Chavín de Huántar. Apparent and unapparent connections identified in the Wari and Inka samples are characterized by innovation and reinterpretation of their traditional forms. The connections tend also to suggest that several Wari motifs established within their known geographical boundaries permeated the Inka expressions to a large degree, specifically in the tapestry tunics. The results may have predictive value for new data, though the success or failure of such a guess is in proportion to: (a) a larger and more comprehensive body of *t'oqapu* patterns; (b) the assumed time-frame of such a body, analogous to the already scanned and explored models; (c) the inclusiveness in spatial terms of Wari and Inka items, be they textile, ceramic, stoneware, or metal-made; (d) the further understanding of the Wari material culture via *in situ* investigations, C^{14}-dating, and additional seriation studies in textile and pottery alike, e.g., Menzel (1964); and concurrently of (e) its

political and ideological programs.[50] Future studies may expand also on the complex topic of differentiation: on the range of Wari symbols rationalized and "sanitized" in line with the Inka agenda, and of other symbols that over time may have been abandoned (cf. Fontana, 2003, pp. 27–28).[51] Lending further legitimacy to this assumption would assist in better determining the timeframes of these cultures.

It may be said that the patterns, many of them enjoying a high level of artistic quality and labor intensity, were meaningful and intentional regarding conveying information about mythological and sacred themes (Stone-Miller, 1994c; Conklin, 1996a, p. 343; Bergh, 1999), social standing, and local or individual affiliation. The ordered patterns are not strictly the end-result of psychotropic plants acting on the neurochemistry of the Andean mind, nor are they comparable to a product of an insect-like collective employing them in a functional way, with disregard of socially-related aims and aesthetics (Ball, 1999, pp. 48–49). The deconstruction of representational forms in Wari or Wari-related artifacts and the conceptualization of information *indicates a shift in a different direction in the use of visual arts* (Pasztori, 1998, p. 146), in contrast to animated pictorial models, e.g., Moche imagery (Jackson, 2008), or to the Gobelin tapestries (Candee, 1935 [1912], pp. 90–144; Ellul, 1996, pp. 46–54, 56). Functionality, communication of political and ideological messages, and textile art, appear structurally blended in a natural manner to the point that it is difficult to say which was of *prime importance* in the Wari mindset. Given the different states of preservation of the examined samples, this seems to have been applicable for ceremonial and utilitarian objects. It would seem that the Andean "priests" / "spirit mediums" and experienced weavers in ancient times did not visualize such matters as Westerners do today (see Boone, 1994a, 1994b; Pasztory, 2010). Yet, modern connoisseurs of abstract expressionism (Hess and Grosenick, 2005) and other art experts tend to qualify scores of surviving Wari or Wari-related tapestry objects as true masterpieces.

Given the present inadequacies of the corpus, we believe a special inventory registering all the *t'oqapu*-like designs in textile, earthenware, and other media of the Middle Horizon Wari and Tiwanaku should be seriously pursued. Any paper-based and/or expandable online version would be a valuable asset for the present scholarship, dedicated

50. In a similar manner, the iconographic analysis may help the understanding of the social connotations that some of the "borrowed" Wari-patterns had for the later Inka culture.

51. It has been long known that "old" symbols are "exploitable" (with several of them disposable) by the more advanced elites of human societies in many parts of the globe. The Inka *vs.* Wari-Tiwanaku model provides one instance of this kind.

to the understanding and interpretation of pre-Inka motifs. Future researchers may bring the data under experimental control by operating with more accessibility and continuing enhancement. Online repositories of corpora of Mesoamerican and South American scripts, recording systems, and artifacts, are already available, see e.g., *FAMSI*, Foundation for the Advancement of Mesoamerican Studies, Inc. (2009), and the *Khipu Database Project* at Harvard University (Urton and Brezine, 2009). A large catalog of Middle Horizon tapestry tunics and related information about them, would be a valuable addition in cyberspace, similar to the Mesoamerican records and inscriptions, plus the knot-recording devices, identified as *quipu* (*khipu*).

Whereas the debate on *t'oqapu* readings is far from settled, conceivable possibilities regarding such "readings" need to be treated with much caution. Concurrently, since we have pondered their iconographical and ethnographical surroundings, as well as establishing cross-cultural contrasts, it is noted that we have done so without isolating *t'oqapu* graphemes, or allotting phonetic values to them. As the vicissitudes of time cannot be totally reversed, the reconstruction of the meaning of *t'oqapu* should be cogently based on the surviving artifacts (textiles or not), whilst acknowledging that *social rank*, *high prestige*, *place of origin*, and *ethnic / group identity* were associated with them. Considering that the cognitive, mental processes of the *t'oqapu* creators / transmitters (be they Inka rulers, *amautas* [knowledgeable masters / wise mentors], or "artists" and expert weavers) are gone, any evidence from other backgrounds is crucial to their explanation. At the same time, while evaluating the various models, new lines of investigations should be pursued.

As Stone (2007, p. 397) properly argues in reference to the *t'oqapu* welter in the Bliss Collection's royal *unqu* (cf. Figure 8b above), the wearer (in this case, the supreme Inka ruler seriously engaged in reigning and administrating) was not supposed to hang around quietly and motionless so the message/s[52] encoded in the small-sized rectangular or square *t'oqapu* could be verbally retrieved in a prearranged mode. There was no showmanship at play.[53] As nearly as we can determine, any plausible "reader"—be that a courtier, an attendant, or a bystander—however intimate to the premises, (a) could have offended the absolute dynast while attempting to approach him or sneak into his vicinity (see Anton, 1987 [1984], p. 195); (b) could have bungled the "reading" due to the uneasy

52. The message is understood as the expected interplay of *t'oqapu* patterns, resulting in a manageable and intelligible communication, e.g., a minimal text, for those conversant with the system in question.

53. Despite the fact, we recognize that the royal unqu *t'oqapu* conjured most certainly a sense of awe and creativity in the eyes of "readers": courtiers / attendants / bystanders.

situation; and most likely, (c) would have ended up seized by the sovereign's personal guards, and summarily executed "at the end of the day". If we use classic logic in this respect, countering the rationale offered by Stone (2007) would be highly questionable. Save cryptography and comparable environments with security primacy, experiments or practical jokes, real-world symbols and scripts are normally *not* conceived to mystify on purpose the minds of recipients, or of any possible and interested audience. To maintain a proper rapport with the intended audience, static objects (such as hanged banners or pennants), drinking / storage vessels, or real-size and customized *unqu* wrapping the body of Inka mummies / bundles of sacrificial offerings (see Cassman, 2000, p. 255; Pillsbury, 2002, p. 76; Shaw, 2019; *v. supra* Figures 10a and 10b) or the miniature textiles adorning the male and female gold and silver figurines across numerous *waka*/s (*huacas* [sacred spots / shrines])[54] found *en route* to or departing from Cuzco (seat of Inka power), might have preferably endorsed a stereotyped "phonetic" use and been decoded at liberty.

Two subsequent issues arise: did only the convened people—for example, Sapa Inka's [= *unique Inka* / top ruler] followers, courtiers, and other needed assistants—in a circumscribed event of *ceremonial* (festivity), *administrative* (customary meetings with provincial governors or *curacas*[55]; see Davies, 1995, pp. 154–158, Kulmar, 2010, p. 138), or *military* (public appearance) nature, "read" the *t'oqapu*? Or, did the average, local person—of Inka or non-Inka stock—living in the culturally shared space make the most of them as well? (see Arellano, 1999, p. 260). Many of the Spanish chroniclers' descriptions mention the select few of the society, its headquarters in Cuzco, and mythical traditions (Montell, 1929, p. 174; MacCormack, 2001, pp. 419–435; Steele and Allen, 2004, p. 45). Hence, it is difficult to state whether the major Inka centers of decision influ-

54. See Rowe (1981); Phipps (2005, p. 89). In turn, R. M. Cerrón-Palomino (2008, p. 245) provides the following explicative terms for *waka* (*huaca*), "adoratorios de *las divinidades incaicas*" [adoratories of the Inka deities] and "santuarios" [shrines]. The same notion is reflected in Brooklyn Museum's (2021) description, "[…] *the* capacocha, *a sacred Inca ritual that took place on mountains, islands, and other revered places called* wakas". Another scholar, L. Trever (2011, pp. 39–40), puts it this way, "'Huaca' *is a Quechua and Aymara term that is often glossed in early Spanish dictionaries and chronicles as* '*idol*' (*González Holguín 1901* [1608]: *123*; *Bertonio 1879* [1612]: *277*) *but that more appropriately refers to a range of numinous Andean subjects including local gods, shrines, statuary, and sacred features in landscapes*".

55. Anton (1987 [1984], p. 191) explains *curacas* as "the nobility of the conquered peoples" who were allowed by the reigning Inka to "remain as officials and dignitaries for diplomatic reasons"; see also Finley Hughes (2010, p. 159), "A governor, *who was an ethnic Inca and who also spent time in Cusco, managed the affairs of each province, but employed intermediate elites, usually hereditary local elites, called* curacas, *to act as administrators on behalf of the* Sapa *Inca at the household level*".

enced seriously all the faraway provinces and peripheral outliers when *fashion* (clothing and designs) comes into attention. Pledging commitment to and abiding by Inka-issued edicts (including the "fashion statements") would have been more achievable for communities or ethnic groups in close proximity to Cuzco or other centers directly related to the Inka axis of power, we infer. Meisch (2006, pp. 387–388), for instance, comments upon a particular case, which grounds the previous remarks,

> Augustinian friars arrived in Huamachuco in 1552, just 20 years after the conquistadors landed nearby on the coast of Peru. Although the friars made concerted attempts to "extirpate idolatry" and Christianize the natives, many pre-Hispanic household religious practices survived—the sara belts [maize belts; *our note*] are a prime example. The Huamachuco region is relatively isolated, and probably escaped the more intense suppression of Inca religion around Cusco.

The presence of numerous storage facilities, great hydraulic works (fountains / irrigation / drainage / sewage systems), an extensive and functional road system (with rest stops / relay stations for the weary traveler) spread as far afield as in desert areas and highlands, of specialized messengers and ancient *quipu* bureaucrats, would suggest most of the time, however, a centralized control and organization throughout this ambitious empire (cf. Hyslop, 1984; D'Altroy and Hastorf, 1984; D'Altroy and Earle, 1985; Mitchell and Guillet, 1994; Sherbondy, 1998; Pasztory, 1998, pp. 154, 155, Fig. 112; McEwan, 2006; Kulmar, 2010, pp. 137–142; Dean, 2011; Bray, 2013).

Victoria de la Jara (1917–2000) is a household name in the *t'oqapu* studies. In her time, V. de la Jara (1967, pp. 242–243) spearheaded the efforts to devise a catalog by offering an index list consisting of 294 *t'oqapu* units. Given the elapsed years, newly discovered material, and the structural-analytical and iconographical approach, the afore-mentioned list calls for updates and a critical reassessment. Particular attention should be paid to the core *t'oqapu* units *versus* the variant forms, i.e., allomorphs. It is difficult to entertain the idea that the mass of weavers across Tawantisuyu[56] were involved in an uneventful routine, producing base and rigid stencils on any given day. While not advocating for their neat phonetic nature, *t'oqapu* allomorphs require careful study, similar to the

56. See in this sense Phipps (2018), "*Hundreds, possibly thousands of weavers and craftspeople contributed to the production of* cumbi *cloth. Among the five or so great weaving centers of the Inca period known to us, those most lauded by Spanish chroniclers were in the Lupaca region, around Lake Titicaca, an area still known for its fine weaving. Milliraya, one of these centers, was established during the reign of Huayna Capac, one of the last Inca kings, and reportedly supported a thousand* cumbi *weavers and feather cloth workers* (Spurling, 1992; cf. D'Altroy, 2002, pp. 96–97)".

scribal allographs, bearing in mind the contextual associations and their morphology. A substantial body of textile texts is required for any scientific analysis and reliable conclusions as to the previous task. In this sense, a likely proposal would be the construction of a *t'oqapu* corpus in the fashion of the *Khipu Database Project* at Harvard University (cf. Urton and Brezine, 2009). Careful cataloguing of any Inka sample would allow for committing this great legacy to a non-profit online for distribution and further study. The outcome would assist in better tackling with the known diachronic and diatopic randomness, while pursuing validity, statistically speaking or not.

The current investigation also prompts the questions: was there an undeniable correlation of *t'oqapu* figures, whether painted, incised, embossed, woven, or knit, attested in different material supports? Was there a standard interpretation (a coherent decoding) throughout Inkario by its inhabitants, or were there regional and sub-regional variations? In this respect, the yet undetermined chronology also calls for time-factored variations. Steele and Allen's (2004, p. 37) awareness on this subject is justified, "... *unfortunately*, *there is no obvious* [and fluid; *our comment*] *development process for* [the pre-Colonial; *our note*] *Inca tocapu*," and we may restate that consensus on the topic remains elusive among the Andeanist scholars.

One may even claim a subliminal message relative to identity, propagandistic goals, and power projection of the authoritarian head and the Inka establishment (in general). Similarly, we wonder if interlaced or separate *t'oqapu* had prophylactic properties as well, so as to repel mythological demons and other devious spirits. How can we maximize the potential of these suppositions and how far can they be taken?

Provided that the *t'oqapu* arrangements reflect symbolically the spatial and cultural perception of the Inka world, then the phonetic hypothesis may be indefinitely reduced in importance. The total number documented so far in the *t'oqapu* stock (*ca.* 300) would suggest, at best, a limited semasiography, obliging the Inka in selecting the textile "language" according to the weight of a particular situation and its practical function. Needless to say, this number of symbols could barely express or encompass all the human thoughts as regards the vast knowledge and technological achievements evidenced and applied across Tawantisuyu. One may also question how incoming neologisms could have been efficiently developed, if the chosen language was merely fixed via logograms (or possible morphemes) during the weaving endeavors (cf. e.g., in a theoretical setting, Sproat, 2000, p. 137).

Nevertheless, at this point, we neither intend to diminish their value nor dislodge the entire intellectual ideas / perceptions over the *t'oqapu*, rather than regard such a peculiar phenomenon beyond the Euro-

pean canons of phonetic writing, culture, and art. More specifically, Damerow (2006 [1999], p. 2) seems to transcend in his statement the limits set for his case-study (i.e., the proto-Cuneiform in Mesopotamia),

> From the viewpoint of historical epistemology, proto-writing is not seen merely as a deficient representation of language but rather as a successful means of representing knowledge and transmitting it from one individual to another, and eventually from one generation to the next.

If *t'oqapu* motifs prove to be ultimately an instance of pre-writing, or a liaison between pure semasiography and incipient writing (with logographic or certain rebus-like elements), it may be assumed that many of the referenced authors would validate their reasoning and intuition, or else, recognize misplaced beliefs (see the discussions of Eeckhout and Danis, 2004; González and Bray, 2008; Cummins, 2011; Clados, 2020). Hereafter, the *archaeology of symbols*, baffling and challenging as it is in anthropological and linguistic sciences, raises particular interest in the case of Inka *t'oqapu* designs and orders more multidisciplinary teamwork on a local and international level.

Appendix: The Interpretation of *t'oqapu*

No clear one-to-one correspondence is demonstrated conclusively (see Harrison, 1989, p. 60), meaning, the precise semantic or phonetic values assigned to the full inventory of *t'oqapu*, still elude today's research. To be sure, the modern Andean scholars are qualified to explore the existing corpus and related patterns at their discretion. A few *t'oqapu* here and there can be interpreted; temporary or even some plausible solutions can be offered, but the premises[57] on which the whole system was built and refined are largely out of our grasp (see Paternosto, 1996 [1989], p. 169).[58] At times, the distributional properties of the *t'oqapu* alignments strongly defy the known human grammar by relegating the phonetic theory, and obviously one cannot avoid getting "a little" leery of the suggested readings. This is observable in particular when a monotonic, boundless repetition is on the way: the Inka "key pattern" (*v. supra* Figure 8a). Indeed, the multiplication of this motif, mimicking a continuous visual litany, lowers the property of informativity. On the other hand, though, it reflects the intended semantic statement of the Inka (see in a slightly different context, Beaugrande and Ulrich Dressler, 1972 [1981], pp. 54–55).

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57. By "premises" we refer to the oral and institutional context in which the *t'oqapu* system was conceived / inherited and applied.

58. "*… it must be acknowledged that a convincing reading of the whole* [t'oqapu; *our note*] *system has not yet been advanced*".

In an unidentified symbolic or writing system, or in an encrypted cipher, *telltale regularities* (Poundstone, 1988), cohesion, and frequency distributions are primarily exploited by analysts conversant with epigraphy, cryptanalysis, and statistics.

Yet, such regularities (or irregularities) are very idiosyncratic in the case of the remaining *t'oqapu* samples, producing every so often disparate, spontaneous patterns, suggestive of thematic changes, or otherwise, unrestrained linear repetitions (Rowe Pollard, 1978, p. 5; Paternosto, 1996 [1989], p. 170; Rowe Pollard and Rowe, 1996, p. 463). One way of working out the difficulty is by analyzing iconographically the tokens and checking if their likelihood of occurrence is dependent on (or independent from) other contextual tokens. To this effect, *subtle* or *major* semantic differences may be tracked down by studying the degrees of association between *t'oqapu* occurrences in the largest possible corpus. Thus, inspecting which *t'oqapu* motif "attracts" or "repels" which in more than one environment enables us to confirm if they are (a) essentially grammar-oriented; (b) if linguistic features are highly marginal; (c), or in a last instance, if they are nil (being otherwise fully visual- / mnemonic-oriented). Quantification is desirable in the sense that it may reveal how frequent a geometrical "unit" or "structure" must be to count as a discrete *t'oqapu* motif. In view of this, multivariate tables collating the data may facilitate insights as to the intimate nature of the examined phenomenon. Therein, the approach may greatly benefit from the use of computer technology.

A few interpretative models from international researchers follow, while abstaining from fully endorsing any of them, or monopolizing the truth regarding the meanings of *t'oqapu*.

(1) *T'oqapu* No. 65 (Figure 29), alias "croix traversée" [double-slashed cross] (see de la Jara, 1967, p. 241, and the compiled index-list "1–294" in V. de la Jara, 1967, pp. 242–243) after the chronicler Martín de Murúa,[59] was an attribute of the last Inka authority Atawallpa, captured and put to death by the Spanish conquistadores. This particular *t'oqapu* appears six times in the waistband of an *unqu* (probably of the late 16th century); see Phipps et al. (2004, p. 167). A series of variations of this motif (comprising the simple key pattern and the double-slashed cross) is offered in Frame (2014 [2009], pp. 257–258, Figuras 10, 11 - *Variaciones en la familia de la llave inka*). The variations show the ingenuity of the weavers when it came to articulating and compounding one simple pattern (i.e., the "key") into attractive and complex *t'oqapu* samples.

(2) Gentile Lafaille (2008, pp. 8–12) sets forth multi-referential "readings" about the *t'oqapu* No. 285 (in keeping with V. de la Jara's 1967,

59. The derived reference is Martín de Murúa's (1616) *Historia General del Perú*; cf. also Thomas B. F. Cummins and Barbara Anderson (Eds.). (2008).

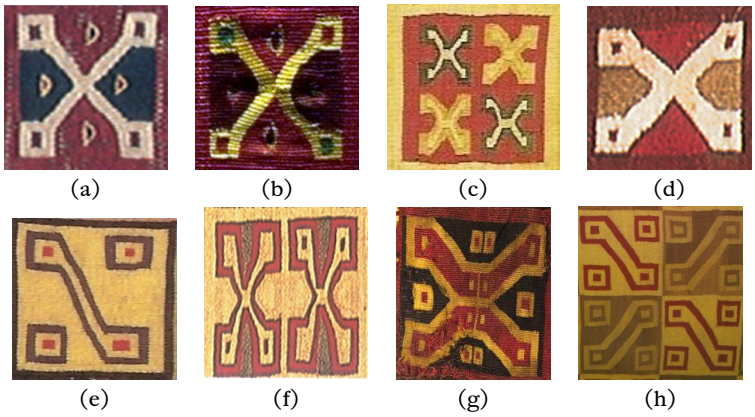


FIGURE 29. In this figure, *t'oqapu* (a) or # 65 in de la Jara's index-list "1–*294*," resembling a "double-slashed cross" (or "the cross of St. Andrew") with four quasi-mini-lozenges, is salvaged from the front part of an *unqu* said to have been found in Ancón, Perú. The artifact is kept to this day at *Staatliche Museen zu Berlin, Ethnologisches Museum* (de la Jara, 1967, p. 244; Arellano, 1999, p. 258; Phipps et al., 2004, p. 167; Ramos Cárdenas, 2005, pp. 58–59). *T'oqapu* (b) is part of an Inka tunic's waistband, found at *Museo Arqueológico de Cuzco* (Museo Inka), Perú (de la Jara (1967, p. 244, Fig. 4, upper band). Iconographically, (b) is the same realization as *t'oqapu* (a). Subsequently, *t'oqapu* (c), a grouping of four juxtaposed "double-slashed crosses," is salvaged from the front part of the Bliss Collection's *unqu* at Dumbarton Oaks; see Phipps et al. (2004, pp. 153–155). *T'oqapu* (d), a single double-slashed cross, coming from a post-Inka shroud preserved at *The Museum of Fine Arts*, Boston (Massachusetts), is markedly similar to Inka-era *t'oqapu* (a) and (b). *T'oqapu* unit (e), in turn, is recovered from the front part of the *unqu* purchased by A. Bandelier in 1895. Nowadays, the artifact is deposited at the American Museum of Natural History, New York (Rowe Pollard, 1978, p. 17; Phipps et al., 2004, pp. 156–157). The backward slash-form *t'oqapu* if merged crosswise with a "forward slash"-like *t'oqapu* seems to generate the "slashed cross" (a) and (b). Research is tempted to consider the token in question as *adjustable* or better said, as a *core productive element* in the set of the *t'oqapu* system. Unit (f) belongs also to the Bliss Collection's *unqu* at Dumbarton Oaks, Washington D.C., and is shaped in a pair-forming structure: a "double-slashed" cross configured side-by-side. As the observations go, duplication of the "core element" (e) is more than plausible in its structure. Pattern (g) is retrieved from a piece of an auctioned Inka tunic, 1450–1530 CE (see H. A. Galleries, 1999–2010; and Frame, 2014 [2009], p. 257, Figure 9a). The whole "crossed" pattern in the condensed *t'oqapu* unit (g) results from the arranged sum of four similar "slashes," as seen in (h). In fact, image (h) corresponds to four *t'oqapu* units, in line with the "core element" (e). The Inka designers / weavers were familiar with the (re)combinatorial properties of the geometrical shapes, employing them resourcefully so as to expand the number of the basic motifs. To prove this point, more analysis and deconstructions of complex *t'oqapu* patterns are required over a significant number of samples. Subsequently, the measured and collated data may be organized in numerically labeled grids of statistical graphics, should one aspire to do so.

pp. 242–243, index 1-294; see also *t'oqapu* No. 267 and No. 268 in the same source). Given the case, it is difficult to say how much conjectural (or realistic) is Gentile Lafaille's (2008) approach regarding this *t'oqapu*, styled after a "*fleur-de-lys*" shape (Figure 30). Such a move may be attended by significant risks if not tested and confirmed effectively in the greatest possible corpus of *t'oqapu*. Her three suggestions attempt to shed light on the alleged meaning of the *t'oqapu*,

(1) *Resumiendo esta primera aproximación tenemos que, en la época preincaica, un dibujo similar al* tocapu 285 *formó parte de los mensajes dirigidos a una divinidad que era un viento que soplaba desde el sudoeste, y que se hacía presente cuando se necesitaba agua para regar* [Summing up the first approach, we may instill that in the pre-Inka era, a similar drawing to *tocapu 285* was part of the messages addressed to a deity in the shape of a wind blowing from the southwest, materializing itself when water was needed].
(2) *Resumiendo la segunda aproximación tenemos entonces que los personajes que muestran sobre el pecho una versión del* tocapu 285 *representarían a los especialistas en temas agropecuarios y sus rituales, pero no se sabe si eran seres humanos, divinos o semidivinos* [Summing up the second approach, we may instill that the individuals displaying over the chest a version of *tocapu 285* would stand for the experts in agricultural and livestock subjects and their rituals, but it is unknown if they were human beings, divine or half-divine].
(3) *Resumiendo esta tercera propuesta tenemos que el felino está representado sintéticamente en el* tocapu 285... [Summing up this third proposal, we obtain the feline synthetically represented in the *tocapu 285*...].

(3) Rowe Pollard (1978, p. 7); Anton (1987 [1984], p. 194);[60] Roussakis and Salazar (1999, p. 280); Steele and Allen (2004, pp. 36–37); Quispe-Agnoli (2006, p. 182); and Finley Hughes (2010, pp. 169–170) consider that the *black-and-white checker-board* motif was used in costumes by the military and/or administrators. Phipps et al. (2004, p. 142) think of the "checkerboard" tunics as "... *symbols of Inca administration*," and a "... *manifestation of ... loyalty to the sovereign*". Rebecca Stone-Miller (1994a, p. 172) in turn, suggested that this particular motif—minute versions of which are also evident as one of the *t'oqapu* patterns in the royal *unqu* of the Bliss Collection at Dumbarton Oaks—, "... *in one form or another, played a special role in the ruler's entourage and in the army*". Her suggestion is apparently anchored in two chronicles, that of Francisco de Xérez in 1534,[61] and the other one, being that of Guamán Poma de Ayala. A. R. Pollard and J. H.

60. Anton (1987 [1984], p. 194) comments that "The chequerboard pattern [checkerboard motif; *our note*] *in* Plate 182 *was the badge of exceptional warriors or high-ranking commanders*".

61. Francisco López de Xerez (1534) authored *Verdadera Relación de la Conquista del Perú*.

(a)

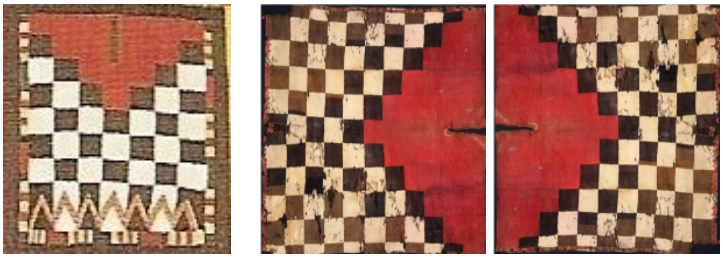
(b)

(c)

(d)

FIGURE 30. (a) Let us consider that *t'oqapu* # 285 resembles the *fleur-de-lys* motif. The shape occurs several times in a frontal horizontal band of *t'oqapu* in the *unqu* retrieved from the ruins of Pachacamac temple in 1780, and later added to *Museo de América*, Madrid (Taullard, 1949, Lámina 3 [Plate 3]; Rowe, 1999 [1979], pp. 640–641; MAM, 2010a). The isolated *t'oqapu* deriving from this specific *unqu* of Late Horizon (inventory No. 14501) is made of cotton and camelid fiber. The motif is part of an original photograph of Joaquín Otero Úbeda, Museo de América, Madrid (MAM, 2010). The "*fleur-de-lys*" was a common theme in the Middle Horizon, corresponding with the rise and fall of the Wari state (*ca.* 600–1100 CE; see Benavides, 1999, p. 398), which pre-dates the Inka by hundreds of years. Figure 30b portrays a double spout "Middle Horizon I" bottle, 600–800 CE, of *Atarco* style, featuring a sizeable "*fleur-de-lys*" shape (CCEM, 2001, pp. 424–425). In Figure (c) we see a decorated "Plaque" made of an alloy of gold and silver pertaining to the Wari, Middle Horizon 650–800 CE; *Dimensions*: 7.9 cm × 18 cm × 0.07 cm; inventory no. PC.B.473; cf. Dumbarton Oaks Research Library and Collections, Pre-Columbian Collection, Washington DC (2021b). It is interesting to observe that the *fleur-de-lys* motif occurs in different support materials, be they fabric, ceramic, or metal. (30d) The "*fleur-de-lys*"-like design is similarly attested on the upper section of a textile *Panel fragment with a checkerboard pattern* (Dallas Museum of Art, 2021a). *Date*: (Late Horizon) 1460–1532 CE; *Material*: Camelid fiber; *Dimensions*: 44.45 × 44.45 cm; inventory no. 1976.W.2138; *Credit line*: Dallas Museum of Art. The Nora and John Wise Collection, gift of Mr. and Mrs. Jake L. Hamon, the Eugene McDermott Family, Mr. and Mrs. Algur H. Meadows and the Meadows Foundation, Incorporated, and Mr. and Mrs. John D. Murchison. © *Image Courtesy* Dallas Museum of Art.

Rowe (1996, p. 461) in their turn would rigorously agree in one point, "*Only one of the* t'oqapu *patterns on this tunic is a recognizable depiction of something. Pattern 1 is a picture of another Inca tunic woven in the standard Black and White Checkerboard pattern*"; see Figure 31a.



(a) (b)

FIGURE 31. Figure (a) depicts "pattern 1" in Rowe Pollard and Rowe (1996, p. 461), or "t'oqapu *1*" in de la Jara's index-list (1967, p.242). This isolated pattern is retrieved from the front part of the Bliss Collection's *unqu* at Dumbarton Oaks, Washington D.C. (Phipps et al., 2004, pp. 153–155). (b) If we unfold a "*black-and-white checkerboard*" tunic and stretch it in a horizontal manner (see Figure 10a regarding the Inka-styled *unqu* featuring this pattern, held at *Museo de Arqueología de Alta Montaña*, Ciudad de Salta, Argentina; MAAM, 2021a), a big stepped-diamond pattern is visible. The key concept of this motif is conversely visualized as a separate *t'oqapu* unit in the Inka inventory design and fashion (Figure a).

Given the chroniclers' testimonials and the apparent consensus, it sounds reasonable that this recurrent motif was indeed associated with the *Inka* administration and its war machine. A motivation for recurrence in these textile "texts" are situations where stability and exactness of content have important practical consequences (see e.g., Beaugrande and Ulrich Dressler, 1972 [1981], p. 59), as in the production of standardized military uniforms on grounds of the *Inka* expansive policies. In fact, the *checkered pattern* and its graphic derivatives have *a very strong visual effect*; the trained Inka male-warriors (under the orders of higher instances) would have exploited this effect to their favor to shock and discourage their adversaries in the battleground or during rapid sweeps. As far as our observations go, such an effect is also applied in present days; Frutiger (1998, p. 85) comments, "… *it is for quite definite reasons of visibility that the judge at a motor race waves a checkered flag*". In this context, the author (ibid., 1998) will definitely get no argument from us.

We also make a note of the "*black-and-white checkerboard*" motif found in the Wari iconography—the assumed Inka's historical precursor. Thus, José Ochatoma and Martha Cabrera (2000, pp. 449–488) found ceramic urns in the area of Conchopata, Perú, which after restoration, yielded

images of warriors with patterned tunics remarkably similar to the Inka ones (Figure 32, and *v. supra* Figure 9).

FIGURE 32. The reconstructed design of an armed Wari warrior. The male figure drawn on a piece of ceramic, equipped with an axe and a shield covered with feline heads, appears to be crossing a lake in a *totora*-like boat (Ochatoma and Cabrera, 2000, Figure 10b).

(4) Clados (2007), after a multi-leveled iconographical and comparative analysis of the systematic "key motif" (= the "percent signs"), is inclined to identify segments of a sacred and legendary "serpent". The "*snake-like arrangements*," due to the characteristics of the inner textile structure, i.e., weaving technique and qualities of the involved material, were carefully analyzed earlier in several fabrics of the ancient Andes by M. Frame (1994, 2001). The imagery, whether belonging to Inka or Wari tapestry tunics, is a direct outcome of such a classic structure (*v. infra* Figures 33 and 34). Therefore, any possible cross-cultural interpretation must automatically refer to it. Similarly, the image of single-headed snakes or double headed-snakes is evidenced since the remote ages of the Huaca Prieta and Chavín cultures (Anton, 1987 [1984], pp. 8–11; Paternosto, 1996 [1989], p. 163). Along these lines, Taullard (1949, p. 41; see Figure 33) reproduces six "*motivos culebroides*" [serpentine-like motifs] extracted from Reiss and Stübel (1880),[62] documented in the region of

62. The cited work of the German duo Wilhelm Reiss (1838–1908) and Alphons Stübel (1835–1904) is "Das Todtenfeld von Ancon in Perú. Ein Beitrag zur Kenntniss der Kultur und Industrie des Inca-Reiches nach den Ergebnissen eigener Ausgrabungen" [*The Necropolis of Ancón in Peru*: *A Contribution to Our Knowledge of the Culture and Industries of the Empire of the Inkas*]. 3 Vols. Trans. by A. H. Keane. A. Asher & Co., Berlin (1880–1887); in this context, see also B. Hoffmann (2017, pp. 178–184).

FIGURE 33. Three of the six "serpentine"-like motifs after Taullard (1949, p. 41) are depicted. The motif (33c) has been placed upright for practical reasons. (33d) An elaborate Moche/Wari tunic (7th–9th century)[63] exhibits the "double-headed" serpentine motif in an analogy to the drawing of Reiss and Stübel (1880–1887); see 33a. The zigzagging serrated "serpents" are interconnected and highly geometricized. A border at the lower edge repeats a small profile figure at regular intervals, hinting at a monkey or a class of hybrid animal. *Material*: camelid hair and cotton; *Dimensions*: H(eight) 87 × W(idth) 147.3 cm; *Credit line*: Bequest of Jane Costello Goldberg, from the Collection of Arnold I. Goldberg, 1986; *Accession Number*: 1987.394.706 (The Metropolitan Museum of Art, 2010–2021c). *Moche-Wari Tunic 7th–9th century*. `https://www.metmuseum.org/art/collection/search/315786` (accessed 13 November 2021).

Ancón, reinforcing the point under discussion. An additional example is provided by Mary Frame (2001, p. 118, Fig. 6) with regard to a *Late Paracas* (*Ocucaje*) style looped tunic, with *double-headed serpents* yielding a pattern that corresponds with Z-plied yarns. The examined tunic (from South Coast, 200–100 BCE) is in *The Textile Museum*, Washington, D.C.; inventory no. 91.934.

63. See The Metropolitan Museum of Art (2000–2021c).

Furthermore, Mills and Taylor (1998, p. 15) view the discussed motif (together with that of the "*black-and-white checkerboard*") as a depiction of "*... the rows of stone storehouses* (collca[64] *or* colca) *to which agricultural tribute flowed...*" from all the provinces of Tawantisuyu (see also D'Altroy and Hastorf, 1984; Quispe-Agnoli, 2006, p. 177). Their observation reflects closely Zuidema's (1991, p. 151) standpoint regarding the *colcapata* pattern. Marianne Hogue (2006, p. 109), on the other hand, takes a different position on the question by considering the winding line as "*... an ancient symbol of water*," linking it with the *waistband diamond-like pattern*, discussed further on. In any case—and yet unable to get by without independent confirmation—, Clados's (2007) supposition cannot be graded as *a figment of the imagination* since this archetype, i.e., the "snake" symbol, is common and solid in every ancient civilization (Julien, 1996, pp. 382–386; Gallagher and Dexter, 2004, pp. 81–82), meaning in many myths the "*... perpetual renewal of life*," the "*libido* and *creation*" or "*wisdom*". As this universal symbol spans the ages, Inka iconography could have been well in line with that of the ancient Egyptians, Chinese, Hindus, Greeks, native North Americans, and Aztecs. In the same way, Gallagher and Dexter (2004, p. 81) bring a point that complements Hogue's (2006, p. 109) premise, if such there be: "coiled snakes (apart from dynamic energy)... *frequently were associated with water*". In view of the mixed state of affairs, scholarship has to content itself with mentioning that more systematic research is needed *en route*, especially regarding diachronic correlations and idiosyncratic interpretations between the Inka textile structure and iconography (Desrosiers, 1992; Frame, 1994, 2001).

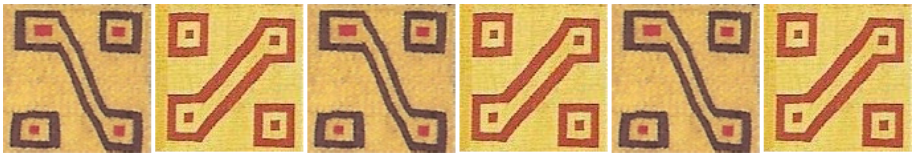


FIGURE 34. As already noted, the successive arrangement of the "key motif" *t'oqapu* is iconically reflecting *a rising and falling structure*, resembling the mythical "serpent" model proposed by Clados (2007); see also Figure 33. Now if this motif was intent on fulfilling the expected function, we may probably still have some doubts. Scholarly suggestions aside, the analysis of structural and iconographical properties is *crucial* in reaching a solution to the specific meaning of each *t'oqapu*.

64. Cf. also Quispe-Agnoli (2005, p. 267), "La palabra collca [qollqa; *our note*] *en quechua hace referencia a una terraza de almacenes*" [The word *collca* in Quechua language refers to storehouses on a stepped terrace (of a mountainside; *our note*)].

Cinzia Florio's (2013) hypothesis comes next in the train of possible explanations regarding the "key motif" (Figures 34 and 35), present in many *t'oqapu* arrangements (ibid., 2013, Figures 6, 7, and 8). The author claims that "There are many interpretations of the Inca key, *but unfortunately they remain self-referential as they find no confirmation in the Spanish chronicles*"; then, she mentions a booklet written in Latin by Blas Valera around 1600, discovered in the last decade of the 20th century.[65] The text, titled "*Exsul Immeritus Blas Valera Populo Suo*" (Valera, 2007 [1618]), presumably contains the meaning of the "Inca key tocapu,"

> Valera relates this tocapu to the number 2 and to Quechua words 'auca callpacuna': the opposite forces. But number 2 and opposite forces pointedly recall the concept of duality, which as we noticed before seems to be expressed also by the geometric shape of the table-yupana. At this point, one might well wonder whether these two things are related. Let us compare the image of the Inca key to a type of the table-yupana (Figure 16).... (Florio, 2013)

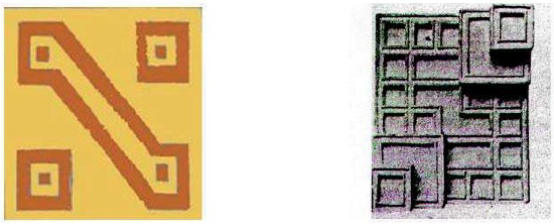
We note that *yupana* [= counter/s, *ENG.* / contador/es, *SPA.*] stood for some kind of *calculating boards*, made of stone, wood, or clay, whose general configuration reminds one of a "chessboard"; they incorporated some type of a central Z- or an S-shape; there are two 'towers' with one, two or three levels of height, situated at the opposite peaks of a quadrilateral (details are found in Leonard and Chakiban, 2010; Florio, 2013; Prem, 2016; and Figure 35b).

Remember also that the notion of dualistic and complementary agents among the Inka (part of a broader philosophical and cosmological model) is well-explored by modern scholars (*v. supra* section *The Concepts of Duality and Complementary Oppositions in Textiles*...). Through stylization processes, the geometrical duality or the binary opposition/s of the *yupana* was painted as evidence pointing at the "Inka key" motif. In other words, the raw configuration of *yupana* was further conventionalized and transferred creatively into a *t'oqapu*-related design, with the concept of *opposing / balancing forces* underlying it. All in all, Florio (2013) does not claim to have finally resolved the meaning of the "key motif," rather than delivering an interpretative option to this particular *t'oqapu*,

> Obviously, this is my personal interpretation; some can see a perceptible resemblance, someone else a very faint one and thinks to [= of] a simply coincidence (ibid.).

(5) Phipps et al. (2004, p. 138) suggest the "quartered diamond," i.e., the *diamond-like motif*, appearing frequently on tunics' waistbands or cloth

65. Whether this document is authentic or a late (or modern) forgery, this is altogether another issue for discussion in another forum.



(a) (b)

FIGURE 35. Illustrations of the "Inka key" motif (35a) and of a table-*yupana* (35b); see Florio (2013). The author (ibid.) theorizes that the "Inka key" is a stylized representation of the table-*yupana*. In light of the earlier conjectures by other scholars[66] who may think there is plenty to argue over the equation "table-*yupana*" = "Inka key motif" (or variants of it), one could deem that the subject of this identification may not be explicitly and entirely off limits.

fragments (see Figures 36, 37, and 38) is possibly related to the notion of "… *Tahuantisuyu*, *the four-quartered Inca empire*". Such a proposal—in need of falsification—cannot be straightforwardly rejected or agreed to. Although we really don't know if it marks a watershed in the *t'oqapu* studies,[67] we have to proceed on the premise that in the possible levels of meaningfulness in the general Inka context, "*the four-quartered Inca empire*" underlying the "*diamond-like motif*" seems to be a realistic interpretation.

This model is also shown in Lehmann and Doering (1924, Coloured Plate XI) in a carpet fabric of Nazca provenance. The end result of Phipps et al.'s (2004, p. 138) hypothesis is poor in this context since the inception and expansion of Tawantisuyu falls centuries later in the chronological scale. Here it may be safely deduced that the Inka had the ability to synthesize to their own advantage from earlier cultures (Barthel, 1970, p. 96), while injecting new meanings to apparently former designs (Arellano, 1999, p. 257). Such appropriations and reinterpretations, parallel to the use of military coercion, assisted eventually in the imperial control of conquered territories.

More to the point, based on the devised morphology of the diamond shape (the quadripartite layout) and the ethnographical and historical data at hand, the idea seems not misleading. The Inka regarded Cuzco as the *center* (= *omphalos*) of their identified universe (Paternosto, 1996

66. See Frame (1994, 2001); Mills and Taylor (1998); Gallagher and Dexter (2004); Hogue (2006); Clados (2007).

67. In the Andean iconography, the continuous diamond-like pattern set in a stepped Greek fret is said to be related with the flow of "… *water and other sacred fluids*"; see Hogue (2006, pp. 108–109). Obtaining multiple interpretations of the same symbol in an unidentified system with a restricted corpus, whose chronological sequence is poorly understood, makes matters worse and may (duly) increase skepticism.

FIGURE 36. Man's tunic (*unqu*) showing a band of successive diamond-like motifs; late 15th—early 16th century, Perú; *Material*: cotton and camelid hair; *Dimensions*: height 88.9 cm; Rogers Fund, 1982 (inventory no. 1982.365), displayed at *The Metropolitan Museum of Art*, New York (2000–2010) `http://www.metmuseum.orgtoah/works-of-art/1982.365` [October 2006].

[1989], p. 151; Finley Hughes, 2010, pp. 168–169), from where their rule, laws, and customs were radiated in four directions. Here we engage specifically with Finley Hughes (2010, p. 168) who quotes Ramirez (2005, p. 19) about the term *Cuzco*—the understood capital of Inkario.

> Central to the ideology of the Inca body, Inca cosmology, and how authority was figured in the Inca Empire is the understanding of the word cuzco. The capital of the Inca Empire was the city of Cusco in the central highlands of Peru; however, the word cuzco might not have been the Inca designation for the name of the city. Rather, the term cuzco referred to a person who was the center of the Inca world. Evidently, it was customary for the Inca people to refrain from using the Emperor's given name, hence they used the term cuzco to refer to the imperial individual. (Ramirez 2005: 19)

This attitude of being "the navel of the world"—observed elsewhere and prevalent in other earlier or later cultures (Harley, 2001, p. 66; e.g., the Omphalos of Delphi, `https://whc.unesco.org/en/list/393/`)—aimed at securing the claims of the Inka's imperial jurisdiction and political impact, and not distorting the spatial reality, whether known or not to them. Interestingly, as in the case of Clados (2007), the assumption is founded on the appearance of the examined *t'oqapu*, i.e., that the token was somewhat used as an immediate reference to a concept or a real object across the Inka realm. Therefore, while assuming recoverable meanings in them, the current approach would point to the fact that *t'oqapu* stand for a mixture of contrived semasiographic signs. While Phipps et al. (2004, p. 138) remains an interpretative option, it is necessary to cite also Cook (1996, p. 98) in this context,

> The diamond in a square symbol [= the "diamond-like motif"; *our note*], as well as an abbreviated form of this design structure, is present on the garments we associate with Inca rulers and with the offices held by their highest-ranking dignitaries (Rowe, J. 1979, Figs. 9-11). In addition, the diamond in a square, which clearly defines Figure A in Wari contexts, is also present in the tunic designs of most of Guaman Poma's illustrations of ruling Incas and some of the Inca 'capitanes' [chiefs].

(a)

(b)

FIGURE 37. In Figure 37a are illustrated waistbands from a tunic with a consistent sequence of the *stepped-diamond* motif (Late Horizon, Inka culture, 1476–1534 CE, made of interlocked tapestry, cotton, and camelid fiber, Arthur Mason Knapp Fund, 42 489; inventory no. 234, Museum of Fine Arts, Boston); see Stone-Miller (1994a, pp. 174–175; cf. Rowe Pollard (1978, p. 15, Figure 20). (37b) Diamond waistband from a tunic (= *unqu*), Dallas Museum of Art (2021b); *Date*: 1400–1534; *Material*: cotton and camelid fiber; *Dimensions*: 142.24 × 12.7cm; inventory no. 1994.282; *Credit line*: Dallas Museum of Art, gift of Silas R. Moutsier III from the Collection of Nora E. H. Wise and in her honor. © *Image Courtesy* Dallas Museum of Art. The right-angled, conjoined rhomboidal structures (*the stepped diamond-like* pattern) are recorded in many of the Andean textiles; see several diamond bands fitted in *unqu* or disconnected from them in Rowe Pollard (1978, pp. 8–9, 12–15, 22; see also Lehmann and Doering, 1924, Collotype Plate 126, bottom; Silverman, 1994, pp. 46–51; Phipps, 2005, pp. 70–72, 90; Hogue, 2006, p. 109; The Metropolitan Museum of Art, 2000–2010). Similarly, in Ferdinand Anton (1987 [1984], Figure 169) a "Fragment of a *man's garment with ornamental bands in slit tapestry*. *South Coast* [of Perú], *ca. 1400–1530*" has all the hallmarks of depicting the *stepped-diamond* motif.

(a) (b) (c) (d)

FIGURE 38. In this figure, a number of cut off *t'oqapu* extracted from various tunics show quadripartite formats. The overall pattern is organized around a nucleus, characterized by a *diamond* or a *plain square shape*, subdivided in dual oppositions using coloring or geometrical shapes. *T'oqapu* (38a) derives from the front part of a post-Inka *unqu* said to have been found in Ancón, central coast of Perú, probably late 16th century, and held currently at *Staatliche Museen zu Berlin*, *Ethnologisches Museum* (Arellano, 1999, p. 258; Phipps et al., 2004, p. 167; Ramos Cárdenas, 2005, pp. 58–59). (38b) is part of the *unqu* of Pachacamac (see MAM, 2010a, a Late Horizon tunic [1460–1550 CE], coded under inventory No. 14501). *T'oqapu* (38c) derives from the post-Inka *unqu* held at the *American Museum of Natural History*, New York (cf. Lehmann and Doering, 1924, Plate 158; Rowe Pollard, 1978, p. 17; Phipps et al., 2004, pp. 156–157). *T'oqapu* (38d) is a constituent part of an Inka tunic's waistband, held at *Museo Arqueológico de Cuzco*, Perú (Museo Inka, 2010); cf. de la Jara (1967, p. 244, Fig. 4, upper band).

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References

Abal de Russo, Clara M. (2010). *Arte Textil Incaico en Ofrendatorios de la Alta Cordillera Andina. Aconcagua, Llullaillaco, Chuscha*. Buenos Aires: Fundación CEPPA.

Agüero Piwonka, Carolina (2000). "Fragmentos para Armar un Territorio. La Textilería en Atacama durante los Períodos Intermedio Tardío y Tardío." In: *Estudios Atacameños* 20. Instituto de Investigaciones Arqueológicas y Museo, Universidad Católica del Norte, pp. 7–28.

———— (2007). "Los Textiles de Pulacayo y Las Relaciones entre Tiwanaku y San Pedro de Atacama." In: *Boletín del Museo Chileno de Arte Precolombino (Santiago de Chile)* 12.1, pp. 85–98.

Aichele, Kathryn Porter (2006). *Paul Klee, Poet/Painter*. Studies in German Literature Linguistics and Culture. Rochester, New York / Woodbridge, Suffolk, UK: Camden House.

Ángeles, Rommel and Denise Pozzi-Escot (2000). "Textiles del Horizonte Medio. Las Evidencias de Huaca Malena, Valle de Asia." In: *Huari y Tiwanaku. Modelo vs. Evidencias. Primera Parte*. Ed. by Peter Kaulicke and William H. Isbell. Vol. 4. Boletín de Arqueología. Lima: Pontificia Universidad Católica de Perú, pp. 401–424.

Anonymous (1970). "The Literate Incas." `http://www.time.com/time/magazine/article/0,9171,909586`.

Anton, Ferdinand (1987 [1984]). *Peruvian Textiles*. Trans. from the German *Altindianische Textilkunst aus Peru* [Old Indian Textile Art from Peru] by Michael Heron. London: Thames & Hudson.

Arellano, Carmen (1999). "Quipu y Tocapu. Sistemas de Comunicación Inca." In: *Los Incas. Arte y Símbolos*. Ed. by G. A. Franklin Pease et al. Arte y Tesoros del Perú. Lima: Banco de Crédito del Perú, pp. 215–262.

Arellano Hoffmann, Carmen, ed. (2014 [2009]). *Sistemas de Notación Inca. Quipu y Tocapu. Actas del Simposio Internacional—15–17 de enero de 2009*. Lima: Ministerio de Cultura del Perú / Museo Nacional de Arqueología, Antropología e Historia del Perú (MNAAHP) / Proyecto Qhapaq Ñan, Perú.

Arnheim, Rudolf (1997 [1954]). *Art and Visual Perception. A Psychology of the Creative Eye*. Berkeley / Los Angeles / London: University of California Press.

Arzáns de Orsúay y Vela, Bartolomé (2000 [1705]). "Relatos de la Villa Imperial de Potosí [Narrations on the Imperial City of Potosí]." In: Quoted in Gisbert 1980. La Paz, Bolivia: Plural Editores.

Baena Preysler, Javier et al. (1994). "El Proyecto 'Propuesta de Conservación, Estudio y Catalogación Informatizada de los Keros y Pajchas Coloniales del Museo de América' y sus Primeros Resultados." In: *Anales del Museo de América* 2, pp. 159–182.

Baitzel, Sarah I. and David E. Trigo Rodríguez (2019). "The Tiwanaku Camelid Sacrificer. Origins and Transformations of Animal Iconography in the Context of Middle Horizon (A.D. 400–1100) State Expansion." In: *Ñawpa Pacha—Journal of Andean Archaeology* 39.1, pp. 31–56.

Bákula, Cecilia (2000 [1992]). "The Art of the Inkas." In: *The Inca World*. Ed. by Laura Laurencich Minelli. Trans. by Andrew Ellis, James Bishop, and Angelica Mercurio Ciampi. Norman: University of Oklahoma Press, pp. 219–222.

Ball, Philip (1999). *The Self-Made Tapestry. Pattern Formation in Nature*. Oxford: Oxford University Press.

Bankes, George (1977). "Peru before Pizarro." In: ed. by Paul Johnstone and Anna Ritchie. Oxford: Phaidon Press Ltd.

Bárcena, J. Roberto (1988). "Investigación de la Dominación Incaica en Mendoza. El Tambo de Tambillos, la Vialidad Anexa y los Altos Ce-

rros Cercanos." In: *Espacio, Tiempo y Forma*. Vol. 1. Prehistoria. Quoted in Gentile Lafaille. Madrid: UNED, pp. 397–426.
Barthel, Thomas S. (1970). "Erste Schritte zur Entzifferung der Inkaschrift." In: *Tribus. Jahrbuch des Linden Museums*. Vol. 19. Stuttgart: Linden-Museum, pp. 91–96.
———— (1971). "Viracochas Prunkgewand [Tokapu-Studien]." In: *Tribus. Jahrbuch des Linden Museums*. Vol. 20. Stuttgart: Linden-Museum, pp. 63–124.
———— (1976). "Writing Systems." In: *Native Languages of the Americas*. Ed. by Thomas A. Sebeok. New York and London: Plenum Press, pp. 27–55.
Bauer, Brian S. and Bradford M. Jones (2003). "Early Intermediate and Middle Horizon Ceramic Styles of the Cuzco Valley." In: *Fieldiana Anthropolog* 34, pp. 1–65.
Beaugarde, Robert-Alain de and Wolfgang Ulrich Dressler (1981 [1972]). *Introduction to Text Linguistics*. London and New York: Longman Group Ltd.
Beaule, Christine D. (2018). "Cambios en la Vestimenta Indígena en el Altiplano Andino bajo el Colonialismo Español [Indigenous Clothing Changes in the Andean Highlands under Spanish Colonialism]." In: *Estudios Atacameños. Arqueología y Antropología Surandinas* 59, pp. 7–26.
Benavides, Mario (1999). "Tejidos Wari · Wari Textiles." In: *Tejidos Milenarios*. Ed. by José Antonio de Lavalle and Rosario de Lavalle de Cárdenas. Lima: Integra AFP, Wiese Ætna, Compañía de Seguros, pp. 353–411.
Bergh, Susan E. (1999). "Pattern and Paradigm in Middle Horizon Tapestry Tunics." PhD thesis. Graduate School of Art and Sciences. Columbia University of New York.
———— (2013). "Tapestry-woven Tunics." In: *Wari. Lords of the ancient Andes*. Ed. by Susan E. Bergh. Cleveland, OH / London: The Cleveland Museum of Art / Thames & Hudson.
———— (2017). "Middle Horizon Textiles from Berlin's Ethnological Museum." In: *Pre-Columbian Textiles in the Ethnological Museum in Berlin*. Ed. by Lena Bjerregaard. Lincoln, Nebraska: Zea Books, pp. 25–31.
Bernal, Ignacio (1975). "Foreword." In: *Archaeoastronomy in Pre-Columbian America*. Ed. by Anthony F. Aveni. Austin and London: University of Texas Press, pp. ix–xi.
Bertonio, Ludovico P. (1879 [1612]). *Vocabulario de la Lengua Aymara. Publicado de nuevo por Julio Platzmann*. Leipzig: B. G. Teubner.
Besom, John Thomas (2009). *Of Summits and Sacrifice. An Ethnohistoric Study of Inka Religious Practices*. Austin, Texas: University of Texas Press.
Bjerregaard, Lena and Adriana Von Hagen (2007). *Chachapoya Textiles. The Laguna de los Cóndores Textiles in the Museo Leymebamba, Chachapoyas, Peru*. Copenhagen: Museum Tusculanum Press.

Blotkamp, Carel (1995 [1993]). *Mondrian. The Art of Destruction*. Trans. by Barbara Potter Fasting. New York: Harry N. Abrams, Inc.

Boman, Eric (1908). "Antiquités de la región andine de la république argentine et du désert d'Atacama, tome II." In: Quoted in Ruiz 2002.

Bonavia, Duccio (1985). *Mural Painting in Ancient Peru*. Trans. by Patricia J. Lyon. Originally published in 1974 as *Ricchata Quellccani. Pinturas Murales Prehispánicas*. Bloomington: Indiana University Press.

———— (2000 [1992]). "The Origins of the Incas and the Chanca Question." In: *The Inca World. The Development of Pre-Columbian Peru A.D. 1000–1534*. Ed. by Laura Laurencich Minelli. Trans. by Andrew Ellis, James Bishop, and Angelica Mercurio Ciampi. Norman: University of Oklahoma Press, pp. 133–141.

Boone, Elizabeth Hill (1994a). "Introduction. Writing and Recording Knowledge." In: *Writing without Words. Alternative Literacies in Mesoamerica and the Andes*. Ed. by Elizabeth Hill Boone and Walter D. Mignolo. Durham and London: Duke University Press, pp. 3–27.

———— (1994b). *The Aztec World*. Ed. by Jeremy Sabloff. Exploring the Ancient World. Montréal / Washington, DC: St. Remy Press and the Smithsonian Institution.

———— (1996). "Beyond Writing." In: *The Writing Systems of the World*. Ed. by Peter T. Daniels and William Bright. Oxford: Oxford University Press, pp. 313–348.

———— (2000). *Stories in Red and Black. Pictorial Histories of the Aztecs and Mixtecs*. Austin: University of Texas Press.

Boone, Elizabeth Hill and Walter D. Mignolo, eds. (1994). *Writing without Words. Alternative Literacies in Mesoamerica and the Andes*. Durham, North Carolina: Duke University Press.

Bouissac, Paul (1994). "Art or Script? A Falsifiable Semiotic Hypothesis." In: *Semiotica* 100.2–4, pp. 349–367.

Bouysse-Cassagne, Thérèse (1986). "Urco and Uma. Aymara Concepts of Space." In: *Anthropological History of Andean Polities*. Ed. by John V. Murra, Nathan Watchel, and Jacques Revel. Cambridge / Paris: Cambridge University Press / Éditions de la Maison des Sciences de l'Homme, pp. 201–228.

Brandt, John C. et al. (1975). "Possible Rock Art Records of the Crab Nebula Supernova in the Western United States." In: *Archaeoastronomy in Pre-Columbian America*. Ed. by Anthony F. Aveni. Austin and London: University of Texas Press, pp. 45–58.

Bray, Tamara L. (2000). "Inca Iconography. The Art of Empire in the Andes." In: *Res. Journal of Anthropology and Aesthetics* 38, pp. 169–178.

———— (2013). "Water, Ritual, and Power in the Inca Empire." In: *Latin American Antiquity* 24, pp. 164–190.

Brice, W. C. (1992). "Notes on the Cretan Hieroglyphic Script." In: *Kadmos* 31, pp. 21–24.

Brinckerhoff, Deborah (1999). *Weaving for the Gods. Textiles of the Ancient Andes*. Greenwich, CT: Bruce Museum of Arts and Science.

Brooklyn Museum (2021). "Inca. Miniature Mantle or Dress." 1400–1532 CE. https://www.brooklynmuseum.org/opencollection/objects/52832.

Brown, Michelle P. (1998). *The British Library Guide to Writing and Scripts. History and Techniques*. London: The British Library.

Bryson, Norman (1983). *Vision and Painting. The Logic of the Gaze*. Quoted in Pasztori 1990–1991. New Haven: Yale University Press.

Burger, Richard L. (1992). "The Sacred Center of Chavín de Huántar." In: *The Ancient Americas. Art from Sacred Landscapes*. Ed. by Richard F. Townsend. Chicago / Munich: The Art Institute of Chicago / Prestel, pp. 265–279.

——— (2008). "Chavín de Huántar and its Sphere of Influence." In: *Handbook of South American Archaeology*. Ed. by Helaine Silverman and William H. Isbell. New York: Springer, pp. 681–707.

Burns Glynn, William (2002). *Decodificación de Quipus*. Lima: Banco Central de Reserva del Perú, BCRP—Universidad Alas Peruanas, Facultad de Derecho y Ciencias Políticas.

Candee, Helen Churchill (Mrs Hungerford) (1935 [1912]). *The Tapestry Book. With Four Plates in Colour and Ninety-nine illustrations in black-and-white*. New York: Tudor Publishing, Co.

Carbonell, Beatriz (2020 [2019]). "Los tocapus de Llullaillaco." In: *Pre-Columbian Textile Conference VIII / Jornadas de Textiles PreColombinos VIII*. Ed. by Lena Bjerregaard and Ann Peters. Lincoln, NE: Zea Books, pp. 157–174.

Carruthers, Mary and Jan M. Ziołkowski, eds. (2002). *The Medieval Craft of Memory. An Anthology of Texts and Pictures*. Philadelphia: University of Pennsylvania Press.

Cassman, Vicki (2000). "Prehistoric Andean Ethnicity and Status. The Textile Evidence." In: *Beyond Cloth and Cordage*. Ed. by Penelope Ballard Drooker and Laurie D. Webster. Salt Lake City: The University of Utah Press, pp. 253–266.

Centre de Documentació i Museu Tèxtil (CDMT) (2010). *The Textile Database*. http://imatex.cdmt.es. Terrasa, Catalonia (Spain): Museu Tèxtil.

"El Ocaso [The Decline]" (1991). In: *Los Incas y el Antiguo Perú: 3.000 Años de Historia*. Ed. by Centro Cultural de la Villa de Madrid. Madrid: Ayuntamiento de Madrid, Concejalía de Cultura / Centro Cultural de la Villa de Madrid, Quinto Centenario, pp. 384–463.

Centro Cultural El Monte (CCEM), ed. (2001). *WARI. Arte Precolombino Peruano*. Colección América. Sevilla: Fundación El Monte.

Cereceda, Verónica (1986). "The Semiology of Andean Textiles. The Talegas of Isluga." In: *Anthropological History of Andean Polities*. Ed. by John V. Murra, Nathan Watchel, and Jacques Revel. Cambridge /

Paris: Cambridge University Press / Éditions de la Maison des Sciences de l'Homme, pp. 149–173.
Cerrón-Palomino, Rodolfo (2005). "Tocapu." In: *Boletín de la Academia Peruana de la Lengua* 40, pp. 137–152.
———— (2008). *Voces del Ande. Ensayos sobre Onomástica Andina*. Ed. by Marco Curatola Petrocchi. Vol. 3. Colección Estudios Andinos. Lima: Fondo Editorial de la Pontificia Universidad Católica del Perú.
Ceruti, Maria Constaza (2003). *Llullaillaco. Sacrificios y Ofrendas en un Santuario Inca de Alta Montaña*. Quoted in Gentile Lafaille 2010. Salta: Universidad Católica de Salta.
———— (2007). "Panorama de los Santuarios Inca de Alta Montaña en Argentina." In: *Arqueología y Sociedad* 18, pp. 211–228.
———— (2015). "Frozen Mummies from Andean Mountaintop Shrines. Bioarchaeology and Ethnohistory of Inca Human Sacrifice." In: *BioMed Research International* 2015, pp. 1–12.
Chaplin, Elizabeth (1994). *Sociology and Visual Representation*. London: Routledge.
Clados, Christiane (2007). "Neue Erkenntnisse zum Tokapu-Symbolsystem am Beispiel eines Männerhemdes der Inkazeit in der Altamerika-Sammlung des Linden Museum." In: *Tribus. Jahrbuch des Linden Museums*. Vol. 56. Stuttgart: Linden-Museum, pp. 71–106.
———— (2020). "On the Iconic Nature of Tocapus and Other Framed Motif Units." In: *Indigenous Graphic Communication Systems. A Theoretical Approach*. Ed. by Jerome A. Offner and Katarzyna Mikulksa. Boulder, Co.: University Press of Colorado, pp. 233–256.
Claridge, Claudia (2008). "Historical Corpora." In: *Corpus Linguistics. An International Handbook*. Ed. by Anke Lüdeling and Merja Kytö. Vol. 29.1. Handbücher zur Sprach- und Kommunikationswissenschaft / Handbooks of Linguistics and Communication Science. Berlin, New York: Walter de Gruyter, pp. 242–259.
Classen, Constance (1993). *Inca Cosmology and Human Body*. Salt Lake City: University of Utah Press.
Cohen, Marcel (1958). *La grande invention de l'écriture*. Quoted in Severi 2019. Paris: CNRS.
Conklin, William J. (1996a). "Huari Tunics." In: *Andean Art at Dumbarton Oaks*. Ed. by Elizabeth Hill Boone. Washington DC: Dumbarton Oaks Research Library and Collection, pp. 375–398.
———— (1996b). "Structure as Meaning in Ancient Andean Textiles." In: *Andean Art at Dumbarton Oaks*. Ed. by Elizabeth Hill Boone. Washington DC: Dumbarton Oaks Research Library and Collection, pp. 321–328.
Conklin, William J. and Michael Edward Moseley (1989). "The Patterns of Art and Power in the Early Intermediate Period." In: *Peruvian Prehistory. An Overview of pre-Inca and Inca Society*. Ed. by Richard W. Keatinge. Cambridge: Cambridge University Press, pp. 145–164.

Cook, Anita G. (1994). *Wari y Tiwanaku. Entre el Estilo y la Imagen*. Lima: Fondo Editorial de la Pontificia Universidad Católica del Perú.

———— (1996). "The Emperor's New Clothes. Symbols of Royalty, Hierarchy and Identity." In: *Journal of the Steward Anthropological Society* 24.1, pp. 85–120.

———— (2004). "Wari and Art Society." In: *Andean Archaeology*. Ed. by Helain Silverman. Malden, MA. / Oxford: Blackwell Publishing, Ltd, pp. 146–166.

Cordy-Collins, Alana (1999). "Painted Chavín Textiles from Ica Valley, South Coast." In: *Tejidos Milenarios del Perú / Ancient Peruvian Textile*. Ed. by José Antonio de Lavalle and Rosario de Lavalle de Cárdenas. Colección APU. Lima: Integra AFP, Wiese Ætna, Compañía de Seguros, pp. 107–143.

Covey, R. Alan (2008). "The Inca Empire. Chapter 40." In: *Handbook of South American Archaeology*. Ed. by Helain Silverman and William H. Isbell. New York: Springer, pp. 809–830.

Cummins, Thomas B. F. (1994). "Representation in the Sixteenth Century and the Colonial Image of the Inca." In: *Writing without Words. Alternative Literacies in Mesoamerica and the Andes*. Ed. by Elizabeth Hill Boone and Walter D. Mignolo. Durham, North Carolina: Duke University Press, pp. 188–219.

———— (2002a). "Los *Quilcakamayoq* y los Dibujos de Guaman Poma." In: *Libros y Escritura de Tradición Indígena. Ensayos sobre los Códices Prehispánicos y Coloniales de México*. Ed. by Carmen Arellano Hoffmann, Peer Schmidt, and Xavier Noguez. Trans. by Rocío Quispe-Agnoli. Toluca, México: El Colegio Mexiquense, A.C. / Universidad Católica de Eichstätt, pp. 185–215.

———— (2002b). *Toasts with the Inca. Andean Abstraction and Colonial Images on Quero Vessels*. Ann Arbor: The University of Michigan Press.

———— (2004). "Silver Threads and Golden Needles. The Inca, the Spanish, and the Sacred World of Humanity." In: *The Colonial Andes. Tapestries and Silverwork, 1530–1830*. Ed. by Elena Phipps, Johanna Hecht, and Cristina Martín. New York / New Haven and London: The Metropolitan Museum of Art / Yale University Press, pp. 2–16.

———— (2011). "*Tocapu*. What Is It, What Does It Do, and Why Is It Not a Knot?" In: *Their Way of Writing. Scripts, Signs, and Pictographies in Pre-Columbian America*. Ed. by Elizabeth Hill Boone and Gary Urton. Washington DC: Dumbarton Oaks Research Library and Collection (Trustees for Harvard University, pp. 277–318.

———— (2014 [2009]). "El *tocapu*. El Nudo Gordiano en los Andes." In: *Sistemas de Notación Inca. Quipu y Tocapu—Actas del Simposio Internacional, Lima 15–17 de enero de 2009*. Ed. by Carmen Arellano Hoffmann. Lima: Ministerio de Cultura del Perú / Museo Nacional de Arqueología, Antropología e Historia del Perú (MNAAHP) / Proyecto Qhapaq Ñan, Perú, pp. 223–245.

Cummins, Thomas B. F. and Barbara Anderson (2008). *The Getty Murúa. Essays on the Making of Martín de Murúa's "Historia General del Piru," J. Paul Getty Museum Ms. Ludwig XIII 16*. Los Angeles: The Getty Research Institute.

D'Altroy, Terence N. (2001). "Politics, Resources, and Blood in the Inka Empire." In: *Empires. Perspectives from Archaeology and History*. Ed. by Susan E. Alcock et al. Cambridge: Cambridge University Press, pp. 201–226.

———— (2005 [2002]). *The Incas*. Ed. by Alan Kolata and Dean Snow. The People of America. Oxford, UK: Blackwell Publishing Ltd.

D'Altroy, Terence N. and Timothy K. Earle (1985). "Staple Finance, Wealth Finance, and Storage in the Inka Political Economy." In: *Current Anthropology* 26, pp. 187–206.

D'Altroy, Terence N. and Christine A. Hastorf (1984). "The Distribution and Contents of Inca State Storehouses in the Xauxa Region of Perú." In: *American Antiquity* 49.2, pp. 334–349.

D'Altroy, Terence N. and Katharina J. Schreiber (2004). "Andean Empires." In: *Andean Archeology*. Ed. by Helaine Silverman. New York: Blackwell, pp. 255–279.

Dallas Museum of Art (2021a). *Diamond Waistband from a Tunic (= unqu). Textiles. Art of the Americas*. https://collections.dma.org/artwork/5336509.

———— (2021b). "Panel Fragment with a Checkerboard Pattern. Textiles. Art of the Americas." https://collections.dma.org/artwork/5336509.

Damerow, Peter (2006). "The Origins of Writing as a Problem of Historical Epistemology." In: *Cuneiform Digital Library Journal* 1, pp. 1–10.

Daniels, Peter T. and William Bright, eds. (1996). *The World's Writing Systems*. Oxford / New York: Oxford University Press.

Davies, Nigel (1995). *The Incas*. Niwot, Colorado: University Press of Colorado.

Dean, Carolyn (2011). "Inka Water Management and the Symbolic Dimensions of Display Fountains." In: *Res. Anthropology and Aesthetics* 59–60, pp. 22–38.

DeFrancis, John (1989). *Visible Speech. The Diverse Oneness of Writing Systems*. Honolulu: University of Hawai'i Press.

Delgado Pang, Hildegard (1992). *Pre-Columbian Art. Investigations and Insights*. Norman and London: University of Oklahoma Press.

Demarest, Arthur and Geoffrey Conrad (1983). "Ideological Adaptation and the Rise of the Aztec and Inca Empires." In: *Civilization in the Ancient Americas. Essays in Honor of Gordon R. Willey*. Ed. by Richard M. Leventhal and Alan L. Kolata. Cambridge, MA: University of New Mexico Press, Peabody Museum of Archaeology, and Ethnology, Harvard University, pp. 373–380.

DeMarrais, Elizabeth (2017). "Animacy, Abstraction, and Affect in the Andean Past. Toward a Relational Approach to Art." In: *Cambridge Archaeological Journal* 27, pp. 655–669.

Desrosiers, Sophie (1992). "Las Técnicas de Tejido, ¿Tienen un Sentido?— Una Propuesta de Lectura de los Tejidos Andinos." In: *Revista Andina* 10.1, pp. 7–46.

Diringer, David (1937). *L'alfabeto nella storia della civiltà*. Quoted in Severi 2019. Florence: Barbèra.

Dransart, Penelope Z. (2002). *Earth, Water, Fleece and Fabric: an Ethnography and Archaeology of Andean Camelid Herding*. London and New York: Routledge.

Dransart, Penny (1997 [1992]). "Pachamama. The Inka Earth Mother of the Long Sweeping Garment." In: *Dress and Gender. Making and Meaning in Cultural Contexts. Cross-Cultural Perspectives on Women*. Ed. by Ruth Barnes and Joanne B. Eicher. Oxford / New York: Berg Publishers, pp. 145–164.

Dumbarton Oaks Research Library and Collections, Pre-Columbian Collection, Washington DC (2021). "Blue And Yellow Panel. Wari, Middle Horizon 810–970 CE." http://museum.doaks.org/objects-1/info?query=Portfolios\%20\%3D\%20\%222638\%22\&sort=0.

———— (n.d.). "Plaque. Wari, Middle Horizon 650–800 CE." http://museum.doaks.org/objects-1/info?query=Portfolios\%20\%3D\%20\%222638\%22\&sort=0\&page=7.

Eeckhout, Peter and Nathalie Danis (2004). "Los tocapus Reales en Guamán Poma: ¿Una Heráldica Incaica?" In: *Boletín de Arqueología* 8, pp. 305–323.

Ellul, Joseph (1996). *The Grandmaster's Palace & The Gobelin Tapestries*. Siggiewi, Malta: Gutenberg Press Limited, Tarxien.

Estermann, Joseph (1998). *Filosofía Andina. Estudio Intercultural de la Sabiduría Autóctona Andina*. Quito, Ecuador: Ediciones Abya-Yala.

Famsi, Foundation for the Advancement of Mesoamerican Studies (2009). "FAMSI @ LACMA." http://www.famsi.org/.

Fedriani Martel, Eugenio M. and Ángel F. Tenorio Villalón (2004). "Los Sistemas de Numeración Maya, Azteca e Inca." In: *Lecturas Matemáticas* 25, pp. 159–190.

Feltham, Jane (1989). *Peruvian Textiles*. Aylesbury, Bucks, UK: Shire Publications, Ltd.

Femenías, Blenda (2017). "Structure, Design, and Gender in Inka Textiles." In: *PreColumbian Textile Conference VII / Jornadas de Textiles PreColombinos VII*. Ed. by Lena Bjerregaard and Ann Peters. Lincoln, NE: Zea Books, pp. 341–348.

Finley Hughes, Lauren (2010). "Weaving Imperial Ideas. Iconography and Ideology of the Inca Coca Bags." In: *Textiles* 8.2, pp. 148–179.

Fleming, Stuart (1986). "The Mummies of Pachacamac." In: *Expedition Magazine* 28.3, pp. 39–45.

Flores Ochoa, Jorge A. (1986). "The Classification and Naming of South American Camelids." In: *Anthropological History of Andean Polities*. Ed. by John V. Murra, Nathan Watchel, and Jacques Revel. Cambridge / Paris: Cambridge University Press / Éditions de la Maison des Sciences de l'Homme, pp. 137–149.

Florio, Cinzia (2013). "Recovering Memory. The Inca Key as *yanantin*." In: *Proceedings of El Olvido Está Lleno de Memoria (Mario Benedetti), Salerno 13th–15th of May 2013*. https://www.academia.edu/12063847/Recovering_memory_the_INCA_KEY_as_YANANTIN.

Fontana, David (2003). *The Secret Language of Symbols. A Visual Key to Symbols and their Meanings*. San Francisco: Chronicle Books LLC.

Frame, Mary (1994). "Las Imágenes Visuales de Estructuras Textiles en el Arte del Antiguo Perú." In: *Revista Andina* 12.2, pp. 295–350.

———— (1999). "Nasca-Huari y Otros Textiles de la Costa Sur [Nazca Wari and Other South Coast Textiles]." In: *Tejidos Milenarios del Perú / Ancient Peruvian Textile*. Ed. by José Antonio de Lavalle and Rosario de Lavalle de Cárdenas. Colección APU. Lima: Integra AFP, Wiese Ætna, Compañía de Seguros, pp. 311–345.

———— (2001). "Beyond the Image. The Dimensions of Pattern in Ancient Andean Textiles." In: *Abstraction. The Amerindian Paradigm*. 'Plates' section is included. Brussels: The Société des Expositions du Palais des Beaux-Arts de Bruxelles / Vereniging voor Tentoonstellingen van het Paleis voor Schone Kunsten Brussel in association with IVAM Institut Valencià d'Art Modern, pp. 113–215.

———— (2007). "Lo que Guaman Poma nos muestra, pero no nos dice sobre Tukapu." In: *Revista Andina* 44, pp. 9–69.

———— (2014 [2009]). "*TUKAPU*, Un Código Gráfico de los Inkas. Segunda Parte. Las Configuraciones Y Familias de los Elementos." In: *Sistemas de Notación Inca. Quipu y Tocapu—Actas del Simposio Internacional, Lima 15–17 de enero de 2009*. Ed. by Carmen Arellano Hoffmann. Lima: Ministerio de Cultura del Perú / Museo Nacional de Arqueología, Antropología e Historia del Perú (MNAAHP) / Proyecto Qhapaq Ñan, Perú, pp. 247–282.

Franquemont, Edward M. (1986). "Threads of Time. Andean Cloth and Costume." In: *Costume as Communication. Ethnographic Costumes and Textiles from Middle America and the Central Andes of South America*. Ed. by Margot Blum Schevill. Vol. 4. Studies in Anthropology and Material Culture. Bristol, RI / Seattle: Haffenreffer Museum of Anthropology, Brown University / The University of Washington Press.

Frutiger, Adrian (1998). *Signs and Symbols. Their Design and Meaning*. Trans. by Andrew Bluhm. New York: Watson-Guptill Publications / A Division of BPI Communications, Inc.

Gallagher, Ida Jane and Warren W. Dexter (2004). *Contact with Ancient America*. Mount Pleasant, South Carolina: Sovereign Terrace Books.

Garrod, Simon et al. (2007). "Foundations of Representation. Where Might Graphical Symbol Systems Come From?" In: *Cognitive Science* 31, pp. 961–987.

Gartner, William Gustav (1998). "Mapmaking in the Central Andes." In: *History of Cartography. Cartography in the Traditional African, American, Arctic, Australian, and Pacific Societies*. Ed. by David Woodward and G. Malcolm Lewis. Chicago and London: The University of Chicago Press, pp. 257–300.

Gaur, Albertine (1987 [1984]). *A History of Writing*. London: The British Library.

———— (2000). *Literacy and the Politics of Writing*. Bristol (UK): Intellect Ltd.

Gayton, Ann (1978). "Significado Cultural de los Textiles Peruanos. Producción, Función y Estética." In: *Tecnología Andina*. Lima: Instituto de Estudios Peruanos, IEP and Instituto de Investigación Tecnológica Industrial y de Normas Técnicas, ITINTEC, pp. 269–297.

Gelb, Ignace J. (1963 [1952]). *A Study of Writing*. 2nd ed. Chicago: University of Chicago Press.

Genotte, Jean-François (2020). "Ancient Peruvian Textiles in the Vatican Museums and their Link to the Musée du Trocadéro Collections." In: *PreColumbian Textile Conference VIII / Jornadas de Textiles PreColombinos VIII*. Ed. by Lena Bjerregaard and Ann Peters. Lincoln, NE: Zea Books, pp. 232–246.

Gentile Lafaille, Margarita E. (2008). "El Tocapu 285. Consideraciones acerca de la Llamada '*Escritura Incaica*'." In: *ARKEOS. Revista Electrónica de Arqueología* 3.2, pp. 1–17.

———— (2010). "Tocapu. Unidad de Sentido en el Lenguaje Gráfico Andino." In: *Espéculo. Revista de estudios literarios* (Universidad Complutense de Madrid) 45. `http://www.ucm.es/info/especulo/numero45/tocapu.html`.

Gillow, John and Bryan Sentence (1999). *World Textiles. A Visual Guide to Traditional Techniques*. London: Thames & Hudson, Ltd.

Gisbert, Teresa (1980). *Iconografía y Mitos Indígenas en el Arte*. La Paz: Gisbert y Cía, S.A.

Gisbert, Teresa et al. (1996). "Los chullpares del Río Lauca y el Parque Sajama." In: *Revista de la Academia Nacional de Ciencias de Bolivia* 70, pp. 3–20.

Glowacki, Mary and Michael Malpass (2003). "Water, Huacas, and Ancestor Worship. Traces of a Sacred Wari Landscape." In: *Latin American Antiquity* 14.4, pp. 431–448.

Golding, John (1988 [1959]). *Cubism. A History and an Analysis, 1907–1914*. Harvard, MA: Belknap Press of Harvard University Press.

Gombrich, Ernest H. (1960). *Art and Illusion*. Quoted in Pasztori 1990–1991. Princeton, NJ: Princeton University Press.

Gonçalez Holguin, Diego (1608). *Vocabulario de la lengua general de todo el Peru llamada lengua Qquichua, o del Inca. Corregido y renovado conforme ala propriedad cortefana del Cuzco [Dictionary of the common language of the Incas of Peru called Quechua Language. Corrected and improved according to the standards of the court of Cuzco]*. Juli, Chucuyto: Franciſco del Canto.

Gonzáles Carré, Enrique and José María Gálvez Pérez (1981). *Wari, el Primer Imperio Andino*. Ayacucho, Perú: Talleres de la Imp. "Gráfica Pérez," Centro de Ediciones Ayacucho.

González, Paola and Tamara L. Bray (2008). "Introducción. Lenguajes Visuales de los Incas [Introduction. Visual Languages of the Inka]." In: *Lenguajes Visuales de los Incas*. Ed. by Paola González Carvajal and Tamara L. Bray. Vol. 1848. British Archaeological Reports (BAR) International Series. Oxford, London: Archaeopress, pp. 1–11.

González Carré, Enrique and Christian Mesía Montenegro (2001). "Wari. Un Imperio por Definir." In: *WARI. Arte Precolombino Peruano*. Colección América. Sevilla: Fundación El Monte, pp. 23–59.

González Holguín, Diego (1989 [1608]). *Vocabulario de la lengua general de todo el Perú llamada lengua quichua o del inca*. 3rd ed. Lima: Universidad Nacional Mayor de San Marcos, Editorial de la Universidad.

Good, Philip I. and James W. Hardin (2003). *Common Errors in Statistics and How to Avoid Them*. Hoboken, New Jersey: A John Wiley & Sons, Inc.

Grasso Ibarra, Dick Edgar (1953). *La Escritura Indígena Andina*. La Paz: Biblioteca Paceña, Alcaldía Municipal.

Grube, Nikolai and Carmen Arellano Hoffman (2002). "Escritura y Literalidad en Mesoamérica y en la Región Andina. Una Comparación." In: *Libros y Escritura de Tradición Indígena*. Ed. by Carmen Arellano Hoffmann, Peer Schmidt, and Xavier Noguez. Toluca, México: El Colegio Mexiquense, A.C. / Universidad Católica de Eichstätt, pp. 27–72.

Guillet, D. (1992). *Covering Ground. Communal Water Management and the State in the Peruvian Highlands*. Quoted in Gartner 1998. Ann Arbor: University of Michigan Press.

Hamburger, Jeffrey F. (2011). "The Iconicity of Script." In: *Word & Image (A Journal of Verbal / Visual Enquiry)* 27.3, pp. 249–261.

Harley, J. Brian (2001). *The New Nature of Maps. Essays in the History of Cartography*. Ed. by Paul Laxton. Baltimore and London: The John Hopkins University Press.

Harrison, Regina (1989). *Signs, Songs, and Memory in the Andes. Translating Quechua Language and Culture*. Austin: University of Texas Press.

Heckman-O'Neil, Andrea M. (2003). *Woven Stories. Andean Textiles and Rituals*. Albuquerque: University of New Mexico Press.

Heritage Auction Galleries (1999–2010). "Inca Tunic Lot 47253." `http://fineart.ha.com/common/view\_item.php?Sale\_No=643\&Lot\_No=47253`.

Hess, Barbara and Uta Grosenick (2005). *Abstract Expressionism*. Köln: Taschen.

Hewson, John (1988). "Introduction to Micmac Hieroglyphics." In: *Cape Breton Magazine* 47. Originally published as "Micmac Hieroglyphs in Newfoundland" (1982). In: *Languages in Newfoundland and Labrador*. Ed. by Harold Paddock. 2nd edition. St. John's, Newfoundland. Memorial University, pp. 188–199, pp. 55–61.

Hoffmann, Beatrix (2017). "Introduction into the History of the Textile Collection at the Ethnological Museum Berlin." In: *PreColumbian Textile Conference VII / Jornadas de Textiles PreColombinos VII*. Ed. by Lena Bjerregaard and Ann Peters. Lincoln, NE: Zea Books, pp. 176–190.

Hogue, Marianne (2006). "Cosmology in Inca Tunics and Tectonics." In: *Andean Textile Traditions. Papers from the 2001 Mayer Center Symposium at the Denver Art Museum*. Ed. by Margaret Young-Sánchez and Fronia W. Simpson. Denver, Colorado: Denver Art Museum, pp. 99–119.

Hoobler, Ellen (2018). "My Kingdom in a Hat. Identity Woven into a Four-Cornered Wari Hat from Ancient Perú." In: *The Journal of the Walters Art Museum* 73, pp. 53–56.

Howe, James (2009). *Chiefs, Scribes and Ethnographers. Kuna Culture from Inside and Out*. Austin: University of Texas Press.

Hughes, Paul (1995). *Time Warps. Ancient Andean Textiles*. London: Fine Textile Art.

———— (2019). *Confluences in Art from the Old and New Worlds, 500 BC–Present*. London: Paul Hughes Fine Arts.

Hyland, Sabine (2017). "Writing with Twisted Cords: The Inscriptive Capacity of Andean Khipu Texts." In: *Current Anthropology* 58.3, pp. 412–419.

Hyslop, John (1984). *The Inka Road System (Studies in Archaeology)*. St. Louis, Missouri: Academic Press.

Iriarte, Isabel (1999). "Túnicas Wari / Huari Tunics." In: *Tejidos Milenarios del Perú / Ancient Peruvian Textile*. Ed. by José Antonio de Lavalle and Rosario de Lavalle de Cárdenas. Colección APU. Lima: Integra AFP, Wiese Ætna, Compañía de Seguros, pp. 413–421.

Isbell, William H. (2000). "Repensando el Horizonte Medio. El Caso de Conchopata, Ayacucho, Perú." In: *Huari y Tiwanaku. Modelo vs. Evidencias. Primera Parte*. Ed. by Peter Kaulicke and William H. Isbell. Vol. 4. Boletín de Arqueología. Lima: Pontificia Universidad Católica de Perú, pp. 9–68.

———— (2001). "Huari. Crecimiento y Desarrollo de la Capital Imperial." In: *WARI. Arte Precolombino Peruano*. Colección América. Sevilla: Fundación El Monte, pp. 99–173.

———— (2008). "Wari and Tiwanaku. International Identities in the Central Andean Middle Horizon. Chapter 37." In: *Handbook of South American Archaeology*. Ed. by Helaine Silverman and William H. Isbell. New York: Springer, pp. 731–759.

Isbell, William H., Christine Brewster-Wray, and Lynda Spickard (1991). "Architecture and Spatial Organization at Huari." In: *Huari Administra-*

tive Structure. Prehistoric Monumental Architecture and State Government. Ed. by William H. Isbell and Gordon F. McEwan. Washington DC: Dumbarton Oaks Research Library and Collection, pp. 19–53.
Isbell, William H. and Anita Cook (1987). "Ideological Origins of an Andean Conquest State." In: *Archaeology* 40.4, pp. 26–33.
Isbell, William H. and Patricia J. Knobloch (2006). "Missing Links, Imaginary Links. Staff God Imagery in the South Andean Past." In: *Andean Archaeology III*. Ed. by William H. Isbell and Helaine Silverman. New York: Springer, pp. 307–351.
Isbell, William H. and Alexei Vranich (2004). "Experiencing the Cities of Wari and Tiwanaku." In: *Andean Archaeology*. Ed. by Helaine Silverman. Malden. MA. / Oxford: Blackwell Publishing, Ltd, pp. 167–181.
Jackson, Margaret A. (2008). *Moche Art and Visual Culture in Ancient Peru*. Albuquerque: University of New Mexico Press.
Janssen, Hans and Joop M. Joosten (2002). *Mondrian. The Path to Abstraction, 1892–1914*. Zwolle / Fort Worth, TX / Paris: Waanders Publishers / Kimbell Art Museum / Réunion des Musées Nationaux.
Janusek, John Wayne (2008). *Ancient Tiwanaku*. Ed. by Rita P. Wright. Case Studies in Early Societies. Cambridge / New York: Cambridge University Press.
Jara, Victoria de la (1967). "Vers le déchiffrement des écritures anciennes du Pérou." In: *Science, progrès, la nature* 3387, pp. 241–247.
———— (1970). "La Solución del Problema de la Escritura Peruana." In: *Arqueología y Sociedad* 2, pp. 27–35.
———— (1975). *Introducción al Estudio de la Escritura de los Inkas*. Lima: Instituto Nacional de Investigación y Desarrollo de la Educación "Augusto Salazar Bondy". INIDE, Ediciones Previas.
Jean, Georges (1998 [1989]). *Signs, Symbols, and Ciphers*. Trans. by Sophie Hawkes. New York: Harry N. Abrams, Inc.
Jiménez Borja, Arturo (1999). "Textilería Peruana / Peruvian Textiles." In: *Tejidos Milenarios del Perú / Ancient Peruvian Textile*. Ed. by José Antonio de Lavalle and Rosario de Lavalle de Cárdenas. Colección APU. Lima: Integra AFP, Wiese Ætna, Compañía de Seguros, pp. 15–29.
Jiménez Díaz, Mª Jesús (2006). "Textiles Prehispánicos Andinos." In: *Y Llegaron Los Incas*. Ed. by Jenny Alva et al. Madrid: Ministerio de Cultura, Dirección General de Bellas Artes y Bienes Culturales; Subdirección de la Promoción de las Bellas Artes, pp. 105–115.
Julien, Nadia (1996). *The Mammoth Dictionary of Symbols*. Trans. by Elfreda Powell. New York: Carroll & Graf Publishers, Inc.
Katz, Lois, ed. (1983). *Art of the Andes. Pre-Columbian Sculptured and Painted Ceramics from the Arthur M. Sackler Collections*. Washington, DC: The Arthur M. Sackler Foundation, the AMS Foundation for the Arts, Sciences, and Humanities.
Kaulicke, Peter (2000). "La Sombra de Pachacamac. Huari en la Costa Central." In: *Huari y Tiwanaku. Modelo vs. Evidencias. Primera Parte*. Ed. by

Peter Kaulicke and William H. Isbell. Vol. 4. Boletín de Arqueología. Lima: Pontificia Universidad Católica de Perú, pp. 313–359.
Kaulicke, Peter and William H. Isbell, eds. (2000). *Huari y Tiwanaku. Modelo vs. Evidencias. Primera Parte*. Vol. 4. Boletín de Arqueología. Lima: Pontificia Universidad Católica de Perú.
Kelly, Samantha (2001). "The Body and Its Manifestation in the Andean World. Corporeality, Simulacrum, and Image." In: *Athanor* 19, pp. 43–50.
Knobloch, Patricia J. (1993). "Who Was Who in the Huari Empire?" In: *3rd Annual Meeting, January 8–9, 1993, UC-Berkeley, of Institute of Andean Studies*. http://www-rohan.sdsu.edu/~bharley/WWWIAS93Paper.html.
Kolata, Alan and Carlos Ponce Sanginés (1992). "Tiwanaku. The City at the Center." In: *The Ancient Americas. Art from Sacred Landscapes*. Ed. by Richard F. Townsend. Chicago / Munich: The Art Institute of Chicago / Prestel, pp. 317–335.
Kolata, Alan L. (1993). *The Tiwanaku. Portrait of an Andean Civilization*. Cambridge, MA and Oxford: Blackwell.
Kulmar, Tarmo (2008). "On the Writing Systems of Ancient Peru. The Possibility of the *Quellqa* and the *Quipu* as an Instrument of Power of the Incas." In: *Electronic Journal of Folklore* 38, pp. 135–143.
———— (2010). "About the Comparison of the State Authority and Social Organization by Incas and Aztecs." In: *Electronic Journal of Folklore* 45, pp. 137–150.
Lanning, Edward P. (1967). *Peru before the Incas*. Englewood Cliffs, New Jersey: Prentice Hall, Inc.
Lapiner, Alan C. (1968). *Art of Ancient Peru*. New York: Arts of the Four Quarters, Ltd.
Lau, George F. (2019). "An Inka Offering at Yayno (North Highlands, Peru). Objects, Subjects and Gifts in the Ancient Andes." In: *Cambridge Archaeological Journal* 29, pp. 159–179.
Laurencich Minelli, Laura (1996). *La Scrittura dell'Antico Perù. Un Mondo da Scoprire*. Vol. 5. Biblioteca di Scienze Umane. Bologna, Italy: Club Lexis.
Lehmann, Walter and Heinrich Doering (1924). *The Art of Old Peru*. London: Ernest Benn.
Leonard, Molly and Cheri Chakiban (2010). "The Incan Abacus. A Curious Counting Device." In: *Journal of Mathematics and Culture* 5.2, pp. 81–106.
LeVine, Terry Y., ed. (1992). *Inka Storage Systems*. Norman: University of Oklahoma Press.
Liebscher, Verena (1986). *La Iconografía de los Qeros*. Lima: Herrera Editores.
Ligmond, Katie Elizabeth (2021). "Boxed In. The Connection between Wari Mortuary Complexes and Inka Textiles." In: *Sequitur. We Follow Art*. https://www.bu.edu/sequitur/2021/01/14/boxed-in-the-

connection-between-wari-mortuary-complexes-and-inka-textiles/. Boston University.
Longhena, Maria and Walter Alva (2007). *The Incas and Other Ancient Andean Civilizations*. New York: Barnes & Noble, Inc. / White Star s.p.a.
Lothrop, Samuel K., William F. Foshag, and Joy Mahler (1959 [1957]). *Robert Woods Bliss Collection. Pre-Columbian Art*. New York: Phaidon Publishers, Inc.
MAAM (Museo de Arqueología de Alta Montaña, Ciudad de Salta, Argentina) (2021a). https://maam.gob.ar/.
———— (2021b). "Aríbalo [Storage Jar]; Colección Reina del Cerro." https://maam.gob.ar/colecciones/coleccion-llullaillaco.
———— (2021c). "Unqu; Colección Reina del Cerro." https://maam.gob.ar/colecciones/coleccion-reina-del-cerro.
MacCormack, Sabine (2001). "Cuzco, another Rome?" In: *Empires. Perspectives from Archaeology and History*. Ed. by Susan E. Alcock et al. Cambridge: Cambridge University Press, pp. 419–435.
Makowski, Krsyztof (2001). "Los Personajes Frontales de Báculos en la Iconografía Tiahuanaco y Huari: ¿Tema o Convención?" In: *Huari y Tiwanaku. Modelo vs. Evidencias. Segunda Parte*. Ed. by Peter Kaulicke and William H. Isbell. Vol. 5. Boletín de Arqueología. Lima: Pontificia Universidad Católica de Perú, pp. 337–373.
Manrique P., Elba (1999). "Tecnología Textil en el Perú / Textile Technology in Peru." In: *Tejidos Milenarios del Perú / Ancient Peruvian Textile*. Ed. by José Antonio de Lavalle and Rosario de Lavalle de Cárdenas. Colección APU. Lima: Integra AFP, Wiese Ætna, Compañía de Seguros, pp. 29–75.
Markham, Clements (1969 [1910]). *The Incas of Peru*. Reprinted from the edition of 1910 (London). New York: AMS Press.
Martell, Hazel Mary (1999). *Civilizations of Peru before 1535*. Austin, TX: RainTree Steck-Vaughn Publishers.
McEwan, Gordon F. (2005). "Conclusion. The Functions of Pikillacta." In: *Pikillacta. The Wari Empire in Cuzco*. Ed. by Gordon F. McEwan. Iowa City: University of Iowa Press, pp. 147–165.
———— (2006). *The Incas. New Perspectives*. Santa Barbara, CA: ABC (Understanding Ancient Civilizations)—CLIO.
Mead, George Herbert (1934). "Mind, Self, and Society." In: *Mind, Self, and Society*. Ed. by Charles W. Morris. Chicago: University of Chicago Press.
Medrano, Manuel and Gary Urton (2018). "Toward the Decipherment of a Set of mid-Colonial Khipus from the Santa Valley, Coastal Peru." In: *Ethnohistory* 65.1, pp. 1–23.
Meisch, Lynn A. (2006). "Messages from the Past. An Unbroken Inca Weaving Tradition in Northern Peru." In: *Textile Narratives & Conversions. Proceedings of the 10th Biennial Symposium of the Textile Society of Amer-*

ica, October 11–14, Toronto, Ontario. https://digitalcommons.unl.edu/tsaconf/345, pp. 380–389.
Melka, Tomi S. (2008). "Structural Observations regarding *Rongorongo* Tablet 'Keiti'." In: *Cryptologia* 32.2, pp. 155–179.
———— (2010a). "Script or non-Script? On *t'oqapu* Patterns in Inka Textiles and Other Media." Typescript in the collection of the author.
———— (2010b). "The Moche Lima Beans Recording System, Revisited." In: *Electronic Journal of Folklore* 45, pp. 89–136.
Melka, Tomi S. and Robert M. Schoch (2020). "Exploring a Mysterious Tablet from Easter Island. The Issues of Authenticity and Falsifiability in *rongorongo* Studies." In: *Cryptologia* 44.6, pp. 481–544.
———— (2021). "*T'oqapu* Patterns on Inqa Textiles and Other Media. Do They Constitute a Writing System?" In: *Presentation at the AWLL*. http://facultysgs.tama.ac.jp/terry/awll/WS/13/2021-ProgrammeAbstracts.pdf.
Menzel, Dorothy (1964). "Style and Time in the Middle Horizon." In: *Ñawpa Pacha* 2, pp. 1–106.
Métraux, Alfred (1963). "Les Primitifs. Signaux et Symboles. Pictogrammes et Protoécriture." In: *L'écriture et la psychologie des peuples*. Ed. by Marcel Cohen et al. Paris: Armand Colin, pp. 9–19.
Meyer, Élise et al. (2006). "A Computerized Solution for Epigraphic Surveys of Egyptian Temples." In: *Journal of Archaeological Science* 33, pp. 1605–1616.
Mignolo, Walter D. (1994). "Signs and their Transmission. The Question of the Book in the New World." In: *Writing without Words. Alternative Literacies in Mesoamerica and the Andes*. Ed. by Elizabeth Hill Boone and Walter D. Mignolo. Durham, NC: Duke University Press, pp. 220–270.
Mills, Kenneth and Williams A. Taylor (1998). "The Inka's Tunics." In: *Colonial Spanish America. A Documentary History*. Ed. by Kenneth Mills and Williams A. Taylor. London / Boulder / New York / Toronto / Oxford: SR Books, pp. 14–18.
Mitchell, William P. and David Guillet, eds. (1994). *Irrigation at High Altitudes. The Social Organization of Water Control Systems in the Andes*. Vol. 12. Society for Latin American Anthropology Publication Series. Washington, DC: American Anthropological Association.
Mitchell, William P. and Barbara H. Jaye (1996). "Pictographs in the Andes. The Huntington Free Library Quechua Catechism." In: *Latin American Indian Literatures Journal* 12.1, pp. 1–42.
Montell, Gösta (1929). *Dress and Ornaments in Ancient Peru. Archaeological and Historical Studies*. Göteborg: Elanders Boktryckeri Aktiebolag.
Morris, Craig and Adriana Von Hagen (1993). *The Inca Empire and Its Andean Origins*. New York: Abbeville Press.
Murra, John V. (1991 [1962]). "Cloth and its Function in the Inka State." In: *Cloth and Human Experience*. Ed. by Annette B. Weiner and Jane

Schneider. Smithsonian Series in Ethnographic Inquiry. Washington and London: Smithsonian Institution Press, pp. 275–302.
Murúa, (Fray) Martín de (1962–1964 [1616]). *Historia General del Perú. Origen y descendencia de los Incas*. Madrid: Bibliotheca Americana Vetus.
Musée National du Moyen Âge (MNMA) (2009). "Tapestries, Clothes, Embroidery. La Dame à la Licorne." http://www.musee-moyenage.fr/ang/pages/page_id18368_u1l2.htm.
Museo Arqueológico de Cuzco (Museo Inka) (2010). *The Museum is a trustee of the* Universidad Nacional de San Antonio Abad del Cusco *(UNSAAC)*. http://www.unsaac.edu.pe.
Museo Chileno de Arte Precolombino (2021). "Botella aríbalo. Horizonte Inka. Período Tardío, 1470–1532 d.C." http://precolombino.cl/coleccion/botella-aribalo/.
Museo Larco (2022a). "Huari Funerary Bundle." Room 10, Vitrine 130. Human remains and textiles. Highlands of southern Perú, inventory no. ML800001 https://www.museolarco.org/en/exhibition/permanent-exhibition/.
———— (2022b). "Huari Funerary Bundle (lateral view)." Room 10, Vitrine 130. Human remains and textiles. Highlands of southern Perú; inventory no. ML800001 https://www.museolarco.org/catalogo/ficha.php?id=44102.
Naville, René (1966). "Une écriture andine." In: *Bulletin de la Société Suisse des Américanistes* 30, pp. 43–48.
Niles, Susan A. (1992). "Inca Architecture and the Sacred Landscape." In: *The Ancient Americas. Art from Sacred Landscapes*. Ed. by Richard F. Townsend. Chicago / Munich: The Art Institute of Chicago / Prestel, pp. 347–357.
———— (1999). *The Shape of Inca History. Narrative and Architecture in an Andean Empire*. Iowa City: University of Iowa Press.
Niu, Gabrielle (2011). "Penn Museum Blog—Bale No. 26626." https://www.penn.museum/blog/museum/mummy-of-the-month-pachamac-mummy-bale-no-26626/attachment/bale_peru/.
Nordenskiöld, Erland (1928). *Picture-writings and other Documents by Néle, Paramount Chief of the Cuna Indians and Ruben Pérez Kantule, his Secretary*. Vol. 7. Comparative Ethnographical Studies. Göteborg: Elanders Boktryckeri Aktiebolag.
Oakland, Amy (2012). "A Wari Tapestry Textile in a Tiwanaku Tomb from the Osmore Valley, Moquegua, Peru." In: *Textile Society of America Symposium Proceedings, 719. 13th Biennial Symposium. September 19–22, 2012*. Washington, DC: University of Nebraska, pp. 1–10.
Oakland Rodman, Amy and Vicki Cassman (1995). "Andean Tapestry. Structure Informs the Surface." In: *Art Journal* 54.2, pp. 33–39.
Oakland Rodman, Amy and Arabel Fernández (2000). "Los Tejidos Huari y Tiwanaku. Comparaciones y Contextos." In: *Huari y Tiwanaku. Modelo vs. Evidencias. Primera Parte*. Ed. by Peter Kaulicke and

William H. Isbell. Vol. 4. Boletín de Arqueología. Lima: Pontificia Universidad Católica de Perú, pp. 119–130.
Ochatoma Paravicino, José and Martha Cabrera Romero (2000). "Arquitectura y Áreas de Actividad en Conchopata." In: *Huari y Tiwanaku. Modelo vs. Evidencias. Primera Parte*. Ed. by Peter Kaulicke and William H. Isbell. Vol. 4. Boletín de Arqueología. Lima: Pontificia Universidad Católica de Perú, pp. 449–488.
Olivier, Jean Pierre, Louis Godart, and Jean-Claude Poursat (1996). *Corpus Hieroglyphicarum Inscriptionum Cretae (CHIC)*. Vol. 31. Études Crétoises. Paris: De Boccard.
Ossio Acuña, Juan M. (2008). *En Busca del Orden Perdido. La Idea de la Historia en Felipe Guaman Poma de Ayala*. Lima: Pontificia Universidad Católica del Perú.
Owen, Bruce D. and Paul S. Goldstein (2001). "Tiwanaku en Moquegua. Interacciones Regionales y Colapso." In: *Huari y Tiwanaku. Modelo vs. Evidencias. Primera Parte*. Ed. by Peter Kaulicke and William H. Isbell. Vol. 5. Boletín de Arqueología. Lima: Pontificia Universidad Católica de Perú, pp. 169–188.
Pärssinnen, Martii (1992). *Tawantisuyu. The Inka State and its Political Organization*. Helsinki: Societas Historica Finlandiae.
Pasztory, Esther (1990–1991). "Still Invisible. The Problem of the Aesthetics of Abstraction for Pre-Columbian Art and Its Implications for Other Cultures." In: *Res. Anthropology and Aesthetics* 19–20, pp. 104–136.
———— (1998). *Pre-Columbian Art*. Cambridge, UK: Cambridge University Press.
———— (2010). "Inka Cubism. Reflections on Andean Art." `http://www.columbia.edu/~ep9/Inka-Cubism.pdf`.
Paternosto, César (1996 [1989]). *The Stone and the Thread. Andean Roots of Abstract Art*. Trans. by Esther Allen. Austin, TX: University of Texas Press.
———— (2001). "Abstraction. The Amerindian Paradigm." In: *Abstraction. The Amerindian Paradigm*. Brussels: The Société des Expositions du Palais des Beaux-Arts de Bruxelles / Vereniging voor Tentoonstellingen van het Paleis voor Schone Kunsten Brussel in association with IVAM Institut Valencià d'Art Modern, pp. 11–113.
Paul, Anne (1992). "Paracas Necrópolis Textiles. Symbolic Visions of Coastal Peru." In: *The Ancient Americas. Art from Sacred Landscapes*. Ed. by Richard F. Townsend. Chicago / Munich: The Art Institute of Chicago / Prestel, pp. 279–291.
———— (2004). "Symmetry Schemes on Paracas Necrópolis Textiles." In: *Embedded Symmetries. Natural and Cultural*. Ed. by Dorothy K. Washburn. Albuquerque: University of New Mexico Press. Published in cooperation with the Amerind Foundation, pp. 58–80.
Payne, Ann (1987). "Medieval Heraldry." In: *Age of Chivalry. Art in Plantagenet England, 1200–1400*. Ed. by Jonathan Alexander and Paul Binski.

London: Royal Academy of Arts; Catalogue published in association with Weidenfeld and Nicolson, pp. 55–59.

Petit Palais. Musée des Beaux-Arts de la Ville de Paris (2006). *Peru. Art from the Chavín to the Incas*. Paris: Paris Musées / Skira.

Phipps, Elena, Johanna Hecht, and Cristina Martín, eds. (2004). *The Colonial Andes. Tapestries and Silverwork, 1530–1830*. New York / New Haven and London: The Metropolitan Museum of Art / Yale University Press.

Phipps, Elena J. (1996). "Textiles as Cultural Memory. Andean Garments in the Colonial Period." In: *Converging Cultures. Art and Identity in Spanish America*. Ed. by Diana Fane. New York: The Brooklyn Museum in Association with Harry N. Abrams, Inc. Publishers, pp. 144–157.

———— (2004). "Cumbi to Tapestry. Collection, Innovation, and Transformation of the Colonial Andean Tapestry Tradition." In: *The Colonial Andes. Tapestries and Silverwork, 1530–1830*. Ed. by Elena Phipps, Johanna Hecht, and Cristina Martín. New York / New Haven and London: The Metropolitan Museum of Art / Yale University Press, pp. 72–100.

———— (2005). "Rasgos de Nobleza. Los *Uncus* Virreinales y sus Modelos Incaicos." In: *Los Incas, Reyes de Perú*. Ed. by Thomas Cummins et al. Colección Arte y Tesoros del Perú. Lima: Banco de Crédito de Perú, pp. 66–91.

———— (2009). "Garcilaso and the *Uncu*. Observations on Dress and Identity among the Inca." In: *Review. Literature and Arts of the Americas* 42.2, pp. 236–245.

———— (2018). "Garments, Tocapu, Status, and Identity. Inca and Colonial Perspectives." In: *The Oxford Handbook of the Incas*. Ed. by Sonia Alconini Mújica and R. Alan Covey. Oxford Academic, pp. 1–22.

Pillsbury, Joanne (2002). "Inka Unku. Strategy and Design in Colonial Peru." In: *Cleveland Studies in the History of Art* 7. Cleveland: Cleveland Museum of Art, pp. 68–103.

———— (2006). "Inca-Colonial Tunics. A Case Study of the Bandelier Set." In: *Andean Textile Traditions. Papers from the 2001 Mayer Center Symposium at the Denver Art Museum*. Ed. by Margaret Young-Sánchez and Fronia W. Simpson. Denver, Colorado: Denver Art Museum, pp. 120–168.

Pino Matos, José Luis (2004). "El *Ushnu* Inka y la Organización del Espacio en los Principales *Tampus* de los *Wamani* de la Sierra Central del Chinchaysuyu [*The* Inka Ushnu *and the Spacial Organization Among the Principal* Tampus *of the* Wamani *in the Central* Sierra *of the Chinchaysuyu*]." In: *Chungará, Revista de Antropología Chilena* 36.2, pp. 303–311.

Platt, Tristan (1978). "Symétries en Miroir. Le concept de Yanantin chez les Macha de Bolivie." In: *Annales: Économies, Sociétés, Civilisations* 33.5–6, pp. 1081–1107.

Poma de Ayala, Felipe Guaman (1980 [1615]). *Nueva Corónica y Buen Gobierno.* Transcripción, Prólogo, Notas y Cronología. Franklin Pease. Caracas (Venezuela): Biblioteca Ayacucho.

Poundstone, William (1988). *Labyrinths of Reason. Paradox, Puzzles, and the Frailty of Knowledge*. New York: Anchor Press, Doubleday.

Powell, Barry B. (2009). *Writing. Theory and History of the Technology of Civilization*. Chichester, UK / Malden, MA: John Wiley & Sons - Blackwell Publishing.

Prem, Dhavit (2016). *Yupana Inka. Decodificando la Matemática Inka (Método Tawa Pukllay)*. Lima: Asociación Yupanki.

Prieto-Olavarría, Cristina and Vanina Tobar (2017). "Interacciones y Lenguajes Visuales en la Cerámica Local de los Períodos Inca y Colonial (Centro Oeste Argentino) [Interactions and Visual Languages in Local Pottery of Inca and Colonial Periods (West-Central Argentina)]." In: *Estudios Atacameños* 55. Instituto de Investigaciones Arqueológicas y Museo, Universidad Católica del Norte, pp. 135–162.

Protzen, Jean Pierre (2018). "The Development and Variation of Inca Architecture (Chapter 6.3)." In: *The Oxford Handbook of the Incas*. Ed. by Sonia Alconini Mújica and R. Alan Covey. New York: Oxford University Press, pp. 623–644.

Prümmers, Heiko (2000). "'El Castillo' de Huarmey. Una Plataforma Funeraria del Horizonte Medio." In: *Huari y Tiwanaku. Modelo vs. Evidencias. Primera Parte*. Ed. by Peter Kaulicke and William H. Isbell. Vol. 4. Boletín de Arqueología. Lima: Pontificia Universidad Católica de Perú, pp. 289–312.

Quispe-Agnoli, Rocío (2002). "Escritura Alfabética y Literalidades Amerindias. Fundamentos para una Historiografía Colonial Andina." http://www.revistandina.perucultural.org.pe/textos.amerindias.doc.

———— (2005). "Cuando Occidente y los Andes se Encuentran. Qellqay, Escritura Alfabética, y Tokhapu en el Siglo XVI." In: *Colonial Latin American Review* 14.2, pp. 263–298.

———— (2006). *La Fe Andina en la Escritura. Resistencia e Identidad en la Obra de Guamán Poma de Ayala*. Series Coediciones. Lima: Fondo Editorial Universidad Nacional Mayor San Marcos.

Ramirez, Susan Elizabeth (2005). *To Feed and Be Fed. The Cosmological Bases of Authority and Identity in the Andes*. Quoted in Finley Hughes 2010. Stanford, CA: Stanford University Press.

Ramos Cárdenas, Gabriela (2005). "Los Símbolos de Poder Inca durante el Virreinato." In: *Los Incas, Reyes de Perú*. Ed. by Thomas Cummins et al. Arte y Tesoros del Perú. Lima: Banco de Crédito de Perú, pp. 43–65.

Regalado de Hurtado, Liliana (2000). "The Andean View of the Universe." In: *Ancient Peruvian World. An Interdisciplinary View*. Ed. by Facultad de Letras y Ciencias Humanas, Pontificia Universidad Católica de Perú. Lima: Fredy's Publicaciones y Servicios E.I.R.L, pp. 67–71.

Rehl, Jane W. (2006). "Weaving Principles for Life. Discontinuous Warp and Weft Textiles of Ancient Peru." In: *Andean Textile Traditions. Papers from the 2001 Mayer Center Symposium at the Denver Art Museum*. Ed. by Margaret Young-Sánchez and Fronia W. Simpson. Denver, CO: Denver Art Museum, pp. 13–42.

Reid, James W. (1986). *Textile Masterpieces of Ancient Peru*. With 77 Illustrations in Full Color. New York: Dover Publications, Inc.

Reinhard, Johan (2016). "Frozen Mummies in Andes. Human Sacrifices in the Sacred Landscape of the Inca." In: *Expedition Magazine* 58.2, pp. 7–12.

Reiss, Wilhelm and Alphons Stübel (1880–1887). *The Necropolis of Ancón in Peru. A Contribution to Our Knowledge of the Culture and Industries of the Empire of the Inkas*. Trans. by A. H. Keane. 3 vols. Quoted in Taullard 1949 and Hoffman 2017. Berlin: A. Asher & Co.

Robinson, Andrew (2009). *Writing and Script. A Very Short Introduction*. New York: Oxford University Press.

Rogers, Henry (2005). *Writing Systems. A Linguistic Approach*. Oxford, UK: Blackwell Publishing.

Rojas y Silva, David de (1981). "Los Tocapu. Un Programa de Interpretación." In: *Arte y Arqueología* (Revista del Instituto de Estudios Bolivianos; Academia Nacional de Ciencias de Bolivia, La Paz) 7, pp. 119–132.

Rostworowski, María (2007). "Estructuras Andinas del Poder. Ideología Religiosa y Política." In: *Obras Completas de María Rostworowski*. Vol. VII. Lima: IEP, Instituto de Estudios Peruanos.

Rostworowski de Diez Canseco, María (1998). "Prólogo." In: *El Tejido Andino. Un Libro de Sabiduría de Gail P. Silverman*. Trans. by Javier Flores Espinoza and Mariana Pease Mould. Lima: Banco Central de Reserva del Perú, Fondo Editorial, pp. 15–20.

Roussakis, Vuka and Lucy Salazar (1999). "Tejidos y Tejedores del Tahuantinsuyo." In: Arte y Tesoros del Perú. Lima: Banco de Crédito del Perú, pp. 263–297.

Routledge, Katherine (1919). *The Mystery of Easter Island. The Story of an Expedition*. London and Aylesbury: Hazell, Watson and Viney, LD.

Rowe, Ann Pollard (1978). "Technical Features of Inca Tapestry Tunics." In: *The Textile Museum Journal* 17, pp. 5–28.

———— (1995–1996). "Inca Weaving and Costume." In: *The Textile Museum Journal* 34–35, pp. 3–52.

———— (1996). "Pile Hat with Large Diamonds." In: *Andean Art at Dumbarton Oaks*. Ed. by Elizabeth Hill Boone. Vol. 2. Washington, DC: Dumbarton Oaks Research Library and Collection, p. 410.

Rowe, Ann Pollard and John Howland Rowe (1996). "Inca Tunics." In: *Andean Art at Dumbarton Oaks*. Ed. by Elizabeth Hill Boone. Vol. 2. Washington, DC: Dumbarton Oaks Research Library and Collection, pp. 453–465.

Rowe, John Howland (1965). "An Interpretation of Radiocarbon Measurements on Archaeological Samples from Peru." In: *Proceedings of the Sixth International Conference, Radiocarbon and Tritium Dating, held at State University, Pullman, Washington, June 7–11, 1965*, pp. 187–198.

———— (1967). "Form and Meaning in Chavin Art." In: *Peruvian Archaeology. Selected Readings*. Ed. by John Howland Rowe and Dorothy Menzel. Palo Alto: Peek Publications, pp. 72–103.

———— (1981). "Una Relación de los Adoratorios del Antiguo Cuzco." In: *Histórica* 2, pp. 209–261.

———— (1999 [1979]). "Standardization in Inca Tapestry Tunics." In: *Tejidos Milenarios del Perú / Ancient Peruvian Textile*. Ed. by José Antonio de Lavalle and Rosario de Lavalle de Cárdenas. Colección APU. Originally published in *The Junius B. Bird Pre-Columbian Textile Conference*. Ed. by Ann Pollard Rowe, Elizabeth P. Benson and Anne Louise Schaffer. DC. The Textile Museum and Dumbarton Oaks, pp. 239–264. Lima: Integra AFP, Wiese Ætna, Compañía de Seguros, pp. 571–629.

Ruiz, Marta (2002). "Unkus, Caminos y Encuentros." In: *Revista Andina* 34, pp. 199–215.

Salcedo, Jaime Salcedo (2007). *Los Jeroglíficos Incas. Introducción a un Método para Descifrar Tocapus-Quillca*. Vol. 14. Colección sin Condición. S. F. de Bogotá: Facultad de Artes, Universidad Nacional de Colombia.

Salomon, Frank (2004). *The Cord Keepers. Khipus and Cultural Life in a Peruvian Village*. Latin America Otherwise. Languages, Empires, Nations. Durham and London: Duke University Press.

Sampson, Geoffrey (1985). *Writing Systems. A Linguistic Introduction*. Stanford, CA: Stanford University Press.

Sassoon, Rosemary and Albertine Gaur (1997). *Signs, Symbols and Icons. Pre-History to Computer Age*. Exeter: Intellect.

Sawyer, Alan (1963). *Tiahuanaco Tapestry Design*. Vol. 3. Museum of Primitive Art Studies. New York: Museum of Primitive Art.

———— (1979). "Painted Nasca Textiles." In: *The Junius B. Bird Pre-Columbian Textile Conference. May 19th and 20th, 1973*. Ed. by Ann Pollard Rowe, Elizabeth P. Benson, and Anne-Louise Schaffer. Washington, DC: The Textile Museum & Dumbarton Oaks, Trustees for Harvard University, pp. 128–150.

Schobinger, Juan (1999). "Los Santuarios de Altura Incaicos y el Aconcagua. Aspectos Generales e Interpretativos." In: *Relaciones de la Sociedad Argentina de Antropología* 24, pp. 7–27.

Schreiber, Katharina (2001). "The Wari Empire of Middle Horizon Peru. The Epistemological Challenge of Documenting an Empire without Documentary Evidence." In: *Empires. Perspectives from Archaeology and History*. Ed. by Susan E. Alcock et al. Cambridge: Cambridge University Press, pp. 70–92.

Schürmann, Jürgen (1996). *Pattern Classification. A Unified View of Statistical and Neural Approaches*. New York: John Wiley & Sons, Inc.

Severi, Carlo (2019). "Their Way of Memorizing. Mesoamerican Writings and Native American Picture-writings." In: *Res. Anthropology and Aesthetics* 71, pp. 312–324.

Shanes, Eric (2005). *Andy Warhol*. Rochester, Kent: Grange Books.

Shannon, Claude (1948). "A Mathematical Theory of Communication." In: *Bell System Technical Journal* 27, pp. 379–423, 623–656.

Shaw, Gary (2019). "Meet the Mummies—Cultural Ambassadors from Beyond the Grave." In: *Apollo. The International Art Magazine*. https://www.apollo-magazine.com/mummies-secrets-life/.

Sherbondy, Jeanette (1998). "Andean Irrigation in History." In: *Searching for Equity. Conceptions of Justice and Equity in Peasant Irrigation*. Ed. by R. Boelens and G. Dávila. Assen, NetherLands: Van Gorcum, pp. 210–214.

Shiff, Richard (2004). "To Create Oneself." In: *Barnett Newman. A Catalogue Raisonné*. Ed. by Ellyn Childs Allison. New York / New Haven and London: Yale University Press / The Barnett Newman Foundation, pp. 2–116.

Silverman, Gail (1998). *El Tejido Andino. Un Libro de Sabiduría*. Trans. by Javier Flores Espinoza and Mariana Pease Mould. 2nd ed. Lima: Banco Central de Reserva del Perú, Fondo Editorial.

——— (1999). "Iconografía Textil de Cusco y su Relación con los Tocapu Inca [Textile Iconography from Cusco and its Relation to Inka T'oqapu]." In: *Tejidos Milenarios del Perú [Ancient Peruvian Textile]*. Ed. by José Antonio de Lavalle and Rosario de Lavalle de Cárdenas. Colección APU. Lima: Integra AFP, Wiese Ætna, Compañía de Seguros, pp. 803–837.

——— (2011). "La Escritura Inca. La Representación Geométrica del Quechua Precolombino." In: *Ex novo. Revista d'Història i Humanitats* 7, pp. 37–49.

Silverman, Helaine and William H. Isbell, eds. (2008). *Handbook of South American Archaeology*. New York: Springer.

Socha, Dagmara M., Johan Reinhard, and Ruddy Chávez Perea (2021). "Inca Human Sacrifices from the Ampato and Pichu Pichu Volcanoes, Peru. New Results from a Bio-anthropological Analysis." In: *Archaeological and Anthropological Sciences* 13, pp. 1–14.

Solanilla i Demestre, Victòria (1999). *Tèxtils Precolombins de Colleccions Públiques Catalanes. Corpus Antiquitatum Americanensium, Union Académique Internationale*. Barcelona: Institut d'Estudis Catalans.

Sproat, Richard W. (2000). *A Computational Theory of Writing Systems*. Cambridge: Cambridge University Press.

——— (2013). "Corpora and Statistical Analysis of Non-Linguistic Symbol Systems." http://rws.xoba.com/monograph.pdf.

Spurling, Geoffrey (1992). "The Organization of Craft Production in the Inca State. The Potters and Weavers of Milliraya." Quoted in Phipps 2018. PhD thesis. Department of Anthropology, Cornell University.

Squier, Ephraim George (1877). *Peru. Incidents of Travel and Exploration in the Land of the Incas*. Quoted in Paternosto 1996 [1989] and Hogue 2006. New York: Harper.

Stagnaro, Giancarlo (2005). "Lecturas. Los Tocapus Incas. Identidades." Suplemento del Diario Oficial *El Peruano*, http://www.editoraperu.com.pe/identidades/87/lecturas.asp.

Steele, Paul J. and Catherine J. Allen (2004). *Handbook of Inca Mythology*. Handbooks of World Mythology. Santa Barbara, CA / Denver, CO / Oxford, UK: ABC–CLIO.

Stierlin, Henri (1984). *Art of the Incas and its Origins*. Trans. by Betty and Peter Ross. New York: Rizzoli International Publications, Inc.

Stone, Rebecca Rollins (1989 [1987]). "Technique and Form in Huari-style Tapestry Tunics. The Andean Artist, AD 500–800." PhD thesis. Yale University.

———— (2007). "'And All Theirs Different from His'. The Dumbarton Oaks Royal Inka Tunic in Context." In: *Variations in the Expression of Inka Power. A Symposium at Dumbarton Oaks, 18 and 19 October 1997*. Ed. by Richard L. Burger, Craig Morris, and Ramiro Matos Mendieta. Washington, DC: Dumbarton Oaks Research Library and Collection, pp. 385–422.

Stone-Miller, Rebecca (1992). "Camelids and Chaos in Huari and Tiwanaku Textiles." In: *The Ancient Americas. Art from Sacred Landscapes*. Ed. by Richard F. Townsend. Chicago / Munich: The Art Institute of Chicago / Prestel, pp. 335–345.

———— (1994a). "III. Creative Abstractions. Middle Horizon Textiles in the Museum of Fine Arts, Boston." In: *To Weave for the Sun. Ancient Andean Textiles in the Museum of Fine Arts, Boston*. Ed. by Rebecca Stone-Miller. London: Thames & Hudson, Inc, pp. 34–42.

———— (1994b). "To Weave for the Sun. An Introduction to the Fiber Arts of the Ancient Andes." In: *To Weave for the Sun. Ancient Andean Textiles in the Museum of Fine Arts, Boston*. Ed. by Rebecca Stone-Miller. London: Thames & Hudson, Inc, pp. 11–24.

———— ed. (1994c). *To Weave for the Sun. Ancient Andean Textiles in the Museum of Fine Arts*. London: Thames & Hudson, Inc.

———— ed. (2002 [1995]). *Art of the Andes. From Chavín to Inca*. 2nd ed. New York: Thames & Hudson.

Taullard, Alfredo (1949). *Tejidos y Ponchos Indígenas de Sudamérica*. Buenos Aires: Editorial Guillermo Kraft Limitada.

The Field Museum (2010). "Cloth Tunic, Inca (AD 1400–1532), Lima Region, Perú." http://www.fieldmuseum.org/ and http://0.tqn.com/d/archaeology/1/0/Z/l/AA14_Inca_Textile.jpg.

The Metropolitan Museum of Art (New York) (2000–2021a). "Inca Kero 15th–early 16th century." https://www.metmuseum.org/art/collection/search/317791.

The Metropolitan Museum of Art (New York) (2000–2010). "Man's Tunic (*Unku*) [Inka]." Heilbrunn Timeline of Art History, http://www.metmuseum.orgtoah/works-of-art/1982.365.

———— (2000–2021b). "Moche-Wari Tunic 7th–9th century." https://www.metmuseum.org/art/collection/search/315786.

———— (2022). "An Inka tapestry weave tunic with the "key" motif, ca. 1460–1534. *The Andean Tunic, 400 BCE–1800 CE. At The Met Fifth Avenue, March 7–October 16, 2011.*" https://www.metmuseum.org/exhibitions/listings/2011/the-andean-tunic-400-bce1800-ce.

The Ohio State University (osu) (2015). "Chicha—An Andean Identity. The History and Meaning." https://www.u.osu.edu/chicha/sample-page/.

The Textile Museum (Washington, DC) (2010). "Man's Tunic, Inca style, Perú, Late Horizon, 1480–1534 AD." The Textile Museum 91.147 http://www.textilemuseum.com/AheadofHisTime/timeline3.html.

Thomas, David Hurst (1999). *Archaeology. Down to Earth*. Fort Worth: Harcourt Brace College Publishers.

Thompson, Deborah (1971). *Coptic Textiles in the Brooklyn Museum*. Wilbour Monographs II. Brooklyn, New York: The Brooklyn Museum.

Topic, John R. (1991). "Huari and Huamachuco." In: *Huari Administrative Structure. Prehistoric Monumental Architecture and State Government*. Ed. by William H. Isbell and Gordon McEwan. Washington, DC: Dumbarton Oaks Research Library, pp. 141–164.

Totten, Norman (1985). "Documentary Evidence from Writing in the Pre-Inca Andes." In: *The Epigraphic Society Occasional Publications* 13.321, pp. 63–66.

Trever, Lisa (2011). "Idols, Mountains, and Metaphysics in Guaman Poma's Pictures of *Huacas*." In: *Res. Anthropology and Aesthetics* 59–60, pp. 39–59.

Tuchscherer, Jean-Michel (1988). "Mantle." In: *The Museum Year 1987–88: The One Hundred Twelfth Annual Report of the Museum of Fine Arts, Boston*. Boston: MFA, p. 37.

Urton, Gary (1990). *The History of a Myth. Pacariqtambo and the Origin of the Inkas*. Austin: University of Texas Press.

Urton, Gary and Carrie Brezine (2009). "Khipu Database Project." http://khipukamayuq.fas.harvard.edu/.

Vanstan, Ina (1967). *Textiles from beneath the Temple of Pachacamac, Peru. A Part of the Uhle Collection of the University Museum*. Museum Monographs. Philadelphia: The University Museum.

Viau-Courville, Mathieu (2014). "Spatial Configuration in Tiwanaku Art. A Review of Stone Carved Imagery and Staff Gods—Configuración Espacial en el Arte Tiwanaku. Una Revisión de la Imaginería Tallada en Piedra y los Dioses de Báculos." In: *Boletín del Museo Chileno de Arte Precolombino* 19.2, pp. 9–28.

Wallace, Dwight T. (1998). "The Inca Compound at La Centinela, Chincha." In: *Andean Past* 5, pp. 9–33.

Washburn, Dorothy K. (2004). "The Genesis of Realistic and Patterned Representations." In: *Embedded Symmetries. Natural and Cultural*. Ed. by Dorothy K. Washburn. Albuquerque: University of New Mexico Press. Published in cooperation with the Amerind Foundation, pp. 47–57.

Wiener, Charles (1880). *Pérou et Bolivie. Récit de voyage suivi d'études archéologiques et ethnographiques et de notes sur l'écriture et les langues des populations indiennes*. Paris: Librairie Hachette.

Wikimedia.org (2021a). "Stowe Armorial Coat-of-Arms." https://commons.wikimedia.org/wiki/File:Stowe_Armorial.

———— (2021b). "Templo de Iñaq Uyu (o de las Vírgenes), en la Isla de la Luna (o de Koati), Lago Titicaca (Bolivia) / Iñaq Uyu (Virgins Temple), Moon Island (Koati Island), Lake Titicaca, Bolivia." https://commons.wikimedia.org/wiki/File:Isla_de_la_Luna_01.jpg.

———— (2021c). "Ventana del templo de Iñaq Uyu (o de las Vírgenes), en la Isla de la Luna (o de Koati), Lago Titicaca (Bolivia) / A window of the Iñaq Uyu (Virgins Temple), Moon Island (Koati Island), Lake Titicaca, Bolivia." https://commons.wikimedia.org/wiki/File:Isla_de_la_Luna_03.jpg.

Williams, Verónica (2008). "Espacios Conquistados y Símbolos Materiales del Imperio Inca en el Noroeste de Argentina." In: *Lenguajes Visuales de los Incas*. Ed. by Paola González Carvajal and Tamara L. Bray. Vol. 1848. British Archaeological Reports (BAR) International Series. Oxford, London: Archaeopress, pp. 47–71.

Xerez, Francisco López de (1535 [1534]). *Libro primo de la Conquista del Peru & provincia del Cuzco de le Indie occidentali*. Trans. by Domingo de Gaztelu. http://brynmawrcollections.org/home/items/show/8178. Venice: S. da Sabio.

———— (1985 [1534]). "Verdadera Relación de la Conquista del Perú." In: ed. by C. Bravo. Vol. 14. Crónicas de América. Madrid: Historia 16.

Young-Sánchez, Margaret (2004a). "Tapestry Tunic." In: *Tiwanaku. Ancestors of the Inca*. Lincoln, NE: University of Nebraska Press and the Denver Art Museum, pp. 46–49.

———— ed. (2004b). *Tiwanaku. Ancestors of the Inca*. Lincoln, NE: University of Nebraska Press and the Denver Art Museum.

———— (2006). "Four-Part Head Cloths from the Peruvian Central Coast." In: *Andean Textile Traditions. Papers from the 2001 Mayer Center Symposium at the Denver Art Museum*. Ed. by Margaret Young-Sánchez and Fronia W. Simpson. Denver, CO: Denver Art Museum, pp. 77–98.

Ziółkowski, Mariusz S., Jaroslaw Arabas, and Jan Szemiński (2008). "La Historia en los *Queros*. Apuntes acerca de la Relación entre las Representaciones Figurativas y los Signos 'Tocapus'." In: *Lenguajes Vi-*

suales de los Incas. Ed. by Paola González Carvajal and Tamara L. Bray. Vol. 1848. British Archaeological Reports (BAR) International Series. Oxford, London: Archaeopress, pp. 163–176.

Zuidema, R[einer]. Tom (1991). "Guaman Poma and the Art of Empire. Toward an Iconography of Inca Royal Dress." In: *Transatlantic Encounters. Europeans and Andeans in the Sixteenth Century*. Ed. by Kenneth J. Andrien and Rolena Adorno. Berkeley / Los Angeles / Oxford: University of California Press, pp. 151–202.