

WRITING WITHOUT WORDS /  
WORDS WITHOUT WRITING:  
The Culture of the Khipu

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*INCA MYTHS*. By Gary Urton. (Austin: The University of Texas Press, 1999. Pp. 80. \$12.95 paper.)

*NARRATIVE THREADS: ACCOUNTING AND RECOUNTING IN ANDEAN KHIPU*. By Jeffrey Quilter and Gary Urton. (Austin: The University of Texas Press, 2002. Pp. 391. \$45.00 cloth.)

*SIGNS OF THE INKA KHIPU: BINARY CODING IN THE ANDEAN KNOTTED-STRING RECORDS*. By Gary Urton (Austin: The University of Texas Press, 2003. Pp. 216. \$40.00 cloth.)

INTRODUCTION

The *khipu* (knotted string recording device) is one of the most enigmatic and recondite artifacts originating in the Pre-Columbian Andes.<sup>1</sup> Because of its rarity—there are approximately 600 known specimens, mostly Inka, dispersed in museum and private collections and held in community custody or laboratory storage<sup>2</sup>—the khipu remains unfamiliar to the general public. Veritable khipu are, to my knowledge, not available for purchase for the collector nor do local artisans reproduce legitimate khipu for the craft trade in Peru and Bolivia. A glance at the cover photographs of *Signs of the Inka Khipu* and *Inca Myths* (a museum specimen of a khipu and a llama offertory figurine, respectively), illustrates the challenge of reproduction in the one and the relative feasibility of replication in the other. While the style of

1. Khipu technology had developed before the emergence of the Huari (central Peru) and Tiahuanaco (northern Bolivia) societies (600–1000 AD). Khipu are known as Chinu in the Aymara-speaking regions of Bolivia (Platt, in Quilter and Urton 2002).

2. One example of a khipu was exhibited in the Museo del Inca in Cusco, Peru, in 2001. Apart from the archaeological khipu in Urton's count, there are doubtless unidentified and unrecorded khipu in family custody in Peru and Bolivia.

the llama effigy is zoomorphic, the khipu has not been an easily recognizable artifact to the uninitiated. Thus, not until the fundamental studies of L. Leland Locke (1923) and Ascher and Ascher (1978), which examined the structural composition of khipu, did this recording instrument enter into the scholarly discourse of Andean studies, and, by way of *Mathematics of the Incas: Code of the Khipu* (Ascher and Ascher 1997), could the interested reader learn about khipu through instructions for constructing one.<sup>3</sup>

The current reprise of khipu culture is largely based on the monograph of record on the khipu (Urton 2003), in which Urton presents a comprehensive description and analysis of the structure and deployment of this means of registry, and which leads him to posit an advanced theory of Inka practices of computation. Complementing Urton's exegesis, the citations in this essay refer to various aspects of khipu use in Andean society as provided through the multidisciplinary approaches of contributors to Quilter and Urton (2002), and by Urton regarding the role of myth in Andean history (Urton 1999).

#### HOW WERE KHIPU CONSTRUCTED?

*Khipukamayuy* (the keepers of the knotted string recording device) most probably fashioned their own instruments.<sup>4</sup> In fabricating khipu these recording specialists first selected the material prepared for the task: camelid or cotton fibers in their natural hues or dyed with organic ingredients according to a color code. While artisans other than khipukamayuy may have carried out the first two preparatory steps (selection of fibers and the tincture of yarns)<sup>5</sup> the khipu-maker was responsible for the construction process: weaving the primary cord; spinning the yarn in either of two directions (to the right, Z-spun, or to the left, S-spun); plying the strings according to the two directional alternatives, respectfully S-spun/Z-plied and Z-spun/S-plied, and in some cases, replying strings; attaching the spun and plied strings (pendant cords) to the primary cord by either verso or recto placement; knotting the string in three ways with simple, figure eight or long knots; organizing knots in either odd or even numbers; and tying the knots within decimal categories on strings. Recording began at the moment the

3. The Aschers have made their Databooks available on line at: <http://instruct1.cit.cornell.edu/research/quipu-ascher/>.

4. There are chronicle accounts referring to khipu as personal possession of khipukamayuy (Garcilaso Inca de la Vega 1987 [1609]) or as media conveying a message, which was sent to another reader (Philippe Guaman Poma de Ayala 1980, 178).

5. Dyed in the fabric colors: a task carried out by a cadre of specially trained women, as in the case of the aqlla who wove the textile garments worn by the nobility.

kipukamayuq attached the strings to the primary cord and continued during all of the nine construction steps that yield encoded information.<sup>6</sup> The decision-making aspect of khipu construction meant at the outset that the khipukamayuq chose between one of the paired aspects of each feature. These choices entailed a reasoning process, which Urton hypothesizes was based on the concept of ever-present pairs in Andean culture, and, in respect to khipu, a concept we would now term a binary code. Urton represents the readout of any given knot (“knot signature”) as a seven-bit sequence, which is symbolized by a black or white circle depending on which pair constituent is chosen. It is this option of choice by the khipukamayuq that distinguishes Urton’s khipu scholarship because he postulates that the tabulation of constituents of pairs of each feature of extant khipu may reveal patterns of features whose significance, in turn, will lead to decipherment and interpretation of these registries (Urton 2003, 42,120,127-28).

Could there be as yet undiscovered information-carrying units embedded in the khipu, the identification of which would amplify the set of signifying units (physical features) proposed by Urton? The primary cord, for instance, is of continuing interest because it has not yet been thoroughly examined. The primary cord length (generally stubbed at one end and extended on the opposite one) was likely fashioned to facilitate the khipukamayuq’s manipulation of the strings in a seated posture by holding it taut by foot and hand, thereby forming a frame for unfurling khipu and displaying the sign carriers (string and knot) (Conklin, in Quilter and Urton 2002). The yarn-worked appendage at the stubbed end of the primary cord (on some khipu specimens) might have functioned as a tab that indicated the type of information encoded on khipu. For example, on a khipu from Tupicocha (Salomon, in Quilter and Urton 2002) the appendage, called Pachakamanta, could denote either “about the laws” or “from the lieutenant governor.”<sup>7</sup>

According to Garcilaso Inca de la Vega, whose description of khipu features and uses is most widely known, khipu contained information recorded during an annual period (*wata*) (1987, 330), this fact could lead to the conjecture whether khipukamayuq may have “synchronized” their khipu at the moment of the year’s end upon sighting the sun’s solstitial position at designated topographical features or at markers situated on the horizon of their local communities (Cobo 1983, 252). The act of tying (*watay*) in the half-year record at the June and December solstices would have coincided with the great state festivals of Inti Raymi

6. The sequence of nine steps is my version of Urton’s listing and description of khipu sign units.

7. My translation of Pachakamanta.

and Quya Raymi during these months, respectfully.<sup>8</sup> Thus the present task of decoding features of khipu may reveal whether pre-Columbian Andeans had devised indicators for months and years, and if so, how this calendrical system functioned in conjunction with data entries knotted into the registry.

#### HOW IS THE KHIPU DIFFERENT FROM OLD WORLD AND OTHER NEW WORLD WRITING OR NOTATION SYSTEMS?

The complex task of learning how khipu were employed requires understanding a set of factors possibly more numerous than those characteristic of Old World writing systems. The constituents making up khipu function as message carriers, whereas in the cuneiform notation system the clay material, for instance, may not have been intrinsic to the recorder's conveying of a message.

Urton emphasizes that a theory of khipu signs and signing should be developed on the basis of binary decision making, involving choice of fiber, color, strings, and knots in order to advance beyond the already substantive studies of the numerical values encoded on khipu. The challenge of developing a khipu sign theory is evident when compared to the "script-rich" Maya hieroglyphic media in which the decipherment of fundamental sign units (logograph or logosyllable components of glyphs) now includes sign vocabularies which aid the "reading" of texts.

Along with the khipukamayuuq, and perhaps in conjunction with him, the *qillqakamayuuq* (the keeper of the symbol lexicon) specialized in iconography, namely the patterns woven into the background of textiles or painted on ceramic ware or incised onto wood or gourds, which constituted a vocabulary of conventionalized signs (icons) in the form of logograms, as well as numerical logograms. Urton contributes to the debate on the definition of writing in New World societies by claiming that the iconic transmission of information does not constitute an Andean system of writing. Further, the invention of the khipu did not necessitate the invention of a phonological system nor a script in order to produce a communicative medium in the khipu. Scholars attending to the assumption that recorded information on the khipu is semasiographic (non-phonological), or utterance-based, find that the chroniclers' descriptions of khipu structure complicates the search for

8. The Quechua name for the month of June, *Hatun Khushka* (great—meeting of halves [festival]), as recorded by Juan de Betanzos, indicates the meeting of paired seasons at the midpoint of the lunar cycle or full moon. A calendrical division described thus would thus substantiate, on the cosmological level, the concept of duality that Andeanist scholars have generally accepted for describing Andean social organization and cultural practices.

a theory of khipu signs; this occurs namely in the case of Garcilaso where he assigns knots for numbers but not for words (1987, 332).

#### WHAT DO THE PERUVIAN CHRONICLES REVEAL ABOUT THE PRE-COLOMBIAN KHIPU?

Those who wrote accounts of pre-Hispanic Andean society would have, in their times, witnessed khipu manipulation and even interacted with khipukamayuc in judicial settings, storehouse inventories, demarcation of territory, and tribute collection involving the native Andean population. The majority of colonial accounts mention khipu (Urton, in Quilter and Urton 2002), beginning with Hernando Pizarro (1533) and concluding with Bernabé Cobo (1653). While modern scholars recognize that chroniclers wrote for a Spanish-speaking readership, they did not produce accounts in the “ethnographic present” which could serve us as a “primer” on recording and interpreting khipu. That is, they omit any analyses of the seven features (as proposed by Urton) that might have revealed how information was encoded through the knotted strings of the registry.

Garcilaso, who claimed to have deciphered khipu, described three of its features (color, number, and knot types). Felipe Guaman Poma de Ayala, on the other hand, who may be the only khipukamayuc of hereditary office among the chroniclers, did not describe any of the khipu’s features nor how it was manipulated. Despite Garcilaso’s declaration that he “read” khipu and Antonio de la Calancha’s witness knowledge of khipu—Garcilaso’s and Calancha’s chronicles both state, for instance, the set of “primary” yarn colors (red, yellow, black, white) and the corresponding subject categories (for example, red signifying the Inka monarch)—neither account discloses the parity principle that is inherent in the scheme of color blending, an important feature for the substantiation of binary decoding of khipu, which Urton examines in yarn dyeing for textile production in highland Bolivian communities.

While Garcilaso recognized the feature of decimal organization of numbers in khipu, Guaman Poma in *El primer corónica y buen gobierno* (1615) only alludes to the function of the decimal system in khipu. Because Garcilaso was familiar with accounting khipu as administrator of tribute payments from his father’s Crown land grant (*encomienda*), he presents a taxonomy of grains and legumes of European origin whose Andean counterparts would be countable items in a tribute list. For example, he describes the knotting of these items in hierarchical order on a string where quantity is represented by the knot’s location in a decimal category. (We do not know at present how to recognize the subject matter of countable items in extant khipu, that is, for example, whether they were cereals or fleece products.) In contrast, Guaman Poma states the duties of two offices of khipukamayuc tribute collectors (*hatun*

*hucha quipoc* and *huchuy hucha quipoc*—[recorders of major infractions and recorders of minor infractions respectively]) without listing the type of items they would have collected. Nevertheless, he provides the most complete description of the decimal system that the tribute collectors would have employed for accounting.<sup>9</sup> Guaman Poma enumerates a series of tribute items by which we can infer that these would have been the types of items encoded (identified and counted) into khipu.

#### WHAT KIND OF INFORMATION WAS RECORDED ON THE KHIPU?

According to Urton's typology, khipukamayuq knotted into their registries two kinds of information: 1) statistical or numerical data, and 2) "anomalous" or memory text (non-numerical) (Urton 2003, 32). The pattern of knots on strings in anomalous khipu varies from that in the numerical decimal-based khipu. But some anomalous khipu have, in addition to statistical notation, knot patterns that have not been identified, and are thus an anomaly compared to the majority of extant khipu, which are numerical. Urton proposes that the alternate knot pattern in anomalous khipu may contain textual content that khipukamayuq decoded in the form of spoken discourse, an act similar to that of "reading out" narrative texts inscribed, for example, in Mayan stone media.

Current research is poised at the cusp of a new era in khipu scholarship—from the present capability of scholars to read numerical, and in some cases categorical, data (annual periods, for example)—to the identification of the discursive paradigms in an indigenous language (primarily Quechua and Aymara) that presumably underlie the interpretation of khipu textual forms.

Given the typology of data entry, Urton envisions that the subject indicators (*señales*) in numerical khipu noted by Garcilaso could indeed pertain to census reports, tribute tallies, war materiel, and the disposition of militia, and as historical and mythical deeds, codes of law, diplomatic correspondence, and the Inka monarch's addresses to his people (in anomalous khipu). However, if we attend to Garcilaso's description of these "subjects," he states unequivocally that khipukamayuq relied on memory to aid in recall of encoded data. According to Garcilaso's account, it appears that khipukamayuq shared with two types of bards: the *hamawt'a* ("philosophers") and *harawikuq* ("poets") a common discourse committed to memory. That is, the *hamawt'a* disseminated verbally, as public addresses to provincial populations, the same record encoded in khipu. Likewise, the *harawikuq* used the same khipu source

9. To the best of my knowledge, Guaman Poma is the only chronicler who employs Quechua terminology for the decimal categories.

for recitations at ceremonial functions at state festivals.<sup>10</sup> The collaboration between *kipukamayuc* and bards, occurred when bards dictated narrative material to *kipukamayuc*, who then transposed it to *kipu*, or when the bards prompted the memory of *kipukamayuc* as they interpreted narrative coded in *kipu*.<sup>11</sup>

In the debate regarding the role of mnemonics versus linguistic-based encoding (of judicial discourse of a code of law, or of a mythological narration, for example) in the decipherment of *kipu*, Urton tends towards the latter hypothesis. Most of the anomalous *kipu* Urton has examined contain sign units in sets of three knots. He speculates that these knot triads encoded “language” whose constituents could correspond to a subject-object-verb (SOV) syntax. How accurate this hypothesis of sentence-level encoding is depends upon the decipherment of binary coded features on the corpus of extant *kipu*.<sup>12</sup> Because Urton admits the difficulty of pronouncing on *conclusive* evidence in Andean studies, he invites scholars to ponder the merits of his hypotheses (Urton 2003, 102, 133–34). Thus I suggest that regarding Garcilaso’s “subjects” of encoded text, we are beset with the task of interpreting European modes of classification in terms of ethnocategories in the native Andean languages. Namely, the *harawikuq*’s act of addressing the public on an Inka’s heroic deeds, an address presumably encoded on *kipu*, was known as *huqarikuykuna* or “the lifting up (plural)” (of one’s voice)[my translation], a “subject” more akin to a speech act than the sought-for content-defining category. Two factors complicate the identification of ethnocategories (“subjects”) indicated on *kipu*: 1) the variability

10. The pre-Columbian anonymous *kipu* and oral narrations of the bards presumably contained the mythological history of the Inka lineage, which later was incorporated into the chronicles of Spanish and native Andean historians. This history dealt with the “origin myths,” which established Inka supremacy over neighboring ethnicities in the Cusco valley, the founding of Cusco by the initiators of the Inka lineage, Manco Capac and his wife, Mama Huaco and the expansion of conquered territory and its incorporation into the empire by their successors (Urton 1999). Betanzos and Inka Titu Cusi Yupangui remembered dialogues that had taken place between the Inka and his subjects that might well have been renditions of diplomatic correspondence and public addresses, both conveyed through *kipu* and bard. As for the Inka legal code, Betanzos records the lawgiver Inka Pachacuti’s words to his subjects, which Guaman Poma later included in his *Coronica* as an itemized list of the “Hordenazas.” In the colonial era the law code *kipu* were adapted to code Christian moral precepts and employed to record their infractions (Harrison, in Quilter and Urton 2002). In the case of tribute—collection protocols involving native Andean and their *encomenderos*—documentation of legal disputes exist which attest to the adaptation of *kipu* to register numerically species and prices (Platt, in Quilter and Urton 2002).

11. See Calancha on the site of the *kipu* (knots) where memory is recorded (cited in Urton 2003, 122).

12. For a recent critique of Urton’s binary theory see Galen Brokaw, “Toward Deciphering the *Kipu*,” *Journal of Interdisciplinary History* 34 (4):571-89 (Spring).



of names for categories across regions and 2) the variability in SOV sentence order in Quechua spoken discourse. Scholars could question the proposed SOV fixity in khipu as well as the purported existence of the subject on two levels: the subject of an utterance recorded as a knot in a triad on a string, and subject as corresponding to a color feature of, or on, the string.

#### POETRY AND STORIES ON A STRING?

If khipukamayuq had indeed attended to the oral delivery of hamawt'a, or other raconteurs, when they composed the anomalous khipu, then what forms of discourse might they have recorded?

The invocations to Andean deities transcribed by the Spanish friar Cristóbal de Molina and the native Andean historian Joan Santa Cruz Pachacuti constitute the largest corpus of purportedly pre-Hispanic poetic Quechua texts. Urton presents one of Pachacuti's invocations to demonstrate his hypothesis that the ordering principals of markedness and parallelism in poetics are operative in sentence (or verse) structure, which is embedded in the khipu knot signature:

<i>Intiqa</i>	Sun
<i>Killaqa</i>	Moon
<i>P'uncharwqa</i>	Day
<i>Tutaqa</i>	Night
<i>Puquyqa</i>	the season of ripeness
<i>Chirawqa</i>	the season of freshness
<i>Manam yanqachu</i>	do not simply exist
<i>Kamachisqam purin</i>	(but) are ordered. (Urton 2003, 157)

This textual example has been arranged in parallel verses, as couplets, in which six nouns carrying the Quechua topic marker (-qa), correspond to the subjects of each verse. However, at closer scrutiny the "couplet," that ends the text precludes a word used as object (O). This text, thereby, exhibits a subject-verb (SV) syntax, which appears to be at variance with the expected SOV sequence. Could this particular SV configuration conform to the syntax of what may have been a form of ritual verse, and not, therefore, to the SOV order which possibly structured narrative texts in the pre-Hispanic Andes? I note several issues to consider upon answering this question: 1) Due to the idiosyncratic arrangements of Quechua texts by Colonial historians of the Inkas, one can only offer conjectures as to the original nature of the utterance or sentence structure levels of poetic and narrative discourse in the pre-Hispanic Andes. 2) There are other textual examples from Pachacuti or Molina's corpus that could better substantiate Urton's hypothesis. These are the invocations to Wiracocha, or other deities, who, as agents (subject), act as the primary cause, hence requiring a object and verb phrase



on the part of the petitioner, for instance “Kamasqaykita waqaychay (“guard that which you have created”). 3) Complicating even more the SOV knot structure hypothesis is that in the semiosis (or poetic structure) of the Quechua text corpus the main subject (the deity) is separated from the main OV constituents by numerous verses containing variations of S,O and V structures. 4) We would also have to attend to the averations of Garcilaso and Blas Valera that poetic verses were recounted by means of a memory “aid”: the syllabic structure of words (Hyland 2002). Thus, in light of Urton’s textual example, the semiosis of the code carrier, or the knot clusters in anomalous khipu, which Urton postulates as following a SOV order and as having a marked feature, is one of the most speculative issues in khipu studies.

In the course of storytelling in present-day Indian communities, narrative discourse involves the naming and ordering of landmarks in the landscape. Conversely, narrative structure in a dialogical manner informs and reflects the storyteller’s perception of features in her landscape (Howard, in Quilter and Urton 2002). The storyteller views these landscape features in a spatial relationship to each other, and also as related to her actual position while she narrates her story. The name and order of toponyms guides the storyteller in contextualizing the narrative elements because toponymy aids memory during the act of story telling. While this pragmatic approach to Andean narrative stylistics is verifiable through discourse analysis of the narrative text,<sup>13</sup> the contested aspect of this approach is the notion that there is (as yet) an unidentified link between modern narrative structural models and modes of khipu encoding of spoken discourse.

In pre-Inka and Inka Cusco a series of shrines connected by a network of pathways (the so-called Ceque System) regulated ritual life for the inhabitants of the valley. The order and names of these shrines (*huaca*) were presumably encoded on a khipu, which served as a record of tribute items offered to them by their custodians. While many of the names of these shrines are still current in the mappings of the modern city of Cusco, their exact location has been obliterated by urban settlement. However, in the periphery of the Cusco valley and in rural areas of the Andes, vestiges of shrine locations and networks are still visible. Therefore, one could recur to colonial judicial land boundary documents to discern the possible links between the narrative configured on landmark features, the storyteller’s relationship to her local toponymy, and the Inka khipu that encoded a mapping of shrines. These land entitlement records (*amojonamiento* or inspection tours) recount the order and

13. In the Quechua narrative texts analyzed by Howard (in Quilter and Urton 2002) the relational and possessive morphemes convey the triangular positioning between landmarks and between landmarks as well as the viewer, herself.

naming of markers (a topographic feature or cairn) that *kuraka* voiced in ritualized speech while verifying their position during periodic inspections of a community's land boundaries. Thus further research promises to reveal cultural practices, such as the conservation of land jurisdictions, that might correspond or reflect the logical structure of *kipu* (M. Ascher, in Quilter and Urton 2002).

In sum, the philology of poetics and the linguistic structure of narrative discourse in Quechua are disciplines to which Andeanist researchers can and should contribute, for they are virtually absent from the most recent *kipu* studies of record.

#### WHAT WAS THE IMPORTANCE AND FUNCTION OF THE KHIPU IN THE INKA STATE?

*Khipu* held the administrative records of the Inka Empire. Betanzos provides the earliest substantial insight on chancery protocols involving the Inka monarch, his deputies (the lords of Cusco or "*orejones*" who accompanied him), and *kurakas* in the production of *kipu*.<sup>14</sup> Betanzos describes the embassy of Inka Tupaq Yupanqui to the newly conquered Sora nation (in central Peru) during which he ordered *kipukamayuc* to assemble "contract" *kipu* as a tribute mandate for *kuraka* whose polities would be incorporated into the Inka state (both Guaman Poma and Martín de Murua illustrate court *kipukamayuc*, presumably that of the *inkap simin khipukuq*, manipulating *kipu* in a seated position in the act of recording the spoken word of Inka Tupaq Yupanqui). Then, the Inka ordered *kipukamayuc* to prepare a "transcript" *kipu* of each *kipu* entrusted to the *kurakas* to be delivered to the provincial governors (a lord of Cusco). Consequently, *kipukamayuc* incorporated these records into a master *kipu*, which would be remitted to the chancellery and depository of provincial *kipu* in Cusco (Sempat Assadurian, in Quilter and Urton 2002). The storage houses for *kipu* in Cusco were presided over by an administrator who read *kipu*, presumably numerical *kipu* from diverse regions, which could have shared a mutually intelligible code.

Urton's investigation of the *kipu* from the Chachapoya region of Peru, discussed in *Signs of the Inka Khipu* (and projected as a forthcoming book), promises to elaborate on the link between early colonial administrative documents and contemporary archaeological remains of personages who may have been *kipukamayuc* and whose *kipu* have been found by archaeologists among their funerary accoutrements.

Garcilaso states that the chancelleries at the provincial level deployed from four to thirty *kipukamayuc* who kept "transcripts" of

14. Juan de Betanzos 1987, 96, 97.

each other's records on their personal khipus. Garcilaso's statement disagrees with Cobo's information that each khipukamayúq kept a specific registry intelligible only to himself, and this disagreement has propelled the debate led by Urton on whether a mutually intelligible or idiosyncratic code ruled in the khipu sign system (Platt, in Quilter and Urton 2002).<sup>15</sup>

Because khipu were not employed for calculating the value of items by number or weight before encoding numerical data, record keepers depended upon counting methods or devices such as the *yupana* in Peru and the *taptana* in Ecuador (Quilter, in Quilter and Urton 2002). Thus, another mode of information recording and interpretation, the use of stone (or grain kernels or legume) counters, is presently engaging scholars of khipu as it promises to clarify the collaboration of khipukamayúq and local treasury officials, *markakamayúq* or *llaqtakamayúq* (Sempat Assadurian, in Quilter and Urton 2002). The accounting protocol proceeded thus: markakamayúq either employed the *taptana* device or improvised by displaying a set of pebbles in a grid pattern (*tabla*) traced on the ground, which designated numerical value or weight of items, such as a tribute quota of products in compliance with an Inka governor's mandate. Guaman Poma illustrates a *yupana* in conjunction with a khipukamayúq, which suggests that the record keeper depended on a visual representation of the data to be recorded on or read out of khipu. The khipukamayúq as an officer of the state treasury then encoded in khipu the calculations gathered by markakamayúq at the regional (*ayllu*) level and visually displayed them on the *tabla* for the state tribute collecting committee.<sup>16</sup> Conversely, the markakamayúq would display sets of stones as a transcript of information encoded in state khipu for inspection by ethnic authorities who accompanied him. Urton envisions that calculation by stone ciphers, especially in the case where white and black pebbles were displayed in a sequence, might correspond to the seven-bit "knot signature" on khipu.<sup>17</sup>

#### WHO WERE THE KEEPERS AND READERS OF KHIPU?

Khipukamayúq were indispensable officials who participated in the administrative duties in the chancellery of the Imperial court at Cusco, as well as at audiences with markakamayúq or local treasury administrators at the provincial level. Investiture in the hereditary office of

15. Urton 2003, 37, 48–49.

16. Polo de Ondegardo 1990 (1571): 150–51.

17. Urton represents this signature graphically with black and white circle symbols (Urton 2003, 120, 128).

kipukamayuy probably depended on the aspiring apprentice's social rank among members of the royal kinship groups of Cusco or upon their ranking among the governing ayllu of provincial polities.

The extant khipu were produced by anonymous record keepers, which is to say that no known specimen can be matched with its maker or user. The examination of extant khipu has yet to reveal whether these registries displayed a marker to identify its maker, owner, or user. As for khipukamayuy, there is scant information pertaining to their identification by name in early colonial Peruvian documents. The earliest unequivocally identified khipukamayuy are Collapiña and Supno, elders of Paqariqtambo, the Inka origin lodge-town near Cusco, who, with two unnamed colleagues, participated in an inquest (1542) on the Inka lineages at the behest of the viceroy, Cristóbal Vaca de Castro in 1542. Extracts from their testimony, based on their khipu record, were transcribed into a written document known as the *Relación de los quipucamayos*. Forty years later, Pedro Sarmiento de Gamboa, the official historian of the viceroy, Francisco de Toledo, convened forty-three khipukamayuy, members of the original royal Inka ayllus in Cusco, to recount to scribes their remembered history of the Inkas. Sarmiento states that his informants relied solely on memory in recounting their reports and on consensus to prove their veracity. Sarmiento suggests that khipu were not employed during the inquest by limiting his description of these devices to their use for numerical registry of items ("número y cuerpo"). Thus, even though Sarmiento carried out a meticulously organized inquest, for which he kept a complete list of his collaborators identified by name and ayllu origin, he does not specify any of them as khipukamayuy. The manner of collaborating as a cadre in the case of the four khipukamayuy (Collapiña et al. 1974 [1542/1608]) and the memory specialists (Sarmiento de Gamboa 1988 [1572]) would have precluded the attribution of any portion of the two resulting histories of the origin of the Inkas to a khipukamayuy.

In the case of Guaman Poma, khipu research has not clarified the extent to which he relied on information from khipukamayuy, whether he was a keeper and reader of khipu, or whether he ever held the office of khipukamayuy. In Guaman Poma's *Corónica*, the totemic appellations in his lineage (patronymns composed principally with the names Poma and Chawa) could be evidence that Guaman Poma alludes to his place by default in his genealogical history. In this genealogy Guaman Poma includes two of his forebears, Apo Poma Chawa and Condor Chawa, who may be the same personages he depicts in two of his illustrations. He identifies Apo Poma Chawa as administrator (*suyuyuyuy*) of one of the four quarters of the empire and Condor Chawa as accountant and treasurer of the four quarters, (*Tawantinsuyu khipuq*) who was possibly the Inka's spokesperson, an office Guaman Poma entitles *incap*

*simin khipukuq*. Both of these ancestors were khipukamayúq during the reign of Guaman Poma's maternal grandfather, Inka Tupaq Yupanqui.

Guaman Poma also is reluctant to state that his sources for writing the *Corónica* were gleaned from khipu records. While the source of his familial ancestral record remains unclear, there is suggestive evidence of a khipu-recorded genre for Guaman Poma's "genealogical biography" of the Inka kings. This precedent is found in the account of the Paqariqtambo khipukamayúq (*Relación de los quipucamayos*), which is believed to have directly derived from khipu encoded recitations of Inka dynastic history (Brokaw 2003).

The study of khipu culture would benefit from a concerted inquiry into Guaman Poma's apparent obfuscation of his activities as khipukamayúq in his native Lucanas province. In his "letter" to the king of Spain (*Corónica*), Guaman Poma may not have explicitly associated himself to the office of khipukamayúq as khipu were regarded by clergy as a facilitator of idolatrous practices. Similarly, if Guaman Poma had disclosed his knowledge of khipu records he might have feared jeopardizing his credibility as author, ("*autor*") in spite of the fact that, paradoxically, his Spanish contemporaries, such as Sarmiento de Gamboa and Bernabé Cobo, were depending upon khipukamayúq for historical accounts of Inka history.<sup>18</sup>

#### HAVE KHIPU BEEN IN USE SINCE EARLY COLONIAL PERU TO THE PRESENT?

The bureaucratic use of khipu by the Inka state extended into the colonial era with the articulation of the office of khipukamayúq into the protocols of court judicial proceedings and in Crown inquests (*Visitas*) among the provincial population. In the Viceroyalty of Peru the office of *escribano quipucamayó* is documented for towns and indigenous communities on the coast and in the highlands of central Peru and Bolivia.<sup>19</sup> These secretarial officials produced notarial documents (*quipu y relación*),<sup>20</sup> which were recorded as written *relaciones* and as khipu-encoded counterparts in Indian town halls (*cabildos*) in the District of Lima.<sup>21</sup> Because khipu were portable, they were carried by *kacha* (messengers) as "letters" to their addressees. Guaman Poma illustrates a municipal councilman (*regidor*), who as *khipuqta hurkukuq* (literally,

18. Cobo mentions the kuraka don Alonso Titu Atauchi as his principle informant on Inka history in Cusco during the year 1608. (Cobo 1956, Vol. 92, 60, 61).

19. Emilio Harth-Terré, 1973, 164-171.

20. See Beyersdorff 2002 for the use of this term in judicial proceedings in the province of Yauyos (Peru).

21. In his listing of court recorders between 1595 and 1808 Harth-Terré (1973, 164-71) names one "escribano quipucamayó" who occupied this office in Pachacamac and seven in the province of Huarochiri.

the one who takes out the khipu) relied on khipu and the book (each, possibly, codes of laws or municipal annals) at the same time while carrying out their official duties for the *cabildo*.

According to an examination of knot types in extant khipu, Urton finds that the majority of these specimens originate from three zones in Peru: Lima and northwards to Huacho, and south to Pachacamac, Ica, and Pisco. The geographical concentration of khipu along the coastal areas of central Peru (favored by the climatic effects, which aided preservation of khipu) along with *escribano quipocamayoc* in provincial townships, suggest that the study of these “provenience zones” of archaeological khipu could reveal how the production of these registries and their administrative use were articulated into the colonial bureaucracy.

Because missionary priests had greater proximity to native Andeans, their records on khipu use promises to shed light on colonial innovations of Inka khipu construction and employment (Harrison, in Quilter and Urton 2002). Apart from *kipukamayoc*, who officiated at court and *cabildo* proceedings, adept users of khipu among neophytes in the Indian *doctrinas* (centers of evangelization) were encouraged to keep personal records on khipu. Missionary priests, such as Juan Pérez Bocanegra and Martín de Murúa remark on the adaptability of khipu to render accounts of *hucha*, or infractions of Christian moral laws, which their parishioners deciphered for them during confession. Murúa also reports that these priests recorded on khipu statistical information regarding their Indian parishioners, such as the number of births and deaths. Thus the “sin counts” and the keeping of parish khipu records may have been an application of tally methods, which were employed by Inka accountants (*hatun hucha quipoc* and *huchuy hucha quipoc*) for the non-compliance of tribute quotas (Sempat Assadurian, Quilter and Urton 2002).

The most important—and controversial—manuscript discovery (the “Naples Documents”) to influence modern khipu studies concerns the Peruvian Jesuit Blas Valera’s (1544–1597) depiction in one of these documents of a “royal khipu”<sup>22</sup> that he had in his custody (Hyland, in Quilter and Urton 2002). This royal khipu was of hybrid construction in that the relative abstraction (compared to an iconic image) of non-symbolic knot types on Inka khipu had by 1595 evolved into conventional figures composed of a yarn fabricated icon followed by a knotted pendant cord. The text encoded in this khipu, according to Valera, is a Quechua poem known as “Sumaq Ñusta” (Beautiful Princess).

22. The royal khipu was purportedly employed by the *hamawt’a* in the Inka court and then by the *kurakas* of the surviving Inka *ayllus* in the Cusco valley (at the end of the sixteenth century) to record the histories of royal lineages and their religious beliefs.

In 1750 the forty-word icons in the royal khipu, such as the one representing *Pachakamaq* (the Andean divinity), were pictured and named in a table by an Italian antiquarian. These icons, all multisyllabic words, constitute a “syllabary,” which purports to include all the phonemes of the Quechua language. However, at first glance at the pictured syllabary, khipu researchers might question whether it is in fact representative of all the syllables and phonemes of Quechua. For instance, can a decoding of both “Sumaq Nusta” and the cosmological litany quoted above: “*Intiqa, Killaqa, P’unchawqa . . .*” indeed be derived from the apparently limited range of linguistic constituents of the syllabary?

The royal khipu appears to be a technological link between classical khipu and the colonial innovative khipu. With the royal khipu as model,<sup>23</sup> khipukamayuc, as Quechua grammarians, and assisted by the pictorial icon art of qillqakamayuc, were modifying khipu so that it could convey an utterance through a phonologic writing system. It is not certain whether Valera invented the word representation method of the royal khipu or whether he adapted pre-Hispanic Andean iconography modes of yarn manipulation in the fabrication of these registries. In any case, the hybrid nature (icon-knot) of the royal khipu enabled Valera to instruct the *ayllu kuraka* of Cusco in Christian doctrine by means of Andean religious concepts encoded in these yarn fabrications.

In the Republican era (since 1825) khipu have been employed by hacienda owners for tallies of herds, animal products, and comestibles, as well as by indigenous authorities in communities to record familial holdings (Mackey, in Quilter and Urton 2002).<sup>24</sup> Since the land reform movement in Peru and Bolivia (1950 to 1965) the use of khipu has diminished except for those restricted to ritual occasions, as in the case of “heritage” khipu, which ayllu authorities display on their person as regalia in the community of Tupicocha in the central highlands of Peru (Salomon, in Quilter and Urton 2002).

#### END NOTE

Similarly to Urton’s tentative conclusions in *Signs of the Inka Khipu* as to the promise of readability of the Andean knotted-cord registry, the majority of contributions to scholarship of khipu culture in *Narrative Threads* end on a speculative note. These conclusions are permissible

23. Hyland declares that none of the royal khipu have ever been found. However, khipu fabricated with icons were in use in Indian villages and doctrinas in Bolivia at least until the 1950s, as claimed by the parish priest, Porfirio Miranda Rivera (1958).

24. The author can attest to the pre-Hispanic tradition of khipu used among camelid herders in highland pasture zones of central Bolivia (Venta del Medio, Department of Oruro) until at least 1998.



and even desirable at this moment of consolidation of interdisciplinary perspectives among Andeanists, because, as Urton points out, concerted scholarship on *kipu* at present is still unencumbered by dogmatic notions (Quilter and Urton 2002, 121). In order not to presume firsthand that *kipu* have the capability to be read as written texts, several unresolved issues continue to be addressed, including the meaning of features in the material structure of *kipu*, and the decipherment of vestiges of discourse modes in colonial documents that may have originated in *kipu* records, as well as of discursive formulas in ritualized practices, supposedly encoded in *kipu*.

The expected advances in *kipu* studies lie in ascertaining “whether *kipu* were (respectively) string-and-knot based configurations whose purpose was to provide “cues” to aid the Inka administrator who made any particular sample to recall a specific body of memorized information, or if these devices were constructed with conventionalized units of information that could be read by *kipu* makers throughout the empire.” Although Urton tends toward the second possibility he suggests that “the final solution . . . will look more like a combination of [these] two forms of record keeping” (Urton 2003, 3).<sup>25</sup>

Because counting devices have been employed for millennia in the Andes by subsistence-herding societies and, later, by ethnic polities incorporated into the Inka empire, the medium ground standing between memory, mnemonics, and the scripting of data (“writing”) may come into clearer focus as Andeanists examine *kipu* use from a historical perspective. The examination of some specimens of *kipu* shows that the data recorded at any given time does not constitute a fixed text—such as in the publication of the first edition of a printed book—as *kipukamayúq* had selected sign carriers for emendation. Thus, as an evolving record we can consider *kipu* a “living” artifact by which any one device would have been modified by *kipukamayúq* over the course of time in which it was employed. Studies of these modifications may shed light on the development of *kipu* technology in a particular region and thus facilitate comparative analyses of *kipu* in those regions that did, or did not, ascribe to the Inka state model. In sum, this historical use approach, which could lead to studies of the “social life” of *kipu*, may ameliorate the perceived division by scholars between regional and Cusco (Inka)-centric *kipu* features, codes, and structures as well

25. This statement by Urton (2003,3), is highly suggestive as the chronicler, Antonio de la Calancha (cited in Urton, 2003, 122) declares, the faculty of memory, specifically trained to veridically retrieve coded narrative structures in *kipu*, enjoined *kipukamayúq* to adhere to a prescribed format of interpretation, which in the case of infraction led to punishment by judicial officers of the Inka.

as that between memory of the ephemeral and the attempt to concretize it in a code and in retrievable form.

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