

The Quipu of the Incas: Its Place in the History of Communication

by Leo J. Harris

The study of postal history has, through time, been defined in a number of different ways. Most of us consider postal history to be the study of how a paper with writing on it was carried in some sort of organized fashion from place to place. But more broadly, and for the purpose of this short article, postal history could be defined as the study of moving information on an organized basis from one place to another. This definition has particular meaning when one considers the situation in which the prevailing language had no written form. That is precisely the case with the Inca Empire in South America.

The Inca Empire (circa 1400 AD to 1532 AD) stretched from Chile and Argentina on the south, through Bolivia and Peru, to Ecuador on the north. The topography was desert, the high Andes mountains, plateaus and jungles. The empire was held together by two principal means. The first was a highly developed, often paved road system, which even today is followed in part by the Pan American highway. The second were “Chasquis,” Indian runners who carried messages from one Tambo (or way-station) to another, over these roads. In this manner adequate communication was assured, but to this had to be added a method to preserve and transmit information. Given the length and breadth of the Empire, the Inca hierarchy needed a significant and continuing flow of information and data to exercise economic and political control over greatly diverse inhabitants. That device was the quipu.



Figure 1: Left, secretary to the Inca and his council, holding quipu and, right, chief treasurer of the Inca with quipu and yupane. Drawings by Felipe Guamán Poma de Alaya, from a facsimile edition of his 1613 letter to King Philip of Spain, *Nuva Cronca y Buen Gobierno*, Paris 1936.

A quipu (also known as a khipu) was a string device made from cotton or llama wool. The quipu had a single main cord and a number of pendant cords, and when extended could range from three to five feet in dimension. The cords had differing colors, including white, black, red, green, blue, and grey. There were also knots of various types at differing positions on most cords. The quipus were carried from place to place in a bag. Quipus ranged from a gathering of simple strings to large versions with up to 1800 pendant cords. The quipu makers (Quipucamas) were minor administrative officials, located at every place in the Empire of economic or political consequence. Their principal duty was to create in readable form and to interpret the information which the quipu contained. A very large accumulation of quipus were kept at Cuzco, the administrative capital of the Inca Empire. Approximately 400 quipus have been preserved for study at the present time. Nearly all of these quipus were found in the graves of the quipucamas. We shall consider the elements of these quipus in greater detail in the pages which follow.

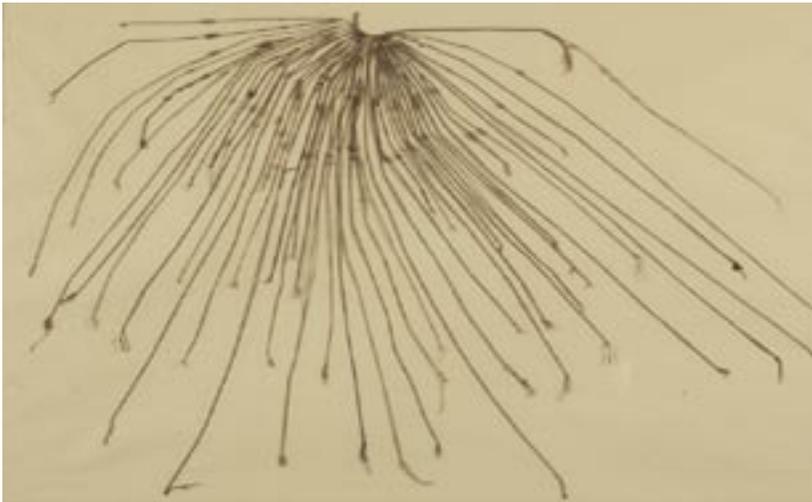


Figure 2: This 51-strand quipu is typical of surviving examples, which date from the 13th and 16th centuries. 78 x 101 cm. Princeton University.

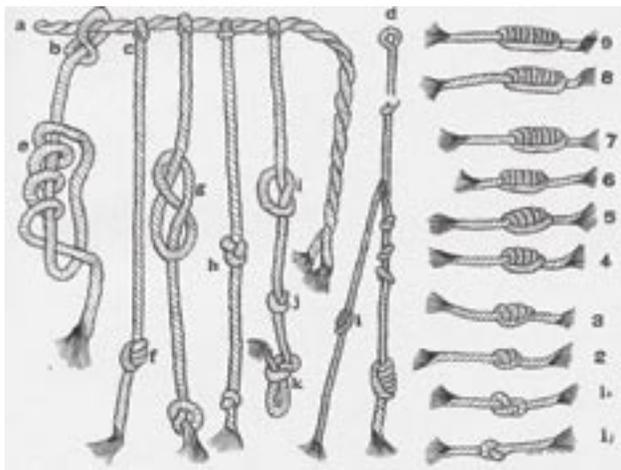
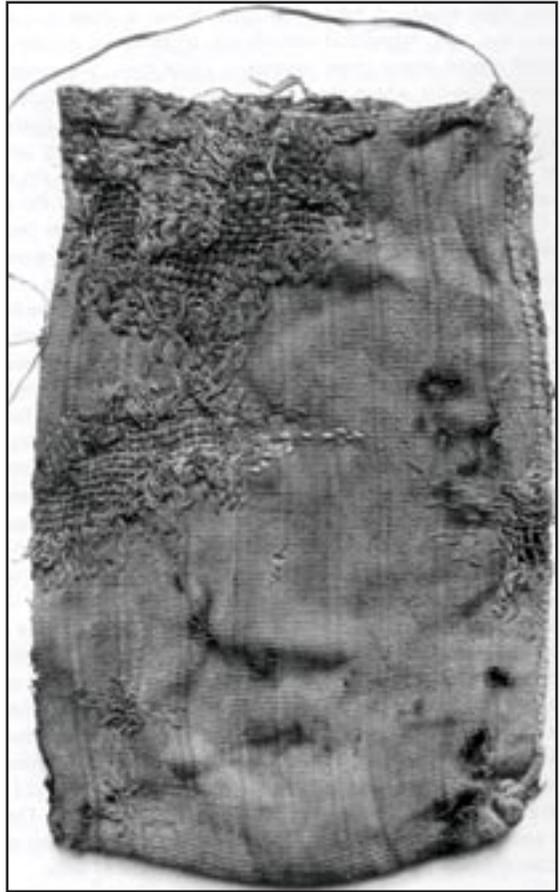


Figure 3: How the knots were tied. This plate from L. Leland Locke's 1923 *The Ancient Quipu*, illustrates on the right the composition of the numbers one through nine. Many scholarly works illustrate the Quipu knots, and analyze the direction of the ply of the string, as well as the meaning of the colors.



Figures 4 & 5: A quipu that has been completed and rolled (from the collection of the Smithsonian National Museum, Washington D.C.) and the bag in which a quipu was carried (from the collection of Oscar Núñez del Prado, Cuzco, Peru), illustrations courtesy of Ascher and Ascher, pages 33 and 69. In terms of postal comparisons, this is reminiscent of bundling letters in packets to place in a mail bag.

Perhaps the best way to explain the quipus is from then contemporary accounts of their use. But even this has its limitations. Marcia Ascher and Robert Ascher, students of the quipu, have cautioned:

For written accounts of Inca culture, we must turn to the sixteenth-century Spanish of soldiers, priests and administrators. Yet, the culture of the Spaniards of that time is remote from our own. We do not share with them, for example, a real fear of the devil, even if we are part of the same tradition which invented him. And the devil, together with many other cultural predispositions, figured largely in Spanish discussions of the Incas. To make matters worse, the Spanish got their information almost exclusively from deposed Inca bureaucrats. They were a special and numerically small part of a population estimated at somewhere between three and five million people. Whatever we may or may not have in common with sixteenth-century Spaniards, they shared close to nothing with the Incas. We can make sense of Spanish accounts only in terms of our framework, and the Spanish,

for their part, rendered what the Incas said from inside a Spanish framework. As a result, written accounts are distorted as they pass from inside this route: one culture (Incas) is interpreted via a second culture (Spanish), which is interpreted via a third culture (American), four hundred and fifty years later.

Not to belabor the point, it is still useful to consider two examples of the approach which the Spanish authorities took to things alien to them. The quipus were actually banned, condemned as idolatrous objects and ordered burned by the Third Council of Lima, the council of the Roman Catholic Church held between 1582 and 1583. With similar hubris, the Spanish bishop of the Yucatan, Diego de Landa, had collected and burned hundreds of Maya codices on July 12, 1562. A codex was a form of book written on tree bark with painted images on the pages. The Maya glyphs which were recorded in these codices and upon various limestone tablets (stelae) are now being extensively read. Unlike the Incas, the Mayas indeed had a written language. Curiously, the Mayan codices contained significant religious and political accounts, while the quipus contained economic and financial information, yet both were anathema to the Church.

The history of the quipu in this short article is based primarily upon the works of two individuals. The first writer was Pedro Cieza de León (born 1519 in Spain) whose observations were published in Seville, Spain, in 1553. His work is generally thought of as reasonably credible, since he was in Inca territory within fifteen years following the conquest. The second was Felipe Guamán Poma de Alaya, a descendant of one of the last Inca rulers, who wrote a comprehensive letter, with commentary and drawings, to Phillip III of Spain in 1613. Various of Poma's drawings illustrate this article.

Marcia and Robert Ascher summarized some of Cieza's writings about the quipu:

In earlier times, when the Incas moved in upon an area, a census was taken and the results were put on quipus. The output of gold mines, the composition of work forces, the amount and kind of tribute, the contents of storehouses—down to the last sandal, says Cieza—were all recorded on quipus. At the time of the transfer of power from one Sapa Inca to the next, information stored on quipus was called upon to recount the accomplishments of the new leader's predecessors. Quipus probably predate the coming to power of the Incas. But under the Incas they became a part of statecraft.

According to Cieza,

The system of the Peruvians was by quipus. These were long ropes made of knotted cords, and those who were accountants and understood the arrangement of these knots could, by their means, give an account of the expenditure, and of other things during a long course of years. On these knots they counted from one to ten, and from ten to a hundred, and from a hundred to a thousand. On one of the ropes are the units, on another the tens, and so on. Each ruler of a province was provided with accountants who were called quipucamayos, and by these knots they kept account of what tribute was to be paid in the district with respect to silver, gold, cloth, and flocks, down to fire-wood and other minute details.

By the same quipus they could report to those who were commissioned to take the account at the end of a year, of ten or twenty years, with such accuracy that so much as a pair of *alpargatas* (canvas shoes) would not be missing.

I was incredulous respecting this system of counting, and although I heard it described, I held the greater part of the story to be fabulous. But when I was at Marcavilla, in the province of Xauxa, I asked the lord Guacarapora to explain it in such a way as

that my mind might be satisfied, and that I might be assured that it was true and accurate. He ordered his servants to bring the quipus, and as this lord was a native, and a man of good understanding, he proceeded to make the thing clear to me. He told me to observe that all that he, for his part, had delivered to the Spaniards at the time that the Governor Don Francisco Pizarro arrived in the valley, was duly noted down without any fault or omission. Thus I saw the accounts for the gold, the silver, the cloths, the corn, the sheep, and other things, so that in truth I was quite astonished.



Figures 6 & 7: Inca storehouse (“deposito del inca”) with functionaries; and, on the right, a provincial administrator with quipus. 1613 de Alaya drawings.

Probably a good deal of these early writings is wishful thinking, but perhaps there is some germ of truth in them to consider. Let us now turn to the analysis of various modern-day scholars who seek a more scientifically verifiable basis for the reading of a quipu.

Were the quipus actually a memory cueing device, or a system of writing, or some other type of record keeping? The quipus were, as noted previously, a configuration of strings, knots, colors, and other features linked to and, perhaps, providing cues, for the recitation of information. Various early writers have argued that the quipu was a mnemonic device whose purpose was to aid the quipucamas in the recitation of information contained in their memory. Other earlier scholars viewed the quipu as carrying and conveying widely shared and logical semantic values, so that a trained quipucama working in the Inca bureaucracy could pick up any quipu produced in the system and read or interpret the information. More recently, scholars considered the quipu to be a writing system in the sense it was a general recording device, with encoded information, decrypted if you will by using cues from a shared informational model within the Inca culture, particularly

those relating to state affairs. The most recent analysis suggest that features of the quipu (strings, colors, knots) provide a binary coding, which could have been decoded and used, and even presented, alternatively, into arrays of colored stones (the Yupane, or Peruvian abacus).

Gary Urton concludes his research by suggesting that a quipu

.... is an arrangement of cotton and/or wool strings— some or all of which may be dyed in astonishingly complex arrays of colors—which have been either Z-spun/S-plied or S-spun/Zplied and attached recto or verso to a common (primary) string, and bear knots that may be (but are not necessarily) tied in a hierarchical, decimal-place fashion using three different types of knots that are tied with their primary axes either in an S- or Z-direction.

This particular analysis is, fortunately, far beyond what most postal historians need to contemplate.

As the Aschers observe, the way that concepts of numbers, geometric configuration, and logic were formed together by the quipucamas were unparalleled in other cultures. Quipu-making came to an abrupt end during the early sixteenth century. Nevertheless, it is incontrovertible that information was inserted into the quipus, which were then transported from one place to another by the chasquis, whereupon information was derived from the quipus. The academics are only arguing about the methodology of this process. For our purposes the use of the quipu clearly meets the definition presented earlier: moving information on an organized basis from place to place, much like a letter carried by the postman.

Further Reading

Gary Urton lists in his bibliography eighteen pages of citations of scholarly works which consider the quipu. We have listed below only a few of the more seminal works which may be of interest to the curious.

Marcia Ascher and Robert Ascher. *Code of the Quipu. A Study in Media, Mathematics, and Culture*. Ann Arbor: University of Michigan Press. (1981).

William Burns Glynn. "La Tabla der Cálculo de los Incas," *Boletín de Lima*, No. 11 (March 1981).

L. Leland Locke. *The Ancient Quipu*. New York: The American Museum of Natural History (1923).

Carlos Radicati Di Primeglio. *El sistema contable de los Incas*. Lima: Librería Studium, S.A. (ND.)

Gary Urton. *Signs of the Inka Khipu. Binary Coding in the Andean Knotted-String Records*. Austin: University of Texas Press (2003).

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