INTRODUCTION

Historians have traditionally relied on written documents to learn about the past. Such sources have obvious limitations, for they tell us much more about privileged, literate people than about those who lacked access to formal education. The best scholars today try to remedy this deficiency by broadening their definition of writing to include nonalphabetic forms of expression and record keeping, such as those developed by indigenous peoples in the Americas before the arrival of Europeans. The Aztecs and Maya of present-day Mexico and Central America produced pictorial manuscripts and carvings that detailed their history and traditions. After many years of painstaking research, scholars have established that, in addition to drawings depicting specific occurrences, the Aztecs used many symbols that represented abstract ideas, and the Maya developed a system incorporating symbols that came to represent sounds. Most sixteenth-century Spaniards dismissed these Mesoamerican writings as less sophisticated than their own alphabetic script, and considered them to be yet another indication of the relative inferiority of native civilizations. Nevertheless, they considered the Aztec and Maya codices to be books, and dangerous ones for the subversive or diabolical ideas they contained.

In South America, by contrast, Spaniards found nothing comparable to the Mesoamerican systems of writing. Yet somehow the Incas administered a complex empire that extended hundreds of miles from their capital at Cuzco, Peru. Some kind of record keeping and communication must have been necessary. Early Spanish observers pointed to the quipus, the knotted cords seen in abundance throughout the Andes, as the means by which Inca functionaries kept track of the tribute payments and labor obligations that native commoners owed to the state and to the gods. Francisco Pizarro, conquistador of Peru, noted in 1533 that native officials used these devices to record supplies that he had requisitioned from the Inca’s storehouses. Dozens of early chroniclers provided detailed descriptions of the quipus and wrote of the special standing that Andean society accorded to those able to make and interpret the cords.

But did the quipus record anything other than quantifiable data, and, if so, how? These questions are still subject to scholarly debate nearly five centuries after the conquest of Peru. The destruction of many quipus by Spanish missionaries who believed them to be
This photograph shows an ancient quipu. The knots at the bottom of each string usually stood for ones, the next knots represented tens, and the higher rows indicated hundreds, thousands, and so on. The Granger Collection, New York.

the work of the devil, and the loss of indigenous historical memory following the conquest, hampered later attempts to interpret those that remained.

Most authorities today agree that quipus carried some additional forms of coded information—verses, historical accounts, traditions. Some suggest that the cords and knots served simply as mnemonic devices; that is, memory aids that would help a reader recall long passages of previously memorized material, the same way a person giving a lecture might need only brief notes, perhaps unintelligible to anyone else, to serve as prompts. Others argue that some quipus recorded precise but nonnumerical information, embedded in a form of binary coding comparable in some ways to what computer programmers use today, and that they could be replicated word-for-word by anyone trained to read them, just like alphabetic script.
José de Acosta was a Jesuit missionary and theologian, born in Spain in 1540. He arrived in Peru in 1572 and spent the next fifteen years there. He wrote a catechism for instructing native peoples in Catholic dogma and a book counseling his fellow Jesuits on the proper ways to carry on their missionary work, but he is best known for his Natural and Moral History of the Indies, written after he returned to Spain and published in 1590. This work includes detailed historical accounts of the prior history of the Indies and rich analyses of the flora, fauna, and geography of the new continent. The following selection from that book describes practices of writing among indigenous peoples in Mesoamerica and Peru.

Among the nations of New Spain there is great knowledge and memory of their ancient customs. And when I desired to learn how the Indians could preserve their histories in so much detail I realized that, although they did not possess the care and refinement of the Chinese and Japanese, still they did not lack some kinds of letters and books, with which they preserved after their fashion the deeds of their ancestors. In the province of Yucatan . . . there were some books with leaves in the Indian style, either bound or folded, in which the wisest Indians kept the distribution of time, and knowledge of plants and animals and other things pertaining to nature, as well as their ancient customs, and it was the result of great zeal and diligence. A missionary there thought that all of it must be witches’ spells and magic art and insisted that they be burned, and indeed those books were burned, which was regretted afterward not only by the Indians but by curious Spaniards who desired to know the secrets of that land. The same fate has befallen other things, which, because our people thought that all of it was superstition, meant the loss of many memories of ancient and hidden things that might have been of no little use. This happens out of unhealthy zeal on the part of those who, without knowing or wanting to know anything about the Indians, indiscriminately dub everything witchcraft, and say that the Indians are all drunkards, and ask what they can know or understand.

Those who have tried to investigate these matters in the proper way have found many things worthy of consideration. One of the members of our Society of Jesus, a very sensible and clever man, brought together in the province of Mexico the old men of Texcoco and Tula and Mexico and conferred with them at length, and they showed him their collections of books and their histories and calendars, a sight very much worth seeing. For they had their pictures and hieroglyphs with which they represented things in the following way: things that had shapes were painted in their own image, and for things that did not have actual shapes they had characters signifying this, and hence were able to express whatever they wanted. And for a reminder of the time when each thing happened they had those painted wheels, each containing a century, which . . . was of fifty-two years; and they painted these things beside those wheels, corresponding to the year in which

---

1 Chapters 7–10 (pp. 339–345) in Natural and Moral History of the Indies written by José de Acosta, ed. by Jane Mangan, trans. by Frances López-Morillas. Copyright © 2002 by Duke University Press. All right reserved. Used by permission of the publisher.
memorable events occurred. . . For instance, by placing a picture of a man with a red hat and jacket in the sign of the cane, which was the century at the time, they marked the year when the Spaniards came into their land; and they did the same with other events. But because their figures and characters were not as adequate as those of our writing and letters, this meant that they could not make the words conform exactly but could only express the essential part of ideas. But they also have the custom of repeating in chorus orations and speeches made by the ancient orators and rhetoricians, and many songs that their poets composed, which would have been impossible to learn through those hieroglyphics and characters. It is known that the Mexicans were very diligent in making boys commit those speeches and compositions to memory, and for this purpose they had schools . . . where the old men taught the youth these and many other things that are preserved as tradition as fully as if they had been set down in writing. In particular they obliged the youths whom they had chosen to be rhetoricians and to practice the office of orators to learn famous orations, and commit them to memory word for word; and many of these, when the Spaniards came and taught them to read and write our letters, were written down by the Indians themselves, as responsible men who have read them can testify.

And I say this because some persons who read such long and elegant speeches in Mexican history will easily believe that they were invented by the Spaniards and not really composed by the Indians; but once they understand the truth they will not fail to give proper credit to the Indians’ histories. The Indians also wrote down these same speeches after their own fashion, with pictures and characters; and, to satisfy my mind about this, I have seen the prayers of Our Father and Ave Maria, the Creed, and the general confession written in the Indian way I have described; and surely everyone who sees it will be astonished, because to signify the phrase “I, a sinner, do confess” they print an Indian kneeling at the feet of a religious, as if confessing; and then for the expression “Omnipotent God” they paint three faces with crowns to represent the Trinity; and for the glorious Virgin Mary they paint the face of Our Lady and a bust of her with a child; and for Saint Peter and Saint Paul two heads with crowns, and keys and a sword, and in this way the whole confession is written in pictures. And where there are no pictures they put characters, such as in “wherein I have sinned”; from this the keenness of the Indians’ minds can be inferred, for the Spaniards never taught them this way of writing our prayers and matters of faith, nor could they have thought of it had they not had a very clear idea of what they were being taught. I also saw written in Peru, in the same style of pictures and characters, the confession of all his sins that an Indian brought when he came to confession, painting each of the Ten Commandments in a particular way and then making certain signs like ciphers, which were the sins that he had committed against each commandment. I have no doubt that, if many of the most complacent Spaniards were given the task of memorizing such things by the use of pictures and signs, they would not succeed in committing them to memory in a whole year or perhaps even in ten.

Before the Spaniards came the Indians of Peru had no kind of writing at all, either by letters or characters or ciphers or pictures, like those of China or Mexico; but this did not prevent them from preserving the memory of ancient times,
nor did they fail to keep a reckoning for all their affairs whether of peace, war, or government. For they were very diligent in passing traditions from one generation to another, and the young men received and preserved what their elders told them as a sacred trust and taught it to their successors with the same care. Apart from this task, they compensated in part for the lack of writing and letters with pictures like those of Mexico (although those of Peru were very coarse and rough), and in part, indeed principally, with quipus. Quipus are memory aids or registers made up of cords on which different knots and different colors signify different things. What they achieved in this way is incredible, for whatever books can tell of histories and laws and ceremonies and accounts of business all is supplied by the quipus so accurately that the result is astonishing. Appointed to possess these quipus, or memorials, were officials who today are called quipucamayos, and these men were obliged to render an account of each thing, like public notaries here in Spain, and hence they had to be believed absolutely. There were different quipus, or strands, for different subjects, such as war, government, taxes, ceremonies and lands. And in each bunch of these were many knots and smaller knots and little strings tied to them, some red, others green, others blue, others white; in short, just as we extract an infinite number of differences out of twenty-four letters by arranging them in different ways and making innumerable words, they were able to elicit any number of meanings from their knots and colors. This is true to the extent that nowadays in Peru every two or three years, when a Spanish governor is subjected to a trial of residency, the Indians come forward with their small proven reckonings, saying that in a certain town they gave him six eggs and he did not pay for them, and in such and such a house a hen, and in another place two bundles of hay for his horses, and that he paid only so and so many tomines and still owes so and so many; and all of this is accurately proved with a quantity of knots and bundles of strands, which they consider to be witnesses and authentic writing. I saw a bundle of these strings on which an Indian woman had brought a written general confession of her whole life and used it to confess just as I would have done with words written on paper; and I even asked about some little threads that looked different to me, and they were certain circumstances under which the sin required to be fully confessed.

Apart from these string quipus they have others composed of pebbles, from which they accurately learn the words that they want to commit to memory. And it is something to see quite old men learning the Our Father with a circle made of pebbles, and with another circle the Ave Maria, and with another the Creed, and to know which stone represents “who was conceived by the Holy Ghost,” and which “suffered under Pontius Pilate”; and you have only to see them correct themselves when they make an error, and the whole correction consists in looking at their pebbles. All I would need to forget everything I have learned by heart would be a circle of those pebbles. Not a few of these circles are found in the cemeteries of the churches for this purpose; and to see them use another type of quipu that employs grains of maize is a fascinating thing. For to make a very

---

2 The Spanish alphabet does not include the letters “k” and “w.”
3 Silver coins of small value.
difficult calculation, to see how much each person must contribute, which an excellent accountant would have to do with pen and ink, these Indians, taking so many grains from that place and adding a certain number from this, and hesitating a hundred times, will take their grains and put one here, three there, and eight I don’t know where; they will move one grain to another place, switch three from elsewhere, and their account comes out very accurately, without the slightest error; and they know much more clearly how to balance an account of what each one has to pay or give, than we could accomplish with pen and ink. If this is not intelligence, and these men are beasts, let anyone who likes judge of it; what I truly believe is that they surpass us considerably in the things to which they apply themselves.

It would be well to add to what we have stated about the Indians’ writing, that their method was not to write one line after another but from top to bottom or in a circle. The Romans and Greeks wrote from left to right, which is the common and ordinary method that we use; the Hebrews do the opposite, for they start from right to left, and so their books have their beginnings where ours end. The Chinese do not write like either the Greeks or the Hebrews, but from the top down, for since theirs are not letters but whole expressions in which each figure or character means one thing they have no need to connect some parts with others and hence can write from top to bottom. The Indians of Mexico, for the same reason, did not write in lines from one side to the other but the reverse of the Chinese, beginning at the bottom and going up; and they did this in the calculation of days and the other things that they wrote, although when they wrote in their wheels or signs they started in the middle, where the sun was represented, and considered to draw by years until they reached the edge of the wheel. Finally, all four of these differences are found in their writings: some write from right to left, others from left to right, others from top to bottom, and others from bottom to top. Such is the diversity of men’s ingenuity.

To finish this subject of writing, some may rightly doubt how the kings of Mexico and Peru could receive news from all their realms, which were so great, or by what means they could send news of things that happened in their court, since they had no letters nor did they write dispatches. This doubt will be satisfied if we realize that, by word of mouth and pictures and memory devices, they were given information at very frequent intervals about everything that happened. For this purpose they had very swift runners who served as couriers and went to and fro and were trained from boyhood in running; and they made sure that they were well trained in breathing, so that they could run up a very steep hill without tiring. That is why they gave a prize in Mexico to the first three or four who could run up that long staircase of the temple. . . . And in Cuzco the long-eared youths, in their solemn festival of Capacraymi, vied with each other in climbing the hill of Huanacauri; and in general it has always been, and still is, very common for the Indians to exercise by running. When it was a matter of importance, they carried a painting of the subject they wished to disclose to the lords of Mexico, as they did when the first Spanish ships appeared. . . . In Peru a strange importance was given to the mail, for the Inca established posts or mail stations all over his empire, which are called chasquis there.
Writing and Record-Keeping in the Ancient Americas: The Quipus of the Andes

1583 DECREES OF THE CHURCH COUNCIL OF LIMA, DECLARING THE QUIPUS TO BE THE WORK OF THE DEVIL

In September of 1580 King Philip II of Spain wrote Martín Enríquez, viceroy of Peru, ordering him to summon all the bishops and other leading Catholic clergy in Peru to Lima to discuss “all matters concerning the good spiritual governance of those kingdoms.” The churchmen met for several months in 1582 and 1583, issuing numerous decrees dealing with a broad range of issues. They specified, for example, which catechism should be used to instruct Indians in the Catholic faith and how priests should conduct Indians’ confessions. In this decree they condemned the quipus as works of the devil, and many quipus were destroyed as a result. José de Acosta, author of the previous selection, participated in the council’s deliberations. The original of this decree can be found in the Archivo General de Indias in Seville, Spain—a huge archival collection that houses many important records dealing with the administration of the Spanish colonial empire.

Consider prohibited in full books that deal directly with, or recount, or teach lascivious or unchaste things, for one must keep in mind that which undermines the faith but also that which undermines good behavior—which reading such books usually does. And so those who have such books shall be rigorously punished by the bishops. However, ancient books in Latin, written by non-Christians, shall be permitted, because of the elegance and propriety of the Latin language, provided that these lascivious books, even if they are in Latin, not be read to young boys. And because in lieu of books the Indians have used, and some continue to use, registers made of different threads, that they call quipus, and with these they preserve the memory of their old superstitions, rites, ceremonies, and perverse customs, the bishops should diligently try to take away from the Indians completely all the records or quipus that facilitate their superstition.

FELIPE GUAMAN POMA DE AYALA’S ILLUSTRATION OF A QUIPU

Felipe Guaman Poma de Ayala was a native Andean born shortly after the Spanish invasion of Peru. Educated by missionaries, he learned to speak, read, and write Spanish and often served as an interpreter for Spanish civil and ecclesiastical officials in their dealings with Quechua-speakers. In many other ways he also straddled two worlds in early colonial Peru. He converted to Catholicism but saw substantial compatibility between Christian and native Andean spirituality, and he often spoke out against injustices that Spaniards committed against native peoples.

In the early seventeenth century, Guaman Poma composed a monumental history of Peru under Inca and Spanish rule, hoping that King Philip III might read it and be moved to end
Guaman Poma de Ayala’s book included 398 pen-and-ink sketches. Here he depicts a keeper of the quipus in Inca times. In the lower left corner of the drawing, he also shows the system of pebbles described in José de Acosta’s account.

the many abuses that his people endured at the hands of the Spanish. Nearly twelve-hundred pages in length, his manuscript failed to reach its intended audience and only came to the attention of scholars some three hundred years later, when it was found in the Royal Danish Library in Copenhagen. Since then his work has received considerable attention from anthropologists and historians. Today the entire text is available on the Internet at http://www.kb.dk/permalink/2006/poma/info/en/frontpage.htm.

GARCILASO DE LA VEGA (EL INCA)’S ACCOUNT OF THE USE OF QUIPUS^6

Garcilaso de la Vega, also known as El Inca, was a mestizo born in Cuzco in 1539 to a Spanish conquistador and an Inca princess. At the age of twenty-one, he traveled to Spain to claim the

Inheritance his late father had left him, and remained there for the rest of his life. He claimed to have learned how to read the quipus as a child, and he describes their use in his monumental history of the Incas, published in the early seventeenth century. In this passage, he argues that these devices served primarily to record quantifiable data—perhaps because, as some modern researchers theorize, he only knew how to read this type of quipu, having observed its use in recording amounts of tribute that native peoples rendered to his Spanish father. Elsewhere in his chronicle, however, he notes that they also recorded fables and verses.

Quipu means “to knot” and “knot,” and is also used for reckoning. . . . The Indians made threads of various colors, some were of a single hue, others of two, others of three or more, for single or mixed colors all had separate significances. The threads were closely twisted with three or four strands, as thick as an iron spindle and about three quarters of a vara in length. They were threaded in order on a longer string like a fringe. The colors showed what subject the thread was about, such as yellow for gold, white for silver, and red for warriors. . . .

Some of these strings had had finer threads of the same color attached, serving as offshoots or exceptions from the general rules. For instance the finer thread on the string referring to men or women of a certain age, who were assumed to be married, would mean the number of widows or widowers of that age in a given year. . . .

The knots were arranged in order of units, ten, hundreds, thousands, tens of thousands, and seldom if ever passed a hundred thousand, since as each village kept its own records, and each capital the records of its districts, the numbers never in either case went beyond a hundred thousand, though below that figure they made many calculations. If they had had to count hundreds of thousands, they would have done so, since their language has words for all possible numbers known in arithmetic. . . . These numbers were reckoned by means of knots in the threads, each number being divided from the next. . . . This was not difficult to do, as there were never more than nine, seeing that units, tens, etc., never exceed nine.

The greatest number, say tens of thousands, was knotted at the upper end of the threads, the thousands lower down, and so on down to units. The knots for each number on each thread were exactly alike, precisely as a good accountant sets his figures to make a long addition. The knots or quipus were in the charge of special Indians called quipucamayu, meaning “one who has charge of the accounts,” although in those days there was little difference between good and bad among the Indians, since they were so well governed and had so little harm in them that they might all be described as good, nevertheless for these and similar duties they picked the best and such as had given longest proof of their aptitude. Offices were never obtained by favor, for among these Indians appointments were always made by merit and never out of favoritism. Nor were offices sold or leased, for as they had no money they could not lease, or buy, or sell. . . .

Although the quipucamayus were as accurate and honest as we have said, their number in each village was in proportion to its population, and however small, [each village] has at least four and so upwards to twenty or thirty. They all kept the same records, and although one accountant or scribe was all that would have been necessary to keep them, the Incas preferred to have plenty in each village and for each sort of calculation, so as to avoid faults that might occur if there were few. . . .

7A vara was a Spanish measurement, roughly about a yard or a meter in length.
These men recorded on their knots all the tribute brought annually to the Inca, specifying everything in kind, species, and quality. They recorded the number of men who went to the wars, and how many died in them, and how many were born and died every year, month by month. In short they may be said to have recorded on their knots everything that could be counted, even mentioning battles and fights, all the embassies that had come to visit the Inca, and all the speeches and arguments the king had uttered. But the purposes of the embassies or the contents of the speeches, or any other descriptive matter could not be recorded on the knots, consisting as it did of continuous spoken or written prose, which cannot be expressed by means of knots, since these can give only numbers and not words. To supply this want they used signs that indicated historical events or facts or the existence of any embassy, speech, or discussion in time of peace or war. Such speeches were preserved by the quipucamayus by memory in a summarized form of a few words: they were committed to memory and taught by tradition to their successors and descendants from father to son. This was especially practiced in the villages or provinces where the event in question had occurred: there naturally such traditions were preserved better than elsewhere, because the natives would treasure them. Another method too was used for keeping alive the memory of the people in their deeds. . . . The amautas who were their philosophers and sages took the trouble to turn them into stories, no longer than fables, suitable for telling to children, young people, and the rustics of the countryside: they were thus passed from hand to hand and age to age, and preserved in the memories of all. . . . Similarly the harauicus, who were their poets, wrote short, compressed poems, embracing a history, an embassy, or the king’s reply. In short, everything that could not be recorded on the knots was included in these poems, which were sung at their triumphs and on the occasion of their greater festivals. . . . Thus they remembered their history. But as experience has shown, all these were perishable expedients, for it is letters that perpetuate the memory of events. But as the Incas had no knowledge of writing, they had to use what devices they could, and treating their knots as letters, they chose historians and accountants . . . to write down and preserve the tradition of their deeds by means of the knots, strings, and colored threads, using their stories and poems as an aid. This was the method of writing the Incas employed in their republic.

The kurakas and headmen in the provinces resorted to the quipucamayus of their provinces to learn historical events. . . . This was because the quipucamayus acted as scribes and historians in keeping the records, which were the annual quipus made of happenings worthy of memory, and were bound by their office to study constantly the signs and ciphers on the knots . . . They were supposed to narrate such matters when requested, and by reason of their office they were exempted from the payment of tribute and any other forms of taxation. Consequently they never let the knots out of their hands.

In the same way records were kept of their laws, ordinances, rites, and ceremonies. From the color of the thread and the number of the knots, they would tell what law prohibited any particular offense and what penalty was to be applied to anyone who broke it. They could say what sacrifice or ceremony was performed in honor of the Sun on such-and-such a festival. They could state what ordinance or
privilege afforded protection to widows, or the poor, or wayfarers. . . . Each thread and knot suggested the meaning attributed to it, rather like the commandments or articles of our Holy Catholic Faith and the works of mercy, which we can recall from the number assigned to them. Thus the Indians recalled by means of the knots the things their parents and grandparents had taught them by tradition. . . .

I used the quipus and knots with my father’s Indians and other kurakas when they came to the city to pay tribute. . . . The kurakas . . . would ask my mother to send me to check their accounts, for they were suspicious people and did not trust the Spaniards to deal honestly with them in these matters until I had reassured them by reading the documents referring to their tributes which they brought me, and comparing them with their knots: in this way I came to understand the latter as well as the Indians themselves.

A MODERN ANALYSIS: QUIPUS AS BINARY CODES: GARY URTON

This selection comes from Signs of the Inca Khipu: Binary Coding in the Andean Knotted-String Records, by Gary Urton, a professor of Pre-Columbian Studies at Harvard University and one of the world’s leading authorities on the quipus. He has studied most of the extant quipus located in museums in the Americas and in Europe, and he and other researchers at Harvard are preparing a detailed database of them. Still, Urton admits that his theory may prove difficult to prove definitively. To learn more about the database, see http://khipukamayuq.fas.harvard.edu.

In the technology of communicating by means of, for instance, e-mail, we work on a keyboard that allows us to produce on the computer monitor in front of us a typewritten version of a message. The message that we perceive on the screen before us in a familiar script (e.g., Spanish, Japanese, English) exists inside the computer in the form of binary-coded sequences in which each mark (e.g., alphabetical letter, comma, hyphen, etc.) that is produced by touching a key on the keyboard coincides with, or is carried by, a particular eight-binary-digit (abbreviated as “bit”) sequence of 1s and 0s. These eight-bit sequences have arbitrarily been assigned to the characters in the system known as the ASCII (American Standard Code for Information Interchange) code. . . .

As for how binary coding “interfaces” with scripts in computers, each word that we see in script on our computer screen coincides with a series of eight-bit sequences within the electronically stored information inside the computer. For example, a word typed on our keyboard as cat corresponds to the binary code: 01000011 [=c] 01100001 [=a] 01110100 [=t]. When instructed to send the e-mail message, the computer transmits the binary number sequences as electronic signals—that is, as patterned arrangements of 1s and 0s (or on/off, positive/negative electronic signals). The computer sends the binary-coded message to another computer, which

9 Excerpted from Ch. 2 (pp. 38–42) in Signs of the Inkakhipu: Binary Coding in the Andean Knotted-String Records by Gary Urton. Copyright © 2003. Reprinted by permission of the University of Texas Press.
receives the electronic code. The receiving computer translates the binary-coded message back into the same script seen in the original message.

Now, no one would confuse a string of 1s and 0s for (for instance) a text written in English by means of the twenty-six letters of the alphabet, plus the number signs and perhaps a few other signs and symbols (e.g., : <). Nonetheless, it is a conventionalized arrangement of 1s and 0s of the binary number coding system (i.e., the ASCII code) that makes it possible for us to communicate e-mail messages in (as in the example given here) an alphabetic script. I argue in this book that the systems of patterned differences in spinning, plying, knotting, numbers, and colors in the khipu¹⁰ are all binary in nature. Inka¹¹ and other khipu users of the ancient Andes relied on seven-bit sequences, rather than the (arbitrarily chosen) eight-bit sequences of the ASCII system. . . .

In order actually to read a message in the khipu, we need something like a table, or a “code book,” that gives the translation values for the particular binary-coded sequences for each unit of information encoded into a khipu. As yet, we do not have such a table or book for translating these seven-bit sequences into intelligible, interpretable messages. . . .

The Inka developed a system of visual and tactile string structures that communicated particular bodies of information—for example, statistical (census data), narrative (myths and genealogical records), and other genres of texts—in a binary code. To return briefly to the analogy with computers articulated earlier, it is as though all other ancient civilizations developed graphic scripts in forms similar to the images seen on our computer monitors, whereas the Inka devised a system more closely resembling the binary digital coding sequences of the ASCII code: out of view, inside the workings of the computer.

QUESTIONS FOR DISCUSSION

1. Based on the various systems of writing and record-keeping used by indigenous peoples in Mesoamerica and the Andes, which of these civilizations might sixteenth-century Europeans seen as the most sophisticated? Would they have seen any of these indigenous forms of writing as equal to, or superior to, the European alphabet? Why or why not?
2. What does José de Acosta think of the destruction of native writings in Yucatán?
3. Does José de Acosta think that the quipus were capable of recording more than just quantifiable information?
4. Why did church authorities order the destruction of the quipus? Although José de Acosta was present at the church council in Lima, do you think that he would have approved of the decree banning the quipus? Why or why not? Why did the church authorities think that it was permissible to read books written by the ancient Romans, even if they were not Christians?

¹⁰ There are many ways to spell this word; Urton prefers “khipu,” while many other sources use “quipu.”
¹¹ Urton also prefers the variant spelling “Inka,” rather than the more commonly used “Inca.”
5. What do these selections tell us about the ways in which indigenous peoples maintained some memory of their ancient traditions after the Spanish conquest? How would the conquest have disrupted the transmission of such knowledge?

6. What does Garcilaso de la Vega think about Inca civilization? How do his views compare with those of José de Acosta?

7. Do you think that the quipus could have recorded more than just quantifiable data? Why or why not? Is Urton’s explanation plausible?

8. Even if we could decode the quipus, what might be some of the limitations on the kinds of information we could glean from them?