How to read Inca

We thought they left no written records. Now we’re untangling the truth, says Daniel Cossins

The Incas left no doubt that theirs was a sophisticated, technologically savvy civilisation. At its height in the 15th century, it was the largest empire in the Americas, extending almost 5000 kilometres from modern-day Ecuador to Chile. These were the people who built Machu Picchu, a royal estate perched in the clouds, and an extensive network of paved roads complete with suspension bridges crafted from woven grass. But the paradox of the Incas is that despite all this sophistication they never learned to write. Or did they? The Incas may not have bequeathed any written records, but they did have colourful knotted cords. Each of these devices was called a khipu (pronounced key-poo). We know these intricate cords to be an abacus-like system for recording numbers. However, there have also been teasing hints that they might encode long-lost stories, myths and songs too.

In a century of study, no one has managed to make these knots talk. But recent breakthroughs have begun to unpick this tangled mystery of the Andes, revealing the first signs of phonetic symbolism within the strands. Now two anthropologists are closing in on the Inca equivalent of the Rosetta stone. That could finally crack the code and transform our understanding of
a civilisation whose history has so far been told only through the eyes of the Europeans who sought to enslave it.

The Spanish conquistadors, led by Francisco Pizarro, first encountered the Incas at the start of the 1530s. They were awestruck by the magnificent stone cities, the gold and treasure. But as the Spanish began to take over the Inca empire and impose their own customs, they became equally enthralled by the way the society was organised.

The Incas governed the 10 million people in their realm with what amounted to a federal system. Power was centred in Cusco, in the south of what is now Peru, but spread through several levels of hierarchy across a series of partially self-governing provinces.

**“Break the khipu code and we might finally read an indigenous Inca history”**

There was no money and no market economy. The production and distribution of food and other commodities was centrally controlled. People had their own land to farm, but every subject was also issued with necessities from state storehouses in exchange for labour, administered through an impressive tribute system.

Historians have argued variously that the Inca empire was a socialist utopia or an authoritarian monarchy. But no one disputes its efficiency. “It was an extraordinary system,” says Gary Urton, an anthropologist at Harvard University. “Administratively speaking, it was very sophisticated and it seems to have worked well.”

Key to that success was the flow of reliable data, in the form of censuses, tribute accounts and storehouse inventories. For that, the Incas relied on the khipus, or knotted cords, “subsidiaries” of the khipus. By the 1990s, though, we still had no idea what the numbers on the cords matching the Spanish document said had been levied. It seemed to be the match he had been looking for.

Even so, Urton was struggling to pick apart the detail of the connections between the Santa valley khipus and the Spanish document. He ended up letting a Harvard undergraduate student named Manny Medrano take a look. He turned out to have the perfect complement of skills for the job. He was a native Spanish speaker and, majoring in economics, he was a whizz with spreadsheets. Medrano painstakingly generated tables of the khipu data and compared it with the numbers on the cords matching the Spanish document. Without a khipu translation, however, the idea looked destined to remain untested.

Then in 2016, Urton was browsing his personal library when he picked out a book that contained a Spanish census document from the 1670s. It was what the colonists referred to as a “reissue,” a reassessment of six clans living around the village of Recuay in the Santa valley region of western Peru.

The document was made in the same region and at the same time as a set of six khipus in his database, so in theory it and the khipus were recording the same things.

Checking it out, Urton found that there were 132 tribute payers listed in the text and 152 cords on the khipus. The fine details fitted too, with the numbers on the cords matching the changes the Spanish document said had been levied. “It was an equivalent of the Rosetta stone, which contained a translation of Egyptian hieroglyphics into ancient Greek and unlocked that picture language,” says Urton.

There are reasons to think khipus may record other things, including stories and myths – the sort of narrative information that many cultures write down. De la Vega was among many chroniclers who hinted as much, writing in one passage that the Incas “recorded on 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 they had uttered”. True, he was prone to ambiguity and contradictions. But about a third of the khipus in collections seem to have a more elaborate construction than the others, as if they contain a different sort of information.

For decades the point was moot, however, because no one could read any of them. The first hints of revelations from khipus came in the 1920s, when anthropologist Leland Locke analysed a bunch of them housed at the American Museum of Natural History in New York. He noticed that the knots are organised in rows almost like beads on an abacus (see diagram, page 37). He demonstrated that each row of knots at a certain height denoted units, tens, hundreds and so on. That made sense, fitting with the decimal system the Inca used to divide up certain height denoted units, tens, hundreds and so on. That made sense, fitting with the decimal system the Inca used to divide up apart the detail of the connections between the Santa valley khipus and the Spanish documents. He ended up letting a Harvard undergraduate student named Manny Medrano take a look. He turned out to have the perfect complement of skills for the job. He was a native Spanish speaker and, majoring in economics, he was a whizz with spreadsheets. Medrano painstakingly generated tables of the khipu data and combed through them in search of matching patterns. This year, he and Urton showed that the first time that the way pendant cords are tied onto the primary cord indicates which numbers on the cords matching the Spanish document said had been levied. It was what the colonists referred to as a “reissue,” a reassessment of six clans living around the village of Recuay in the Santa valley region of western Peru.

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The incredible Collata khipus

Khipus were knotted strings used in the Inca Empire to record information. They were made of grass and were used by Inca leaders to communicate with each other. The strings were knotted in specific patterns to represent numbers, names, and other pieces of information. The patterns were complex and could take years to learn.

Inca inventors

The Inca Empire was known for its advanced engineering skills. They built impressive structures such as the Machu Picchu and the Inca Trail, which were used for trade and communication. They also had a complex system of writing known as the khipu, which was used to record important information.

Hyland's research

Hyland's research has focused on the khipus and their use in the Inca Empire. She has worked with the last remaining khipus in Collata, Peru, and has made significant progress in understanding how they were used.

The khipus are known to be made of colored cords that are knotted in specific patterns. The patterns represent numbers and other pieces of information. Hyland has been able to decode some of the patterns and has made some important discoveries.

Examples of khipus

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Inca Inventions

Inca inventors, called “khipu kuna,” were responsible for creating and maintaining the khipus. They were highly skilled in their craft and were able to decode the complex patterns that the khipus contained. The khipus were used for communication, record-keeping, and other important purposes.

Written in knots

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