

DECODING ANTIQUITY

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By Andrew Robinson

WRITING is one of the greatest inventions in human history. Perhaps the greatest, since it made history possible. Without writing, there could be no accumulation of knowledge, no historical record, no science - and of course no books, newspapers or internet.

The first true writing we know of is Sumerian cuneiform - consisting mainly of wedge-shaped impressions on clay tablets - which was used more than 5000 years ago in Mesopotamia. Soon afterwards writing appeared in Egypt, and much later in Europe, China and Central America. Civilisations have invented hundreds of different writing systems. Some, such as the one you are reading now, have remained in use, but most have fallen into disuse.

These dead scripts tantalise us. We can see that they are writing, but what do they say?

That is the great challenge of decipherment: to reach deep into the past and hear the voices of the dead. When the Egyptian hieroglyphs were deciphered in 1823, they extended the span of recorded history by around 2000 years and allowed us to read the words of Ramses the Great. The decipherment of the Mayan glyphs revealed that the New World had a sophisticated, literate civilisation at the time of the Roman empire.

So how do you decipher an unknown script? There are two minimum requirements. First, there has to be enough material to work with. Secondly, there must be some link to a known language. It helps enormously if there is a bilingual inscription or identifiable proper names - the Rosetta Stone, for example, is written in both ancient Egyptian and ancient Greek, and also contains the name of the Ptolemy dynasty. If there is no clear link, an attempt must be made to relate the concealed language to a known one.

Many ancient scripts have been deciphered (see "The great decipherments"), but some significant ones have yet to be cracked. These fall into three broad categories: a known script writing an unknown language; an unknown script writing a known language; and an unknown script writing an unknown language. The first two categories are more likely to yield to decipherment; the third - which recalls Donald Rumsfeld's infamous "unknown unknowns" - is a much tougher proposition, though this doesn't keep people from trying.

Most of the undeciphered scripts featured here have been partially deciphered, and well-known researchers have claimed that they have deciphered some much more fully. Further progress is possible for most of them, especially if new inscriptions are discovered, which fortunately happens fairly often.

1 Etruscan Greek and not Greek

(known script, unknown language)

For those interested in language and writing, the Etruscans are a fascinating and frustrating bunch. Decipherment of the Etruscan language is like trying to learn English from reading nothing but gravestones. The Etruscan script was written in a form of the ancient Greek alphabet, but their language was unlike any other. So although Etruscan sentences can easily be "read", nobody has much idea what they mean, apart from the names of people and places, and a smattering of vocabulary and standard phrases.

The Etruscans were a prehistoric civilisation that arose in western Italy - what is now Tuscany and parts of Umbria - and was absorbed into the Roman empire by the first century BC. The Etruscans were highly literate, leaving thousands of texts. Many Etruscan artefacts are inscribed with the Greek alphabet, almost certainly borrowed from Greek colonists who settled in western Italy around 775 BC.

The everyday Etruscan alphabet is different, however. Although it strongly resembles the Greek one, it differs significantly too. The main difference is that Etruscan letters generally point in the opposite direction to Greek ones, because Etruscan was written from right to left.

Researchers persisted for over a century with efforts to relate Etruscan to other European languages - including Basque - by looking for similarities between readable Etruscan words and words in known languages. The attempt was hopeless. Etruscan is definitely not an Indo-European language and is now regarded as an isolate, like Basque.

Nevertheless, some Etruscan words can be understood from their contexts in inscriptions, such as Ruma (Rome), Clevsina (the city of Chiusi) and Fufluns (the god Dionysus). The problem has been to find the meanings of the many words that are not names. Perhaps 250 words have now been generally agreed, for example ci avil (three years), and this number is increasing as new inscriptions are discovered.

2 Meroitic hieroglyphs voices of the black pharaohs

(known script, unknown language)

In the first millennium BC, the kingdom of Kush flourished around the two great bends of the river Nile between Abu Simbel and Khartoum, in what is now Sudan. The Kushite (or Meroitic, after the capital Meroe) civilisation was one of the most important early states of sub-Saharan Africa.

In 712 BC, Kushite kings conquered Egypt and were accepted as its 25th dynasty. The "black pharaohs" ruled for nearly 70 years until war with the Assyrians forced the Kushites back to their homeland in 656 BC.

The Meroitic hieroglyphs date from after this defeat: the Kushite pharaohs used Egyptian hieroglyphs, but from the 3rd century BC these increasingly appeared alongside a new, indigenous script. As in Egypt (for example, on the Rosetta Stone), there are two forms of this script: hieroglyphic, which was used on monuments and had essentially pictographic signs, and everyday cursive, or joined-up, writing.

There are 23 symbols in each form of Meroitic. In that respect it resembles a modern alphabet - unlike Egyptian hieroglyphics, which use hundreds of symbols. Around 1911, Francis Llewellyn Griffith, an Egyptologist at the University of Oxford, deciphered the phonetic values of both Meroitic scripts from inscriptions that record a text in Meroitic and Egyptian scripts.

Meroitic words can therefore be "read", like Etruscan words. Frustratingly, however, they cannot be understood, because the Meroitic language is unknown. Proper names can be deciphered, and a few dozen other words, such as *tenke* (west) and *ato* (water), can be guessed from their contexts, but that is all.

Griffith always believed that Meroitic would eventually be deciphered. But despite decades of comparisons between Meroitic words and the ancient and modern African languages of the region, no convincing resemblance has yet been detected.

3 The New World Olmec, Zapotec and Isthmian

(Olmec: unknown script, unknown language Zapotec: unknown script, possibly known language Isthmian: unknown script, possibly known language)

We know that the classical Mayan civilisation (around AD 250 to the 8th century) was literate, but the origins of writing in Central America - and the New World as a whole - are murky. The region has a number of undeciphered ancient scripts. Three have attracted particular interest: Olmec, Zapotec and Isthmian.

The earliest American script may come from the Olmecs, the region's most ancient civilisation, which flourished along the Gulf of Mexico coast of the Isthmus of Tehuantepec from around 1500 to 400 BC. The Olmecs were thought to be illiterate until the late 1990s, when an inscribed stone block was discovered by road builders. Dated to 900 BC, the inscription is made from 62 symbols, some of which are repeated. It is very probably writing, but without the discovery of further inscriptions there is no certainty, and no hope of decipherment.

The Zapotec civilisation of Oaxaca undoubtedly had writing. Some 1200 inscribed objects have been found, ranging from painted walls to pots, bones and shells. The date of the script appears to lie somewhere between 600 and 400 BC.

Scholars have been able to work out the Zapotec calendar and show it to be a precursor of the Mayan one. But even though Zapotec languages are still spoken in the area, it has proved more difficult to reconstruct the language of the script, in part because of the bewildering complexity of the modern Zapotecan language group.

The latest and most controversial of the three scripts is Isthmian. Even its name is not agreed: some call it "epi-Olmec". In 1902, an unusual statuette made of jade was ploughed up in a field in the Olmec area. It represents a man dressed as a duck, and was inscribed with about 70 unknown symbols. Deposited in the Smithsonian Institution in Washington DC, the Tuxtla statuette was the only example of the script until 1986, when fishermen stumbled on a second example in a river: a 4-tonne slab of polished basalt with a much longer inscription.

The script dates to the 2nd century AD. The most likely language is an archaic version of Zoquean, a current language of the Isthmus of Tehuantepec. Two linguists, John Justeson of the State University of New York in Albany and Terrence Kaufman of the University of Pittsburgh, Pennsylvania, have proposed a decipherment based on their reconstruction of "pre-Proto-Zoquean". Unless more inscriptions turn up, this must remain a well-informed conjecture.

4 Linear A a Minoan mystery

(partially known script, unknown language)

In 1900, British archaeologist Arthur Evans discovered not one but two unknown scripts, both scratched on clay tablets, while digging at the "Palace of Minos" at Knossos in Crete - the centre of the Bronze-Age Minoan civilisation.

One of these, Linear B, was famously deciphered in 1952, making it Europe's earliest readable writing (see "The great decipherments"). The other, Linear A, remains undeciphered.

Linear B dates from around 1450 BC. It is an archaic form of written Greek used by Greek-speakers who conquered parts of Crete around that time. Linear A is older, from the 18th century BC. It is the script of the Minoan civilisation, and the only solid link we have to the lost Minoan language.

Unfortunately for decipherers, we have much less Linear A than Linear B - around 1500 texts, mostly from Crete but also from other Aegean islands, mainland Greece, Turkey and Israel. The majority of the inscriptions are short or damaged.

The symbols of Linear A strongly resemble those of Linear B, but this does not mean that a Linear A symbol necessarily has the same sound as a similar Linear B symbol, because Minoan and Greek were different. You can read Linear A using Linear B sounds - but because no one knows Minoan, we cannot be sure if the words are correct. What can be deduced from such substitutions, however, is that the language of Linear A is not Greek.

5 Rongo-rongo the chant of Easter Island

(unknown script, probably known language)

Easter Island is a place of intrigue and mystery, and its indigenous script rongo-rongo is no exception.

Rongo-rongo means "chants" in Rapanui, the language of Easter Island. Although the language of rongo-rongo is probably similar to Rapanui, the script is complex and baffling. There are only 25 inscriptions, some quite long, and all written on driftwood.

Its age is puzzling. Local legend has it that the writing was brought to the island by boat when Easter Island was settled from Polynesia; the date is unknown, but could have been as early as AD 300. However, the first Europeans to land, a Dutch fleet in 1722, saw no evidence of rongo-

rongo. When two Spanish ships arrived in 1770 and made a "treaty" claiming Easter Island for Spain, the islanders "signed" the treaty - but their signatures do not resemble rongo-rongo.

Captain James Cook, landing in 1774, saw no writing. The first confirmed sighting of rongo-rongo was by a French missionary in 1864, who noted that knowledge of the signs was dying out. Despite efforts by the bishop of Tahiti in the 1870s, no islanders could be found to read the writing. Since then scholars have been at odds on how to interpret it.

Not surprisingly, rongo-rongo has been a powerful kook attractor. One popular, but absurd, idea relates rongo-rongo to the Indus script simply because some of the signs are alike.

One thing is beyond dispute: the direction of reading is unusual, though not unique. To read a rongo-rongo tablet, you start at the bottom left-hand corner and read along the line. Then you turn the tablet by 180 degrees and begin reading the next line up, again from left to right. At the end of that line, you repeat the 180-degree turn, and so on. This is known as reverse boustrophedon ("boustrophedon" is ancient Greek for "as the ox turns" when ploughing).

6 Indus script sign of the unicorn

(unknown script, possibly known language)

The remains of the Indus valley civilisation cover an area of Pakistan and north-west India about a quarter the size of Europe. At its peak, between 2500 and 1900 BC, its major cities were comparable with those of contemporary Mesopotamia and Egypt.

The exquisitely carved script of this civilisation is known from about 5000 inscriptions, many of them on stones found scattered in the houses and streets of its ruined cities. A frequent motif on the seals is a one-horned quadruped like a unicorn (a creature, legend has it, from India). The texts are tantalisingly brief. The average length is just five signs, the longest only 20. A few researchers have questioned if they really are writing, but the majority reckon they are.

The language of the Indus civilisation may have died out altogether, though some speculate that it relates to the Dravidian languages now spoken only in southern India and in Baluchistan, not far from the Indus valley, where the Dravidian language is known as Brahui. If the Dravidian hypothesis is correct, it might be possible to match words from the old form of Tamil, a Dravidian language spoken in Tamil Nadu, with the Indus signs.

For example, a very common sign is the fish (see below). The Old Tamil word for fish is min. But min has another meaning too - "star" or "planet". Perhaps the fish sign stands for an astral word - a bit like using a pictogram of the sun in a puzzle to mean "son".

Attractive as such speculation is, we are still a long way from deciphering the Indus script. More than 100 decipherments of the script have been published since its discovery in the 1920s, some by respected archaeologists, but they differ widely, often wildly.

7 Proto-Elamite oldest undeciphered writing

(partially known script, unknown language)

Proto-Elamite is the world's oldest undeciphered script - assuming that it really is a fully developed writing system, which is by no means certain. It was used for perhaps 150 years from around 3050 BC in Elam, the biblical name for an area that corresponds roughly to today's oilfields of western Iran. It is almost as old as the oldest writing of all, the earliest cuneiform from Mesopotamia. Little is known about the people who wrote the script.

Proto-Elamite preceded a partially deciphered script, Linear Elamite, used in the same area 750 years later. Linear Elamite in turn preceded a third script, a cuneiform that the Elamites used for many centuries starting in the 13th century BC. Elamite cuneiform was deciphered in the 19th century.

So there are three Elamite scripts, each separated by about 800 years and with no texts to fill the gaps: no Chaucer or Shakespeare to link Anglo-Saxon with modern English, as it were.

The relationship between Proto-Elamite and Linear Elamite is controversial. The discoverer of Proto-Elamite in the early 20th century was convinced that the two scripts wrote the same language. Later scholars agreed. But since the 1980s, specialists have become increasingly persuaded that there is no evidence for a shared language and culture. They have worked out Proto-Elamite arithmetic in impressive detail, but the language of the inscriptions is still completely unknown.

8 Phaistos disc oldest printing, or hoax?

(unknown script, unknown language)

The notoriously solitary Phaistos disc from Crete appears to be the world's oldest "printed" document. The disc, about 15 centimetres in diameter, occupies pride of place at the Heraklion Museum in Crete. Some say it should not be regarded as an undeciphered script because it is in fact a hoax - the Piltdown Man of ancient writing.

However, most authorities have treated it as genuine since its discovery by Italian archaeologists in 1908 at ancient Phaistos, in an archaeological context suggesting a date of about 1700 BC. Few scholars, however, have been intrepid enough to propose a decipherment.

The disc is made of baked clay and has inscriptions on both sides consisting of a spiral of symbols impressed into the wet clay with a set of stamps. The 241 or 242 symbols (one is obliterated) were made by 45 different stamps. This is about all that can be stated without fear of overstepping the evidence.

But why should anyone have bothered to produce a set of 45 stamps, rather than "writing" the signs afresh? If it was to mass-produce documents, why have no others been found? And why are the symbols unlike any of the signs of the other Cretan scripts?

One idea is that the disc was imported, possibly from Anatolia (one symbol resembles an Anatolian rock tomb). If so, the disc's language may be some unknowable non-Cretan tongue. Unless more of the script is found, however, the Phaistos disc must remain a perplexing riddle.

Profile Andrew Robinson

Andrew Robinson is the author of *Lost Languages: The enigma of the world's undeciphered scripts* (Thames & Hudson) and *Writing and Script: A very short introduction* (to be published by Oxford University Press in August). He is a visiting fellow of Wolfson College, Cambridge

The great decipherments Andrew Robinson

EGYPTIAN HIEROGLYPHS

WHEN? 1823

WHO? French orientalist Jean-François Champollion

HOW? By starting with the bilingual Rosetta Stone, partly deciphered by the physicist Thomas Young, and applying his profound knowledge of ancient Egypt and the Coptic language, which is similar to ancient Egyptian

BABYLONIAN CUNEIFORM

WHEN? 1850s

WHO? British Assyriologist Henry Creswicke Rawlinson and Irish clergyman Edward Hincks

HOW? Using Darius the Great's trilingual cuneiform inscription at Behistun in western Persia, written in Old Persian, Babylonian and Elamite cuneiform. Two decades of concentrated study may have helped too

LINEAR B

WHEN? 1952

WHO? British architect and amateur classicist Michael Ventris

HOW? Years of slog, assisted by an architect's analytical thinking plus a flash of insight that the language of Linear B was Greek even in the absence of a bilingual inscription

MAYAN GLYPHS

WHEN? 1952

WHO? Soviet linguist Yuri Knorosov

HOW? By matching the signs in a flawed Mayan-Spanish "alphabet" recorded by a Spanish inquisitor in 16th-century Mexico with signs in ancient Mayan manuscripts, and then matching the words they apparently spelt with words listed in recent Mayan dictionaries

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