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Other Pre-alphabetic Scripts of Crete and Cyprus

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Linear B was only one of a series of related writing systems. It bears a close relationship with two earlier scripts in use in Crete during the Middle and Late Bronze Ages, and a more distant – but nevertheless very significant – relationship with the syllabic systems of Cyprus in the Late Bronze and Iron Ages. Most of these other scripts are considered to be undeciphered, with the exception of the Cypriot Syllabic script of the first millennium BC, which like Linear B was used to record the Greek language.

Cretan Hieroglyphic

Writing first appeared in Crete around the beginning of the Middle Bronze Age (about 2000–1800 BC) in the form of a system of quite pictorial-looking signs. Although the signs look like pictures of often recognizable entities like animals and body parts, they are not pictographic in the same sense as Egyptian hieroglyphs, where pictographic signs each represent whole words and can be combined to make sentences. In the Cretan writing system each sign represents a syllable, just as in Linear B. The only difference is that these signs look much more like small drawings of objects and animals than the later signs, which have become more linear and correspondingly more abstract. So the name 'Cretan Hieroglyphic' is really a misnomer that has remained in currency since the first categorization of Cretan writing systems made by Arthur Evans in his 1909 work *Scripta Minoa* (see chapter 1).

With only around 300 Cretan Hieroglyphic inscriptions surviving, our chances of deciphering the script and understanding whatever language is written in it are very small at present. Even so, a study of the inscriptions and the objects on which they are written can tell us a lot about the functions and context of writing. For example, a large proportion of surviving Cretan Hieroglyphic inscriptions are written on seal stones (figure 1). A larger number of clay documents bearing the impression

Figure 1
Seal stone made of green jasper and inscribed with a Cretan hieroglyphic inscription. The middle sign is easily recognized as a representation of an eye, and the bottom one as a representation of a cat's head
(Courtesy of Ingo Pini)

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of such seal stones has also been found, showing a connection between the inscriptions and administrative uses of writing. Cretan Hieroglyphic signs could also be written directly on to clay documents with a stylus, in a manner very similar to Linear A and Linear B.

The relationship between pictorial representation and writing is never more obvious than with Cretan Hieroglyphic,[1] and even though this script remains undeciphered it gives us some important clues about the origins of signs in other related writing systems. In Linear B it is still sometimes possible to identify what a sign was originally supposed to look like, especially when we are dealing with a sign that is used as both a *syllabogram* (representing a syllable like *a*, *ti* or *ko* and used to spell out words) and an *ideogram* (representing a whole concept or commodity, like *sheep*, *swords* or *cloth*). A good example is the syllabogram *mu* (moo!), which is also the ideogram for a cow, suggesting that the values of some syllabograms could be closely connected to what was represented by the corresponding ideogram. It is very common to find Linear B signs that have antecedents in Linear A (on which see below), but there are also some cases where we can identify a related sign in Cretan Hieroglyphic, like the cat's head sign shown in figure 1 (bottom sign), which in Linear A has become more abstract (often a triangle with two upper extensions for 'ears') but can sometimes be written in a more pictorial way (figure 2), while in Linear B it no longer looks very much like a cat at all. In Linear B we know that this sign stands for the syllable *ma* (), and it is very likely that it had the same value in the other scripts.

Even though we know less about it than we do about the other scripts, Cretan Hieroglyphic is a very important part of the story of writing in ancient Crete. It is furthermore striking that Cretan Hieroglyphic signs appear to be new creations, with little evidence to corroborate a long-standing view that the script was based on, or created with knowledge of, other writing systems around the Mediterranean such as Egyptian hieroglyphs. In turn this suggests that the earliest development of writing in Crete was an innovative and transformative process, and one that was to have long-lasting effects on the island.

Linear A

Appearing shortly after Cretan Hieroglyphic, and co-existing with it for perhaps two or three hundred years, was another writing system that we

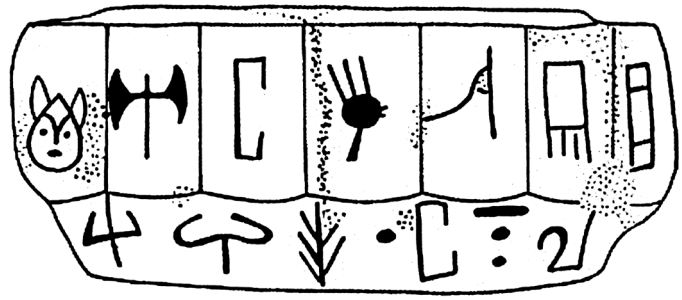

Figure 2
Line drawing of one side of a Linear A inscribed stone vessel. The first sign on the top left is an elaborate version of the cat's head sign. (After Godart and Olivier 1976–85, vol. 4, IO Za 2)

call Linear A. Again we owe the term to Arthur Evans's categorization of Cretan writing, who saw this system as more linear-looking than Cretan Hieroglyphic – and, again, the term remains in currency today, over a hundred years after it was coined. Based on our modern impression of the distinctive features of each script, it is usually possible to classify any given inscription as being written in either Cretan Hieroglyphic or Linear A. However, we do not understand very well why the two scripts co-existed with each other for so long, or to what extent their users viewed them as separate entities.

Linear A remained in use for longer than Cretan Hieroglyphic, lasting into the second phase of the Late Bronze Age (around the fifteenth century BC), by which time it was written almost exclusively on clay documents like tablets and sealings. However, over the several hundred years when it was in use, we have a clear indication that Linear A was not restricted to clay administrative documents alone because a small number of other inscribed items have survived. These include items of jewellery made of silver and gold, such as pins and rings, as well as bronze axe heads, pottery vessels and stone vessels. The last of these categories, usually consisting of slabs of stone with a hollowed-out basin, are particularly intriguing because their inscriptions often include elements of a repeated formula, possibly related to a religious use for the items. Overall, however, it is the clay tablets and sealings that make up the overwhelming majority of the surviving corpus of inscriptions, with around 1,500 examples.

Linear A is clearly much more closely related to Linear B than is the Cretan Hieroglyphic script. We can observe very close affinities in the shape of Linear A and Linear B signs, to the extent that it is possible to identify more than 70 per cent of Linear B signs with Linear A antecedents. There are also very good reasons to believe that Linear B did not make drastic changes to the values of most signs, which means that we can use the deciphered Linear B script to 'read' Linear A.[2] In practice, however, this does not mean that we understand the language of Linear A: surviving Linear A inscriptions do not contain vocabulary items that can confidently be identified as belonging to any other known language. By contrast, the successful decipherment of Linear B was owed in part to its superior numbers of surviving inscriptions (four times as many as we have for Linear A) and in part to the fortunate coincidence that the language recorded in it was a well understood and recognizable one, namely Greek. Whatever the language of Linear A, which is often referred to as 'Minoan', we can be sure at least that it is not Greek.

In the current state of knowledge, it seems unlikely that the language written in Linear A could be fully understood without further discoveries of long inscriptions that could give us some clues to its identity. Nevertheless, a study of the inscriptions we have can be very fruitful. Sometimes place names or personal names that are attested in Linear B documents also appear in Linear A documents, such as the place name Phaistos (*pa-i-to*) in southern Crete – the name is still in use today. Looking at patterns in Linear A sign sequences also allows a study of some of

the language's morphological properties, which look quite different from those of Greek. Occasionally we can even work out the meaning of a word. The best example is the word *ku-ro*, which appears at the end of lists of commodities: the numeral that follows *ku-ro* is the sum of each of the individual numerals in the list entries, and so we can identify the word *ku-ro* as meaning 'total'.

Many of the individual words in surviving Linear A inscriptions occur only once, or recur only infrequently, which again makes it difficult to try to ascertain what sort of word we are dealing with in any given case – for example, whether a word is a noun, a person's name, a verb, etc. The best opportunity to try to understand the construction of a sentence is found in the so-called 'libation formula': a recurring set of words that often appear on stone vessels with hollows, whose purpose is thought to be religious. Variants of several words reappear together in this context: *a-ta-i-*301-wa-ja*, *a-di-ki-te* (which could be related to the name of Mount Dikte, also found in the Linear B tablets), *ja-sa-sa-ra-me*, *u-na-ka-na-si*, *i-pi-na-ma*, *si-ru-te*. However, the exact composition of the 'phrase' as well as the exact form of each word can vary from one inscription to another, making it more challenging to try to reconstruct how the words fit together. The more evidence we have, the better our chances of making sense of such inscriptions, and further advances are entirely possible following the sorts of careful methods that were employed in the decipherment of Linear B.

The story of how Greek speakers came to adopt the Linear A script and create the one that we call Linear B is not very easy to reconstruct. Once envisaged as a violent episode in which Mycenaeans ousted Minoans from their native land, we now better understand this period as one of gradual if decisive transition. Where previously there had been regional administrative centres in different areas of the island, in the period between 1450 and 1375/1350 BC it looks as though power was concentrated at Knossos in the north of Crete. This may be where Greek speakers encountered the use of Linear A in administrative documentation, and adapted it for their own uses; at quite an early stage the new Linear B script was transferred to Mycenaean centres in mainland Greece along with the administrative processes with which it was associated. What is striking is that although the Mycenaean Greek speakers made some changes, their methods of bureaucratic administration were very much modelled on those of their Minoan predecessors, in particular the types of documents in which Linear A records had been kept.

Mycenaean Greek speakers seem however to have had a different attitude to writing and what it could be used for. Linear B was restricted almost completely to bureaucratic clay documents, and even the few exceptions to this rule (for example, a number of stirrup jars with painted inscriptions) seem to belong to the administrative sphere. The more 'private' uses of writing witnessed in Linear A, such as inscriptions on pieces of jewellery and votive items, were apparently abandoned.

Figure 3
One of the earliest Cypro-Minoan inscriptions, written on a clay tablet. (Courtesy of Silvia Ferrara)

Cypro-Minoan

Linear B was not the only writing system to be derived from Linear A. At some point around the beginning of the Cypriot Late Bronze Age (the sixteenth or early fifteenth century BC), a new system based on Linear A was adopted in Cyprus. This adaptation created a quite different-looking system that is usually labelled Cypro-Minoan, again based on Arthur Evans' categorisation. Although one of the earliest surviving texts, a clay tablet from Cyprus, has quite a Linear A 'look' to it (figure 3), most of the 250 surviving Cypro-Minoan inscriptions are somewhat different in appearance. This means that it is not a simple task to try to work out how each of its signs might be related to Cretan predecessors in Linear A.

Despite the smaller number of surviving inscriptions in Cypro-Minoan (which has the smallest corpus of all the Aegean scripts), we have enough to be able to identify some signs that are very clearly related to ones in Linear A. Even better, we can reconstruct the values of the signs using the values of signs in a later Cypriot script derived from Cypro-Minoan, usually called the Cypriot Syllabary and used often to write the Greek language (see the next section). It is very striking that there are about ten or eleven signs that have the same values in the Cypriot Syllabary and in Linear B (both scripts used for Greek, which means we can understand them). If they share the same values in these two scripts, this must be because they also had the same value in the ancestor of each script, i.e. Linear A (the script from which Linear B was derived) and Cypro-Minoan (the script from which the Cypriot Syllabary was derived). So, we can for example reconstruct the value *ti* for an arrow-shaped sign found in all four of these scripts (figure 4), and the same can be said confidently for a handful of other signs.

Although it is probably the case that the shapes and perhaps even values of a number of signs changed in the adaptation of Cypro-Minoan

Figure 4
Clay ball with a Cypro-Minoan inscription. The sign on the right is the arrow-shaped sign, ti. (Courtesy of Silvia Ferrara, with digital enhancement by Philip Boyes)

from Linear A, the core of ten or eleven signs whose values can easily be reconstructed proves the close relationship between these writing systems. For the other signs, a study of developments in their shape over time can help us to try to understand where each sign came from and what it developed into.[3] Such palaeographical analysis has the potential to reveal links between the signs that are not always obvious when looking at any single inscription, and it is very important to consider the whole range of inscriptions, as well as the effect of using a different medium: for example, it is possible to achieve more rounded shapes when incising in wet clay than it is when incising on a surface like hard metal or stone.

Although there are clearly some advances that can be made in the study of Cypro-Minoan, it has not yet been possible to understand the language (or perhaps languages) written in it. One reason is the small number of inscriptions, as well as their short length (the vast majority of the surviving 250 inscriptions are ten signs long at a maximum, and most are shorter than that), which means that we have very little material to analyse. Another problem in this regard is the diversity of the inscriptions. Cypro-Minoan is attested between the sixteenth/fifteenth century to the tenth century BC, and over the five hundred years or more when it was in use, it was written on a wide variety of different objects.

Like the other Aegean scripts, Cypro-Minoan is sometimes found on clay tablets and other documents like labels and cylinders. The most popular surviving clay document type is, however, of a type not found in Crete, namely the clay ball: these were small spherical pieces of clay with short inscriptions running around the outside (figure 4), a very distinctive Cypriot object with few parallels elsewhere. There were also numerous other types of objects bearing inscriptions, including items of jewellery, bowls made of silver and bronze, votive items including clay figurines and ivory pipes, bronze 'spits' and miniature ingots, stone and especially clay vessels of various sizes and shapes. This array of inscribed items tells us something very important about Cypriot literacy in the Late Bronze Age, namely that writing was perceived as suitable for use in many different spheres of life. This might remind us of the situation found in Linear A, while it stands in stark contrast with the situation in Linear B.

While Cypro-Minoan may not be easy to decipher, given the small amount of inscribed material surviving, there is in fact great potential for understanding the context of Cypriot writing in the Late Bronze Age.

Studying the range of inscribed objects and their archaeological context can tell us a great deal about the role of writing in society.[4] Meanwhile, the position of Cypro-Minoan as 'daughter' of Linear A, 'sister' of Linear B and 'mother' of the Cypriot Syllabary – to envisage the relationships as a family tree – gives us some significant advantages in an attempt to reconstruct the values of Cypro-Minoan signs. With further finds of inscriptions coming to light every so often in archaeological excavations, better understanding of the content of inscriptions may one day be tantalisingly within reach.

The Cypriot Syllabary

The last of the Aegean writing systems is the also the latest, the Cypriot Syllabary, a system developed from Cypro-Minoan and used in Cyprus for hundreds of years from at least the eighth century to the third or second century BC. It was used to write Cypriot Greek during this period, and also to write a local Cypriot language that we do not understand, known today as 'Eteocypriot'. As a syllabic system broadly similar in appearance to the other Aegean systems, the Cypriot Syllabary occupied the odd position of being the only non-alphabetic script used for Greek anywhere in the Mediterranean at this time. Elsewhere, it was the very prolific Greek alphabet that was used, developed from the Phoenician alphabet and passed on to other areas including most significantly Italy, where Etruscan and Latin speakers also adopted it. The continued use of the Cypriot Syllabary to write Greek in Cyprus throughout this period looks very much like a statement of Cypriot identity and independence.

The Cypriot Syllabary was in fact the first of the Aegean scripts to be deciphered. The decipherment was made long before that of Linear B, by the Assyriologist George Smith in the nineteenth century. The basis for his decipherment was a bilingual inscription with parallel texts written one above the other in Phoenician and Cypriot Syllabic Greek, discovered at the site of Idalion in central Cyprus (figure 5). Phoenician, an alphabet in which only consonants were represented, had already been deciphered and so could be understood reasonably well, thus providing the sense of the text. Most words and phrases in the bilingual had to be translated to understood, but there were some names that had close parallels in both the Phoenician and the Cypriot Greek halves of the text. In the top line, for example, the Phoenician phrase *MLK MLKYTN*, 'of King Milkyaton', is paralleled in the first line of the Cypriot Greek half, where the phrase *pa-si-le-wo-se mi-li-ki-ya-to-se* has the same meaning (*mlk* and *basileus* being respectively the Phoenician and Greek word for 'king'), and the name Milkyaton is spelt in a similar way in both halves. Working through the whole inscription therefore gave important clues to the values of Cypriot Syllabic signs.

The decipherment of the Cypriot Syllabary was achieved by Smith, and aided by the work of other nineteenth-century scholars such as Moritz Schmidt, Wilhelm Deecke and Johannes Brandis. It was this great step forward in our understanding of one of the Aegean scripts that

Figure 5
Bilingual inscription in Phoenician (at the top) and Cypriot Syllabic Greek (below). (British Museum 125320, © Trustees of the British Museum)

unlocked the potential to decipher others. The stability of the shape and value of some signs across the Aegean scripts meant that when scholars in the twentieth century began to attempt decipherment of Linear B, they could already be confident of the values of some of its signs. Nevertheless, the task was not straightforward: the signs of the Cypriot Syllabary had undergone a number of developments since the original adaptation of Cypro-Minoan from Linear A, leaving only about ten or eleven that were close enough in shape and value to allow certainty in reconstructing them. The values of other signs of Linear B had to be reconstructed via a much more complex process (see chapter 2).

Even though it is formally 'deciphered', there still remain a few unanswered questions surrounding the use of the Cypriot Syllabary. One of the most intriguing is the use of this script to write an otherwise unknown language that has been labelled by modern scholars as 'Eteocypriot'. Only about twenty-five Eteocypriot inscriptions survive, and although we can reconstruct some features of the language (for example a probable case system and some of its phonology), the content of most of the inscriptions remains mysterious.[5] Even the survival of one complete and three fragmentary bilingual inscriptions (in Eteocypriot and Greek) has not helped very much, perhaps because the Eteocypriot language is not closely related to any well-understood languages known today.

The Cypriot Syllabic script persisted throughout the age of the city kingdoms in Cyprus, when the island was divided between independent

cities with their own kings, who sometimes used Cypriot Syllabic inscriptions to mark events of their reign and on their coinage. During this period, the script enjoyed quite widespread use: not only were there 'public' inscriptions issued by royal dynasties and found in religious sanctuaries, but there have also survived numerous inscriptions of a more 'private' nature, including gravestones and graffiti on pieces of pottery. In the fourth century BC, mercenaries serving in the armies of Egyptian pharaohs were literate enough to write their own names on the walls of Egyptian temples, and there is even a Cypriot Syllabic graffito on a block of the Great Pyramid of Khufu. At the end of the fourth century BC however, Cyprus became politically unified under the Ptolemaic dynasty, at which point the Greek alphabet was adopted as the writing system used for official inscriptions. The surviving epigraphic record suggests that the Cypriot Syllabary went out of use within the next one or two centuries, putting an end to the last of the Aegean scripts.

Future directions

There remain enough mysteries surrounding the Aegean scripts and their relationships with each other that scholars today are still researching and shedding new light on these issues all the time.[6] In some cases, we may be able to make progress towards decipherment, but decipherment is not the only goal of such studies: analysing the surviving inscriptions of Crete, Greece and Cyprus in the Bronze and Iron Ages has great potential for helping us to understand literacy and the role of writing in society, as well as the relationships between different groups of people who passed writing on from one to another.

A new research project based in Cambridge, *Contexts of and Relations between Early Writing Systems*, has recently begun to explore such relationships between the Aegean scripts in comparison with the development of early alphabetic scripts of Greece and the Levant, showing the potential for the study of broader connections that can help us to understand why and how writing systems change. Meanwhile, new inscriptions can often come to light in ongoing archaeological excavations, and with every new inscription comes the hope of a better understanding of the languages and writing systems of the ancient Aegean and Cyprus.