Writing «systems»: Literacy and the transmission of writing in non-administrative contexts

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Abstract[1]: A wide range of document types have been preserved written in the undeciphered scripts of the Aegean and Cyprus (Cretan Hieroglyphic, Linear A and Cypro-Minoan), with inscriptions appearing on a variety of media and object types. Some of these inscriptions are assumed to relate to centralised administrative structures, especially those on particular types of clay objects such as tablets and seals/sealings. This paper, however, will deal with the question of literacy existing outside of any centralised administrative sphere. Within an administrative context, we may envisage writing as an economic or bureaucratic tool, controlled to some extent through training in the structure and conventions of the script. ~~The nature of the writing system itself is also controlled by this context, because centralised control over writing entails a degree of standardisation in the system used.~~ Outside of such a context, however, we face the question of how and why writing is proliferated: Who is using it and how do they know how to do it? Do they have access to any kind of training? How standardised is the script they use? The Aegean and Cyprus provide us with some important parallels and differences. On Crete in particular, the concept of administrative writing, whether in seals and sealing practices or in centralised record-keeping, was probably always part of the story. The context in which the deciphered Linear B writing system was adapted from still undeciphered Linear A had a tangible effect on the type and composition of the new script, which was developed alongside administrative influence. Unlike its descendant Linear B, however, we must also remember that Linear A is well attested in non-administrative or 'private' contexts, raising the question of whether individuals writing outside the administrative sphere were using the same model of script as the centralised administrations. On Cyprus, we must envisage a completely different context for script adoption. Although the need for writing was probably stimulated by economic development, and although the Late Bronze Age Cypriot script(s) was/were related to the Aegean ones, there is no evidence for Cypriot writing existing within a closely controlled and centralised administrative system. Instead we find a vast array of inscribed objects from a wide variety of contexts, many of which look decidedly non-administrative. It may be no accident that, alongside this diversity in attested written forms, there continues a longstanding scholarly debate concerning the number of writing systems in existence in Late Bronze Age Cyprus. Difficulties in reconstructing the

size and composition of the script(s) in use may correspond to real variation (as opposed to standardisation) in the written repertoire. An investigation of these factors has the potential to stimulate new debate on what we mean by 'writing', and what we are doing when we try to reconstruct an undeciphered writing 'system'. ~~For the systematisation of writing is itself open to question, and closely dependent on the context in which writing was being used~~,

When the Linear B writing system was developed from its predecessor Linear A, in perhaps the 15th century BC, there can be no doubt that the context of the transmission of writing was administrative. That is to say that writing was adapted for a new language within a sphere of usage that already existed in Minoan Crete, namely the keeping of economic records on clay documents[2]. Changes were made to document types, especially in seal and nodule usage and in the form, size and layout of clay tablets[3]. To a lesser degree some developments occurred in the script repertoire itself, with a few old syllabic signs discontinued and a few new ones created (although the potential degree of innovation in terms of sound values has not infrequently been overstated[4]), alongside an overhaul of the system of ideograms/logograms and weights and measures signs. Nevertheless, there can be no doubt that both the writing system and its use in administrative clay documentation were adapted directly from Linear A practice.

Linear A, however, which is first attested in the early 2nd millennium BC, was not used on clay documents alone: inscriptions are also found on stone vessels often labelled as «libation tables», on various ceramic vessels and on a range of other items including pieces of jewellery, bronze axes and figurines. Linear B, as far as we can tell from surviving epigraphy found almost exclusively on clay documents, did not inherit these other contexts of script usage[5]. Nor was Linear B the only script to have been derived from Linear A, since it must be assumed that Linear A was also the direct inspiration for the syllabic writing system that appeared in Cyprus in about the 16th century BC, which we label Cypro-Minoan[6].

Cypro-Minoan is somewhat different in appearance from its cousin Linear A but somewhat similar in its range of uses, and the first part of this paper will consist of an excursus on the nature of writing in Late Bronze Age Cyprus and some trends in the scholarship on this system in the 20th and into the 21st century. Two questions are at issue here, namely on the one hand the specific impetus for and context of writing in Cyprus, and on the other the effect of modern analytical approaches on our view of it. The last part of the paper then brings these questions to bear on the Linear A material with a view to thinking about the sorts of writing that existed outside of the strictly administrative context of literacy that was in some sense the inspiration for Linear B.

2 See Schoep 2002 on the administrative context of Linear A clay documents. Finlayson, however, has rightly questioned the usually unspoken assumption that administration = clay document usage (Finlayson 2014: 33-36).

3 See e.g. Tomas 2011a, 2011b, 2012; Weingarten 1994. In sealing, a link between Cretan Hieroglyphic and Linear B cannot be overlooked: Hallager 1997/1998.

4 Steele and Meiβner forthcoming.

5 Even if documents on «perishable materials» existed in Linear B, as had undoubtedly been the case for Linear A (on the problem, see Perna 2011), it remains the case that there is no evidence for the use of Linear B on the wider range of object types functioning as writing supports for Linear A. This makes it *a priori* more likely that Linear B literacy was relatively restricted in the variety of uses to which it was put: see Steele forthcoming 1.

6 For the compelling arguments in favour of direct descent of Cypro-Minoan from Linear A, see most recently Valério 2016.

The central questions here are related to writing systems. Outside of a controlled administrative context, where writing was a predominantly scribal activity (i.e. it was proliferated by training designed for administrative literacy), does writing look different? Does non-administrative writing display a greater degree of variation, or any unusual features? Were authors of non-administrative texts using the same basic system as the administrators, or not? We will return to such questions after dealing with the Cypriot material, which has some lessons to teach us about variation in writing and the way we think about it.

Writing in Late Bronze Age Cyprus

The earliest appearances of writing in Cyprus, dating from the Late Cypriot I period at the beginning of the Late Bronze Age, demonstrate that already at the outset of Cypriot literacy there was some awareness of the use of writing in administrative clay documentation in the Aegean and elsewhere: a flat, thick clay tablet (##001) and a clay label (##095), both from Enkomi, echo document types found inscribed in contemporary Linear A, while an early example of an inscribed cylinder seal (##225) shows writing appearing already on an object type inspired not by Aegean but by Near Eastern administrative practice[7]. Influence from both east and west is a characteristic feature of Cypriot literacy throughout the Late Bronze Age, but what is striking is that Cyprus did not borrow any system of administrative documentation wholesale. In fact, there is very little evidence that there ever existed, for example, any longstanding tradition of writing on clay tablets. Not only have very few clay tablets survived from Late Bronze Age Cyprus, but furthermore the few extant examples are quite different in type: the early tablet mentioned above and two recently discovered later examples from Pyla-Kokkinokremos are of a flatter type reminiscent of the Aegean, while three later tablets from Enkomi (##207-9) are closer in type to «cushion»-shaped tablets used for cuneiform in Near Eastern administrations[8]. The small number of surviving tablets and the variety of their size, shape and method of incision points towards a significant difference in literate administration from those characteristic of both the Aegean and the Near East[9]. In Cyprus there may have been some degree of experimentation with clay documentation as a means of bureaucratic regulation or recording, at different times in different places, but what we do *not* have evidence for is any kind of centralised administrative control operated through and with clay documents as could be found in different societies both east and west of the island.

This is not to say that Cypriots were not keen to borrow trends that belonged broadly to an administrative sphere in other areas of the Mediterranean. Cylinder seals (sometimes bearing inscriptions, but much more often not) are a prime example of an object type that became suddenly very popular in Cyprus around the time when writing first appeared, i.e. from the end of Middle Cypriot III onwards. They were borrowed from the Near East, where impressions of cylinder seals played an important role in marking identity, authenticating transactions and overseeing economic activities (sometimes quite literally

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7 Steele forthcoming 2: ch. 1. Note that Cypro-Minoan tablets are referred to by the numeration found in Olivier 2007, Ferrara 2012/2013 and subsequent publications (prefixed with ##).

8 Four Cypro-Minoan inscribed tablets (##212-215) found amongst an archive of otherwise cuneiform material at Ugarit can be mentioned here, but must be considered as local creations fitting in with Ugaritan literate culture.

9 See Ferrara 2012/2013 vol. 1: 211-213.

borrowed, as there are numerous examples of re-cut imported seals as well as local Cypriot creations). However, what Cypriots did not borrow was the context of the use of cylinder seals, and in fact we have almost no evidence at all that these objects were ever used to seal anything in Cyprus; in the absence of evidence for sealing practices, it seems much more likely that cylinder seals were appropriated by elites as a mark of status than that they served the sorts of functions attested in the Near East[10]. Even more striking is the appearance in Cypriot cylinder seals of iconography that borrows heavily from Aegean glyptic, again showing a blend of influences from east and west.

Conversely, the Cypriot documents that look most likely to be related to administration in some sense are ones that do not have close parallels in either the Aegean or the Near East, namely clay balls and clay cylinders. The clay balls are a document type almost unique to Cyprus and with over 80 surviving examples (##002-091, 244, 247) they account for about a third of surviving Late Bronze Age Cypriot epigraphy[11]. The six surviving clay cylinders (##097-102) are cylinders made of clay with signs inscribed around the outside that are intended to be read on the cylinder itself – i.e. they are not to be confused with cylinder seals, which are made of stone with images and inscriptions that are intended, going by Near Eastern parallels at least, to be read in impression. While cylindrical and conical clay documents are well known in the Near East, they do not provide close parallels for these distinctive Cypriot objects that bear text directed along the length of the cylinder with a line to show where to begin reading (Fig. 1).

Fig. 1. Cypro-Minoan inscribed clay cylinder from Enkomi. Photograph courtesy of Silvia Ferrara

In what sense the clay balls and cylinders can be labelled as «administrative documents» nevertheless remains open to question, especially given that we do not understand their content[12]. The degree to which we can «read» Cypro-Minoan remains a subject of debate: although it is often labelled an «undeciphered script», there are at least 10 or 11 signs, and perhaps numerous others, where we can be reasonably confident of some approximation of their phonetic value, and in many ways it is the diversity and brevity of the surviving texts that is a greater obstacle to a better understanding of the

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10 See Smith 1994; Webb 2002.
11 See Steele 2014; Ferrara 2015.
12 Several hypotheses have been put forward concerning the function of the clay balls, which are generally thought to contain personal names and other sequences and abbreviations: see Masson 1971; Steele 2014; Ferrara 2015.

script[13]. However, it is important here to consider the find contexts of such inscriptions, and the discovery of many of them in contexts associated with industry and in buildings associated with social hierarchy (such as the «fortress building» at Enkomi) indicates at least that these objects existed within a situation of social or economic control, however ~~smallscale~~ or varied such control may have been in Cyprus compared with the more deeply centralised administrative and power structures of the contemporary Aegean and Near East.

We can move on now to consider the question at the crux of this paper, namely what literacy looked like when it appeared outside of an «administrative context». Some inscription types seem to sit somewhere between what we might think of as an administrative sphere of literacy on the one hand and a more private sphere of literacy on the other. Important here are the many inscriptions found on pottery vessels, some of which have been considered as inscriptions proper in scholarship (i.e. the ones consisting of more than one sign) while others have been consigned to the category of «potmarks» (i.e. the ones consisting of one sign alone). While such a division is not entirely without merit in terms of attempting to understand a writing system and what is written in it (because single-sign inscriptions are by nature too brief to give an indication of what is being represented or abbreviated), in terms of understanding the function and context of such inscriptions the division is entirely a false one. Signs and sequences marked on the handles of storage vessels, for example, sometimes on Cypriot wares and sometimes on imported wares, must undoubtedly be understood as part of a tradition of potmarking that relates to the movement and trading of the vessels. The wide variety of the marks, however, points away from any highly standardised or centralised control of the commodities being transported in the vessels; otherwise we should expect a much higher degree of repetition and systematisation in the attested signs and sequences than has been identified[14]. Another feature of these inscriptions, especially the single-sign ones, may be important here: namely the appearance of some marks that do not appear to be very close to known Cypro-Minoan signs. Whether this suggests limited literacy on the part of the people making the marks (i.e. imperfect knowledge of a system used more competently in other inscription types), or simply constitutes a different system (i.e. a type of writing that includes signs not present in the type of writing used in different inscription types), is difficult to assess, and similar problems are encountered when studying, for example, the inscriptions found on Inscribed Stirrup Jars originating from the Mycenaean world[15].

Inscriptions on pottery for the most part can be considered to belong to contexts related to trade and the movement of goods, and aside from the marks on handles some inscriptions on the rims of pithoi (one of which, ##145, includes a numeral) and other vessels can also be included in this category. However, there are also inscriptions found on vessels such as kraters and bowls that are more likely to be associated with the consumption of food and drink, potentially in feasting contexts that could be linked with elite status display. The incised Cypro-Minoan signs found on the bases of three Mycenaean vessels from Tombs 4 and 5 at Kition (##132-134) are an example probably

13 See, for example, Steele 2013 and Valério 2016 for different takes on the degree to which we can reconstruct Cypro-Minoan sign values.
14 See Hirschfeld 1992 and 2002.
15 See Judson 2013.

best understood in such a context, although the use of the same two signs in each case is mysterious. Another inscribed object type occupying a nebulous position somewhere between administrative and non-administrative is the miniature ingot: three examples are attested, all bearing very similar sign-sequences (an abbreviation consisting of two signs, on one occasion with a further sequence added), and their inscriptions are perhaps best understood within the broader context of trade in copper and bronze, potentially as «branding» of a characteristically Cypriot product[16]. Again, when a document contains what appear to be numerals (a rarity in Cypro-Minoan), should we consider it to belong to a tradition of centralised or bureaucratic accounting or to a broader mercantile sphere where there remains an important need to keep track of numbers and quantities of the commodities being moved and traded? A unique Cypriot ostracon bearing some isolated signs (one hapax, the other attested elsewhere only once) followed by series of dots and lines that look like numerals is difficult to categorise in this regard (##093), but this is the inscription that has most often been cited as evidence for the existence of some sort of logographic system in Late Bronze Age Cyprus (and hence a centralised accounting system), akin to what is seen in the Aegean (on this concept, however, see further below)[17].

Moving further away still from administration, the final group of inscriptions we can consider are found on items that are most frequently associated with status, elite display and ritual activity. These inscriptions tend to appear on objects made from valuable materials and are frequently placed in such a position as to add decorative value to the item inscribed. The two most clearly linked with wealth and status display are two gold rings found at Kalavassos, in an extremely rich tomb assemblage, bearing identical inscriptions on their bezels (Fig. 2).

Fig. 2. Cypro-Minoan inscribed gold rings from Kalavassos. Photograph courtesy of Silvia Ferrara

The only difference between the two rings comes in the presumably exclusively decorative symbols appearing below the line in each one, where the symbol on the left is the same but the one on the right is different. As small, portable items linked with elite display, these recall also the cylinder seals, which can vary in decoration and material but at their most elaborate can be made of semi-precious stones such as lapis lazuli or amethyst and bear intricate designs that sometimes include writing (22 examples)[18]. Several examples of otherwise plain metal bowls have been discovered with inscriptions

16 Bell and Ferrara 2016.
17 See Palaima 1989: 43-44; Ferrara 2012/2013 vol. I: 75-77.
18 For cylinder seals the classification of Porada 1948, despite criticism of some details and associations, is still largely followed.

in a prominent position around the rim; usually they are made of bronze but one example of a silver bowl from Enkomi (##182) shows that precious metals could sometimes be used (Fig. 3).

Fig. 3. Cypro-Minoan inscribed silver bowl from Enkomi. Photograph courtesy of Silvia Ferrara

Again these are thought to be high status objects that belong to a sphere of private consumption by elites, and, as often suggested for the gold rings, their inscriptions are assumed to contain the name of the bowl's owner[19]. These types of inscribed objects suggest that writing was a visible status symbol appropriated by elites and incorporated ostentatiously into the decoration of luxury items.

Writing was also sometimes present in the religious sphere. In fact, some otherwise administrative-looking items such as clay balls have been found within religious spaces, although it is difficult to determine whether this means that they had some religious function, or whether they were simply carried by individuals in religious contexts as well as non-religious ones. Some ivory objects with inscriptions originate from a ritual context at Kition: a pipe (##161), a rod (##162; similar to the pipe but not hollowed out) and an elaborate plaque depicting the Egyptian god Bes (##163), all found within the same building. Also associated with religious practice is an inscribed bull figurine found at Psilatos (##103). Where the ivory objects from Kition show writing incorporated into decorative ritual objects made of expensive materials, however, the bull figurine is quite different, a common object made of clay (bulls being the most commonly depicted animal in coroplastic art at this stage), but one that happens to have had an inscription added to its side as well as a set of crossed lines engraved into its forehead (Fig. 4).

Writing could appear in a range of different contexts, then, on different objects with different associations. Modern attempts to label the inscriptions as «administrative», «non-administrative», «religious» or «private» is potentially somewhat misguided given that it is difficult to reconstruct whether such categories would have had any intrinsic meaning for Late Bronze Age Cypriots themselves. What is significant, however, is that there are no obvious restrictions on what writing could be and was used for, including

19 See Buchholz and Matthäus 2003 and Steele forthcoming 2: ch. 2.

everything from clay documents of different shapes and sizes, whether inspired from east or west or of innovative Cypriot design, through mundane-looking marks on pottery vessels, to decorative-looking sequences on luxury and ritual items. This is at first glance a situation comparable with the range of inscribed objects in Linear A, but there are also some differences. Before turning to Linear A, however, a brief excursus on Cypro-Minoan scholarship will be instructive in considering not only what range of evidence we find for Late Bronze Age literacy, but also how we think about and categorise it.

Fig. 4. Cypro-Minoan inscribed bull figurine from Psilatos. Photograph courtesy of Silvia Ferrara

Attempts to analyse and categorise Cypro-Minoan

The c.250 surviving attestations of writing from Late Bronze Age Cyprus show a considerable degree of variation in date, geographical origin, object type, material, method of inscription and length of text[20]. Only a handful consist of 20 or more signs (e.g. the surviving tablets and cylinders) while most are considerably shorter than even this. Faced with such a disparity of material on which to draw conclusions about the size and composition of the syllabic signary in which the texts are written, scholars of Cypro-Minoan have faced serious difficulties when attempting to draw up a list of the script's signs. More significantly for our present purposes, scholars have reacted to these difficulties in different ways, and have taken different approaches to the problem of understanding the underlying systemic features of Cypro-Minoan writing.

Already in the first half of the 20th century, John Daniel made the important point that the shapes of signs are affected by the medium on which they are written, which means that study of palaeographic variation is key to understanding the structure of Cypro-Minoan writing[21]. The challenge of drawing up a Cypro-Minoan signary was taken up by subsequent scholars, most notably Émilia Masson, who published new inscriptions, discussed further epigraphic and palaeographic factors and drew up sign tables in a number of successive publications[22]. Masson's work provided a solid foundation for more recent studies, but also introduced some elements to research on Cypro-Minoan that have remained controversial up to this day, most notably the separation of the Cypro-Minoan inscriptions into four different groups, each hypothesised to represent a separate

20 See Steele 2012.
21 Daniel 1941.
22 E.g. Masson 1971, 1972, 1974, 1985. Other works tackling similar problems include Nahm 1981 and Hiller 1985.

script with a different repertoire of signs. She labelled them CM1 (i.e. all inscriptions that do not fall into the other groups), CM2 (a small group of long inscribed tablets from Enkomi), CM3 (all the Cypro-Minoan epigraphic material from Ugarit and its environs) and «Archaic» (four inscriptions that she assumed to be relatively early and to show an earlier form of script). In some ways this can be seen as a reversal of Daniel's methodology: instead of using variation in medium, document type and chronological/geographical distribution to understand variation in sign shape within a single body of texts, Masson used such variations to divide up the whole corpus into smaller sub-corpora looking for internal consistency within the smaller groups.

More recently, scholarship on Cypro-Minoan has aimed to reassess Masson's categorisations and incorporate a better appreciation of the degree of palaeographic variation that can exist within a single writing system[23]. In other words, can we retreat from the view of Cypro-Minoan as a multiplicity of scripts and reassess it as a single script with a high degree of internal variation? To a certain extent this is possible, although there remain some open questions that have allowed Masson's categories to retain some currency even in the latest scholarship. For example, a study of the numbers/shapes of the signs attested in the long «CM2» clay tablets from Enkomi (##207-9) reveals some discrepancies that seem to relate to the composition of the signary and cannot easily be ascribed to palaeographic differences alone[24]. For the very short inscriptions, meanwhile, especially ones that display unusual features, it can be difficult to reconcile all attested sign shapes with signs otherwise well known to be party of the Cypro-Minoan signary. In short, while a considerable number of well-attested signs (more than 50) can be attributed to the Cypro-Minoan signary with certainty, there are numerous *hapax* or sparsely attested signs or sign variants whose position with relation to the rest of the signary remains difficult to establish. Following on from this observation, it is even more difficult to be certain whether the size and composition of the signary used could vary in different types of inscription: were all authors of Cypro-Minoan inscriptions working from a basic signary of the same number and shapes and values of signs?

The last question posed above is a hypothetical one that is impossible to answer, but if we ask it from a different point of view we might be able to make better progress: how standardised was Cypro-Minoan writing? To put it another way, can we reconstruct any kind of stimuli that might cause writing to become more standardised over time, for example centralised political pressure, regulated scribal training or restricted contexts of literacy? The high degree of variation in inscribed object types illustrated in the previous section would militate against such suggestions, and even in the sphere of clay documentation that can most plausibly be linked to administration there is considerable disparity. The clay balls are the only document type that can be observed to consist of relatively large numbers of inscriptions manufactured in the same way and inscribed in a very similar ductus. These texts may indeed have made use of a writing system that was to some degree standardised for use in a particular context. Similarly, the three «CM2» clay tablets are very similar to each other not only in object type but also in method of inscription and in internal palaeographic features, again suggesting some degree of

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23 E.g. Ferrara 2012/2013 vol. 1, 2013; Steele 2013: 22-35; Valério 2016.
24 Admitted, for example, even in the most comprehensive recent re-evaluation of Cypro-Minoan palaeographic variation, Valério 2016: 444.

standardisation. Overall, however, the c.250 surviving Cypro-Minoan texts show such great diversity that we should not be surprised to find that the heterogeneous contexts in which writing was being used corresponded to a high degree of variation in writing itself, whether of the palaeographic or, perhaps in certain circumstances, the systemic kind. Or, to put it another way, the persistent view that Cypro-Minoan constitutes more than one different script is no more than an uncompromising modern reflection of the lack of evidence for any single longlasting tradition of writing in Late Bronze Age Cyprus.

Writing in Linear A

Returning to the Aegean, what I want to pose is the possibility that Cyprus might be able to help us think about literacy in Linear A. In contrast with the striking homogeneity of later Linear B, Linear A is marked by a considerable degree of heterogeneity. While later Linear B is practically unknown outside of the sphere of administrative clay documentation[25], Linear A inscriptions are found not only on clay documents but also on a variety of other objects, reminiscent to some degree of the diversity witnessed in Cypro-Minoan. There are, however, some differences between Linear A and Cypro-Minoan in terms of the evidence for administrative uses of each script: where Cypro-Minoan, as we have seen, shows very little evidence for long-term archival practice and what survives shows a considerable degree of variation, Linear A, on the other hand, is found on large numbers of clay tablets, nodules and other clay document types. In fact the administrative documents in Linear A far outnumber texts of any other kind, and they often come from clear archival contexts related to regional administrative complexes (most notably the archives from Haghia Triada, Khania and Zakros, but with smaller numbers found at other sites across Crete and even in the islands[26]). There is greater potential here to consider the differences between administrative and non-administrative uses of writing.

With a smaller number of documents and a language that we do not understand, Linear A administrative documentation is not as well understood as that written in Linear B, which has far more documents (c. 6.000 Linear B compared with c. 1.500 Linear A) and is written in Greek, allowing detailed appreciation of the content and context of administrative writing. Nevertheless, there can be no doubt that Linear A clay tablets and other document types such as nodules of various kinds existed within a sort of scribal system and were being employed for the purpose of controlling commodities and personnel and recording information about them[27]. A word of caution is, however, necessary because to some extent our notions of «administrative», «private», «ritual», etc, may impose anachronistic distinctions that would have had little meaning for the people writing Linear A inscriptions. As John Bennet has pointed out, inscriptions that we consider to be non-administrative were often «bound up with practices of the elite, who may well have seen no distinction between recording on clay and inscribing on metal or stone»[28]. A case in point is the discovery of Linear A seallings and even a clay

tablet in the Temple Repositories at Knossos, pre-burnt and placed in a ritual deposit alongside other ritual objects including elaborately painted shells and a Snake Goddess figurine[29]. What perfectly administrative-looking writing might be doing, or might be desirable, within such a context is mysterious and may lead us to challenge some of our preconceptions.

With the above caveat in mind, we can move on to consider what sorts of inscriptions existed outside of the administrative sphere as we understand it, i.e. ones that are not on clay tablets, nodules, sealings or roundels. These have in scholarship been classed as belonging to the Z-series of documents, with further subsets for stone vessels (Za), clay vessels (Zb if incised, Zc if painted), architectural supports (Zd for plaster, Ze for stone), metal objects (Zf: axes, pins and a gold ring) and various other items (Zg: various items made of stone or clay, including figurines)[30]. Again some caution is necessary because we may not always be dealing with texts that are completely removed from the administrative sphere, as we will see below. Conceivably, inscriptions of these types could differ from the clay documents in a number of different ways, including systemic differences (e.g. written using a different basic repertoire of signs), palaeographic differences, differences in direction of writing and differences in geographical or chronological distribution. These four types of potential variation will be considered briefly in turn; an extended analysis of the features discussed here in a preliminary way is in progress but is beyond the scope of the current paper.

Systemic differences?

An assessment of all the signs attested in administrative and non-administrative inscriptions is beyond the scope of this paper, and so we will focus here on one of the more obvious systemic differences, namely the use or non-use of logograms. Logograms do appear in the Z-series texts, but they are rare and confined to particular types of object, for example clay storage vessels such as the large vase and pithos from Knossos that feature logographic signs and numerals (KN Zb <27> and KN Zb 35). The only exception is the intriguing appearance of two signs that elsewhere function as logograms at the end of syllabic sequences in one of the libation vessels, in conjunction with some words that commonly appear in the libation formula (SY Za 2: Fig. 5). The practice of ligaturing signs, commonly used with logograms or to create a sign with a logographic function[31], is attested in another pithos from Knossos(KN Zb 34) and a jar from Kea (KE Zb 5). Numerals, which are frequently found alongside logograms in other texts such as clay tablets, are also rare in the Z-series but appear in the vessels mentioned above as well as one of the inscriptions on plaster from Haghia Triada (HT Zd 156).

The non-appearance of logograms in the majority of Z-series texts could perhaps suggest that they were written by authors who did not have, or at least did not need to have, knowledge of the logograms as used in administrative texts. In other words, the inventory of syllabic signs used to spell out words in Linear A could potentially have functioned independently of the system of logograms used to represent concepts and

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29 See Hatzaki 2009: 20-28; Finlayson 2014: 165-166.

30 As classified in *GORILA*.

31 Presumably representing the word for the commodity, as with the MA+RU ligatured sign continued in Linear B as the logogram for «wool», linked with the word *mallos* attested in Hesiod (*Works and Days* 234) and *mallukes* in Hesychius where it is glossed as *triches*.

commodities. However, to speak of a logographic system in Linear A analogous to that found in Linear B could itself be an anachronism. Linear A lacks the advanced «neat» layouts and formulations that were characteristic of later Linear B, with clear places for logograms that often kept them quite visibly distinct from sequences of syllabic signs.
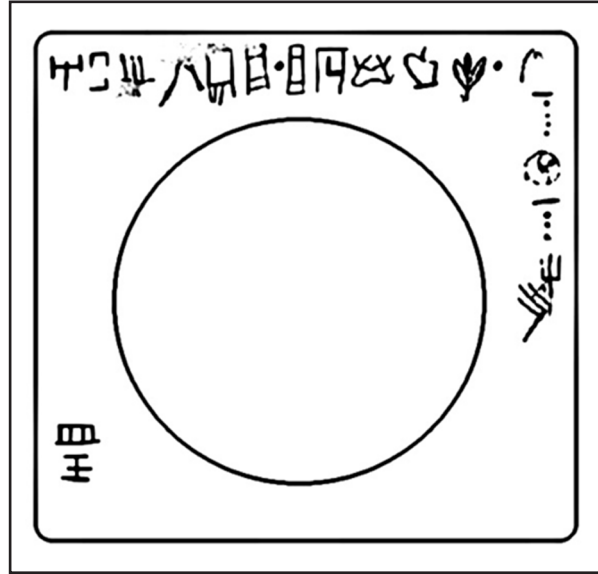

Fig. 5. Linear A inscription on a libation vessel from Kato Symi, SYZa 2. Drawn by the author after *GORILA* vol. 5: 64

More importantly, there is considerable diversity in the repertoire of logograms used at different sites where Linear A was used, and this must point towards regional creativity in logography, and away from any widely employed single system; moreover, the lack of a clear logographic system could perhaps suggest a more *ad hoc* practice of abbreviations, as opposed to signs that were always dedicated to logographic representation[32]. The fact that some logograms used in Linear B can be shown to originate from abbreviations of Minoan words for the commodities represented, via the acrophonic principle (e.g. *NI* for «figs» related to the word *nikuleon*, which Hermonax glossed as a Cretan word for the fig[33]), could be seen as support for such a suggestion. It is furthermore probably significant that many signs used logographically in Linear A are also ones that can function as syllabograms and are attested within syllabic sequences.

It has been suggested that one of the reasons why Cypro-Minoan did not inherit the Aegean logographic system is that Cypriots never encountered it, i.e. that they encountered Linear A being used outside of any centralised administrative context where logograms strictly belong. This could support the suggestion that logograms were a separable element that did not need to be learned alongside the syllabic signs of Linear A. However, if Linear A had not developed a functioning logographic system by the time Cypriots borrowed and adapted it (not later than the 16th century BC when Cypro-Minoan is first attested in the Late Cypriot IA-B period), then we need to interpret the transition

32 I am indebted to Ester Salgarella for these observations, based on discussion of her ongoing doctoral research.
33 Neumann 1962.

in a different way. In fact, conversely, it could be possible that Cypriots did borrow the concept of abbreviating words by their first syllable, which could underlie the frequent use of single signs divided from longer sequences in a considerable number of Cypro-Minoan texts (most frequent in the clay balls but found in other inscription types as well), and also of a considerable number of series of two single signs divided from each other (a practice that continued into Cypriot Syllabic usage in the first millennium BC). On the other hand, such a use of abbreviations in Cypro-Minoan could potentially have developed independently and it is striking that in Cyprus this never developed into a logographic system and remained by all appearances, and considering the high degree of variation in signs appearing as single signs (in such cases always signs that are otherwise known as syllabograms), an *ad hoc* referential tool.

Interpreting the practice of logography or abbreviation in one way or another therefore makes a considerable difference to the way we think about systemic features of Linear A and potentially obscures the central question asked here, namely whether there was a systemic difference between Linear A as used in administrative documents and Linear A as used in non-administrative texts. However, whether «logograms» in Linear A belonged to a developed system or not, it remains the case that they are almost entirely absent from inscriptions on items other than clay documents associated closely with administration, and most of the few logograms that appear in the Z-series can plausibly be connected with a broader administrative context.

Palaeographic differences?

Palaeographic differences should be expected when writing appears on different materials and media, which is precisely the case outside of the administrative sphere of clay documentation. However, not all palaeographic differences are an effect of the medium written on or the tool used for writing, some rather being deliberate choices to, for example, simplify or elaborate signs (i.e. for motivations other than ease of execution, such as aesthetic features). In the Linear A Z-series, it is striking that we find some relatively elaborate sign forms, especially in the stone libation vessels, apparently a reversal of the tendency witnessed in the clay tablets to simplify signs to basic linear shapes in many cases. Two signs are chosen here as brief case studies to demonstrate the range of palaeographic variation, both deliberately chosen as ones that have available elaborate alternatives based on their real-world referents: sign 08 (*a*, the double axe) and sign 80 (*ma*, the cat's head).

Sign 08 is usually formed with a vertical and one or two crossing horizontal lines, the latter terminating in vertical strokes at each side, which is the typical form used in clay documents but also appears in many Z-series texts. A few of the libation vessels, however, feature a variant of sign 08 that depicts the full bowed form of the double axe (see Fig. 6): KO Za 1 from Kophinas and IO Za 2, IO Za 3 and IO Za 7 from Mount Iuktas. The only other similar object from Mount Iuktas to feature sign 08, however, uses the ordinary abstract linear version. Perhaps significantly, this elaborate variant is also identical to the most common form of sign 042 of the Cretan Hieroglyphic script, which was in use contemporaneously with Linear A. In Linear A clay documentation, only the occasional example of the elaborate axe form of sign 08 is found, for example in nodule HT Wa 1148 (and probably also HT Wa 1149) from Haghia Triada.

Fig 6. Variants of sign AB 08 *a*. From left to right: IO Za 10 (Z-series variant closest to sign 08 found in tablets, etc), IO Za 2, IO Za 3, KO Za 1, HT Wa 1148. Drawn by P.M. Steele after the drawings in *GORILA*.

In the clay documents, the most common form of sign 80 involves a rounded or triangular centre with short single or double lines (the «ears») protruding upwards, although elaborated versions can also often be found, for example with a rounded «face» or added «eyes» (an extreme example is found in PH 7, side a). It is likely that, unlike the completely abstracted version of the same sign witnessed in Linear B (*ma*), in Linear A the sign was still associated with its real world referent, the cat's head, hence the sporadic optional addition of facial features such as eyes and occasionally a mouth or nose. In the Z-series texts, where this sign appears it is very often of the more elaborate type (see Fig. 7): for example, it is found among the stone libation vessels (e.g. the rounded versions with eyes and looped ears in KO Za 1 and IO Za 2, and the triangular version with eyes and pointed ears in VRY Za 1), on a bronze bowl (KO Zf 2) and on gold and silver axes from Arkalokhori (AR Zf 1 and 2). The high level of variation in the shape of this sign may again be indicative that authors were sometimes aiming to replicate features of the sign's real world referent. A comparison with the cat's head sign of Cretan Hieroglyphic may again be instructive, although no Linear A variant of sign 80 approaches the high degree of elaboration found in the few examples of the Cretan Hieroglyphic sign.
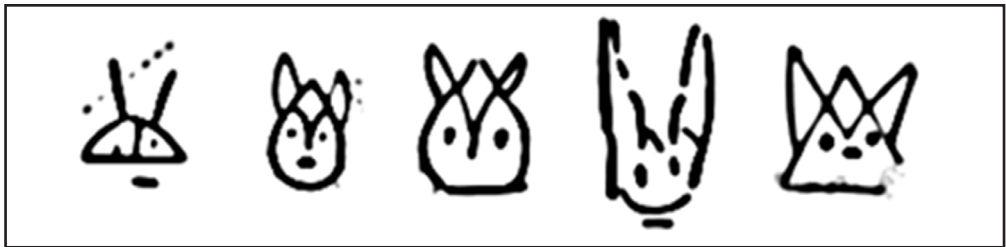

Fig 7. Variants of sign AB 80 *ma*. From left to right: PH Zb 4 (a relatively simplified version), IO Za 2, AR Zf 1, SK Zb 1, VRYZa 1. Drawn by P.M. Steele after the drawings in *GORILA*.

The use of more elaborate signs may reflect the added decorative value of script signs on objects that were intended to impress visually. This can also be inferred from the incorporation of writing into particularly decorative sequences on items such as the fragment of female figurine PO Zg 1, painted around the skirt, or the extravagant sign forms spaced evenly around the luminous orange alabaster bowl IO Za 6, or the similarly elaborate sign forms drawn in individual facets around the dark green serpentine basin IO Za 2. In some of these inscriptions, the high degree of elaboration evidently goes hand-in-hand with the skilfully executed decoration of the item, and raises the question of whether these originate from skilled literate craftsmen. The further issue of competence in writing can also be raised here, as it has been for example with regard to the Linear

B Inscribed Stirrup Jars, where some inscriptions show evident mistakes[34], while others are more competently executed. Craftsmen could conceivably have been working from a drawing of the signs, or the inscription could have been added by another individual, making it difficult to assess the extent of literacy: would the ability to write have been considered a specialist skill, or not? The occasional appearance of signs that look close to ones commonly found in Cretan Hieroglyphic adds another intriguing element, since literacy does not necessarily have to have been confined to one of these scripts alone.

Differences in direction of writing?

It is commonly claimed of Linear A that administrative inscriptions are always dextroverse (i.e. reading from left to right), while outside of the administrative sphere writing can vary in direction, with examples of sinistroverse (i.e. right to left) and boustrophedon (i.e. alternating direction in different lines) inscriptions attested. One of the earliest inscriptions in Cypro-Minoan is almost certainly written in boustrophedon, a feature that has been suggested to be inherited from Linear A[35]. However, it must be emphasised that direction of writing other than dextroverse is incredibly rare in Linear A: just one example of sinistroverse (on the silver pin PL Zf 1) and one of boustrophedon (on the stone vessel KN Za 19); see Fig. 8. In both cases, asymmetrical signs are reversed to follow the direction of writing.
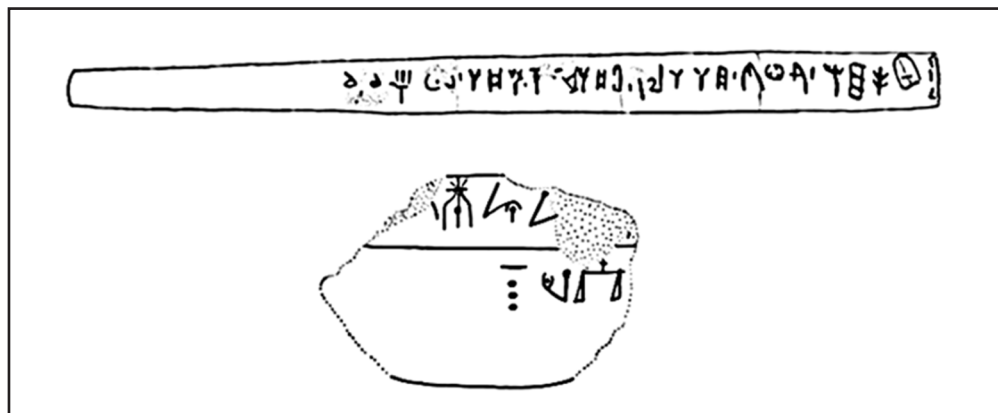

Fig. 8. Top: sinistroverse inscription PL Zf 1. Bottom: boustrophedon inscription KNZa 19. After the drawings in *GORILA*

It is perhaps dangerous to extrapolate from the paucity of the evidence, but what survives of Linear A does *not* suggest that variation in direction of writing was a common feature of non-administrative inscriptions. We could be dealing with limited experiments here, rather than a situation in which direction of writing was always optional, or in which sinistroverse and boustrophedon directions were always thought of as available alternatives. Given that the two objects in question here are both fragmentary (with only part of the pin's shaft surviving and only a very small fragment of the stone vessel), it is impossible to reconstruct potential design features of the objects that could have made an unusual direction of writing desirable.

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34 See e.g. Judson 2013: 78.
35 Janko 1987.

Significant geographical or chronological distribution?

It is a significant feature of the geographical distribution of the Z-series texts that there are several sites where such inscriptions are the only sort attested (i.e. they do not co-occur with clay documents such as tablets, nodules, sealings, etc): Apodoulou (stone vessels), Arkalokhori (gold and silver axes), Mount Iuktas (stone vessels and a fragment of stone «altar»), Kardamoutsa (bronze axe), Kato Symi (stone vessels), Kophinas (a stone vessel and a bronze bowl), Larani (pithos fragment), Platanos (silver pin), Prassa (stone vessel), Psykhro (stone vessel), Sitia (rounded stone), Skhinia (pithos fragment), Traostalos (pottery fragment), Troullos (stone vessel) and Vrysinas (stone vessel).Outside of Crete we can also include Haghios Stephanos in mainland Greece (a plaque) as well as Kythera (a stone weight) and Thera (ceramic vessels including jugs and a pithos). While a few sites have produced clay documentation alone, there are some that are home to both clay documentation and Z-series texts, including Knossos, Mallia, Palaikastro, Phaistos and Tylissos, and outside of Crete, Kea and Melos.

The fact that writing could appear outside of palatial/administrative centres, and that when it appeared in such places it was on different types of object (i.e. not on clay documents), is in itself significant. This could strengthen the suggestion that there was a more widespread, «non-scribal» sphere of literacy, which underpins the issues explored in a preliminary way in this section. Out of the fifteen sites where Z-series texts alone have been found, nearly half (seven) have produced stone vessels, and elements of the «libation formula» (e.g. words such a *a-ta-i-*301-wa-*, *(j)a-di-ki-t-*, *(j)a-sa-sa-ra-m-*, *u-na-ka-na-*, *i-pi-na-m-* and *si-ru-te*) typically appearing in these objects are found at all these sites. So these particular inscriptions are appearing outside of centralised administrative contexts, and predominantly at sites associated with ritual activity, but they give evidence of not only common ritual practice but also common practice in writing in relation to such activity. While the palaeographic features and degree of incorporation of writing into decoration can vary in these texts, there is a clearly developed trend in inscription type and inscription content in these cases. This may lead us to reconsider the issue of scribal and non-scribal writing in such a context: who are the authors of these texts, and what is the motivation for this degree of unity? Other inscriptions found at isolated sites, however, seem to belong to far less unified traditions of writing, for instance the rare examples of writing on pins/jewellery and axes in previous metals and on clay figurines.

A final observation can be made concerning the chronological distribution of the Z-series texts, although it is important to state at the outset that around half of these inscriptions are of unknown date, and so cannot help us with a chronological reconstruction. The undated texts include a number of the stone vessels (e.g. some from Mount Iuktas, Knossos, Kophinas, Palaikastro, Psykhro and Vrysinas), although where stone vessels can be dated (e.g. some at Apodoulos, Mount Iuktas, Prassa, Symi and Troullos) they typically belong to Middle Minoan III – Late Minoan 1A. In fact, of the Z-series inscriptions a date in such a range is typical for most items, including also ceramic lamp from Kea, inscribed ceramic vessels from Knossos (including the two painted cup inscriptions), the clay weight from Kythera, a pottery fragment from Mallia, a painted cup fragment from Palaikastro, ceramic vessels from Thera and the pithos and figurine from Tylissos[36].

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36 The inscribed ceramic fragments from Phaistos (PH Zb 4, 5 and 48) are dated less exactly but may also fit this pattern,

What are missing from the Z-series texts in general are ones dated to Late Minoan IB. There are a few: the inscriptions on plaster found at Haghia Triada (HT Zd 155-7), a cup (KE Zb 3) and jar fragment (KE Zb 5) from Kea and a pithos and pithos fragment from Zakros (ZA Zb 3, 34)[37]. There are good reasons, however, for considering these seven inscriptions as ones not wholly removed from the administrative sphere. At least one of the plaster inscriptions from Haghia Triada includes numerals, suggesting at least a function that involves accounting for quantities, while the cup from Kea bears a single sign (potentially therefore used as an abbreviation or logogram) and the jar fragment a single ligatured sign that is particularly reminiscent of logography as found in administrative clay documents. Pithoi like the ones from Zakros, meanwhile, are vessels that we have already seen can use logograms and numerals (as is the case for ZA Zb 3), and can plausibly be understood as relating to the control of goods moved in such containers. A date of Late Minoan IB also puts these texts close to the many administrative documents from sites such as Haghia Triada, Khania and Zakros, which belong to destructions at the end of this period[38].

Of the Z-series inscriptions of other kinds, there is almost none that can be dated with certainty to a period as late as Late Minoan IB. The main exception here is the fragment of clay figurine from Poros (PO Zg 1), which should date stylistically to Late Minoan IIIA1, making it relatively very late[39]. However, this is a unique and isolated example, and we may furthermore note that the cursive ductus of the inscription's signs in some cases make them difficult to reconcile comfortably with known script signs (of either Linear A or Linear B). Two signs incised on the wall of the Kephala tholos tomb with a probable date of Late Minoan II present a similar problem (KN Ze 16)[40]: this is a late, isolated inscription, whose signs could as well be Linear B as Linear A. Very tentatively, we could suggest that the distribution of Z-series inscriptions, especially the majority that do not appear to be closely related to administration and date earlier than Late Minoan IB, could points towards wider literacy being a feature of the earlier period, followed by some degree of restriction of literacy already around the Late Minoan IB-II period; in turn this could have fostered the almost complete limitation of literacy to the administrative sphere witnessed in Mycenaean Linear B.

Final thoughts

The survey of some Linear A material presented here is only a brief foray into the sorts of potential differences between scribal and non-scribal writing that may have existed in the Minoan world, and I will emphasise here that the intention of this paper is to offer some hypothetical thoughts rather than considered conclusions. We have seen some ways in which literacy in Bronze Age Cyprus is similar to, and some ways in which it differs from, literacy in the Aegean. The differences in terms of administrative documentation are perhaps the most telling, because while Cretan palaces had evidently developed

though the last of the three could potentially be earlier than MMIII.
37 Also worth mentioning is a pithoid jar from Knossos (KN Zb 40) whose dating is uncertain but could potentially be as late as Late Minoan II: Popham, Pope and Raison 1976.
38 See Schoep 1995.
39 Dimopoulou, Olivier and Réthémiotakis 1993.
40 Preston 2005.

regulated literate administrative systems (if not standardised to the degree that would be reached under Mycenaean administration), in Cyprus there is no evidence for such a phenomenon. It is at least possible that the existence, non-existence or scale of centralised administration may have an important correlation with types and extents of literacy: i.e. that the degree of regulation of literacy that may arise from centralised administration may create a normalised or standardised version of a writing system with which we can compare writing in non-administrative contexts. The precise lack of any such longstanding administrative system is apparently characteristic of Late Bronze Age Cyprus, and with it the degree of variation seen in writing, which has typically been at the heart of its fragmentation into sub-categories in previous scholarship, should not be unexpected. In other words, decentralised contexts of literacy can equate to palaeographic and in some circumstances even systemic fluctuations in writing.

For Linear A we may be dealing with quite different circumstances from those of contemporary and later Cyprus. Despite some clear differences between administrative and non-administrative writing in Linear A, some of which are mentioned in the previous section, there has never been a temptation to break up Linear A into LA1, LA2, etc. I would not wish to imply that doing so would be a useful tool for understanding Linear A. On the contrary, I will finish by suggesting that we might take a prompt from more recent views in Cypro-Minoan scholarship, whereby there have been greater attempts to understand underlying variation in Cypro-Minoan writing as corresponding to not the existence of separate writing systems, but rather to fluctuations in the wider spectrum of Cypriot literacy. In this regard, there is a remaining open question concerning literacy in Bronze Age Crete, which there has not been space to address in this paper, namely: how do the co-existent Linear A and Cretan Hieroglyphic systems relate to each other? This is a question for another day, but instances of overlap and interrelation between the two suggest that it is a fruitful one to ask – and I hope that we may be better equipped to try to answer it in the light of some of the sorts of study proposed above.

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