

Mycenaean Ideograms and How They Are Used

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Enrica Fiandra is a true pioneer in the study of how clay sealings were used within early societies in order to assist in economic management.¹ Her work (in seamless collaboration with the late and much-missed Piera Ferioli) and the work of Denise Schmandt-Besserat take us to the earliest stages of developing pre-literate tools for administration. Schmandt-Besserat has shown how clay tokens were precursors of and evolved into ideographic signs (signs that communicate the concept of a thing and the thing itself, by-passing the word for the thing) for economic essentials like cereals, land and livestock.²

Fiandra has studied sealing systems both in the pre-literate stage (Arslantepe) and in the stage after writing was invented (in Minoan and Mycenaean palatial cultures),³ when again simple ideograms were often inscribed upon sealings. In all areas of the ancient world, sealing systems continued to be used for administrative purposes alongside written forms of records.

In this paper I investigate how ideograms or logograms (signs that stand for the word associated with a thing), which were the first elements, along with numbers, used in written recording, continued to be used in the most advanced stage of the Linear B script. One scholarly approach, known as the theory of 'double writing',⁴ sees Mycenaean ideographic practice as a kind of 'fossilized feature' of Linear B writing to which the 'scribes'

¹ We all owe a great debt of gratitude to Enrica Fiandra (and Piera Ferioli) for her original scholarly work and her great spirit as an organizer of and participant in colloquia.

² D. Schmandt-Besserat, *Before Writing* (Austin 1992), vol. 1, 150-154, 184-194.

³ See as a representative work especially P. Ferioli and E. Fiandra, "The Continuance of More Ancient Bureaucratic-Administrative Criteria in the Age of Writing," in P. Ferioli, E. Fiandra, and G. G. Fissore eds., *Administration in Ancient Societies* (Turin 1996), 87-97.

⁴ J.T. Hooker, *The Origin of the Linear B Script* (1979), 20-32, 71; W. Nahm, "Die Pleonasmen in Linear B und anderswo," *Kadmos* 9 (1970) 1-21 and n. 1.

were, we might say, addicted. Here I argue that the patterns of use of ideograms within the Linear B texts prove that more complicated factors are at work in determining how scribes used this class of signs. These factors produce the effect known as 'double writing', but 'double writing' is in many cases a misnomer.

Linear B is remarkable among Bronze Age writing systems for the particular ways in which it uses a developed system of ca. eighty-eight phonetic signs together with a larger repertory of ideograms.⁵

The ideograms number about 172 including modified or ligatured variants of primary, or what I would rather call 'generic', ideograms. For example, SUS^m, SUS^f, SUS+KA, SUS+SI are variants of generic SUS = pig; BOS^m, BOS^f, BOS+SI are variants of generic BOS = cattle; and OLE+A, OLE+PA, OLE+WE are variants of generic OLE = olive oil. Ten ideograms are gender variants, two each, of the five generic livestock ideograms (EQU horse, OVIS sheep, CAP goat, SUS pig, BOS cattle).⁶

Another thirty-five or so are primary ideographic signs with phonetic ligatures, generally the initial syllable of a descriptive or identifying term *209^{VAS}+A (= *a-pi-po-re-u and *a-po-re-u, both found in the plural, the two-handled vase known as the 'amphora'), *210^{VAS}+KA (= *ka-ra-re-u = *khlarous*, found in the plural at Knossos and Pylos, 'stirrup-jar'), *243 = ROTA + TE (= *te-mi-dwe* = *termidwen*: WHEEL 'provided with a *termis*', i.e., a 'border, edge, flange'). Another six are ligatured composites, or 'monograms', of phonograms, and function as ideograms, e.g., *156 = TURO₂ (= *turyos 'cheese').

Nine signs stand solely for units of weight or measure *110 - *118. These are an invention in Linear B, since Linear A deals with weights and measures in a different way. It is important to note that the ideograms for measurable dry and liquid commodities also serve as the highest units within the designated increments of measurement. So, for example, dry-commodity ideograms like GRA, GRA+PE, HORD, OLIV, OLIV+A,

⁵ See J. Chadwick, *Linear B and Related Scripts* (Berkeley 1987), 22-32. For a detailed discussion of how the Linear A and Linear B phonetic and ideographic repertories relate to one another, see T.G. Palaima, "The Development of the Mycenaean Writing System," in J.-P. Olivier and T.G. Palaima eds., *Texts, Tablets and Scribes: Studies in Mycenaean Epigraphy and Economy in Honor of Emmett L. Bennett, Jr.* (Salamanca 1988), 320-329.

⁶ The gender variants for CERV (deer) are not attested; nor is there any generic ideogram for HOMO = human being, surprising in terms of the theoretical structure of the ideographic system, but not in regard to the specific concerns of the extant Linear B documents.

OLIV+TI, KAPO (= *karpoi* ‘fruits [of the olive?]’) equal, as units of measure, 10 of the largest pure unit of dry measure T (= 9.6 liters), i.e., 96 liters. And they include all of the types of ideograms so far described, i.e., generic, phonetically ligatured, and phonetic composite. The ideograms denoting liquid commodities function similarly. These also include generic, phonetically ligatured and phonetic composites: VIN, OLE, OLE+A (= OLIVE OIL + *aleiphar* or *aloiphā* ‘ointment’), OLE+PA (= *sphakowen* ‘scented with sage’), OLE+WE (= first element starting with *we-* and second element *-aleiphes* = ‘anointed with regard to *we-*’⁷), AREPA (= *a-re-pa aleiphar* ‘ointment, unguent’). But in contrast to the dry commodities, the convention with liquid commodities is that the substance ideogram equals only 3 of the largest pure unit of liquid measure S (= 9.6 liters), i.e., 28.8 liters.

In addition, single phonetic signs, again being the initial syllables of words in all cases where identification is certain, can serve as independent ideograms in tablet entries or can stand as adjectival or even noun-modifiers or as adjuncts to an ideogram, as opposed to ligatures, whether that ideogram is actually written or merely to be understood. Clear examples of the phonograms used as independent ideograms (i.e., of single phonetic signs functioning as ideograms) occur in the Pylos Ab series where rations of GRA (wheat or barley) and NI (figs) are allotted to women and children in work groups. Here the phonetic ideogram NI, associated with *su-za* (< **sukjai*) on KN F 841 and taken over directly from an ideogram appearing in similar contexts in Linear A, has been interpreted by Neumann with reasonable probability as representing the initial syllable of a Minoan word which appears in the Greek gloss *νικύλεον* = ‘fig’.⁸ The sign retained its phonetic value of *ni* despite the fact that Greek speakers using the Linear B script must surely have thought of the underlying thing identified as *sukon*.⁹ We may also compare the history of the Linear B ideogram for goat. Its phonetic value in Linear B seems to be something

⁷ Aura Jorro 1993, s. *we-a-re-pe*.

⁸ G. Neumann, “νικύλεον,” *Glotta* 40 (1962), 51-54, citing lexical items in Egyptian and Coptic and Athenaeus 3, 76e: Ερμῶναξ δ’ ἐν Γλώτταις Κρητικαῖς σύκων γένει ἀναγράφει ἀμάδεα καὶ νικύλεα.

⁹ This would be one instance in which one could argue, albeit without full conviction, that NI in Mycenaean functioned ‘ideographically’ rather than ‘logographically’.

like *mbi* or *mi* and again we have a lexicographical gloss that says that the Cretan word for ‘goat’ is *miglas*.¹⁰

There are numerous examples of single phonetic signs functioning as adjectival or noun-appositional modifiers or adjuncts. On Knossos tablet Ch 896 (figure 8) signs *ne* and *we* function as abbreviations of the appropriate case forms of *newos* and *wergatās*, describing the ideogram BOS^m, itself followed by the phonetic ideogram *ZE* (= *zeugos* ‘pair’). We find such a usage as the third element of the standard formula on an inscribed stirrup-jar inscription from Eleusis (EL Z 1 figure 1).¹¹ There, sign *wa* (= *wa-na-ka-te-ro*), which is the last sign at right of the bottom line of text on the shoulder of this transport container, serves as an abbreviation modifying an understood ideogram OLE or *210^{VAS}+KA. On an oil tablet from Pylos (PY Fr 1203 figure 2) occurs a sign that is actually adjoined, but not ligatured to, an ideogram. Here the syllabic abbreviation is *po* (= *po-ni-ki-jo phoinikion* = ‘alkanet’). It snuggles up to the generic OIL ideogram on the left. One wonders whether the difference between how the use of alkanet alters the olive oil in contrast to variants of OLIVE OIL that have to do with its usage, e.g., ‘for anointing’, or scent brought about this odd variation in positioning and adjoining versus ligaturing. The ideogram OLE also serves here as the largest unit of liquid measure (= 3 S), and in turn is modified by full word-units *ku-pa-ro-we* (‘stypticized with cyperus’¹²) and *wo-do-we* (‘rose-scented’).

Even this brief survey of the ideographic elements in the Mycenaean Linear B script reveals some of its complexities and distinctive characteristics.

It follows its parent script Linear A in the use of ideograms and shares with Linear A some fundamental generic ideograms. On the other hand, as I discussed in a full treatment of the development of Linear B as a total writing and recording system (above n. 5), its repertory of actual ligatured ideograms is far less extensive than that of Linear A (roughly 31:137).

¹⁰ See J.L. Melena, “On Untransliterated Syllabograms *56 and *22,” in P.H. Ilievski and L. Crepajac eds., *Tractata Mycenaea* (Skopje 1987), 203-232, and M. Janda, “Zur Lesung des Zeichens *22 von Linear B,” *Kadmos* 25 (1986), 44-48.

¹¹ A. Sacconi, *Corpus delle iscrizioni vascolari in lineare B* (Rome 1974), 113.

¹² C.W. Shelmerdine, *The Perfume Industry in Mycenaean Pylos* (Goteborg 1985), 25.

This is a significant disproportion since in Linear B we have almost fifteen times as many tablet inscriptions containing nearly eight times as many signs. Linear B also greatly expands the use of independent phonetic ideograms and abbreviations.

But here we must also keep in mind that Linear B texts rely much more on lexical and syntactical expression, and therefore offer more occasions to exhibit such features. The extreme brevity of the fewer than 350 extant Linear A tablets (no heading in these Linear A economic documents exceeds three sign-groups, and very few tablets have entries longer than one sign-group followed by an ideogram and numerical-fractional signs) and the abbreviated nature of Linear A inscriptions on sealings and roundels may give us a distorted view of the potential subtlety of the mother-script in its lexical and ideographic components and the interplay between them.¹³

Texts like KN Zf 31 (a silver pin with at least ten phonetic sign-groups and no ideograms figure 3) indicate that Linear A had equal potential for lengthier syntactical expression. So far as we can tell, Linear B followed Linear A in using ideograms exclusively as signs for objects, animate and inanimate, as opposed to signs standing for abstract concepts or serving as lexical, grammatical, or semantic determinatives. This cannot simply be a matter of the narrow economic and mundane concerns of the extant documents, since even they afford opportunities for using semantic determinatives as in Hittite documents, say to mark words as belong to the category 'deity' or even 'human being', if the writing system used such determinatives in more formal texts.

Moreover, it is a commonplace that in Linear B, with one remotely possible exception (sealing Ws 8493 from Knossos which bears three word-units and an ideogram with a phonetic abbreviation on two of its three faces), ideograms are never inserted into a group of words written phonetically and forming a syntactical unit. Paradoxically, however, there are few series among our nearly 5,000 surviving Linear B inscriptions in which ideograms do not routinely appear.

¹³ J.-P. Olivier, "Le linéaire A: Quelques approches quantitatives," in P.H. Ilievski and L. Crepajac eds., *Tractata Mycenaea* (Skopje 1987), 237. Y. Duhoux, "Le linéaire A: problèmes de déchiffrement," in Y. Duhoux, T.G. Palaima and J. Bennet eds., *Problems in Decipherment* (Louvain-la-Neuve 1989), 62. I. Schoep, *The Administration of Neopalatial Crete* (Salamanca 2002) gives the most recent statistical and structural analyses of Linear A texts.

Why then are ideograms present at all? How do they relate to the relatively full syntactical structure of Mycenaean texts? The first question has been answered in two ways. One answer is based in writing theory; the other, to which I adhere, is grounded in an assessment of the archival nature of the surviving inscriptions. The first approach focuses on the instances, by no means infrequent, where: (1) an ideogram immediately follows the word-unit to which it corresponds; or (2) an ideogram appears at the end of a syntactical unit that contains the word-unit to which it corresponds. These occurrences were greeted in the 1950's with great warmth and favor, since they supported, for all but the most perversely or inveterately sceptical minds, the validity of the Ventris decipherment.

Good examples are KN Ra(1) 1540 (figure 4): which records *to-sa* (majuscule) / *pa-ka-na* PUG (sword) 50 [= so many *phasgana* SWORD 50]. Numerous tablets of the Pylos E- series (e.g., En 74 figure 5) record landholdings measured in terms of seed grain expressed both lexically *to-so(-de) pe-mo* or *pe-ma* and ideographically by the ideogram GRA (wheat or barley) and appropriate quantities.

This practice of lexical-ideographic synonymy or quasi-synonymy is viewed by some as an unnecessary, uneconomical and illogical redundancy called 'double writing'. We should point out, as has not been done, that in many cases, this is not really redundant writing. To take but one example, the ideogram GRA(num) on tablet En 74 (figure 5) identifies the seed-crop in terms of which land is measured as wheat/barley as opposed to HORD(eum) barley/wheat. *pe-ma* and *pe-mo* by themselves only mean 'seed'.

Secondly, our textual documentation does not make it unequivocally clear whether the ideogram PUG stands generically for 'sword' or specifically and absolutely synonymously for the particular sword type *φάσγανον*.

The implication of viewing such ideographic usage as 'double writing' is that this practice would not have persisted for the conservatively estimated 250 years that Linear B existed unless Linear B had developed from a script (Linear A) which had a strong ideographic component. In this view, after the invention of Linear B, writers of Linear B lurched onward, administrative period after administrative period, like Bronze-Age William Burroughses, wanting to kick their ideographic habits, but not being able to do so.

This view fails to take into account the rather full texts we do possess which contain no non-numerical ideograms and specifically define the items listed and counted phonetically by sign-groups without ideographic repetition. For example, on PY Vn 10 (figure 6) the numerically totaled commodities delivered to the Pylos 'joinery workshop' (*a-mo-te-jo-na-de*) are only specified lexically before the numerical quantities. The first entry can be interpreted as an accusative *e-pi-[.]ta* agreeing with the possible interpretation of the heading word for the second section of the tablet: *to-sa-de*. Both could be understood as the direct object accusatives of the verb *di-do-si* and subject *du-ru-to-mo* written in the header in lines .1-.2.

However, the second grouped items 'given' by the 'woodcutters' are recorded twice as *a-ko-so-ne* = *aksones* = 'axle-shaped pieces of raw wood'.

This can only be a so-called 'nominative of rubric'. This usage indicates that the scribe was conditioned by the bookkeeping nature of the Linear B accounting texts to have an element in the ideographic 'slot'. Here it is most likely that *aksones*, which are larger-sized 'raw shafts' of wood, did not lend themselves to any standard pictorial ideographic representation (like vases, weapons, animals and so on). The other ready option would have been phonetic abbreviation, i.e., the scribe could have written: A. But, as we have already seen, phonetic sign *a* already is commonly used in the Linear B repertory to abbreviate 'anointing oil' and 'amphora'. Even though a juxtaposition with *a-ko-so-ne* would have surely removed any ambiguity, the scribe of Vn 10 (Hand 3) was reluctant to use here an *ad hoc* coining of the kind that served Mycenaean ideogram-addicts as a kind of graphic methadone.

On Pylos tablet, Un 1185, Hand 1, the most accomplished scribe in the entire known Linear B corpus, uses the monogram *TURO*₂ after the phonetic spelling of 'cheese' *tu-ro*₂. And on line .5 he also uses the initial syllable *A*₃, perhaps his own coining, to serve ideographically for the item *a*₃-*ka-na-jo*.

Again, one imagines that 'cheese' was not conducive to ideographic representation (cf. again figs = *NI* = *nikuleon*). One could also point to tablet Ue 611 by Hand 60 from the House of the Sphinxes at Mycenae, which lists quantities of different vases, designated solely by phonetic sign-groups (figure 7). This is despite the existence of attested ideograms for

some of these vessels: *a-po-re-we* on line .1 being our familiar *209^{VAS}+A (attested in part of the KN Gg series) and unligatured *209^{VAS} on other texts in the KN Gg series and specifically following *a-po-re-we* on the Pylos inventory of vessels Tn 996; *qe-to* on line 4 of the Mycenae tablet occurs on the second line of the Pylos vase inventory Ta 641 preceding ideogram *203^{VAS}. The ideograms existed. Scribe 60 at Mycenae opted not to use them. So much for ideographic addiction. This is just one major problem with the theory of ‘double writing’.

Our main questions still are why do ideograms exist in Linear B and why are they used as they are? This leads to a reformulated question: how do ideograms relate to the phonetic syntax of Mycenaean Greek texts? Here we take up again the second approach mentioned above as an alternative to ‘double writing’. This approach emphasizes the purpose and nature of our documents and tries to interpret their peculiarities in view of the particular conditions for producing the texts. It is then ‘text pragmatic’ in focusing on what goes on in the communicative process between the writer of the text and the imagined reader or recipient of the text’s message.¹⁴

On a general level, ideograms are a bookkeeping convenience, and scholars have rested content with this general and sound explanation, although the notion, expressed early by Ventris and Chadwick, that the ideograms somehow assist non-literate members of Mycenaean palatial communities to understand these documents is misconceived.¹⁵ Yet we have seen that the varieties of ideograms are many, and a close study of a

¹⁴ For an example of text pragmatic interpretation of Linear B tablets, see T.G. Palaima, “Syntax and Context as Tools for Interpreting Mycenaean Texts and Scribal Processes: Un 718, Ta 709 and K(1) 740,” in T. Krisch, T. Lindner and U. Müller eds., *Analecta Homini Universali Dicata* (Stuttgart 2004), 268-278. The use of text-pragmatic theory in Linear B was pioneered by Prof. Panagl.

¹⁵ The Linear B tablets are system-internal, mnemonic texts. Cf. T.G. Palaima, “Archives and Scribes and Information Hierarchy in Mycenaean Greek Linear B Records,” in Maria Brosius ed., *Ancient Archives and Archival Traditions* (Oxford 2003), 153-194. The texts would not have had a ‘public audience’ except perhaps at the interface between the palatial administrative sphere and the general territories that the palatial centers controlled. Even then, the palace officials would have been dealing mainly with their own ‘agents in the field’ (e.g., *ko-re-te-re* and *po-ro-ko-re-te-re*) and with power figures of high enough status (‘collectors’ and local chieftains, i.e., the *qa-si-re-we*). Such individuals would have had opportunity and incentive to become literate or semi-literate.

Thus there is now less to recommend the explanation in M. Ventris and J. Chadwick, *Documents in Mycenaean Greek*² (Cambridge 1973), 49, that the ideograms were added as “habitual ‘classifier[s]’, partly to aid the non-literate members of the household (which may have included the highest as well as the lowest) in seeing the contents of the tablets at a glance.”

cross-section of texts would convince us that, even as bookkeeping aids, ideograms were used, in connection with phonetic syntax, in ways equally various and subtle by the individual identifiable scribes who worked within the Mycenaean administrative systems.

We should follow the lead of scholars studying other areas, such as orthography, dialectal variations, textual errors, and ‘text pragmatics’ and emphasize the creative role of the individual Mycenaean scribes. In contrast to their Near Eastern counterparts, the writers of the Linear B records were not, it seems, rigidly trained in canonical and invariable methods of textual layout and production. They therefore could use individual ingenuity in devising solutions to problems of recording economic data efficiently.

We must also understand that the Mycenaean Greek syllabic texts are mainly rough drafts and memoranda for the essential purpose of preserving information, often exclusively for the personal use of the writer. The tablets are nearly always produced with an eye to simple, but systematic clarity and to an almost tachygraphic speed of recording and later extracting information.

Nicole Maurice (now Guilleux) has studied closely patterns of scribal errors. She has proved that the Mycenaean tablet-writers are guided by an overriding concern for readability and accessibility of information.¹⁶ Hence, they use such techniques as majuscule heading words, e.g., Knossos tablet Ch 896 (figure 8) where the all-important proper name to whom paired worker oxen are assigned is delineated in large signs. Scribes also use quasi-stoichedon repetitions of set formulae and categories of essential information, as on Pylos tablets En 74 (figure 5) and Jn 829 (figure 9). We should keep in mind that the Linear B tablet-writers had no ‘ditto marks’. Moreover, the repeated full entries on land-holding lists may have had something like a quasi-legal status. Finally, the virtue of a tablet like Jn 829, where each locale has its *ko-re-te* and *po-ro-ko-re-te* listed, is that it can then be used as a convenient check-list once the anticipated contributions have been made—or not.

However laborious and tedious this kind of technique appears to us, it does assure that vital information is entered correctly and in easily accessible positions within the extemporaneous forms which the scribe is

¹⁶ N. Maurice, “Fautes de scribes. Pour une critique verbale appliquée aux textes mycéniens,” *Minos* 19 (1985), 29-50.

creating. The ideograms serve a like purpose and are used with considerable dexterity.

Here are four brief illustrations of particular scribal practices, which should further underscore the need to examine more carefully the ways ideograms are used within Mycenaean Greek texts.

On Pylos text Cn 608, we are told in the heading ‘thus the local inhabitants will fatten *sialons*’, which all sensible interpreters of this text take to mean ‘fatted pigs’.

Here one member of the ‘double writing’ school finds the subsequent entries of SUS+*SI*, *sialons* pigs, so redundant, especially after the scribe has said that members of the communities listed here line by line are to fatten ‘fatted pigs’, that he wishes to interpret the *SI*-ligature differently.

The essential point, however, is that we find elsewhere in the Pylos corpus (Cn 418 figure 10) the ligatured ideogram BOS+*SI*, which implies that *sialos* could equally well describe other ‘fatted’ livestock. The message of this tablet is therefore ambiguous until one sees the generic ideogram SUS, which has in fact enabled Ventris and Chadwick and Palmer and others to translate the heading fully, something that could not be done in isolation without the use of the ideogram in the individual entries. What then appears to be ‘double writing’ is actually adept and precise disambiguation. And the use of the *SI*-ligature with the SUS ideogram is proleptic, anticipating the actual fatted versions of the pigs that the record-keeper will eventually have to account for.

On Pylos tablet Ta 641 (figure 11), Pylos scribe Hand 2 alters the ideogram *202^{VAS} (*di-pa*) on the second and third lines in order to represent ideographically differences in vases of the same generic shape, differences which are expressed lexically in the preceding adjectives: *qe-to-ro-we* ‘4-handled’, *ti-ri-o-we-e* ‘3-handled’, and *a-no-we* ‘without handles’.

He thus refines the generic ideogram, most likely for ease of future reference in this set of thirteen full inventory texts. But the alteration is in the way of embellishment, not any change in the distinctive feature of the *di-pa* vase. The same applies on the first line of the same tablet to the ideogram for tripod. Its essential quality is its ‘three-footedness’. And so we have a tripod described as ‘one-footed’, yet the generic ideogram is still drawn with three feet. We might contrast our scribe from Mycenae (Ue 611), whose single text obviously did not require such a reference device.

At Knossos, as at Pylos, vessels are sometimes used as units of measure. In the Knossos Gg series, we can see how three different scribes manipulated lexical entries and ideograms in records of contributions of amphorae of honey to different divinities (figure 12). Hand 135 (top) uses the monogram for honey *ME+RI* raised, and rather minuscule, above a word-unit, but contiguous to the ligatured ideogram *209^{VAS}+A.

Hand 140 (center) also places the monogram next to the unit of measure, in this case an unligatured generic *209^{VAS}. Hand 103 (bottom) writes the word for ‘honey’ phonetically in minuscule next to the generic vase ideogram. The question is then whether those who used the Linear B script might ‘read’ these different texts as Hand 135: ‘To Marineus, the δούλη [gives] 1 amphora of honey’; Hand 140: ‘At Amnisos, to Eileithuia [Lacon. Ἐλευθία] honey 1 jar’; Hand 103: ‘To the *potnia* of Daburinthos 1 jar of honey’.

Those are the different emphases implied by majuscules, minuscules, ideograms, ligatured and unligatured, and the combined lexical and ideographic syntax of each scribe's text. I think we can then, if we look, find ‘style’ and ingenuity lurking within these individual styluses and classes of tablets. And style and class and graceful ingenuity are what also characterize our good friend Enrica Fiandra, *potnia sphragismatōn*.

FIGURES

Figure 1 Linear B inscription on stirrup jar Eleusis Z 1.

Figure 2 Pylos tablet Fr 1203.

Figure 3 Linear A inscribed silver pin Knossos Zf 31.

Figure 4 Knossos tablet KN Ra(1) 1540.

Figure 5 Pylos tablet En 74.

Figure 6 Pylos tablet Vn 10.

Figure 7 Mycenae tablet Ue 611.

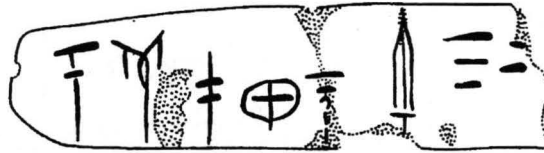
Figure 8 Knossos tablet Ch 896.

Figure 9 Pylos tablet Jn 829.

Figure 10 Pylos tablet Cn 418.

Figure 11 Pylos tablet Ta 641.

Figure 12 Knossos Gg tablets by Hands 135, 140 and 103.



Ra(1) 1540 ASHM J3 126
to-sa / pa-ka-na PUG 50[

Fig. 4

En 74	.1	ru-*83-o , ko-to-na ₁ ki-ti-me , to-so-de , pe-mo	GRA 1 T[5
	.2	o-da-a ₂ o-na-te-re , ru-*83-o , ko-to-na , e-ko-si	
	.3	pe-ki-ta , ka-na-pe-u , wa-na-ka-te-ro , [o]na-to , e-ke , to-so-de , pe-mo	GRA T 1
	.4	mi-ra , te-o-jo , do-e-ra ₁ e-ke , to-so-de ₁ pe-mo	GRA T 1
	.5	te-se-u , te-o-jo , do-e-ro , o-na-to , e-ke , to-so-de , pe-mo	GRA T 4
	.6	ma-re-ku-na , te-o-jo , do-e-ro , o-na[-to e-ke to-so-de]pe-mo	GRA T 1
	.7	e-ko-to , te-o-jo , do-e-ro , o-na-to , e-ke , to-so-de , pe-mo	GRA V 3
	.8	ma-*79 , te-o-jo , do-e-ra , o-na-to , e-ke , to-so-de , pe-mo	GRA V 3
	.9	e-*65-to , te-o-jo , do-e[-ro] , o-na-to , e-ke , to-so-de , pe-mo	GRA V 1
	.10	<i>vacat</i>	
	.11	a ₂ -ti-jo-qo , ko-to-na ₁ , ki-ti-me-na , to-so-de , pe-mo	GRA 1 T 5 V 4
	.12	o-da-a ₂ o-na-te-re , e-ko-si , a ₂ -ti-jo-qo , ko-to-na	
	.13	e-pa-sa-na-ti , te-o-jo , do-e-ra o-na-to , e-ke , to-so-de pe-mo	GRA T 2
	.14	ku-*63-so ₁ te-o-jo , do-e-ro , o-na-to , e-ke , to-so-de , pe-mo	GRA T 1
	.15	ta-ra ₂ -to , te-o-jo , do-e-ro , o-na-to , e-ke , to-so-de , pe-mo	GRA T 1
	.16	we-te-re-u , i-e-re-u , o-na-to , e-ke , to-so-de , pe-mo	GRA T 5
	.17	e-ko-to , te-o-jo , do-e-ro , o-na-to , e-ke , to-so-de , pe-mo	GRA T 1
	.18	ko-ri-si-ja , te-o-jo , do-e-ra , o-na-to , e-ke , to-so-de , pe-mo	GRA T 5
	.19	<i>vacat</i>	
	.20	pi-ke-re-wo , ko-to-na , ki-ti-me-na , to-so-de , pe-mo	GRA 2 T 6
	.21	o-da-a ₂ , o-na-te-re , e-ke-si , pi-ke-re-wo , ko-to-na	
	.22	a ₂ -wa-ja , te-o-jo , do-e-ra , o-na-to , e-ke , to-so-de , pe-mo	GRA T 1
	.23	pe-ki-ta , ka-na-pe-u , wa-na-ka-te-ro , o-na-to , e-ke , to-so-de , pe-mo	GRA T 2
	.24	ko-ri-si-ja , te-o-jo , do-e-ra , o-na-to , e-ke , to-so-de , pe-mo	GRA T 5

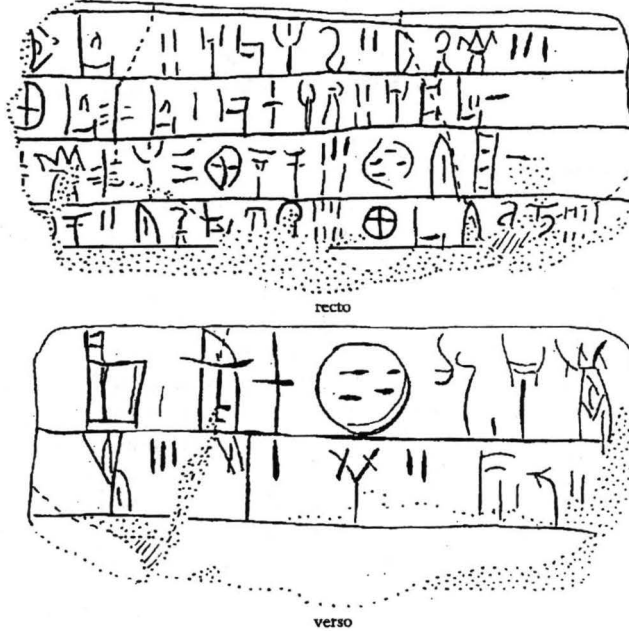
Fig. 5

Mycenaean Ideograms and How They Are Used

- Vn 10 .1 o-di-do-si , du-ru-to-mo ,
 .2 a-mo-te-jo-na-de , e-pi-[.]-ta 50
 .3 a-ko-so-ne-qe 50
 .4 to-sa-de , ro-u-si-jo , a-ko-ro , a-ko-so-ne
 .5 100 , to-sa-de , e-pi-[.]-ta 100

Fig. 6

611 (Ue)

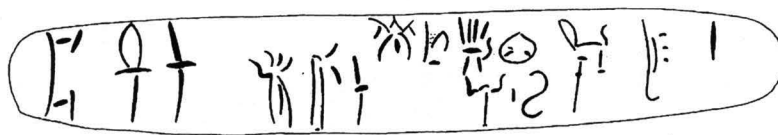


- .1]pe-ra 4 a-po-re-we 2 pe-ri-ke 3
 .2]ka-ra-te-ra 1 po-ro-ko-wo 4 a-ta-ra 10
 .3]pa-ke-te-re 30 ka-na-to 5 qe-ti-ja 10
 .4]qe-to 2 ti-ri-po-di-ko 8 ka-ra-ti-ri-jo 7
 .5] *inf. mut.*

- v.1*189 pi-ro-qe-mo , a-ke
 .2 OLIV+TI 3 OLIV 1 NI 2 VIN S 2[
 .3 *vacat* [
inf. mut.

v. Palinsesto.
 v. 1 *189 è infatti il segno *87 della lineare A / [OLIV] scritto sotto -ke.

Fig. 7



Ch 896

I3

110

ta-za-ro / a₃-wo-ro 'ke-ra-no-qe' ne , we BOS^m ZE 1

Fig. 8

Jn 829

.1	jo-do-so-si , ko-re-te-re , du-ma-te-qe ,		
.2	{		-e-we-qe
		po-ro-ko-re-te-re-qe , ka-ra-wi-po-ro-qe , o-pi-su-ko-qe , o-pi-ka-pe-	
.3	ka-ko , na-wi-jo , pa-ta-jo-i-qe , e-ke-si-qe , a ₂ -ka-sa-ma		
.4	pi*82 , ko-re-te ,	AES M 2 po-ro-ko-re-te	AES N 3
.5	me-ta-pa , ko-re-te	AES M 2 po-ro-ko-re-te	AES N 3[] <i>vacat</i>
.6	pe-to-no , ko-re-te	AES M 2 po-ro-ko-re-te	AES N 3
.7	pa-ki-ja-pi , ko-re-te	AES M 2 po-ro-ko-re-te	AES N 3
.8	a-pu ₂ -we , ko-re-te	AES M 2 po-ro-ko-re-te	AES N 3
.9	a-ke-re-wa , ko-re-te	AES M 2 po-ro-ko-re-te	AES N 3
.10	ro-u-so , ko-re-te	AES M 2 po-ro-ko-re-te	AES N 3
.11	ka-ra-do-ro , ko-re-te	AES M 2 po-ro-ko-re-te	AES N 3
.12	ri-]jo , ko-re-te	AES M 2 po-ro-ko-re-te	AES N 3
.13	ti-mi-to-a-ke-e , ko-re-te	AES M 2 po-ro-ko-re-te	AES N 3
.14	ra-jwa-ra-ta ₂ , ko-re-te	AES M 2 N 3 po-ro-ko-re-te	AES N 3
.15	sa-jma-ra , ko-re-te	AES M 3 N 3 po-ro-ko-re-te	N 3
.16	a-si-ja-ti-ja ₂ ko-re-te	AES M 2 po-ro-ko-re-te	N 3
.17	e-ra-te-re-wa-pi , ko-re-te	AES M 2 po-ro-ko-re-te	N 3
.18	za-ma-e-wi-ja , ko-re-te	AES M 3 N 3 po-ro-ko-re-te	N 3
.19	e-re-i , ko-re-te	AES M 3 N 3 po-ro-ko-re-te	N 3
.20-23		<i>vacant</i>	

Fig. 9

Cn 418

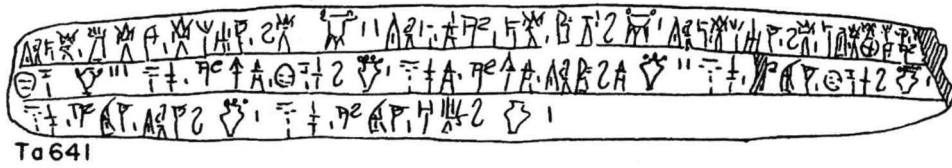
.1	pa-ro , we-u-da-ne-we		
.2	re-u-ko , a-ko-ro-we-e	BOS+SI 2	
.3	re[-u-]ko , ma-ra-pi , pe-ko , a-ko-ro-we	BOS+SI 1	
.4]3 CAP ^m 3 WE 3 CAP ^m 3	
.5]2 []3 [
.6] <i>vestigia</i> [
.7	re-u-ko[]pe-ko , a-ko-ro-we[
.8	OVIS ^m 1 CAP ^m 1 WE[] SWS ^x [
.9] <i>vacat</i> [

infra mutila

Fig. 10

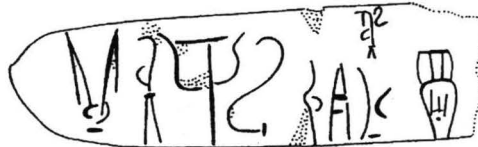
Mycenaean Ideograms and How They Are Used

Fig. 11



Ta 641.1(a) { ti-ri-po-de, a₂-ke-u, ke-re-si-jo, we-ke *207^{VAS} 2 ti-ri-po, e-me, po-de, o-wo-we *207^{VAS} 1 ti-ri-po, ke-re-si-jo, we-ke, a-pu, ke-ka-u-me-po[
 .2 qe-to *203^{VAS} 3 di-pa, me-zo-e, qe-to-ro-we *202^{VAS} 1 di-pa-e, me-zo-e, ti-ri-o-we-e *202^{VAS} 2 di-pa, me-wi-jo, qe-to-ro-we *202^{VAS} 1 [
 .3 di-pa, me-wi-jo, ti-ri-jo-we *202^{VAS} 1 di-pa, me-wi-jo, a-no-we *202^{VAS} 1

Fig. 12



Gg(2) 713 + 994

F18 135

ma-ri-ne-we ,/ do-e-ra 'ME+RI' *209^{VAS} +A [

Perhaps *209^{VAS} +A !{.

Gg(3) 705

G1 140

.1] a-mi-ni-so ,/ e-re-u-ti-ja ME+RI *209^{VAS} 1

.2]pa-si-te-o-i ME+RI *209^{VAS} 1

.3]o-ne ME+RI *209^{VAS} 1

Gg(1) 702

G1 103

.1 pa-si-te-o-i / me-ri *209^{VAS} 1

.2 da-pu₂-ri-to-jo ,/ po-ti-ni-ja 'me-ri' *209^{VAS} 1