Minoan Linear A
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MINOAN LINEAR A

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AROUND 2000 B.C. the first Minoan system of writing is attested on stone seals found on various parts of Crete. The language for which this Cretan hieroglyphic script was devised remains undetermined. That the cultured Minoans, who were in contact with the literate Egyptians and Mesopotamians, should be impelled to create or adapt a system of writing for their own use seems natural enough.

The *Odyssey*, xix. 173 ff. describes the population of Crete as a patchquilt of ethnic groups, speaking a variety of languages. In earlier times, say around 2000 B.C., the population may have been just as composite linguistically, though all the elements did not correspond exactly to those mentioned in the *Odyssey*. Just as the Mesopotamian syllabary and the Ugaritic alphabet were used for writing a number of languages, the same may have been true of the Cretan hieroglyphs.

An unbroken scribal tradition seems to run through the successive stages of Minoan writing: hieroglyphs (*ca.* twentieth–seventeenth centuries), Linear A (*ca.* seventeenth–fifteenth), Linear B (*ca.* fifteenth–twelfth), and the various Cypriote systems (down to the end of the third century B.C.). But while these stages have an orthographic continuity (with some of the signs retaining their phonetic value from stage to stage), the linguistic continuity was broken. Linear B, thanks to Ventris' decipherment, is identified as a dialect of Greek; whereas Linear A, on analytic grounds, was seen to be a very different language, even before Ventris' discovery.

The evidence of pottery links the Aegean with Mesopotamia going back to at least the fourth millennium.[1] In the literate periods, the international penetration of the Aegean is attested by inscriptions. For example, Cythera had established itself as a cultic center, attracting worshipers from great distances already by the third millennium B.C. A sustained tradition of a wise and helpful priesthood may account for the international fame of shrines like Cythera or Delphi, or in our own time like Lourdes.[2] In Greek times Cythera was known as a great center for the worship of Aphrodite. Herodotus (i. 105) tells us that the Phoenicians had built a temple there to the Heavenly Aphrodite. A Mesopotamian monarch named Narâm-Sin son of Ibiq-Adad, King of Eshnunna, in the eighteenth century, left on Cythera a dedicatory object inscribed with a prayer for his life.[3] A still earlier stone cup found on Cythera bears the Egyptian hieroglyphs *sp-r*^{c}: the name of the Fifth Dynasty sun temple of Pharoah Userkaf at Abusir.[4]

During the First Dynasty of Babylon (nineteenth–sixteenth centuries) contacts between Crete and Mesopotamia are particularly strong. Caphtor is mentioned on a tablet found at Mari, and seal cylinders

[1] Cf. F. Schachermeyr, *Die ältesten Kulturen Griechenlands* (Stuttgart, 1955).

[2] Solomon's Temple is represented as aspiring to attract and help foreign visitors from afar, so as to enhance the fame of Yahweh and establish the reputation of His Temple in Jerusalem (see I Kings 8:41–43).

[3] For the latest translation, see E. F. Weidner, *Journal of Hellenic Studies*, LIX (1939), 137–38.

[4] See K. Sethe, *ZÄS*, LIII (1917), 55–58; and H. Ricke's reports on the solar temple of Userkaf at Abusir in *Annales du Service*, LIV (1957), 75–82 (cf. Pl. Ib, l. 2), 305–16.

of the First Dynasty of Babylon appear on Crete.[5]

The use of clay tablets as a writing material in the ancient Near East is always an indication of direct or indirect Mesopotamian influences. We should therefore be on the lookout for Sumero-Akkadian elements, starting with the earliest tablets.

The foundation on which the identification of Linear A rests is the continuity of the graphic system. The signs common to "A" and "B" have essentially the same syllabic and logographic values in both "A" and "B." The decipherment of "B" therefore provides the graphic basis for approaching the problem of "A."

The difficulties inherent in the interpretation of Minoan texts are serious. Related consonants may not be graphically distinguished; *p* falls together with *b*, *k* with *g*, *l* with *r*. When they close a syllable, *-m*, *-n*, *-l* and *-r* are omitted in the orthography of "B"; the same seems usually to be the case also in "A." Most serious of all is the fewness of the "A" texts (200–odd short inscriptions) vis-à-vis the thousands of "B" tablets. Indeed, were it not for the decipherment of "B," the "A" problem would probably resist all attempts to solve it.

The vocabulary[6] and onomasticon[7] of the "A" tablets should reflect the complex character of Minoan culture, with elements from Mesopotamia, Anatolia, and Egypt side by side with local Aegean elements. This is the impression I got when I first studied the "A" texts; it is also the impression one gets when reading the introduction to Piero Meriggi's valuable *Primi Elementi di Minoico A* (a supplement of *Minos*), Salamanca, 1956.

[5] Shortage of space prevents me from citing all the background literature here. I plan to cover such matters adequately in a volume now in preparation.

[6] See *Antiquity*, Sept. 1957, pp. 128–29.

The limited volume of the material and the mixture of syllabic and logographic orthography make it futile to rely on the routine types of analysis that work so well with large bodies of material in alphabetic or even syllabic script. Even frequency counts are of limited value in a small body of highly specialized short texts such as the Linear A corpus. The method that I find of most use is "the method of the probable word." From context and from spelling, the cryptanalyst guesses what the word should be. He then applies the results (for instance, the newly assumed phonetic value of a sign in "the probable word") in other contexts. If there is enough material for checking, the validity of the guess becomes apparent. If the new values are wrong, they will produce contradictions when applied elsewhere, provided that there is a sufficient number of applicable contexts. Imagination and boldness are just as necessary as knowledge and judgment in the problem before us. Unfortunately, there is not always enough Linear A text to expose every error immediately.

Like all pioneering our present task calls for flexibility rather than perfectionism. I feel no obligation to stand by all my past proposals; certainly not, when fresh evidence shows them to be in error. I hope that this article, which supersedes my earlier publications, attains a higher level of accuracy and truth than previous work on the interpretation of the "A" tablets.

The opening wedge of my attempt to determine the language of Linear A was tablet HT[8] 31, on which a number of pots are drawn pictographically, with their

[7] Note that *da-we-da* (HT 10:a:4; 85:a:2; 93:a:7; 122:a:7) may designate "the chief" (so in the Mari and Alalaḫ tablets and Mesha stone) rather than the personal name "David."

[8] The Hagia Triada tablets are published by G. Pugliese Carratelli in *Monumenti Antichi* (Reale Accademia d'Italia), Vol. 40, puntata 4ª (Milan, 1945), col. 421–610, Pls. I–XL.

names spelled out syllabically over them. Out of five legible names, three looked Semitic; *su-pu*, *ka-ro-pa*$_3$ and *su-pa*$_3$-*ra* reminded me of the Ugaritic pot-names *sp*, *krpn* and *spl* and their equivalents in other Semitic languages.[9] While the article containing this observation (*Antiquity*, Sept. 1957, pp. 124–30) was in press and no changes or additions could be made, I concluded (for reasons given below) that the Semitic language was specifically Akkadian and announced it in the newspapers in August 1957. My hope that this announcement would stimulate others to work along productive lines without delay was not disappointed. A classicist at the Minoan Seminar, held at the University of London on Oct. 30th, 1957,[10] proposed the additional identification of *qa-pa*$_3$ with Akkadian *quppu*, and modified my reading of *ka-ro-pa*$_3$ to Akkadian *karpu*. Thus four out of five legible pot-names on HT 31 have likely readings in Akkadian; *karpu* and *quppu* do not occur in ancient West Semitic;[11] *sappu* and *saplu* are Akkadian words that have counterparts in ancient West Semitic (e.g., Ugaritic and Hebrew). The fifth pot-name on HT 31, *pa-ta-qe*, remains unidentified.

A Ugaritic poem describes the Caphtorian god of craftsmanship[12] at work in his atelier (51:I:24–44). Among his creations are *ṣ*^{c} . *il*, "bowl(s) of god" (meaning actually "magnificent bowl[s]"); lines 42–43 read *ṣ*^{c} . *il* . *dqt* . *kamr* (43) *sknt* . *ḫwt* . *yman*. The Caphtorian setting suggests the possibility that *dqt* and *kamr* might refer to Cretan Dicte (or Dictos) and Kamares. G. Pugliese Carratelli identifies *di-ki-te* (Pc 8 and 11) with Dicte, but *di-ka-t*[*u?*] (HT 52:a:2) might also be compared (*Antiquity*, Sept. 1957, pp. 128, 130). While the interpretation of 51:I:43 is unclear, the fact that *yman* appears in a Caphtorian context dealing with bowls prompts us to compare *sa-ya-ma-n*[*a*] in HT 31:3, another "Caphtorian" tablet dealing with bowls. If *ya-ma-n*[*a*] = Ugaritic *yman*, then *sa-ya-ma-n*[*a*] can hardly be anything but "of Y." with *ša* "of, which," that is characteristically Akkadian (though it also occurs, albeit *very rarely*, in archaic Hebrew).[13]

The factor that was decisive in impelling me to announce the Akkadian identification of Linear A in August 1957 was my observation that the conjunction was *o* = *ū*, "and" (HT 15:4, 103:3).[14] I attach weight to the presence of *ū* in Linear A, because among the early Semitic languages, *ū* is limited to Akkadian; all the early West Semitic languages have *wa-* instead.

Among the Sumero-Akkadian readings that I had collected but refrained from publishing because of doubts, is *ku-ni-su* = *kunêšu*, "emmer (wheat)." But on learning that A. Furumark had on independent grounds concluded that *ku-ni-su* designates a grain,[15] my doubts have been dispelled.

The nature of the "A" tablets is such that they cannot be expected to reflect much of the inflectional picture of their language. But we must try to squeeze out what little is there. On a number of cultic objects from different parts of Crete, *ya-*

[9] The data are presented under each word in the glossary of my *Ugaritic Manual* (Rome, 1955).

[10] Hereafter abbreviated "MS 30/X/57." Maurice Pope delivered the paper of which I have a mimeographed abstract.

[11] But *quppā* is found in later Aramaic to designate a large vessel or basket.

[12] One of his names, *kṯr* (= *Kôṯār* < **Kawṯar*), is possibly related to *ka-sa-ru* (HT 10:b:3).

[13] Judg. 5:7; cf. Gen. 6:3.

[14] MS 30/X/57 points out cases of *u*, "and," in HT 28:b:1; 117:a:1; 122:a:1. In all three cases, *u-* is prefixed to the following word; whereas *o* is written both times as a separate word. In Ugaritic, *w*, "and," is sometimes independent and sometimes prefixed, too.

[15] MS 30/X/57.

sa-sa-ra (var. *a-sa-sa-ra*)[16] seems to correspond to Akkadian *ušêšer*, "I/he set aright"; cf *a-sa-ra₂-pi* (HT 89:1) with *ušêreb*, "I/he caused to enter" (can *a-ra-pi?* in 87:5 be the G conjugation of the same verb?).

In Meriggi's handy reverse index (*Primi Elementi*, pp. 35–41), there are enough examples illustrating endings such as *-a-tu*, *-a-ti* (which could stand for f., sg. or pl., of the noun or adjective) and *-u-tu*, *-u-ti* (which could stand for the noun of abstraction or for the m. pl. of the adjective) to suggest some plausible Akkadian readings. For example, *da-ne₂-ku-ti* (HT 117:a:8–9) might stand for m. pl. *danqūti*, "good," in what appears to be a date formula introduced by *sa-ta* (:7) = *šatta*, "the year when . . ." (which opens the final section of the tablet after ten entries are recapitulated by *ku-ro 10* on l. 6, with the rest of l. 6 left blank)

It has been proposed[17] that *ku-pa₃-na-tu* (followed by the numeral "7" in HT 119:3) is a pl. in *-âtu* of the rather common *ku-pa₃-nu* (HT 1:a:3; 3:6; 88:3, 4; 117:a:3; 122:a:7) This proposal has in its favor the fact that *ku-pa₃-nu* is followed several times by the numeral "1." On the other hand, it is followed by a high number in HT 1:3. Meriggi considers Kupanu a personal name; I specifically suggested that it is the name appearing as Gupanu at Ugarit (*Antiquity*, Sept. 1957, p. 127).

Very interesting is the suggestion[18] that *da-[ku]-se-ne₂-ti* (followed by "45" in HT 104:1–2) is the Akkadian pl. of *da-ku-se-ne₂* (HT 103:4–5, where it is followed by "1"). If this is correct, then we have the characterically Akkadian shift from *-âti* to *-êti* under the influence of an *e*-vowel; cf. *bêlêti*, "ladies."

The Minoan system of writing is partly syllabic and partly logographic. Outside of the commodity logograms, there are three fairly common logograms for technical terms in the administrative tablets from Hagia Triada. One is the *te*-sign which frequently follows a group of signs (presumably designating the recipient) at the beginning of a tablet, and precedes the commodity that has been issued. The late J. L. Myres assumed that the logogram between the name and the commodity has to mean something like "received." I am inclined to take this *te* as the Sumerogram TI = Akkadian *ilqī*, "he received."

Another logogram, *ki* (so written about half a dozen times), introduces a number referring to quantities of goods. About ten times it is followed by the phonetic complement *-ro*. I suggest that this be taken as the Sumerogram GIʳᵘ = *târu*, "to return." (The variant GIʳᵃ in HT 103:5 is welcome because it may reflect the directive suffix *-a(m)* which is so common with this verb.)[19] Since the meaning is transitive, the D conjugation would be used. Any grammatical form can be indicated (such as present, preterite, or permansive) depending on the needs of the context. In a tablet such as HT 15, where it is stated that a person (l. 1) has received (or, perhaps, owes) 68 units of one commodity (l. 2) and 57 of another (l. 3), *o* . GIʳᵒ *40* = *ū utîr 40* (l. 4), "and has returned *40*," the

[16] Initial *ya-* and *a-* are sometimes interchangeable; cf. M. Ventris and J. Chadwick, *Documents in Mycenaean Greek* (Cambridge University Press, 1956), p. 79. It should also be noted that in Amarna Akkadian, verbal forms often have *y-* prefixed to what is normally the opening vowel.

[17] MS 30/X/57.

[18] MS 30/X/57. However, the *ti* may go with the following numeral (as in HT 119:3), and we may be dealing with a Hurrian name: D/tagu-ženni, occurring at Ugarit as *tgdn*. The first element occurs as *ta-ak-ku* (var. *ta-gu*), and the second as *še-en-ni*, in Hurrian names at Nuzu.

[19] I took this ending differently in *Antiquity* (Dec. 1957), p. 240. I take this occasion to retract the proposed change of *ku* to *mu*, and *ki* to *ku*, as well as the readings *kitmuru*, *mullu* and *kullu* in *Antiquity* (Dec. 1957), pp. 237–40.

preterite seems smoother than any other grammatical form. I take these tablets to be records of what has taken place in the assignment of palace goods. A less likely, though conceivable, interpretation would make this a promissory note, where the man has received so much and "will return" (*utâr*) a part thereof. I find this less likely because anything issued from the palace would either be the man's due, in which case it would not have to be returned; or, it would be lent to him, in which case he could repay it in installments. I take GI to designate repayments.

The opposite of GI^{ro} is *ku-ro*, which frequently introduces a number after a listing of goods. The obvious reading of *kull-*, "all," is unidiomatic, especially in Akkadian where *kâl-*, "all," is not used this way. Moreover, *ku-ro* does not always introduce a total; it can introduce less than the total (e.g., HT 118:5), which precludes the meaning "all." My present approach is rather to regard it as a Sumerogram with a meaning more or less opposite to GI. I am accordingly proposing a tentative solution that involves more ingenuity than I like (for truth is more often simple than complex), but if it proves to be wrong, I hope that it will at least stimulate someone else to find the right solution.

An idiomatic opposite of "goods *returned*" ($\sqrt{târu}$) is "goods *owed*." A familiar logogram for "debt" or "to owe" is ḪAR-*ra*, which can stand for the noun *ḫubullu*, "debt," or any form of the related verb *ḫabâlu*. For the sequence, *ḫabâlu . . . târu*, cf. the Cappadocian tablets (G. Eisser and J. Lewy, *Die altassyrischen Rechtsurkunden von Kültepe*, Parts I–II [Leipzig, 1930], p. 113 (text ll. 16, 21) and Nuzu tablets (E. R. Lacheman, *Harvard Semitic Series*, XIV, text 109:21–22).

It happens that the KU-sign in Akkadian is sometimes to be read with *ḫ* instead of *k*. In neo-Babylonian tablets from Babylon, "Judah" is written either *ia-a-ḫu-du* or *ia-ku-du*.[20] It might be argued that in neo-Babylonian times, the *k* was spirantized (like postvocalic *k* in Aramaic and Hebrew), but there is evidence for a laryngeal consonant indicated by KU back in the second millennium. There is an ABC tablet from Ugarit, with the Ugaritic alphabet defined in terms of Akkadian syllables. While *ḫ* is defined as ḪA, and *h* as Ú, *ḫ* is clearly represented by KU. Accordingly, strange as it might seem without the foregoing evidence, Linear A *ku-ro* could reflect cuneiform ḪAR-*ra*. KU-*ro 30* GI *15* (HT 118:5) may therefore mean "he owes 30; he has returned 15." HT 118 is valuable because it is fairly well preserved, with all the numerals written clearly. The figures preceded by GI in ll. 2–4 add up to "15" (10 + 4 + 1), but the other numbers add up to "35" (15 + 6 + 4 + 10), and not to the "30" introduced by KU-*ro*. While this does not prove that "owed" is right, it does indicate that "total" is wrong.

If the tablets reflect, as I think they do, cuneiform forerunners, there is one word that ought to stand for *napḫaru*, "total." HT 122:a ends with KU-*ro 31*, and next to the last line on side b ends with KU-*ro 65*. The last line of the tablet indicates the total of the two figures thus: X-Y-KU-*ro 96*. "Y" consists of a vertical stroke crossed at the top by two horizontal strokes. This would make the sign *to* in Linear B; but *to* is exceedingly rare in Linear A. Accordingly "Y" might be the *pa*-sign with the vertical crossed higher than usual. As pointed out above, KU might stand for *ḫa*, in accordance with

[20] The pertinent facts are most conveniently accessible in A. L. Oppenheim, *apud* J. B. Pritchard, *Ancient Near Eastern Texts* (2d ed., Princeton, 1955), p. 308b.

usage attested in cuneiform.[21] "X" ought then to stand for na_2.[22] The word would then be read na_2-*pa*!-KU-*ro* = *napḫar(u)*, "total." Again, I am less than satisfied with so much ingenuity, but I feel that it is more constructive to try than to throw up one's hands in despair.

The likelihood that the Linear A tablets reflect cuneiform forerunners is of considerable consequence for the backdrop of Greek civilization. There are logograms in "B" without Greek derivation; some have definitely been inherited from "A." For example, "B" tablets from Knossos indicate two garments as *ku-CLOTH* and *zo-CLOTH*. On HT 38, *ku-CLOTH* certainly, and *zo-CLOTH* too, according to Ventris and Chadwick,[23] occur in Linear A. While we cannot rule out coincidence, it is striking that Akkadian offers idiomatic readings: *kusîtu* and *ṣubâtu:* two of the commonest words for "garment" in Akkadian.

Among the "B" logograms that defy all attempts to explain them from Greek, is TA. It usually occurs after listings of personnel, in the combination of DA *1* TA *1* (var., DA TA, TA DA, TA *1*, DA). The formula apparently refers to the allotments issued to the personnel. Since cuneiform texts use TA to designate "each" (as in "one each"), possibly Linear B TA is to be understood the same way. A list of people followed by DA TA would mean "one DA portion each." This TA may be inherited from Linear A; e.g., *ARCHER 18* TA *4* (HT 94:a:2) "18 archers, 4 portions each."[24]

In *Antiquity*, Sept. 1957, pp. 125–26, I connected *ki-re-ta-na* (HT 2:3; 8:a:5; 108: beginning; 120:4–5) with "Cretan"; cf. the Ugaritic personal name *krtn* (var. of *krt*). In HT 120, it is paralleled by *pa-i-to* (l. 6), "Phaistos." In HT 108, it is followed by *MAN*, suggesting that it may refer to a native Cretan part of the community. In HT 2, *ki-re-ta-na* is paralleled by *a-ka-ru* (l. 1), which accordingly ought to designate another part of the population.[25] Two alternative solutions come to mind. (1) Are we dealing with "Carians"? (2) Or, should we see a reference to a Mesopotamian commercial colony—a *kâru(m)*—located nearby?[26] For either of these interpretations, *ka-ru* (HT 97: beginning; cf. the fragmentary 75) provides a simpler reading. The *a-* of *a-ka-ru* could be explained away either as the predeterminative for *âl*, "town," or as the prefixed form of the preposition *a(n)*-, "to, for," (with *kârum* treated indeclinably as a place name). But neither of these explanations is convincing.

Contact between the Sumero-Akkadian people of Mesopotamia and the East Mediterranean is very old. The Sumerians, whose civilization required metal and stone, could not have originated their ma-

[21] Curiously enough, the regular Mesopotamian *ḫa*-sign has also the value *ku₆*.

[22] Since the Minoan syllabary is homophonous, a second *na*-sign is possible. While it may be sheer coincidence, the na_2 I am assuming here, is the same sign in reverse (cf. *ra* and *ki*, which are also reversible in shape), as in HT 16:4, where (for entirely unrelated reasons) I proposed the reading *sa-*na_2*?-t(+)? =šanat* "year" (status constructus). In the same tablet I proposed reading *o+ku* (though I then misread *mu* for *ku*) as *ûm(u)*, "day" (*Antiquity* [Dec. 1957], p. 239). That Sumerian *u-ku* = Akkadian *ûmu*, "day" (A. Deimel, *Šumerisches Lexikon*, II, 2 [Rome, 1930], p. 333, No. 130:3), may be another coincidence.

[23] *Op. cit.*, p. 313. I have reservations about the reading of *zo* on HT 38. The Knossos tablets also include *te-CLOTH*, *pa-CLOTH* and *pu-CLOTH* (cf. the sign-list in E. L. Bennett, J. Chadwick, M. Ventris, *The Knossos Tablets* [London, 1956]). With the first of these, the Akkadian *têdequ* garment may be tentatively compared.

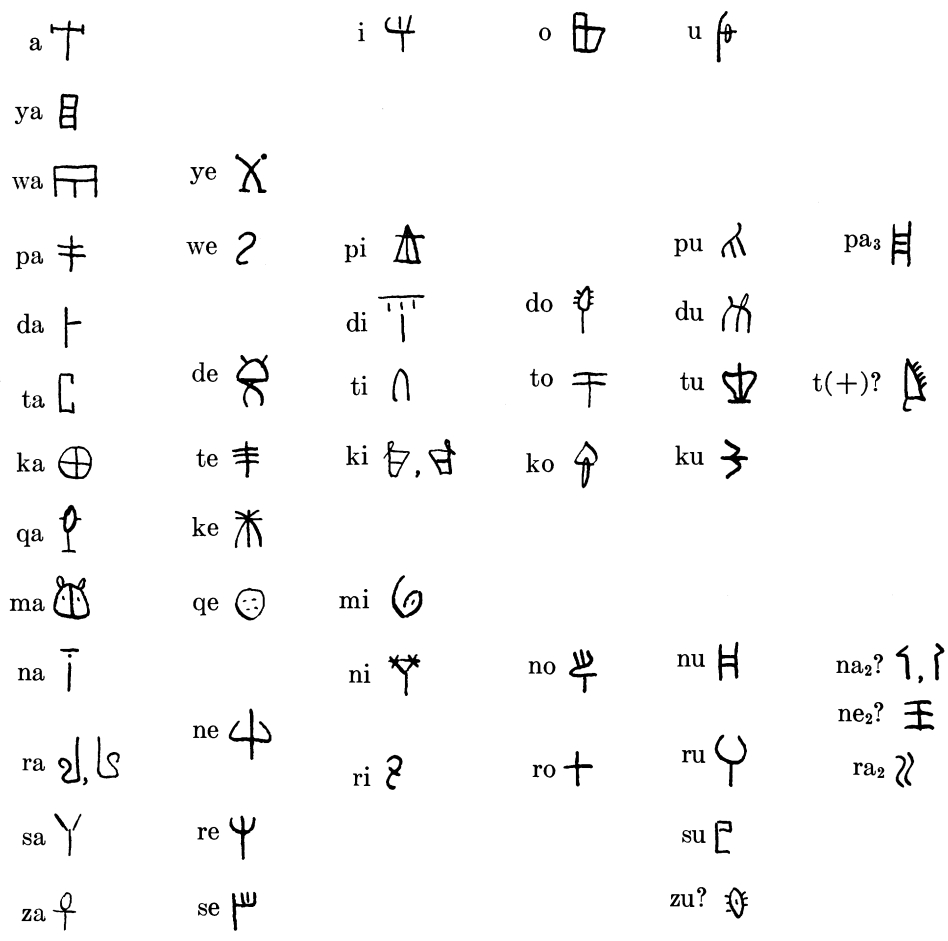
[24] Unlike Akkadian usage, the number follows the TA in Minoan writing. This can be explained by the circumstance that numbers also follow nouns in Minoan script. Therefore the TA would have to be interposed between the two sets of numbers to keep them apart, as in *ARCHER 18* TA *4*.

[25] The parallel *ki-re-ta-na* makes it difficult to derive *a-ka-ru* from *akâlu*, "to eat," or *agâru*, "to hire."

[26] On the shore, at Komo?

LINEAR A

PROVISIONAL SYLLABIC VALUES



Other signs referred to

terial way of life exclusively in the land we call Sumer, where there is neither stone nor metal. They doubtless entered Sumer with connections which they kept up, in areas were the raw materials were available. Anatolia may well have been among those areas.

If we can trust the tradition reflected in the King of Battle Epic,[27] Sargon was called by his merchants in Asia Minor to re-establish his authority there. This would mean that the Dynasty of Akkad

[27] See S. A. B. Mercer, *The Tell el-Amarna Tablets* (Toronto, 1939), II, 808–15. The text mentions Burša*ḫ*anda (in Anatolia), with the element *-nd-* that found its way as *-nth-* into so many place names in the Greek world (e.g., "Cori*nth*") and especially in Anatolia (see Schachermeyr's chart, *op. cit.*, p. 242).

had, from the start, imperial interests in Anatolia. The Akkadian language itself suggests early contact with Indo-Europeans anticipating, and perhaps allied with, the Greeks. The Akkadian prepositions *in(a)* and *ana* diverge from the Semitic norm and point to linguistic alliance with Indo-Europeans. *In(a)* ties in, as to sound and meaning, with Latin and Germanic *in*, Greek *en*, etc. *Ana* is specifically reminiscent of Greek *ana*, with which it shares some uses.[28]

The Old Assyrian commercial colonies in all probability followed a long tradition of Mesopotamian business activity in Asia Minor. Ur of the Chaldees was probably founded, somewhere northeast of Haran, as a commercial outpost, when Sumerian Ur was strong, presumably during the Third Dynasty of Ur.[29] I take it that Ur of the Chaldees was named after the mother city of Ur.

Military and commercial penetration was accompanied by religious give-and-take as well. The dedicatory text of Narâm-Sin of Eshnunna anticipates a wide distribution of Linear A dedicatory texts, some written on cult objects.

With the First Dynasty of Babylon, Caphtor and Babylonia are parts of the same One World. This became even more pronounced in the Amarna Age, as the center of gravity shifted to the East Mediterranean: the focal area in the emergence of western civilization.

The interconnections of Mesopotamia and the Aegean can be seen in art and literature. Bull-grappling in the Gilgamesh Epic, and in Sumero-Akkadian art,[30] can hardly be divorced from the prominence of bull-grappling in the Minoan sphere. The Minotaur and the Mesopotamian "Bull of Heaven," each a destructive monster, part bull and part human, to be slain by heroes, appear to be reflexes of a single prototype. The Minoan goddess with the raised hands and flounced skirt looks much like the interceding goddess appearing on Mesopotamian seal cylinders only after the advent of the Semitic Akkadians, who may have imported her from the East Mediterranean. The deity Dagân may well have been imported into Mesopotamia from the Mediterranean, too. Linear A *da-ku-na* (HT 103:4), Ugaritic *dgn*, and the Philistine deity Dagôn, all point in that direction.[31]

At the time of Linear A, there was only one great *lingua franca* throughout Western Asia; namely, Akkadian. This also held true for the East Mediterranean, *as far as we know.* (This reservation is necessary, because new discoveries may change the picture appreciably.) That the Linear A tablets (at least those from Hagia Triada)[32] reflect cuneiform usage, seems reasonably clear. But until we can normalize and translate all the material, there will be some doubt as to precisely what the language is in detail. I am inclined to regard it as a sort of *written* "pidgin" Akkadian, full of East Mediterranean localisms including possibly West

[28] It is used in both languages to designate going "on to" (i.e., boarding) a ship (Gilgamesh Epic, 11:93; Odyssey ii. 416). I shall present further material on the prepositions and other parts of speech in a forthcoming publication.

[29] See *JNES*, XVII (1958), 28–31.

[30] The sporting aspect of Mesopotamian bull-grappling (tying in with the Minoan sport) is reflected by the wrestling belt worn by the beast; cf. *Iraq*, VI (1939), 4–5, Pl. II, 9; *Orientalia*, XXII (1939), Pl. LVII, 3.

[31] The devotion of the Akkad Dynasty kings, Sargon and Narâm-Sin, to the god Dagân, confirms the northwestern affiliations of the Akkadians. Cf. the texts translated by Oppenheim, *apud* Pritchard, *op. cit.*, p. 268 a.

[32] I do not insist that all tablets currently classified as Linear A need be in one and the same language. If Furumark's difficult but conceivable equation of *ya-sa-sa-ra* with Hittite *išḫassaras*, "Lady, Ishtar," is right, the religious "A" texts may possibly be in some Anatolian language with Hittite affinities.

Semitic, Hurrian, dialectal Hittite (such as Luvian), and, above all, native Cretan vocabulary and proper names. Linear A should have been to Crete what Amarna Akkadian was to Egypt and Western Asia.

I have italicized the word *written*, above, because I do not think that the tablets need represent a language spoken by the scribes who wrote it. In Europe many a Christian scholar has known Latin, and many a Jewish scholar, Hebrew, as written languages without being able to speak them. (Physicians, who write prescriptions in "Latinograms," and the pharmacists who read them, can rarely read or write a simple narrative sentence in Latin, let alone speak Latin, nowadays.) A parallel situation must have obtained among many non-Mesopotamian scribes who wrote Akkadian as the *lingua franca* for specialized purposes. We know from the Amarna (and other foreign) tablets, that local lads who were recruited and trained as scribes gradually transformed Akkadian into barbaric written dialects.

In communities like Ugarit a number of different languages and scripts were used. That there were scribes who handled Babylonian and Ugaritic simultaneously is known from tablets on which both systems appear. We have already mentioned the ABC with Ugaritic letters defined in terms of Mesopotamian syllables. Whenever scribes know different languages in different scripts they may transfer the writing of one language to the script of another. This happens all the time. In our day any number of languages have made the jump to Latin characters (e.g., Turkish, from Arabic to Latin letters). At Ugarit texts No. 102 to No. 105 have been identified by E. Dhorme as Akkadian written in the Ugaritic alphabet. If Akkadian could make such a jump at Ugarit, it could happen also on Crete, where the native Minoan script must have enjoyed prestige on its own soil.

Akkadian was useful because it was a fully developed medium, with adequate terminology and bookkeeping methods, for the records of commerce and administration. The polyglot nature of Crete was conducive to retaining a *lingua franca*, just as the polyglot nature of India and Pakistan make the retention of English as the *lingua franca* highly desirable.

It is possible that, during the Linear A period, there were some Mesopotamians around Hagia Triada in administrative capacities. We have noted the possibility of a *kârum* in the vicinity. On the Harvester Vase from Hagia Triada, the natives are led by a man of very different appearance. He alone is clad in a Sumero-Akkadianoid garment with a Mesopotamian fringe. The vase suggests that Mesopotamian administrators were in charge of some of the operations at Hagia Triada during the Linear A period.

Some of my critics are inclined to attribute the Akkadian vocabulary in "A" to borrowing. But Minoans with a long ceramic tradition would not be borrowing *most* of the pot-names from far-off Mesopotamia.[33] Nor would they be too likely to borrow the conjunction "and." A more plausible criticism (one, however, that no one has raised) is that Linear A, like cuneiform Hittite, might be full of Sumerograms and Akkadograms and yet be in a non-Mesopotamian language. That

[33] The evidence of the pot-names goes beyond HT 31. The text on a Knossos bowl (Cn 7) begins with *a-ka-nu* = Akkadian *ag(g)ânu* (with cognates also in Hebrew and Aramaic); see *Antiquity* (Dec. 1957), p. 239. Four more Akkadian pot-names were proposed at MS 30/X/57: *da-qe-ra* and *qe-pi-ta* (both in HT 6:a:6); and in parallel contexts *qe-ku-re* (HT 20:2–3) and *ka-ku-pa* (HT 16:1). Cf. Akkadian *daqiru* (so rather than *diqaru*), *qabûtu*, *(q/k)(a/u)kkullu* and *kukubu*.

some elements in Linear A are not Semitic is a foregone conclusion. Whether or not *ka-pa* is Akkadian *gabba*, "all," it is clear that *ka-pa-qe* (HT 6:a:4) has the suffix that appears in Latin as *-que*, Linear B Greek *-qe*, "and." Even though the language be Akkadian, the local Cretan vernacular(s) would peer through, like Ugaritic in the Akkadian contracts at Ugarit, or, to cite another case, like the native Hurrian in the Akkadian tablets from Nuzu. It is not unreasonable to ask how we know that *te* (=TI = *ilqî*) was not meant to be pronounced as some native Cretan word for "received"; or how we know that *o/u*, "and," was not to be pronounced as some Cretan conjunction. The analogy of cuneiform Hittite must be kept in mind but, pending more evidence from Linear A, I think it would be a mistake to get bogged down in doubts, when our energies could be better spent in further identifications that will sooner or later clear up the Linear A problem. Meanwhile, this much can be said: It was characteristic of the Minoan tradition to combine pictographs now and then with syllabic spellings in the language of the text. Specifically, this was done with ceramic entries. On a Linear B Pylos tablet,[34] the pictograph of a tripod goes with *ti-ri-po;* the pictograph of a four-handled pot, with *qe-to-ro-we*, "four eared"; the pictograph of a three-handled pot, with *ti-ri-yo-we;* the pictograph of a pot without handles, with *a-no-we*. This usage goes back to Linear A precedent. HT 31 spells out the names of pots drawn pictographically. Possibly four out of the five legible names are Akkadian. If all these readings are correct, the language must be Akkadian. Time will tell which are right, and which are wrong.

[34] Ta641, published in autograph by E. L. Bennett, *The Pylos Tablets* (Princeton, 1955), pp. 66, 186.

It might be argued that Akkadian is well enough known so that, if the "A" texts are Akkadian, we ought to be able to translate them completely here and now. The "B" texts are Greek, and yet it is frequently impossible to decide what word the ambiguous Minoan script indicates. The same holds for "A," where we have the added burden imposed by the paucity of the tablets. Most of us would experience the greatest difficulty reading English transliterated in Minoan syllables. To see in *po ko a-da se-we yi a-ko o pa-te po-ro-to po-to o ti ko-ti-ne-te a nu na-su*, "Four score and seven years ago our fathers brought forth on this continent a new nation," is not easy. More than one scholar has stated that no Greek scribe would have been able to read Greek in such an ambiguous script. This kind of skepticism is incomprehensible to me because it is perfectly well known that Greek scribes on Cyprus did write Greek in a Minoan syllabary till the close of the third century B.C. Ancient scribes were professional men, adequately trained in the conventions of their medium, no matter how perverse those conventions appear to us. When troublesome ambiguity did arise, the Minoan scribes could and did resort to pictographs, thus limiting the graphically possible readings to the one correct reading.

I am not trying to tell the reader that the "A" problem is already as clear as the "B" problem. The interpretation of "B" is far more advanced because more scholars have been working a longer time on a much larger corpus. But there is one striking analogy between the status of "A" and "B." The Greek readings for "B" were substantiated by Pylos tablet Ta641, with pictographs accompanied by the appropriate Greek words for "tripod, no-handled, three-handled, four-handled."

If the pot-names accompanying the pot-pictographs on HT 31 are in the main correct, do they not substantiate the Akkadian character of the tablets indicated by distinctively Akkadian vocabulary such as *ū*, "and," *ša*, "of, which," *kunêšu*, "emmer," etc.?

The importance of our subject transcends its epigraphical and cryptanalytic aspects. Whatever the final verdict on the language of Linear A may be, the fact will remain that both in the Aegean and in Canaan, clay tablets were used for writing, prior to the emergence of the Greeks and Hebrews. Those tablets bear testimony to the common denominator of Mesopotamian culture built into both our Greek and Hebrew heritage.

ADDENDA

Confirmation of my thesis came from observations of friends while this article was in press. (1) E. R. Lacheman confirms *napḫaru* by showing that na_2 has the same shape as the old Phoenician letter *n*. (2) A. Rainey and B. Schwartz independently noted that the *ku*-sign, derived from the flying bird (as on the Phaistos disk), reflects the Sumero-Akkadian bird-sign *ḫu*, supporting the *ḫ*-value in the readings I assign to *ku-ro* (= ḪAR-*ra*, translated into "B" Greek as *o-pe-ro*, "owed") and na_2-*pa-ku-ro* (= *napḫaru*). (3) Barbara N. Kaye noted that Ugaritic text ʿnt:I:11 refers to a two-handled vessel because it is lifted with both hands. The vessel is called *krpn*, tying in with HT 31, where the $ka\text{-}ro\text{-}pa_3$ is depicted as a two-handled vessel viewed from opposite one of the handles. (4) H. Mühlestein asked me to determine whether *o-pa* (= Greek *alfē* "gain," appearing on "B" clay sealings) was anticipated in Akkadian on "A" clay sealings. While the published hand copy is confusing and must be collated, it is striking that Pugliese Carratelli (HT, p. 590, No. 154 bis) read, without reservation, on a clay sealing the signs "L 94, 78, 54," which we now read as *we-ti-re*. Akkadian *watru/wetru*, "surplus," might well be translated into Greek as *alfē*.

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