ON THE LANGUAGE OF LINEAR A

In a recent article[1] Dr. C. H. Gordon claims to have read some Semitic words on the Linear A tablets. Unfortunately two of his word recognitions are vitiated by starting from a wrong reading of the Linear A text, while others fail to match meaning with context[2]. Nor does he attempt to identify any grammatical characteristics of the language. Nevertheless though the article may be often wrong in detail it may be right in general conclusion. Linear A may still represent a Semitic language. The question is worth examination.

Preliminary.

The Linear A documents have never been accurately dated, but we may provisionally assume that they were written in the period 1700-1500 B. C. They belong almost exclusively to Crete. The first question to ask is what form of Semitic language could have been current in that area at that time. Western Semitic, whose dialects

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[1] *Antiquity* XXXI, 1957, p. 124-130.

[2] It is unfortunately necessary to point out the following mistakes in Dr. Gordon's article:

8. *apu* identified as = «bakers», but the reading on HT 88 is *adu*.

9. *adu sisi* translated as «owner(s) of horse(s)». What he calls *sisi* (a double L 56 which is normally considered in any case to correspond to the Linear B sign for *pi*), is certainly an abbreviation or ideogram rather than a phonetic word. L56 occurs doubled on HT 85a, 97a, and single on HT 27a, 89, in all cases as part of the heading of a tablet which contains the ideogram for MAN. The meaning of «horse» cannot therefore be maintained, and with it fall away the other conjectures made about the words on the tablet 85a.

12. A connection between Minoan $sara_2$ and Semitic *srr* «king» is wildly unlikely. The Minoan word from its contexts must mean something like «rations», «issues», «rejects».

10 & 11. It is surely a mistake in method to start by assuming totally different meanings for $kupa_3nu$ and $kupa_3natu$ (the one a personal name, the other meaning «harness»).

It would be invidious to make more general criticisms, and I shall not do so. The article however contains many suggestions which may prove fruitful.

were spoken along the Mediterranean seaboard, is geographically closest to Crete. The major grammatical difference between this and the Eastern branch of Semitic is that it was the earlier to drop case-endings. But these were preserved at Ugarit in the fourteenth century, and may therefore well have been preserved by the Minoans —assuming they were Semites— a hundred or more years earlier. On the other hand at Alalakh Level VII and at Mari, which are the sites in the Semitic world with the closest affinities to Minoan Crete, the language used was Old Babylonian, though the personal names preserved on the tablets show that this was not the language of the bulk of the population. A similar situation may have prevailed in Minoan Crete, though if it did it would be surprising that the writing used was a linear script derived from the native pictographic and not cuneiform. The third alternative that must constantly be borne in mind is that any apparently Semitic words extracted from the tablets may be Babylonian loan-words.

The Minoan Language.

On the Hagia Triada tablets three syllable words are much the most common (50 %); next come two syllable words (32 %), followed by four syllable words (16 %). Long words are very few. On the religious material longer words are somewhat more common. Monosyllabic words may not exist since the occasional occurrences on the tablets could be abbreviations. This distribution seems plausible enough for Semitic, the greater proportion of longer words in the more continuous texts of the sacral inscriptions being accounted for by the relevance to such texts of verbal inflections and pronominal suffixes of the sort that would find no place on the straightforward accounting tablets. But of course this is necessarily a negative argument: it cannot exclude the possibility of another type of language.

Another way of checking the *a priori* likelihood of a Semitic language is by counting the comparative frequency of initial letters. This procedure rests on two assumptions, first that Linear A is not a 'prefixing' language, which would badly distort any count based on initial frequencies, and second that we know the phonetic values of the signs. The only way at present that we can arrive at these is by supposing that when the Mycenaeans adopted their syllabary they used the signs to convey approximately the same sound as they had in Minoan. Fortunately there are ways of checking the accuracy

of this assumption for some of the signs[1], which makes it reasonably certain that this was in fact the principle on which the Mycenaeans worked. The following is an approximate count of Hebrew initial frequencies compiled from Brown-Gesenius.

	Hebrew	Linear A
Aleph & weak consonants:	26	21
Labials:	9	9
k, g, & *ḥ* :	16	17
l & *r*:	9	6
m :	6	6
n :	7	7
q :	4	5
Sibilants:	15	9
Zayin:	3	?
Dentals:	5	20
	100	100

The only major discrepancy between the two columns is in the sibilants and dentals. Now the later Greeks transliterated the first consonant of Tyre, which in Semitic is a palatalised sibilant *š́*, with a dental[2]. Supposing the Mycenaeans had done the same, one of their two dental series could have stood for *š́* in Minoan. This would not only remove the discrepancy in the table above, but would also explain the surprising fact that the dental series is the only one in which voiced and unvoiced stops are differentiated. That this differentiation did not exist in Minoan is strongly suggested by its well-known absence from the derived Cypriote syllabary.

In composing the above table I have assumed that if Minoan were Semitic it would be their equivalent of *qoph* that the Mycenaeans took over as their labio-velar. An encouraging check on this is provided by comparing the medial occurrences of the letter:

Hebrew (Brown-Gesenius)	c. 360 initial *qoph*	c. 175 medial
Linear A	18 initial *q*	8 medial

[1] See in particular G. Pugliese Carratelli, «La decifrazione dei testi micenei», *Annuario della Scuola Archeologica Italiana di Atene* XIV-XVI; Goold & Pope *Preliminary Investigations,* ii, x; A. Furumark, *Linear A*, Berlin 1956.

[2] This was pointed out to me by Mr. Chadwick, who is not thereby committed to any views about the language of Linear A.

It is worth adding that in Hebrew *qoph* never follws *kaph* or *gimel*, and follows *heth* only a very few times. In Minoan *q* does not follow a *k* syllable in any of our existing words.

It goes without saying that the body of material in Linear A is too small for the above statistics to prove anything positive. The best they can show is that the hypothesis that Linear A represents a Semitic language is not immediately absurd.

Grammatical Inflection.

The Minoan scribes naturally do not tell us which of their words belong to the same root. Nor have they left us enough material to enable us to construct a convincing table of inflections as Kober and Ventris were able to do with Linear B. The only occasions where there is a high degree of probability that we are dealing with the same word are:

kupa$_3$nu	*kupa$_3$natu*	*kupa$_3$natuna*	*kupa$_3$weja* (?)
dakusene	*dakuseneti*		
datare	*datara*	*dataro*	
titiku	*titikuni*		
pa$_3$ni	*pa$_3$nina*		

kupa$_3$nu, etc.— It is probable that we have here evidence of a Minoan plural form. *kupa$_3$nu* occurs before a singular numeral in HT 3, 49, 88, 117, 122. The only occasion where it precedes a plural number is HT 1. It would seem that on this tablet it is the commodity represented by the heading word that is being counted[1]. The numeral will therefore not refer to *kupa$_3$nu*. *kupa$_3$natu* is found before a plural numeral in both its occurrences, HT 47, a fragmentary tablet, and HT 119, where the list is totalled and without heading, so that the numerals must refer to their preceding words[2]. The broken libation vessel from Apodoulou (Ap 2b) unfortunately gives no indication what form of the word *kupa$_3$natuna* may be expected to be, and there can be no certainty that *kupa$_3$weja* (HT 24) is connected with the same root.

dakusene.— This may be the singular of *dakuseneti*. In HT 104 *dakuseneti* precedes a plural numeral: the other two words in the list,

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[1] See A. Furumark, Table 7.

[2] See E. Peruzzi, *La Parola del Passato* LI, 1956, p. 437.

one of which precedes a plural and the other a fraction, also terminate in *-ti*. In HT 103 *dakusene* comes before a singular numeral. Unfortunately the reading of the other occurrence of the word on HT 103 is uncertain: *dakusene* X 6½.

The evidence afforded by these two words for a Minoan plural form in *-t-* falls short of certainty. But it is not negligible, and so far as it goes it would accord well with the supposition of a Semitic language[1].

datare etc., *titiku* etc., *pa₃ni* etc. —On the other hand I can see no way of explaining these words in terms of Semitic grammar. *titiku* and *titikun* occur as personal names at Alalakh, and are supposed by Wiseman to be Hurrian. But if on the strength of this we begin to wonder if the language of Linear A could not after all be Hurrian, we are immediately confronted, among other difficulties, by the termination *-na*. If Hurrian this would probably represent the plural. But from the occurrences of *pa₃nina, kiretana,* and other words ending in *-na* there is no ground for supposing that it indicates a plural in Linear A.

The copula.

The normal form of entry in the Hagia Triada lists after the heading runs word — numeral, word — numeral... The only occasions where one finds word — numeral, word — word — numeral, word — numeral... are on the tablets 117a and 122a & b. On these occasions the second word begins with a *u* (L 97).

The discovery of the copula, if certain, would be of great significance. No other candidate has been suggested. But Minoan facts are hard to come by, and in this instance as in so many others the

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[1] Cf. Akkadian *sarru* «king», *sarratu* «queen» or «queens»; *ḫazannu* «mayor», *ḫazannatu* «mayors»; *beltu* «mistress», *beletu, beleti* «mistresses». There is of course no evidence for the gender of the words in Linear A. The main objection to *kupa₃natu* being a plural is the occurrence of *kapa₃nato* as a presumably Minoan name on the Linear B Knossos tablet As1516. This cannot be conclusive. Since the word *kupa₃nu* not only inflects but occurs so frequently (in both sets of tablets and sometimes more than once on the same list) it is unlikely to be a name in Linear A. We can easily explain the fact that it is clearly a name in Mycenaean-ruled Knossos by assuming that the word denotes a professional; cf. *smith, Smith.* In English *Smith* can be the name of a woman and *Nunn* the name of a man.

evidence is pitifully meagre. There are however no contradictory examples of double entries. But though the Akkadian for «and» is *u* and the Hebrew *waw* used proclitically, one becomes less certain that the evidence is conclusive when one remembers that the copula is similar in modern Turkish and old Iranian, both of them non-Semitic languages[1].

Suggested word meanings.

The search for word identifications is clearly a dangerous pastime. A single Mycenaean sign may represent many phonemes, and the same may be true in Minoan. At any rate all the possible variants must be tested when we are looking for a word. The result is that the Semitic dictionaries are likely to contain at least one match for almost any Minoan word we try to identify. Often there are more. One must therefore severely limit oneself to words for which the Linear A context is such as to give a clear indication of the sort of meaning to be expected. The following list is in diminishing order of probability.

kuro: The only Minoan word whose meaning is certainly known is *kuro* or *kulo* =«total». There is no doubt that this could be Semitic (Akkadian *kalu, kullatu*; Hebrew *kôl*; etc.).

kunisu: Furumark, in his excellent study of Linear A[2], argued that *kunisu* must mean some type of corn[3]. The argument is entirely on internal evidence. It is extremely tempting to compare the frequent Babylonian *kunasu*, which means a species of wheat or emmer.

qapa$_3$, *supu*, *karopa*$_3$, *supa*$_3$*ra*, *pataqe* are words written above various pots or cups on HT 31. In view of the fact that the pots are sketched in different ways it seems more likely that the words describe the names of the pots rather than their contents. Babylonian

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[1] In Turkish *ve*, in Old Iranian *wa*. I must thank Miss Nadia van Brock for this warning.

[2] *Op. cit.*, Text p. 21, Table 13.

[3] Furumark's reasoning on *kunisu* seems to be both plausible in itself and to gain added credibility from Bennett's join to HT 95 (*Minos* III, 1955, p. 123), which he did not at the time know of. But one should not follow Furumark blindly. For instance it is hard to believe that *dideru* and *minute* in the same list should be one a personal name and the other a geographical area.

parallels suggest themselves (with varying degrees of probability) for four of the five — *quppu* (though this means rather a box), *sappu* (Ugarit *sp*), *karpu**, *saplu*[1].

akaru: If the language is really Semitic, *akaru* could hardly be other than derived from the common Semitic root *'kl* = «eat». It occurs before *kunisu* and corn ideograms on HT 86a, and before corn ideograms on HT 2. «Provisions» would therefore make an acceptable heading for both tablets. The only objection is that on the latter tablet the word is parallel to *kiretana*, for which I can suggest no plausible interpretation.

adu: The word occurs only as a heading, and can introduce both types of tablets — the ones which consist of words and numerals only, and the ones which contain corn ideograms. It is frequently found together with what Myres called the «contract sign» L92. All its occurrences are on the tablets 85-154, which were found in the building S.W. of the main court. It is probably therefore some special economic or administrative technical term which was only needed for this set of tablets[2]. In our present state of ignorance about the precise rules of Minoan spelling, there are of course many Semitic words we could read into it. A very plausible meaning, however, is given by the Babylonian *adu* «decision», «treaty», «contract». But a similar word, not thought to be Semitic, occurs on the ration tablets from Alalakh Level VII.

I would stress that these are not the only words in the Minoan material for which a Semitic meaning can be suggested. There are many more, but where the interpretation cannot yet be predetermined from the internal evidence of the contexts, every likeness may be a mirage.

General.

It does not seem possible on the archaeological evidence either to refute or to support the hypothesis that the Minoans wrote a

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[1] Some of these parallels are suggested by Dr. Gordon.

[2] For *akaru* and *adu* Furumark (Table 12) suggests either a geographical meaning or a general signification as a vocabulary word. He then proceeds to eliminate the latter possibility on the grounds that *adu* often stands next to L92 (*te*) —which he regards as a vocabulary word— in the same heading. But this further conclusion does not follow from his main premise, that entry words and heading words must belong to different categories.

Semitic language, particularly as it is not necessary to suppose that if Linear A is Semitic, so was the Cretan pictographic. The new script may just as easily have been adapted to serve the needs of a new language (cf. the adaptation of Linear B to serve Greek). In fact the assumption that Linear A stands to Cretan pictographic in the same relation as Egyptian hieratic to hieroglyphic is the less likely of the two. For in that case we would expect religious usage to have retained the earlier script. But all the religious inscriptions in Crete are written in Linear A, and not in pictographic.

The most unequivocal piece of external evidence for the origin of the Minoans is of course the legend which tells us that Minos' grandfather was Phoinix, or alternatively, the King of Tyre. This would suit the Semitic hypothesis admirably. But in these matters tradition is like prophesy. It may often be true, but you cannot know until independent evidence has proved it so.

Conclusion.

It seems to me quite possible that some of the word-identifications suggested above will ultimately prove correct. For Minoan to contain some Semitic words would not be surprising. Bronze Age Crete belonged to the same culture as the contemporary Near East. It is natural that technical terms of accountancy and of articles of commerce such as pots should have been borrowed. The further conclusion that the language itself is Semitic is however still a long way from being proved. The possible plural in *-t-*, the copula, the word for «total» in particular present a *prima facie* case. One cannot yet say more[1].

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[1] The substance of this article formed a lecture given to the Minoan Seminar of the Institute of Classical Studies of the University of London and afterwards to the Linguistic Society of the University of Durham. I should like to thank the organisers of these meetings for the opportunity of addressing them and those who attended for their helpfulness in the subsequent discussions. In particular Mr. Wiseman of the British Museum has saved me from many mistakes. For those that remain I am of course solely responsible.