Evidence of Indo-Aryan dialect in 10 Minoan Linear A inscriptions and Minoan Indo-Aryan etymologies of 16 Greek words

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"Extraordinary claims (with extraordinary consequences) require extraordinary evidence."

Abstract. This paper presents the analysis of 10 Minoan Linear A inscriptions as grammatical Indo-Aryan statements. The paper demonstrates the historical plausibility of the presence of Indo-Aryan speakers on Crete circa the 17th c. BCE. The paper argues for the soundness of comparing Linear A words with very similar Indo-Aryan forms attested in later stages of Sanskrit: One cannot expect to find the same expressions attested both in Minoan inscriptions and in the Rigveda, even if they reflect dialects of the same language. This analysis of Linear A uses the same basic principles and phonetic values as Ventris & Chadwick's analysis of Linear B. The basic principles of the syllabic sign system of Linear B are summarized, and the phonemic reading rules specific to Linear A are presented. The main body of the paper comprises the analysis of 10 Minoan Linear A inscriptions as grammatical Indo-Aryan statements. Also, Minoan Indo-Aryan etymologies of 16 Greek words are proposed, including *θαλασσα* 'sea', *λαβυρινθος* (labyrinth), *κυπάρισσος* 'cypress', etc. As a "control group" test, an attempt to interpret a Linear B inscription, known to be Greek, as an Indo-Aryan statement fails. The paper concludes that the resemblances between the words in the Linear A inscriptions and the corresponding Sanskrit forms presented in this paper cannot be due to random chance coincidence, and thus that the 10 Linear A inscriptions presented in this paper must represent an Indo-Aryan dialect.

1. Historical plausibility of an Indo-Aryan dialect as the language of Minoan Linear A inscriptions

1.1. The Indo-Aryan superstrate in the Mitanni language of Anatolia and Syria circa the 16th-13th centuries BCE

Before being willing to entertain a hypothesis of the presence of an Indo-Aryan language in Minoan Linear A, which may imply the presence of Indo-Aryan rulers of the pre-Mycenaean Minoan civilization on Crete prior to circa 1450 BCE, readers may fairly question the historical plausibility of such an occurrence. In support of this possibility, the author points to the well-known Indo-Aryan superstrate, established in historical documents both of the Mitanni kingdom itself and of the neighboring Hittite kingdom in a treaty with the Mitanni, in the Mitanni language of Anatolia and Syria circa the 16th-13th centuries BCE.

The names of four Indo-Aryan deities of the Ancient Sanskrit Rigveda are invoked by the Mitanni in their treaty with the Hittites: *Indra, Varuna, Mitra,* and *Nasatya*. Mitanni horse training texts use Indo-Aryan words for certain numbers (*aika, tera, panza, satta, na*) and colors (*babru, parita, pinkara*). Mitanni warriors were called *marya*. And a half dozen or more personal names that are clearly of Indo-Aryan origin are also found in Mitanni documents.

The basic language of the Mitanni was Hurrian (a non-Indo-European, Hurro-Urartian language), so that some of the above Indo-Aryan root words take the Hurrian suffix *-nnu* in attested Mitanni forms. But the linguistic evidence clearly demonstrates not only an Indo-Aryan presence but in fact Indo-Aryan political hegemony over the Mitanni kingdom by the military elite *Marya-nnu*.

The relevance of the establishment of the Indo-Aryan Mitanni kingdom in Anatolia by the 16th century BCE is its relative geographic proximity to Crete. The Mitanni kingdom ruled over southeastern Anatolia, and Crete is off the coast of southwestern Anatolia: The distance between the modern city of Adana (ancient Adanya) in the western part of the Mitanni kingdom and the Greek island of Rhodes off the southwestern coast of Anatolia is less than 650 kilometers, about

the same distance as that between Paris and Marseille, Rome and Grenoble, Munich and Hamburg, Boston and Washington, D.C., or Mumbai and Hyderabad.

The point is that, in the larger context of the historically well-known and documented Indo-Aryan migrations in the period 2000 BCE to 1600 BCE, it is quite plausible to propose that if we know the Indo-Aryans migrated as far as southeastern Anatolia no later than the early 16th century BCE, then it is reasonable to suppose that they quite possibly could have migrated slightly farther, slightly earlier, as far as southwestern Anatolia circa 1700 BCE.

Please note: This hypothesis does not claim that the Indo-Aryan Mitanni rulers *themselves* migrated farther west to Crete. Rather, the Indo-Aryans who migrated to Crete would have represented an *earlier* wave of westward Indo-Aryan migration, preceding the arrival of the Mitanni rulers.

1.2. The possible invasion of Crete from Anatolia circa 1700 BCE

As great and as historic as the Minoan civilization on Crete was, it sure seems to have suffered much more than its fair share of devastating natural catastrophes in the span of just a few short centuries. Historians and archaeologists have identified historically significant major social disturbances on Crete that occurred no fewer than three times during the apex of Minoan civilization: circa 1700 BCE, 1600 BCE, and 1450 BCE. Although the exact cause of each social disruption is hotly disputed by Minoan scholars and other historians of the Bronze Age, it is fair to say that it is widely believed that either an earthquake or an eruption of the Thera volcano on the Greek island of Santorini about 200 kilometers north of Crete was responsible for at least two of the most significant such disturbances.

Many scholars attribute all three of the social disruptions on Crete to earthquakes and/or eruptions of the Thera volcano. But there is also a school of thought which believes that the first of the three major disturbances on Crete, circa 1700 BCE, may not have been an earthquake, but rather an invasion of Crete from Anatolia. This author observes that it also seems quite logical and plausible to suppose that a natural disaster such as an earthquake may have offered an

opportunity for a migrating and militarily powerful people from Anatolia to take advantage of the situation to invade and conquer Crete. (Likewise, it was in the aftermath of the natural disaster circa 1450 BCE that the Mycenaean Greeks invaded and conquered Crete themselves.)

Thus, it is the working hypothesis of this paper that a migrating militarily powerful group of Indo-Aryan people may have reached southwestern Anatolia circa 1700 BCE, and from there invaded and conquered the Minoan civilization on Crete around that time period, perhaps exploiting a natural disaster or other social disturbance that weakened the existing Minoan society there.

1.3. The overwhelming majority of Linear A writing is dated after 1600 BCE

Here it is necessary to address the issue of the chronology of the appearance of Minoan documents written in the Linear A script. Generic descriptions of the timeline of the three writing systems of Bronze Age Crete—Cretan hieroglyphs, Linear A, and Linear B—typically list a beginning date for Linear A as early as circa 1800 BCE. Younger's website states, "Linear A documents appear either contemporary with or soon after the first appearance of Hieroglyphic writing," and he even goes so far as to speculate, "Although the two scripts share several signs, which may have similar phonetic values, it is not clear why two such different scripts should have developed more or less contemporaneously unless they represent two different administrative practices and/or two different languages or dialects (Schoep 2002, 22-23)."

However, this author considers such emphasis on very early beginning dates in generic chronologies of the appearance of documents written in the Linear A script to be rather significantly misleading. First of all, the dating of many of the documents in question is apparently far from certain or exact. When Younger writes, "Hieroglyphic was therefore probably invented first, in MM IA and appears first on seals from Archanes and Ayia Triada; Linear A follows immediately in MM IB, or soon after, in MM II, and appears first on documents primarily from Phaistos," it all sounds very close to contemporaneous phenomena indeed. But in fact, "MM IA", the earliest Middle Minoan period, begins as far back as 2100 BCE, "MM IB" ends a full 300 years later circa 1800 BCE, and "MM II" ends as late as circa

1700 BCE. These dates were just as far apart from each other for the Minoans, as 1700 and 2100 CE are for us in modern times.

The point is that a careful reading of the periods of Minoan history in this statement and their dates thus reveals that there is no certainty that the Linear A writing system actually appeared before 1700 BCE. Such a beginning date for Linear A may be toward the later end of the possible spectrum, but it is still within the possible spectrum.

Furthermore, and probably more importantly, an emphasis on the earliest possible date of the first appearance of Linear A is also misleading because the early exemplars of Linear A comprise such a microscopically tiny portion of the totality of existing attested documents written in the Linear A script. There are approximately 1400 documents known to exhibit writing in Linear A—and only about 50 of them are dated to the period before 1600 BCE. Moreover, those few Linear A documents that are dated before 1600 BCE, tend to be extremely short inscriptions containing very few words and signs, even by the standards of other Linear A writings, which unfortunately for us do not tend to be very long or to contain very many words and signs.

The point is this: It is quite possible to propose a hypothesis that the "Linear A" attested before some particular date in the 17th century BCE (i.e., between 1700 and 1600 BCE) may have had a significantly different linguistic base than the Linear A attested after that date. It would be quite difficult to refute such a hypothesis, since so little of the older Linear A exists, and that which does contains so few words and signs. This hypothesis should be kept in mind as one possibility while considering the other arguments advanced in this paper.

2. Introduction to the analysis of the Linear A inscriptions

The most critical prefatory point to emphasize, before presenting the interpretation and analysis of the 10 Linear A inscriptions themselves, is the following:

It is unavoidable and inevitable that certain words and morphemes (meaningful parts of words) in the Linear A inscriptions must be compared with certain Sanskrit words and morphemes, **not**

all of which can be found attested in the Rigveda, the oldest Sanskrit text and the only one that is chronologically approximately comparable with the Linear A inscriptions (i.e., in the middle of the 2nd millennium BCE).

There is a simple and natural reason for this: the Rigveda comprises quite **different subject matter** than do the Linear A inscriptions. Consider for example the first inscription to be analyzed below. We are unlikely to find an attested "Rigvedic" phrase or expression that means "due to be delivered, fit for distributing", because the Rigveda did not include practical instructions for the distribution of wine and other commodities. (The mere mention of such items and concepts, in isolation, in a work of poetic verse hymns is still very different from a real-life practical set of instructions.) But that does not mean that Indo-Aryan speakers in the middle of the 2nd millennium BCE did not have the means in their language to express such a set of practical instructions!

It is true that such forms, words, and phrases would not be identical to later attested Sanskrit forms from the middle of the 1st millennium BCE (or later). But we can expect that they likely would have been very similar, just as other forms, words, and phrases from the Rigveda and later stages of Sanskrit were similar. And the analysis below shows that indeed the Linear A readings, using the same basic phonetic values and manner of representation of the language by the script as Linear B, are very similar to these later attested Sanskrit forms and words.

I also wish to emphasize a second critical prefatory point: The analysis below uses the **same basic principles** of the representation of the language by the script **as Linear B does**. It would be questionable to use some speculative, drastically different, manner of representation of the underlying language by the script than what Linear B uses. (See Hubert La Marle's Indo-Iranian theory of Linear A, which has nothing at all in common with the analysis presented here, for an example of such a perilous and erroneous method.)

But the most natural, default, "null" assumption is that Linear A & B had similar phonetic values of the signs, as well as a similar manner of representation of the underlying language by the script. Indeed this has long been the consensus conclusion of Minoan scholars. The analysis presented below is faithful to both of these natural, default assumptions and to this consensus

conclusion of scholars in the field. This reduces the number of degrees of freedom allowed in the analysis, thus strengthening the weight of the evidence for this Indo-Aryan theory of the language of the Linear A inscriptions.

3. The phonemic reading rules of Linear A syllabic signs

As stated above, the analysis presented here is faithful to the natural assumption that the basic principles and basic phonetic values of the system of syllabic signs in Linear B largely apply to Linear A as well. The essential difference between Linear A and B is the underlying language, not the script. The modifications of the basic principles and phonetic values are relatively minor. One may consider as a comparative example the minor adaptations of the Arabic script to write Persian and Urdu (the latter of which is the same essential underlying language as Hindi, but written in a very different script).

Thus it is appropriate here to recall certain basic principles of the representation of Mycenaean Greek by the syllabic sign system of Linear B, as deciphered and analyzed by Ventris & Chadwick:

- Typically each sign represents a syllabic sequence of a consonantal component and a vocalic component. There is a series of plain vocalic signs without a consonantal component, but there are no consonantal signs without vocalic components.
- Consonants in the underlying language that are not followed by a vowel are either represented by a syllabic sign with a "dummy vowel" component or not represented in the script at all:
- In word-final position, /s/ is typically not represented in the script at all, but other consonants are.
- In other positions in the word, sibilant and sonorant phonemes that are not followed by a vowel (that is, they are followed by another consonant in a cluster) are typically not represented in the script at all, but stop phonemes are.

- There is only one sign series for the liquid consonants /r/ and /l/, conventionally transcribed as the "R-series".
- Voicing and aspiration distinctions of stop phonemes are largely not represented in the script. The only exception is the D-series to represent the voiced dental stop. (The "Q-series" represents the reflexes of Indo-European labiovelars in archaic Mycenaean Greek.)
- Initial /ha-/ is only rarely marked by a special sign, but otherwise initial /h/ is not represented by the script at all. This is indeed consistent with the orthography of the later classical Ancient Greek alphabet itself, in which the presence or absence of initial /h/ is marked not by a letter of the alphabet but only by so-called "rough breathing" or "smooth breathing" diacritical marks.

Only a small handful of relatively minor adaptations of these principles of the system are required to yield the phonemic reading rules of the syllabic sign system of Linear A for the Indo-Aryan dialect that it represented. It is important to keep in mind that the actual historical chronology unfolded in the opposite order of the chronology of decipherment: Linear A existed first, and Linear B was adapted later for Mycenaean Greek. (It should be noted here in passing that I also believe it is probable that Linear A was actually originally invented for some other language spoken on Crete before the hypothesized arrival of the Indo-Aryans in the early 17th century BCE. However, unfortunately, the amount of surviving examples of Linear A writing from before 1700 BCE is microscopically small.)

Here then are the phonemic reading rules specific to Linear A:

- A syllabic sign with a consonantal component + an "E" vocalic component most typically represents an Indo-Aryan consonant that is not followed by a vowel. Recall from the Linear B principles that this could apply to a stop phoneme in word-initial or word-medial position, or to any phoneme except /s/ in word-final position. Other consonants that are not followed by a vowel in these positions are typically not represented in the script at all. (In one instance, a word-medial coda sonorant /r/ within a root is represented by the syllabic sign ⟨RE⟩.)

- An "E-series" sign may also represent an actual syllable with the vocalic diphthong /ai/ (which indeed became /e/ in a later stage of Sanskrit), but in general such signs appear to occur rather less frequently than "E-series" signs representing consonants that are not followed by any vowel at all.

- A word-final consonant that is followed by an initial vowel in the following word is represented by a syllabic sign comprising a component for the consonant and the vocalic component of the following initial vowel, rather than the "E" vocalic component. This vowel is then represented again by a plain vocalic sign to begin the following word.

- Aspiration distinctions of stop phonemes are more fundamental to the Indo-Aryan phonological system than they are to Greek, because Indo-Aryan distinguishes unaspirated and aspirated voiced stops ("gh", "dh", "bh") as well as voiceless stops. Therefore, Linear A represents such aspiration distinctions for dental and velar stops:

- "T" = unaspirated dental stops "t" and "d"

- "D" = aspirated dental stops "th" and "dh"

- "K" = unaspirated velar stops "k" and "g"

- "Q" = aspirated velar stops "kh" and "gh"

- These distinctions were less critical in the language of the Mycenaean Greeks, so in Linear B they adapted the "D" and "Q" signs for different purposes, more significant to their language, as described in the penultimate bullet point of the Linear B basic principles above.

- Both Linear A and Linear B used a single "P-series" to represent all labial stops, regardless of voicing or aspiration.

- As in Linear B, Linear A does not represent initial /h/ in the script at all.

- The representation of the Indo-Aryan sibilants is by far the most complicated feature of the Linear A phonemic reading rules according to the present analysis. I do not claim to have worked out all of the final details conclusively at this stage. It seems likely to me that Linear A was originally invented for a previous language spoken on Crete before the Indo-Aryans arrived, and the original language had far fewer sibilant phonemes than Indo-Aryan does. (Lycian, an Anatolian language of a seafaring people of the southern

central coastal region of Anatolia, is one plausible candidate to have been this language.[1])
Thus, the following are more provisional proposals:

- "S" naturally represents /s/.

- "Z" appears to represent "j" (/dʑ/).

- The syllabic signs ⟨SI⟩ and/or ⟨SE⟩ may be used to represent palatal "ś" and/or retroflex "sh".

- The sign combination "⟨SA-S⟩" may be used to represent the palatal affricate "c".

- The manner of representation of the aspirated palatal affricates "ch" and "jh" is not yet clear at this stage.

- Both Linear A and early Indo-Aryan had a basic phonemic three-vowel system of /a/, /i/, and /u/, naturally represented by the A-series, I-series, and U-series signs respectively.

- The primary and secondary uses of the "E-series" in Linear A were described in detail in the first two bullet points of this set of rules.

- The "O-series" is by far the rarest of the vocalic series in Linear A, and thus the most difficult to determine the significance of in the script. In the one example among the inscriptions analyzed below, it appears to represent /u/, but that occurs in the word "*a-kuhān*", in which "*uhā*" is a complicated and difficult sequence for this script to represent. It would be more logical for the "O-series" to represent the vocalic diphthong /au/, but unfortunately I have not yet found any examples of such a correspondence in the inscriptions that I have been able to analyze to date.

Although this may appear to be a long list of rules, in fact the actual significant distinctions between the basic principles of representation of language by script for Linear A and B will be found to be quite limited and restricted upon careful examination. The nature of the detailed explanation of the Linear A rules presented here is based upon Einstein's principle: "Everything should be explained as simply as possible, but not any simpler!"

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[1] It is beyond the scope of this paper to propose a detailed hypothesis to explain how exactly the Indo-Aryans arrived on Crete in the early 17th c. BCE. But it may be noted here that it would be plausible to suggest that the land-based chariot-driving Indo-Aryans may have made an alliance with the seafaring Lycians, who after all were geographically nearby the slightly later Indo-Aryan rulers of Mittani. Indeed the Lycians have been identified with the "Termilae", a people later displaced from Crete circa 1600 BCE (Bryce 1986).

With this system of phonemic reading rules for Linear A in place, we are now prepared to proceed to the reading and analysis of 10 Linear A inscriptions in the sections to follow.

4. The wine delivery and distribution inscription

The heart of the strongest evidence now, by far, consists of the following Indo-Aryan readings of Linear A inscriptions, presented in this and the following sections:

The Indo-Aryan reading of the last two words of the inscription on item ZA Zb 3 is a perfect fit for the context, given that the inscription begins with the commodity sign ⟨VIN⟩ (wine) and amount ⟨32⟩:

⟨ [...] . A-RE-PI-RE-NA . TI-TI-KU⟩

2. *arpya* 'to be delivered, consignable' (M-W p. 93)

ṛiṇa 'anything due, obligation, duty, debt' (M-W pp. 225-226)

díti 'distributing; cutting, splitting, dividing' (M-W p. 477)

-gu "[at end of compound] 'fit for' " (M-W p. 356)

arpy[a]-ṛiṇa díti-gu

"due to be delivered, fit for distributing"

The use of a syllabic sign of the form ⟨xE⟩ to represent a consonant that is not followed by a vowel is consistent through readings of several additional inscriptions to be presented below.

I note here that in fact the sequence "*ṛi*" in the word "*ṛiṇa*" represents a "vocalic r" sound in Sanskrit (see the chart in Monier-Williams on the page preceding p. 1), so "⟨RE⟩" appears to be a good and logical choice for a sign to represent this syllable.

I describe below the rule that "T" represents both unaspirated dentals "t" and "d", and "K" represents both unaspirated velars "k" and "g", with supporting examples in readings of several additional inscriptions.

5. Two precious metal pin inscriptions: a memorial statement and a philosophical statement

The following two inscriptions are written in Linear A on metal (gold and silver) pins (hairpins), known as items CR(?) Zf 1 and PL Zf 1. Using only the standard Linear B phonetic values of the syllabic signs and a few additional regular logical rules, I read and interpret these inscriptions as grammatical Indo-Aryan statements as follows:

⟨A-MA-WA-SI · KA-NI-JA-MI · I-JA · QA-KI-SE-NU-TI · A-TA-DE⟩

Amāvásy[ā] kaníyām ya (a)gha kshinut[a]i [a-tad?]

"For Amava's daughter, who was killed [unjustly?]"

⟨WI-TE-JA-MU . U-QE-TI . JA-SA-SA-RA-ME . TA-NU-NI-KI-NA . NI-NU-NI⟩

vidyām, ukhtí, ācāram. Tanúr-ní-kína n[ah]í-nú-n[ah]í

"Vidya, worthy speech, Ācāra. The self is not flesh, by no means"

Regular logical rules produce these readings from these syllabic signs. For example, in the second statement, in the signs ⟨TE⟩, ⟨QE⟩, and ⟨ME⟩, each represents a consonant that is not

followed by a vowel. In the signs ⟨MI⟩ (end of *kaníyām*) and ⟨MU⟩ (end of *vidyām*), the vowel in the sign reflects assimilation with the initial sound in the following word. Likewise the J at the beginning of *ācāram* reflects assimilation with the final sound of the preceding word.

It is apparent that this analysis must assume a certain contraction rule for final diphthongs, such that /-yā/, /-ai/, and /-ahi/ were all contracted to /-ī/ in *Amāvásy[ā]*, *kshinut[a]i*, and *n[ah]í*.

The sandhi-induced [-r] at the end of *Tanúr* is not expressed in the Linear A script. This would be in line with the rule of Linear B that sonorants and sibilants before another consonant are not represented at all in the syllabic script. However, the "r" in *arpya* in the inscription in Section 4 above is represented in the script, as ⟨RE⟩. Most likely this script simply did not represent sandhi-induced coda consonants such as the "-r" in *Tanúr* at all, but did represent certain coda sonorants in roots such as the "r" in *arpya*.

Strictly speaking, my rules should read ⟨-KI-SE-NU-TI⟩ as "*kishnut[a]i*". It seems to me that this is a rather natural metathesis of "*kshinutai*".

The reading "*a-tad*" for ⟨A-TA-DE⟩ is dubious for multiple reasons. I would like it to mean "*a-tad-arha*". The bigger problem is that /d/ in *vidyām* is written as T, so I actually prefer a rule that T represents both unaspirated dentals "t" and "d", while D represents the aspirated dentals "th" and "dh". This would invalidate the representation of "d" in "*a-tad*" by D in the script.

6. New interpretation of a critical libation formula inscription

This section focuses on the crucial fourth through seventh words of inscription PK Za 11, a distinctive example of the Linear A libation formula statement:

⟨[...] PI-TE-RI . A-KO-A-NE . A-SA-SA-RA-ME . U-NA-RU-KA-NA-TI […]⟩

Pitrí--a-kuhān Ācāram unna-ruk-kananti

The analysis of the sixth word of PK Za 11, ⟨A-SA-SA-RA-ME⟩ = "*Ācāram*" (accusative singular form), is based on the hypothesis that Linear A used consecutive S-series signs ⟨SA-SA⟩ to represent Indo-Aryan "c" in *Ācāram*.

(This is the **only** exceptional rule in this theory that posits any more or less drastic difference with Linear B in the manner of representation of the underlying language by the script. Other more minor differences, such as T/D and K/Q representing unaspirated vs. aspirated dental and velar stops respectively, are quite in line with the basic principles of the manner of representation of language by script in Linear B, even if the latter adapted these distinctions to represent unvoiced vs. voiced (for the dental stops) and plain velar vs. labiovelar (for the velar stops) rather than the distinctions proposed here for the Indo-Aryan dialect in Linear A.)

The fourth and fifth words have long been thought to be two names of dedicants:

⟨. PI-TE-RI . A-KO-A-NE . ⟩

I now find that this assumption is not entirely accurate. My Indo-Aryan analysis is rather able to read these words instead as

"*Pitrí--a-kuhān*"

'Ancestor--not-deceivers' (accusative plural form)

= "true Pitri (Ancestors)"

Monier-Williams entries:

pitrí 'father, paternal ancestor, Pitri, deceased ancestor' (M-W p. 626-627)

a-kuha 'no deceiver; honest, sincere' (M-W p. 2)

a-kuhān is the accusative plural form of the noun *a-kuha*.

Regarding the seventh word ⟨U-NA-RU-KA-NA-TI⟩, I analyze the segment ⟨-KA-NA-⟩ as the Indo-Aryan verb root *-kana-* 'be satisfied or pleased; agree to, accept with satisfaction; like, enjoy; strive after, seek, desire, wish' (M-W p. 248).

With the new understanding of the fourth and fifth words, I further analyze the ending of this verb as *-kananti*, active voice, 3rd person plural form. Note that in Linear B, and I propose in Linear A as well, the sonorant /n/ before another consonant in the ending *-nti* is typically not expressed in the script at all, so the script cannot distinguish 3rd person singular *-kanati* and 3rd person plural *-kananti*. I consider the plural a more natural semantic fit in this statement. Since the fourth + fifth word compound and the sixth word are both accusative case forms, I find no explicitly expressed subject of this verb as far as I can determine from my analysis at the present stage.

The syllable ⟨-RU-⟩ is clearly optional, as it may be present or absent in forms of this word in the libation formula, even though the syllables before and after it are typically both present. I now analyze this optional syllable as *ruk-*, the compound form of *rúc-* before a following /k/. This noun means 'light, lustre, brightness, splendour, beauty, loveliness; pleasure, delight, liking, wish, desire' (M-W p. 882). Clearly the semantic fit with *-kananti* is quite natural, and at the same time this *-ruk-* element can be present or absent with little drastic change in meaning.

Most significantly, there is an Indo-Aryan analysis of the segment ⟨U-NA-⟩ that is a beautiful semantic fit for the Minoan Linear A libation formula:

unna 'wetted, wet, moistened, moist; kind, humane' (M-W p. 183, 3rd column, the very final entry in the bottom right hand corner of the page)

This form is related to the verb entry 2. *ud / und*, Parasmaipada (active/transitive) form *unátti*, 'to flow or issue out, spring (of water); to wet, bathe' (M-W p. 183, near the bottom of the 1st column).

Putting it all together, here again is the reading and interpretation of the fourth through seventh words of the libation formula inscription PK Za 11:

⟨. PI-TE-RI . A-KO-A-NE . A-SA-SA-RA-ME . U-NA-RU-KA-NA-TI . ⟩

Pitrí--a-kuhān Ācāram unna-ruk-kananti

"they gladly agree to wet (pour a libation for) the true Pitri (ancestors) and the Ācāra"

We observe the same rule for the signs ⟨TE⟩, ⟨NE⟩, and ⟨ME⟩, as we saw for the signs ⟨TE⟩, ⟨QE⟩, and ⟨ME⟩ in the statement ⟨WI-TE-JA-MU . U-QE-TI . JA-SA-SA-RA-ME . TA-NU-NI-KI-NA . NI-NU-NI⟩ above: each represents a consonant that is not followed by a vowel.

The sonorant /n/ in the ending /-nti/ is not expressed, according to the same Linear A & B rule by which the [-r] in *Tanúr* is not expressed in the second statement above: sonorants and sibilants before another consonant are typically not represented in this syllabic script. As discussed in Section 5 above, however, the "r" in *arpya* in the inscription in Section 4 is represented in the script, as ⟨RE⟩. Most likely this script simply did not represent sandhi-induced coda consonants such as the "-r" in *Tanúr* at all, nor coda nasals in grammatical endings such as the "-n-" in "-nti", but did represent certain coda sonorants in roots such as the "r" in *arpya*.

7. Evidence of a Minoan Indo-Aryan sound change in an inked inscription

Inked inscription KN Zc 7 at Knossos:

⟨A-KA-NU-ZA-TI . DU-RA-RE . A-ZU-RA . JA-SA-RA-A-NA-NE . WI-PI-[?] . ⟩

arká-nūyat[a]i dhúra-rai āyur-ra …

"Exalted, distinguished by the king, possessing long life …"

The crucial sound change that justifies this reading and interpretation is this one:

In this dialect, "y" (/j/) > "j" (/dʑ/) in certain phonetic environments, such as often after a long vowel.

This explains the representation of Indo-Aryan "y" as Z in the Linear A script after the long ū in *nūyat[a]i* and after the long ā in *āyur*. We observe that in all examples of "y" as J in the other readings above, the sound does not follow a long vowel. However, it must be noted that examples in Section 10 below exhibit some variation in the application of this sound change: in one instance, it remains "y" ("J") after a long vowel, and in another instance, it changes to "j" ("Z") after a stressed but not long vowel. It is possible that there also occurred sound changes in the length and stress of the vowels themselves in this dialect, which could not be represented by the relatively crude Linear A (and B) script. In this case, it may never be possible to determine the exact combination of vowel sound changes with this y > j sound change that produced the attested forms, even though they are actually the products of a sequence of regular sound changes. It is also possible that the variations may simply reflect dialect variation or individual scribal variation in the written representation of Indo-Aryan "y" as J or Z in the Linear A documents.

It must be noted here that in the reading of ⟨DU-RA-RE⟩ as *dhúra-rai*, we have the first example of the use of an E-series sign to represent "ai", rather than its more typical and frequent use to represent a consonant that is not followed by any vowel at all, as described above.

8. More complete reading of the wine delivery and distribution inscription

Za Zb 3:

⟨VIN 32⟩

⟨DI-DI-KA-SE A-SA-MU-NE A-SE⟩

⟨A-TA-I-*301-DE-KA . A-RE-PI-RE-NA . TI-TI-KU⟩

"VIN 32"

Dhīthikás[ya?] āsa-múnayas

… arpy[a]-ṛiṇa díti-gu

"32 [containers of] wine

Dhitika['s?] seated/present/celebrating devotees (Munis)

… due to be delivered, fit for distributing"

Since the logogram ⟨*301⟩ cannot be read phonetically, I withhold an analysis of the word in which it appears for the time being. Given the substantial progress in the reading and interpretation of the strictly phonetic syllabic signs of Linear A, it is prudent to reserve judgment on the meaning of a logogram that cannot be read phonetically.

9. Two more metal pin inscriptions

end of KN Zf 31 (metal pin inscription):

⟨ […] . A-WA-PI . TE-SU-DE-SE-KE-I . A-DA-RA . TI-DI-TE-QA-TI . TA-SA-ZA . ⟩

⟨TA-TE-I-KE-ZA-RE . ⟩

[…] … ádhara dīdhītai-ghati dāsāya tád-aik-járāi[a] …

"[…] … the lower (person? region?) is intently preoccupied by the demon / savage, that decrepit one …"

We observe in the reading of ⟨TA-SA-ZA⟩ as *dāsāya* yet another example of the sound change that "y" (/j/) > "j" (/dʑ/) after a long vowel in this dialect.

Observe the consistency in the reading of "T" to represent both unaspirated dentals "t" and "d", and "D" to represent the aspirated dentals "th" and "dh".

item ARKH Zf 9 (metal pin inscription):

⟨JA-KI-SI-KI-NU . MI-DA-MA-RA2⟩

ya 'relative pronoun' (M-W p. 838)

kishk- 'to injure, kill' (M-W p. 284)

kishk-ya : gerund form 'having killed'

nu 'now; indeed, certainly, surely' (M-W p. 567)

mīḍha n. 'contest, strife; prize, reward' (M-W 818)

mara adj. 'killing' ; m. 'dying, death' (M-W 789)

ya kishk-y[a] nu mīḍha-mara

"who has killed indeed, prize-fighting"

This inscription must be compared with the 3rd through 5th words of item CR(?) Zf 1, also a metal pin, which is analyzed above:

⟨A-MA-WA-SI · KA-NI-JA-MI · I-JA · QA-KI-SE-NU-TI · A-TA-DE⟩

Amāvásy[ā] kaníyām ya (a)gha kshinut[a]i *[a-tad?]*

"For Amava's daughter, who was killed [unjustly?]"

10. An announcement of a rent/tax increase: a mare to be paid to the king/lord

Although HT 85b has been analyzed as a mere list of people supervising groups of 6 people from places specified on HT 85a -- see the entry for ⟨*100/*102/VIR⟩ at http://people.ku.edu/~jyounger/LinearA/#11 -- I have an alternative analysis:

⟨KI-KI-RA-JA . KI-RE-

-TA2 | QE-KA | PA | TE-TU-

-[?] | KA | DI | ME-ZA |

RE-DI-SE | WA-DU-NI-

-MI | MA-DI | QA-*310-

-I | ⟩

I suggest that the vertical lines are not the number "1" repeated 11 times for 11 groups of 6 people, but just a different form of word dividers.

I am able to make a provisional partial analysis of this inscription as a grammatical Indo-Aryan statement, with a meaning that seems to be quite plausible for the historical and cultural context:

⟨KI-KI-RA-JA . ⟩

kilkin-rāyas

"horse-property" (genitive case form)

⟨. KI-RE-TA2 | ⟩

difficult word to interpret, multiple possibilities, none of them clearly correct:

- ? form of *kirt-* "to mention, tell, name, recite, declare", etc. ?

- ? related to much later Indo-Aryan word *kirāyedāra* "hirer, holder, occupant, renter, tenant" = "~kiraidā" ?

⟨ [| QE-KA | PA | TE-TU-[?] | KA | DI |] ⟩

⟨QE-KA⟩ and ⟨TE-TU-[?]⟩ may be personal names as Younger suggests, and it is difficult to be certain about the one-syllable sign words, which Younger suggests may be logograms serving as transaction signs or abbreviations.

⟨ | ME-ZA | RE-DI-SE | ⟩

méya-ṛiddhis

"increase of share to be measured/paid to the king/landlord"

(i.e., a Bronze Age form of a "rent or tax increase")

⟨WA-DU-NI-MI⟩

vadhū-nimey[a]

"mare to be measured/paid"

⟨MA-DI | QA-*310-I | ⟩

mádhy[a] [place name?]

"middle of [place name?]"

Putting it all together:

kilkin-rāyas kirt-/kiraidā-? [names+signs] méya-ṛiddhis vadhū-nimey[a] mádhy[a] [place name?]

"of horse-property: declaring?/tenants? [names+signs] increase of share to be paid to the king/landlord, mare to be paid, middle of [place name?]"

Notes:

The interpretation of J in ⟨KI-KI-RA-JA⟩ and Z in ⟨ME-ZA⟩ means that the sound change rule about y > j, while still operating, may be more complicated in terms of when it does and does not occur. See the revised discussion of this sound change in Section 7 above.

kilkin is a rather obscure Sanskrit word for "horse" (see M-W p. 284).

The defintion of *méya* as "share to be paid to the king/landlord" is found in the *Indian epigraphical glossary*, where "it can be found on ancient inscriptions commonly written in Sanskrit" (Sircar 1966) (https://www.wisdomlib.org/definition/meya#history).

I note again that "*ṛi*" is a "vocalic r" sound and thus once again ⟨RE⟩ is a logical sign to represent it, consistent with *ṛiṇa* as ⟨RE-NA⟩ in Section 4 (pp. 11-12) of this paper.

I analyze *kilkin-rāyas* and *méya-ṛiddhis* as compound nouns, so only the second component of each declines with a case ending. There is a small discrepancy in final "-s" not written in the former but written as ⟨-SE⟩ in the latter.

vadhū can mean a female human or animal. Here it clearly makes the most sense as an animal, in this case a mare.

I note the continued consistency of K and T to represent unaspirated stops and Q and D to represent aspirated stops throughout this reading and all readings in this paper, except for ⟨A-TA-DE⟩ as ["*a-tad*"?] which I already marked as dubious at the end of Section 5 (p. 13) of this paper.

Another argument in favor of reading ⟨ME-ZA⟩ as Indo-Aryan "*méya*" meaning "share to be paid to the king/landlord" is that its one other occurrence, on item HT 10a, is as the very last item on a list. It makes perfect sense that such a type of tribute payment would be the final item on a list, just as the tax amount is typically the final item on a bill in modern times. Here is the complete inscription on HT 10a:

⟨KU-NI-SU . SA-MA 4 .
PA . DA-RE 16 1/2 U-*325-ZA 4 *301
6 U-*325-ZA 14 [?] *305-RU
2 1/2 DA-RI-DA 8 ME-ZA 3⟩

Out of curiosity, if this amount "3" is the tribute payment imposed on the total of the other amounts on this list, which add up to 55, then this would represent a 5.45% rate of "taxation".

11. The oldest Linear A statement: the king commands the enemy to perish, surrender, and truly be afraid

The inscription on item PH 6 (tablet at Phaistos) is quite interesting, in that it is the oldest Linear A writing (circa 1800-1650 BCE) with multiple words composed of syllabic signs, not logograms. As Younger writes: "PH 6 is unusual in that it presents 5 signgroups over 4 lines with NO ideograms or fractions." (http://people.ku.edu/~jyounger/LinearA/#7c)

Indeed I wondered if this inscription might represent Lycian or whichever language predated the arrival of Indo-Aryans to Crete. However, once again I find that I am able to read and interpret the inscription as a meaningful, grammatical Indo-Aryan statement that fits the historical and cultural context well:

⟨I-NA-WA . A-RI

I-ZU-RI-NI-TA

A-RI

I-DA-PA3-I-SA-RI⟩

⟨I-NA-⟩

ina(s) (M-W 165)

"able, strong; powerful, mighty; glorious"

"a lord, master; a king"

⟨-WA . ⟩

va[ś] (M-W 929)

"to will, command"

⟨A-RI⟩

a-rí(s) (M-W 87)

"envious, hostile"

"an enemy"

⟨I-⟩

5. *i-*, imperative *ihí* (M-W 163)

"go", etc. ;

"appear, be"

⟨-ZU-R(I-) ⟩

1. *jur* (M-W 423)

"to become old or decrepit, decay, perish"

2. *Jūr* (M-W 423)

"an old man"

⟨ (-R)I-⟩

diacope with I- above:

5. *i-*, imperative *ihí* (M-W 163)

"go", etc. ;

24

"appear, be"

⟨-NI-TA⟩

nītta = ni-datta (M-W 565 ; M-W 548)

adj. for "*ni-*" + root "1.*dā*"

"having given in"

⟨A-RI⟩

diacope with A-RI above:

a-rí(s) (M-W 87)

"envious, hostile"

"an enemy"

⟨I-DA-⟩

itthā (M-W 165)

"thus" ("often used in the Rigveda and sometimes only to lay stress on a following word; therefore by native etymologists considered as a particle of affirmation. [...] is often connected with words expressing devotion to the gods &c. in the sense of thus, truly, really;")

⟨-PA3-I-SA-⟩

bhais-a (M-W 767 ; M-W 758)

"be afraid" (imperative form)

⟨ (-S)A-RI⟩

diacope with A-RI above:

a-rí(s) (M-W 87)

"envious, hostile"

"an enemy"

Putting it all together:

⟨I-NA-WA . A-RI I-ZU-RI-NI-TA A-RI I-DA-PA3-I-SA-RI⟩

ina[s] va[ś] : a-rí[s] i[h]í jur i[h]í nītta a-rí[s] itthā bhais-a a-rí[s]

"the mighty king command : enemy, go perish!, go surrender! [=give in], enemy, truly be afraid, enemy!"

12. Minoan Indo-Aryan etymologies of 16 Greek words: *θαλασσα, θαλαμος, πυργος, λαβυρινθος (labyrinth), χαρασσω, χαραδρα, πλίνθος, μύρινθος, κυπάρισσος, μίνθη, σταφυλή, σῦκον, ὕᾰκινθος, ἀράχνη, βόλινθος,* **and** *κάμαξ*

As evidence of Minoan Indo-Aryan influence on the Greek lexicon, Minoan Indo-Aryan etymologies can be identified for a number of Greek words considered to belong to a "Pre-Greek" substrate, although in light of this analysis, it is perhaps more accurate to describe this particular layer of the lexicon with a Minoan Indo-Aryan origin as an adstrate.

12.1 Indo-Aryan *tarala* 'moving to and fro, trembling, tremulous' ; 'a wave' (Monier-Williams 439)

Thus, **tarala-ssa** "trembling, tremulous place ; **place of tremulous waves**", where the suffix -*ssa* is likely of Anatolian origin.

> **tala-ssa** by contraction

> *θαλασσα* 'sea'

(possibly originally a toponym for the Mediterranean Sea specifically, and then later generalized to mean 'sea', 'channel', etc.)

12.2 Indo-Aryan **tala(m)**, neuter noun, 'surface, level, flat roof (of house) ; part underneath, lower part, base, bottom' (M-W 440)

> *θαλαμος* 'inner room or chamber' ; 'lowest, darkest part of the ship ; the hold'

12.3 There is a natural Minoan Indo-Aryan etymology for the Pre-Greek word *πυργος* 'tower'. Previous proposals, none convincing, have included /-g-/ as part of the root, but if this single phoneme is analyzed as part of some unidentified suffixal element instead (as many endings of such Pre-Greek words contain), then there is a phonetically and semantically perfect Indo-Aryan source for /pur-/:

Sanskrit 3.*púr* 'stronghold, fortress; castle', etc. (M-W 635) and moreover 2.*pura* (ibid.) is an exact match for a remarkable number of multiple meanings of Greek *πυργος*:

πυργος '1. tower, watchtower ; 3. the part of the house where women live ; 4. castle, fortress, bulwark'
(https://en.wiktionary.org/wiki/%CF%80%CF%8D%CF%81%CE%B3%CE%BF%CF%82#Noun)

pura '1. fortress, castle, city, town ; 2. the female apartments, gynaeceum ; 4. an upper story'
(https://en.wiktionary.org/wiki/%E0%A4%AA%E0%A5%81%E0%A4%B0#Noun_2)

Also another meaning of πυργος '2. towered wall', matches another meaning of Sanskrit *púr* 'rampart, wall'.

A curiosity is the correspondence of the meaning of πυργος '(military) division, column' and the meaning of *pura* 'name of the subdivisions of the vedānta'.

It is interesting that Sanskrit *púr* and *pura* are Indo-European cognates with Greek πολις! But it often happens in historical linguistics that a language later borrows from a related language a cognate of a native word in a different later form of the other language. If the pre-Mycenaean Minoans were Indo-Aryan speakers as I propose, the etymology of πυργος < *púr* / *pura* makes perfect sense, especially with the multiple perfect semantic matches.

12.4 As further evidence of possible Minoan Indo-Aryan influence on the Greek lexicon, consider this very Cretan word's etymology:

"labyrinth" (λαβυρινθος) is proposed by Beekes 2010 to be derived from **dabúrintʰos*, likely "Pre-Greek", and indeed ⟨DA-PU-RI-TO-JO⟩ is attested in Linear B.

The latter form has a quite natural Indo-Aryan etymology:

dabh-/dambh- "to deceive" [Rigveda] (Monier-Williams p. 469)
rītí "motion, course" [Rigveda] (Monier-Williams p. 881)

For the connecting vowel of *dabh-/dambh-*, cf. "Dambholi", a name for Indra's thunderbolt (the root can also mean "destroy"); thus, *dabhau-/dabho-/dabhu-* is a plausible Indo-Aryan compounding form.

The traditional analysis of the Pre-Greek *-nthos* ending, whatever may be its ultimate origin, Anatolian or otherwise, may be retained in this etymology:

dabh[a]u-rītí-nthos

In both Minoan Indo-Aryan and in a Greek borrowing, the contraction of the sequence "*-itinth-*" to "*-inth-*" within a long word would be quite natural.

The meaning of Indo-Aryan ***dabh[a]u-rītí-nthos > dabh[a]u-rī-nthos*** thus would be **"place of a deceiving course"**, quite a natural etymological origin of Greek **dabúrint^hos > λαβυρινθος* "labyrinth".

12.5 & 12.6 The present status of the etymology of the Greek words *χαρασσω* 'sharpen' and *χαραδρα* 'torrent; gorge, gully, ravine' is rather thorny: The two words are no longer considered to be able to be related to each other etymologically; it is suggested by Beekes that both are Pre-Greek, presumably from separate sources. It is suggested that *χαρασσω* is derived from *χαραξ* 'pointed stake' and that the latter is a borrowing from a Phoenician cognate of an attested Semitic root. No particular origin is proposed or suggested for *χαραδρα*.

This author proposes that the etymology of these Greek words can be better explained as borrowings from Minoan Indo-Aryan ***khára*** 'hard, harsh, rough, sharp; cutting; sharp-edged', etc. (M-W 337) and a compound from this word, ***khára-dhāra*** 'having a harsh edge or one full of notches (like that of a saw)' (ibid.). The latter definition is an accurate description indeed of a gorge or ravine.

12.7 There is an interesting possible Minoan Indo-Aryan etymology for the root of Greek *πλίνθος* 'brick': Indo-Aryan ***pala*** 'straw' (M-W 609), together with the common Pre-Greek

suffix *-inthos*, likely of Anatolian origin. Indeed it is well-known that in the Bronze Age and later, straw was essential in brick-making, to the extent that "bricks without straw" is a phrase that refers to a task which must be undertaken without appropriate resources, based on a Biblical reference in the Book of Exodus to the Egyptian Pharaoh's punishment of refusing to give straw to the Israelites to make bricks.

Now by itself that connection alone is not enough to make a convincing etymological argument to derive *πλίνθος* from *pala + -inthos*. However, an examination of the attested Sanskrit compounds from *pala-* reveals such forms and meanings as *pala-ganda* 'a mason' ("as using straw?") and *pala-dá* 'particular material for building', etc. ("straw-giver?") (M-W 609). With attested semantic connections in Sanskrit of *pala* 'straw' with brick-making, the proposed etymology of Greek *πλίνθος* from *pala + -inthos* is much more plausible.

12.8 The etymology of Greek *μύρινθος* 'cord, line, string' may be tied to a Minoan Indo-Aryan root related to ***murv*** 'to bind, tie' (M-W 824) and ***mūrvā*** or ***mūrvikā*** 'a sort of hemp from which bowstrings and the girdle of the Kshatriyas are made' (M-W 826). (The Kshatriyas are the Indo-Aryan warrior caste.) Again the common Pre-Greek suffixal element *-(i)nthos* is added to the Indo-Aryan root to yield a Minoan form *murv-inthos*, borrowed into Greek as *μύρινθος*.

12.9 The tree *κυπάρισσος* 'cypress' is associated in Greek culture with mourning and burial; Hades' palace in the underworld is located under a cypress tree. This association suggests the following Minoan Indo-Aryan etymology of *κυπάρισσος*: Indo-Aryan ***kúbera*** (originally ***kúbaira*** in ancient Indo-Aryan phonology) '(originally) name of a chief of the evil beings or spirits of darkness' (M-W 291). Adding the common Pre-Greek suffix *-ssos*, likely of Anatolian origin, yields a Minoan Indo-Aryan form such as ***kubaira-ssos*** '**place of chief of spirits of darkness**'. Simple natural phonological processes could have changed this form *kubaira-ssos > kubari-ssos > kupari-ssos*, whence it was borrowed into Greek as *κυπάρισσος*.

12.10 One of the traditional medicinal uses of mint (Greek *μίνθη*) is to cleanse the urinary tract. This suggests the following Minoan Indo-Aryan etymology of *μίνθη*: Indo-Aryan ***mīh*** 'to void or pass urine, make water upon or towards' (M-W 818). Adding the Pre-Greek suffix *-nth-* (Anatolian) produces a Minoan Indo-Aryan form ***mīh-nth-***, whence it was borrowed into Greek variously as *μίνθη, μίνθα, μίνθος*.

12.11 Indo-Aryan ***stambá*** '(prob. phonetic variation of *stambha*) any clump or bunch or cluster' (M-W 1257-1258), combined with some Pre-Greek suffix of Anatolian or other unknown origin, is a plausible Minoan Indo-Aryan etymology of Greek *σταφυλή* 'bunch of grapes'. The variation [b]~[bh] within Indo-Aryan itself makes the further variation to [ph] in the Greek borrowing more justifiable, and such Pre-Greek words are known for variance in voicing and aspiration of consonants in any case.

12.12 The fig "fruit" (Greek *σῦκον*), called the syconium, is technically not a fruit but a fleshy stem. This fact suggests the following Minoan Indo-Aryan etymology of *σῦκον*: Indo-Aryan ***su-kāṇḍa*** 'having a good stem or stalk' (M-W 1220).

12.13 One meaning of Greek *ὐάκινθος* ("hyacinth") is 'a blue precious stone, perhaps aquamarine'; the word can also mean 'a shade of blue' and certain blue flowers such as 'alpine squill' (in the family Hyacinthaceae) and 'larkspur'. Aquamarine itself is named after the bluish-green color of the sea. This suggests a possible Minoan Indo-Aryan etymology of *ὐάκινθος*: Indo-Aryan ***vāŋka*** 'the ocean, sea' (M-W 935) with the now familiar Pre-Greek suffix *-inthos*, yielding Minoan Indo-Aryan ***vā(ŋ)k-inthos***, here meaning "color of the sea". Simple natural phonological processes could have changed this form *vā(ŋ)k-inthos > vāk-inthos > wāk-inthos > hwāk-inthos > huāk-inthos*, whence it was borrowed into Greek as *ὐάκινθος*.

12.14 The etymological relationship of Greek *ἀράχνη* 'spider web', *ἄράχνης* 'spider', and Latin *arānea* 'spider, spider web' has long been considered a sticky issue: Did Latin borrow the word

from Greek, or did both languages borrow it separately from a different common source? A Minoan Indo-Aryan etymology of both words provides a possible answer: Indo-Aryan *ara* and *araka* both mean 'spoke of a wheel'; the root is attested in the Rigveda (M-W 86). The form *araka* can also refer to either of two plants, *Blyxa octandra* and *Gardenia enneandra* (*latifolia*), which have circular leaf or flower patterns. Likewise, Greek ἀράχνη can also refer to 'cow parsnip', which can have a similar circular pattern. Moreover, ἀράχνη can mean 'a kind of sundial' as well.

I propose that Greek borrowed a form of Minoan Indo-Aryan *arak(a)*, whereas Proto-Italic (the ancestor of Latin spoken at the time of the Minoan Neopalatial period) borrowed a form of Minoan Indo-Aryan *ara*, each with some suffix *-ne* from an unknown source. It is also possible that an unknown intermediary language of the area borrowed the *ara-ne* form from Minoan Indo-Aryan, and Latin later borrowed it from the other language.

Thus the core meaning of the root, both in Indo-Aryan and in Greek, is "wheel-shaped thing". Clearly this must have referred to the spider web originally, and was later extended to mean spider as well. (However, it must be noted that the leaf pattern of *Blyxa octandra*, as the name suggests, is not unlike the eight legs of a spider itself.) Latin apparently did not acquire, or did not retain into the historical era, the extended meanings referring to plants with circular patterns, sundial, etc.

12.15 There is an obvious phonological connection between Indo-Aryan *bholi* 'camel' (M-W 768) and Greek βόλινθος 'European bison'. The crucial question is to explain the semantic connection. In fact, the camel and the European bison are two of the largest and heaviest land mammals in Eurasia except for elephants and rhinoceroses. The Bactrian camel would have been native to the region from whence the Indo-Aryans would have migrated before they arrived in Anatolia and then on Crete. The geographical range of this camel does not overlap with that of the European bison, and it is logical that the Minoan Indo-Aryans would have used a form of their familiar word *bholi* (+ the suffix *-nthos* of course) to name the similarly large land mammal that they would have encountered in southeastern Europe, perhaps most likely in Thrace.

12.16 Greek *κάμαξ* 'pole, shaft' < Indo-Aryan ***kāma*** 'pleasure, desire, sexual love' (M-W 271-273) + an Aegean Pre-Greek suffix, with a presumed phallic symbolism of *κάμαξ* as the obvious semantic connection.

13. Control group: Linear B inscription cannot be read as Indo-Aryan

Readers may fairly ask: given the enormous lexicon of Sanskrit as documented in Monier-Williams' 1332-page dictionary, is it not possible to find some Sanskrit or Indo-Aryan interpretation of any possible string of syllabic signs? Indeed, I have asked that question of myself.

The first natural place to turn to investigate this question is the corpus of Linear B inscriptions, deciphered by Ventris & Chadwick and known to represent Mycenaean Greek. Obviously the same sequences of syllabic signs in these inscriptions cannot represent both Greek and Indo-Aryan. (On the other hand, particular Linear B words that scholars have been unable to interpret as Greek may plausibly represent borrowed Linear A / Minoan / Indo-Aryan words.) So it is an instructive exercise to take a Linear B inscription that is similar in general form to those that I have interpreted as Indo-Aryan in Linear A, and which has a documented and accepted Greek interpretation, and see if it is indeed possible to produce a plausible Indo-Aryan reading of it as well.

One such Linear B inscription is PY Tn 316:

line 2 : ⟨I-JE-TO-QE . PA-KI-JA-SI . DO-RA-QE . PE-RE . PO-RE-NA-QE⟩

verso, line 1: ⟨I-JE-TO-QE . PO-SI-DA-I-JO . A-KE-QE . WA-TU⟩

verso, line 2: ⟨DO-RA-QE . PE-RE . PO-RE-NA-QE . A-KE⟩

These two parallel statements have been deciphered into Greek as follows:

ιετο/ιεντοι -τε/-και/-γε Φασγια[να]σι/Σφαγια[να]σι [archaic locative ending] *δωρα -τε/-και/-γε φερει(ν) φορηναι -τε/-και/-γε*

ιετο/ιεντοι -τε/-και/-γε Ποσιδαιο[ν] αγει/αγεε[ν] -τε/-και/-γε Fαστυ

δωρα -τε/-και/-γε φερει(ν) φορηναι -τε/-και/-γε αγει/αγεε[ν]

"performs a holy ritual [lit. "deliver"] at Sphagianai, and brings gifts, and leads attendees [lit. "to be brought"] in sacrificial ceremony"

"performs a holy ritual [at the sanctuary of] Poseidon, and the town leads [lit. "send"],

"and brings gifts, and leads ["sends"] attendees in sacrificial ceremony"

So, can this Linear B inscription be read and interpreted as a grammatical Indo-Aryan statement in a plausible way? I suggest not: The key question is the interpretation of the repeated Linear B word suffix ⟨-QE⟩. In archaic Greek this can be naturally read as the derivative of Proto-Indo-European *-kwe* "and", well known as Latin *-que* (also cognate with the second part of Slavic *(j)eš-če* (> Russian *ещё*) and the *-gh* in English "*though*"), famously present in the acronym *SPQR = Senatus Populusque Romanus*. Indeed this makes perfect grammatical sense in Greek in these statements, reading this suffix as the Greek particle *-τε/-και/-γε* (in these statements, *-τε/-και*).

But the Sanskrit cognate of this particle/suffix is *-ca*, which is not phonetically compatible with ⟨-QE⟩ at all. I made a dogged effort to find a plausible Indo-Aryan interpretation of the repeated suffix ⟨-QE⟩ in these statements, following my own phonemic reading rules, but the results are not convincing. Reading ⟨-QE⟩ as "kh/gh" not followed by a vowel is highly unlikely, as final -*kh/-gh* in Sanskrit appears to be quite rare. So that leaves us with *-khai / -ghai* or the later classical Sanskrit equivalent *-khe / -ghe*. Such forms exist, mainly as a masculine/neuter *-a* stem locative ending *-e*, or as an *-i* stem or feminine *-ā* stem vocative ending *-e*, attached to a stem with final consonant *-kh-/-gh-*. But it is quite a stretch, I dare say, to find a plausible reading of ⟨I-JE-TO-QE [...] A-KE-QE . WA-TU . DO-RA-QE . PE-RE . PO-RE-NA-QE . A-KE⟩ that incorporates four (!) such Indo-Aryan endings into a short statement.

There is one line in the Rigveda that provides a possible parallel, but it still seems like a stretch, for semantic and other reasons:

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8.91.7 *khe rathasya khe 'nasaḥ khe yugasya śatakrato | apālām indra triṣ pūtvy akṛṇoḥ sūryatvacam*

"Thrice, Śatakratu, Indra, did you purify Apālā, in the hole of the chariot, in the hole of the cart, and in the hole of the yoke, and you did make her with a skin splendent like the sun."

(https://www.wisdomlib.org/hinduism/book/rig-veda-english-translation/d/doc837064.html)

[quoting H. H. Wilson, 1854-1888]

Readers may well guess, correctly, that "*khe*" means "in the hole", the locative case form of "*kha*", which means "sky; orifice; aperture; air; hollow; cavity". I suggest that it would be quite a stretch to argue that ⟨-QE⟩ means "in the hole", or even "in the sky, in the air", in every such example in Linear B.

The most common word ending in *-khe* or *-ghe* in the Rigveda, by far, is *sákhe*, the vocative case form of *sákhi*, "friend, companion" (1.30.10-11-12; 3.51.6; 4.1.3; 4.18.11; 4.35.3; 8.43.10; 8.71.9; 10.87.21; 10.112.10). But none of the examples of ⟨-QE⟩ in this Linear B inscription are preceded by the syllabic sign ⟨SA-⟩. Likewise, Sanskrit examples of *mukhe*, *-maghe*, and *-meghe* cannot be words in this inscription. Sanskrit *-dughe* or *-doghe* is possible, as ⟨-TO-QE⟩, but this cannot explain ⟨DO-RA-QE⟩, ⟨PO-RE-NA-QE⟩, or ⟨A-KE-QE⟩.

Of course the introductory Section 2 of this paper makes a big point that we cannot limit comparisons of Linear A words to the Rigveda alone. But individual words in the lexicon are one thing, and an entire phonological structural segment is quite another. I am quite confident that any attempt to produce an Indo-Aryan interpretation of ⟨I-JE-TO-QE [...] A-KE-QE . WA-TU . DO-RA-QE . PE-RE . PO-RE-NA-QE . A-KE⟩ following my phonemic reading rules will result in a patently and transparently absurd reading, and it will be quite evident that it will not be remotely comparable to the convincingly plausible Indo-Aryan readings and interpretations of Linear A inscriptions that I have presented in this paper.

The simplest explanation for this is that Linear A really is Indo-Aryan, and Linear B is not.

14. Conclusion

The author concludes that the resemblances that can be plainly seen between the 10 Linear A inscriptions and the corresponding Sanskrit forms, words, and phrases presented and analyzed in this paper are much closer than could possibly be due to pure random chance coincidence alone. The degrees of freedom in the interpretation of the Linear A syllabic signs are quite strictly limited by the faithfulness to the basic phonetic values of the signs established for Linear B, as well as to the basic principles of the representation of the language by the script established for Linear B. If the resemblance were due to pure random chance coincidence alone, the Linear A words would not correspond with the Sanskrit forms as closely as they clearly do.

Of course the author recognizes that there still remains much that is unknown and that requires further explanation regarding the language of the Linear A inscriptions of the Minoan civilization of pre-Mycenaean Crete circa 1700(?)-1450 BCE. But in the author's view, it is clear that the language of the 10 Linear A inscriptions presented and analyzed in this paper must represent some dialect of an Indo-Aryan language. At this stage of the investigation, this is simply the author's opinion, but it is necessary to express this opinion clearly and not behind a screen of false equivocation that does not reflect the actual state of the author's view of the subject matter at the present stage.

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