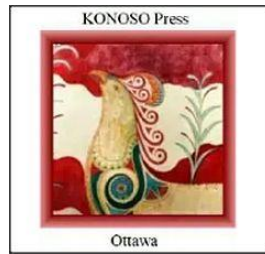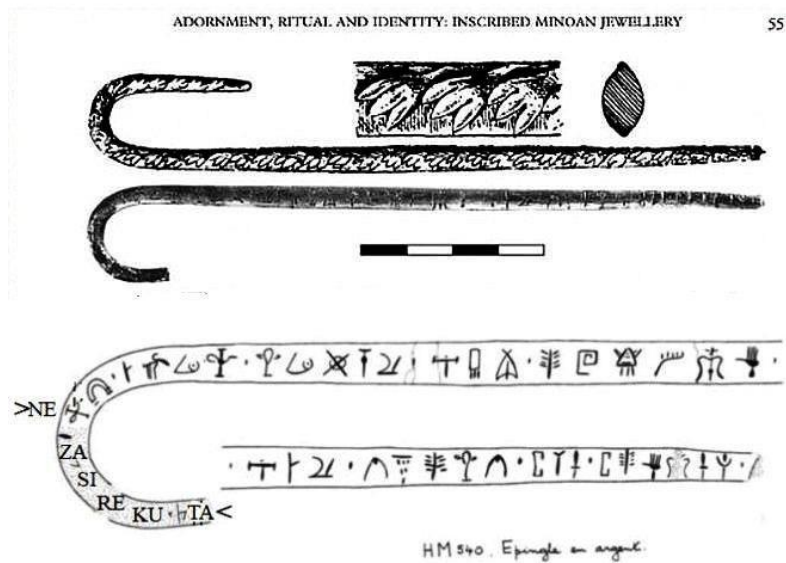# Cluster Analysis of the Silver Pin, Mavro Spelio KN Zf 31 (HM 540) in Anatolian Proto-Greek

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by Richard Vallance Janke, with Francesco Perono Cacciafoco
and Manoj Pratham (Editorial Consultants)

KN Zf 31 (HM 540) Silver Pin, Mavro Spelio
(MM IIIa), Herakion Museum, Crete

ADORNMENT, RITUAL AND IDENTITY: INSCRIBED MINOAN JEWELLERY   55

HM 540. Epingle en argent.

TA]✶[KURE]✶✶✶ · ✶✶✶ · ✶✶✶✶ · ✶✶✶✶✶✶
SI   SIZANE ✶310 DADUMINE QAMI ✶47 NARA AWAPI TESUDESEKEI
ADARATIDITEQATI TASAZA TATEIKEZARE

< [ta]si [kure]zisane (dat. sing.) = HI+SU = TUGkuressari (dat. sing.)
= … and to her herself for a woman's coiffure… >

Godart, Louis et Olivier, Jean-Pierre, Études crétoises
Recueil des inscriptions en linéaire A. 1982. pp.154-155, after Forsdyke, 1926-7

The reverse of this pin is embellished with a row of crocus blossoms.

Preamble: Theoretical framework: preliminary findings

A theoretical framework should be *de rigueur* if we are to decipher any unknown ancient language. Such a framework has been notably absent in all too many previous attempts at deciphering ancient languages. Our framework is buttressed by our translations of three Linear A libation invocations. Contact linguistics suggest that through cross-fertilization, Hittite and Luwian cognates, and even cognates from other ancient languages adstrate with or superstrate to Linear A often reappear in Linear A. According to Finkelberg, "... there is reason to suppose that the languages once thought to constitute the so-called pre-Hellenic substratum belong to the Anatolian group of the Indo-European languages; ..." Colin Renfrew also stresses the Anatolian provenance of a pre-Hellenic substratum.
Pursuant to the introduction cited *supra*, it is highly advisable to read the *entire theoretical framework* outlined on pp. 2-8 in: *The influence of Hittite and digraphia on Minoan Linear A proto-Greek libation invocations.* [1]

Synopsis: Cluster Analysis by Francesco Perono Cacciafoco [2 & 3] :

In light of the unsolved linguistic enigma behind the Minoan Linear A writing system, new hermeneutic approaches may be able to shed some light on persistent problems in the interpretation of Linear A. Consequently, Francesco Cacciafoco Perono and his team of researchers have devised a synthetic outline highlighting some still unanswered epistemological questions on scholars' attempts to date at deciphering libation formulas inscribed predominantly on clay tablets in Linear A, a syllabary in use in Crete in the Bronze Age early and middle Minoan periods (MM IIA – MM IB, *ca*. 1750 – 1450 BCE). This research raises numerous earlier and contemporary methodological questions on this Aegean writing system, formulating a grammatological macro-comparison, in order to shed light on the possible improvement of computational approaches to the Linear A corpus, by postulating 1. a possible connection with ancient Greek through Linear B, the script transcribing Mycenaean Greek, plausibly derived From Linear A, 2. Semitic hypotheses, and 3. theoretical parallels with the cuneiform writing system.

Analysis of recurrent clusters of symbols may uncover aspects of the structure of the language transcribed in Linear A inscriptions in readily available publications. Essentially, this project revolves around finding words in different ancient languages that might conceivably share similarities with Linear A words, by running dictionaries of various languages through a computer program that removes vowels from words in these dictionaries to form *consonant clusters* alone. These are then compared letter by letter with Linear A consonant clusters alone, from which the program returns a table of potential matches.

However, *a fair share of these matches might be mismatches, which is why it may consequently be necessary to manually sift through results to filter out words based on their length, positions of the vowels, etc.* (*italics mine*) Frequently recurring clusters have been identified, and the comparison and analysis of these clusters have yielded three aspects of variation: symbol-internal variation, inter-cluster variation, as well as variants in the wider context. Observations from the patterns in inter-cluster variation pave the way to an approximate morphological breakdown of derived clusters, and have isolated plausible roots and affixes. While a comparison of the clusters' immediate environments suggests that the affixes were more likely to have been semantically motivated, the wider contextual variation provides possible interpretations of the semantic content of the affixes themselves.

This internal analysis approach, with the morphological breakdown of the clusters analyzed, provides further circumstantial evidence for the current hypothesis that the language Linear A represented was

rich in *affixation (italics mine).*

Consequently, Richard Vallance Janke proposes that several proposed decipherments of 2 Minoan Linear A libation invocations, PK Za 11 (HM 1341), IO Za 2 (HM 3557), of the Spelio gold ring KN Zf 13 (HM 530) [1 bis] and of the Silver Pin, Mavro Spelio (MM IIIa, 1700 – 1650 BCE), may offer plausible circumstantial evidence that indeed affixes abound in Linear A. In fact, all 4 of these inscriptions are inscribed in *heavily affixed Anatolian Proto-Greek*, the synchronous adstrate of Hittite and Luwian. Notably, these 4 inscriptions feature all 3 criteria isolated by Francesco Cacciafoco Perono and his team of researchers, *viz.*
1. a possible connection to Mycenaean Greek; and in particular,
2. derivation of Minoan Linear A vocabulary from Semitic digraphia, which abounds in Hittite and Luwian, in which *sumerograms and even an appreciable cross-section of Sumerian vocabulary are directly derived from the Akkadian and Sumerian languages, both proto-Semitic (italics mine).*
We find several examples of Linear A lexemes and lemmata in this inscription which are strikingly analogous to both Hittite and Luwian sumerograms and Sumerian words, for which their etymology is almost certainly founded on Akkadian and Sumerian, and finally;
3. Early Kingdom cuneiform Hittite (once again adapted directly from Akkadian and Sumerian cuneiform). All 3 of these criteria are rigorously subjected to computational internal cluster analysis adopted by the team, and again here in our decipherment of the Silver Pin, Mavro Spelio KN Zf 31.

In the LEXICON: Linear A with Hittite, Luwian, Linear B or ancient Greek counterparts (pp. 9 & 10), each Linear A word on the Silver Pin, Mavro Spelio KN Zf 31 (HM 540) is followed by its synoptic form in **[square brackets]** with all vowels removed in the first line, with the hypothetical Hittite, Luwian, Linear B, Linear C, ancient Greek, Sumerogram or Akkadian with all vowels removed in the second line, with a view to establishing a potential parallel between Linear A and the other ancient languages invoked (Akkadian, Sumerian, Hittite, Luwian, Mycenaean Linear B, Arcado-Cypriot Linear C *etc.*). Where this parallel is identical or nearly identical, both the Linear A in **[square brackets]** and the hypothetical parallel in the other ancient language in **/[square brackets]** are in **bold**, as in **[krzsn]/[krssrt]/[ktrs]** = Linear A, Hittite and Arcado-Cypriot Linear C Greek respectively, + **[dr]** + **[ddmn]** + **[nr]** + **[wp]/[wpp]** + **[ts]** **/tsz]/[tshz]** and **[ttt]**. We find that 7 or 50% of 14 Linear A consonant cluster matches are identical or close matches in our decipherment of the Silver Pin, Mavro Spelio KN Zf 31 (HM 540). In addition, metathesis may account for discrepancies between Linear A and Hittite + Luwian in 2 more instances, these being:
1. Linear A = *tesudeseke* (LA dat., instr.) **[tsdsk]** = HI = *suhkešdai* (dat. sing.) (COP) **[shksd]** and secondly, 2. LA *qakisenuti (instrumental sing.)* **[qksnt]** = LU = *šakantamai* **[skntm]** decorated with appliqué + HI = *šak(k)antat(t)ar* **[sk(k)nt(t)r]** = appliqué. *Cf.* AK = *šiptu, šupiu/sissatu/tasitu* **[sp/ssst/tst]** = ornament (COA).

Legend:

AK = Akkadian LB = Linear B HI = Hittite LU = Luwian SU = Sumerogram
Sources: COA = English-Akkadian Dictionary/ COH = Copeland English-Hittite Dictionary/ GOA = Glossary of Old Akkadian/ HAL = Halloran, Sumerian Lexicon/ HED = Hittite-English Dictionary/ HIG = Hittite Grammar online/ HIL = Hittite online lexicon/ LBL = Linear B Lexicon/ LUC = Luwian Corpus: Cuneiform Vocabulary/ SUL = Sumerian lexicon

RECTO: *... si ... sizane*310.dadumine.qami*47nara.awapi*

Conjectural restoration = [ta]*si* [kure]*zisane*310.dadumine.qami*47nara.awapi*
VERSO: *adara.tiditeqati.tasaza.tateikezare… // (qakisenuti)*

Analysis and synthesis:

RECTO:
1. * Conjectural/Restored * of the corrupt … si … sizane*310:
< [ta]*si* [kure]*zisane* **[krzsn]** (where *ne* is the Linear A proto-Greek instr. sing.) = SU + HI = *TUGkuressarit*
[krssrt] (instr. sing.) = ... *and to her herself by means of* = *as a woman's coiffure* … Since the illustration
of the pin itself clearly identifies it as a silver *hairpin,* our restored text is almost certainly correct.
Cf. SU = *sağtuŝx* **[sğtŝ]** = headdress AK = *kililum* **[kllm]**= wreath + Linear C *kitarise* **[ktrs]** =
Cypriot diadem

Hypothesis/Analysis * Conjectural/Restored *:
If we operate on the hypothesis that … (1) *si* is preceded by just 1 syllabogram, given the single space
preceding it, and that (2) … *sizane*310* appears to be preceded by at least 2 syllabograms, any restoration
of the missing syllabograms should yield a plausible Linear A phrase *which must make contextual sense
in the full reading of the entire inscription*. Restoration of an admissible reading for such a phrase is, to
say the very least, a daunting challenge. At least 10 possible alternative permutations were explored (9
of which simply failed to meet this criterion), finally yielding one plausible, nevertheless unattested,
Linear A phrase which actually makes credible sense once rephrased in ancient Greek itself, and
consequently in the English translation *of the entire inscription*. As can be attested by our conjectural
phrase [ta]*si* [kure]*zisane*, it appears that we have discovered a meaning in Linear A = ancient Greek =
English which does makes sense meeting this contextual criterion. Anything less is of course inadmissible
from the outset. Not surprisingly, it took some two weeks to arrive at the most plausible candidate for
this single phrase apt to yield contextual sense in the reading of the inscription *in extenso*.

Step by step restoration:

Step 1 (in 2 subsets):
1.1 … *si* (with only enough space for 1 syllabogram) plausibly reads in Linear A [ta]*si* = HI = *tasi* = and
to her (herself) *Cf.* GR = καὶ ἑαυτῇ = and to herself
1.2 … *sizane*310, w*hile left-truncated apparently with 2 missing syllabograms, (*See* below) is attested
here, the 2 unattested divined syllabograms *kure* are unattested in Linear A. If they are correct, the
conjectural restored Linear A word *kurezisane* **[krzsn]** = woman's headdress (Linear A archaic proto-
Greek, instr. sing.) is almost certainly the Linear A cognate of Hittite *TUGkuressarit* **[krssrt]**= woman's
headdress (Hittite instr. sing.), but if you strip out the second **s** to correspond to Linear A = **[krsrt]**. *Cf.*
Sumerian sagtuš₄ = **[sgtš]** = headdress (HAL) & AK = *kililum* **[kllm]**= wreath (GOA). This last entry is
significant, insofar as the liquids *l* and r are often interchangeable from one language cognate to another.
This is particularly striking in Linear A & Linear B, where there is no *l* series of syllabograms, the *r* series
standing in instead, while in Arcado-Cypriot Linear C, both the *l* and the *r* series of syllabograms obtain.
So hypothetically, if AK = *kililum* were written in Linear A or Linear B, it would read as *kiriru* **[krrm]**.
Now a wreath is another form of a headdress. Finally, in Arcado-Cypriot Linear C Greek, we encounter
the Greek cognate = *kitarise* κίτταρις **[ktrs]** = Cypriot diadem. The analogous parallels between
kurezisane (LA) = *for a woman's coiffure...* (instr. sing.), Hittite *TUGkuressarit* = *for a woman's
headdress...* (instr. sing.), Arcado-Cypriot Linear C Greek = *kitarise* = Cypriot diadem, and even AK =
kililum= wreath (GOA) are not simply co-incidental.

Hence, the missing syllabograms restored yield the sound concatenated intact phrase: *tasi kuresizane =* *... and to herself for a woman's coiffure...* , which when transcribed into Hittite = *... tasi* ^{TUG}*kuressari*, and into ancient Greek = καὶ ἑαυτῇ τῆς κόμησης κόσμοσι. While Hittite sentences practically always begin with *nu* or *ta* = "and", this is not *de rigueur* in ancient Greek. Likewise, English routinely omits "and" as the incipit, yielding simply, … *to herself by means of* = *as a woman's coiffure...* While this restoration is conjectural, it is nevertheless probable or even highly probable.

+ **310* [4] [5] [6]

Minoan Linear A ideogram

*310 = (in the shape of) a crozier?
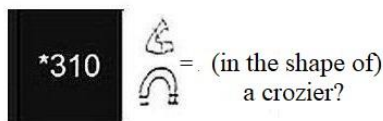
KN Zf 31 (HM 540)
Silver Pin, Mavro Spelio

*310 bears a striking similarity to a crozier. This is remarkable insofar as *qami*47nara (infra)* seems to signify "ritual payment in silver". This appears to validate the notion that the silver crozier is the actual means of reimbursement. This is hardly surprising, given that the Minoans had no currency or money, transacting accounts payable instead by bartering with gold or silver.

The rest of the vocabulary on this inscription is intact, hence:
RECTO (continued):

2. *dadumine* **[ddmn]** (proto-Greek instr. sing., modifying *qami*47nara*) = LB = *dedomena* **[ddmn]** δεδεμένα = offered. *Cf.* HT 95: *dadumata* = LB = *dedomena* δεδομένα = delivered = GR = διδούμενος **[ddmn]** = (passive part. present) = *given* + δεδούμενος = (passive part. past) = having been given or granted or (a debt paid off), derived from LB =*dosomo* δοσμοί = offerings (LBL). Since *dadumine* and *dadumata* are both passive participles in Linear A & in Greek, this reading is firm.

3. *qami*47nara* (concatenated) =
3.1 *qami* (proto-Greek instr. sing.) **[qm]** = HI + SU = ^{GIŠ}*kalmus* **[klms]** = crook, crozier (*digraphia*: where SU ^{GIŠ} = "wood" in Hittite). However, this crozier is silver. So the Hittite sumerogram ^{GIŠ} prefixed to *kalmus* is not applicable. It would therefore appear that the Linear A scribe decided to retain *kalmus*, while abandoning the Hittite sumerogram ^{GIŠ}, since this pin is silver. *Cf.* AK = *gamli* **[gml]** = staff, like a hooked or curved staff. The Akkadian orthography is so close to Hittite that it cannot be co-incidental. (COA); and yet again, Sumerian = *gàm* **[gm]** = sickle, handle (HAL). NOTE that the Linear A Q series of syllabograms is analogous to G in Akkadian and Sumerian. See also, Bibliography, General:
20. Thomsen, Marie-Louise. *The Sumerian Language: An Introduction to Its History and Grammatical Structure. Cf.* HI = *misriwant* = shining.; *Cf.* AK = *kaspum* **[kspm]** = *kiršum* **[kršm]** = silver = *KUG.BABBARsu = their silver in weight* (GOA)*,* and *misriwant;* such that the phrase *qami*47nara* = "a shining silver crozier" is quite acceptable in context.

3.2 = **47nara* = gold + *nara*

✠ *47 = gold
Linear A & B

nara **[nr]** (Linear A fem. sing., gender migration) = HI = *niaur* **[nr]** (common) = prestation, ritual payment, *i.e.* payment in money (N/A because the Minoans had no money *per se*); hence, payment by bartering in gold, but in this case in silver (HED) *Cf.* synonym HI = *wahnumar* = compensation (HIL).

4. *awapi* = HI = *(y)+ wa(r)+ apa* = *(y)wa(r)appa* = *iwar appa* (postposition) = 1. *(iwar)* = "like" + 2. *appa* = "again", (Olivier Simon [7]); where 2. the ultimate Linear A matches Luwian = *appi* = "again", rather than Hittite *appa,* which does not match the Linear A. Hence: "like again", so that the Linear A phrase = "like ritual payment again", or more fluently = "as ritual payment yet again", implying that another ornament may also have been submitted as ritual payment, it being more than likely the Gold Pin CR (?) Zf 1: A. Nik. Mus.9675 (épingle en or). If so, these apropos comments surely apply to payment by bartering with gold or silver for both ornaments:

> … inscribed Minoan jewellery seems so far to lie mostly *outside the purview of men*. (*italics mine*) Second: these objects were almost certainly used to construct and broadcast the elite identity (and perhaps authority) of the people who wore them. Third: the objects may also have served as apotropaic amulets and/or symbols of rites of passage for their wearers, thus expressing certain rituals associated with the lives of the people who wore them. Fourth: inscribed items of Minoan jewellery may have played an active role in linking elite Minoan (and particularly elite Minoan *female*) identity and authority to the divine. [8]

The synopsis above of the role of Minoan jewelry is truly compelling, insofar as our decipherment of the Silver Pin, Mavro Spelio KN Zf 31 (HM 540) so astonishingly mirrors it. *See* Lexicon 2. *infra*.

5. *tesudeseke...* **[tsdsk]** (LA dat., instr. sing.) = HI = *suhkešdai* **[shkšd]** (dat., instr. sing.) (HAL) = ornament (metathesis) where Linear A inserts the incipit syllabogram *te* (epenthesis). This aligns with the context.

VERSO:
NOTE: the incipit *adaratiteteqati* is apparently a concatenation of 3 distinct words, *adara, titetete* and *qati.* Yet, we cannot rule out the likelihood that it consists of more than merely 3 words, perhaps even as many as 5. The phrase is entirely conjectural at best, and possibly even flat out wrong. At the outset, it seems to consist of 3 separate words, *viz*: 1. + 2.1 & 2.2, but beyond that it is anyone's guess.

1. * Conjectural * *adara* **[dr]** = HI = *adr* **[dr]** = (abstract suffix; denominal as well as adverbial), more than likely: "indeed" or "of course" in this context (HED)

2. *titeteqati* (concatenated) 2.1: LA proto-Greek present tense = *titete* = you put (2nd. person sing., which is analogous to the Hittite conjugation rather than to the classical Greek conjugation, τίθης = *you put* (2nd. person sing.) Hence, LA proto-Greek *titete* = HI = *tāitti (dāitti)* (*hi* conjugation, 2nd. person sing.) = you put, from: infinitive, *dai* = to place, to put. For this, see Hittite Grammar: II hi-Conjugation. 1. Consonant stems & scroll down to: §173) b) *dāi-* "to place", *pāi-* "to give", *nāi-* "to guide", *zāi-* "to exceed", *halzāi-* "to call", where we find: *dāitti (tāitti)* = present tense 2nd. person

singular [7] +

2.2 LA = *qati* **[qt]** (preposition) = HI = *katti* **[ktt]** (postposition) = "at, by, with, here". Also, according to Olivier Simon, Hittite Akkadogram, *qattaman* **[qttmn]** = « de la même façon » = in the same way [7 bis], hence: *adaratiteteqati* (concatenated) may also be translated as: "you (2nd. person singular) put (here) in the same way, *i.e.* "like this."

However, our translation of *adaratiteteqati* is at best entirely conjectural, and in all probability even flat out wrong. An alternative interpretation, as proposed by Alexandre Solcà, *grounded on the cardinal hypothesis that Minoan Linear A is, for all intents and purposes, Anatolian proto-Greek* (*italics mine*), might possibly serve to resolve the dilemma of baffling gaps such as this in Linear A vocabulary, founded on the principle that Anatolian proto-Greek Linear A features a multiplicity of cognates in its synchronous adstrates, Anatolian Old Kingdom cuneiform Hittite and Luwian. Still, we cannot overlook the prospect that this phrase, among others in this and other Linear A inscriptions, may in the final analysis prove to be recalcitrant to decipherment. Yet this does not mean that, however long it takes (more than likely for some time yet), we shall eventually not have for all practical purposes deciphered Minoan Linear A as Anatolian proto-Greek, since it is more or less axiomatic that some ancient languages, while by and large deciphered, leave us grappling with baffling lacunae, oftentimes frequent. This may prove to be the outcome for Linear A in the long run. Such gaps occasionally recur in Hittite, Luwian and Mycenaean Linear B, yet commonly in Etruscan, para-Mongolic and Tibeto-Burman, among several other partially deciphered ancient languages. In some instances, where a smattering of researchers are at odds, as in the case of Mesoamerican Mayan, for all intents and purposes that language has by majority consensus been deciphered.

3. *tasaza* **[tsz]**= HI = *tsahaza* **[tshz]** (ablative sing., in this case interchangeable with the instr. sing.) = silver object …

See Hittite Grammar: Case Usage: § 217) "However, Hittite also uses an *ablative of instrument*: and also § 218) a) This is why the ablative or the instrumental can be found in the same turn." [9] (*i.e. are interchangeable, italics mine*). Cf. SU = *ara₄* = to shine; bright, clear, polished + SU = *tam* = polished, silver, hence; Linear A = *titeteqati* + *tasaza* = Hittite: *tāittisi tsahaza katti* = "you put here as a silver object." NOTE that in Hittite *katti* must follow the noun *tsahaza*, since it is a postposition. There are no prepositions in Hittite. In Minoan Linear A, *qati*, is equivalent to the postposition *katti* in Hittite, hence the Linear A phrase: *titeteqati.tasaza.* Of all the decipherments on the silver pin, this is the least plausible.

4. *tateikezare* **[ttkzr]** (Linear A *t* = Hittite *s*) + ultimate *re* (instr. sing.) = HI = *sepikustai, spikustai* (instr. sing.) **[spkst]** = pin, hairpin, stylus (COP). In this context, the most accurate reading would be, "serving as a hairpin" *Cf.* HI = *suppisduwara* **[sppsdwr]** = decoration, ornament (COP). *Cf.* LU = *šakantama/i* **[škntm]** = decorated with appliqué + LU = *šak(k)antat(t)ar* **[šk(k)nt(t)r]** = appliqué, in Hittite texts (ACL) *Cf.* AK = *šiptu, šupiu* **[špt/šp]** = ornament (more than merely co-incidental) (COK). Linear A *t* = Hittite *s* is not so surprising, given that in ancient Greek itself, *t* and *s* are often interchangeable, *e.g.* θάλασσα + θάλαττα = sea. *Cf.* SU + HI = ᵀᵁᴳ*kuressar* = cap, headdress (woman's headdress) *Cf.* also Arcado-Cypriot Linear C cognate = *kitarise* κίτταρις **[ktrs]** = Cypriot diadem [10] :

Arcado-Cypriot Linear C

Ƭ Ⱶ Ꝛ ᙢ

KI   TA   RI   SE

κίτταρις

Cypriot diadem

5. and on the reverse side, *with no text*, but where we find crocus blossoms, the missing lexeme, *qakisenuti* **[qksnt]** = decorated with appliqué likely applies = LU = *šakantamai (*LUC) **[škntm]**, decorated with appliqué + HI = *šak(k)antat(t)ar* **[šk(k)nt(t)r]** = appliqué. *Cf.* AK = *šiptu, šupiu* **[špt/šp]** (COH) *Cf.* LB = *audewesa* = having a rosette *Cf.* HI = *alil* = flower

Translation of the Linear A:
Legend: [… restored text …] * = Conjectural *

RECTO:
Literal:
[… and to her herself for a woman's coiffure …] * having been given or granted or (a debt paid off), crozier, silver, ritual payment bartered yet again, for ornament
VERSO:
indeed *, in this fashion, as silver object, serving as hairpin +
on the reverse side of this silver pin, there also appear crocus blossoms, to which this lexeme applies:
qakisenuti = + LU = *šakantama/i* = decorated with appliqué + HI = *šak(k)antat(t)ar* = appliqué
(methesis) Accordingly, *qakisenuti* makes sense in context: borrowed from: CR (?) Zf 1 Gold Pin : A. Nik. Mus.9675 (épingle en or)

Detailed analysis:

The reverse of this pin KN Zf 31 (HM 540) Silver Pin, Mavro Spelio carries a row of crocus blossoms
This is highly significant, insofar as CR (?) Zf 1 Gold Pin : A. Nik. Mus.9675 (épingle en or)
is also embellished with what appear to be none other than crocus blossoms, and on which appears this lexeme: *qakisenuti* = + LU = *šakantamai* = decorated with appliqué + *šak(k)antat(t)ar* = appliqué
(metathesis) This surely makes sense in context.

CR (?) Zf 1 Gold Pin : A. Nik. Mus.9675 (épingle en or) *is illustrated on the next page*.

CR (?) Zf 1 (Ayios Nikolaus Mus. 9675), gold pin

According to the text, the flowers are violets.
They may instead be white lilies.

1.
2.
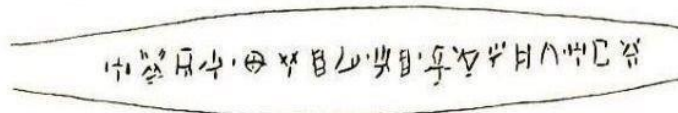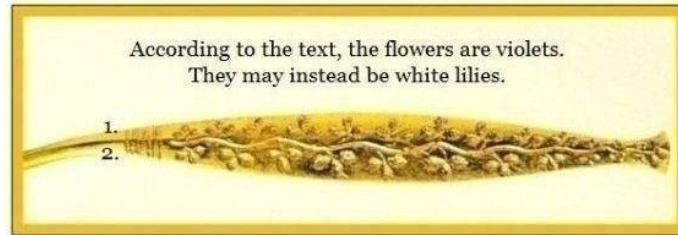
A. Nik. M. 9675 épingle en or (golden pin)

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

Godart, Louis & Olivier, Jean-Pierre. Études crétoises: Recueil des inscriptions en linéaire A. IV : 146-147, 162

Translation of the Linear A: Free:

RECTO/VERSO:

… this silver crozier, a ritual offering yet again, a bartered debt paid off in compensation to reimburse this ornament serving as a hairpin for herself for a woman's coiffure, + no text on the obverse of this pin, which is embellished with what appear to be crocuses, hence: decorated with appiqué

Reverse Translation from Linear A into Hittite/Luwian S-O-V word order:

… *tasi* ^{TUG}***kuressari*** *kappuwant GIŠ**kalmus** KUG.BABBAR misriwant SISKUR₂* **niaur iwar appi** *suhkešdai* **adr** *pai nu kuit KUG.BABBAR* **tsahaza katti sepikustai tāittisi** // (**šakantamai**)

Linear A left = Hittite right: **[ts] + [krzsn]/[krssr] + [qm]/[klms] + [nr] + [wr] + [pp] +**
+ [dr] + [tsz]/[tshz] + [qt]/[ktt] + [ttkzr/spkst] + [ttt] + [qksnt/škntm]
NOTE (exception): Linear A **[ddmn]** *dadumine* (proto-Greek instr. sing = LB = *dedomena* = Greek δεδεμένα = offered

Literal translation in the rigid S-O-V of Hittite/Luwian:

… and for herself, woman's coiffure paid (off), crozier, silver, shining, ritual offering yet again, for ornament, indeed, to pay, and which, silver object, here, for hairpin, you place + (no text, reverse side of this pin: = // *šakantamai* = decorated with appiqué)
Free translation of the Hittite, reflecting fluid English word order:

… this shining silver crozier you of your own accord have reimbursed her for your debt paid off as

9

ritual compensation yet again, to pay in due course for this silver ornament you've just placed here to serve as a hairpin decorated with appiqué for her woman's coiffure

---

A similar inscription on a silver pin in Arcado-Cypriot Linear C (ICS 219, British Museum) 6th. century BCE, echoes the inscription on this silver pin in Minoan Anatolian proto-Greek, lending further credence to the plausibility of Minoan Linear A as Anatolian proto-Greek.

silver pin (ICS 219) in Arcado-Cypriot Linear C

18 cm. (6th. century BCE)

ICS 219, British Museum

sinistrograde = read from right to left

line drawing after R.H. Lang in Schmidt, 1876

ICS 219 detail

‹ ---- sinistrograde

I A KI LO KO I TA I O TI ITAKETETEKASEMUA
= --- › AMUSEKATETEKETAIOITAKOLOKIAI
"ημεις κάθε τεθνεῖ οἱται κάλῆ
It is presented to us and with beautiful craftmanship.

© by Richard Vallance Janke 2022

LEXICON: Linear A with Hittite, Luwian, Linear B, Linear C or ancient Greek counterparts:

Legend: ! = definite, certain/PR = probable or highly probable/PS = possible/? = implausible/
* Conjectural *: * Conjectural/Restored * [word] = LA or Hittite, Luwian, Sumerogram, Akkadian, Linear B or Greek with consonants only, all vowels removed. [cluster] in bold = exact or near match:

First Line: LA = Linear A:
Second Line: HI = Hittite cognate/ SU = sumerogram/ LU = Luwian cognate/ LB = Linear B/
LC = Arcado-Cypriot Linear C/ GR = Greek

1. LA PS * Conjectural *: = adara [dr] (preposition) (abstract suffix; denominal as well as adverbial) = indeed, of course, in due course. HI = adr [dr] (postposition) (abstract suffix; denominal as well as adverbial) = indeed, of course

2.1 LA ? * Concatenated *: adaratititeqati. See also supra pp. 6-7 LA ? * titeteqati, VERSO:
 LA ? * Concatenated *, and infra 14. = 2.2 titeteqati.

10

3. LA PR = *awapi* = HI = *(y)+ wa(r)+ apa* = *ywa(r)appa* = *iwarappa* (postposition) = *(iwar)* **[wr]** = "like" + *appa* **[p/pp]** = "again"*,* (Olivier Simon [7]), hence: like again, so that the Linear A phrase = "like ritual payment", or more fluently = "as ritual payment again", implying that another ornament is also submitted as ritual payment, it being more than likely the Gold Pin CR (?) Zf 1: A. Nik. Mus.9675 (épingle en or)

4. LA ! = *dadumine* **[ddmn]** (proto-Greek instr. sing., modifying *qami*47nara*)
LB = *dedomena* **[ddmn]** δεδεμένα = offered. This interpretation is absolutely sound.

5. LA PR * Conjectural/Restored *: = [kure]*zisane…* **[krzsn]** (instr. sing.) = for a woman's headdress, in: … *sizane*310* (concatenated) HI + SU = *TUGkuressarit* **[krssrt]** (instr. sing.), but if you strip out the second **s** to correspond to Linear A = **[krsrt]**. = for a woman's headdress.

6. LA PR * Conjectural/Concatenated *: = *nara* **[nr]** (gender migration to fem. sing*.*)= prestation, ritual usually payment in money, but here payment by bartering; hence, usually payment in gold, but in this case in silver,
in : *qami*47nara*
HI = *niaur* **[nr]** (common) = prestation, ritual payment, *i.e.* payment in money, obligation

7. LA PR * Conjectural/Concatenated *: = *qami*47* **[qm]** (proto-Greek instr. sing.) = silver crozier, in: *qami*47nara* SU + HI = GIŠ*kalmus* **[klms]** (Sumerogram + Hittite) = crook, crozier
+ KUG.BABBAR = SU = silver + HI = *misriwant,* the phrase = *a shining silver crozier*
Cf. AK = *gamli* **[gml]** = staff, like a hooked or curved staff. The Akkadian spelling is close enough to Hittite that it is likely not co-incidental.

8. LA PR = *qakisenuti* **[qksnt]** = decorated with appliqué (instrumental sing.)
Cf. CR (?) Zf 1 Gold Pin : A. Nik. Mus.9675 (épingle en or) + LU = *šakantamai* **[škntm]** = decorated with appliqué + HI = *šak(k)antat(t)ar* **[skntr/skknttr]** = appliqué *See .5 supra,* in Step by step restoration:

9. LA PR * Concatenated *: = *qati* **[qt/ktt]** (preposition) = at, by, with, here (instr.), in: *titeteqati*
HI = *katti* **[ktt]** (postposition) (Hittite postposition, with instr.)

10. LA PR * Conjectural/Restored *: = [ta]*si* **[ts]** = and to her herself
HI = [ta]*si* **[ts]**= and to her herself + GR = καὶ ἑαυτῆ= and to her herself

11. LA PR * Conjectural/Restored *: = … [ta]*si* [kure]*sizane* **[tskrszn]** =… *and to herself for a woman's coiffure…* This restoration is so convincing it is highly likely it is correct.
HI = … *tasiTUGkuressari* **[tskrssr]** (*ditto*) + GR Greek = καὶ ἑαυτῆ τῆς κόμησῃς κόσμοσι

12. LA ! = *tasaza* **[tsz]** (ablative sing., in this case interchangeable with the instr. sing.) = silver object
HI = *tsahaza* **[tshz]** NOTE that the Linear A & Hittite ablative sing. are practically identical.

13. LA ! = *tateikezare* **[ttkzr]** (LA proto-Greek dat., instr. sing.) = for/serving as a hairpin (dat. sing.)
HI = *sepikustai, spikustai* **[spkst]**= for/serving as a hairpin (dat. sing.) *Cf.* Arcado-Cypriot Linear C
= *kitarise* **[ktrs]** = κίτταρις = Cypriot diadem

14. LA ! = *tesudeseke* **[tsdsk]** (LA dat., instr.) (epenthesis) = ornament. *Cf.* HI = *suhkešdai* **[shkšd]** (instr. sing.) = ornament. In this case, where the Linear A consonant cluster **[tsdsk]** apparently clashes with Hittite **[shkšd]**, metathesis may account for the discrepancy.

14. = 2.2 LA ? * Concatenated *: = *titete* **[ttt]** = you put (2nd. person sing.), in: *titeteqati*
HI = *tāitti* **[ttt]** *(dāitti)* **[dtt]** (*hi* conjugation, 2nd. person sing.) = you put, from: infinitive, *dai* = to place, to put. For this, see Hittite Grammar: II hi-Conjugation. 1. Consonant stems: *dāi-* "to place" This interpretation is far from conclusive. In fact, it should be taken with a grain of salt.

Conclusions:

1. The foundations of the Linear A and Linear B syllabaries:

Before we can even address the mystery surrounding Linear A, we first need to pose the question that has perplexed linguists specializing in ancient languages for the 122 years since Sir Arthur Evans unearthed the first sizable cache of Linear B and much smaller one of Linear A tablets at Knossos in 1900 [11]: just what is Linear A? However, the 2 syllabaries have much in common. Of the 51 syllabograms in Linear A, 40 or 69 % are in common with Linear B, and of the 59 in Linear B, minus 1 which appears in Linear A, yielding a remainder of 58, again 40 or 69 % are in common with Linear A. The 40 commonalities between the Linear A and Linear B syllabaries are illustrated here:

Linear A base syllabary = 51

	A AU*		E		I		O		U	5
	JA		JE						X1JU	8
	WA		X2		WI		X3			10
	MA		ME		MI		X 4		MU	14
	NA		NE		NI		X 5		NU	18
	RA		RE		X6RI		RO		RU	23
	RA₂	++ supplemental: omit from the base								
	DA		DE		DI		X7		DU	28
	TA		TE		TI		TO		TU	33
	++	supplemental: omit from the base								
	KA		KE		KI		KO		KU	38
	QA		QE		QI		X8			41
	PA		X9		PI		PO		PU	45
	PA₃	++ 2 supplementals: omit							PU₂	
	SA		SE		SI		X10		SU	49
	ZA		ZE				X11			51

TOTAL = 51, of which 40 or 69 % are in common with Linear B = 59 - 1 = 58

Linear B base syllabary = 59

a	e	i	o	u	5
da	de	di	do	du	10
ja	je		jo	X	13
ka	ke	ki	ko	ku	18
ma	me	mi	mo	mu	23
na	ne	ni	no	nu	28
pa	pe	pi	po	pu	33
qa	qe	qi	qo		37
ra	re	ri	ro	ru	42
sa	se	si	so	su	47
ta	te	ti	to	tu	52
wa	we	wi	wo		56
za	ze		zo		59

TOTAL = 59 - 1 = 58, of which 40 or 69 % are in common with Linear A

While this overlap of 69 % is not as high as we might have hoped for, the commonalities between the two syllabaries are significant. This raises the further question: do both syllabaries 1. consist sets of syllabograms, either (a) entirely unrelated, (b) somewhat related or (c) significantly related? This dilemma has been hotly debated for well over a century. Many linguists and philologists, professional and amateur alike, insist instead that the Linear A symbols, in spite of the fact that 40 or 69 % are identical or practically identical to those of Linear B, are emblematic of some other esoteric writing system, consisting either of pictographs, glyphs, hieroglyphs or even cuneiform converted into a novel set of symbols, any of which alternatives are supposedly designed to accommodate some unknown language. These proponents, of which there are a great many, sit on one side of the fence, while an equally vocal company of linguists sit on the other, trusting that Linear A is in fact a sylla-bary closely related to Linear B. Of late, evidence, which is more than merely circumstantial, is mounting in favour of those in the latter camp.

The most notable of the latter proponents is without a doubt John G. Younger, the author of the most impressive corpus of practically all of the Linear A inscriptions [12], (a) the largest repository by far consisting of agricultural, commodity and vessel or pottery based and (b) a considerably smaller cache apparently consisting of libation formulae or ornamental rubrics. While John G. Younger wisely does not venture to decipher Linear A, in light of the fact that no one in over 120 years has ever even come close to doing so, he nevertheless subscribes to the hypothesis that it is indeed a syllabary, founding this belief on the very similarities between the Linear A and Linear B syllabaries outlined above.

Still, the nagging question persists: even if Linear A is a syllabary, are the values of its syllabograms commensurate with those of Linear B or not, and if so, to what extent? Again, given that the overlap between the 2 syllabaries amounts to practically 70 %, we are of the opinion that the Linear B is indeed simply a streamlined version of Linear A. Richard Vallance Janke and Alexandre Solcà addressed this question head on in their ground-breaking study,
High Correlation Linear A—Linear B vocabulary, grammar and orthography in Linear A and Linear B [13]
drawing the conclusion that not only is the Linear B syllabary a more streamlined version of its immediate precursor, Linear A, but even that the 2 syllabaries may possibly be emblematic of one and the same language. So while the verdict is still out, it does appear that the prospect of Linear B being a more streamlined syllabary directly derived from its precursor is, more likely than not, circumstantially sound. Moreover, the preliminary findings by Richard Vallance in
The influence of Hittite and digraphia on Minoan Linear A proto-Greek libation invocations [14]
provide relatively sound circumstantial evidence bearing out the novel hypothesis that three of of the Minoan Linear A libations invocations and one instance of a Minoan Linear A ornamental inscription, notably, that of the Mavro Spelio Gold ring KN Zf 13 (HM 530), are indeed inscribed in what appears to be none other than Linear A Anatolian proto-Greek.

2. The inscription positively must reflect the function of the medium:

If any inscription in any ancient language is to make any sense at all, its contents must reflect its function as a medium. According to this principle, if we have an ornament, then the context must perforce reflect its function as an ornament. Since the Silver Pin, Mavro Spelio KN Zf 31 (HM 540) is a hairpin, it follows that the inscription must be an actual description of it. Any other interpreta-tion is unacceptable out of hand. Our decipherment is emblematic not only of its cardinal function but also of the delicate embellishment of what appear to be crocuses on its obverse [15].

3. Manual cluster analysis:

As one of the newest active members of the cluster analysis team under the auspices of Francesco Perono Cacciafoco, the author is not yet fully familiarized with the project's core mission, which revolves around extracting words from different ancient languages that might conceivably share similarities with Linear A words, by running dictionaries of various languages through a computer program that strips vowels from words in these dictionaries to yield consonant clusters alone. These are then compared letter by letter with Linear A consonant clusters alone, from which the program returns a table of potential matches. Under these circumstances, the author has undertaken to manually run cluster analysis of Minoan Linear A words, comparing them with cognates or analogous words in several other languages, of which Akkadian and Sumerian are substrates, Hittite and Luwian are synchronous adstrates, while yet others are diachronic descendants, amongst which figure Mycenaean Linear B, Arcado-Cypriot Linear C, and Homeric and classical Greek. While the current cluster analysis here is manually executed, the results are apparently essentially the same as they would be, were they run by the computer program. [16] [17]

Computer generated cluster analysis cannot in and of itself account for all of the lacunae common to both Linear A and Linear B. In these syllabaries, the syllabogram series listed below account for these missing letters in the Latin alphabet: B C = S *lenis* = S, C *fortis* = K, G F H L V X and Y.

In addition, we must account for analogies between Linear A + Linear B and Hittite + cuneiform Luwian, as illustrated *infra*.

LALB I series = I/Y in Hittite & Luwian (a)
LALB J series = H in Hittite & Luwian (b)
LALB K series = C *fortis* = G+K in Hittite & Luwian
LALB K+S series = K+S/Š in Hittite & Luwian
LALB Q series = B+G+K in Hittite & Luwian (c)
LALB R series = L+R or RL in Hittite & Luwian (d)
LALB S series = C *lenis* = S/Š in Hittite & Luwian
LALB W series = U/W in Hittite & U/Ú/W Luwian (e)
LALB *301 = WE in Linear A = U/W Hittite & U/Ú/W Luwian (e)

This explains why several Linear A words with consonant incipits + vowel are in fact analogous to their HI Hittite and LU Luwian counterparts, for example [18]:

(a) LA *inajapaqa* = HI *iyannāyant* + LA *waja* = LU *waya* + LA *ajaku* = LU *aya* + HI *ku*
(b) LA *jasasara* = HI *hassusara* + LA *jadi* = HI *handai* or LU *halti* + LA *jatari* = HI *han(dan)datarit*
(c) *qakisenuti* = LU *šakantamai* + HI *šak(k)antat(t)ar* (via *metathesis*)
(d) LA *siru[(te – restored)* = LU *šrlatteš* & HI *sarlai*
(e) LA *Arenesidi*301* = *Arenesidiwe*, where *301* = LA *we*

While Hittite is also a syllabary, entries in the Hittite lexicon [19] and in the Luwian Corpus (Cuneiform Vocabulary) [20] are alphabetical; hence, Hittite and Luwian equivalents of Linear A are: Linear A (stripped of syllabogram vowels): LA D+T or *vice versa* = HI/LU T+D or *vice versa* : LA J = HI/LU H : LA I = HI/LU I+Y : LA K = HI/LU G+K : LA P = HI/LU B+P : LA Q = HI/LU B+G: LA R = HI/LU L *incipit* or *medial* & HI/LU R *medial*

How accurate is our decipherment of Cluster Analysis of the Silver Pin, Mavro Spelio
KN Zf 31 (HM 540)?

As with any translation of a newly deciphered language, in this instance, Minoan Linear A Anatolian proto-Greek, we inevitably encounter inaccuracies, and sometimes even undecipherable gaps. But the question is: to what extent? In the case of the Silver Pin Mavro Spelio KN Zf 31 (HM 540), there are bound to be at least one or two doubtful interpretations of the 14 terms displayed thereon. We have tagged each term according to the degree of accuracy or inaccuracy entailed. These degrees are formulated by rank as (a) ! certain (b) PR probable (c) PO possible and (d) doubtful ? Of the 14 terms found on the Silver Pin, we encounter 2 ! which are almost certainly correct, 10 PR which are probable, 1 PO which is possible and 1? which is at best doubtful. For the classifications of each of the 14 terms, *See* LEXICON: Linear A with Hittite, Luwian, Linear B, Linear C or ancient Greek counterparts:

Implications:

The implications for the near successful decipherment of Minoan Linear A Anatolian proto-Greek libation invocations and ornamental inscriptions are manifold. Only time will tell whether our decipherments fall into the categories: largely, somewhat or minimally valid. To date, most of our decipherments appear to be largely valid. Our meticulous analysis of all 6 of the Linear A inscriptions we have deciphered to date appear to bear out the conclusion that they are all by and large accurate, inclusive of our translation of the Silver Pin, Mavro Spelio KN Zf 31 (HM 540) in Anatolian Proto-Greek, which is by all accounts largely accurate, with the notable exception of the apparently concatenated phrase, *adaratiteteqati*, the translation of which is at best to be taken with a generous serving of grains of salt. Moreover, cluster analysis can account for only 7 of the 14 lexemes and lemmata in this inscription. Based on these findings alone, further analysis of our decipherment of the Silver Pin, Mavro Spelio KN Zf 31 (HM 540) is clearly in order.

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Ỹ   Ͱ   ϶   barred-M

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κίτταρις

Cypriot diadem

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