CHAPTER 4

MACRO VIEW: USES, SOCIAL PRACTICES AND IDEOLOGICAL IMPLICATIONS OF CRETAN HIEROGLYPHIC TEXTS

Anna Margherita Jasink and Judith Weingarten

4.1 The Hieroglyphic Seals: Continuity and Innovation

Seals, by definition, are objects created to close or authenticate (that is, to seal) something, even if they are not always used as such. On Crete during the Prepalatial period, however, evidence for sealing is extremely scanty, especially compared with the large number of seals made during this long period.[1] It is therefore possible, even likely, that seals were meant above all as a mark of distinction, worn by the leaders of this time (whether merchants, landowners, or headmen or -women), rather than a sphragistic tool beyond the household, still less for administrative purposes. We know next to nothing of Minoan Prepalatial organisation, even if class differentiation is clearly visible in the typology of houses, tomb architecture and burials, and in the objects found within. Seals certainly represent a luxury good and, to some extent at least, a luxury trade, the very concept borrowed from Egypt and the Near East. Worn on a necklace or a pin, Prepalatial seals identified prominent individuals and not bureaucratic/administrative concerns.

This changed in the First Palace period (MM IB–MM IIB), beginning with the introduction of a new tool, the horizontal bow lathe in MM II, which allowed engravers to carve hard stones for the first time. Glyptic shifted from the gouging of soft materials (steatite/serpentine, bone and ivory) towards fine, sharp cutting of colourful gemstones (notably jasper and quartzes). New seal shapes appeared – especially the handled signet (*Petschaft*) and 3- and 4-sided prisms (Figure 4.1) – which were put to use by palace bureaucracies at Knossos and Malia. The *Petschaft* is really the best designed of the three for making seal impressions, especially on clay, because it is easy to hold by its handle, to stamp with and lift out cleanly.[2] *Petschafte* were almost always made of hard stone (88%), as were also most 4-sided prisms (69%) but decidedly fewer 3-sided prisms (47%), a material difference which suggests a lower ranking.[3] Alongside purely decorative motifs (e.g. floral, linear and architectonic motifs), other symbols are engraved that

[1] Weingarten 1990; *pace* Vlasaki and Hallager 1995. [2] Ferrara and Jasink 2017.
[3] Poursat 2000: Table 2.

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represent 'script-signs': not merely icons which reproduce pictorial objects, but signs that record sounds of the Minoan language.[4] It is difficult to distinguish symbols with pure iconic value from those with syllabic (phonetic?) value, but symbols that appear as single signs on *Petschafte* or on faces other than those with Hieroglyphic script on 3- and 4-sided prisms are generally recognised as part of the Hieroglyphic heritage. They must at least be visually meaningful symbols (Valério, this volume).

We would argue that the Hieroglyphic seal always refers to its user/owner and not to the object(s) on which it may be stamped. Even when it does not bear clear script-signs, the Hieroglyphic seal obviously represents, both in its particular form and engraved designs, symbol(s) that reference its user/owner: if it bears an 'inscription', it identifies either the person (e.g. name, position or trade) or place of residence/origin (e.g. palace, temple, function/title).

It should be borne in mind that even inscribed seals were not necessarily used sphragistically, to seal or authorise, but were also found in tombs, presumably interred with the dead as a valued possession. In other words, it would have been a personal object, a kind of badge,



Figure 4.1 Examples of Hieroglyphic seal shapes: (a) *Petschaft* in green jasper from Ziros (*CMS* VI 124 = *CHIC* #193); (b) 3-sided prism in green jasper? (*CMS* XII 117 = *CHIC* 262); (c) 4-sided prism in green jasper, from Adromili (*CMS* II.2, 256 = *CHIC* #293) Images courtesy of *CMS* Heidelberg

[4] Ferrara and Jasink 2017: 48.

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identifying the person by name or residence, or their political or religious role in life, or simply a symbol/sign of good omen.

4.2 The 'Archanes Script' as an Antecedent of the Hieroglyphic Script

In the Introduction (4.1), we intentionally skirted the complicated issue of the so-called 'Archanes formula' and the existence of a script that differs both from the later Hieroglyphic script and from Linear A. Most likely dating to the very end of the Prepalatial period (MM IA), the 'Archanes script' (for a discussion on this definition, see Meissner and Salgarella, this volume), until now, has been found engraved only on seals, and is represented mainly – but not solely! – by the formula, A-SA-SA-RA-NE (ascribing Linear B phonetic values to the signs). Unlike other authors of this book (Ferrara, Valério, Flouda, Meissner and Salgarella), we agree with Roeland Decorte (2018a) that it represents a true script: most of its signs recur in CH,[5] including the formula itself – in its entirety or just its first part, A-SA – which continues to appear on a small group of Hieroglyphic seals and seal-impressions (Table 4.1). The formula takes on a richer meaning on the triple-stacked cube bone seal from Archanes (*CMS* II.1, 391 = *CHIC* #315) where, we suggest, it 'identifies the deity/ceremony/religious institution in whose honour' animal sacrifices, offerings and a procession have been made, as described on the other seal faces.[6] If the seal was made to commemorate such an event, it most likely belonged to the leader of the procession. However, he was not alone. The 'Archanes Seals Group', most of which (but not all) bear the 'Archanes formula', would have been worn by those who belonged by birth or rank to the same religious institution as the leader, he who boasted the largest and most impressive of their seals.

Scholarly consensus dates the four seals from Archanes, the cube from Moni Odigitria (Figure 4.2) and possibly also the discoid from Knossos (Table 4.1, nos 1–6) to late MM IA.[7] The peculiar cylinder (no. 7), a *unicum* among script seals (Figure 4.3), dates within the wider

[5] The 'human leg' in profile, the 'hand', the so-called 'U-sistrum' and a 'man' holding a basket(?), are symbols that appear to be iconographic representations, but which could also have an ideographic or phonetic value as in the later Hieroglyphic script.

[6] Weingarten 2022.

[7] On the single symbols, or group of symbols, visible on some of these seals apart from the formula, see Decorte 2018a.

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limits of MM I–II based on its attribution to the Border/Leaf Complex.[8] The next two seals (nos 8–9), bearing true Hieroglyphic signs, are made of hard stones so they cannot be earlier than MM II (cf. § 4.3). The use of the formula on these unusual Hieroglyphic seals could represent a *trait d'union* between the earlier seals from Archanes – which we see primarily within a religious context – while the standard Hieroglyphic seals play a most significant role in administration. The recently found no. 10 from Boughada Metochi (Knossos) appears to straddle the two roles, combining the 'Archanes formula' (side α) with signs on the narrower sides β, δ, that so regularly appear on 'matrix seals' that they may be considered 'matrix symbols' (see below, section 4.4), strongly suggesting a place in administration as well.

Nos 11–16 are seal impressions. The seal that stamped no. 11 (from Knossos) had almost certainly been engraved with the full 'Archanes formula': the fragmentary impression reads A-SA-SA, but with sufficient space for possibly two lost signs. No. 12, from the S-W Pillar Basement at Knossos, on the other hand, retains CH 042-19 and an illegible third sign, but lacks space for additional signs (though those might have appeared on another seal face). The remaining impressions found on Samothrace appear to have all been made from seals originating in a single workshop. All are engraved with A-SA plus additional signs, several of which might belong to the Hieroglyphic script. Together, they raise interesting issues of dating, script and trade, requiring further study.

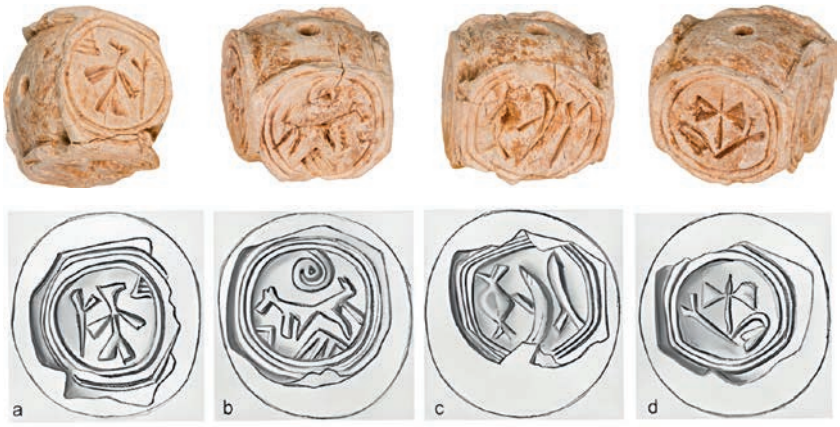


Figure 4.2 Bone cube from Moni Odigitria S35 (*CHIC* #313). Images Copyright INSCRIBE (drawing after Sbonias 2010: Pl. 61).

[8] Yule 1980: 47.210. Decorte (2018a: Table 8, Figure 14) considers the shape of the 'double axe' as 'transitional' between Archanes and Hieroglyphic script. For a possible interpretation of the two symbols next to the 'sepia', see Jasink 2017: 239.

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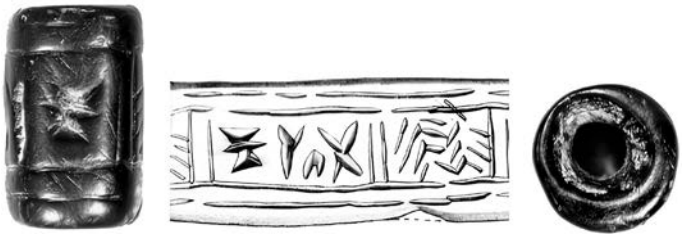


Figure 4.3 Black steatite cylinder in *CMS* XI, 73 (= *CHIC* #201). Images courtesy of *CMS* Heidelberg

Table 4.1 *Seals and sealings with the 'Archanes formula'*

	CHIC no.	*CMS* no.	Material	Shape	Provenance	Date*
1	#202	II.1 394	Bone	2-sided discoid	Archanes	MM IA
2	#252	II.1 393	Bone	3-sided prism (gable)	Archanes	MM IA
3	#315	II.1 391	Bone	Triple-stacked cube	Archanes	MM IA
4	#251	VI 14	Green steatite	3-sided prism (gable)	Archanes	MM I A
5	#313	[S35]	Bone	Cube	Moni Odigitria Ossuary	MM IA
6	#203	VI 13	Green steatite	2-sided discoid	Knossos?	MM IA
7	#201	XI 73	Black steatite	Cylinder	Unknown	MM IA–II?
8	#292	II.2 217	Pseudo-jasper	4-sided prism (with two 'stepped' faces)	Gouves	MM II
9	#205	VII 35	Grey and white agate	Cushion	unknown	MM II–III
10	—	—	Burnt steatite	Irregular cushion with four unequal engraved sides	Bougada Metochi[9]	MM II–III
11	#179	II.8 29	Sealing: bone?	Rectangular seal	Knossos	MM II (*CMS*)

[9] Recently discovered in a sanctuary context at Bougada Metochi above Knossos (Kanta, Palaima and Perna 2023; Kanta 2018; see Civitillo 2021b: 96–7. The seal is a *unicum*: it has two convex faces (which define a 'cushion seal') with, in addition, two smaller side faces; all four faces are engraved. Eleven cushion seals are engraved on both faces (Dionisio, Jasink and Weingarten 2014: 25), only four of them depict Hieroglyphic seals.

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Table 4.1 (*cont.*)

	CHIC no.	*CMS* no.	Material	Shape	Provenance	Date*
12	#134	II.8 56	Sealing: soft stone	Cushion	Knossos	MMI–IIA[10]
13	#136	V.S1B 325	Sealing: soft stone	Cushion	Samothrace	MM II–III
14	#135	V.S1B 326	Sealing: soft stone	Cushion	Samothrace	MM II–III
15	#137	V.S1B 327	Sealing: soft stone	Cushion	Samothrace	MM II–III
16	#137*bis*(?)	V.S3 343[11]	Sealing: soft stone	Cushion	Samothrace	MM II–III

(* Dates mostly based on material and style)

4.3 The Cushion Seals

Cushion seals first appear in the Protopalatial period; none are securely dated earlier than MM II. A little less than half are made of soft stones (93), 110 of hard stones; the latter, of course, will have been engraved after the introduction of the horizontal bow lathe (MM II), which allowed Minoan artisans to carve hard stones for the first time.[12] Three cushions engraved with Hieroglyphic signs are of hard stone (Figure 4.4); one of them, from the sanctuary of Juktas,[13] is fragmentary, but two Hieroglyphic symbols may be identified on two different sides: 'trowel' 𓐁 (CH 044) and 'ear of barley(?)' 𓐂 (Evans No. 95).[14]

A fourth seal (Figure 4.5), though quite irregular in shape, from a plot at the modern village of Knossos, Bougada Metochi,[15] is made of burnt steatite (incised on the soft stone that was then heated until transformed into artificial enstatite, with a hardness of 5–6 on the Mohs scale). Not only is the choice of seal shape extremely unusual for Hieroglyphic seals, but their signs and/or group of signs are *also* unusual: three seals belong to an exceptional sub-group, the so-called 'matrix' seals (Table 4.2, 1–3; see Fig. 4.4C), a group of seals that displays symbols or signs which,

[10] MM IIA probable, but an earlier date cannot be excluded (Dionisio, Jasink and Weingarten 2014: S-1, 103 and n. 3).

[11] The diamond-shaped sign preceding CH 019 read as CH 042 by M. Del Freo (2008: 201), who assigned to the sealing the *CHIC #137bis*(?) number; reading accepted by Jasink 2009: 109–10 and n. 305, 195.

[12] Dionisio, Jasink and Weingarten 2014: 12–35.

[13] Karetsou and Jasink 2015.

[14] Recognising an 'ear of barley' 𓐂 – instead of a variant of the 'parallel branches' CH 068 𓏏 – on two seals, #225α and # 272γ, already proposed by Jasink 2009: 100–1.

[15] See n. 9.

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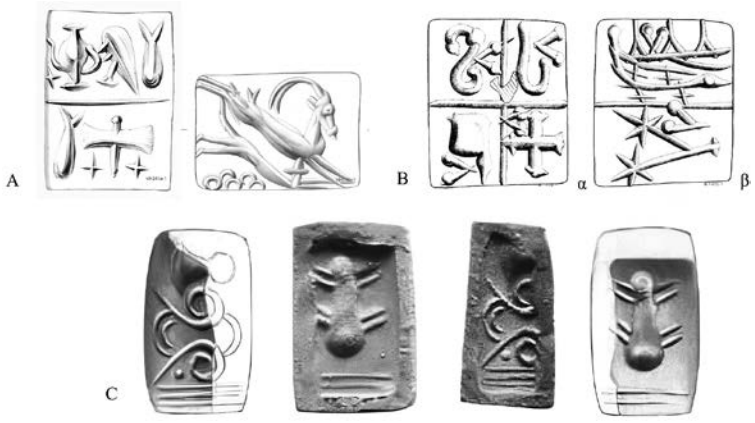


Figure 4.4 Three Hieroglyphic cushions: (A) *CMS* VII, 35 = *CHIC* #205, (B) *CMS* III, 149 = *CHIC* #206), (C) HM 2570 (courtesy of A. Karetsou)

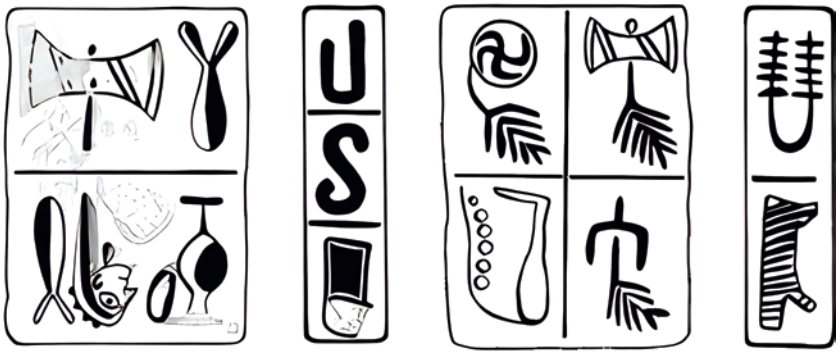


Figure 4.5 KN S (4/4) 01, modified from Kanta–Palaima–Perna 2023: figs. 8c, 24c, 25c, 32c; courtesy of A. Kanta

although on the same seal face, are not necessarily linked: rather, the seal face is split into different panels either by division lines [|] or it is 'stepped' so that the symbols/signs are on different levels which would allow them to be stamped separately. The role of 'matrix' seals in Minoan administration seems beyond doubt.

4.4 Matrix Seals and Matrix Symbols

Three Hieroglyphic cushions are defined as matrix seals[16] two of which display the 'Archanes formula' (nos 1, 3). Another two matrix seals (nos 4, 5) are 4-sided, stepped prisms, one of which (no. 4) also bears this formula. A few Hieroglyphic symbols are

[16] Jasink 2005; 2009: 147–58; 2011.

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so often repeated on matrix seals that we may consider them, at least partly, as 'matrix symbols': 𐄁 | 𐄂 | 𐄀 | 𐄃 | 𐄇 | 𐄈 | 𐄉.[17] While some of these symbols are also attested on regular Hieroglyphic seals – where they might have a syllabic, logographic or perhaps fractional value – they seem to have a particular meaning on matrix seals, possibly not unlike that of the 'Archanes formula'. Matrix seals apparently represent an important process within palatial bureaucracy, whether identifying specific sectors of administration, or linked to specific commodities. Two symbols, in particular, 𐄂 and 𐄈, are, respectively, very similar to the Linear B ideograms for AES and AROM, while they don't occur on other Hieroglyphic seals! As to CH **181* 𐄉, attested in the Bougada Metochi matrix seal (KN S (4/4) 01), it has been recognised in *CHIC* as a script-sign only on the Lastros seal (see below), but its occurrence also in Linear A documents reveals its relevance in Minoan administration.

A further symbol, CH 044 𓌹 (conventionally called 'trowel'), is not present on the matrix seals, but is attested on the cushion seal from the sanctuary of Juktas and so could be added to the matrix symbols.[18] It is one of the most commonly attested Hieroglyphic signs, in most cases presumably having a syllabographic value. It is part of the two most common Hieroglyphic formulae on seals ('trowel-arrow' 𓌹𐄁 and 'trowel-eye' 𓌹𐄇).[19] It may not be chance that this sign occurs also on

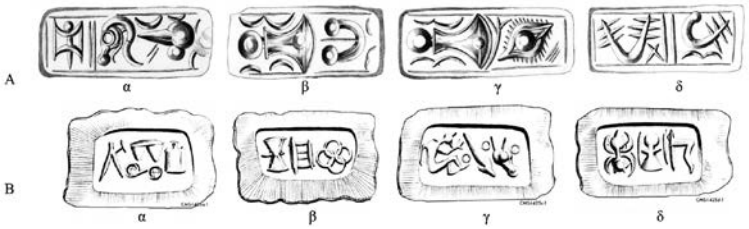


Figure 4.6 Two examples of 4-sided prisms with faces displaying 'strange' modes of partition: (A) jasper prism from Lastros (*CMS* IV, 136 = *CHIC* #305); (B) carnelian prism from Sitia (*CMS* I, 425 = *CHIC* #310)

[17] For a fuller analysis of these symbols, with the exclusion of 𐄉, see Jasink 2009, especially 147–53. As to the symbol on the lower box of face δ of the Bougada Metochi seal, according to Kanta, Palaima and Perna 2023, it resembles logogram CH **164* / **165* 𐄀 / 𐄁, attested only on the bar *CHIC* #48.

[18] A new interpretation of CH 044 𓌹 – not as 'trowel' but itself representing a *Petschaft* seal – opens new ways of looking at this symbol (Ferrara and Cristiani 2016).

[19] On the so-called 'formulae', several of which have been partly deconstructed, perhaps to be read as logograms, see Ferrara and Weingarten 2022; for a more general discussion, Jasink 2009: 186–8; Civitillo 2021b and, this volume, Chapter 5.

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seals either as a solitary symbol or divided from other symbols by various visual devices.[20] For example, on some hard-stone, 4-sided prisms (Figure 4.6):

1 *CHIC* #305 (*CMS* IV, 136, jasper, 'Lastros'). Figure 4.6A. The formulae trowel-arrow and trowel-eye appear on two separate faces. While trowel-arrow, though surrounded by decoration symbols, are not divided one from the other, trowel-eye are divided by a complex symbol very like CH 031 , probably simply intended to mark a division. On the two other faces, division is at least strongly implied by two bars.[21] Intriguingly, the same two symbols on face δ, CH **180* and CH **181* (the latter a matrix sign), occur together again on the Linear A inscription on the ivory circle, KN Zg 58, from the Cult Centre of Knossos.[22]
2 *CHIC* #310 (*CMS* I, 425, carnelian, Sitia). Figure 4.6B. On face γ, the trowel is separated by division lines from the signs on either side: | |.[23]
3 *CHIC* #309 (M-P 75/3, jasper, Myrtos-Pyrgos).[24] The first face of this seal seems to divide the 'trowel' from the 'eye' by the insertion of a full-bodied cat sign: .[25] A second face apparently divides both the initial 'double-axe' sign, CH 042 , and the final 'textile' sign, CH 041 , from the two-signs intermediate sequence – the 'ship' CH 040 and the 'vessel' CH 053 – by sharp division lines.
4 *CHIC* #298 (*CMS* XI, 14, carnelian). The fourth face presents the trowel flanked by eye and arrow in the sequence: ||||, with the trowel separated from eye and arrow by double division lines. In this case, the seal potentially could impress two different 'formulae' by combining either the eye or arrow together with the central 'trowel'.
5 *CHIC* #283 (*CMS* VI, 100, jasper, Candia district). The first face bears both formulae, divided by a central 'double bar': ||.

These examples highlight how Hieroglyphic scribes could divide the seal face in order to manipulate special symbols, either as entities on their own (icons, ideograms?) or as phonetic script-signs.

[20] Jasink 2009: 127–8; 155–7.
[21] While on face δ *CHIC* considers the two bars as a dividing symbol, on face α the 'double' bar is numbered as CH 66 ‖, becoming part of a four-sign word.
[22] For a full discussion on both symbols, see Kanta, Palaima and Perna 2023; Kanta *et al*., *forthcoming*.
[23] The first symbol, the 'spider' , listed in *SM* I as *SM* 85, was eliminated as a Hieroglyphic sign in *CHIC*; restored in Jasink 2009. The remaining sides have normal Hieroglyphic signs but each with the addition of a full-size symbol not usually identified as a script-sign: a 'seated man' , 'four intersecting circles' and a closed S-spiral with crosses in its circles.
[24] This seal is discussed in detail in Ferrara, Weingarten and Cadogan 2016.
[25] Restoring the 'cat' and 'cat-mask' to Hieroglyphic script, see Civitillo 2021b.

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Table 4.2 *Matrix seals*

	CHIC	*CMS*	Shape	Material	Symbols	Provenance
1	#205	VII no. 35	Cushion	Agate	α. Archanes *formula* (*two squares*) b. Ibex attacked by a dog	Unknown
2	#206	III no. 149	Cushion	Agate	α. 𐄀 |𐄁|𐄂 |𐄃 | (*four squares*) β. 𐄇 |𐄈	Malia?
3			Irregular cushion: with 4 unequal engraved sides	Burnt steatite	α. Archanes *formula* (*two squares*) β. 𐄃 | 𐄀 | 𐄁| (*three squares*) γ. four symbols[26] (*four squares*) δ. 𐄉 | 𐄊 (*two squares*)	Bougada Metochi
4	#292	II.2 no. 217	4-sided stepped prism	Marble	α. part of Archanes *formula* (*stepped face*) β. 𐄀 |𐄂 (*flat face, two squares*) γ. part of Archanes *formula* (*stepped face*) δ. 𐄁 | 𐄃 (*flat face, two squares*)	Gouves
5	#291	II.2 no. 315	4-sided stepped prism	Black steatite	a. lizard (*stepped face*) β. 𐄌 | 𐄁 (*flat face, two squares*) γ. 𐄇 | 𐄂 (*stepped face, two squares*) δ. 𐄃 | 𐄀 (*flat face, two squares*)	Unknown

4.5 Extended Implications of the Hieroglyphic Script

In this section, we discuss two inscribed seals, each of a unique shape: the first is a veined agate (sardonyx), 8-sided prism; the second, of white steatite, is the longest 4-sided prism found to date (an exceptional 3.95 cm). Both seals might best be interpreted not as sphragistic tools to be used within palatial administration but as status-symbols to be worn as luxury ornaments (longitudinally pierced pendants) intended to display social distinction and perhaps also emblems of a different kind of authority. The message of their 'inscriptions', comprising single signs and sign groups (whether it was possible to read them or not), may have been to add prestige to the objects and, thus, to their owners. Both seals have been systematically analysed elsewhere.[27] Consequently, we concentrate here on how the Hieroglyphic signs and symbols – and the

[26] For a likely interpretation, see Kanta, Palaima and Perna 2023. [27] Jasink *forthcoming*.

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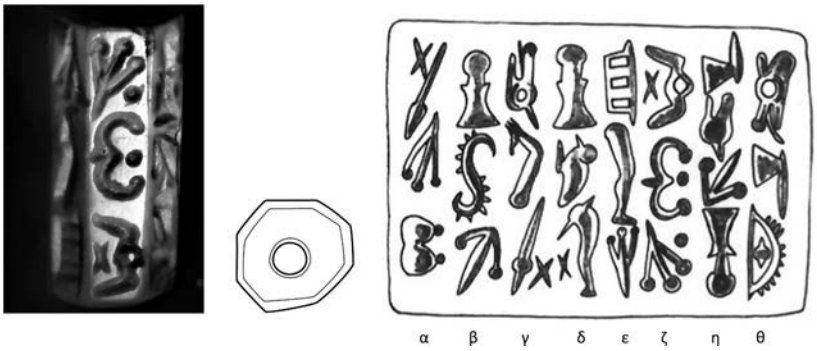


Figure 4.7 Neapolis agate 8-sided seal (*CHIC* #314). Images (left) courtesy of *CMS* Heidelberg

extravagant prismatic shapes – worked together to enhance the value of the object in the eyes of people who saw them.

CHIC #314 = *CMS* VI, 102 (Figure 4.7) presents eight faces completely carved with Hieroglyphic signs, although not all are accepted as such by *CHIC*.[28] Rather, we propose[29] to include both 'spiral' 𓎛 (on face β)[30] and 'duck/seated bird' 𓅱 (on face δ) as Hieroglyphic signs. On the other hand, the symbol 𓁹 (on face θ), taken by *CHIC* as a variant of the eye 𓁹 (CH 005), possibly represents a different symbol, simply not [yet] attested elsewhere in our scanty documentation. Similarly, the 'animal's head' on faces γ, η and θ (all identified as CH 018 𓃒 in *CHIC*) may be better taken as two different signs: CH 018 𓃒, on faces γ and θ[31]– 'wolf's head with protruding tongue' (Evans, *SM* No. 73); and CH 014 𓃰 or CH 017 𓃟, on face η – 'ass' or 'calf's head' (Evans, *SM* No. 68 and No. 64).[32] The engraver of this prism also repeats certain sequences of signs found elsewhere on Hieroglyphic texts, especially the so-called formulae. However, sequences of such formulae are never joined together in this manner on any other Hieroglyphic seal; that is to say, there is no evidence of any logical reciprocal sense to bring them together to make a more ample phrase.

[28] Two symbols do not belong to Hieroglyphic signs recognised in *CHIC*: one is a simple dot carved two times on face ζ, next to H 031 𓌙 and inside H 092 𓍿; the other, an ***x*** symbol, repeated four times (on faces α, γ, δ, ζ), usually is considered a *stiktogram* (*CHIC*: 445). Possibly both symbols represent simple filling patterns on this seal. However, we don't exclude a meaningful role for the ***x*** symbol as indicating the reading direction of a sign group. Sometimes, it might distinguish what is iconic from what is writing *stricto sensu*, to underline (as it were) that the symbol is not a picture, but a sign.

[29] Jasink 2009: 4–12, 50.

[30] The spiral is adorned with small linear decorative appendices also in other seals, and analogous appendices may be observed also for other symbols, which likewise have not been considered as script-signs (for example, on *CHIC* #300). For a discussion, see Jasink *forthcoming*: n. 4.

[31] We are dealing with the same symbol, now reversed.

[32] For a discussion on this (or these) 'animal's head', see Jasink 2009: 102–4.

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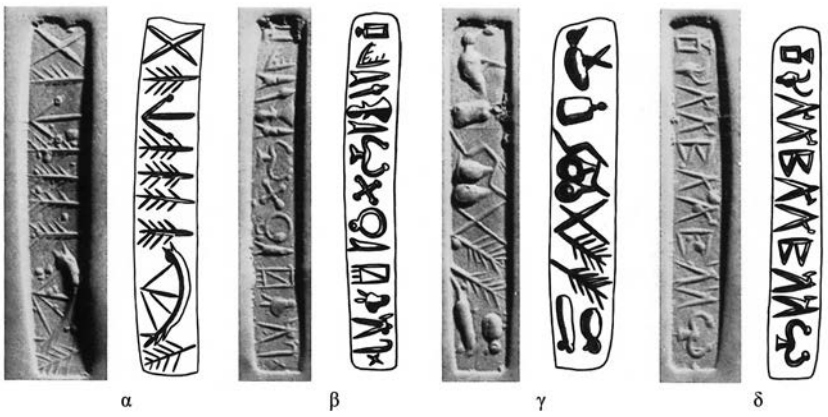


Figure 4.8 4-sided prism NAM Π 8915 (*CHIC* #294)

The four faces of the prism *CHIC* #294 (Figure 4.8) are divided into two slightly wider faces (α and γ) and two slightly narrower faces (β and δ).[33] This differentiation is not haphazard since all symbols on faces β and δ are evidently script-like, while those on α and γ apparently mix script-signs and decorative symbols, the latter quite possibly part of the 'message' but surely not meant to be read. This fourfold repetition of a single symbol on face α – hypothetically identified with the 'tree' CH 025 – may not be meaningless; nor need be the three larger symbols: 'cross' (similar to the stiktogram 'cross' X), 'ship' CH 40 and 'arrow' CH 49 . Could they be explained as ingenious devices to identify the seal's owner in a kind of code or even as a rebus? Arthur Evans certainly thought along these lines: 'the ship and trees seem to point to oversea traffic in timber',[34] a rather more literal interpretation than any we are inclined to. Yet, one could easily imagine such an extravagant elongated prism being made for someone like an ambitious merchant, not involved with a palace, but who wanted a striking pendant seal as a personal mark of his importance.[35] This seems to be the simplest interpretation of faces α and δ. At this point, we would stress how the engraver uses different semantic schemes to produce eye-catching patterns: the composition of face α relies on the visual sequences of 'tree-signs' (of which four in a row obviate any reading); on face δ, anyone who views the seal closely must notice that the series of signs are repeated two by two, whether or not they have any real meaning.

[33] Civitillo 2023b discusses this prism, with a review of previous interpretations, and proposes a new hypothesis.

[34] *SM* I 154, P. 26. [35] Jasink, *forthcoming*: §3.1.

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In conclusion, although so different in material, shape and engraved symbols, the two seals might express the similar patron–artisan relationship whereby the seal's owner commissioned an object to be 'seen' and admired rather than 'read' yet boasting some of the most frequently recurring sign groups and formulae of the Hieroglyphic script. Such extension of the Hieroglyphic script reveals ideological implications beyond the palatial élite and bureaucracy and implies possible relevance for persons outside those circles in Protopalatial society.

4.6 Archanes, Cretan Hieroglyphic and Linear A

The essential contemporaneity of the earliest surviving documents in Cretan Hieroglyphic and Linear A seems extremely probable, as attested for Hieroglyphic on seals and Linear A on administrative and cult documents. On current evidence, the earlier 'Archanes script' represents an archetype for both scripts (Godart, Valério, Flouda, this volume)[36] albeit perhaps scripts created for different purposes. On an island with varying regional traditions, their close connection through the 'Archanes script' may represent the only certain fact.[37]

Between the latest Prepalatial period, when seals were engraved with the 'Archanes script', and MM II, when two distinct writing systems flourished, it appears possible, even likely, that they manifest two distinct approaches to the purpose of writing. On the one hand, the signs of the 'Archanes formula' and the iconic symbols on the 'Archanes Group' seals come together − with some slight variations − in the Cretan Hieroglyphic script. As with the earlier formula itself, signs passed from a purely visual value to a phonetic one even while maintaining an iconic appearance. The resulting words seem to relate to the subjects rather than the objects of the recorded activities; that is, identifying those who operated (or their locations), and not the *chaîne opératoire* of production and distribution in an economic-administrative system.

[36] There is no scholarly consensus on which script came first nor on a possible direct derivation of one of the two scripts from the 'Archanes script' nor whether it is itself Hieroglyphic or Linear A. However, the most recent study concludes that it is unlikely to be a prequel to Linear A religious sequences but rather a manifestation of the iconic glyptic practices of the Hieroglyphic tradition: Ferrara, Montecchi and Valério 2021b (also argued by Flouda 2015b: 65, as a 'formative phase of Cretan Hieroglyphics').

[37] For a clarification of the problem, see Karnava 2016a: 81–2; Perna 2016: 103–6; Anastasiadou 2016a; Decorte 2018a. On some seals, possible overlapping of 'Archanes script' and Minoan Hieroglyphics, cf. Jasink 2011.

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Precisely such a focus on economic-administrative matters is, however, seen on the earliest Linear A documents, mainly economic records incised on clay tablets. Unlike Cretan Hieroglyphic, Linear A administration did not require inscribed seals, but rather created seals with high-quality geometric and pictorial images from a rich iconographical repertory. Nonetheless, the 'Archanes formula' sequence of signs survived in Linear A, with the signs assimilated to the more evolved Linear A forms. The formula still maintained a sacral meaning, as can be deduced by the many inscriptions found on libation tables, among the rare surviving non-administrative Linear A documents.

4.7 Sealings and Hieroglyphic Sealed Documents

Sealings stamped by Hieroglyphic seals testify to the use of these seals within administrative systems at Malia (MM IIB), Knossos (MM IIB or IIIA?)[38] and Petras (MM IIB; very fragmentary). With the exception of seals engraved with the so-called two/three-sign 'formulae',[39] there are very few repetitions of 'words' between seals and clay documents.[40] It is also striking that the most common formula, 'trowel-arrow' 044-049, found sixty-one times on seals/sealings, appears just eleven times on clay documents, while no other sphragistic formula appears more than three times on clay documents.[41] This very limited overlap makes it likely that the two/three-sign formulae, whatever they meant in practice, were predominantly the concern of seal-users and not scribes, although the latter were not entirely excluded (see Civitillo, this volume).

When comparing the use of seals and sealing-types from Malia, *Quartier Mu* and *Bâtiment A* (nineteen seals stamped on twenty-three sealings), with those from the Knossos Hieroglyphic Deposit (fifty-four seals on thirty-nine sealings), we note some significant differences.[42]

1 At Malia, there were five direct object sealings, including at least one peg and one pommel – types very well-known from MM IIB Phaistos but not found in the Knossos Hieroglyphic Deposit.

[38] MM IIB, thus late Protopalatial, or MM IIIA, early Neopalatial? New evidence based on the sealings found in Samothrace (Matsas 2009) may decisively tilt the debate on the date of the Knossos Hieroglyphic Deposit.

[39] Partially deconstructed in Ferrara, Weingarten and Cadogan 2016; Ferrara and Cristiani 2016; Ferrara and Weingarten 2022.

[40] Jasink 2002. [41] Civitillo 2016a: 100–8, Table IV.

[42] Weingarten 1995: Figs. 1.1–2, 4.1–4. For the latest review of the shapes of sealed documents, see Karnava 2000: 113–35 and 2016: 68–78.

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Figure 4.9 Two examples of *noduli* from Malia, *Quartier Mu* (Mu V 5 and IV 13 respectively). (A) *CMS* II.6, 180 = *CHIC* #126; (B) *CMS* II.6, 179 = *CHIC* #131. Images courtesy of *CMS* Heidelberg

2 At Malia, more than half of the 'sealings' (thirteen of twenty-three) were in fact noduli (Figure 4.9),[43] not sealings at all, but rather a seal-impressed mini-document; cf. just two *noduli* found at contemporary Knossos.
3 Multiple stamping[44] was very rare at Malia, with just one example (Figure 4.10), a single crescent stamped by *CMS* II.6, 195 + 184; however, each seal also appeared alone on crescents: *CMS* II.6, 184 (from a Hieroglyphic 4-sided prism [*CHIC* #172], thrice; *CMS* II.6, 195 (from a figurative soft-stone seal), once. Since these are the *only* crescents found in *Bâtiment A*, we may postulate a connection between crescents and the Multiple Sealing System, at least on this site. Multiple stamping is far more common at Knossos, where twelve of the twenty-nine crescents were stamped by two different seals. Furthermore, twenty-three crescents bore added Hieroglyphic signs ranging from a single logogram to three-, four- and five-sign 'words'; there were no added signs on the Malia sealings.
4 Seven sealings at Knossos (but none at Malia) were of the new flat-based type that sealed leather/parchment documents, a type that will become common in later deposits.[45] Two of them are remarkable:
   a HM 132 is stamped by at least five different seals: a Hieroglyphic 4-sided prism (*CHIC* #157), a 4-sided prism depicting a 'bird-headed' woman and two of the three ring impressions in the Deposit, an oval ring depicting a naturalistic animal-hunt,[46] and a circular ring with geometric design,[47] plus one or two illegible impressions.

[43] In *Quartier Mu* but outside *Bâtiment A*, two more noduli: *CHIC* #126 / *CMS* II.6 180, #131 / *CMS* II.6 179.
[44] Weingarten 1992.
[45] After Weingarten 1995, two more document sealings have been identified at Knossos: *CMS* II.8, 98, 106, both cushion seals with simple geometric motifs.
[46] Becker 2018: A-31. [47] Becker 2018: A-5.

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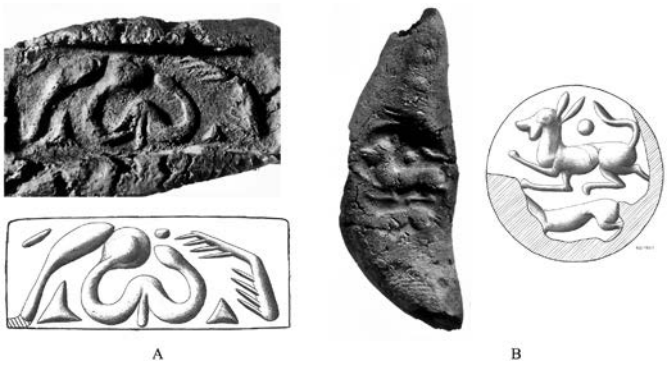


Figure 4.10 Sole example of 'multiple stamping' on crescents at Malia: (A) crescent stamped by a Hieroglyphic prism (*CMS* II.6, 184 = *CHIC* #172) and (B) a figurative seal (*CMS* II.6, 193). Images courtesy of *CMS* Heidelberg

b HM 180 is stamped by three different seals: the so-called 'Prince' (*CMS* II.8, 41); an 'Egyptian-eyed' male head (*CMS* II.8, 42); and an architectonic design impressed by an oval metal/stone ring.[48]

When we next view administrative sealings at Knossos in the Temple Repositories, inscribed seals have vanished, scribes are writing in Linear A and officials are stamping semiliterate roundels. The only trace of the Hieroglyphic system will be the enduring habit of multiple stamping which continued at the Temple Repositories and down (at least at Zakro) into LM IB.

4.8 From the Multi-Faced Seal to the Clay Documents Typical of the Hieroglyphic Script: Bars, Lames ('Blade-Shaped') and Medallions

The document shapes used by Hieroglyphic and Linear A scribes are generally quite different. Hieroglyphic bars and lames appear to have been moulded with local seal-forms in mind, apparently modelled after 2-sided and prismatic seals. Linear A tablets, on the other hand, are shaped more like their contemporary Near-Eastern documents; possibly, along with the tablet shapes, scribes borrowed formatting and concepts of palatial administration as well. Jean-Pierre Olivier[49] recognised

[48] Becker 2018: A-8. [49] Olivier 1994–1995: 266–7.

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that the Hieroglyphic administration dealt with very large numbers in recording transactions: probably 'big numbers represent the totals of something(s) which were already added and registered on different documents'.[50] One is tempted to connect this insight with the 'new' MM II flat-based 'document sealings', which first appear in the Knossos Hieroglyphic Deposit, indicating administrative records kept on leather/parchments. Those who sealed these new documents had a penchant for using more naturalistic seals as well as rings, perhaps indicating their higher rank, although Hieroglyphic prisms (Figure 4.11) were not excluded (*CMS* II.8, 79 = *CHIC* #164, *CMS* II.82, 82 = *CHIC* #157).[51] Document sealings would soon be appropriated by Linear A scribes and will be found in all later sealing archives. Knossos scribes were particularly enthusiastic: in the MM IIIB Temple Repositories, along with one Linear A tablet and six roundels, were twenty-seven document sealings (38.5% of seventy nodules).[52]

No Hieroglyphic seals were used in the Temple Repositories, though a few remnants do look back to that earlier time.[53] Rather it is the

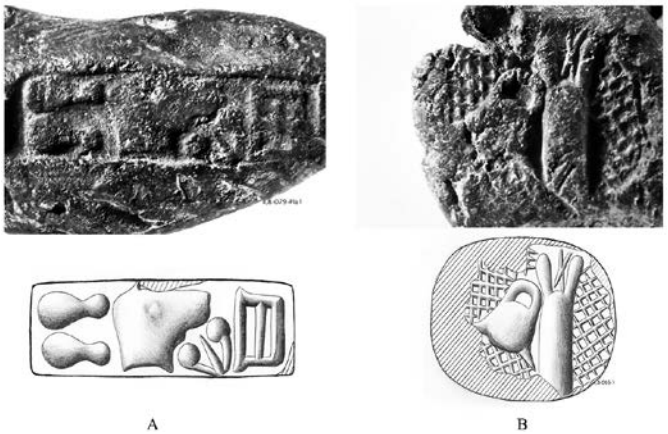


Figure 4.11 Knossos Hieroglyphic Deposit: A. *CMS* II.8, 79 = *CHIC* #164 + B. *CMS* II.8, 66 = *CHIC* #176. Note: *CMS* II.8, 79 (*CHIC* #164) (A) is also stamped alone on the flat-based 'document sealing' HMs 195. Images courtesy of *CMS* Heidelberg

[50] Karnava 2000: 153.

[51] *CMS* II.8, 79 = *CHIC* #164, a hard-stone, 4-sided prism, stamped a crescent together with *CMS* II.8, 66 = *CHIC* #176, a Hieroglyphic 3-sided prism; *CMS* II.8, 79, alone, also stamped a 'new' flat-based document sealing, which underlines the unity of the Hieroglyphic deposit (Poursat 1990a).

[52] Weingarten 1989: 42, and table 3.

[53] Three 'Archaic' seals probably originated as single Hieroglyphic signs (CH 116, 94, 107); no less likely is *CMS* II.8, 38, a dog-head with protruding tongue, the Hieroglyph CH 018, with a cross stiktogram in the field to prove it.

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Multiple Sealing System that links the Hieroglyphic Deposit, where 46% are multiply stamped, to the Temple Repositories (47%), and possibly, too, the burst of fifteen high-quality metal rings in sphragistic use there, a development presaged in the Hieroglyphic Deposit.

4.9 The Difference Between Hieroglyphic and Linear A Administrative Documents

Hieroglyphic and Linear A administrative documents were composed at much the same time and in apparently analogous administrative contexts, the former at Knossos, Malia and in eastern Crete, the latter at Phaistos. Documents in both scripts were present at MM III(B?) Malia, and possibly at Knossos (MM IIA, SW House: *CHIC* #49), while one or two roundels – a mini-document otherwise associated with Linear A – were found at MM IIB Petras.[54]

The simultaneous existence of two scripts on the island and their possible simultaneous use at three sites is puzzling. One possible explanation, not so far explored, is that the scripts were created for different purposes. There can be little doubt that Linear A was designed specifically to record precise economic information on transactions of inbound or outbound commodities to and from palatial storehouses or workshops, as well as the people directly responsible for those operations. The oldest tablets from Phaistos (MM II) can already be interpreted in this sense. Olivier (1986), noting that Hieroglyphic administrative documents often referred to very large numbers, proposed that they concerned the entire state apparatus, while the much lower numbers on Linear A documents indicated accounts kept by a single building or department. Possibly the differences in numerical entries or even the numerous 'administrative' documents in Cretan Hieroglyphic that lack numbers entirely might not only have measured different things but reflected different ideological concepts that underlay the creation and use of the two scripts. If, as we believe, the Hieroglyphic script was born on seals, having from the start a religious bent and only later expanding into general administrative purposes, those purposes were probably not related to individual storehouses or workshops but to larger complexes (e.g. palace and temple). Such a genesis might also hint at an inherent weakness in Hieroglyphic

[54] Malia 'Hieroglyphic Deposit' has remnants of deposits mixed in a dump (Pelon *et al.* 1986: 701–3). Uncertain if the very fragmentary KN 49 (tablet or 2-sided bar or label?) is indeed written in Linear A (Schoep 2007: 131–4).

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data recording, perhaps a reason why the script began to disappear in MM IIIA when Knossos was becoming the pre-eminent palace on Crete. The more efficient Linear A recording system was adopted in its place, spreading throughout the island, to further the bureaucratic and economic needs of palaces and villas. As the use of Cretan Hieroglyphic declined, its prestige inexorably faded and inscribed seals lost their privileged place. High-ranking seal-users chose semi-precious stones and metal rings engraved with subjects more in keeping with images that were soon to appear on palace walls.

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