VOLUME II

HIEROGLYPHS

STUDIES IN ANCIENT HIEROGLYPHIC WRITING

Hieroglyphs 2 (2024)

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In this second issue of *Hieroglyphs*, we continue our exploration of graphic practices and linguistic ideologies in hieroglyphic writing systems in Egypt and beyond. This volume features an in-depth analysis of Maya glyphs that appear to intrude into the domain of picture, highlighting the rich tensions and interplay between text and image in the Maya world. It also includes a close study of gender markers in pre-Old Egyptian private stelae and an examination of digital approaches to the Sethian classifier in the Coffin Texts. The volume concludes with the second part of a study of hieroglyphs in the Renaissance, followed by a comparative analysis of functional parallels and divergences in sign usage between ancient Chinese and Egyptian hieroglyphic scripts.

Variation and idiosyncrasy are defining characteristics of hieroglyphic writing systems, extending far beyond the general paleographic variation seen in non-hieroglyphic scripts. The high degree of iconicity in hieroglyphs provides fertile ground for creative innovations—some of which may be repeated, while others remain unique. "*This* sign" and "*My* sign" mattered—crafted in a particular manner, at a specific time and place, they showcased a scribe or painter's wit, virtuosity, and engagement with the surrounding texts and broader pictorial context.

With this second volume, we are pleased to introduce a new section of the journal: *Hieroglyphs-Extraordinary*. Hieroglyphic peculiarities appear across monuments, in museums, and within both historical and modern publications. This new section serves as a platform for sharing and disseminating these endlessly captivating individual variations. The primary aim of *Hieroglyphs-Extraordinary* (edited by Niv Allon) is to document significant instances of variation—both in form and in aesthetic investment. Additionally, hieroglyphs that remain incompletely understood, whether in their form or function, can provide valuable contributions to this section.

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Digitizing Seth
Digital Approaches to Sethian Classification in the *Coffin Texts*[1]

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Abstract. To illustrate the benefits of digital research on hieroglyphs in Egyptology, this article presents the results of a case study into the use of the hieroglyphs of Seth and the Sethian animal as classifiers in the corpus of the *Coffin Texts*. This study covers two different approaches. One approach uses the research platform *iClassifier* to study the classifier strategies applied by the scribes of the *Coffin Texts* for lemmata that can take Sethian classification. Secondly, the animal depicted with the lemma *sr* (to foretell) in the *Coffin Texts* is discussed using a *t*-SNE layout based on image similarity.

Keywords. Classifier, coffin texts, digital humanities, hieratogram, mortuary texts, Seth, giraffe, cat.

The Ancient Egyptian god Seth is well-known during the Pharaonic period and beyond.[2] Besides his presence in religion, Seth has a presence in the Hieroglyphic script as well. Seth and his animal represent an interesting case, especially in their use as classifiers in the Ancient Egyptian scripts. In textual material, Sethian classifiers—Seth in the form of an anthropomorphic body with the head of the Seth animal  (C7) or Seth as an animal  (E20),  (E21)—take on a wider collection of semantic domains in their metaphoric use than most other divinities in Ancient Egypt did.[3] Many of these are related to negative things like [ILLNESS] and [PAIN], but there is a clear association with [NOISE] as well, which is most clearly visible in his connection with [THUNDER] and [DISTURBANCE].

1 This article is supported by the Israel Academy of Sciences and Humanities & Council for Higher Education Excellence Fellowship Program for International Postdoctoral Researchers. I would like to thank Orly Goldwasser, Haleli Harel, Matthijs Wibier, Dina Serova, Julianna Paksi, Christian Casey and the anonymous reviewers for their aid and suggestions in writing this article.

2 See te Velde 1977; Castillos 2021.

3 Goldwasser 1995: 99–103; Goldwasser 2005: 108–109.

This association with [noise], [thunder] and [disturbance] is due to the same common base, namely the opposite of order or chaos.[4]

Although the study of Sethian classification in Ancient Egypt has been ongoing,[5] the development of digital tools is creating new opportunities in Egyptology. To illustrate the benefits of digital tools, this article will discuss Sethian classification in the *Coffin Texts* as published by de Buck and Allen (*CT* I–VIII) as a framework.

1. Lemmata that can take Sethian classifiers

Throughout the Pharaonic period, Sethian classifiers show up in a limited set of lemmata. These lemmata reflect the semantic domains in which a Sethian classifier can be used. This list of lemmata was originally proposed by te Velde to contain 24 lemmata.[6] Later, this list was expanded by McDonald to a list of 38 lemmata.[7] Some additional changes and additions to this list that can have Sethian classification have been made for this article. For example, the lemma *nšn* (storm) was returned to the form proposed by te Velde as *nšnỉ* (to rage), representing the root of the lemma and its derivates.[8] The verb *ḫnn* (to trouble, to decay, to disturb) was taken as the root of *ḫnn.w* (disturbance, tumult). Besides *nbw.tï* (the Ombite [Seth]), the similar lemma *ỉm.ï-nbw.t* (the one who is in Ombos [Seth]) was added. This resulted in the following list of 39 lemmata:[9]

Lemma	**Translation**	**Date of Sethian classification**[10]
ꜣkr	earth god (Aker)	MK
ỉnḏ	to be sick, to be sad, to be vexed	FIP
ỉh	pain, sickness, shout	OK
ꜥꜣ	ass, donkey	MK-NK
ꜥš	to call, to summon	NK
bꜥr	Baal (divinity)	NK

4 McDonald 2002b: 220–221.

5 See te Velde 1977; McDonald 2000, 2002a, 2002b, 2007; Allon 2007; Soler 2021 among others.

6 te Velde 1977: 22–23.

7 McDonald 2007: 34–37.

8 Winand & Stella 2013: 36–37.

9 I left out the hapax *išš.ï* (the spewer), see: *išši* (Lemma ID 32110) https://thesaurus-linguae-aegyptiae.de/lemma/32110, edited by Altägyptisches Wörterbuch, in: *Thesaurus Linguae Aegyptiae*, Corpus issue 17, Web app version 2.0.2.1, 8.8.2023, ed. by Tonio Sebastian Richter & Daniel A. Werning on behalf of the Berlin-Brandenburgische Akademie der Wissenschaften and Hans-Werner Fischer-Elfert & Peter Dils on behalf of the Sächsische Akademie der Wissenschaften zu Leipzig (accessed: 8.30.2023), as it is a single attestation in which the  (E20) classifier is damaged (so the reading is in doubt). See Kitchen 1983: 545,4.

10 Based on McDonald 2007: 34–35. Note that this date only refers to the periods in which Sethian hieroglyphs were attested as a classifier with a lemma. The date does not reflect the period when the lemma was in use, which is generally much longer.

pr.yt	crisis	FIP
pḫpḫ	storm, tempest	NK
mn	to be ill, to suffer	FIP-MK
mr	to be ill, to suffer	FIP-MK
nb.wï	the two lords (Horus and Seth)	NK
nbw.tï	the Ombite (Seth)	MK-NK
ỉm.ï-nbw.t	the one who is in Ombos (Seth)	MK-NK
nmʿ	to be biased	MK-NK
nhmhm[11]	to roar	NK
nhs	Nehes (a designation for Seth)	NK
nšnỉ	to rage, to be furious	OK-NK
nqm	to suffer	FIP, NK
nṯr.wï	the two gods (Horus and Seth)	NK
rḫ.wï	the two rivals (Horus and Seth)	NK
rsw.t[12]	awakening, dream	MK
hmhm.t	roar, war-cry	NK
ḥrr.t	Hereret (divinity)	FIP
ḥtr.w	yoked asses	NK
ḫ³.t	disease, illness	FIP
ḫ³ḫ³.tï	storm, tempest	NK
ḫnn	to trouble, to decay, to disturb	MK-NK
swh³	admiration, glory, roar	MK-NK
snm	storm, rain	NK
sr[13]	to announce, to predict, to foretell	MK-NK
srq	snow (loanword)	NK
sh³	to damage, to disturb, to corrupt	MK-NK
sšn	storm	OK
stḫ/stš	Seth	OK-NK
š³[14]	desert dweller (Seth animal)	MK-NK
qrỉ/qrr	storm, storm cloud	MK

11 In te Velde and McDonald listed as *nhnh,* but it is understood to be the same lemma. See: *nhmhm* (Lemma ID 85630) https://thesaurus-linguae-aegyptiae.de/lemma/85630, in: *Thesaurus Linguae Aegyptiae*, Corpus issue 17, Web app version 2.01, 12.15.2022 (accessed: 7.10.2023).

12 Taken as a separate lemma, even though it would go back to the root *rs* (to wake or watch). However, as the use of a Sethian classifier is currently only known from one source, letter to the dead Nag' ed-Deir 3737, it is better not to include the entire root lemma and derivates for a single attestation. Note that the interpretation of the sign used as a classifier of *rsw.t* in this letter to the dead has been discussed in Szpakowska 1999 and McDonald 2002a.

13 For the inclusion of *sr* in this list, traditionally classified with a giraffe 𓃶 (E27), see the discussion in § 3 and McDonald 2007: 36; McDonald 2009: 367–368 among others.

14 Which includes the variant *ỉ³š* which is attested in the Graeco-Roman period in Dendera, classified by a donkey. See *LGG* VII: 3 and Cauville 1997: 102,8, plate 70.

kꜣhs	to be harsh, to be overbearing	MK
khꜣ	to raise (a voice), to utter (a bellow), to roar	NK
khb	to harm, to be violent, to roar	NK

This list represents the lemmata that have been attested to receive a Sethian hieroglyph as a classifier during the Pharaonic period. For most lemmata, the use of a Sethian classifier only occurred in a specific period, even though the lemma itself might be attested before or after that period. For example, in the lemma *ḫꜣ.t* Sethian classification only occurs during the First Intermediate Period,[15] even though the lemma itself is attested without Sethian classifiers beyond that period as well. In the corpus of the *Coffin Texts* as published by de Buck and Allen, only 25 of these 39 lemmata are attested: *ꜣkr, ỉh, ꜥꜣ, ꜥš, mn, mr, nb.wï, nbw.tï, ỉm.ï-nbw.t, nmꜥ, nhmhm, nšnỉ, nqm, nṯr.wï, rḥ.wï, rsw.t, hmhm.t, ḥrr.t, ḫꜣ.t, ḫnn, sr, stḫ/stš, šꜣ, qrỉ/qrr, khꜣ*. Note that this does not mean that all these lemmata are attested with Sethian classifiers in the corpus of the *Coffin Texts*, as is discussed in more detail in § 2.1. In fact, there are only 11 lemmata which are attested with Sethian signs as classifiers in the corpus of the *Coffin Texts*.

Even though the lemmata that do not show Sethian classifiers in the *Coffin Texts* do not provide any additional information about the classification strategy of using Sethian classifiers in the *Coffin Texts*, it is worthwhile to be aware that the strategy of using Sethian classifiers is not all-encompassing in the lemmata. Nor does the use of a Sethian classification strategy represent the primary classification strategy applied to these lemmata in the corpus.

The list of 25 lemmata that could take Sethian classifiers that occur in the *Coffin Texts* shows the underlying semantic domains that could be covered by Seth in the *Coffin Texts* as well. These are [divine], [force], [effort], [anger], [noise], [thunder], [disturbance], [illness], [pain], [dream] and [animal]. This stresses the wider metaphorical use of Sethian hieroglyphs in the Ancient Egyptian language.

In order to study the use of Sethian signs as a classifier, the *Coffin Texts* word index by van der Plas & Borghouts was used.[16] Through this index, the attestations of these lemmata—with and without a Sethian classifier—in the *Coffin Texts* were located in the supports.[17] In total, there were 1981 tokens[18] collected from the available *Coffin Texts* material.[19] Of these 1981 tokens, 193 were

15 For more detail, see McDonald 2007: 34–37.

16 Plas & Borghouts 1998, with additional entries based on Molen 2000.

17 For this article, the word *support* is a reference to an object—a coffin, papyrus, tomb etc.—which carries *Coffin Texts*. However, the word support is not intended to minimize the influence of the materiality on the texts, especially in the presentation of the script. Note that in this article the supports are referred to by the sigla assigned to them by de Buck and Allen, rather than fully following the sigla as updated by Willems 2014: 230–315.

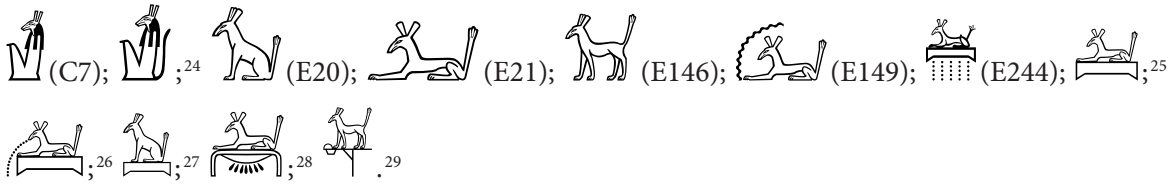
18 In the context of this article, a token refers to a single attestation of a word or hieroglyphic sign.

19 *CT* I–VIII. Note that except for of M1Be, other supports outside these publications were not included, due to limited opportunities for accessing the material.

reconstructions and were ignored for this article. Thus, there were 1788 tokens which were at least partially visible and considered worthwhile for inclusion. Some of these 25 lemmata which could take Sethian classifiers are widely represented in the corpus of the *Coffin Texts*. For example, *sṯḥ/stš* has a total of 726 tokens, and *nšni* has 250 tokens. On the other side is *nqm,* which is attested only once.[20]

2. Sethian classification in the *Coffin Texts* through *iClassifier*

In order to study Sethian classification in the *Coffin Texts*, the digital research platform *iClassifier*[21] was used.[22] In total, there are 71 different classifiers attested over the 1981 tokens in the *Coffin Texts* sources studied in this article, although some of them are grammatical classifiers[23] like 𓏛 (Z2). In the *Coffin Texts*, the following Sethian signs have been attested as classifiers:



(C7); ;[24] (E20); (E21); (E146); (E149); (E244); ;[25] ;[26] ;[27] ;[28] .[29]

20 *CT* IV: 330,c (B1L).

21 *iClassifier* 1.0, a digital research platform © Goldwasser/Harel/Nikolaev. *Conceptualization*—Orly Goldwasser, *Computational realization*—Haleli Harel, *Programming*—Dmitry Nikolaev, *Financing*—Orly Goldwasser. More information on the project can be found at https://www.archaeomind.net/ (accessed 08.06.2023) and in Harel et al. 2023.

22 Besides the discussion below, the results of the study are available on the *iClassifier* reports page. https://www.iclassifier.pw/reports/#!digitizingseth (accessed 10.07.2023).

23 Harel et. al. 2023: 138–139.

24 A unique variant of C7 with a tail. This sign occurs once in the *Coffin Texts*, see *CT* V: 168,c (S1C). See Sign TSL_1_7112 https://thotsignlist.org/mysign? id=7112 (accessed: 31.07.2023), in: *Thot Sign List*, edited by Université de Liège and Berlin-Brandenburgische Akademie der Wissenschaften. Supposedly this sign exists in Helck 1957: 1658,7. When verified with a photo of the original stela—see Petrie 1897: plate X—some traces of a line at the back of the sign can be seen, but based on the quality of the rest on the inscription I highly doubt that is an intentional tail, rather than an artefact of the stone or damage. However, I have not seen the stela in person to verify.

25 A more common variant of E244, with 50 attestations over 31 attestations of E244. Note that there is one erroneous variant that looks like 𓃩 (E21) on 𓊃 (N37), see *CT* VII: 517,c (B5C).

26 A rare variant of E244, with seven attestations.

27 One attestation only, see *CT* II: 340,b (S2C). The status of this as a separate class of E244 can be disputed, as based on the original one could argue the Seth animal is lying down as well. However, this was included as de Buck considered the transcription valid enough to include.

28 A new sign not yet recorded in existing sign-lists, now added, see Sign TSL_1_7113 https://thotsignlist.org/mysign?id=7113 (accessed: 31.07.2023), in: *Thot Sign List*, edited by Université de Liège and Berlin-Brandenburgische Akademie der Wissenschaften.

29 Attested twice in the same support (T2L), once as a classifier of *sṯḥ/stš*: *CT* VII: 46,e, and once as logogram in *sṯḥ/stš*: *CT* VII: 46,f.

There is one additional classifier that can be considered "Sethian," depending on interpretation. This is  (Aa21), which is primarily used for *wḏʿ* (to judge, to separate, to cut).[30] Traditionally, this sign has been taken as a logogram following or replacing the phonetic or logographic spelling of the word 'Seth' in the *Coffin Texts*, translated as 'the one who is judged.'[31] That *stḫ/stš* is replaced by *wḏʿ* can, for example, be seen in *CT* spell 335.[32] Here B1P has  , where most of the other witnesses use *stḫ/stš*, either spelt logographic ( [33] /  [34]) or phonetic ( /).[35] It becomes more problematic when Seth is written as ,[36] which is either *stḫ wḏʿ* (Seth, the one who is judged), as a compound lemma that is classified by (A40), or two separate lemmata where *stḫ* is unclassified. As the other witnesses in the same phrase use either *stḫ/stš* or *wḏʿ*—but not both—it is difficult to say what the original intent of the scribe was. Thus, it is possible that (Aa21) could be taken as a classifier or logogram for Seth in this phrase.[37] For the remainder of this article, any cases of doubt concerning the (Aa21) were treated as logograms, rather than classifiers.

2.1. *iClassifier* network

One of the primary benefits of *iClassifier* is that one can visualize the classifiers and lemmata in a network. In the case of the 25 lemmata of the list above that were attested in the *Coffin Texts*—with or without Sethian classifiers—the following network can be drawn:

30 Sign TSL_1_958 https://thotsignlist.org/mysign? id=958 (accessed: 10.07.2023), in: *Thot Sign List*.

31 "*wḏʿ*" (Lemma ID 52400) https://thesaurus-linguae-aegyptiae.de/lemma/52400, in: *Thesaurus Linguae Aegyptiae*, Corpus issue 17, Web app version 2.01, 12.15.2022 (accessed: 7.5.2023).

32 *CT* IV: 234–235,b.

33 See Sq1C or Sq7C.

34 T2Be.

35 B9C,a; M8C.

36 *CT* II: 394,a (B6C). As suggested by an anonymous reviewer, it might be possible that this variation is due to a combination of two separate vorlage.

37 Note that I currently prefer to stay on the safe side by treating all cases of (Aa21) as *wḏʿ* over *stḫ/stš*, following the tradition set by the translations of Faulkner 1973: 49, note 30, and the *TLA*.

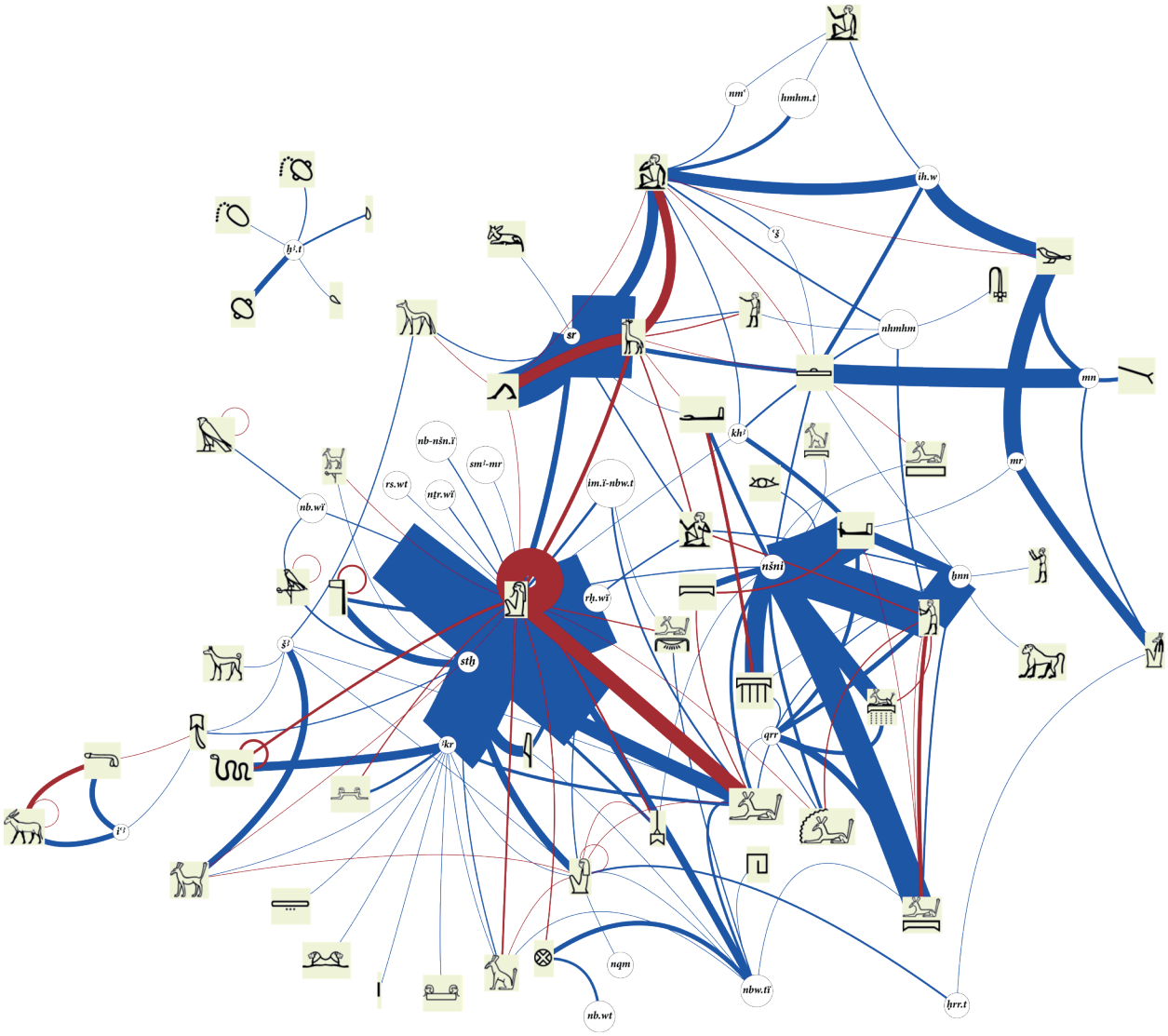


Fig. 1. Classifier network for the 25 lemmata that could take a Sethian classifier attested in the Coffin Texts ©*iClassifier*, Jorke Grotenhuis

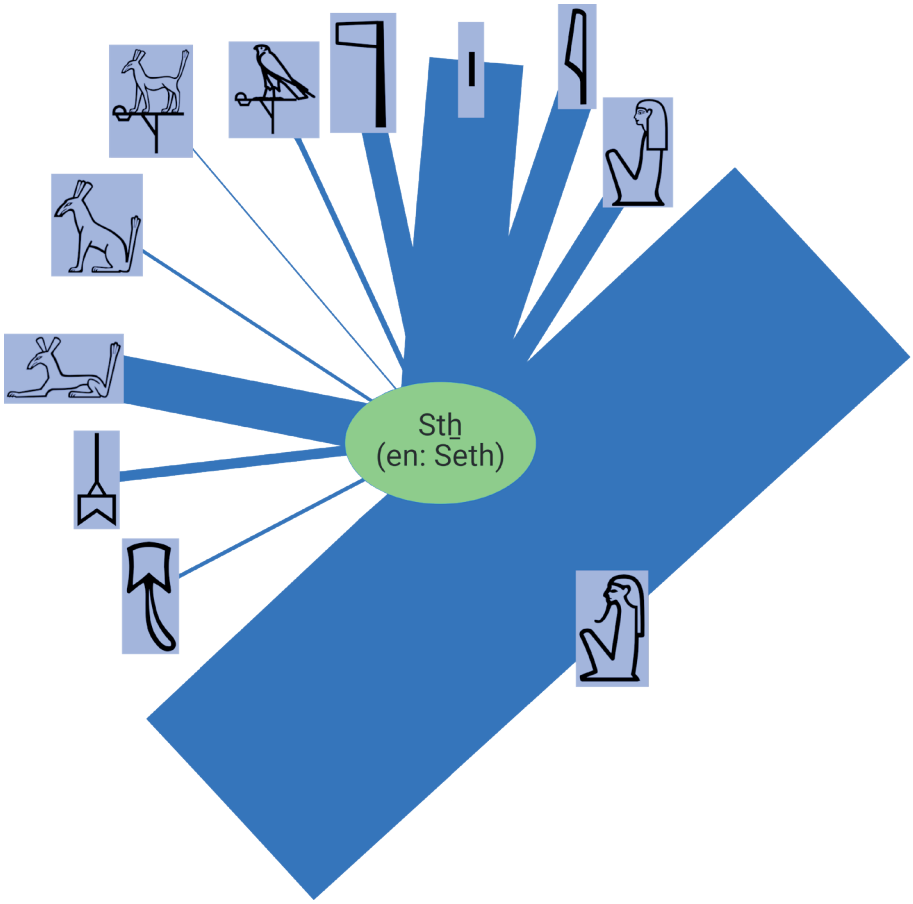
In this network, the classifiers are depicted as hieroglyphic signs, and the lemmata as transliteration. The blue lines represent the connection between a classifier and a lemma. The red lines depict the co-occurrence of a classifier with another classifier in the same lemma.[38] The width of the line reflects the number of connections.[39] For example, the very thick line between the lemma *sth* and the 𓀛 (A40) sign shows that there are many tokens of the lemma *sth* that use the 𓀛 (A40) as a classifier. A red circle with a classifier indicates a co-occurrence of a sign within a lemma, where the same sign is used multiple times. For example, in the lemma *rḥ.wï* (the two rivals [Horus and

38 As it is possible in the *Coffin Texts* for lemmata to be classified by multiple classifiers, this connection could tell a lot about the information structure of the Ancient Egyptian mind. See Goldwasser 2002: 16–17, 2005: 100–101.

39 Note that the length of the lines and the clustering of lemmata and signs hold no meaning.

Seth]), which can be classified with a double 𓀀 (A40).[40] There is one lemma, *ḫ³.t* (disease, illness) which is free-floating, as there are no shared classifiers between this lemma and any of the other 25 lemmata.[41] Even though included in the list of McDonald, the lemma does *ḫ³.t* not show a Sethian sign as a classifier in the *Coffin Texts*.[42]

One of the first sections to address is the very wide blue line between 𓀀 (A40) and *stḫ/stš*. As 𓀀 is the primary classifier for [DIVINE] in the *Coffin Texts*, the use of 𓀀 is not surprising. The width of the line is due to the high number of tokens of the lemma *stḫ/stš* (726), and 370 of these tokens are classified by 𓀀. Remarkably, Sethian signs used as classifiers are relatively rare with this lemma, as can be seen in fig. 2. However, the 𓃭 (E21) is quite commonly used as a logogram.[43]



Classifier combination	Total
𓀀 (A40)	340
𓌳+𓇋 (M17+Z1)	15
𓃭+𓀀 (E21+A40)	15
𓇋 (Z1)	14
𓌳 (R8)	11
𓀀+𓇋 (A40+Z1)	9
𓃭 (E21)	7
𓀀 (B1)	7
𓄤+𓀀 (Aa21+A40)	3
𓀀+𓇋 (B1+Z1)	3
𓅱 (G7)	3
𓃩+𓀀 (E20+A40)	2
𓎛+𓇋 (F27+Z1)	2
𓌳 (M17)	1
𓄤+𓀀 (Aa21+B1)	1
𓆑+𓀀 (E146:R12+A40)	1
𓄤 (Aa21)	1

Fig. 2. Classifier co-occurrence graph for the lemma *stḫ/stš* (Seth) with the classifier combination table for the same lemma
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40 See for example *CT* I: 19,c (B3Bo, B2Bo, B4Bo, B1P, B4C, T9C)

41 Obviously, the classifiers attested for *ḫ³.t* occur with other lemmata in the *Coffin Texts*. However, these classifiers do not occur with any of the other 23 lemmata discussed in this article.

42 This reflects the gradual shift of Seth away from [ILLNESS], where Sethian signs are replaced by 𓄿 (G37) or 𓃀 (Aa2 and its variants), see Allon 2007: 18.

43 With 338 of the 726 tokens using 𓃭 (E21) as a logogram.

Fig. 2 represents the different classification strategies used in the *Coffin Texts* for the lemma *stẖ/stš*. As with fig. 1, the width of the lines represents the number of co-occurrences between the lemma and a sign. One thing of note here is that the (G7) is an uncommon classifier for [DIVINE] in the *Coffin Texts*, as the (A40) is preferred in most supports. The use of (Z1) and (M17) as classifiers in this lemma is due to some of the supports avoiding the use of humanoid signs. For example, this occurs in the supports L3Li, M54C and T1Be. The use of (B1) instead of (A40) is something that occurs due to the cursive script in some of the supports.[44] For example in the support G2T, where the distinction between (A40) and (B1) is practically lost. See for example in *ḥw.t-ḥr* [45] vs *skr* .[46]

The majority of the tokens of *stẖ/stš* are classified by a single classifier (384 out of 726 tokens). However, classification strategies with multiple classifiers are used for the lemma *stẖ/stš* (Seth) as well, as can be seen in fig. 2. Most of these tokens with multiple classifiers are a combination of a sign with (Z1), but a combination of an animal followed by (A40) occurs as well. Interestingly enough, the + (E21+A40) group only occurs in one set of supports, Papyrus Gardiner II–IV.[47] As these papyri were collected by Gardiner as a group, it could be suggested that they were written by the same scribe(s), who used this classification strategy.[48] If this strategy reflects a local tradition or a personal preference of the scribe(s) cannot be proven, due to the lack of certainty of the provenance and date of these papyri.[49]

As stated above, there are in total 71 different signs in the *Coffin Texts* used as classifiers for the 25 lemmata of the 39 lemmata that can take Sethian classification. However, that does not mean that every classifier is used for all of the 25 lemmata. In most cases, every sign only classifies a few of these 25 lemmata in total. This can be seen in the long-tailed distribution graph[50] of fig. 3:

44 See Shalomi-Hen 2008: 183.

45 *CT* V: 159,c (G2T).

46 *CT* V: 122,b (G2T).

47 P. Gard. II: British Museum EA 10676,1–32; P. Gard. III: ISAC Museum Chicago 14059–87 (formerly Oriental Institute); P. Gard. IV: P. Louvre E14703. For a discussion of this group of supports, focused on P. Gard. II, see Gestermann 2003 and Regulski 2018: 236–238. For P. Gard. III, see Bandy 2010: 161–162.

48 Besides the work of Regulski 2018, which focused on P. Gard. II, no study has yet been done on the number of hands that worked on these papyri. A combined edition of these three papyri would be beneficial for future research.

49 Regulski 2018: 237–238.

50 Harel 2023: 122–126.

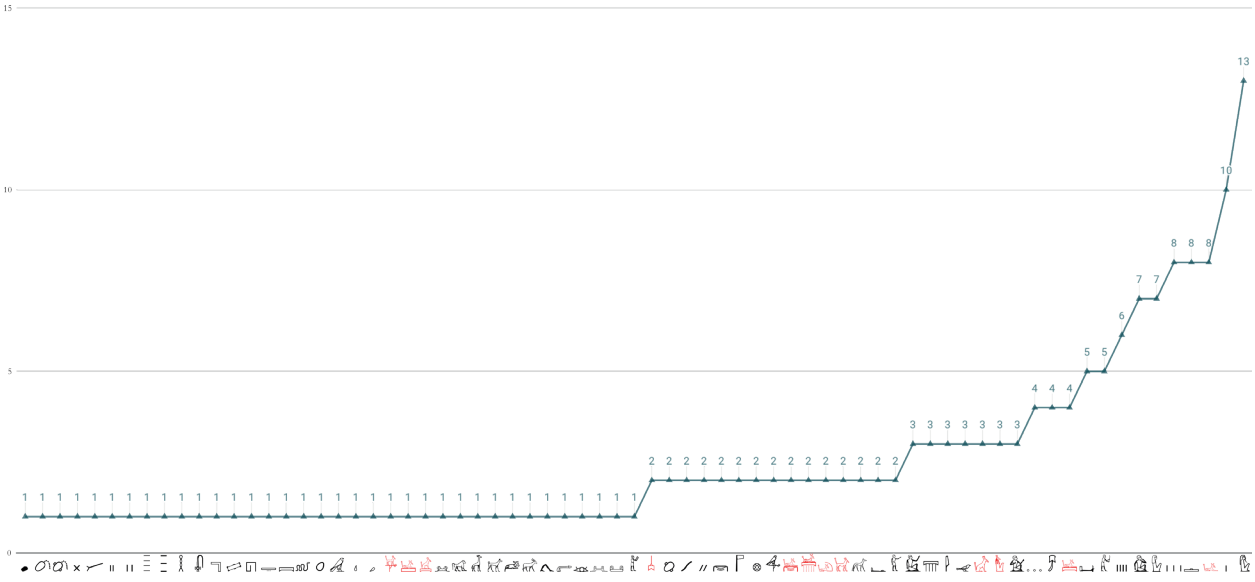

Fig. 3. Long-tailed distribution graph representing the occurrence rate of classifiers based on lemma in the 25 lemmata that can take a Sethian classifier in the *Coffin Texts*. Sethian classifiers are highlighted in red
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In this long-tailed distribution graph, the different classifiers attested in the corpus of the *Coffin Texts* for the lemmata that could take Sethian signs as classifiers are set out based on the number of lemmata in which they occur. The further the hieroglyphic sign is to the right, the higher the number of lemmata in which they occur.

As stated above, the 𓀀 (A40) is the sign that occurs as a classifier with the most lemmata, as it is attested in thirteen different lemmata: *ꜣkr, mr,*[51] *nb.wï, nbw.tï, ỉm.ï-nbw.t, nšnỉ, nṯr.wï, rḥ.wï, rsw.t, sr, stḫ/stš, qrỉ/qrr, khꜣ*. For the lemmata which use a Sethian hieroglyph as classifier, most of these signs are only used in one or two lemmata. The 𓃭 (E21) is the Sethian classifier that occurs in the most lemmata out of all the Sethian signs used as a classifier. In this corpus, the sign 𓃭 is used as a classifier in the following eight lemmata: *ꜣkr, nbw.tï, ỉm.ï-nbw.t, nšnỉ, ḫnn, stḫ, šꜣ* and *qrỉ/qrr*. Of the 25 lemmata that could take a Sethian classifier in the *Coffin Texts*, the combined Sethian signs are only attested in 11 out of the 25 lemmata.

By the quick decline of the graph, one can see that most signs used as a classifier in the 25 lemmata that can take a Sethian classifier in the *Coffin Texts* are only used in one or two lemmata at most. Most of the signs—the left side of the graph—only classify one lemma.

The use of alternative classification or multiple classification in the *Coffin Texts* paints a picture in which semantic domains the Sethian classifiers occur. If one looks at the non-Sethian hieroglyphs that may classify the same lemmata classified by Sethian classifiers, one finds the domains of [divine]: 𓀀 (A40) and 𓁐 (B1); [force], [effort]: 𓀔 (A24) and 𓎛 (D40); [noise], [thunder], [tumult]: 𓀂 (A2), 𓉔 (N4); or [bad], [evil]: 𓋴 (G37).

51 As one attestation in a construct *smꜣ-mr* (the sick scalp), see *CT* VII: 150,b (P. Gard. IV).

Thus, as alternatives to Sethian classifiers occur, one should consider how common the strategy of using Sethian signs as classifiers *Coffin Texts* is. Additionally, this variation poses the question of why Sethian classifiers are used over non-Sethian classifiers. The following section will discuss the percentage in which the strategy of using Sethian classifiers was applied in the *Coffin Texts*. Additionally, the classification strategy of using Sethian signs is viewed through a diachronic and diatopic lens.

Based on the corpus data, it becomes clear that the classification strategy of using Sethian signs as classifiers in the *Coffin Texts* is rare. As can be seen in fig. 4, for the lemmata that could take Sethian classification in the *Coffin Texts*, there is a general Sethian classification rate of 9 % overall.[52] However, there is a high rate of classification in general for this corpus, with 74 % of the tokens having at least one classifier in the *Coffin Texts*. However, it needs to be noted that there is a varied number of supports responsible for the data in each column, as the remaining textual material is overrepresented in some regions,[53] and underrepresented in other regions.[54]

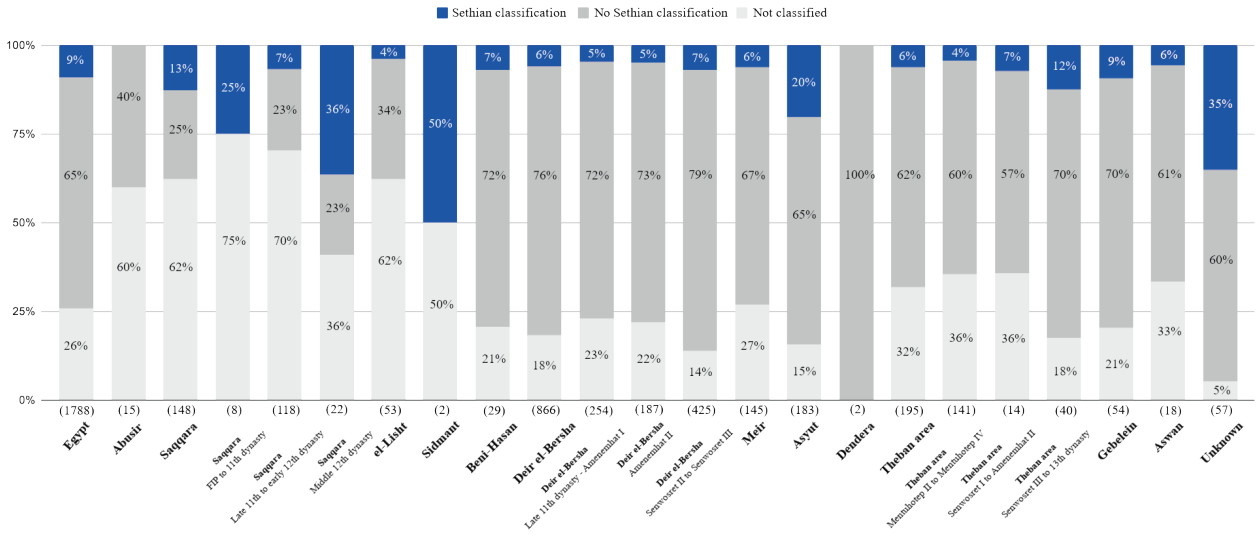

Fig. 4. Sethian classification in the *Coffin Texts*, set out based on region and chronological Sethian classification rates in those regions. The numbers in brackets are the total number of tokens
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Note that due to the use of percentages, some entries in fig. 4 are deceptive. For example, in Sidmant the use of Sethian classifiers has a rate of 50 %. However, this is only because there are only two tokens from Sidmant in the corpus, one with a Sethian classifier.

52 Note that the figure represents absolute numbers only, weighted identically. The supports had a large repertoire of texts to choose from to be part of the decoration. Therefore, different spells and a different number of spells could be part of the decoration. Thus, by chance one support could have many more attestations in of the lemmata discussed here than any others, as these lemmata would not be mentioned in every *PT* and *CT* spell available.

53 For example in Deir el-Bersha, see Hoffmeier 1996: 48.

54 For example Aswan, which is only represented by a single support (A1C).

Discarding Sidmant and only looking at the rate of Sethian classification overall in every region, the rate of Sethian classification is generally below 10 %. Thus, the classification strategy of using Sethian classifiers instead of non-Sethian classifiers—for example  (A40)—was not popular in the *Coffin Texts*. The only outliers here are Asyut with 20 % Sethian classification and the group with an unclear provenance[55] with 35 % Sethian classification. If the suggestion that Papyrus Gardiner II–IV and Y1C originate from Asyut—suggested by Schenkel, Regulski and Jürgens[56]—is correct, that would overlap with the higher tendency to use Sethian classification.

At the same time, it is interesting to see that the tokens from the supports from the most northern regions[57] are much less likely to use classifiers at all. Most of the other regions have a rate of more than 70 % of the tokens with some type of classifier.

In Deir el-Bersha, which has a low rate of Sethian classification (7 %), one can see that there is a minimal diachronic development where the rate of Sethian classifiers slightly increases over time.[58] As one can see in fig. 4, the first two periods of coffin decoration in Deir el-Bersha—late 11th Dynasty to the reign of Amenemhat II—have a rate of 5 % Sethian classification. The last period of coffin decoration in Deir el-Bersha—the reign of Senwosret II–III—has a rate of 7 % instead. Thus, it could be argued that over time, the use of Sethian classifiers becomes slightly more likely.[59]

This seems to be visible in the supports from the Theban area as well. Although the division of periods for coffin decoration varies from Deir el-Bersha, the same tendency to increase the rate of Sethian classification occurs. In the supports decorated during the reign of Mentuhotep II–IV, there is a rate of 4 % Sethian classification. For the reign of Senwosret I to Amenemhat II, there is a rate of 7 %. In the final period of coffin decoration—Senwosret III to the 13th Dynasty—there is a rate of 12 %. This rate is deceptive, however. All the tokens with Sethian classification from this later period come from one support—T2Be—out of a group of three supports.[60] Therefore this is more likely to be a scribal preference rather than a diachronic and diatopic pattern.

In Saqqara, there seems to be a different pattern which starts with a rate of 25 % Sethian classification during FIP to the 11th Dynasty, which drops down to a lower rate of 7 % during the late 11th

55 P. Gard. II–IV and Y1C.

56 Schenkel 1996: 125; Regulski 2018: 237 for P. Gard. II–IV and Jürgens 1996: 55–56 for Y1C.

57 Abusir, Saqqara and el-Lisht.

58 As Deir el-Bersha is overrepresented in the corpus (see Hoffmeier 1996: 48), the three chronological periods shown in fig. 4 represent a meaningful number of supports for every period. For the period of the late 11th Dynasty to the reign of Amenemhat I, there are seven supports: B1Bo, B2Bo, B3Bo, B4Bo, B6Bo, B7Bo and B6C. The second period, set during the reign of Amenemhat II has seven supports as well: B3C, B4C, B9C, B10C, B11C, B15C and B1Y. The final period of coffin decoration in Deir el-Bersha is from the reign of Senwosret II–III. This period consists of 15 supports: B1Be, B1C, B5C, B7C, B12C, B13C, B16C, B17C, B20C, B1L, B2L, B3L, B4L, B1P and B2P. The dates of the supports used in this article were based primarily on Willems 1988.

59 For a list of the chronology of the *Coffin Texts* supports, see fig. 14 at the end of the article.

60 T1Be, T2Be, T3Be.

Dynasty to the early 12th Dynasty. The final period of coffin decoration in Saqqara—the middle of the 12th Dynasty—has a higher rate of Sethian classification of 36 %. However, both the first and second period of coffin decoration in Saqqara are deceptive. In comparison to the second period of coffin decoration, which has 12 supports,[61] both the earlier and later-dated supports only have three supports each.[62] Moreover, the earlier period in Saqqara only provides eight tokens of lemmata that can have Sethian classifiers. Two of these eight tokens have a classifier, which explains the 25 %. For the later period, there are 22 tokens which could take a Sethian classifier, with eight of these with a Sethian classifier. Note that these 22 tokens are all from the same lemma, namely *nšnỉ*.[63] Thus, there is no proof of diachronic variation in Saqqara either.

For the *Coffin Texts*, there seems to be only marginal variation in the use of Sethian signs as classifiers based on either diatopic or diachronic variation. Moreover, the data shows that the use of Sethian signs as classifiers was rare at best, only passing the 10 % in Asyut and the supports from an uncertain origin. In Deir el-Bersha, there are some suggestions of a gradual rise in the use of Sethian signs over time, but the variation is so low (<2 %) that it is likely negligible. It can be noted however that there is a distinction in the level of classification in general between supports from the north and the south. There is a higher tendency to use classifiers in the south than there is in the north, which might reflect local preferences.

2.2. Sethian classification tendencies in the *Coffin Texts*

As discussed above, of the 39 lemmata that could use a Sethian classifier at some point in the Pharaonic period in Ancient Egypt, only 25 are attested in the *Coffin Texts*. However, as one can see in the lemmata list of McDonald above, most of these lemmata are not attested with a Sethian hieroglyph as a classifier until the New Kingdom. Yet, of these 25 lemmata, there are only 11 lemmata which use a Sethian classifier in the *Coffin Texts*. These lemmata are *ꜣkr* (Aker, earth god), *mn* (to be ill), *mr* (to be ill), *nbw.tï* (the Ombite), *ỉm.ï-nbw.t* (the one who is in Ombos), *nšnỉ* (to rage), *ḥrr.t* (Hereret), *ḫnn* (to trouble), *stḫ/stš* (Seth), *šꜣ* (Seth's animal) and *qrr* (storm). The exact rate of Sethian classification for these lemmata can be seen in fig. 5:

61 Sq2Be, Sq3Be, Sq3C, Sq4C, Sq5C, Sq6C, Sq9C, Sq10C, Sq11C, Sq1Sq, Sq3Sq and Sq4Sq.

62 FIP to the 11th Dynasty: Sq1Cop, Sq13C, Sq1Ch; Middle of the 12th Dynasty: Sq1C, Sq2C, Sq7C.

63 All in the same spell, *CT* spell 335. See *CT* IV: 238,c, 240,a, 242,a.

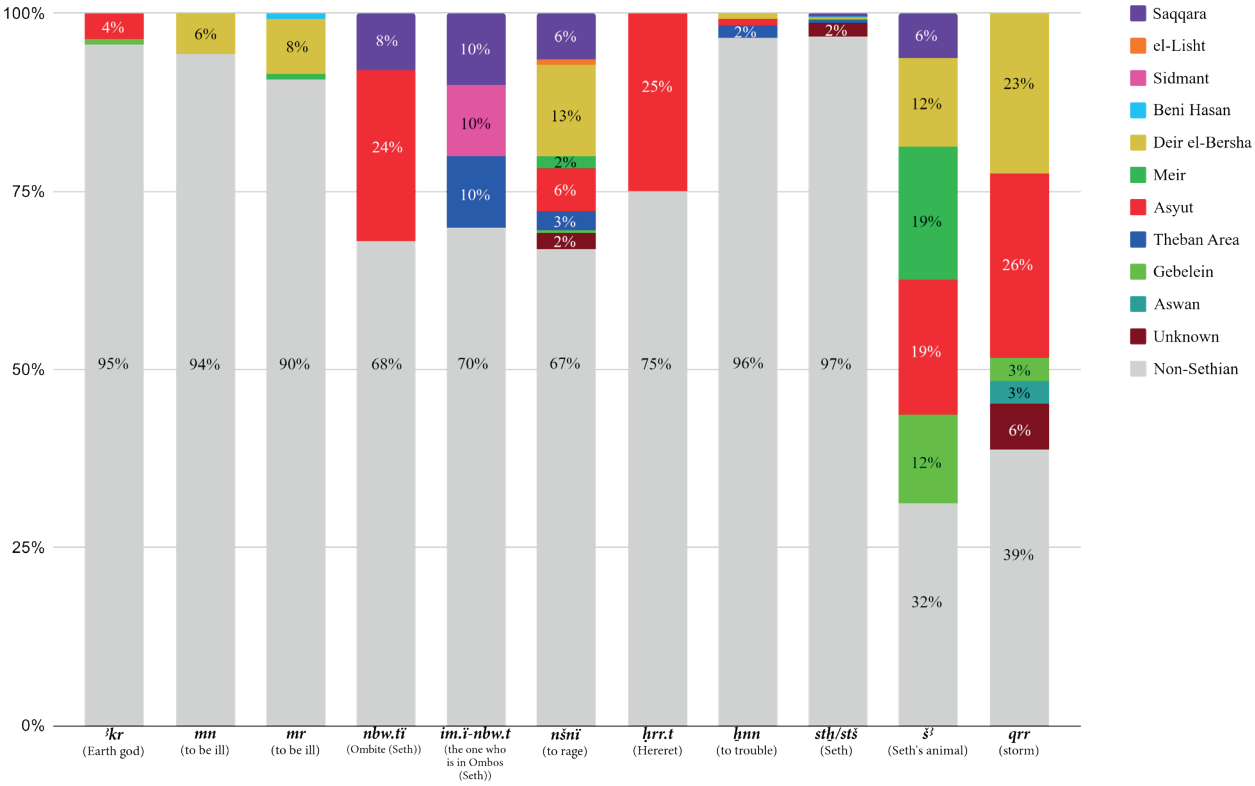


Fig. 5. The occurrence rate of Sethian classification in 11 out of 25 lemmata in the *Coffin Texts* that show Sethian classification, sorted by region. The non-Sethian grey group represents tokens without classifiers as well as tokens with non-Sethian classifiers ©*iClassifier*, Jorke Grotenhuis

For five of these lemmata—*ʾkr, mn, mr, ḫnn* and *stḫ/stš*—the rate of Sethian classification is about the same as could be seen in fig. 4, barely scratching 10 %. However, it shows that the other lemmata—*nbw.tï, ỉm.ï-nbw.t, nšnỉ, ḫrr.t, šʾ* and *qrr*—are much more likely to receive Sethian classifiers. This reflects the gradual development of the categories which Sethian hieroglyphs classify, where [ILLNESS] and [PAIN] are in retreat, while the connections with [ANGER], [DISTURBANCE], [THUNDER] and [NOISE] are on the rise.[64]

In the same vein as Fig. 4, some of these rates are deceptive. For example, *ḫrr.t* has a rate of 25 % Sethian classification, from Asyut. However, this represents one out of four tokens. Thus this is not a representative result of this rare lemma in the *Coffin Texts*.[65] Note however that the classifier here is the sole attestation of the seated Seth  (C7) variant with the tail  in the *Coffin Texts*.[66]

The same potential for overinflation of the rate of Sethian classification can be applied to the lemmata *nbw.tï, ỉm.ï-nbw.t, šʾ* and *qrr*. However, it is less extreme in these cases. *nbw.tï* has a total of 25 tokens, *ỉm.ï-nbw.t* is attested with 10 tokens, *šʾ* with 16 tokens, and *qrr* with 31 tokens. The other

64 See Allon 2007: 18–19.

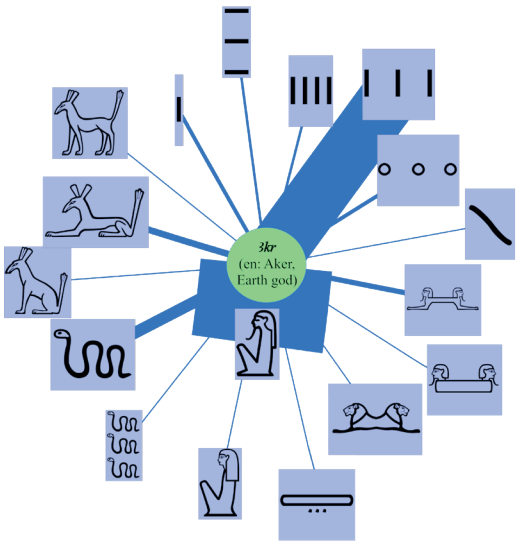
65 For more detail about *ḫrr.t*, see McDonald 2007: 26–29.

66 See note 24.

lemmata have at least 50 tokens and are less likely to misrepresent the rate of Sethian classification. Even so, the lemma *š³* (Seth's animal) has a very high rate of Sethian classification, where it is primarily classified by (E146).[67]

Remarkably, one can see in fig. 5 that Sethian classification in these lemmata is to some extent dependent on the origin of the support. For example, *³kr* is only classified with a Sethian sign in Asyut and Gebelein, although rarely. In Gebelein *³kr* is only classified once with a Sethian sign out of three tokens.[68] Additionally, Sethian classification in *³kr* only occurs in one of the two supports from Gebelein (G1T and G2T). In Asyut there are four tokens of *³kr* with Sethian classification out of 17 tokens, all from the same assemblage (S1C and S2C).[69] Thus, for *³kr,* the use of a Sethian classifier seems to reflect a preference of the scribe(s).

The classification strategies for the lemma *³kr* are rather interesting, however, with a broad repertoire of signs available for classification, see fig. 6. Moreover, the rate of classification for this lemma is high, with only eight out of 113 tokens without a classifier, or with a grammatical classifier only.



Classifier combination		Total
	(A40)	57
	(A40+Z2)	24
	(I14+Z2)	7
	(E21+A40)	4
	(A40+N33A)	3
	(Z2)	3
	(C274B+A40+Z2)	2
	(A40+Z1*Z1*Z1*Z1)	2
	(A40+Z1+Z2)	1
	(C274B+Z2)	1
	(C274B+Z2)	1
	(C146+A40+Z2)	1

Classifier combination		Total
	(E128+Z2)	1
	(E20+B1+Z3A)	1
	(I14 :I14 :I14)	1
	(E21+A40+Z2)	1
	(Z1)	1
	(A40+Z1)	1
	(I14+A40)	1
	(I14+A40+Z2)	1
	(Z5+Z2)	1
	(A40+Z3A)	1
	(C274B)	1
	(N16)	1

Fig. 6. Classifier co-occurrence graph for the lemma *³kr* (Aker, earth god) with the classifier combination table for the same lemma
©iClassifier

67 Which is not remarkable, considering the lemma is specifically Seth's animal. However, the jackal (E17, *CT* II: 96,d [S1C]), and the dog (E14, *CT* I: 397,b [B1P]) are used as well.

68 *CT* II: 112,e (G2T).

69 *CT* I: 398,a (S1C); *CT* VI: 177,c (S1C), 206,c (S1C, S2C).

As this lemma is a divinity, the high number of classifications with 𓀭 (A40)[70] is not surprising. The high number of grammatical classifiers like 𓏺𓏺𓏺 (Z2) is due to the tendency to use the plural *ꜣkr.w* (Earth gods) in the varied spells in which this lemma occurs.[71] The land and double-headed classifiers are to be expected as well.[72] Although rare in comparison to the seated god, there are two patterns of classification with an animal, one through Seth, the other through the 𓆓 (I14) snake. The connection between the snake and the earth is not unexpected,[73] but one has to wonder where the connection between the earth and Seth comes from. One route McDonald suggests is that the Sethian animals are corruptions of lions.[74] Alternatively, some intentional connection between the gods could exist, depending on the reading of 𓀭𓀭 in *CT* spell 366:[75]

smn ṯb(w)=i ḥr ꜣkr ỉn ꜣs.t smn=s wỉ ḥr ꜣkr wḏꜥ m nṯr ʿnḫ

My sole is made firm on Aker by Isis, she makes me firm on Aker (and) the one who is judged, as a living god.

If Aker and *wḏꜥ* are taken as two separate divinities (which the spelling with a 𓀭 [A40] classifier for both suggests), there could be a connection between the two gods, as they are mentioned as a duo. If such a connection between the gods existed, it could explain why the Sethian animal shows up with Aker. However, this connection occurs in a single spell only, in only three witnesses,[76] and with some doubt, as *stḫ*/*stš* is not spelt out. Thus, one can wonder how likely this explanation for the use of the Sethian animal would be.[77]

In the 11 lemmata in which the use of Sethian classifiers is attested in the *Coffin Texts*, it is clear that this was a rarer classification strategy employed by the scribes. Alternative classification strategies using traditional hieroglyphic signs were preferred over the use of Sethian hieroglyphs. The only exception to this is with the lemma *šꜣ* (Seth's animal), which is 68 % classified with a Sethian sign. The higher tendency of *qrr* (storm) and to some extent *nšnỉ* (to rage) to use Sethian signs as

70 99 out of 113 tokens.

71 For example see *CT* spell 75, *CT* I: 398,a.

72 For example, 𓊪 C274B is currently only known as a classifier for Aker. See: Sign TSL_1_1629 https://thotsignlist.org/mysign?id=1629 (accessed 10.07.2023), in: *Thot Sign List*.

73 See for example *zꜣ-tꜣ* (Lemma ID 126130) https://thesaurus-linguae-aegyptiae.de/lemma/126130, in: *Thesaurus Linguae Aegyptiae*, Corpus issue 17, Web app version 2.01, 12.15.2022 (accessed: 7.16.2023).

74 McDonald 2007: 36, no. a.

75 *CT* V: 27,d–e (B2L). Faulkner 1977: 7 prefers not to read *wḏꜥ* at all, following the sentence structure in Sq6C.

76 B1C, B2L, and B2P, which all originate from Deir el-Bersha and are all dated to the same period (Senwosret II–III).

77 An even less likely suggestion could come through the overlap between *šꜣ* (Seth's animal) and *šꜣỉ* (pig)—in as far they are not the same lemma or root—where due to the tendency of pigs to root around in the earth there could be a connection. But as pigs do not show up as classifiers for Aker in the *CT*, I highly doubt this to be the case.

classifiers in comparison to *mn* and *mr* (to be ill) illustrates the development of the metaphorical semantic categories Sethian signs classify. Sethian signs move away from illness and pain, while the connection with anger and storm grows. Within singular lemmata, the strategy of using Sethian hieroglyphs as classifiers was often only attested in a few regions, but these cases likely represent a personal preference of the scribe rather than a diatopic or diachronic variation pattern.

2.3. Domain-specific Sethian signs for classification.

Not only is there a tendency to only classify certain lemmata depending on the region. In the *Coffin Texts,* there is the tendency to use certain Sethian signs only for certain specific lemmata centred around a common theme. Below there will be a discussion of three different domain groups that have specific hieroglyphs used to classify these groups.

One of these domain groups is [STORM], [THUNDER] and [NOISE]. This domain has been discussed in some detail by Allon 2007 and more recently by Soler 2021, who used *iClassifier* for the study of storm-related lemmata in the *Coffin Texts*. Even so, it is worthwhile to discuss this section due to the occurrence of a group of sign classes that are—in the *Coffin Texts*—uniquely used with the lemmata associated with [STORM], [THUNDER] and [NOISE]: *nšni* (to rage); *qrr* (storm) and *ḫnn* (to trouble, to disturb). The different classifier strategies for these lemmata can be seen in fig. 7.[78]

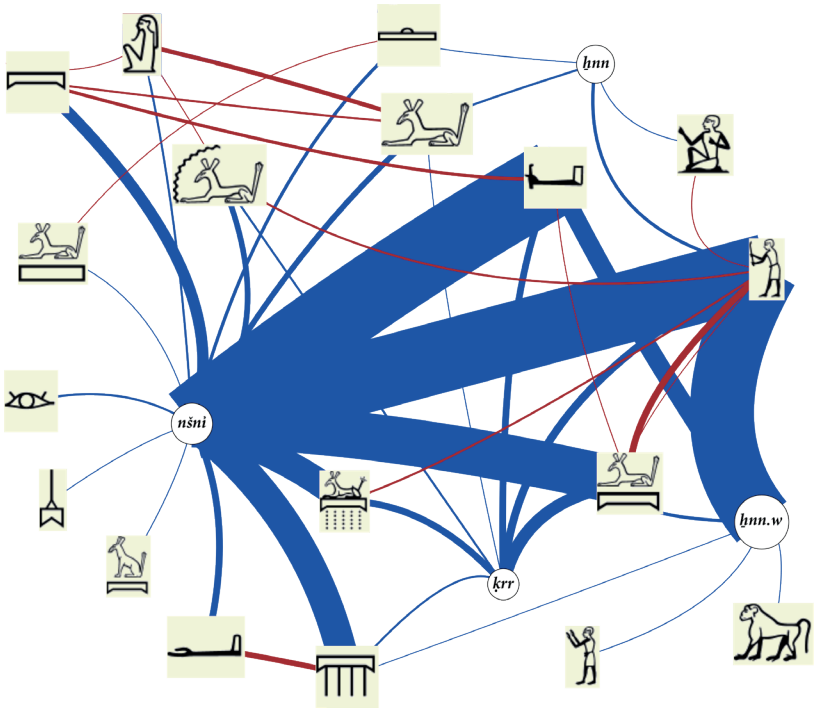


Fig. 7. Classifier network for *nšni* (to rage), *qrr* (storm), *ḫnn* (to trouble) and *ḫnn.w* (disturbance) ©*iClassifier*, Jorke Grotenhuis

78 Note that for the sake of clarity, this image differentiates between *ḫnn* and *ḫnn.w,* even if they should be understood as the same lemma.

The classifier strategy of using  (A24) and (D40) here is to be expected, as they generally classify [FORCE, EFFORT].[79] Additionally, it is interesting to see the single attestation of the metaphoric classifier  (E32) with *ḫnn.w* (tumult),[80] considering the tumult an angry monkey can cause.[81] These three lemmata show a higher tendency for using Sethian classifiers, especially for *nšnỉ* and *qrr,* see fig. 5. For the specific classifier strategies employed by the scribes for *nšnỉ*, *qrr,* and *ḫnn* separately, see fig. 8:

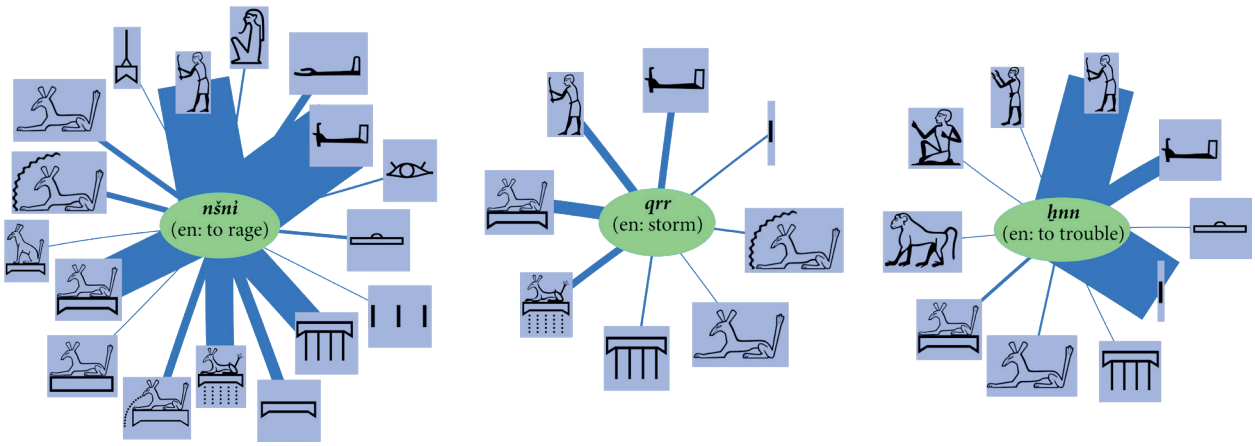


Fig. 8. Classifier co-occurrence graph for the lemma *nšnỉ* (to rage), *qrr* (storm) and *ḫnn* (to trouble)
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Although all three lemmata can be classified by  (E21), the unique feature of these lemmata is the use of  (E244) and its classes ( ,  , ) which only occurs with these [STORM] and [NOISE] related lemmata. The same is true for  (E149), which only occurs in *nšnỉ* and *qrr* as a classifier for storm or rage.[82] In the *Coffin Texts*, these signs are used intentionally due to the connection with weather, water and the sky, essential ingredients for a storm.[83] However, it should be noted that the Sethian signs are much more dominant in *nšnỉ* and *qrr* in comparison to *ḫnn*. This suggests that the more direct connection between *nšnỉ* and *qrr* to a storm reflects that the development of the semantic clusters covered by Sethian hieroglyphs towards "weather disturbances"[84] was underway before the later identification of Seth as Baal.[85]

79 Goldwasser 2005: 99; Kammerzell 2015: 1409–1410.

80 *CT* VI: 212,h (S1C).

81 Goldwasser 2005: 104.

82 The only attestations of this classifier with *nšnỉ* is when it is either used as a noun (rage, storm), or as a deverbal (the one who rages), see *CT* VII: 154,t (P. Gard. III).

83 I do not intend to state that the signs were developed by the scribes by throwing different aspects of the storm together, but that the sign was intentionally chosen by the scribe as it reflects the parts of the storm.

84 Allon 2007: 18.

85 Even though Baal was known in Egypt as early as the 13th Dynasty (Allon 2007: 19), I cannot conclude that this connection already exists in the *Coffin Texts*, as nearly all supports are dated to the 12th Dynasty or earlier.

Note that the class of (E244) is a new sign shape, as it is a class that has been mentioned before,[86] but was up to now not included in any sign-list.[87] There is no doubt that this is a distinct class when compared to the graphemes in the supports: for ,[88] instead of which is used for .[89] However, the exact presentation of this hieroglyph can vary based on the handwriting of the scribe.

These three lemmata above are not the only case where there are specific signs used to classify specific lemmata. There is a hieroglyph which only occurs with the lemmata *nbw.tï* (the Ombite) and *ỉm.ï-nbw.t* (the one who is in Ombos): .[90] This sign reflects a graphical pun with the combination of Seth with the *nbw* phonetic value of (S12). Not only does this sign occur in the *Coffin Texts* as a classifier,[91] but it is used as a logogram as well.[92] However, due to its specific function, in the *Coffin Texts*, the sign is not used outside these two lemmata.

Finally, there is the curious case of the (C7). In the *Coffin Texts*, this sign is only attested as a classifier for the lemmata *mn* (to be ill) and *mr* (to be ill). Remarkably, the is in the *Coffin Texts* never used in connection with the lemma *sth*/*stš*.[93] This is not due to a tendency to evade any type of seated god with an animal head in the *Coffin Texts*, as (C3) is attested for Thot.[94] This tendency to only use the seated god as classifier for *mn* and *mr,* rather than any other Sethian hieroglyph is remarked upon by McDonald 2002b: 104, 143–146, 187, 190–196, 222–223, who notes that for [ILLNESS], [PAIN] the preferred use was (C7), not any other Sethian hieroglyph,[95] stating: "As the determinative of these words, seems to have a meaning that cannot adequately express."[96]

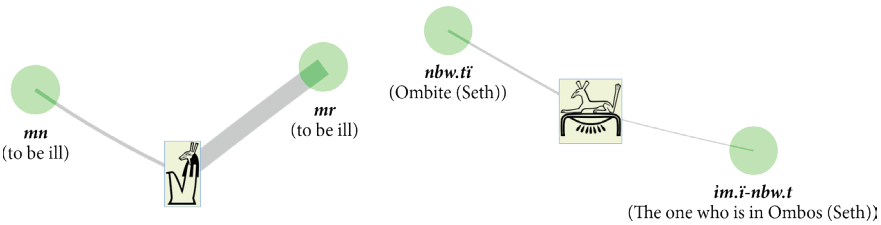

Fig. 9. Lemma co-occurrence graph for (C7) and ©*iClassifier*, Jorke Grotenhuis

86 McDonald 2002b: 90.

87 See Sign TSL_1_2678_03 https://thotsignlist.org/mysign?id=2678 (accessed: 31.07.2023), in: *Thot Sign List*.

88 *CT* VI: 348,u (B3Bo).

89 *CT* VI: 156,c (B2Bo).

90 See Sign TSL_1_7113 https://thotsignlist.org/mysign?id=7113 (accessed: 31.07.2023), in: *Thot Sign List*, edited by Université de Liège and Berlin-Brandenburgische Akademie der Wissenschaften.

91 *CT* III: 360,b (S1C,a and c); *CT* VIII: 230, PT204a (Sed1Sed).

92 For example, see *CT* VIII: 230, PT204a (B2Bo, B3Bo, B4Bo).

93 See fig. 2 and fig. 9.

94 For example, in *CT* IV: (B5C). However, is only used as a logogram in the *Coffin Texts*.

95 When a Sethian classifier is used at all.

96 McDonald 2002b: 223.

Thus, in the *Coffin Texts*, it is possible for domain groups to have Sethian signs that are uniquely connected to those domain groups. The sign  (E244) and its classes are uniquely associated with lemmata related to [storm] and [noise]. Due to the graphical pun the sign represents,  is only attested as a reference of Seth's connection to Ombos. Third,  (C7) has a unique connection with the lemmata of *mr* and *mn* (to be ill). Sethian signs not only have a broad collection of semantic domains in their metaphoric use but even develop unique sign variants for these semantic domains.

3. The *sr*-animal in the *Coffin Texts*

As stated above, the lemma *sr* (to announce, to foretell)[97] was included in this study as one of the lemmata that can take a Sethian classifier, following McDonald.[98] One could wonder about its inclusion in this discussion, as in the transcription of de Buck the animal used in this lemma is  (E27), the giraffe. In the varied types of cursive scripts in the *Coffin Texts*,[99] this interpretation of the animal becomes a problem. In Cannuyer's work, when the attestations of the lemma *sr* in the *Coffin Texts* are addressed,[100] de Buck's transcriptions are taken as the hieroglyphic representation in the supports, except for cases when de Buck himself mentioned that there is any variation.[101] The reality is much more interesting, however. McDonald has shown that alternative animals could be interpreted based on the cursive script in the *Coffin Texts*.[102] However, this is limited to a few examples.

For this article, all the tokens of the *sr*-animal in the *Coffin Text* have been collected. Note that these tokens include both classifiers and logograms.[103] In total, 178 attestations of the lemma *sr* and its derivates were collected in the *Coffin Texts*. Of these 178 attestations, 27 were reconstructions or are no longer visible. 48 tokens used a classifier that was not an animal, for example,  (A2) or  (D54). Seven tokens were without a classifier. In total, it was possible to collect 96 hieratograms[104] of *sr*-animals in the *Coffin Texts*.[105] Digital facsimiles were made of these hieratograms.[106]

97 For an in-depth study of the lemma and the giraffe in Ancient Egypt, see Cannuyer 2010.

98 McDonald 2007: 36, 2009: 367–368. Note that the overlap between the E27 and E20 was already mentioned in Gardiner 1957: 460–461.

99 Ranging from Fischer script type 2, 3a, 3b and very rarely 4. See Fischer 1976: 41.

100 Cannuyer 2010: 250–284.

101 McDonald 2012: 229–230.

102 McDonald 2009: 367–368.

103 The only token of a *sr*-animal as a logogram in the *Coffin Texts* which I could locate is in *CT* I: 321,d (M1Be).

104 See Verhoeven 2001.

105 In some tokens the animal was no longer recognizable in the original. For some other tokens, I could not access an image of the original to create the facsimile of the token.

106 I am grateful to Olaf Kaper and the Netherlands Institute for the Near East (NINO) in Leiden, Patricia Rigault and the Musée de Louvre, Foy Scalf and the Institute for the Study of Ancient Cultures (ISAC) in Chicago for their aid in the creation of the digital facsimiles.

In order to create an overview of the types of *sr*-animal in the *Coffin Texts*, the new method for visualization of Hieratic signs used in the AKU-project[107] in Mainz was applied to the 95 hieratograms. This was done using the program *VIKUS viewer*[108] as described in Gerhards & Konrad, 2022. Not only is this a visualization tool, but it allows for digital clustering of the tokens based on image similarity,[109] using *t-distributed stochastic neighbour embedding* (*t*-SNE).[110]

Following this method, the following image collecting and clustering of the shapes of the *sr*-animal was created:

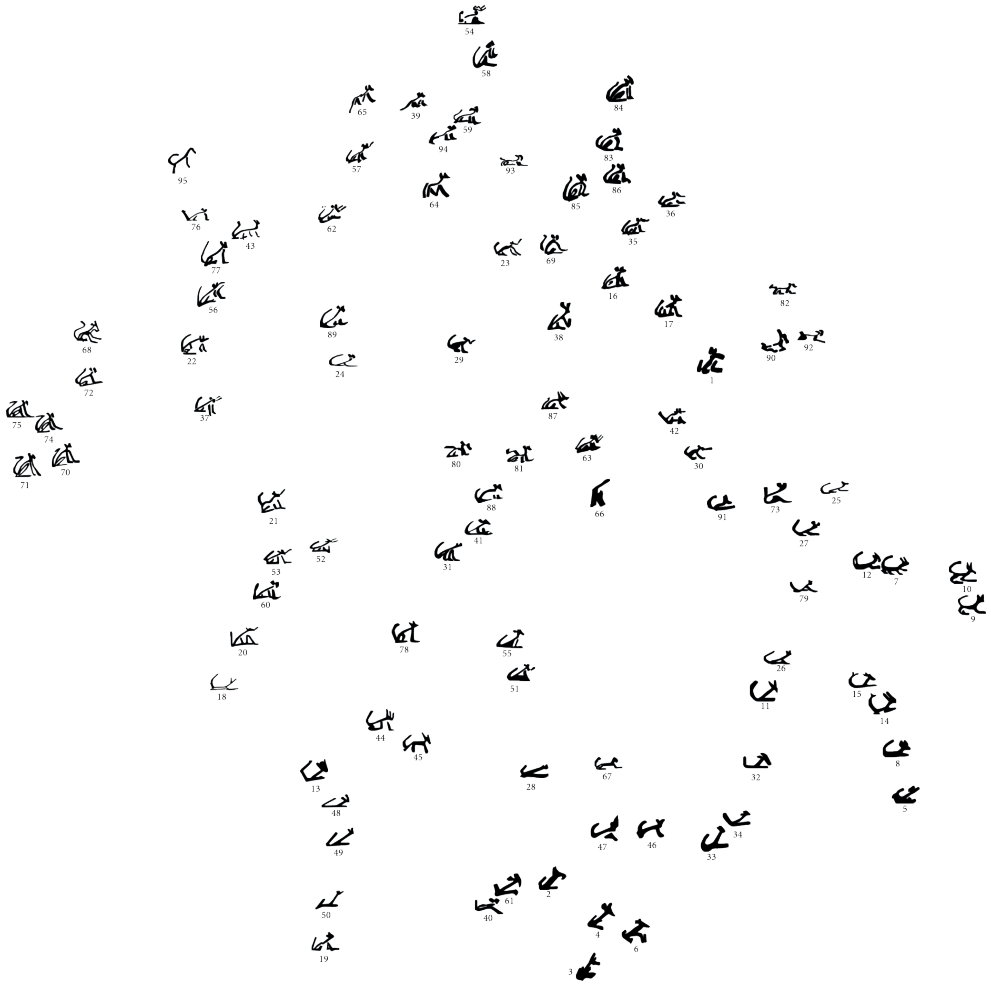

Fig. 10. Similarity distribution of individual hieratograms of the *sr*-animal in the *Coffin Texts* calculated using *t*-SNE (parameters used: epsilon = 50, perplexity = 5). The hieratogram numbers refer to the numbers in the annex

107 https://aku.uni-mainz.de/ (accessed 10.07.2023). See Gerhards & Konrad 2022; Gülden 2022, 2023.

108 https://vikusviewer.fh-potsdam.de/ (accessed 10.07.2023). I am indebted to Tobias Konrad and Siebren Frölich for their aid and expertise which allowed me to run the program.

109 In order to reduce my biases in assigning shape similarity. However, the influence of biases can only be reduced as Peursen 2010: 12 states: "Even in image capture and editing, which may at first sight be a rather straightforward and 'objective' procedure, 'virtually all parameters in the process […] require intellectual, critical choices, interpretation, and manipulation."

110 Maaten & Hinton 2008.

As one can see in fig. 10, there is a wide distribution of the tokens that clusters the hieratograms in small groups based on graphical similarity. Most clusters consist of two to three hieratograms but can be as large as four or five hieratograms. It needs to be noted here that the results of the *t*-SNE technique can be misleading.[111] For example, even though the distance between single hieratograms is important to create clusters, the size of the cluster itself[112] and the distance between clusters is meaningless. In the same vein, the thickness of the lines of the hieratograms could be a reason for clustering as well. Even so, one can see that there is a difference between the signs generally clustered near the top of fig. 10 versus those who are near the bottom.

One of the most encouraging results in fig. 10 is that most hieratograms from the same support ended up in the same cluster, as could be expected when signs were written by the same hand. For example, the cluster at the far left (no. 70–71, 74–75) consists of four  type hieratograms, which all come from G1T. More impressively this occurs too in some clusters which I would not have created. For example, in the small cluster consisting of  and  (no. 44–45). At first glance, these are two distinct shapes. However, both of these hieratograms come from the same support (B6C). So, there is an underlying similarity between the two hieratograms that the *t*-SNE picks up where a human might not. This stresses the need to keep a critical human eye during the analysis and clarifies that digital tools should not be relied upon to answer questions. Instead, these tools should be used to aid the user to formulate questions and suggest additional avenues of research.

Based on the clustering of these hieratograms in fig. 10, it seems unlikely that there is a regional or chronological pattern underlying the writing of the *sr*-animal in the *Coffin Texts*. Most clusters represent separate supports or a wide mixture of supports. The personal preference of the scribe(s) seems the most likely explanation for the variation in shapes. This is illustrated in fig. 11, where the hieratograms are colour coded by region of origin.

111 Wattenberg, Viégas & Johnson 2016. http://doi.org/10.23915/distill.00002 (accessed 10.07.2023).

112 i.e., how much space the cluster takes in comparison to other clusters.

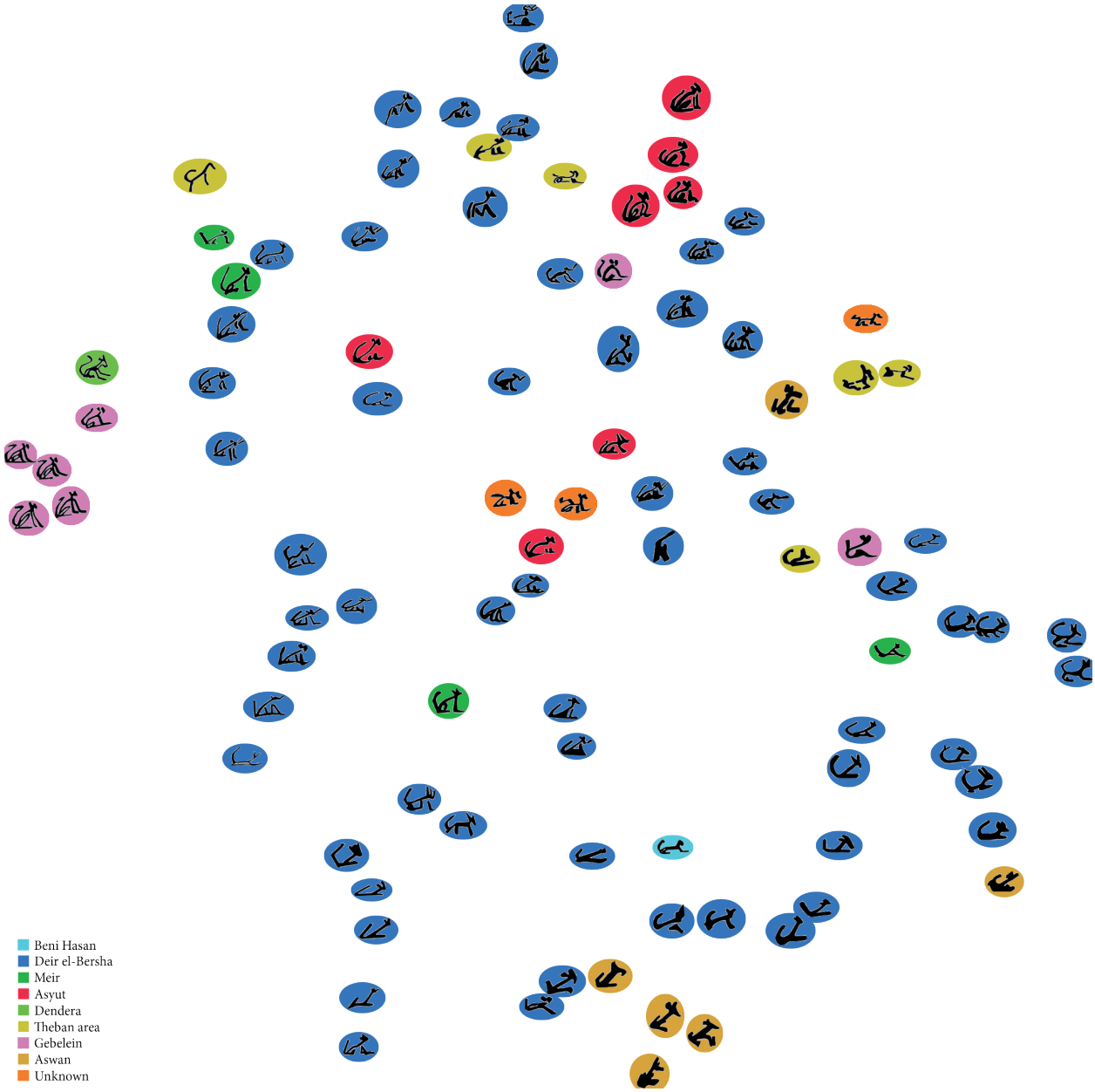

Fig. 11. Similarity distribution of individual hieratograms of the *sr*-animal in the *Coffin Texts* calculated using *t*-SNE (parameters used: epsilon = 50, perplexity = 5). The hieratograms are colour-coded based on the region of origin

Based on the hieratograms available for this study, it quickly becomes clear that the  (E27) is a bad choice to represent the *sr*-animal in hieroglyphic transcriptions of the *Coffin Texts*. Even if some hieratograms could be considered long-necked, for example  (no. 49) or  (no. 28), both of these two hieratograms have an upward tail. This makes reading the *sr*-animal as a giraffe extremely unlikely. Based on Cannuyer 2010: 57–194, the tail of a giraffe in Ancient Egyptian iconography is nearly always downwards. This leaves the question, if the *sr*-animal is not a giraffe in the *Coffin Texts*, what animal did the scribes use?

The first candidate would be a Sethian animal, either  (E20) or  (E21).[113] Especially based on the hieratograms in the bottom right corner of fig. 10, this interpretation is possible. Additionally, the use of a Sethian animal as a classifier of *sr* is known from other sources as well.[114] However, this does not fit that well for all of the supports. The scribe(s) seem to have made some effort to distinguish between the *sr*-animal and the Seth animal depending on the supports. This is illustrated in fig. 12:

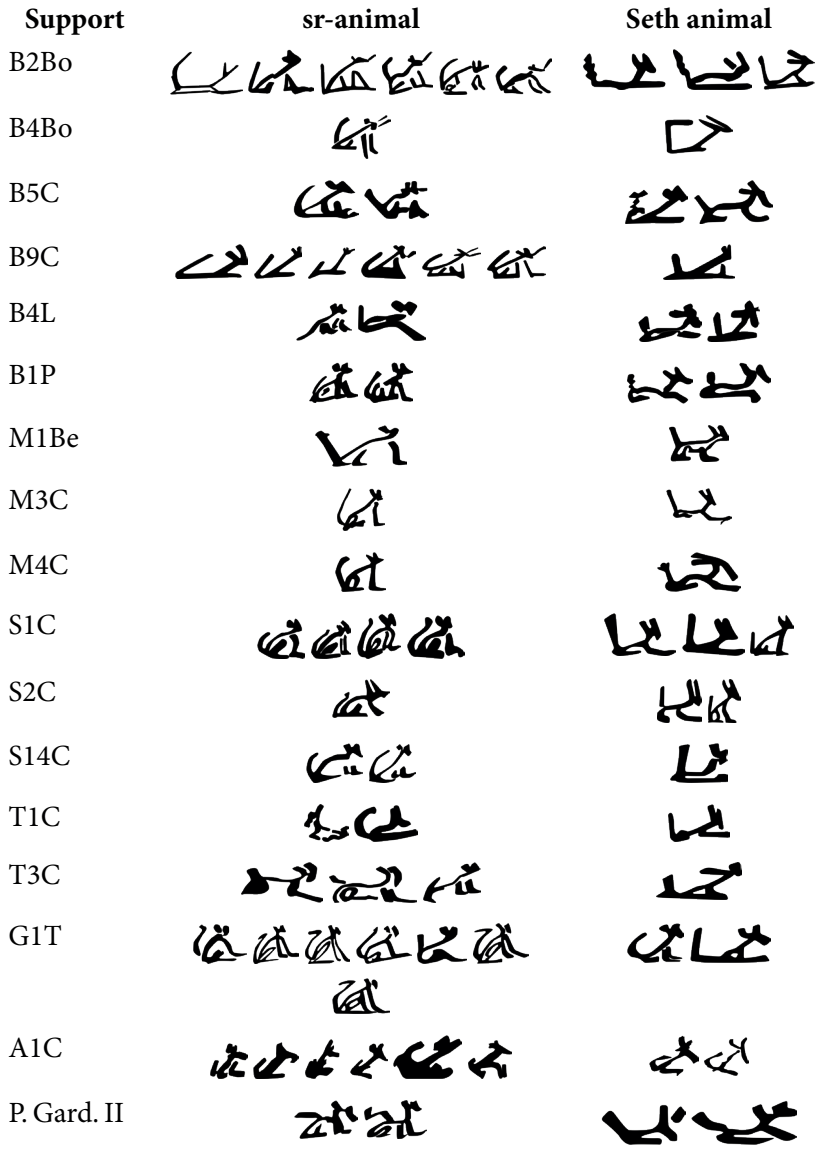

Fig. 12. The hieratograms of the *sr*-animal and the Seth animal in the same supports of the *Coffin Texts*

113 Due to the cursive writing, it is often difficult to decide if  (E20) or  (E21) is the better fit.

114 For example in the shipwrecked sailor, P. Petersburg 1115, col. 31 (compare with the classifier of *nšn.ï* in col. 32). See Golénischeff 1913: 2, plate 2.

For A1C, there is little doubt that the *sr*-animal is Seth, as both animals are sufficiently similar. However, when one compares either S1C or G1T with the shape of the Seth animal in the same support, there are clear differences between the shapes of the hieratograms. For example, in S1C, the tail of the *sr*-animal curves forwards. For the Seth animal, the tail is straight upwards. The same is mostly true for G1T, where the tail of the *sr*-animal not only curves forward but curves backwards again at the tip. However, there is a straight-tailed animal under the *sr*-animals (), and a curved tail under the Seth animals () in G1T. Thus, some variety exists.

For the other primary animal, which clusters mostly in the top part of fig. 10, the suggestion by McDonald 2009: 368 that this represents a cat (or at least a feline) seems likely. Especially the hieratograms of S1C () and G1T () with the distinctive tail support this interpretation.[115] When the hieratogram from D1C () is added as well, this interpretation seems even more likely.[116] However, as the standard hieroglyph of the cat (E13) has the tail in an incorrect position, it would ideally require the addition of a class of with the tail curving towards the back, not the front, for example .[117] Even so, this would constitute a potential over-generalization of the hieratograms of the *sr*-animal in the *Coffin Texts,* which can be argued to be a feline animal. For example, the technically represents a single front and rear leg variant of the cat, whereas the nicest examples from S1C and G1T prefer to have two front legs.

In Deir el-Bersha a variant of the *sr*-animal occurs that did not cluster as expected. These are the animals with strokes on the nose, for example: (no. 37), (no. 52) or (no. 57).[118] These variants with strokes were added randomly by the scribe(s) to the supports while using variants without strokes as well. Thus these variants do not represent a pattern in any of the supports. It is most likely that the strokes on the nose intended to 'disarm' the sign.[119] This does pose the question of what animal is used in these cases. In Deir el-Bersha, there is no clear preference for either Seth[120] or a feline, with most supports from Deir el-Bersha having both the feline and Seth type. When the seated shape of most of these hieratograms with strokes on the nose are compared,

115 Based on the tail of the animal, it was suggested to me that it could be a monkey as well, but based on the ears and leg position I find that unlikely.

116 Although this hieratogram seems to be closer to a lion(es) than a cat to me, therefore the description of the animal as a feline.

117 See Sign TSL_1_2446_01 https://thotsignlist.org/mysign?id=2446 (accessed: 17.09.2024), in: *Thot Sign List.*

118 All the hieratograms in this corpus with arguably one or two strokes on the nose are: (20), (21), (22)?, (23), (29), (30), (35), (37), (42)?, (44), (51), (52), (53), (54), (56)?, (57), (62) and (63).

119 As the Sethian animal represents disorder and chaos, one could expect the sign to be considered dangerous and to be made harmless by the addition of a stroke. However, it is remarkable that most of the Deir el-Bersha attestations occur in the *Coffin Texts* spells located on the bottom of the coffins.

120 The stroke(s) on the nose are not attested for any cursive hieroglyphs which are without a doubt used for Seth.

they mostly fall on the feline side. However, the disarming strokes make more sense in the context of Seth, rather than a feline.[121] Thus, if this should be taken as a form of the  (E202A) type of sign, or a feline variant can be discussed.

Then there are some hieratograms that do not clearly fall within the Seth or seated feline group of shapes. For example, B16C has two *sr*-animals  and  (no. 64–65). Together with a single attestation from B4L  (no. 39), these represent standing animals with their tail down. This could be represented by a jackal  (E17), or at least a dog. As McDonald 2009: 368 points out, however, the jackal is slightly different in B16C. Still, a canine would be a decent fit.[122] In the same vein, one could argue that this is still a feline animal, for example  (E90).[123]

Then there is a lying down animal that curves the tail forwards:  (no. 80–82),  (no. 92).[124] These signs would most likely be sufficiently represented by a feline as well, specifically the recumbent lion  (E23). This can be supported by a case of in P. Gardiner 2, where there is less doubt of the sign:  [125] in the lemma *i³r.w* (rushes). Alternative interpretations are possible as well, as the in this case has the head a lot lower, and does not have the unusual bends in the tail.[126]

A final variant of the *sr*-animal to be discussed is most likely a corruption due to how the hieratogram is created. This is most clearly visible in T1C:  (no. 90), where the *sr*-animal is represented by what should be considered the newborn bubalis antelope  (E9).[127] This is not the only *sr*-animal with one ear, see for example  (no. 41) and  (no. 55), but  represents the most extreme case in the *Coffin Texts*. As the intentional connection between the antelope and *sr* is unlikely, the variation seems to occur through the script,[128] as in the Middle Kingdom the (E9) and  (E21) can be similar in cursive/hieratic scripts.[129]

The reinterpretation from the *sr*-animal to the likely comes from the way the head of the *sr*-animal is formed by the scribes. For Seth, the *sr*-animal and the antelope, the scribe would use two strokes to draw the head. It is the placement, curve and angle of the strokes which form the

121 Unless taken as the whiskers of a cat, but I find that a stretch.

122 McDonald 2009: 369, n. 32.

123 In the context of the Unicode hieroglyphic repertoire expansion, I was able to acceptably verify this sign for the Graeco-Roman period, see *Edfu* VIII: 93,6. However, it could be argued it is a lioness instead of a cat there.

124 Note that it could be argued in these cases that the animals are walking. Due to the horizontal lines at the tip of the legs the animals show, I preferred to consider the animals to be lying down.

125 *CT* III: 177,a (P. Gard. II,b).

126 But it has the tail coming from the back, and the forward curving front line of the head, so it is at least possible.

127 Sign TSL_1_2850 https://thotsignlist.org/mysign?id=2850 (accessed: 12.07.2023), in: *Thot Sign List*.

128 Likely due to an unclear precursor text, even though there is some variation from the (E9) in the original:  , see *CT* IV: 208,c (T1C).

129 See Möller 1909: 18, no. 143–144.

basis of the interpretation of the type of animal that is depicted. To form Seth, the two strokes start at roughly the same height, with the frontal stroke generally a bit longer than the back. Sometimes the frontal stroke curves at the bottom of the stroke towards the front. For the *sr*-animal, the two strokes start at the same height and are generally the same size. The frontal stroke can have a slight curve towards the back of the sign. The antelope differs from the Seth and *sr*-animal by having the strokes start at different heights, with the frontal stroke a lot lower than the back and often longer. This creates the suggestion of a brow with a single ear behind it. See fig. 13 below:

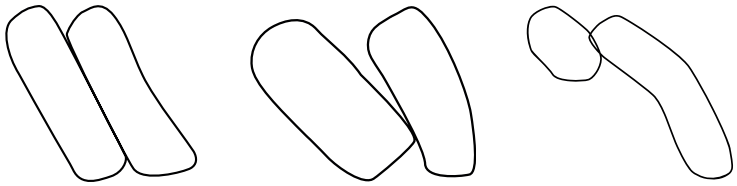

Fig. 13. Stroke pattern for the head of the Seth animal,[130] *sr*-animal[131] and antelope[132] in S1C

As the stroke patterns are similar between the three animals, a small error can quickly cause a change in interpretation if the body is poorly made. Especially in the case of  (E9) and  (E21), where the body—except for the tail—can be rather similar. Thus, the reinterpretation of the *sr*-animal in T1C by the scribe as an antelope is not unexpected.

The hieratograms of the *sr*-animal in the *Coffin Texts* make it clear that the standardization by de Buck into  (E27) is not only wrong, but it hides a wide variety of shapes that are used in this lemma as well.[133] Additionally, this standardisation can restrict the interpretation of the lemma *sr,* as the animal can represent different aspects of the lemma.[134] The giraffe is more related to 'foretell,' as it can see things earlier due to the spatial aspect of its long neck.[135] The proposed interpretations of the *sr*-animal in the *Coffin Texts* fall more under the aspect of 'announce', where the animal represents the audible aspect of the lemma. Seth is well connected with [NOISE], and the relation with sound can be applied to cats (meow), lions (roar) and dogs (bark) as well.

Based on the available hieratograms of the *sr*-animal in the *Coffin Texts*, it becomes clear that care should be taken with cursive texts in transcriptions. However, some level of standardization

130 *CT* II: 341,a.

131 *CT* I: 404,c.

132 *CT* II: 279,b.

133 The variation in depicted animals poses the question of why the scribe did not write a cursive form of the (E27) hieroglyph (as far as this even exists), instead of using a different animal. However, I consider this corpus too limited to be able to provide a satisfying answer to this question, due to limited sources and a too varied type of script. A broader study including other genres and types of cursive and hieratic writing might be beneficial, as there might be other signs that behave differently between hieroglyphic texts and cursive scripts.

134 See Cannuyer 2010: 604 for a summation of the function of the lemma.

135 McDonald 2012: 231.

would be needed for the border cases. Even if oversimplified, it would be recommended that any *Coffin Texts* transcription would replace the giraffe with either a Sethian animal or a feline (cat, lion). But any transcription choice should be made on a case-by-case basis only.[136]

Conclusions

Sethian signs represent a rare type of classification strategy in the *Coffin Texts*, as alternative strategies using other hieroglyphic signs are more popular with the scribes. Generally in the corpus, there is at most 10 % Sethian classification within the lemmata, with some slightly higher tendencies in Asyut. However, the number of lemmata that are attested with Sethian classifiers is low, with only 11 lemmata being attested with some type of Sethian sign. Even there, in general, the tendencies to use Sethian signs over non-Sethian signs are generally low and often reflect only the personal preferences of the scribe.

In the metaphorical semantic domain of Sethian signs, one can recognise the development of Seth away from the domains of [ILLNESS] and [PAIN], which is only primarily still attested in Deir el-Bersha, more towards the domains of [ANGER], [NOISE], [THUNDER] and [DISTURBANCE]. This is in line with the development of Seth towards becoming a god of storm, rather than chaos and disorder.

It is remarkable that in the *Coffin Texts* there are some Sethian signs which are specifically used as classifiers with some specific semantic groups. These include  (E244) and its classes for storm-related lemmata. The sign  is only used in the lemmata *nbw.tï* (the Ombite) and *ỉm.ï-nbw.t* (the one who is in Ombos). Third,  (C7) is only attested in connection with [ILLNESS] in *mr* and *mn* 'to be ill.' Thus, the scribes used certain Sethian signs only in very specific contexts.

In the case of the lemma *sr* (to announce, to foretell), it was shown that at least partially, in the *Coffin Texts*, the *sr*-animals could be better interpreted as a Seth animal, rather than the standard transcription by de Buck as a giraffe. However, a large section of the *sr*-animals would be better described as a cat or a feline: the exact shape of the *sr*-animal is varied among the different scribes and seems to reflect a personal preference in writing. This stresses that care needs to be taken during the process of transcription, as interesting details can be easily lost in transmission.

136 Note that I still consider the transcriptions of de Buck to be one of the most trustworthy transcriptions in Egyptology, but it shows the benefit of working with (images of) original material, rather than relying on transcriptions.

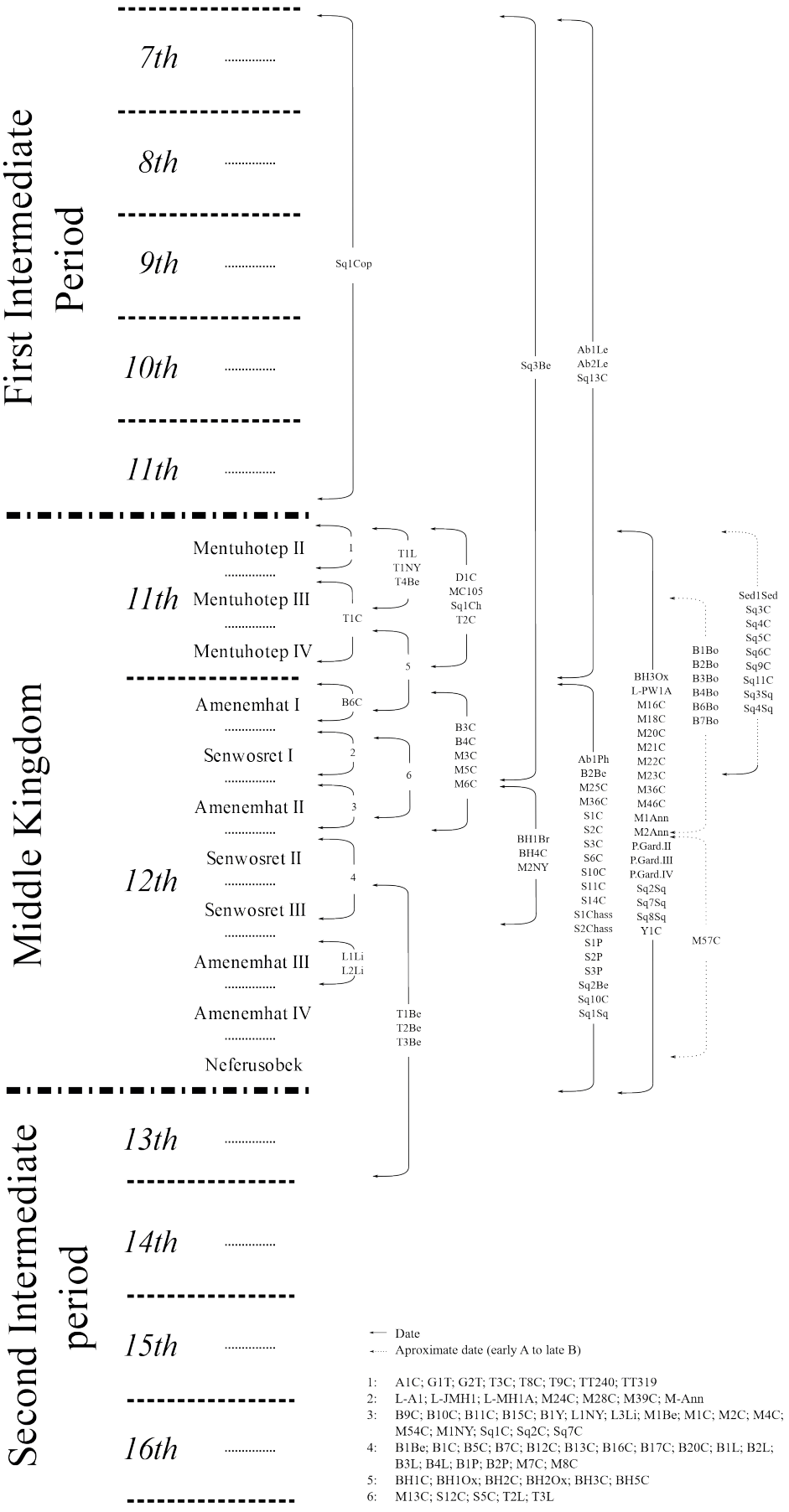

Fig. 14. The chronology of the *Coffin Texts* supports

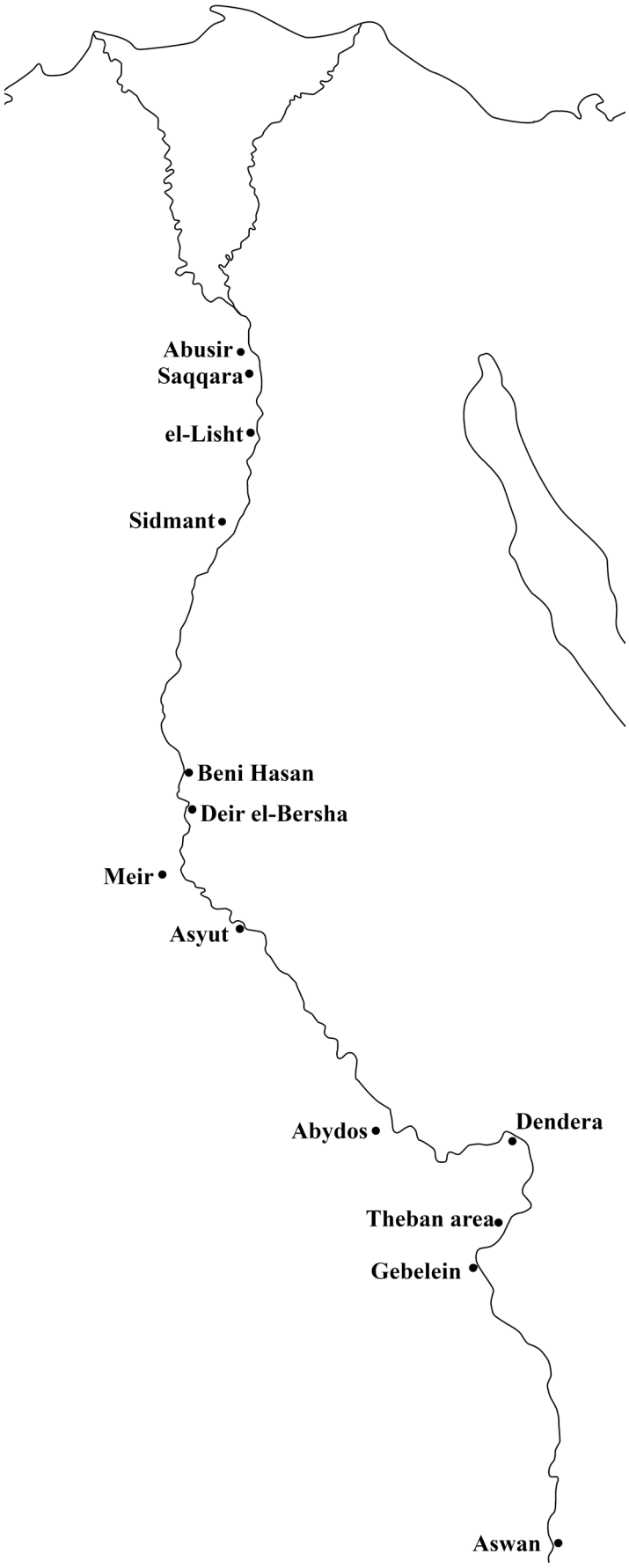

Fig. 15. A map of Egypt showing the regions discussed in this article

Tokens of the *sr*-animal in the *Coffin Texts*

	Token	Support	Location			Token	Support	Location
1		A1C	*CT* I: 321,d		43		B6C	*CT* I: 320,d
2		A1C	*CT* III: 320,g		44		B6C	*CT* IV: 75,g
3		A1C	*CT* III: 323,b		45		B6C	*CT* V: 367,h
4		A1C	*CT* VI: 263,c		46		B6C	*CT* VII: 401,b
5		A1C	*CT* VI: 264,l		47		B6C	*CT* VII: 428,b
6		A1C	*CT* VII: 133,e		48		B9C	*CT* V: 367,h
7		B1B0	*CT* I: 320,d		49		B9C	*CT* VI: 94,b
8		B1Bo	*CT* VI: 53,e		50		B9C	*CT* VII: 401,b
9		B1Bo	*CT* VI: 173,r		51		B9C	*CT* VII: 402
10		B1Bo	*CT* VI: 308,k		52		B9C	*CT* VII: 430,b
11		B1Bo	*CT* VII: 314,a		53		B9C	*CT* VII: 442,c
12		B1Bo	*CT* VII: 401,b		54		B10C	*CT* I: 191,e
13		B1Bo	*CT* VII: 428,b		55		B12C	*CT* I: 140,g
14		B1Bo	*CT* VII: 430,b		56		B12C	*CT* I: 191,e
15		B1Bo	*CT* VII: 442,c		57		B12C	*CT* I: 211,a
16		B1P	*CT* I: 320,d		58		B12C	*CT* I: 229,d
17		B1P	*CT* I: 404,c		59		B12C	*CT* VII: 401,b
18		B2Bo	*CT* IV: 75,g		60		B12C	*CT* VII: 402,b
19		B2Bo	*CT* VII: 314,a		61		B13C	*CT* I: 140,g
20		B2Bo	*CT* VII: 401,b		62		B13C	*CT* I: 191,e
21		B2Bo	*CT* VII: 402,b		63		B13C	*CT* I: 211,a
22		B2Bo	*CT* VII: 428,b		64		B16C	*CT* I: 211,a
23		B2Bo	*CT* VII: 430,b		65		B16C	*CT* I: 229,d
24		B3Bo	*CT* I: 140,g		66		B17C	*CT* I: 229,d
25		B3Bo	*CT* VI: 236,i		67		BH2C	*CT* I: 321,d
26		B3Bo	*CT* VI: 253,n		68		D1C	*CT* IV: 75,g
27		B3Bo	*CT* VI: 254,a		69		G1T	*CT* I: 321,d

	Token	Support	Location			Token	Support	Location
28		B3C	*CT* VII: 314,a		70		G1T	*CT* III: 320,g
29		B3C	*CT* VII: 428,b		71		G1T	*CT* III: 323,b
30		B3C	*CT* VII: 430,b		72		G1T	*CT* VI: 263,c
31		B3C	*CT* VII: 442,c		73		G1T	*CT* VI: 264,l
32		B3L	*CT* V: 383,a		74		G1T	*CT* VII: 140,o
33		B3L	*CT* VII: 401,b		75		G1T	*CT* VII: 140,p
34		B3L	*CT* VII: 402,b		76		M1Be	*CT* I: 321,d
35		B3L	*CT* VII: 428,b		77		M3C	*CT* I: 320,d
36		B3L	*CT* VII: 430,b		78		M4C	*CT* I: 321,d
37		B4Bo	*CT* VII: 314,a		79		M20C	*CT* I: 320,d
38		B4C	*CT* VII: 442,c		80		P. Gard. II	*CT* VII: 197,b
39		B4L	*CT* I: 140,g		81		P. Gard. II	*CT* VII: 248,l
40		B4L	*CT* VII: 314,a		82		P. Gard. III	*CT* VII: 152,c
41		B5C	*CT* V: 367,h		83		S1C	*CT* VI: 48,c
42		B5C	*CT* VII: 511,e		84		S1C	*CT* I: 320,d
85		S1C	*CT* I: 404,c					
86		S1C	*CT* VI: 53,e					
87		S2C	*CT* VI: 200,b					
88		S14C	*CT* I: 320,d					
89		S14C	*CT* VI: 96,d					
90		T1C	*CT* I: 65,c					
91		T1C	*CT* V: 176,l					
92		T3C	*CT* I: 320,d					
93		T3C	*CT* I: 404,c					
94		T3C	*CT* III: 320,g					
95		TT319	*CT* VI: 277,f					

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Hieroglyphs Out of Place[1]

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Abstract. Maya glyphic writing, a lush and storied hieroglyphic system of Mexico and northern Central America, offers much evidence of tensions and play between text and image. An anomaly worth exploring is when a glyph appears to intrude into the domain of pictures. Closer study reveals that such signs are usually of a limited sort, being concerned with time and seasons, or with ways of naming the complex, expansive surfaces of geographical locales. They respond to gravity and rest on depicted surfaces. Yet many, perhaps most, are signs that exist in mythic settings, where humans of rare aptitudes fused with gods.

Keywords. Hieroglyphs, Maya, picture and text relations, cognitive domains.

The essence of a hieroglyph is its unsettled relation to pictures. A hieroglyphic sign that records a word, sound or thought tends to be figural and materially grounded. It corresponds to things in the world and continues to do so over the course of writing systems in active use. It also forms part of a graphic "ecosystem" extending to other forms of representation. This means that, for those looking at them, hieroglyphs foster the potential for a "category mistake," a blurring of classes often kept distinct.[2] The issue arises when viewers and readers interact with hieroglyphs. A viewer sees less a sequence of meaningful sound than an arrangement of objects in space. A reader attends to phonic signs and their "vectoriality" or linear order, parsing them according to the morphology and syntax of language.[3] Outside of braille, all readers are viewers, but not all viewers are readers. Yet this

1 This essay has benefitted from discussions with David Stuart, along with perceptive leads and comments from John Baines, Claudia Brittenham, James Doyle, and two anonymous reviewers. John was especially helpful with a close edit of the manuscript. My thanks go also to Eric Poeschla, Alexandre Tokovinine, and Marc Zender for use of their drawings and photographs, and to Andréas Stauder for his editorial help.

2 On category mistakes, see Ryle 2002: 16–18. For recent review, see Magidor 2024.

3 Winand 2023: 79, 81, fig. 3; see also, Angenot 1996, a citation provided by John Baines. "Vector" implies, in English usage, both direction and magnitude. If taken to heart, it stresses both the linear nature and overall length of texts. For the Maya texts under review here, that length is likely to correlate with the social importance of figures

distinction was not fully understood in the Italian Quattrocento and Early Modern periods. Falling into a category mistake, savants of the time understood Egyptian hieroglyphs as graphic symbols yielding parables or esoteric wisdom. A script details particles of language. Hieroglyphs were, seemingly, about something else, a portal to a monistic consciousness floating beyond, above, and outside the perceptible world, serving as a vehicle for universal communication. Several Humanists even experimented with a "new mode of writing," an ad hoc system, never widely used, that both resembled Egyptian script and departed radically from its linguistic kernel.[4]

In theory, not all of this was wrong. The retention of pictoriality in hieroglyphs—several such systems are known, not just in Egypt—encourages a certain tension or friction in their use and makeup. Correctly understood as records of sound, they nonetheless record much else, as inferred from variances of color, form, paleography, graphic customs, textural clues, physical placement, interplay with light, and orientation: they tend to semiotic, pictorial saturation, or can do so as part of the graphic resources of makers. Hieroglyphs are also a kind of picture, a set of objects in representational space: they communicate a feeling of mass, have shape, interiors, exteriors, an edge in between. In this, they contrast profoundly with stroke-based systems that constitute most non-printed scripts in the world.[5] Perhaps, too, the Humanists who toyed with hieroglyphs were partly correct in another way. The separation of picture from text—to those who believe a category error has occurred—denies the possibility that they might also share a measure of vitality in which a depiction absorbs a portion of the original's identity, being, and behavior or be capable of speaking and emoting. Such vitalities, or a claim to them, can certainly be detected in Maya glyphs, a hieroglyphic system used for about 2000 years in the Yucatan peninsula and environs.[6] At times, its signs erupt into fully figured forms, grasping other glyphs nearby or relating to them as though

captioned by glyphs. Shorter texts tag those of lower (but still elite) status, longer ones the images of kings, queens, and princes. In the longest texts, depictions of people disappear or reduce to figures at the top margins or sides and front of a stela (Helmke et al. 2018: table 1, for comparative length of texts by number of glyph blocks, the main unit of glyphic display). They emphasize lengthy chronicles of key import to the local dynasty. Their volubility is better suited to all-textual presentations, as part of an effort to craft an authoritative account in words. In other cases, particularly at Yaxchilan, Mexico, self-referential texts, such as a lintel alluding to its dedication, typically avoid the use of imagery; see Houston 2023. Lintels with imagery are about events outside the text, away from the building that houses such carvings. A subtle decorum of use is apt to be at play here.

4 Winand 2023: 52, 58, *in quibus interpretandis dimitte voces accipe sensus*, "in which to interpret, let go of the words, receive their meanings." See also Hamann 2008, for wider Humanist discussions about non-Western writing, and, for musing about hieroglyphs as a facilitator of universal language, Howard 2024; there is broader contextualization in Curran 2007 and Giehlow 2015, and, for specific studies of images or carvings, Galis 1980; Winand 2022. To consider a Mayanist analogy, see Coe 2012: 141, citing J. Eric Thompson, for whom, in his "Herculean" quest for "mythological allusions," decoding "leads us, key in hand, to the threshold of the inner keep of the Maya soul, and bids us enter" (Thompson 1950: 295).

5 Houston & Stauder 2020: 21.

6 Houston et al. 2004: 73–81.

in conversation or respectful attendance (fig. 1).[7] Indeed, fuller shapes are implicit or latent in the more common reduced or abbreviated versions. They lurk "off-screen," bursting into view, embodied, as a special and rare kind of emphasis. In a few cases, they reflect a particular class of creature. Animals and birds were more likely to appear in this manner, wild, tussling or vocalizing through mouths open wide. Glyphs without clear pictorial referents appear to have skirted such exuberant variants and were accorded latent animacy. This suggests that some Maya glyphs had such potentials, others did not. There is also some evidence that these animacies were less generic than rooted in specific mythic prototypes: in glyphs, not just any snake, but *this* one, rooted in a distant tale; not just any god, but *that* one, a participant in a sacred story.[8]

Fig. 1. Full-figure glyphs, **ma-k'a-na CHAN-la**, Mak'an Chanal, a noble owner of the "dwelling" (*otoot*), Structure 9N–82 Hieroglyphic Bench, block 4, July 7th, 781 CE, with alternation between conventional glyphs and two fully figured ones, **na** and **CHAN** (Zender 2019: 30, fig. 1, photograph by Marc Zender)

7 Houston 2022a: 79.

8 Houston & Martin 2012.

Yet, with Maya writing, the promised union of picture and text never comes to pass, despite the complementation between them.[9] There is less a category mistake than an abiding ambiguity, a coding that makes quiet distinctions. Glyphs and images employ the same canon of graphic conventions, draw on similar clues to material, surface quality, gender, details of body parts, and gestures.[10] They were probably crafted by the same people, schooled in a similar repertoire of graphic forms. A particular object might have led a viewer or reader to think of the word for it and its associated meanings: to see, say, a statue of Abraham Lincoln, recognizable by his gangly frame and chinstrap beard, tended to elicit his name in the mind. But glyphs as writing are always recognizable as such, either because of their vectoriality and strong phonic content, almost always of word signs, or by their patent identities with isolable signs in texts. According to cognitive psychologists, they are, with images, constituents of different, if parallel, modes of graphic display.[11] Some displays are mostly picture, with a bit of text; others allot more room to textual graphs. Intersections of the modes may have intensified human encounters with them, and their juxtapositions—as in, from another context, rebus spellings interspersed with Latin script—appear at once ludic and droll, engrossing and serious.[12] On a deeper level, each collaborates with the other in an immersive visual argument, rich with sound and pictorial ingenuity. The aim is to enhance an overall notion of authoritative display, an "unerring accuracy" in the words of some specialists: if not literal, they at least offer up a narrative truth, a coherent story.[13] Yet the modes are most jarring, at their most mutually contrastive, when graphs from the textual, language-based domain infiltrate the pictorial field as objects. The signs appear solid and graspable, as though held in human hands, but the very point is their anomaly. They are, as in Egyptian cases, an uncommon insertion that seems, in a semiotic sense, "marked" by their departure from the norm. As hieroglyphs out of place, they underscore what is in fact a carefully observed distinction between categories, word signs of a particular sort that find their way into pictorial space. There was no logical error or spurious fusion of different categories, no blending of modes or secure "assimilation" of picture and text.[14] The aim was to enact a purposeful, supernatural friction at the boundaries between them.

9 Houston 2022: 79. For complementarity of text and image, see Nöth 2000.

10 Precisely the same point about a collective inventory of visual conventions, held at a particular time and place, is made for Egyptian hieroglyphs by Vernus 2016: 2–3, who also identifies how such graphs can be configured for pictorial or textual use. An especially apt term is "calibration," by which graphs are adjusted in size depending on whether they are mobilized for texts (where size becomes uniform) or images (where size adjusts to a pictorial field).

11 Cohn 2016: 310–318; see also Cohn & Schilperoord 2022. For a sophisticated view of relations between images and words in domains of picture, signs of meaning ("semasiographs") and language ("glottographs"), see Martin 2006: 63–64, who reflects on an influential treatment by Elkins 1999: 85–86. A suggestion of more overlap between these domains appears in Stuart 2021: 27–28, commenting on the celebrated Aztec Calendar Stone.

12 Brisset et al. (ed.) 2016.

13 Stone & Zender 2011: 24, for "unerring accuracy."

14 Stone & Zender 2011: 26, on "assimilation."

1. The emblematic mode

Egyptologists have defined an "emblematic mode of representation" in which "a deity or a king" is shown as "an inanimate symbol with limbs attached," often to perform an action; this allows "entities to be depicted in otherwise inappropriate contexts."[15] Scribes and carvers "exploit[ed] the distinction between representation and writing to create something that is located between the two," yet were "less common than is sometimes implied… and no one confuses picture with script (as is true also of Mesoamerica)."[16] Familiar Egyptian examples include name glyphs held in the hands of their referent, as in a cedar panel from Hesy-re, a Third Dynasty official, or, earlier still, from Naqada III, standards sprouting arms to constrain captives, prefiguring in turn the use of Narmer's name hieroglyphs to smite Libyan enemies (fig. 2).[17] It is surely notable that the bodies may be human, hinting at sentient agency, but almost always lack human heads. That slot is instead filled by an animated sign, the evident initiator of action. The human limbs are a kind of prosthetic for graphs not ordinarily understood to walk, grasp, bludgeon or affect the physical world around them.

Fig. 2. Battlefield Palette, Naqada III, ca. 3100 BCE, British Museum (EA20791), with cast of upper left fragment, taken from original in the Ashmolean Museum, Oxford University; a third fragment is not reproduced here (© The Trustees of the British Museum. Shared under CC BY-NC-SA 4.0 license)

15 Baines 2007: 16. See also Baines 1985: 41–63, noting the use of human hands to assign agency to an attached symbol, and, for earlier exposition, Fischer 1972: 9, 17–19, figs. 9–11, 25, and, in more detail, Fischer 1986: 40–41, figs. 10–13.

16 Baines 2007: 285.

17 Baines 2007: fig. 8; Fischer 1972: 17–19.

As a term, "emblematic" has a different usage in Mesoamerican writing. The script of Teotihuacan, Mexico, sometimes carries this descriptive, above all to emphasize its compaction, allergy to vectorial sequences, stress on symmetry, distribution in areas of its near-imperial reach, abbreviations of larger, more elaborate signs, and frontality of signs, "perhaps as a statement of aggression and domination."[18] They usually sit alone, in murals or next to strikingly similar figures they help to distinguish: their function is to name persons or buildings and place names, or to supply titles (fig. 3).[19] There is no special emphasis, as for Egyptian hieroglyphs, on their appearance with arms or legs. Any disposition into syntax, as sequent signs, is infrequent and not always clear in their order and still less so in their meaning. Their role is to complement imagery, to supply it with clarifying labels. They also represent a collective decision at Teotihuacan and among other peoples in ancient Mexico to move away from the vectorial, highly linear texts that find their fullest expression among the Maya and related groups in the Isthmus of Tehuantepec region. One hypothesis is that this strategy allowed greater transmissibility and broader use in areas of varying language, as part of polyglot societies, although the signs unquestionably carried words and perhaps homophones from local speech.[20] Writing may not be reducible to language, but, by definition, it bears a necessary connection to meaningful, structured sounds.

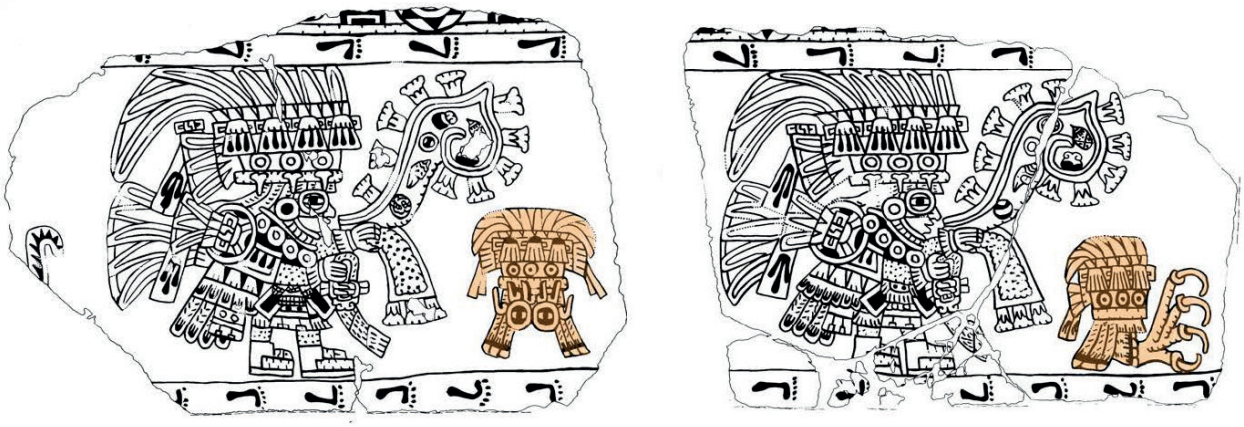

Fig. 3. Persons in procession with tasseled headgear and garments; highlighted in color are their name glyphs (frontal Storm God eyes with flames and a raptor's talon respectively) and, above, smaller versions of their dress, probably titles or insignia of rank, wall paintings, Techinantitla compound, Teotihuacan, ca. 500–550 CE (Millon 1988: figures v.1, 4, Fine Arts Museum of San Francisco, 1985.104.5, 1985.104.11)

18 Taube 2000: 47, figs. 7, 10, 21; also Taube 2011: 87, 104, fig. 5.7. For such glyphs away from imagery, see Cabrera Castro 2017: 112–116, fig. 14.6, or as possible place names, Helmke & Nielsen 2014. For analogues from the late first millennium CE city of Cacaxtla, Mexico, see Helmke & Nielsen 2011, who make a case for language-specific syntax.

19 Houston 2004: 277. For Teotihuacan titles, Millon 1988: 123–125.

20 Houston 2004: 275–280.

2. Names out of place

For the Maya, glyphs that appear by themselves, without syntactic ordering beyond a single word and its adjectives or numerical notations, are a special kind of out-of-place hieroglyph. They clearly operate as logographs, needing first to pass through a process by which sounds were attached to them, after which the sign might be inserted into an image.[21] The most common are name glyphs occurring in headdresses.[22] This pattern goes back to the origins of Mesoamerican writing as identifying, almost diacritical signs affixing themselves to human heads.[23] In earlier images, idiosyncrasy did not come from some trait of a particular body, but from an identifying glyph. Word signs, now in the existential space of the figure, rest on the head, thus naming the figure (fig. 4). Roles are designated by elements of costume or seating on a throne: examples among the Maya, as on Copan Altars L, Q, I, and T, include rulers seated on their names, as though such signs existed to ground and solidify their presence (fig. 5).[24] Glyphs, obedient to gravity, placed squarely on the head, provide a more individual label. In other respects, aside from minor elements of clothing, the figures are nearly identical.

Fig. 4. Name glyphs on the head of enthroned rulers, Kaminaljuyu Monument 65, Late Preclassic period, ca. 1 CE, Museo Nacional de Arqueología y Etnología, Guatemala City (photographs by Stephen Houston)

21 Stone & Zender 2011: 18. Their emphasis on logography, the attachment of sound, is crucial.

22 Claudia Brittenham points out that the stucco glyphs on palace and temple walls at Palenque, Mexico, were probably finished prior to their placement. Intended to form parts of larger texts, they began, in a sense, as isolable glyphs, and could also dislodge if their bindings to the surface failed; see Schele & Mathews 1979 for the largest samples of such stuccoes. For a study of their state once dislodged by later visitors to Palenque, see Houston & Stuart 2013.

23 Houston et al. 2006: 68–72.

24 Copan evidence: Fash 1991: figs. 11–14, 109. Altar T, consultable in the *Corpus of Maya Hieroglyphic Inscriptions archive* at the Peabody Museum, Harvard University, contains personified day signs, holding up month glyphs that mesh with them calendrically—for the Maya, days and months together constitute an important count of 52 years. The day signs sit on individual glyphs that spell out an anniversary text referring to the "seating" in office of the 16th ruler of Copan. The trope of sitting, by figure and verbal glyph alike, is undoubtedly intentional. An intriguing twist is the imputed agency of the day signs—they are equipped with bodies—and what seems to be a more inert, passive role for the month signs. This may be some scribal whim or a reflection of subtle differences between the nature of days and months. The top of the altar shows figures, each seated on the splayed body of a mythic crocodile, holding largely eroded glyphs; http://ancientamericas.org/collection/aa010021; for discussion of these day names, see Stuart 2024a.

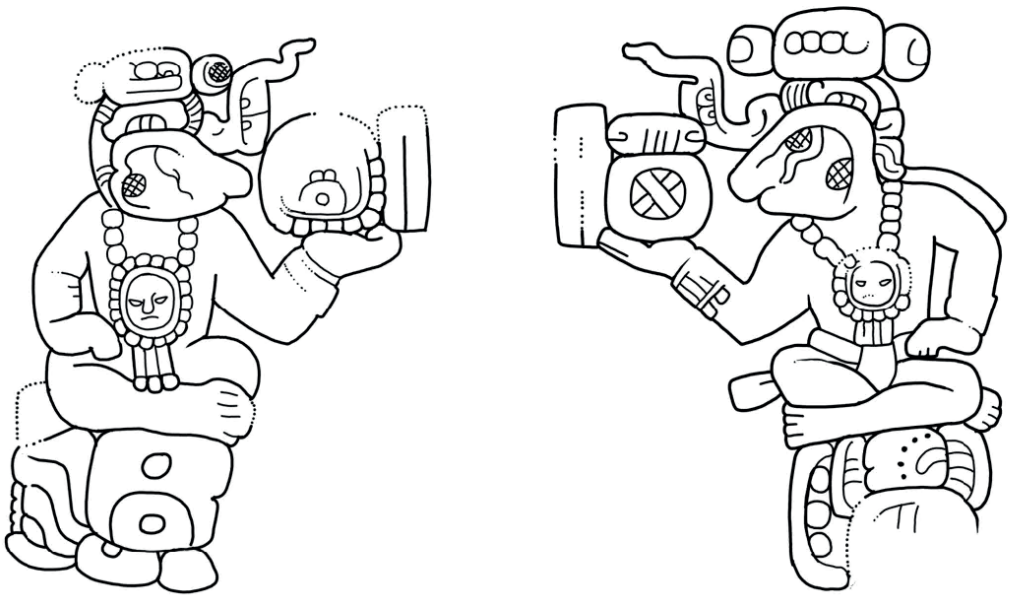

Fig. 5. Seated Kaban day names, with numbers 6 and 4 respectively, holding their corresponding month glyphs, 10 Mol and 10 Zip, equating to June 29, 763 CE, and March 16, 783 CE; these refer to a royal enthronement and its 20-year anniversary (drawing by David Stuart)

Later examples demonstrate the semantic complexities of such name glyphs and the graphic fictions of weight and gravity, at least in the pictorial field. Naranjo Stela 43, thought to date to about 573 CE, records different slices of time, both in its texts and in images on the back and front of the carving. One side highlights the reigning lord, the other his father; they are respectively in the guise of a deity linked to the sun in its nocturnal phase (the current ruler) and its full appearance at day (the father, fig. 6).[25] The son's side abounds with various name glyphs, perched atop the ruler's own. His outsized name glyphs sit in a horizontal sequence above a conventionalized rectilinear emblem for the sky. Three bugs, perhaps fireflies, illuminate the scene while buzzing about to upper left. They exude a fiery smoke in an amusing conceit of the time: the glow of such creatures was construed to come from torches or fire rather than bioluminescence. In its packed layout, an interpretive riddle even to an au fait viewer, the stela exhibits other historical figures in miniature. These small beings may embody the effigies kept in Maya temples.[26] All are labeled by glyphs on their heads, and, in their grasping and gesturing bodies, they meld with nocturnal aspects of the Sun God.

25 For analysis and drawings, Stuart et al. 2023.

26 Small effigies of the Rain Deity, Chahk, are attested in various collections, if without provenience. These may well have been the focus on rituals and storage in certain temples, *wayib*, locations where gods resided, e.g., Peabody Museum, Yale University, YPM ANT 236866; Houston & Taube 2010: 240–241; on *wayib* in general, see Stuart 1998: 399–400; Baron 2016: 65–70.

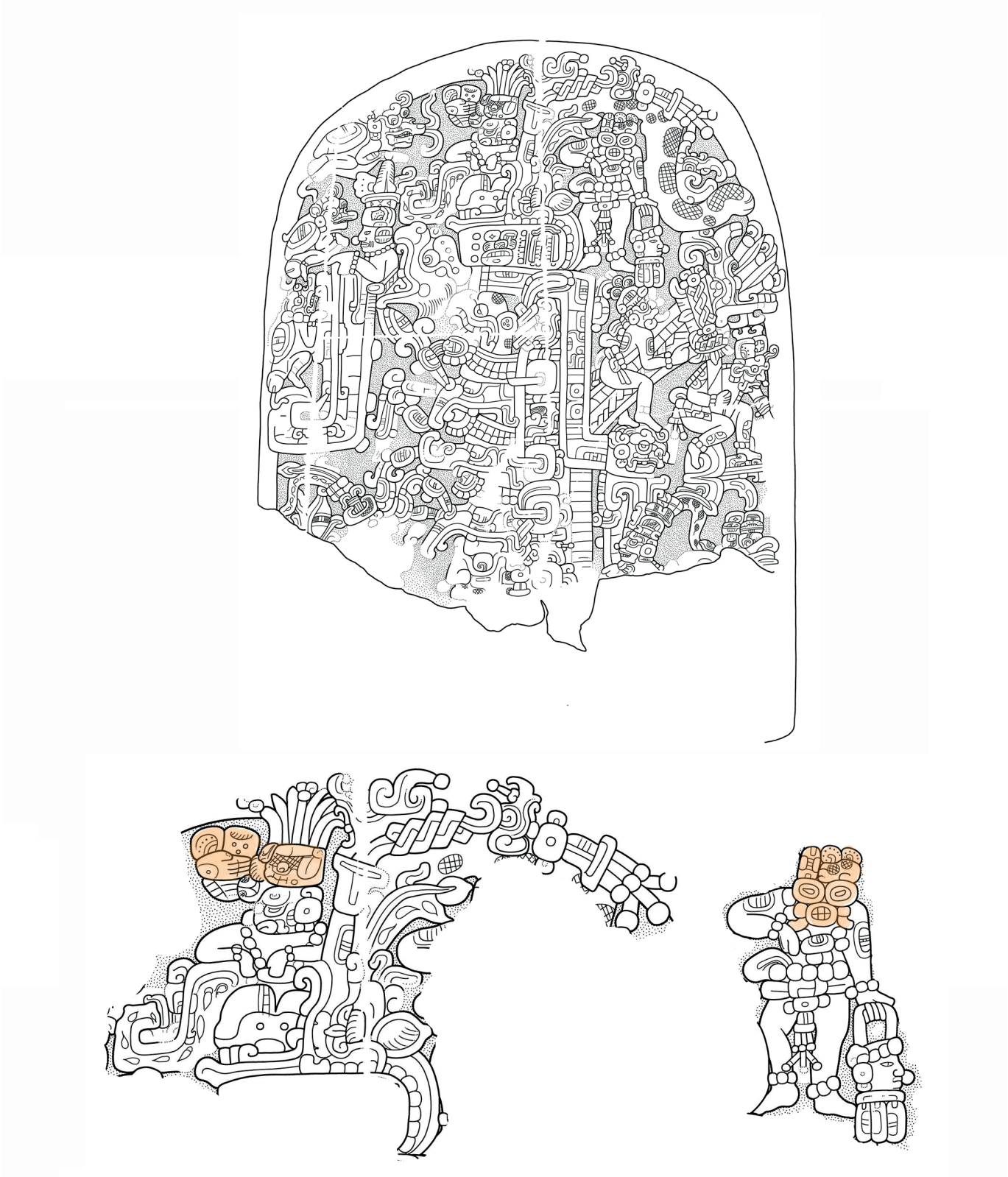

Fig. 6. Name glyphs, highlighted with color, in complex arrangements but susceptible to gravity, Naranjo Stela 43, possibly ca. 573 CE; original stored in the Museo Nacional de Arqueología y Etnología, Guatemala City (drawing by Alexandre Tokovinine)

Two are of special note. To lower left in Figure 6 is the name, sprouting from primordial growth, of a ruler of Calakmul, Mexico. Known to have been an overlord of the current king of Naranjo, he also bears an exalted dynastic title, "King of the Snake [kingdom]," and, below, the head of a deity emerging, hands drawn together, from a split seed. Exuberant foliage issues forth to both sides. That foliage may be seasonal, a logical concomitant, as germinated seed, of solar beings tied to intense sunlight or its absence, or the growth may refer earlier still to the first mythic verdure, a harbinger of the first fruits of harvest.[27] Appearing to disgorge these complex symbols and glyphs is an open-mouthed reptile merged with a mammal, possibly a feline. To lower right in Figure 5 is the name of a ruler of Tikal, Guatemala. His name glyphs displace his head and are tagged with a sign for "youth" in a spelling tied to the distant city of Teotihuacan, Mexico; he carries a belt assemblage often linked in Maya imagery to ancestors.[28] Such rulers were likely deceased at this time. As a cosmic declaration, enlaced with many of the dynastic politics of the time (Calakmul and Tikal were notoriously antagonistic and devoted to political maneuvering), the stela is drenched with assertions about the relation of rulers to gods, and royal mergers with day and night. The sides of the carving, in fact, explain glyphically how each ruler of Naranjo impersonates a deity, the father the Sun God, K'inich, perhaps "reborn" (*sihyaj*) as such a few years after his death, and his son its nocturnal aspect, perhaps read Ik' Chuwaaj, an enigmatic god tied later to trade. Do the figures from Calakmul and Tikal offer vegetative productivity and ancestral insignia to the king of Naranjo? Beyond that speculation, the glyphs do not float or disengage as most texts do in the Maya corpus. They exist in a pictorial domain where gravity operates, where they will fall off if not positioned on someone's head, or if they lose their grip or slip off a perch. The "calibration" or sizing of these glyphs is consistent across the image, approximately the size of the heads of the figures they name. Clearly, they are also word signs and follow the lexical syntax of certain multi-element royal names: the rulers of Calakmul and Tikal have three particles in their names, all present here. What began as the perusal of an image requires a separate cognitive procedure, a glyph-by-glyph reading and an explicit activation of sound. Yet it never extends beyond a name label or two. In the Early Classic period, in the middle years of the first millennium CE, not a few such names are enveloped by maize foliage. Whether this was read as *nal*, "foliage [of corn]," as suggested by other spellings, raises the chance that they refer to a particular class of name or to some association between rulers and Maize Gods.[29]

27 Houston et al. 2021: 132–134.

28 Martin 2008: 72, 104. On this sign for "youth," see Houston 2018: 47–48, figs. 23–25.

29 Stuart 2024b: 53, fig. 41; compare with *nar* [*nal*], "ear of corn that is ripe and dry," Hull 2016: 298. As a term, *nal* referred to both matronymics and patronymics in Yukateko Maya of the early Colonial period, lending possible weight to a phonic rather than a semantic reading (Barrera Vásquez et al. 1980: 557). On Maize Gods, locations, and kings, see Tokovinine 2013: 115–123.

3. Hand-held glyphs

Another subset of out-of-place glyphs are those held in hands. These seem largely to relate to seasonal or calendrical rituals, including signs for agricultural bounty. On a panel from Pomona, Mexico, are a series of four nobleman. They are described as historical figures, discharging a particular duty as "mouths of the white/pure book or paper," *Ti' Sak Hu'n*, probably a nod to their ritual roles and the oral recitations involved in Classic Maya literacy. But their identities also conflate with mythic personages, in this carving the *4 Itzam Tuun*, four-part embodiments of inspirited stone.[30] Two figures are largely gone, but those that remain hold up day signs in their hands (fig. 7). The version that survives hides the final dot for "4" behind his pinky, although the glyph manages to peek out to the side. These are sure to be literal counterparts to Maya "year bearers," in that they hold signs correlating with the first month of the year, an important waystation in Maya calendars from all regions. The day signs cycle through sets of 4—all would have been on display by the god impersonators at Pomona—and, in this case, may have been stressed or seen as otherwise remarkable because of the unusual dedication date of the monument. It fell, as very few inscribed dates do, on one of the "holes of the year." This was a fraught, anxiety-inducing span of five days at the end of the year, known in the Classic period as the *u way ha'b*, the "hole" (or "slumbering room"?) of the year.[31] The number "4" with the year-bearers at Pomona was likely more numerological than strictly calendrical, for the number would fit neatly with the figures on view in the carving. Again, gravity and perceived weight are in force, and the day sign is only as large as the open hand can hold.[32] Here, too, is a sense of offering or raising, for the hand is close to the shape of a verb, *k'al*, signifying "raising up, elevation." Not just the glyph but the hand appears to intersect with logography.

30 Stuart 2004: 4, fig. 4. For such beings, consult Martin 2015, drawing in part on a decipherment proposed by David Stuart.

31 For inked rendering and initial discussion, see Schele & Miller 1986: 142, fig. III.12. The grim nature of the *way*, often depicted as centipede jaws—a ravenous stand-in for an earth that eats—is affirmed by a plate in the Royal Museums of Art and History, Brussels, AAM 02012.2.102 (Matteo 2023: fig. 3). A death god sits within such a hole, his food before him in a wooden bowl that must be a clever reference to the actual plate. The meal: the long bones and soul (*sak saak ik'*, the "pure seed-wind') of the deceased, hard and ethereal parts all at once, the material vestiges and spirit of the human body being tidily contrasted. That Death Gods are documented as malignant spirits known as *wahy* may be a further bit of sly wit, for, as a homophone, that is also the name of the chambered space where he sits. The *saak* reading for "seed" was first proposed to me by David Stuart, personal communication, 2005; note that the glyph for "seed" (*saak*) is not the same as that for "white" or "pure" (*sak*).

32 Nonetheless, the glyphic spelling of "bear, carry," *kuch*—which might be expected for a "year-bearer"—is probably not intended here. When shown, that action involves an object strapped to the back (see deities in the Dresden Codex, p. 16a, b, 17a, b, 18, c, 20c, 27a). No hands are used in the Dresden.

Fig. 7. Nobleman impersonating deity, holding up the day sign 4 Kaban, a "year-bearer" in the calendar of the Classic period, Museo de Sitio Pomona, 771 CE, Tabasco, Mexico (photograph by Stephen Houston)

Two other seasonal or calendrical uses occur with glyphs out of place. The first comes early in the Classic period, on El Zapote Stela 5, a site 22 km from Tikal, Guatemala (fig. 8).[33] The stela records a period of active intervention in Maya affairs by warriors from Teotihuacan, Mexico. This is expressed in glyphic passages that refer to people involved in that interaction but also in the form of *Mexican* year-bearer sign, with its distinctive triangle and inverted, "u"-shaped bar, equipped here with the number 12. The bearer is a woman, perhaps the spouse or mother of the male figure depicted on the other side of the stela. The sign within the square and strongly un-Maya cartouche is probably the same as an ancestral figure, perhaps from the early 300s CE, mentioned on Stela

33 Stuart 2024b: 25; see also Proskouriakoff 1993: 14.

31 at Tikal, also depicted as part of an ancestral belt on that monument. This does not seem to be a day sign, yet it may allude to some familial relationship or mix of associations: her hand, its thumb more-or-less vertical, resembles the Maya sign for "receive," *ch'am*, as well as that for "child of woman," *'al*.

Fig. 8. El Zapote Stela 5, 435 CE, Museo Nacional de Arqueología y Etnología, Guatemala City, with detail to show the square cartouche of a Mexican-style year bearer (photographs by Eric Poeschla)

A similar year sign occupies the left side of a Late Classic panel at Coba, Quintana Roo, Mexico (fig. 9).[34] A captive kneels to face it, bound hands in the air, his body on what is likely a placename. A small glyph above may label the captive, who addresses the year sign as though it were a physical object. Here are two glyphs out of place, a toponym grounding the captive and a non-Maya sign that becomes a focus of entreaty or the temporal frame for his capture and humiliation. This, as at El Zapote, presents an example of what might be called a "xenosign" in Maya writing, ostentatious in its foreign attributes, kept graphically distinct from local script. Its presence at Coba suggests a comparable time of engagement with distant areas of Mexico or with groups representing them. Whether the event takes place close to the time of carving is impossible to say—it has no overt date and may report on some far earlier event.

Fig. 9. Coba Panel 19, Late Classic period, with captive and possible name glyph by his face (photograph by Maria José Con)

34 Esparza Olguín 2020: 110–111, fig. 16; Grube & Esparza Olguín 2017, who suggest a tie to Uxul, far to the south, near the border with Guatemala. Whether that is the placename remains unclear. Its suffix at Coba is a sign for "water," *'a*, common in place names but otherwise unattested for Uxul's Emblem glyph title. In rare instances, other placenames may vary their spellings by appending *'a*, as at El Peru, Guatemala (**wa-ka** > **wa-ka-'a**), although that particle may simply be a syllabic reinforcement, not an added particle (see a spelling on a stela looted from El Peru, now at the Kimbell Art Museum, # AP 1970.02, block pA9). A possible reading for the Uxul Emblem is **NAAH-ku-ma**, *naahkum*, without the final *'a* (Martin et al. 2015).

The second set of signs is still opaque but appears to communicate some awareness of seasons. Found, among other places, on Laxtunich Lintel 1, from 773 CE, it involves a local overlord, the king of Yaxchilan, Chelew K'inich, in the act of impersonating the Sun God (fig. 10).[35] Across from him sits the magnate who commissioned the lintel; he impersonates a variant of the Maize God. The dates on the panel, which relate to the spring equinox and intense seasonal shifts in the Maya agricultural calendar, are reinforced by two signs held by the king and the magnate: one shows the head of the wind god, tied to robust winds and storms, the other to a time of hunting. Much is murky, but these may represent notional divides in times in which the sun dominated, another time in which rains did: the circumstances of growing, the time for preparing fields, leading to hoped-for harvests.[36] They too "raise up" the signs, and the date above overtly records this act as "raising up the Sun Lord in the sky" (**K'AL-ja ti-CHAN-K'IN-AJAW-wa**) on March 18, 773 CE, the full intensity of the dry season now upon them. These glyphs angle on the outstretched hands, causing them to dip slightly from their heft.

Fig. 10. Laxtunich Lintel 1, 773 CE, showing probable signs referring to seasonality (photograph by Stephen Houston)

A final inventory of signs employs the adjectival signs for "blue/green" and "yellow," preceded by glyphs for "1" (fig. 11). Their contexts mostly concern agriculture and bounty.[37] A relevant capstone,

35 For discussion of impersonations on the lintel, Houston et al. 2021: 119–131.

36 On such signs and seasonality, see Houston et al. 2021: 127–131.

37 On the *wi'* reading for "abundance," see Lacadena 2002; also, for later review, Esparza Olguín & Benavides 2020: 4, figs. 2, 3–4. For related capstones, see Staines Cicero 2008. Showing an apparent image of instruction, a unique vessel inserts 1 *k'an*, "1 yellow," 1 *yax*, "1 green/blue, into an utterance from Itzam, an elderly god, while speaking

a central slab in the uppermost part of a corbelled vault, comes from ca. 750 CE, at Dzibilnocac, Campeche, Mexico. Brimming with such references, it faced down into the vault, visible to those looking up if made difficult to see by murk and distance from the viewer. K'awiil, a deity associated with lightning but also the vegetation that flourishes from lightning strikes, sits on a throne amidst rich foodstuffs (fig. 11, left). There is a basket of what may be maize seeds, spilling also out of his mouth, a bag of chocolate beans is behind him, a bowl of three stylized tamales in front. The text above and below, not pictured here, may specify the "plenty" (3 *wi*'?), possibly indicated by the bowl with tamales, along with the presence of seeds (*saak*) and food and drink (*waaj*, *ha*'). Yet his left hand supports the sign 1 *k'an*, "1 yellow," in the bag behind is 1 *yax*, "1 blue/green." Ordinarily, adjectives do not appear as nouns in Mayan languages, and their use in the capstone demands an explanation. In several sources, the combination of yellow and blue-green (the Maya did not distinguish these colors) touches on general concepts of "abundance" (Q'eq'chi', *raxal q'anal*), "glory, majesty" (Ch'olti', *canal yaxal* [*k'anal yaxal*]), "reward, merit" (Poqom, *kanalrax*a), and "riches… good things of fortune, glory, prosperity [*Próspero cosa… Gloria; Paraíso*]" (Cakchiquel, *q'anal, raxal*).[38] The dyads, a set of evident contrasts, yield a range of meanings that go from the specific, "abundance," to the oblique or suggestive, "glory." As a glyphic pair in the Classic period—the preceding combinations are from Colonial or more recent sources—the dyad also signals the idea of things put in order, usually in terms of a totality, *tz'ak*.[39] Yet its fundamental undergirding seems more vegetative and agricultural, of green growth leading to its eventual dry, yellow state, ready for harvest. It connotes and, in many scenes, openly exults in an abundance of food, a bounty of things stored and eaten, to be immediately consumed or processed into steamed breads and liquids. The wider allusions may emanate from a basic concept of fertile production. As a guess, the rooms below these capstones may have stored foods as a buttress of elite wealth, in goods to be sequestered and distributed; or, in a more esoteric vein, they motion to a common trope in Mesoamerican belief, to the mythic, underground chambers where corn was stored, to be released by blasts of lightning from a Storm God.[40]

to an attentive youth (Kimbell Art Museum, Fort Worth, Texas; AP 2004.04). The full text reads 1-K'AN-na 1-YAX u tu-ta-lL cho-ko-na? ta-ta-bi ch'o[ko]? -ji-AJAW, much of which remains opaque in meaning. Another vase of roughly similar date situates the *yax* and *k'an* signs on a brazier in which an infant is being sacrificed (K3844 in the Kerr series of photographic rollouts). The image is enigmatic but involves supernatural beings. *K'an* also occurs as part of a field of signs across the background of mythic or supernatural images, such as the wall of a tomb at Tikal, the probable interment of an Early Classic ruler of the city; Shook & Kidder 1961. Of uncertain function, these may impart a blessed, almost bejeweled ambiance in remote or mythic time, the air itself an embodiment of beauty. Stuart (2022) refers to them as "elemental words" that evoke beneficence and creation.

38 All references from Stuart 2022. For precise lexical citations: Q'eq'chi, Haeserijn 1979: 282; Ch'olti', Robertson et al. 2013: 71; Poqom, Feldman 2004: 82; Cakchiquel, de Coto 1983: 249, CCXXVI.

39 Stuart 2003: fig. 1a.

40 Taube 1993: 66–67; also Chinchilla Mazariegos 2017: 220–221; Zender 2006: 9–10, fig. 10.

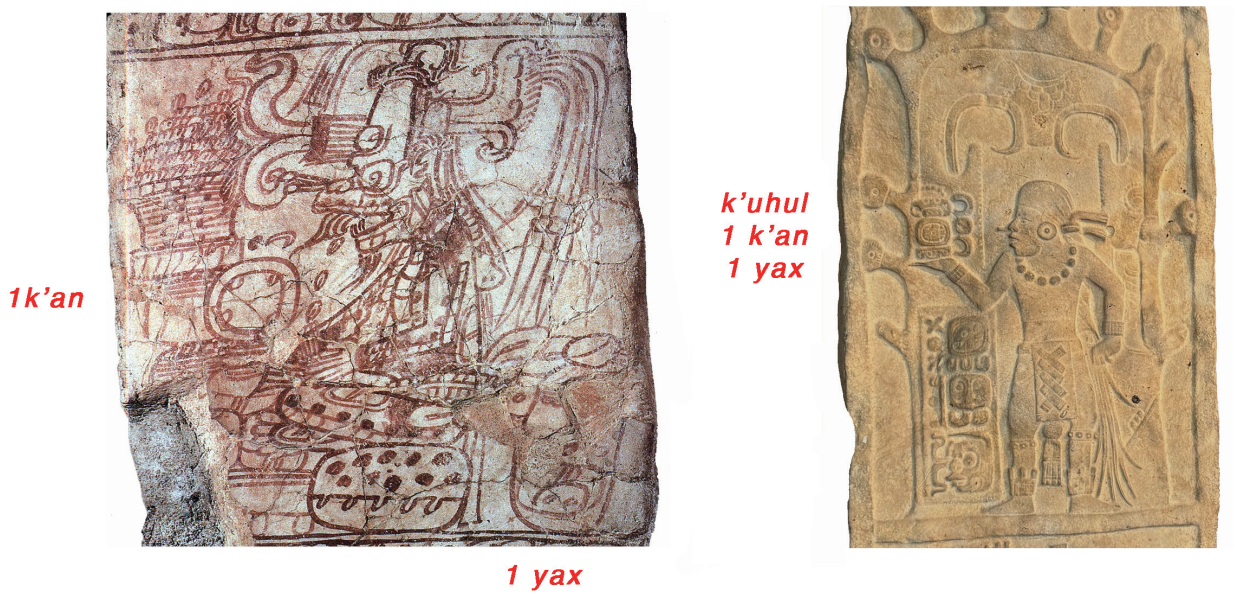

Fig. 11. Dzibilnocac Capstone 3, ca. 750 CE, and Ceibal Stela 3, 9th century CE (left, Instituto Nacional de Antropología e Historia de México, CC BY-NC, https://mediateca.inah.gob.mx/islandora_74/islandora/object/objetoprehispanico%3A17975; right, photograph by Eric Poeschla)

A more enigmatic spelling of this color combination occurs in a scene from the final years of the Classic period, although its date continues to pose uncertainties. It is not even clear whether the event is in dynastic time or in some remote past—the presence of a god as the main actor suggests the latter (fig. 11, right).[41] A figure with hair or feathers down to the ground and septum bar—a distinctly non-Maya or non-standard ornament—holds up the colors, but here qualified by the word for "holy" or "sacred," *k'uhul*. He emerges from an aperture of both stone and wood (well-known traits of these materials mark its surface), along with floral elements. Not visible in the photograph are Mexican Storm Gods above and, below, musicians with attributes of Wind Gods. This is a stormy, noisy, festive emergence. Most Maya texts place verbs after dates, but this includes the name of the local patron god, a combination of two deities, including K'awiil. The foreign inflections are apparent as is a link to surfacing from a jeweled cave or hole, rain and wind, perhaps cuing the agricultural prosperity brought forth by the central figure.

A slightly less clear example of these colors occurs on a capstone now at the University of Pennsylvania Museum—the signs are partly eroded, and the suffixes (**na**) seem more conventionalized than reinforcements for phonetic readings (fig. 12, left). On it a Maize god with kyphosis or scoliosis of the back offers the signs to K'awiil, the deity of lightning and vegetation. That deity

41 If from the Classic period, possible dates depend on the style of the carving and the slightly eroded day sign: Dec. 16, 872 CE (1 Ajaw 8 K'ank'in, 10.2.3.7.0 in the Maya Long Count system), and Dec. 7, 898 CE (1 Ok 8 K'ank'in, 10.3.9.13.10). There is a slim chance that the date is misspelled, corresponding to 1 Ajaw 3 K'ankin, 10.3.0.0.0, May 1, 889 CE, but this would be a striking and unexpected blunder on a carefully shaped monument.

holds up two *Spondylus* (thorny oyster) shells as though in reciprocal offerings.[42] Color signs mark the upper left and lower right, in the floating array more usual to Maya writing. The juxtaposed, numbered signs for colors are further treated as "burdens," *kuch*, of a voluptuous goddess in the Dresden Codex from ca. 1400 CE (Dresden 18a, fig. 12, right). The gendering here indicates a merger of a glyph for agricultural bounty and a cossetted child usually held with such a back strap: the embodiment of tending and near-parental care. Other hand-held glyphs occur in images—maize of "structure" glyphs on the stucco frieze from Holmul Building A, Group II, and sets of glyphs piled into a plate for bloodletting implements on Naranjo Stela 45 (for a "stingray-spine" god, *kokaan k'uh*)—but a longer tabulation would probably not change the conclusion that these images concern deities.[43]

Fig. 12. Left, capstone with K'awiil and a hunchbacked Maize God holding color signs. The mixed orientation of texts on the painting, some read right-to-left, others left-to-right, is unusual. It may reflect the varied positioning of the painting in relation to the reader or viewer, and to the doorway leading into the room under the capstone (University of Pennsylvania Museum, #65–44–1). Right, detail from page of the Dresden Codex, p, 18a (Codex Dresdensis - Sächsische Landesbibliothek-Staats-und Universitätsbibliothek, Dresden Mscr.Dresd.R.310)

42 Deities with such back bulges are rare but do exist in Maya imagery (Beliaev & Houston 2020: fig. 3). In one image, the back (*paat*) was evidently intended to be sawn through (*juhtaj*) to release a snake from the wound.

43 Estrada-Belli & Tokovinine 2016: fig. 4; Graham & von Euw 1975: 63–64. An anonymous reviewer suggested I add these clear examples.

4. Glyphs that support

But the most rooted of all glyphs out of place are those spelling place names.[44] So heavy they cannot be held, the very firmament lying underneath, such glyphs have been noted by specialists since the detection of place names within texts (fig. 13). The example depicted here carries its semantic weight mostly in the toponym underfoot, for it is a stela otherwise without a text. Place signs are considerably larger in pictorial fields than those grasped by hands. Figures stand on them, and the glyphs themselves reveal their stony, hill-like essence (*witz* in the inscriptions), often an explicit part of their names. Maize gods and corn foliage grow or emerge from their clefts, in ways natural to growth from pockets of soil in the karstic landscape of the Maya. Place names can also repeat. Sometimes this is because of a common epithet. Hix Witz, "Hill of the Jaguar," applies to several locations, from Zapote Bobal, Guatemala, to La Honradez in the same country.[45] A rocky outcrop with a feline would not have been noteworthy in any tropical jungle of the Maya region. But there are also place names that express a succession, in the same way that Athens, Georgia, only exists because of Athens, Greece, or Mora, Minnesota, because of immigrants from Mora in Sweden; the academic prestige of their originals led to Oxford, Mississippi and Cambridge, Massachusetts. So also for the Classic Maya: some repeated places, in several instances shown as glyphs of considerable size, are distinguished by whether they are the "first" such location, designated by the color adjective, *yax*, "blue-green" but also "first." A stela at Dos Pilas, Guatemala, refers to the original homeland of a ruler's dynasty, Tikal, over 120 km to the northeast, the distinction confirmed by the prefixation of *yax*.[46] This place glyph is doubly out of place at Dos Pilas, not just as intrusion into an image. Its findspot is not in the first but *second* location of the dynasty, and the stela refers in its eroded text and partial image to events in a city the royal family left behind.

Fig. 13. Base of Tamarindito Stela 3, Guatemala, ca. 750 CE (photograph by Daniel Chauche)

44 Stuart & Houston 1994: 57–68; Tokovinine 2013: 48–55.

45 Fitzsimmons 2015; von Euw & Graham 1983: 101, 110.

46 Houston 1993: fig. 3–28.

5. Glyphs out of place

The glyphs featured in this essay were rendered anciently as though endowed with real weight or mass. They functioned as part of the graphic repertoire of Maya carvers and scribes. An image could be loaded with information from two domains: of pictures, a disposition in multi-directional space, and of texts, words arranged in a single direction, vectorial, grounded in logographs that had to be read, not just viewed. They interact, seemingly in fused messages. Yet their cognitive processing, while graphic and visual, operated by what seem to have been distinct stages. Unlike glyphs out of place, most texts, even explanatory ones, do not obey gravity or seem not to. They hover in places convenient to their labeling function next to this or that figure or scene. At least one day sign exists as an actual if small object: a shell carved into the shape of a day sign 4 Ajaw, probably an evocation of distant time, the beginning of part of the Maya calendar (fig. 14). It faces in a way counter to conventional reading order, and, to judge from its two drilled holes, was probably worn as a pectoral.

Fig. 14. Day sign 4 Ajaw, in shell, ht. 7.7 cm
(The Art Museum, Princeton University, Princeton, NJ PUAM# 1983–51, K2843)

This is a piece of great rarity. The reality is that glyphs out of place affect only a select group of actors. They name people who might be hard to distinguish because of their dress, and of these almost all are of high or highest rank. They also serve as place names that both sustain a key figure and fold the sheer magnitude of a Maya city or its sub-sectors into a single label. By a process of graphic efficiency, the land has become a sign of itself. However, most beings with hand-held signs are supernatural or fused with such figures, or they are foreign or deceased. They deploy a limited category of signs relating to time, seasons, and the lush bounty that results from these phases of the year. More to the point, the signs they hold are out of place because their contexts are mythic or godly. To clasp a glyph was in essence, it appears, a non-human act. The anomaly of such signs underscores the wonder of their appearance and the impediments, for mere men and women, of bringing holdable text into the existential domain of pictures.

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Emerging Gender Markers in Pre-Old Egyptian

The Umm el-Qa'ab Private Stelae reconsidered

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Abstract. During the period between Dynasty "Zero" and the Fourth Dynasty, the Egyptian state was formed and developed numerous elements that remained fundamental for the later state and complex society. Early pictorial evidence indicates that both men and women are depicted, although the assignment of gender does not always appear to be unambiguous. Archaeological findings, artistic representations and linguistic evidence provide some insights about gender representation; in particular the First Dynasty stelae from the subsidiary burials of the royal tombs at Abydos are a unique corpus of Pre-Old Egyptian writing. The stelae are inscribed with titles and/or names, and one of mainly three different signs is often found at the end of such a title/name unit. These signs are categorised as [DOG], [DWARF] and variants of a seated persons, some of which are the hieroglyphic sign A1, others B1 and some are often interpreted as a woman—or not. The difference is not trivial because—of course—gender matters and is an analytical category for structuring societies. This raises an interesting point: how is the sex expressed in Pre-Old Egyptian writing that is presumed to match grammatical gender?

Keywords. Classifier, gender, early dynastic period, stela, system of writing.

1. Introduction

1.1. Identifying gender in Early Dynastic contexts

In recent years—probably in response to current debates in modern societies—a number of publications appeared that dealt with women, minorities or dependence structures in ancient Egyptian society. Depending on the topic, the material base is better or worse, but authors are generally able to identify the group(s) to be researched. After all, criteria are known that help to distinguish men from women: in arts, for example, these are differences in skin color, posture, dress and shape regarding the primary sexual characteristics; the writing system presents linguistic indicators like the grammatical gender that appears in nouns, adjectives, articles etc. agreeing with them in number and gender. In case of humans, for example, the sex actually corresponds to the grammatical

gender and is often classified with A1 [man], or B1 [woman]—this also goes for personal pronouns.

While these criteria are undisputed for the periods from the Third Dynasty onwards and are in turn used to answer further questions, their validity in the preceding period is questionable. The First and Second Dynasties are the decades in which these features and rules were developed and therefore experiments and deviations from the later schemes are to be expected. Shape, phonetic value and function (phonogram or logogram) of hieroglyphs were work in progress and so the identification of signs is not always fully established. In his recent article on "Lesefunde in frühägyptischen Inschriften," Martin Fitzenreiter questions (under the subheading "Zu viele Frauen in Abydos?") the identification of a sign that depicts a seated person, formerly read as [woman] on First Dynasty private stelae (Fitzenreiter 2022: 1). In another article in the same volume, however, other authors interpret a similar squatting person, originally read as a [man], now as an image of a [woman] (here: Fig. 4b; Sperveslage, Schneider & Bussmann 2022: 230 for sign A2). A similar basic assumption about "too many women" among Early Dynastic seal-bearers may already have prompted Egyptologists to interpret depictions of people with huge wigs/coiffures on Early Dynastic private seals as men by summarily declaring long-haired hairstyles to be a component of Early Dynastic male costume (von Bissing 1952: 9; Kaplony 1986: 711), albeit without providing any evidence for this, while similar representations in later Dynasties would be classified as women. People depicted on objects associated with royalty and power are also more likely to be interpreted as men—it was only recently proven that the person in front of Narmer is his queen and not some male official (Narmer Palette, upper panel of recto, Kammerzell 2021: 59–62). Obviously, the identification of men and women in these early samples is less clear than previously assumed and a fresh look is required at the differences that matter.

1.2. Archaeological classification

The classification of finds (and features) into categories, types, variants etc. is one of the most intrinsic archaeological methods. This way we are able to interpret the subdivision in subsequent steps on the basis of recognized patterns or to determine them with the help of analogies to (supposedly) better documented information. The assessment of a feature as belonging to a certain type, however, is usually subject to view, experience or knowledge of the respective researcher, methodological or theoretical approach, state of preservation of the respective object, or scope of the available or deliberately selected corpus and is likely to change with new findings. Previous classifications on the subject dealt with here often seem to be based on assumptions that the respective authors were not necessarily aware of—and this will be no different for the following study. A longstanding hypothesis is, for example, that women's burials could be identified by jewelry or the remains of

long hair,[1] while men could be identified by weapons or tools, or by over- or under-representing a certain group of people in the cemetery,[2] by assigning activities and functions to the deceased,[3] and the like.

To examine elements that mark gender, various aspects of material culture, iconography and written evidence must be considered. Key sources should include burials, human remains, and statuary. Clothing and hairstyles often provide gender-specific indications. Body postures and gestures in human representations can further differentiate male and female figures. Additionally, early inscriptions, names and titles associated with individuals should offer valuable clues about gender and identity. It should be noted that the criteria used to select burials (male/female/social hierarchy etc.) for certain cemeteries can vary considerably.

Signs on a specific group of stelae are the starting point for this discussion, namely those found at Umm el-Qa'ab. Based on this case study, human remains and linguistic as well as pictorial evidence are then discussed from a broader perspective.

2. The stelae from Umm el-Qa'ab

The stelae from Umm el-Qa'ab are assumed to belong to the altogether approximately 800 subsidiary burials around the royal tombs of the First Dynasty. The number of (surviving) stelae is much lower: 359 limestone stelae are listed by Martin 2011 (many of them fragmentary), with some of them originating from the contemporary enclosures and not the royal tombs.[4] About 60 additional stelae made of a green hard stone were observed during the re-excavation of Tomb U/Semerkhet (Dreyer, in: Dreyer et al. 2011: 83). While the stelae seem to have been found predominantly in some areas of the necropolis (Tombs O, Z/W, T as well as U and Q in the south), some areas provided hardly any at all (Cemetery B, Tombs Y, X).[5] Therefore, stelae are preserved only for approximately 50 % of the subsidiary tombs. Unfortunately, the situation for the osteological evidence is not any better, as many bodies—if not destroyed before the first excavations—were inadequately documented during that process.[6]

1 Kaplony 1963: 217; Amélineau 1899a: 57, 66; Amélineau 1905: 451–452.

2 The initial remark by Fitzenreiter 2022: 1.

3 Concubines: Troy 1986: 180; Morris 2007: 19; Trigger 1983: 52; Reisner 1936: 109; scribes: Morenz & Kuhn 2011: 8.

4 An additional object was found in Tomb Y (Köhler et al. 2023: 98, fig. 31).

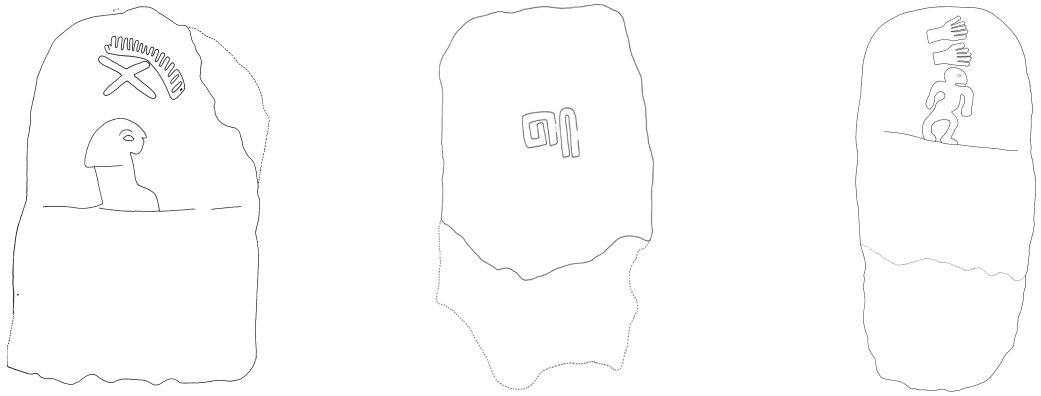
5 During the re-excavations of the German Archaeological Institute in Cairo at the site, a large number of fragments was collected that might have been stelae that are so badly weathered that nothing remained of the original surface. Apart from a few examples from Tombs T and U, none of them are published (see Martin 2011: 194–199, there often called "rough blank for a stela"). General assumptions taken from the remaining published stelae have, therefore, always to be taken with a grain of salt.

6 For a list of tombs and anthropological remains see Engel 2021a: 125. In all tombs the number of surviving skeletons is so small that it seems difficult to conclude a "ausgeglichene[n] Geschlechtermix" (Fitzenreiter 2022: 3, note 8): of

Since the tombs in Umm el-Qa'ab were excavated several times, beginning in the Middle Kingdom and ending with the recent re-excavations of the German Archaeological Institute, hardly any finds were preserved *in situ* but scattered over the whole area (see Engel 2015 for examples). As a consequence, the origin of objects has to be established using distribution charts to observe clusters in certain areas.

As the number of "green" stelae approximately equals the number of subsidiary chambers in Tomb U and were found only in this tomb and its surroundings, it seems that these stelae were exclusively made for this tomb. The "green" stelae, therefore, can be excluded from attempts to assign the remaining stelae to the tombs. Unlike most of the limestone stelae, the "green" stelae had an ink inscription that only left very few traces (Dreyer et al. 2017: 87, fig. 94).

The remaining limestone stelae do not form a uniform corpus but can be divided using several criteria indicating different workshops or developments within the same: one is the kind of limestone that varies between a rather porous and a denser variety (see the photographs in Martin 2011): inscriptions on stelae made of the porous variety are executed in raised relief and are clustered in and around Tomb O/Djer[7] giving the name (fig. 1b) or the name and the classifier in question on a baseline (fig. 1a, c). The same stone variety was used for two stelae of persons of short stature. Other stelae with a denser limestone can also be attributed to the same tomb if they show this particular feature (the baseline) (fig. 1c). The inscriptions are arranged vertically.



a) Stela 55 (Martin 2011: 51) *b*) Stela 108 (Martin 2011: 91) *c*) Stela 58 (Martin 2011: 53)

Fig. 1. Stelae coming from Tomb O/Djer (not to scale)

the about 20 skeletons in Tomb Q, for instance, several skeletons were removed by Petrie without giving any indication on gender determination or present location; less than 30 bones of approximately 4200 that should have been there were found during the re-excavation by the German Archaeological Institute, many of which were so fragmentary that they did not allow a determination of sex or other characteristics (Zink in Dreyer et al. 2003: 131–133). The same difference in numbers holds true for the remains of fifteen individuals published in Amélineau 1905: 730–736 (as quoted by Fitzenreiter) of originally 318 persons in the subsidiary chambers of Tomb O/Djer. Zink 2008: 693, however, describes the gender and age ratio in Cemetery U and cannot be taken to represent any of the royal tombs at Umm el-Qa'ab.

7 Some objects were moved to the environments of Tombs B (Aha) and P (Peribsen).

Inscriptions on stelae from the reign of "Serpent" are also arranged vertically, as can be seen in stelae from Tombs Z and W as well as from the contemporary enclosure. These stelae are made from a harder and denser limestone than the older stelae and are usually less than 20 cm wide, but have a lengthier appearance than the older ones from Tomb O. Many give only the name of the owner. These stelae are distributed over a wider area with single objects found in the area of Tomb T (e.g., Stela 278), Y, or U (Stela 301) (fig. 2a–b).

a) Stela 203 (Martin 2011: 145) *b*) Stela 14 (Martin 2011: 25)

Fig. 2. Stelae coming from Tomb Z and W/"Serpent" (not to scale)

The location of Tomb T in the middle of the cemetery makes it more difficult to single out typical stelae of this reign since it is surrounded by Tombs Z, Y, U, Q and even O, so that it is likely that finds in this area are mixed with objects from the adjoining tombs. Still, some statements seem possible: the stelae appear to be generally wider again (> 20 cm)[8]—and remain so until the end of the dynasty. The top of the stelae is usually rounder than in the examples from Tomb Z/W or nearly square. Many stelae now mention name, title and feature a larger range of classifiers: In addition to those used during the reign of Djer two generations earlier (the supposed B1 and a14) A1 and E14 are used.

8 The width of the objects is, however, an unreliable criterium since many of the measurements given in Martin 2011 do not state whether the original surfaces are preserved or not.

a) Stela 125 (Martin 2011: 99)

b) Stela (Amélineau 1899b: pl. XLII)

c) Stela 34 (Tomb U) (Martin 2011: 37)

d) Stela 18 (Tomb Y) (Martin 2011: 29)

e) Stela 35 (Tomb U) (Martin 2011: 37)

f) Stela 37 (Tomb U) (Martin 2011: 37)

g) Stela 281 (Martin 2011: 187)

h) Stela 212 (Martin 2011: 151)

Fig. 3. Stelae from the reign of Den/Tomb T and surroundings (not to scale)

A couple of stelae mention women from the king's circle with the titles *mꜣꜣ ḥr.w wr ḥts rmn/ʿ.w stḥ* or show other exceptional representations (fig. 3a–c). All in all, for the (non-royal) stelae found in and around Tomb T two different patterns of inscriptions are observable: one has the signs arranged in a column (fig. 3d, f, h), while the other has the title and the name or a second title in a horizontal line above the classifier. Three rather uniform stelae mention *pr.w-bš* perhaps referring to people responsible for grain magazines (fig. 3h).

Tombs Q/Qa'a and U/Semerkhet yielded a variety of stelae many of which probably originated from Tomb T. Only two stelae can be assigned to Tomb Q: Stela 286 (fig. 4e) since it was found in the royal burial chamber in an area that was neither touched by Amélineau nor by Petrie and therefore was less far removed from its original location than other stelae, and Stela 48 which belongs to Sabef, a person of small stature (fig. 6c) which was found by Petrie in a chamber probably not excavated previously by Amélineau. Both stelae do not deliver enough information to determine characteristics regarding shape or layout of the other stelae from Tomb Q.

a) Stela 44 (Martin 2011: 41) | *b*) Stela 39 (Martin 2011: 39) | *c*) Stela 41 (Martin 2011: 39) | *d*) Stela 42 (Martin 2011: 41) | *e*) Stela 286 (Martin 2011: 189)

Fig. 4. Stelae from the southern part of the necropolis (Tombs U and Q) (not to scale)

Keeping in mind the starting point of stelae from Umm el-Qa'ab, the following points will shed light on more general questions such as: if and how is gender marked in burials, in language or in art?

3. Human remains

Despite a large number of excavated Early Dynastic sites, osteological studies are only available for comparatively few cemeteries—and in the cemeteries that were already in use during the Predynastic period, only a minority of the burials can be attributed to the First and Second Dynasties. Examples for this paper are taken from Tarkhan in Upper Egypt and Minshat Abu Omar in Lower Egypt, since publications of both offer an osteological determination of the human remains as well as evidence of the grave goods found in the respective tombs.[9]

No differences in costume can be determined from these two sites. This is partly due to the state of preservation, as no remains of clothing or hair were preserved. Moreover, there are also no clear differences in the surviving grave goods or costume components: both men and women were buried with jewelry (beads, bracelets),[10] and grave goods such as flint or copper tools;[11] a simple equation of jewelry = women, tools = men can therefore not be maintained, although a certain prevalence for jewelry in female and tools in male graves is obvious. Any findings from Umm el-Qa'ab were destroyed during Amélineau's excavations who described large quantities of fabrics,

9 Petrie, Wainwright, Gardiner 1913; Petrie 1914; Kroeper & Wildung 1994, 2000.

10 Men: Minshat Abu Omar 170 (109), 173 (126), Tarkhan 4, 61, 170, 538, 949; women: Minshat Abu Omar 14 (673), 80 (758), 111 (340), 137 (866), 142 (322), 152 (400), 167 (329), 172 (404), Tarkhan 80, 269, 415, 763, 797, 874, 1430, 1438, 1528, 1795, 1907, 1919 (Kroeper & Wildung 1994: 13–15, 105–108, 153–154; Kroeper & Wildung 2000: 34–41, 47–55, 69–72, 91–95, 102–105, 109–113, 114–119; Petrie 1914: pls. LXIV, LXVI; Petrie, Wainwright & Gardiner 1913: pls. XLII, XLIII).

11 Men: Minshat Abu Omar 173 (126), 189 (853), Tarkhan 122, 170, 176; women: Minshat Abu Omar 167 (329) (Kroeper & Wildung 2000: 91–95, 114–119, 141–142; Petrie 1914: pls. LXIV, LXVI).

skeletons, hair and different grave goods from the Tomb of Djer, but without giving proper documentation and sexing of the bones.[12]

The impression gained from the Early Dynastic osteological findings is confirmed by various depictions in contemporary three- and two-dimensional images, in which men and women are shown wearing jewelry, for example, necklaces and bracelets.[13]

However, Stephan Seidlmayer was able to establish for burials of the Old Kingdom on Elephantine some generations later that: "women […] had clothes, jewelry, cosmetics, men headrests, staffs, weapons" in their graves, whereas children had no grave goods or only "a small chain with a few pearls" (Seidlmayer 2003: 67).

So social, regional or temporal differences/developments are possible.

Attempts are repeatedly made to draw conclusions about the social position of the buried persons in this world on the basis of grave goods: certain people are referred to as "artisans" because their burials, among other things, include most notably copper tools such as knives, adzes, chisels, needles and even axes (Bestock 2009: 49; O'Connor 2009: 173).

In the same way, Bestock 2009: 50 interprets ivory game pieces due to their materials and "their indication of leisure activity" as a reference of high social status, but as we have no external evidence to identify the individuals' professions/social status this has to remain a circular reasoning.

In rare cases, remains of hair are found, as was the case in the eastern row of chambers of Tomb O (temp. Djer)[14] or in some eastern chambers of Tomb T (temp. Den).[15] Amélineau describes his finds as being braided with great skill, the hair being of different colors: black, brown and white, suggesting that persons of different ages were buried in the tombs. He first took it for granted that the hair belonged to women buried in the subsidiary chambers[16] but changed his mind afterwards and interpreted them as votive offerings instead.[17] Since no anthropological examination of the remaining bones was undertaken, the attribution to women remains questionable, but Amélineau's description of the hair as "*nattes des cheveux*" with delicately braided hair points indeed more to female hairstyles or wigs (see below) than to longer male hair[18].

12 Amélineau 1904.

13 Nesa (Louvre N39/LP 1702/A38 <https://collections.louvre.fr/en/ark: /53355/cl010009482> [accessed: 2.12.2024]); Netjerikhet (Ne/He/4 = Turin Omv-Sppl. 2671 = Kahl, Kloth, Zimmermann 1995: 116–117); […]-*sjsj* (EM99–32 [= D3/Hl/3 = Kahl, Kloth, Zimmermann 1995: 178–179)] (Third Dynasty). Costume and hair style identify the owner of the stela as Nubian who obviously climbed up in Egyptian society: Raue 2018: 120).

14 Amélineau 1899a: 57, 1905: 450–460.

15 Dreyer, in: Dreyer, Hartung, Pumpenmeier 1993: 59.

16 Amélineau 1899a: 57; see also Kaplony 1963: 217; Fitzenreiter 2022: 5 [13].

17 Amélineau 1905: 451.

18 See also Tassie 2008 for an exhausting catalogue of hair.

Archaeological evidence, therefore, seems to be of little help in determining elements that mark gender in written or pictorial records.

4. Linguistic evidence

Since the uncovering of Cemetery U in Umm el-Qa'ab/Abydos and, above all, the discovery of U-j, a great deal of predynastic inscribed material is known; in Tomb U-j alone there are 175 labels and 145 vessels inscribed with one to three signs that can be clearly identified as hieroglyphs (Dreyer 1998; Regulski 2015). Other Predynastic and Early Dynastic objects like the labels are inscribed with hieroglyphs and hieroglyph-like signs belonging to different *Modes of Graphic Information Processing* (Kammerzell 2021: 1–3). It is often difficult to distinguish between a pictorial and a linguistic mode for the signs and sign sequences that are displayed on the text carrier because:

> (…) there is no fundamental difference between the shape of an individual pictorial element and the shape of a hieroglyph. Both are figurative, there are almost identical conventions for sign shaping, and the respective inventories of basics elements are also very similar: either constitutes an open class controlled by more or less the same set of rules. In addition, a hieroglyph may be even used as an ambimodal sign (…) with one and the same instance belonging simultaneously to the pictorial as well as the linguistic mode.[19]

Kammerzell 2021 has shown that there is a way to decipher these texts with reference to the medium they are applied to.

The reading of Early Dynastic inscriptions often takes place with the aid of and recourse to established knowledge about the structure of the language, such as Edel's *Altägyptische Grammatik* (Edel 1955). Variants in the phoneme system, sound change and function of the corresponding phonogram or diachronic changes in the inventory of signs, i.e. differences in vocabulary and grammar,[20] must also be taken into account. Two phases are evident here: the first phase involved the creation, expansion and standardization of the corpus of signs from a wide range of possibilities as well as the introduction of morphological and lexical elements, syntactic structures and the phonetic characteristics typical of later hieroglyphic writing. Kammerzell therefore calls this very early status of the language "Pre-Egyptian"[21] from which Pre-Old Egyptian was formed.[22] From the second half of the First Dynasty onwards, standardization intensified: with increasing phonetisation, the corpus of signs was reduced, the vocabulary changed, and more complex grammatical constructions could be reproduced.

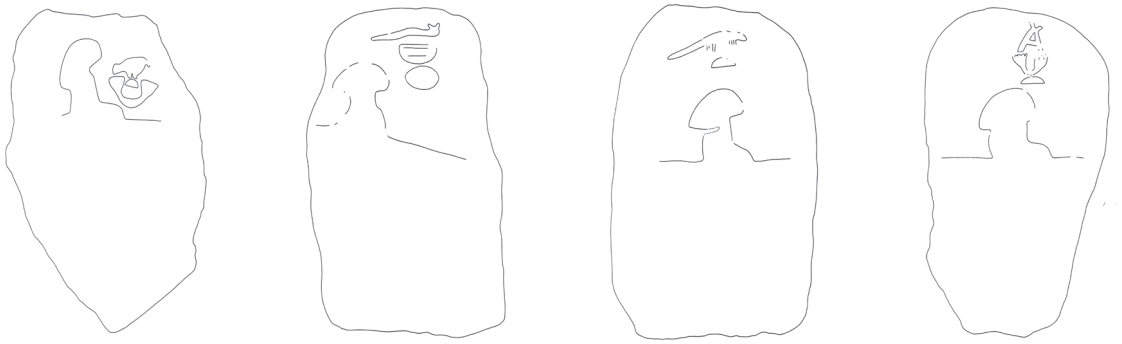
19 Kammerzell 2015: 2; for ambimodal signs see Lapčič 2014.

20 e.g. the use of *nb* as a noun versus the later use only as a modifier (Kahl 2000).

21 Kammerzell 2021: 7 sees Pre-Egyptian "not in the sense of a reconstructed proto-language but as a historically attested state of language which still lacks some of the typical traits of Egyptian."

22 Kammerzell 2005; Regulski 2015: 13–14.

The paleographical development shows that graphical modification can be observed at the beginning of the First Dynasty and is marked by three phases: 1: new versions/outlines for signs that already existed; 2. changes in preference for modified versions; and 3. the omission of sign shapes.[23]



wr.t-k³
a) Stela 77
(Martin 2011: 67)

nb.t=f or *nb.t-jt(j)*
b) Stela 82
(Martin 2011: 71)

ḥḏr.t or *mzḥ.t*
c) Stela 64
(Martin 2011: 59)

mrj.t-k³
d) Stela 61
(Martin 2011: 55)

Fig. 5. Stelae with feminine marker *.t* (not to scale)

4.1. Genera

Classification of nouns to which a grammatical gender is assigned is one of the assumed features of Pre-Old Egyptian. Edel 1955: 91 states that Old Egyptian recognizes two genera: a masculine without its own ending and a feminine with the ending *.t*. The grammatical gender corresponds to the natural gender when it comes to people, i.e. women or men. For the Fourth Dynasty, Schweitzer found that:

> *zwei Genera zu unterscheiden [sind]. Substantive sind entweder maskulin* (…) *oder feminin* (…). *Dabei muß nicht notwendigerweise die Femininendung in der Schrift erscheinen* (Schweitzer 2005: 104–105, § 205).

This statement is probably also true for the Early Dynastic Period. In view of Schweitzer's relatively frequent grammatical-morphematic defective spelling of *.t*,[24] the question of the grammatical gender of certain words also arises in early spellings. The word *wḏ³/wḏ³.t* may serve as an example for the Early Dynastic Period: it appears in various seal inscriptions in the title *ḫr(.j)-wḏ³* or *-wḏ³.t*, whereby the feminine form only appears in the reign of Khasekhemwy[25]. *FrühWb* and *TLA* list both words with identical translations, but there is comparatively little evidence for the feminine

23 See Regulski's 2010 extensive study of the paleography of early writing. See Loprieno 2020: 492–494 for the standardization of writing.

24 Schweitzer 2005: § 185; see also Kahl 1994: 959–1020.

25 We are indebted to Anke Ilona Blöbaum for discussions and comments on this word.

form.[26] The absence of the *.t* is conspicuous during the reign of Netjerikhet, for example, in a spelling for the king's daughter *s³.t-nzw*, while the accompanying title or personal name indicates that it actually refers to a female member of the family.[27] The same applies to an epithet of Queen Nimaathapi (*ḏd(.t) jr(.t) n=s*)[28] whose designation as *mw.t-nzw* leaves no doubt as to her gender. Despite all obstacles in recognizing female endings, some stelae do mention a *.t* in the writing of the personal name (fig. 5) that point to women as the interred.

4.2. Classifiers

One of the characteristics of the hieroglyphic writing system is the so-called classifier[29], an extra sign added at the end of the word. Classifiers emerged in the course of the invention of writing from Naqada IIIA–B onwards (Kahl 1994: 22, 52; Kahl 2001: 118–119; Kahl 2003: 129–131; Regulski 2015). They usually have a non-phonetic value, are related to the word they classify or serve as a homophonic repeater and are therefore only important for the written word. Classifiers are meaningful signs, iconic and thus not arbitrary linguistic signs but rather pictorial signs. Given the pictorial character of hieroglyphs, one of the features of a classifier is that they can be used as a picture or part of a picture of the written word to narrow down the meaning and indicate the general idea of the word. Goldwasser describes their general function and relation to the preceding word as follows:

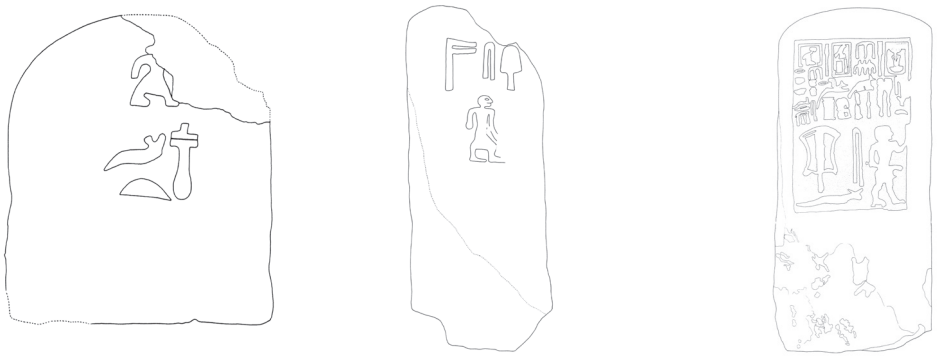
> Determinatives are related to the word preceding them in two main ways: metaphoric and metonymic, i.e. categorical or schematic. Together they form part of a domain. Sometimes the word carries two determinatives representing both axes. Any arbitrary look at the determinative in the dictionary will reveal the kind of movement we are already familiar with—from the iconic to metaphoric relations. The determinative must have an iconic relationship with the preceding word or may relate to it in metaphoric or metonymic ways (Goldwasser 1995: 84).

26 FrühWb. 129; TLA: https://thesaurus-linguae-aegyptiae.de/lemma/52110 (accessed 2.12.2024) and https://thesaurus-linguae-aegyptiae.de/lemma/885329 (accessed 2.12.2024).

27 Ne/Sa/51 = Kahl, Kloth, Zimmermann 1995: 72–73.

28 Ne/Be/17 = Kahl, Kloth, Zimmermann 1995: 22–23.

29 We follow Goldwasser 1995, 2006, Goldwasser & Grinevald 2012 and Grinevald 2015 and use the term Classifier instead of Determinative. The conceptual world created in this way is therefore subordinate to reality (Köhler 2016: 76–77).



a) Stela 36 (Martin 2011: 37) *b*) Stela 205 (Martin 2011: 145) *c*) Stela 48 (Martin 2011: 45)

Fig. 6. Stelae with [DWARF] (not to scale)

The corpus of First Dynasty stelae from Abydos shows combinations that can be read phonetically as a personal name or sometimes a personal name with title. The name ist often followed by a sign, usually a seated person, a dog, a dwarf or a soldier.[30] The seated person varies in shape depending on their date:  (Djer),  (Den),  (Den) (see below).[31] Regardless of their shape the signs all follow the above-mentioned scheme and therefore the preceding phonetic hieroglyphic combination. They show the aforementioned "iconic relationship" due to their location behind or below the other sign units and their orientation. The signs also represent the written word: the name belongs to a human (male? /female?, dwarf, soldier) or a dog. Their size often corresponds roughly to that of the other groups of signs,[32] so that it becomes clear that they are not to be interpreted as images, as is the case, for example, in the somewhat younger offering table scenes from Helwan (Köhler & Jones 2009).

While these signs are usually written at the end of the sign unit, there are two stelae that stand out: Stelae 36 and 37 (fig. 3f, 6a) show a person with shortened long bones standing in front of the

30 e.g., Lincke (2011: 94). Fitzenreiter (2022: 1), on the other hand, doubts that these signs are linguistic signs and thus classifiers: "*Stelen aus dem Bereich der Königsgräber der 1. Dynastie in Umm el-Qaab zeigen neben einer Namens- und ab Den auch regelmäßig einer Titelinschrift oft eine Darstellung, die zwischen Personenabbildung und Determinativ oszilliert.* […] *Dazu kommen einige seltener auftretende Bildzeichen, bei denen es nicht immer möglich ist zu entscheiden, ob es sich um einen Teil der Titel und Namensinschrift handelt, oder um eine Abbildung/Determina.*"

31 The most prototypical examples of each were taken for this purpose. There are rare samples that vary e.g. in the length of hair, but these varieties never interfere with the prototypical outline.

32 Stela 48 of Sabef (Martin 2011: 44–45; here: fig. 6c) could be seen as an exception to this as Sabef is depicted as large as the two lines above his head that mention his titles; however, his image is as tall as the signs forming his name behind him. As this stela was found in the last of the Umm el-Qa'ab tombs with subsidiary burials (Tomb Q/Qa'a) and is contemporary to the stela of Merka from S3505 in Saqqara (Emery 1958: pl. 23, 39), both stelae might mark a transition to a different importance of images on these stelae, as is emphasized by the Helwan offering plates (Köhler & Jones 2009).

sign unit, which obviously is to be read as the name . The person with the shortened long bones is similar to the sign on other stelae and can clearly be interpreted as a so-called dwarf (fig. 1c, 6b–c). From the arrangement of the signs on Stelae 36 and 37 it can be concluded that the dwarf is not an image, but a sign with the linguistic meaning [DWARF]. It is possible that the prefixing means that [DWARF] also served as a title—it is also possible that the classifier was placed in front for other reasons.

Therefore, the sign [DWARF] classifies the aforementioned name as well as the signs [DOG],[33] [SOLDIER] (fig. 4e) and the seated human—the question is whether a gender classification was always intended. At the same time, there are also stelae with names or names with titles that do not have a classifier. What is already apparent from this corpus of stelae from Abydos is the need to differentiate between groups buried alongside the king. While the groups of [DOG], [DWARF] and [SOLDIER] are clear, the group of unclassified names or names with title and those classified with a seated human should be examined more closely with a focus on whether the seated person indicates the gender of the aforementioned name. A development can be observed: While unclassified names/titles (or Ø-writing of a classifier) and names/titles with the classifier are attested in the stelae from Tomb O/Djer at the same time, the inventory of classifiers on stelae from Tomb T/Den has expanded. The following are now documented: , , and no classifier (Ø-classifier).[34] , and have in common the absence of gestures and therefore can be identified as (B1) and variant (B8A), while the "running arms" of are clearly recognisable (see fig. 7, d, g, h) which can be identified as (A1).[35] At the same time, it is the most recent sign (see also fig. 14). How can unclassified names/titles be explained? Already during the First Dynasty A1 together with B1 ( ) are attested as classifiers (Kahl 1994: 421, 435–436): A1&B1 are used as classifiers on a more encyclopedic level for the word *rmṯ* which together are "the people" (fig. 10). The order is fixed and reflects the basic gender hierarchy.[36] For the Fourth Dynasty, A1, 19, 20, 32, 40, 51 and 299B are attested for [MAN] and B1 and 21A for [WOMAN], as well as A1&B1 and A1&B1&B2 for [PEOPLE] (Schweitzer 2005: 95–96), but the process of creating these classifiers for different functions in the Old Kingdom is not yet complete (Goldwasser 2002: 18–19).

33 Stelae 173, 178, 192, 206, 283.

34 Morenz 2020 and Beaux 2008 address the development of classifiers A1 and B1 in the early writing systems; however, both refer to later sources and omit the stelae of Umm el-Qa'ab, so that Morenz 2020: 58 incorrectly assumes that A1 is attested before B1 ("The decidedly iconically open basic type MAN— —was created out of the older group of signs depicting warrior-like men in warlike activities in the context of this complex process. The seemingly slightly later sign for woman was subsequently created by analogy, and more specifically through structural correspondence, to the former.").

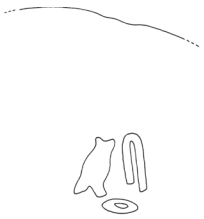
35 To be identifiable as a hieroglyph sign, a certain economy must be observed; on one hand, the sign should maintain a *connective* iconicity, typically by identifying prototypical features of the represented entity. On the other hand, the sign should convey a *distinctive* iconicity, e.g. the running arms of A1 versus no arms of B1. See Loprieno 2020: 492.

36 Goldwasser & Grinevald 2012: 23; Goldwasser 1995: 31.

If we, therefore, assume that these classifiers are motivated by the specification of the prototypical agent plus gender marker (Goldwasser & Grinevald 2012: 28–29)—as in *rmṯ*  "all [people]"—than we should also assume that the names on the stelae from Abydos are classified considering their gender. In the case of stelae with titles and names but without a classifier, we can therefore assume that it belonged to someone who was not in need to make a difference. Usually and reflecting the basic gender hierarchy, the default setting is [man] that therefore could be expressed in a Ø-writing of  A1.[37] This implies that "gender classification" was intended.[38]

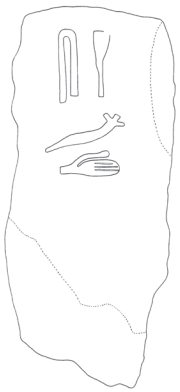
4.3. Names and titles

In addition to grammatical endings and classifiers, writing offers various references to individuals of both genders via names and titles. As in the Old Kingdom, personal names are constructed similarly for men and women, i.e. it is not possible to tell from the name alone whether it is that of a man or a woman (Scheele-Schweitzer 2014: 44–47, esp. 45). In some cases, a suffix referring to the bearer allows determining the gender.[39] Still others are provided with a classifier that—as discussed above—indicates the gender.



smr
a) Stela 69
(Martin 2011: 63)

sš.t
b) Stela 118
(Martin 2011: 95)



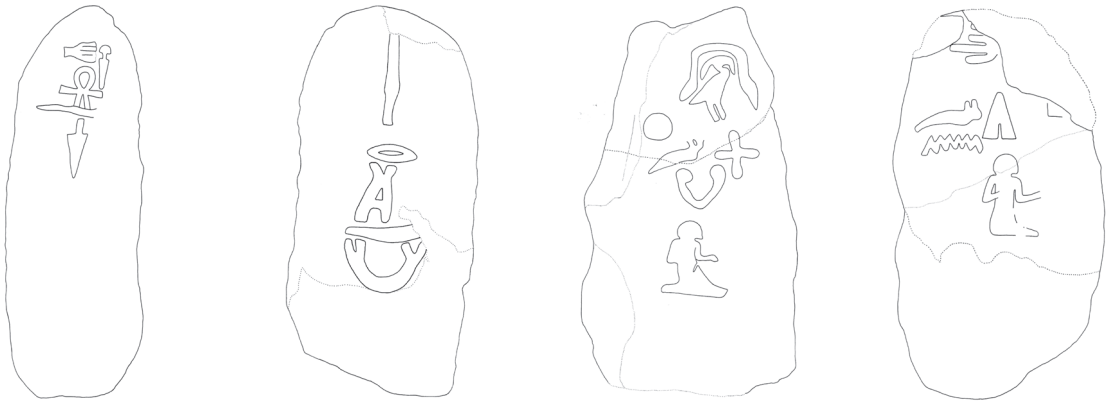
fd.j
c) Stela 197
(Martin 2011: 141)

šrs
d) Stela 20
(Martin 2011: 29)

37 The absence of A1 during the reign of Djer does not mean that there was a lack of the category [male] (contrary Fitzenreiter 2022: 5). It only shows what seemed important to be reflected in the script. In case of the stelae the inscription is only one part of the information while the knowledge where the stele was erected, who made the funeral offerings etc. are inherent. See Fischer 1973 for Old Kingdom male names that show classifiers less often than female names.

38 This development might correlate with the development of pronouns. Within the forms of personal pronouns, it can also be seen that the second- and third-person pronouns indicate both number and gender. The dependent personal pronouns *sw* (3ms) and *sj* (3fs) and the suffix pronouns *=f* (3ms) and *=s* (3fs) are attested in the Fourth Dynasty, while the 1ms of the suffix pronouns is usually not written, see Schweitzer 2005: 125–131.

39 e.g. names like *ʿnḫ=f* and *ʿnḫ=s* (Scheele-Schweitzer 2014: 309–310 [769, 771]).



sn=f-ʿnḫ
e) Stela 262
(Martin 2011: 179)

mr=f-k³
f) Stela 263
(Martin 2011: 179)

wn-k³=f
g) Stela 175
(Martin 2011: 129)

(r)dj.n=f
h) Stela 200
(Martin 2011: 143)

Fig. 7. Stelae with names with identified gender as inferred from analog Old Kingdom names (not to scale)

In other names, only a *.t* distinguishes between male and female names, a criterion that is not very reliable due to the inconsistent spelling of this element (Fitzenreiter 2022: 4 note 10). For still others, there are analogies to later epochs, which suggest that certain titles or names only apply to one gender or the other which works with some of the stelae (fig. 7). Although the use of a god's name within a personal name is often used to determine the gender of the bearer of the name (god = man, goddess = woman), it is not always unambiguous, as some people have names with gods of the opposite gender.[40]

The inconsistency of spellings becomes clear in individual inscriptions with several details (title, epithet, name) relating to one person: in seal inscriptions of private individuals from the reign of Khasekhemwy, it can be observed that words that appear masculine to us are the norm. However, some inscriptions indicate that a woman was the bearer of the seal, as this can be inferred either from the name or from a feminine form of the respective title. At the same time, other words in the same inscription may show the masculine form.[41]

In case of the Umm el-Qa'ab stelae, this means that there are only a few names that indicate the gender of the person without doubt by adding a *.t* or another suffix pointing to a female owner while the majority remains inconclusive (but not pointing to men as owners).

40 e.g., female names with *jrj.t-* + male gods: Scheele-Schweitzer 2014: 256–257.

41 e.g., Engel 2021b: 26, tab. 12; Engel 2021c: 200, fig. 6c, e.

5. Pictorial evidence

The classifiers with their pictorial character have proven to be good indicators for the determination of gender; now it has to be examined how certain typical features are shaped in three-dimensional representations.

Pictorial evidence from better identifiable representations of men and women offers different aspects that might be used for differentiation of the sexes: posture, dress, hairstyle, and skin color. Of those only posture and hairstyle seem to be relevant for the signs on the early stelae as details of dress are hardly visible and possible coloration of the images disappeared long ago.[42]

Fig. 8. Statue of Ankh (Musée du Louvre N40, https://collections.louvre.fr/ark: /53355/cl010009174 [accessed 2.12.2024]

Fig. 9. Statue of Redj (Museo Egizio Torino C3065, https://collezioni.museoegizio.it/en-GB/material/Cat_3065 [accessed 2.12.2024])

5.1. Hair

In many depictions, men wear a short, round, tiered curly wig, while women wear a long-haired tripartite wig consisting of individual braided plaits that end in small knots at the top of the back.[43] Occasionally, images of men with straight hair falling to their shoulders can be found[44] (Fig. 8), but this hairstyle is less voluminous and stringier than those of the female depictions, which sometimes

42 Only a few stelae preserve remains of color: e.g., Stela 124, 289, while Stela 102 was inscribed with ink, as were the green stone stelae from Tomb U.

43 The Helwan Funerary Slab Stelae show this consistent pattern (Köhler & Jones 2009). For an extensive documentation see Tassie 2008.

44 Quibell 1913: pl. XXIX–XXXI for different wigs worn by Hesira.

leave an almost teased impression (fig. 9). The seated statues of Rahotep and Nefret, on the other hand, show him without a wig and with short hair, while she again has individual plaits that end at shoulder level (e.g., Borchardt 1911: Blatt 1 [3, 4]). Hetepheres II and Mersyankh III, on the other hand, are occasionally depicted with short hair (e.g., Fay 1998: 135, fig. 25), so that this seems to be common for both genders, indicating that even at this early date hairstyle is a question of which wig to wear—at least in that part of society that could afford it—and not of individual hair for both genders.

A1 & B1		First Dynasty (temp. Den)	Label (after Dreyer 1990: Pl. 26b + joining fragment from Tomb U)
		Third/Fourth Dynasty	Tomb inscription, Metjen
		Third/Fourth Dynasty	Tomb inscription, Metjen
B1		Fourth Dynasty	Statue of Nofret

Fig. 10. Examples of classifiers A1 and B1 until the early Fourth Dynasty

However, the result is different when looking at classifiers A1 and B1 which we can identify without doubt, that is mostly in writings for *rmṯ* or other contexts:[45] there, the length of hair seems to be a fairly safe way to differentiate between squatting men and women: women always are shown with long hair/a wig while men are depicted as short-haired (fig. 10).[46]

5.2. Pose

The signs on the Umm el-Qa'ab stelae mostly show persons squatting on the floor. Only persons of short stature are depicted standing, obviously to make different proportions of arms and legs visible (see above, fig. 6).

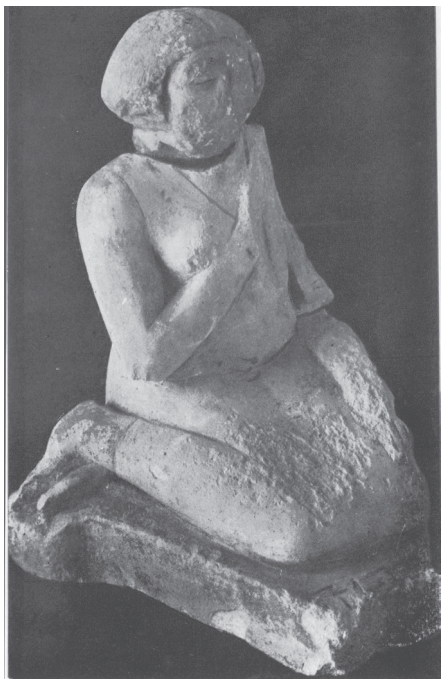
Given the crude style of many signs on the stelae, not many possibilities for the differentiation of genders exist. The squatting persons are shown either with raised knees or in a position that looks like kneeling when seen from the side. A three-dimensional ivory object in Munich, for example, preserves a predynastic version of this by showing a man and a woman next to each other, assumed to be an unnamed king and a queen (Dreyer & Josephson 2011: 47–50): he is sitting on a shallow chair while she is kneeling next to him (fig. 11a). In later periods, the kneeling posture is typical for

45 The vast majority of attestations quoted in Kahl 1994 and Regulski 2010 were taken from the stelae in question and are, therefore, not included.

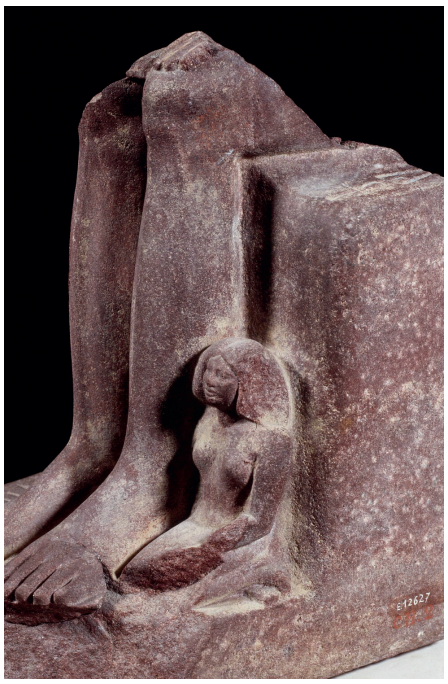
46 The picture is different with other classifiers, e.g. A50 which often has men with longer, stringy hair.

women in combination with other, higher ranking persons:[47] Old Kingdom representations show female members of the respective royal family sitting on the floor next to the king with the legs tucked to a side (so that would seem from the side that they are in a kneeling position).[48] A statue represents the king's daughter of (possibly) King Snofru, Wemtet-ka, alone in this pose, as others do later in company of the king (fig. 11b–c).

a) Ivory object, Munich, SMÄK 1520 (Dreyer & Josephson 2011: fig. 1–2)



b) King's daughter Wemtet-(ka) (Fakhry 1961: pl. XLIII)



c) King Djedefra with female family members (© Louvre https://collections.louvre.fr/ark: /53355/cl010006350 [accessed 2.12.2024])

Fig. 11. Kneeling women

47 Cf. Fay 1999: 135, fig. 25 for Mersyankh III and Hetepheres II.

48 See the examples by Fay 1998, 1999.

The statue of Hetepdief as an example of a kneeling man, on the other hand, rests the feet on their toes which results in a different angle of the thigh when seen from the side (fig. 12).[49] Sign A52, the classifier for [ANCESTOR], depicts a kneeling male person similar to the representations on the stelae, but with a flail in one of the hands which, therefore, can be ruled out as being the sign on the Umm el-Qa'ab stelae: sign A52 is not yet attested for the Early Dynastic Period (Regulski 2010). It seems therefore that mostly women were, at least at this early date, depicted in this kneeling pose with the feet flat on the floor.

Fig. 12. Statue of Hetepdief (Borchardt 1911: Blatt 1 [1])

As a result, there seem to be two designs for classifier B1 which probably added to the difficulties in accepting both versions (see above). Mapping the different signs (A1, and both versions of B1) on a site plan from Umm el-Qa'ab (fig. 13), however, a clear division becomes visible: examples with B1/"kneeling" are concentrated in and around the Tomb of Djer with some objects moved to Tomb P and Cemetery B in course of the early excavations.[50] Only two examples were found in the southern part of the necropolis but they differ in layout (no baseline) and quality of stone (dense, not porous) from the examples from Tomb O.[51] The second version of B1/"raised knees", on the other hand, is grouped in and around the Tomb of Den, as are the first attestations of sign A1 (or mentions of queen's titles).

49 Other three- and two-dimensional examples for squatting men show their legs similar to the layout in A1 (e.g., a limestone statue from Hierakonpolis [Quibell 1900: pl. II] or a depiction of bound prisoners [Petrie 1901: pl. IV [19]).

50 As a consequence, the attestations for B1 that are taken to date to the reign of Aha (sources 259, 268: Kahl 1994; Regulski 2010) have to be shifted to the reign of Djer leaving no attestation of B1 before the reign of Djer.

51 Stelae 32, 35 (here: fig. 3e, see also fig. 14).

This finding indicates that in the middle of the First Dynasty, during the reign of Den, the standard shape for B1 was modified at the same time as A1 was introduced, with a certain overlapping period: This is supported by the writing for *rmṯ* on a label from the reign of Den that attests to the use of this early form of B1 until his reign (fig. 10 first line)[52] and the two stelae with the "old" shape of B1 which were found in Tomb U (Stelae 32, 35) but probably originate from Tomb T. Both shapes of B1 are, therefore, not different signs but refer to a chronological development in the creation of later standard hieroglyphs.

Fig. 13. Distribution of stelae with classifiers A1 and B1 and with queen's titles

52 Dreyer 1990: pl. 26b; in the meantime, the lower part of the label was found in Tomb U (still unpublished), see here fig. 10 [first line].

Conclusion

The archaeological evidence yielded hardly any information for identifying the discussed sign(s) as no general differences between male and female burials could be established that would be identifiable in writing. Yet, linguistic evidence as well as comparison to other, later representations of men and women indicated that the persons depicted on the stelae from Tomb O were most likely women, and therefore the sign "kneeling person" was a version of B1. The spatial and chronological distribution of the objects indicated that sign B1 underwent a change during the reign of Den (fig. 14) as was the case with other signs before the final shape as standardized hieroglyphs developed.[53]

By showing that B1 was clearly used as a classifier, the study emphasizes the use of classifiers that mark differences from the (male) standard, and shows that there was a need in the written language to link names and titles to a specific prototypical agent. The written language did not need a classifier [MAN] for male agents at this time. However, words like *rmṯ* [PEOPLE] are classified with A1and B1 highlighting that [PEOPLE] are male and female, at the same time reflecting gender hierarchy by writing the man in front of the woman.

Coming back to the situation in Umm el-Qa'ab, the earliest setting in which these classifiers were used on a larger scale, it seems as if this development is an answer to the diverse section of the population buried close to the kings which had to be identified by later generations. In Egyptian antiquity, too, a gender ratio of approximately 50: 50 can be assumed and a corresponding distribution in the cemeteries is expected. However, occupancy of many cemeteries is influenced by selection criteria: already during the Predynastic Period, Cemetery U at Umm el-Qa'ab/Abydos developed into a cemetery of the elite (e.g., Hartung 2007; 2024), so that here the selection was not based on gender, but on family or status affiliation. Burials at the enclosures of Aha in Abydos contained exclusively women while the subsidiary tombs of Aha's seem to have been predominantly male (Bestock 2008: 53–54). In later periods, burials of followers in the vicinity of a large tomb do not display a "normal" distribution, as for the Old Kingdom Seidlmayer was able to observe shifts by comparing the necropolises at Elephantine and Qubbet el-Hawa, which can be attributed to external circumstances (Seidlmayer 2001: 218).

53 See Regulski 2010: 290–291 for changes in the middle of the First Dynasty. For B1 already suggested by Fitzenreiter 2022: 4.

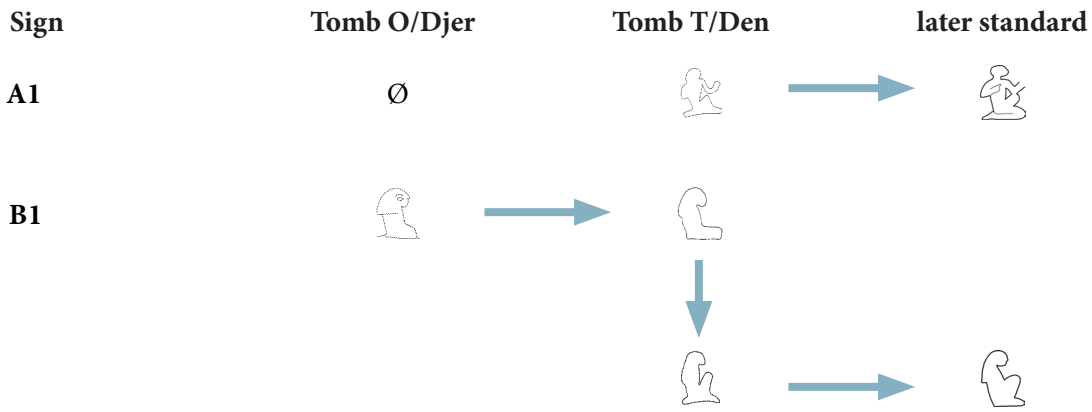


Fig. 14. Development of A1 & B1 during the First Dynasty

In case of the individuals who were buried in the subsidiary chambers around the royal tombs in Umm el-Qa'ab, there are further options that might explain an uneven representation of the sexes: either due to the individuals' proximity to the king ("concubines", see note 3), their function in the household (Engel 2021a: 133) and/or due to their function in the ritual during the burial (Engel 2023: 323). These options do not stand in the way of "too many" women, as long as we do not know the criteria that prompted the selection of people to be buried in the surroundings of the First Dynasty kings[54]—on the contrary: by "eliminating" women from the subsidiary tombs in Umm el-Qa'ab one would end up with definitely too many men.

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54 The assumption that an even distribution between bearers of names with the element *k³* and those of the element *n.t/hmws.t* was intended among the burials in the subsidiary tombs (Fitzenreiter 2022: 25 following Almansa-Villatoro 2019) suggests a selection for those to be killed for the royal burial on the basis of the individual's name instead of other properties which seems a little farfetched.

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Writing in (Neo-)Hieroglyphs in the Renaissance

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Abstract. The second part of this study of Renaissance neo-hieroglyphs deals more specifically with the technical aspects of this writing system. After presenting some issues related to the general layout of the texts (§ 2.1), I give an analysis of the lexicon (§ 2.2), considering its composition, the inventory of signs and their meanings. Finally, I turn to morpho-syntax (§ 2.3), considering how the authors of the neo-hieroglyphic inscriptions managed to express some basic morphological variations (such as plurality) and syntactic relations (such as coordination, possession, quality and dependence).

Keywords. Neo-hieroglyphs, Renaissance, writing systems.

In the first part of this study (Winand 2023), I presented the corpus and theoretical foundations of the neo-hieroglyphic culture of the Renaissance.[1] The second part deals with the technical aspects of the neo-hieroglyphic writing system.

At its most basic level, a linguistically articulated communication code needs a repertory of words (lexicon), a set of rules for combining words into meaningful sentences (grammar), and a language of reference.[2] For instance, in an alphabetic system, what is transcribed as [bas] can be interpreted in several ways: "low" in French, "well, ok" in Afar, "what?" in Cimbrian, "bass voice" in Polish, "bus" in Pitcairn (Pacific creole), etc. The writing system can sometimes help guessing the correct solution: Dom spelt in the Latin alphabet will more likely point to German *Dom* "cathedral" than to Russian дом "house." Neo-hieroglyphs in the Renaissance succeeded in cumulating all

1 Humanists and artists unanimously used hieroglyph (noun) and hieroglyphic (adjective). To avoid any confusion with the Egyptian hieroglyphs, I here retain the labels neo-hieroglyph (noun) and neo-hieroglyphic (adjective). To the bibliographical references already provided in part 1, add Howard 2024 (I warmly thank one of the anonymous reviewers for pointing out this paper to me); for a short presentation of the material and a discussion from a semiotic perspective, see Ben Dor Evian 2021.

2 See already Pozzi 1982, whose seminal study on Colonna's hieroglyphs (*sic*) is still highly valuable, and Morenz 2003.

possible obstacles to communication: they were written with signs whose meaning was veiled, they were not firmly linked to a particular language, morphology was almost inexistant, and there were no syntactic rules except for some basic linear order, with occasional exceptions.[3] Nevertheless, neo-hieroglyphs presented themselves as a new mode of writing, if not as a new type of language. This paper examines to what extant such a claim was realistic.

After quickly reviewing the evidence (§ 1), I turn to neo-hieroglyphic inscriptions (§ 2), dealing first with the general layout of the texts (§ 2.1), then proceeding to the lexicon (§ 2.2) and the morpho-syntax (§ 2.3). The conclusion (§ 3) will set the neo-hieroglyphic inscriptions in a larger context by showing their limitations but also their capacity of expressing ideas in an original and entertaining way.

1. The neo-hieroglyphic inscriptions—a quick survey of the corpus

The production of neo-hieroglyphs can be sorted out in classes according to three main criteria: vectoriality, translatability into a natural language, iconic dimension (tab. 1).

	vectoriality		interpretation			signs as iconemes
	unpredictable	strictly linear	translation	gloss	nothing	
neo-hieroglyphs		X	X			no
iconograms	X		X			yes
isolated symbolic elements	X			X		no
decorative neo-hieroglyphs		X			X	no

Tab. 1. A taxonomy of Renaissance hieroglyphs[4]

The composers of neo-hieroglyphic inscriptions *sensu stricto* consciously drew their inspiration from classical Roman epigraphy. The signs are arranged in a linear order (see below for some exceptions), they can be translated (or rather translated back) into a natural language, and the images are treated as signs, not as iconemes. Fig. 1 illustrates a prototypical neo-hieroglyphic inscription.

3 This is only valid for the neo-hieroglyphic inscriptions *stricto sensu*. The ordering of signs in iconograms was less constrained.

4 For a definition of these classes, see Winand 2023.

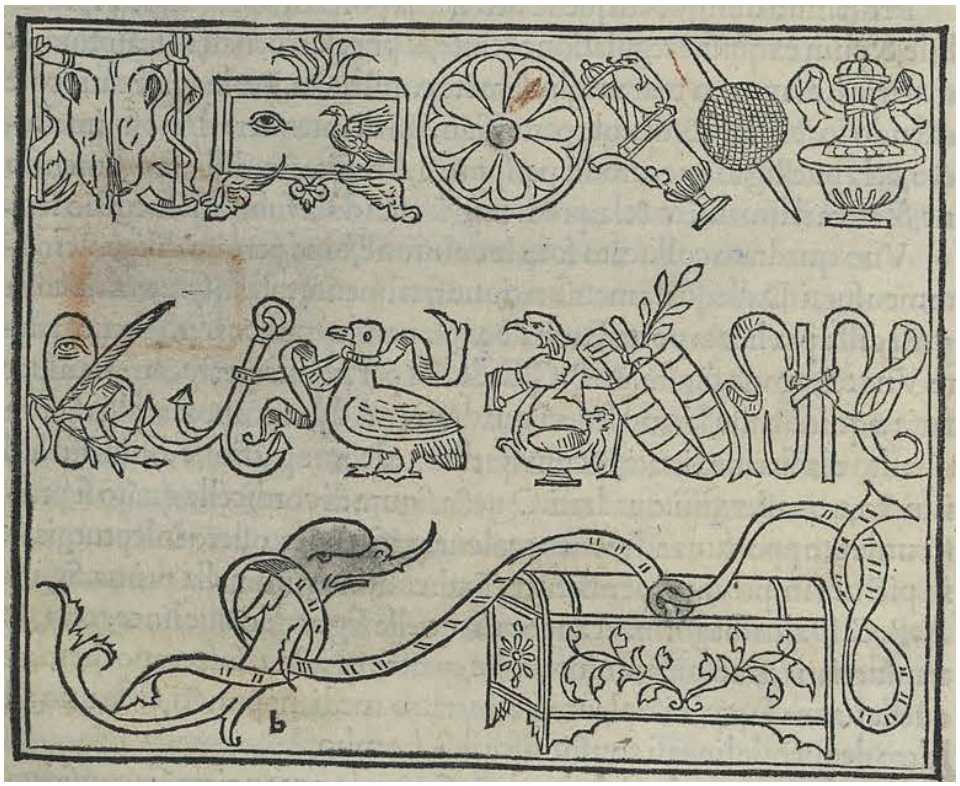

Fig. 1. Colonna, *Hypnerotomachia Poliphili*, 1st inscription (1499, s.n.)

Iconograms are of a different nature. While being translatable into a natural language, they are not made of signs, properly speaking. They should rather be analysed as built with iconemes as constitutive parts of a larger iconographic composition. As the latter is the organizing principle, vectoriality is no longer linear. While the "reading" of some iconograms proceeds from a natural order for Western cultures (top to bottom and left to right), the sense of reading of others would remain a puzzle without the accompanying translation. According to Poliphilo (fig. 2a), the translation of the curious composition showing elephants transforming into ants (and vice versa) is:

> *Pace ac concordia parvae res crescunt: discordia maximae dilabuntur*
> With peace and concord, the small things grow; with discord the greatest things are dilapidated

The sketch by Lambert Lombard (fig. 2b) depicting a lion passing left with a dolphin on its back, its head linked to a spindle whose thread is cut by a knife held by a hand, is translated:

> *Breve e veloci è la vita dei grandi*
> Short and quick is the life of the great ones

As this was only a draft, Lombard added the meaning of each iconeme. The vectoriality of both compositions is shown below by blue arrows. In the second, the wheel, which was glossed *instabile* by Lombard, does not show up in the translation. I suggest the following matches: shortness is

symbolized by the cutting of the thread, quickness by the dolphin, life by the spindle, and the great ones by the lion (which should have rather been better translated in singular, § 2.2.2a). This apparently leaves the wheel untranslated.

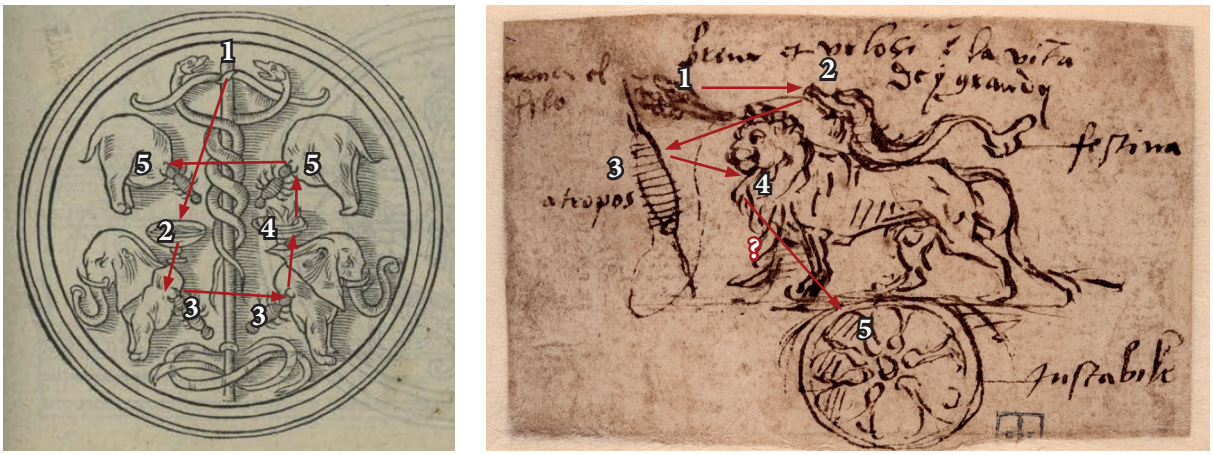

Fig. 2a. Colonna, *Hypnerotomachia Poliphili*, 1561, fol. 86
2b. Lombard, Fonds Arenberg, N 208

Humanists and artists of the Renaissance also called "hieroglyphic" small arrangements of figures that could only be glossed in some loose way.[5] The guiding principle of the arrangement of the signs was aesthetic rather than linguistic. Fig. 3 shows the small "inscription" standing at the bottom of the famous portrait of Admiral Andrea Doria by Sebastiano del Piombo. The iconic elements of the composition are indexes to the activities of Doria as chief of the fleet (anchor, prow, tiller, stern). The models, going back to the Roman times, were easily accessible in the Renaissance, being represented on reliefs and in coinage (§ 2.2.3b). They were ultimately incorporated in Herwarth's *Thesaurus* as hieroglyphs (fig. 4).

Fig. 3. Sebastiano del Piombo, Portrait of Admiral Andrea Doria, ca. 1526 (base)

5 For the general cultural background, see Winand 2022c–d, Winand 2023.

Fig. 4. Herwarth von Hohenburg, *Thesaurus*, 1610, s.n.

Finally, artists sometimes added iconic elements that were more or less directly related to the first category, as a vague reminiscence to ancient Egypt. Lambert Lombard provides some illustrations of this in several of his paintings. A convincing example of this practice is the panel on the front of the well in *Rebecca and Eliezer* where the signs directly inspired by Colonna's *Hypnerotomachia* have been randomly drawn (fig. 5).

Fig. 5. Lambert Lombard, *Rebecca and Eliezer*

2. The neo-hieroglyphic inscriptions—an analysis

The neo-hieroglyphic inscriptions are most particular as they are both a language and a writing. The hero of Colonna's novel boasts his ability to at once translate the inscriptions he comes across during his errands. Actually, it is quite the opposite, as these inscriptions were translated from a text most often written in Latin, sometimes in French, or in Italian. Knowing the language underlying a neo-hieroglyphic inscription helps understand it as the signs of the neo-hieroglyphic version normally follow the sequence of the words of the original (§ 2.3).[6] As the signs are original, having

6 One may compare the influence of the Greek original on Coptic translations.

nothing to do with an alphabet nor with any other writing system, neo-hieroglyphs qualify as a writing system. As the meaning of the signs is most often metonymic, metaphorical or symbolic in nature,[7] the set of neo-hieroglyphic signs is a lexicon. One will immediately note that this lexicon was not bound to a specific natural language. As the morphological and syntactic markers of the underlying version have been lost, being sometimes replaced by *ad hoc* solutions (§ 2.3), neo-hieroglyphic inscriptions have an (admittedly very basic) grammar. One is thus justified in considering neo-hieroglyphs as both a writing system and a language.

A writing system that aims at transmitting a message formulated in a natural language needs a lexicon, a grammar, and a language of reference (§ 1). Writing systems commonly represent more than one language. Reading does not, however, automatically imply understanding. Etruscan, for instance, can be easily read, but its understanding is still badly handicapped for different reasons, the most evident one remaining the scarcity of the sources. As far as can be determined, the neo-hieroglyphic inscriptions are a transposition from a text first composed in a vernacular language. A quick comparison of the Latin and French versions of the inscriptions found in the *Hypnerotomachia Poliphili* shows that the underlying text was written in Latin (§ 2.3) because the ordering of the words of the Latin "translation" naturally matches the sequence of the signs of the inscription. I put the word translation in quotation marks to underline the fact that what is presented as a translation in the text must actually be analyzed the other way around. Adopting the point of view of the novel's hero, he had to make a translation in Latin from what he saw on the monuments, while from the author's point of view, the Latin text obviously preceded the neo-hieroglyphic inscription. Determining the language of reference is also crucial if the value of the neo-hieroglyphic sign is supposed to directly derive from a specific word in a given language. For instance, Deroy 1946–1948 "translated" the inscription of Hubert Mielemans by guessing the Latin word referred to by each sign, which he thought was sometimes abbreviated by applying more or less strictly the principles of acrophony.

In this section, I first give some general considerations on neo-hieroglyphic texts (§ 2.1), then move to the neo-hieroglyphic lexicon (§ 2.2) and grammar (§ 2.3). The corpus consists of the inscriptions that have been provided with a translation by their authors. The list in tab. 2 provides the reference of the inscription, its (probable) date of composition, the underlying language, and the reference to the first part of this study, if any.

Reference	Date	Language	Winand 2023
Hypnerotomachia—First inscription (1546, fol. 11b)	1499	Latin	Fig. 4
Hypnerotomachia—Second inscription (1546, fol. 85b)	1499	Latin	Fig. 5
Hypnerotomachia—Third inscription (1546, fol. 96a)	1499	Latin	Fig. 6
Hypnerotomachia—smaller inscription a (1546, fol. 22a–1)	1499	Latin	Fig. 7

7 For some neo-hieroglyphic signs treated as iconograms, see § 2.2.4.

Reference	Date	Language	Winand 2023
Hypnerotomachia—smaller inscription b (1546, fol. 22a–2)	1499	Latin	Fig. 8
Hypnerotomachia—inscription on a banner (1546, fol. 104b)	1499	Latin	Fig. 9
Alberici's Album—First inscription (fol. 19v)	1507	Latin	Fig. 10
Alberici's Album—Second inscription (fol. 20r)	1507	Latin	Fig. 12
Alberici's Album—Third inscription (fol. 21r)	1507	Latin	Fig. 14
Alberici's Album—Fourth inscription (fol. 21v)	1507	Latin	—
Alberici's Album—Fifth inscription (fol. 22r)	1507	Latin	—
Alberici's Album—Sixth inscription (fol. 22v)	1507	Latin	—
Alberici's Album—Seventh inscription (fol. 23r)	1507	Latin	—
Alberici's Album—Eighth inscription (fol. 23v)	1507	Latin	—
Alberici's Album—Eighth inscription (fol. 24v)	1507	Latin	—
Obelisk for Henri II's Joyous Entry	1549	French	Fig. 15
Jan van der Noot's *Cort Begryp der XII Boeken Olympiados*	1579	French	Fig. 17
Jan van der Noot's *Book of Extasis*	1580	French	Fig. 18
Lionello Spada's first inscription	1603	Latin	Fig. 19
Lionello Spada's second inscription	1603	Latin	Fig. 20a
Lionello Spada's third inscription	1603	Latin	Fig. 20b
Lionello Spada's fourth inscription	1603	Latin	Fig. 20c

Tab. 2. Corpus of neo-hieroglyphic inscriptions provided with a translation[8]

To this list, one can add the iconograms that were composed by Colonna, Dürer and Lombard, for they also provide a translation and occasionally glosses to the individual iconemes (tab. 3).

Reference	Date	Language	Winand 2023
Hypnerotomachia, fol. 46a	1499	Latin	Fig. 27
Hypnerotomachia, fol. 85b–86a	1499	Latin	Fig. 28
Hypnerotomachia, fol. 86a–b	1499	Latin	Fig. 29
Dürer, *Maximilian I's Triumph Arch*	1517–1518	Latin	Fig. 30
Lombard, Album Arenberg N 207	s.d.	Italian	Fig. 31
Lombard, Album Arenberg N 208	s.d.	Italian	Fig. 31
Lombard, Album Arenberg N 210	s.d	Italian	Fig. 32

Tab. 3. Corpus of the neo-hieroglyphic iconograms provided with a translation

8 The corpus provided here cannot claim exhaustivity as the possibility cannot be excluded that some inscriptions are still hidden in some Italian palazzi not open to the public. The famous dedicatory inscription made by Kircher in the *Oedipus Aegyptus* is of a different nature, being composed with more or less real hieroglyphs, while still being dependent on the Renaissance's semantic theory about the functioning of hieroglyphs.

2.1. The neo-hieroglyphic texts

In this section, the general layout (§ 2.1.1) and the contents (§ 2.1.2) of the texts are presented and briefly discussed.

2.1.1. *General layout*

The neo-hieroglyphic inscriptions followed the patterns of classical, mainly Roman, inscriptions. They were preferably inscribed on prestigious monuments like obelisks, bases of statues, bases of fountains, altars, funerary monuments, dedicatory stelae, and, more rarely, banner and bridges. The presence of neo-hieroglyphs undoubtedly contributed to enhancing the quality of the monuments and certainly raised the potential interest of the reader or visitor by soliciting his/her ingenuity for solving the enigmas. Inspiration came from classical epigraphy but could also depend on previous compositions. The first inscription of Colonna's *Hypnerotomachia* made a lasting impression on artists and writers and was widely copied and imitated.[9] Intertextuality could also be less straightforward as exemplified by the general layout of the dedicatory inscription made for Henri II's Joyous Entry. The general conception was obviously inspired by Colonna's very similar disposition, except for one important element: the elephant that bore the obelisk on its back in the original composition of Colonna was replaced by a rhinoceros fifty years later.[10] The general layout of this text also failed to meet the high standard set by Colonna.

The inscriptions are never long. It is exceptional for a neo-hieroglyphic text to have more than 15 signs. Of course, the literary genres they tried to imitate (§ 2.1.2) called for concision. But above all, as will be hopefully clear in what follows, this way of expressing one's ideas was intrinsically limited. The inscriptions that have come down to us without a translation are the best proof of this. Scholarship still struggles to find acceptable solutions; those who have ventured to proposing one have generally been met by scepticism.[11] But could it be otherwise, as the neo-hieroglyphic inscriptions are generally replete with bombastic statements and odd sentences whose logic is sometimes hard to follow? Composing a text of several lines in this medium would have been an impossible challenge both for the writer and the reader. As it seems, humanists and artists quickly realized that neo-hieroglyphs had strong limitations in their capacity of emulating a natural language. Tab. 4 gives the number of signs of the neo-hieroglyphic inscriptions, both with and without translation.

9 See Winand 2023: 5, n. 15.

10 The substitution of the elephant by the rhinoceros is reminiscent of the curious confrontation between the two animals that took place in Lisbon in 1515. When put face to face, the elephant ran away, and the rhinoceros was declared the winner (Winand 2022).

11 Dempsey 1988.

Name	Date	Translated	number of signs
Colonna's first inscription	1499	yes	14
Colonna's second inscription	1499	yes	12
Colonna's third inscription	1499	yes	14
Colonna's smaller inscription a	1499	yes	3
Colonna's smaller inscription b	1499	yes	2
Colonna's inscription on a banner	1499	yes	3
Alberici's Album—First inscription	1507	yes	19
Alberici's Album—Second inscription	1507	yes	18
Alberici's Album—Third inscription	1507	yes	7
Alberici's Album—Fourth inscription	1507	yes	9
Alberici's Album—Fifth inscription	1507	yes	15
Alberici's Album—Sixth inscription	1507	yes	10
Alberici's Album—Seventh inscription	1507	yes	13
Alberici's Album—Eighth inscription	1507	yes	10
Obelisk for Henri II's Joyous Entry	1549	yes	21
Jan van der Noot's *Cort Begryp der XII Boeken Olympiados*	1579	yes	18
Jan van der Noot's *Book of Extasis* (four faces of the obelisk)	1580	yes	3–4–18–12
Lionello Spada's first inscription	1603	yes	6
Lionello Spada's second inscription	1603	yes	7
Lionello Spada's third inscription	1603	yes	7
Lionello Spada's fourth inscription	1603	yes	6
Bellini, *San Marco*	1504–1507	no	7
Thevet 1554 = Beuckelaer, *Ecce homo*	1554	no	8
"Inscription of Sais", in Valeriano's *Hieroglyphica*	1556	no	5
Mielemans, left column	1558–1560	no	8
Mielemans, right column	1558–1560	no	10
Caron, *Arthemise*	1559	no	8
Thevet 1575	1575	no	12

Tab. 4. Number of signs in the neo-hieroglyphic inscriptions

The average number of signs for a neo-hieroglyphic inscription is ten, with a minimum of three and a maximum of twenty-one.[12] The number of iconemes entering the composition of the iconograms

12 Given the nature of the neo-hieroglyphic signs, one can sometimes dispute whether a complex sign must be counted for one (composite sign) or for two signs (§ 2.2.2).

is not higher. For instance, Maximilian I's Triumphal Arch (Winand 2023: 83–84), which is among the most elaborate compositions of its kind, has only twelve iconemes invested with a semantic value. This was after all only to be expected as the vectoriality was in this case unpredictable.

The neo-hieroglyphic inscriptions were preferentially written in lines, except on the obelisks. The reading always proceeds from left to right as in alphabetic inscriptions. *Scriptio continua* is the rule. There is no separation between words, or between phrases or sentences, nor marks (dot, line) to help segmenting the text. In the texts where the signs are carefully calibrated, the average number of signs remains stable for each line, which prevents any attempt at matching syntactic organization with the layout of the lines (§ 2.3).

Texts can sometimes show unusual layouts. This is the case with the first inscription by Spada for the funeral monument of Agostino Carracci (fig. 6), where the sign of the anchor was placed at the centre of a composition made of two pairs of nouns sharing the same verb. The translation clearly suggests how to interpret the text:

> *Spiritus tenet Coelum / Fama tenet Orbem. Mors victa*
> The spirit holds the sky, fame holds the earth. Death is defeated.

Fig. 6. Spada, first inscription for Agostino Carracci's funerary monument

The compositions imagined by Alberici in his press book to show his skills to potential buyers can be divided into two groups: in the first, the rules of the decorum prevailing in classical epigraphy have been respected, while in the second the modern hierogrammateus indulged himself to some extravaganza as shown in fig. 7.

Fig. 7. Alberici (Royal MS 12 C III, fol. 22v)

2.1.2. *Contents of the texts*

The content of neo-hieroglyphic inscriptions is mostly trivial to say the least. They are usually short statements glorifying kings and emperors, reminding the style of ancient aretalogies (Maximilian's Arch, Henri II's Joyous Entry), dedicatory texts about the meaning of life (*Hypnerotomachia*) with some moral precepts (Mielemans), and funerary laudatory texts (*Hypnerotomachia*, Spada).

In Colonna's *Hypnerotomachia*, a natural link between the text and the nature of the monument bearing the inscription can occasionally be found. For instance, the dedicatory inscription to Julius Caesar (1561, fol. 85b) was inscribed on a panel inserted in an obelisk. The same obelisk also bears on each side an iconogram celebrating Caesar's deeds, the values of justice, and stigmatizing the vanity of life. It seems obvious that Colonna had in mind the Vatican's obelisk which, according to legend, contained Julius Caesar's ashes at its top. The text itself is remotely inspired by Latin dedicatory inscriptions, ancient and modern, which could be easily seen in Italy and were gradually copied by early epigraphists like Ferrarini (1481).

2.2. The lexicon

Basically, the neo-hieroglyphic lexicon is made of signs that refer directly or indirectly to concrete or abstract entities. I provide some formal considerations first (§ 2.2.1) before more closely analysing the composite signs (§ 2.2.2), the inventory of the neo-hieroglyphic signs (§ 2.2.3), and their meanings (§ 2.2.4).

2.2.1. *General considerations*

When used in inscriptions, signs were usually calibrated to fit in the lines (or columns). Thus, the size of the signs is not proportional to their external referents. Typologically, an interesting parallel can be drawn with how the ancient Egyptians dealt with the same issue.[13] Fig. 8 shows a line taken from a hieroglyphic inscription and another one from a neo-hieroglyphic one. On the first, starting from the right, the crocodile, a small bird, the sitting woman, the human face, the hydria, and the sitting man have been resized to fit the so-called quadrats, the imaginary quadrangular spaces that rhythmized the ordering of signs in classical ancient Egyptian epigraphy. The second, without displaying the same regularity as in the Egyptian inscription, nevertheless conforms to the same rules (from left to right): the sole, the anchor, the goose, the lamp, the tiller, and the two hooks have been given equal size. This general rule knows some exceptions, as already mentioned (see above, fig. 6).

Fig. 8.a. Stele Louvre C1 (12th Dynasty)

Fig. 8.b *Hypnerotomachia Poliphili*, 1st inscription

As was the case in ancient Egypt (even though this point is never emphasized), the signs are not drawn against a background. This contrasts with the books of emblems and imprese, where it was common practice to set the signs in their supposedly natural environment (Brunon 1982). While in most cases the signs were indeed integrated in an *ad hoc* scenery in some acceptable way, some compositions seem very odd to modern eyes. Fig. 9 shows two drawings from Alciat's *Emblemata* 1577 edition. While the hive in the first has been indeed set in a likely country landscape, the arrow and the remora in the second have been curiously drawn against a terrestrial landscape.

13 See Vernus 1982: 105–112; Polis 2018: 294–296. However, there is no groupings of signs into what is called quadrat in Egyptology, that is a virtual square, which could sometimes alter the 'natural' succession of the signs (Polis 2018: 294 and 297).

Fig. 9. Alciat, *Emblemata*, 1577, #148 and 20

The same practice was followed in the successive editions of ps.-Horapollo's *Hieroglyphica* (fig. 10) with varying results (the rabbit on the left is not out of place in the landscape, while the tongue, the hand and the eye, floating above the hills have some oneiric appeal). There was no difference in this respect between a genuine sign taken from the *Hieroglyphica* and the additional signs inherited from the neo-hieroglyphic tradition that were regularly incorporated at the end of the editions of the *Hieroglyphica*, as is the case with the burning antique lamp meaning "life".

Fig. 10. Horapollo's *Hieroglyphica*, ed. Kerver, 1543, s.n.

The signs can be drawn with many details in a very realistic way (see above the rabbit, fig. 10a). This is mostly the case when they are presented in a lexicon with an accompanying gloss. For instance, Alberici makes a distinction between the signs that are exposed in the first part of his manuscript and the same signs when used in one of his inscriptions in the second part (fig. 11). In the lexicon, extreme attention is given to details, including the use of colours. In the inscriptions, the signs are simplified and are always monochrome. Fig. 11 compares how a single sign—the helmet—is presented in the lexicon (with a spade and a shield), then used in situation.

Fig. 11. Royal Ms 12 C III, fol. 4r and 19v

As the signs were not elements of a close set in a writing system, variations could freely occur. The signs in Colonna's *Hypnerotomachia* show some variations from one edition to another. For instance (fig. 12), the vase in the first line of the inscription was inclined in the original edition (Manuce, Venise, 1499), but no longer in the French edition of Jacques Kerver (1546, fol. 11b). The serpent—a very frequently motive in neo-hieroglyphic inscriptions—is never drawn the same way, being represented in different positions and with a varying number of rings.[14] This contrasts with Egyptian hieroglyphs, where a change in the position of a sign could signal a difference in meaning (compare the respective values of  , for instance in *qd* "to build", and  , for instance in *whn* "to fall", or *gs*^{3} "to be inclined").

Fig. 12. Colonna's *Hypnerotomachia*.
Comparison between the edition princeps and the French edition (Kerver, 1546)

A major difference between neo-hieroglyphic and classical Egyptian epigraphy is that the former was not apparently sensitive to respecting a strict orientation of the signs. In Egyptian hieroglyphs, signs that are not symmetrical were necessarily oriented (Polis 2018: 295). Except in some compositions, like royal cartouches, the signs are always oriented in the same direction. The reverse orientation can sometimes change the meaning of the sign as in the contrasting pairs  vs. ("to move in", "to enter" vs. "to move out", "to leave"), and vs. ("to sail" vs. "to be shipwrecked", "to be

14 The hook is used twice by Alberici in his inscriptions. While the shape remains unchanged, its position varies: compare Royal MS 12 C III, fol. 19v (horizontal) vs. 23v (vertical). The same observation applies for the arrow, which is normally drawn horizontally but can also be found occasionally drawn obliquely to adjust to the available space (Royal MS 12 C III, fol. 19v).

upside down"). In neo-hieroglyphic inscriptions, the orientation preferably seems to follow some internal aesthetic rules.[15]

Variations in the representation of a single sign can be best explained by the difference between a writing system in the narrow sense and a system of symbolic representation as was the case with neo-hieroglyphs. In the former, there is inevitably a process of standardization, which can allow for some variations, more visible in diachrony than in synchrony as illustrated in the specialized existing palaeographies. In the Renaissance, however, it was impossible to match a single hieroglyphic sign with a description as offered by the Greek and Latin authorities, who always referred to generic types, never to real inscriptions. Humanists and artists only knew (or believed they knew) what the Egyptians meant by drawing a certain figure. What really mattered was the equation between a figure and its meaning. How the figure should look like was of secondary interest. Thus, if a rabbit could convey the meaning of being open, one could feel free to draw the rabbit as one pleased: seated, running, looking right or left, engaged in a particular activity or remaining idle. In one of van der Noot's neo-hieroglyphic inscriptions (1579), the deer appears twice, in two completely different attitudes (fig. 13).

Fig. 13. Van der Noot, *Court aperçu des XII Livres de l'Olympiade*

The dog is frequently used as a sign, meaning "to ward", but also "friendship" and "fidelity".[16] Once again, its positions and attitudes can vary (fig. 14): in the inscription for Hubert Mielemans, it is shown standing, whereas in Colonna's *Hypnerotomachia*, it is lying on the top of a helmet. In the dedicatory inscription for Henri II, only the forepart was drawn, while Spada opted for a very dynamic attitude.

15 Compare the orientation of the helmet in Royal ms. 12 C III, fol. 19v and fol. 20r. In the former, the helmet faces right as the first sign of the line, whereas in the latter, which has the mirrored situation (end of the line), the helmet faces left.

16 In the iconogram at the top of Maximilian's Triumph Arch, there is a dog sitting with a stole, with the meaning of "first of princes" (*princeps optimus*).

Fig. 14. The sign of the dog: *a*) Mielemans, *b*) Colonna, *c*) Henri II, *d*) Spada

Spada also used the sign of the dog twice in another inscription, with two completely different attitudes (fig. 15).

Fig. 15. The sign of the dog: Spada (Morello 1603, 17b)

Conversely, signs can also display minor variations that turn out to be significant. For instance, the universe is frequently represented as a circle (or a globe) with the sun and the moon in the upper part, and the earth in the lower part.[17] In Royal MS 12 C III, fol. 21v, the sun and the moon are in the lower part (fig. 16). According to the translation provided by Alberici, the sign here means *mundus inferior*. Thus, Alberici intentionally created a contrast with the generic sign he also used in his other inscriptions.

17 The division in the lower part is sometimes applied to the upper part (Royal MS 12 C III, fol. 19v). The globe can also be represented with a cross at its top (Mielemans, see Winand 2023: fig. 20), or take a special shape to convey a specific meaning as the globe dotted with stars (for the *Incaminati*) in one of Spada's inscription (Winand 2023: fig. 20).

Fig. 16. The sign of universe. Colonna's *Hypnerotomachia* (1546, fol. 86b), Royal MS 12 C III, fol. 21v, 20r and 19v

The inscription with the sign of the universe drawn upside down is a funerary composition directly inspired by Colonna's *Hypnerotomachia*, but in a less inspired way (fig. 17). Although Colonna translates the sign of the universe by *cuncta*, he made a subtle distinction by reversing the respective order of the sun and the moon. Whether this was intentional or not is impossible to decide, but it seems reasonable to suggest that Alberici took it seriously. He thus turned the sign upside down and adapted the meaning.

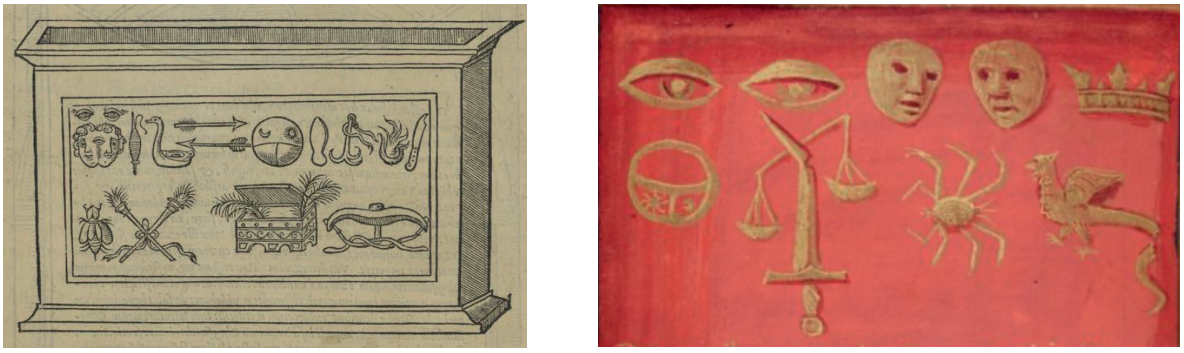

Fig. 17. Colonna's *Hypnerotomachia* (1546, fol. 96a) and Royal MS 12 C III, fol. 21v

2.2.2. *Composite signs*

While the signs are usually simple items, however detailed they can be, they are also sometimes complexified. This can be achieved in different ways: *a*) repeating, *b*) embedding, *c*) augmenting, and *d*) combining. Signs that are connected by a formal device, like a ribbon, are treated in the section dealing with syntax (§ 2.3.2).

a) Repeating a sign

A sign can be repeated to indicate plurality as is the case with the two ibises and the two plumb lines for writing the phrase "the Egyptians … erected" (*Hypnerotomachia* 1546, 85b, fig. 18).[18] In the same inscription however, the small disk representing a coin was drawn six times for writing the word

18 In Egyptian, the repetition of a sign expresses duality; plural is marked by the triplication of the sign. In the modern Western languages, where there is no longer a morphologically marked dual, plurality starts with two.

"money". The reason for this exception can only be guessed. Six disks were probably better to fill the space and more adapted to suggest opulence and generosity. But why six, and not five or seven? The pattern was perhaps reminiscent of the armorial of the Medici, who made their fortune in the bank (fig. 19). This hypothesis seems likely as the disks are indeed silver coins, symbolizing the source of the fortune made by the family.[19]

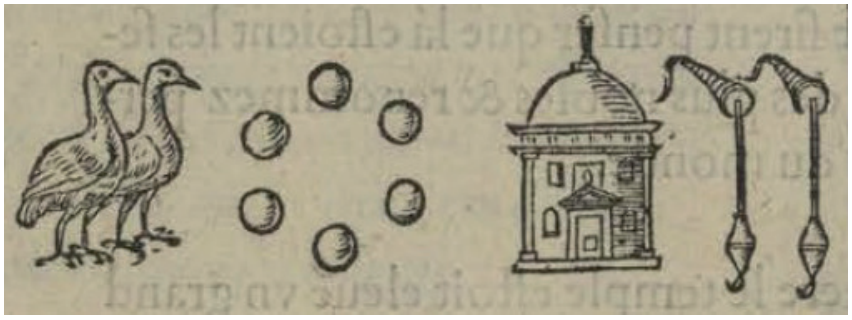

Fig. 18. *Hypnerotomachia* 1546, 85b

Fig. 19. Armorial of the Medici

A single sign can be made of two similar iconemes without implying duality or plurality, as is the case with the two hooks for writing the verb *tenere* "to hold" (*Hypnerotomachia* 1546, fol. 11b), the two ears of wheat for writing the month of July (*Hypnerotomachia* 1546, fol. 85b), or two torches for expressing the intensity of love (*Hypnerotomachia* 1546, fol. 96a). Similarly, Alberici used two crossed olive branches with the meaning "ornament" (Royal MS 12 C III—fol 19v). Expressing a complex reality by duplicating the same sign was already suggested in ps.-Horapollo's *Hieroglyphica*. For instance, two crows signify marriage (I,9). This is also the case with the two feet standing on water for expressing something that is impossible to realize (I,58).[20]

19 One will note that Cosimo I (r. 1537–1569) chose as the family's motto *Festina lente*, which had been popularized by Colonna. The motto was illustrated by a turtle passing with a ship's sail on its back, as illustrated in the Palazzo Vecchio or at the entrance of the Grotta del Buontalenti (Palazzo Pitti). The motto and its representations will be discussed in the part 3 of the study.

20 This last iconeme was used by Dürer in the iconogram for Maximilian's Triumph Arch (Winand 2023: fig. 30).

b) Embedding, including, superposing

Two signs can be placed in close contact. The corpus shows cases of the embedding of a sign into another, of including a sign into another, and of superposing a sign onto another.[21] The semantic or syntactic relations between the signs cannot be predicted, being context sensitive.

Embedding is not a very common device for combining two signs. The first examples can already be found in Colonna's *Hypnerotomachia*. While including a sign into another can serve different purposes, the overall iconic dimension is quite clear, suggesting some kind of subordination or dependency. In the first inscription, Colonna used inclusion twice, embedding the [eye], meaning "god, divine", in an [altar] and a [sole] respectively (fig. 20). In the first case, God is the beneficiary of the action symbolized by the altar (*deo … sacrifica* "Sacrifice to God!"), while in the second case, God is part of the argument structure of the word "submission", symbolized by the sole (*deo subiectum* "submitted to God").[22] The first group is actually more complex as it also includes the [vulture], which here means "nature". The [eye] and the [vulture] are enclosed in a common space—the altar—which invites the reader to look for a syntactic relation between the two, here one of dependency (*deo naturae sacrifica*).

Fig. 20. Embedding a sign into another (*Hypnerotomachia* 1546, fol. 11b)

In the second inscription (fig. 21), the inclusion of the olive branch (*clementia*) into a vase (*animus*) indicates syntactic dependency (*animi clementia* "by soul's mildness"). One will immediately note that the syntactic interpretation is not without ambiguity: one could equally well understand "the mild soul" or "the spirit of mildness".

21 In Egyptian hieroglyphs, signs can be *a*) inserted into the same square without touching, each sign keeping its value, *b*) stacked, *c*) connected with one another, or *d*) combined to form complex signs (Polis 2018: 316).

22 This combination was reproduced by van der Noot (Winand 2023: fig. 18). While in Colonna's inscription the two branches surrounding the sandal are left untranslated, they are rendered by van der Noot as two adverbs (*par sa benignité, & toute puissance*).

Fig. 21. Embedding a sign into another (*Hypnerotomachia* 1546, fol. 85b)

When two signs are superseded, one can only suspect a relation of some kind between the two, but the exact nature of it can fluctuate (fig. 22). In *Hypnerotomachia*'s first inscription, Colonna put a ship's tiller on an olive branch, giving the translation:

> *misericorditer gubernando*
> by governing with misery

The olive branch (*misericordia*) here indicates how the government by God will be done. A similar arrangement can be seen in one of the last neo-hieroglyphic inscriptions, where two crossed brushes for representing the act of painting have been drawn against two crowns (olive and oak branches) in the background for signifying excellence. The group was translated:

> *pictae poesis ingenium*
> genius in the art of painting

One will note that the two brushes are not here indicative of plurality. The sign has been more likely doubled to keep a harmonious symmetry in the drawing, with the two different kinds of crowns.

Fig. 22. Superposing two signs (*Hypnerotomachia* 1546, fol. 11b and Spada, first inscription)

In the inscription for Hubert Mielemans, the [sole] has been inserted into a [circle] (fig. 23). As the underlying Latin or French version has not come down to us, the exact meaning can only be guessed; when comparing the compositum with Colonna's inscriptions (fig. 20), which deeply influenced Mielemans' inscription, the meaning "always subjected" seems likely (Winand 2024). If this is correct, the sign showing a circle expresses the temporal frame of the action conveyed by the

sign showing a sole. This interpretation can be supported by the complex sign found in Colonna's second inscription for writing *semper Augustus*.[23]

Fig. 23. Including a sign into another (Mielemans, col. a), and superposition (*Hypnerotomachia* 1546, fol. 85b)

Embedding should not be confused with augmentation (see below, c), which is another technique for specifying the meaning of a sign by adding an element that specifies or limits the intention of the first sign.

c) Augmenting a sign with another

A sign can be augmented by another sign to acquire a more precise meaning. The resulting monogram was usually translated by one single word. For instance, in the first inscription, Colonna shows two hooks bound together by a thin linen strip (fig. 24a). The hook, when used alone, can mean to hold (*retinere*), as shown in Alberici's inscription (fig. 24b). In Colonna's inscription, the intended meaning is probably to stress the intensity of the action, as suggested by the preceding group (*firma custodia*, see below 2.3).

Fig. 24. The hook-signs *a*) *Hypnerotomachia* 1546, fol. 11b; *b*) Alberici (Royal MS 12 C III—fol 19v)

23 The arrangement of the signs sometimes depends on aesthetic considerations. For instance, the short inscription showing a dolphin winding around an anchor begins with a circle, which is clearly separated from the main motive (Colonna, *Hypnerotomachia*, 1546, fol. 22a). It is likely that including the dolphin and the anchor inside a big circle would have destroyed the harmony of the compositum.

A chest with two cypress branches in it was selected by Colonna in the third inscription to express a complex idea: the death and sepulcher of two persons (fig. 25). Of course, the two branches convey a proper meaning (duality), but it is the conjunction of the chest and the cypress that naturally leads to the meaning of death. One will note that the duality of the lovers was already expressed by the repetition of the torch-sign just before, whose composing elements have been linked together. The monogram then conveys the idea of intense burning love.

Fig. 25. Augmenting one sign with another (*Hypnerotomachia* 1546, fol. 96a)

Alberici produced a high number of original monograms, some of which are highly sophisticated. For instance, the sign depicting a sword, meaning "to avenge", "to protect", or "a king", was augmented by Colonna with scales and a royal crown to add the idea of justice (fig. 26a). The same sign, but with a broken sword, expresses the opposite idea, "injustice" (fig. 26b).[24] In Alberici's introductory glossary, the sword with a crown to which a branch of laurel and palm have been added means "victory" and "triumph" (fig. 26c). In the dedicatory inscription for Henri II, the sword pierces through a book, which apparently, according to Martin's translation, was intended to mean "good council" (fig. 26d).

a) *b*) *c*) *d*)

Fig. 26. Royal MS 12 C III, *a*) fol. 19v, *b*) 21v, *c*) glossary, *d*) Henri II

24 See Alberici's explanation: *cuius ratio est quod iustitia virtutum regina est et domina: sine qua nihil rectum nihil in homine sanctum est* "the reason is that justice is the queen and ruler of virtues; without it, there is nothing right nor sacred in humans".

A well-known case of specifying the meaning of a sign by adding other elements is offered by the bucranium. The sign, which shows the skull of an ox facing the spectator, can sometimes be left without ornament, but it usually takes some accessories hanging from the horns. The most common ones are agricultural tools conveying the general idea of work or labour. The bucranium was a popular motif in Roman sacrificial scenes that could still be seen in the Renaissance on some monuments (fig. 27).

Fig. 27. Frieze with ritual objects for sacrifice, Rome, Forum, Temple of Vespasianus

In the neo-hieroglyphic inscriptions, the bucranium with the agricultural tools usually means "labour". When represented bare, without accessories, it can apparently take the meaning of "patience". The two variants are present in Colonna's *Hypnerotomachia*; one will once more note the author's minute attention to details (fig. 28).

Fig. 28. Declensions of the bucranium-sign (*Hypnerotomachia* 1546, fol. 11b and 22a)

d) Combining signs into a tableau

Signs can be combined in such a way that they make a small distinct unit within the inscription. A first example is offered by the opening signs of Henri II's dedicatory inscription. The heads of a lynx and a dog face each other and are surmounted by a crown that seems to rest on their noses. The intended meaning is:

> May strength and vigilance guard your kingdom.

There is indeed a visual effect suggesting that the two animals work together to the benefit of the king. The action of guarding is not expressed by a specific sign, but it can be iconically derived from the position of the crown vis-à-vis the lynx and the dog, which are seen, as it were, supporting it. The three signs form a unit that is distinct from the rest of the inscription, where the signs follow

each other in a sequential order (fig. 29). Such small tableaus are very close in spirit to the iconograms, as the rectilinear vectoriality, which is the guiding principle of neo-hieroglyphic inscriptions in the narrow sense, is broken. They are not found in Colonna's inscriptions, being seemingly a more recent development. Typologically, they can be compared to some complex hieroglyphic signs combining independent elements to create a small tableau which had both a visual effect and a linguistic value.[25]

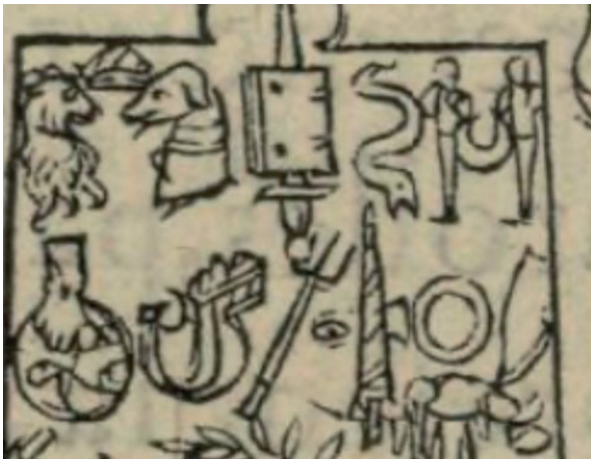

Fig. 29. The first two lines of Henri II's dedicatory inscription

2.2.3. *Inventory of signs*

The repertory of neo-hieroglyphic signs was open-ended (compare Collombert 2007 for ancient Egyptian hieroglyphs). As the concrete realities and concepts were conveyed by signs whose value was entirely symbolic, the number of signs should theoretically match the number of words found in the lexicon of any natural language, which was constantly expanding for the needs of communication. In reality, this number was potentially higher as a word could be expressed by several signs. For instance, in his glossary, Alberici sometimes presented different symbols for expressing the same idea. Fig. 30 shows two variants for expressing the conflicting ideas of war and peace, here illustrated by the opposition between fire and water.[26] Another trivial example is the king or emperor, which can be "written" with an eagle, a crown, a basilisk or a sword.[27]

25 This is particularly common in the so-called enigmatic (previously called cryptographic) inscriptions in ancient Egypt, see § 2.3.7.

26 For the use of antithetic pairs, see below tab. 14.

27 As iconograms, the anchor with a dolphin could be glossed *Festina lente*, *Matura* (*Maturnadum*), or *Moderatio*. In his *Emblemata*, Alciat reused the motive of the dolphin with the motto *Princeps subditorum incolumitatem procurans* (Emblem 144), while reserving the motto *Maturandum* for the motive of the arrow with the remora (Emblem 20). The same ambivalence can be observed for the two competing iconograms: the crab with the butterfly, and the turtle with ship's veil.

Fig. 30. Alberici, Glossary

Artists were eclectic in how they found inspiration. Four main categories of sources for creating new signs can be distinguished: *a*) direct experience with the natural and cultural environment, *b*) antique artefacts or reproductions thereof, *c*) classical written sources dealing with hieroglyphs, and *d*) medieval bestiaries.

a) Experience with the immediate environment

Artists frequently represented tools and artefacts that they could see around them and handle in their everyday life. These objects are missing from the ancient hieroglyphic repertoire, or, if they by chance do show up (like the tiller), they could not attract the Renaissance artists' and humanists' attention as they were not mentioned in the sources these had access to (e.g. yoke, scales, royal crown). Moreover, the shape of an Egyptian tiller has no resemblance with those which were used in the 15th and 16th centuries. Here is a small sample of some contemporary artefacts and items that were used in the neo-hieroglyphic inscriptions (fig. 31): *a*) a spindle and a ball of thread, *b*) a marine anchor, *c*) two flails, and *d*) an hourglass.

Fig. 31. *a* and *b*) *Hypnerotomachia*, 11b; *c*) 85b; *d*) Mielemans, col. B

Animals are common enough in neo-hieroglyphic inscriptions. Except for occasional links with Egypt that were supported by classical sources (see below, c), artists frequently included in their repertoire animals that they frequently came across on earth, like the deer (fig. 32a), or at sea, like the dolphin (fig. 32b).

Fig. 32. *a*) deer—Henri II's dedicatory inscription; *b*) dolphin—*Hypnerotomachia*, 11b

b) Antique artefacts or reproductions thereof

Classical – mostly Roman – Antiquity was clearly a constant source of inspiration in the Renaissance. Those who composed neo-hieroglyphic inscriptions could not fail to exploit such a vast and diverse gallery of images. This can be best observed in the presence of artefacts, for instance vases and lamps of different kinds (fig. 33a), but also of characteristic vegetal elements, like olive, cypress, pine branches and oak leaves, which supported a symbolic meaning (fig. 33b), without mentioning the omnipresent cornucopia (fig. 33c).

Fig. 33. *a*) classical vase with a pouring spout (*Hypnerotomachia*, 11b); *b*) olive branches (Royal MS 12 C III—fol 19v); *c*) cornucopia (Henri II's dedicatory inscription)

Models could be found in what was left of Roman civilisation. While most monuments still waited to be properly excavated, rebuilt and restored, traces of Classical Antiquity were everywhere, particularly in Rome. As already mentioned (fig. 27), a frieze with cultic objects played a significant role in the symbolic imaginary of those who created neo-hieroglyphic inscriptions; its use by Colonna for one of his inscriptions became so popular that it was reproduced several times (fig. 34, middle register).

Self-appointed epigraphists copied numerous inscriptions, which provided basic phraseology for some neo-hieroglyphic inscriptions. Smaller artefacts, like different types of terracotta lamps, were present in private collections. A small sketch by Lombard precisely shows objects he was interested in (fig. 34). Some of them indeed appeared in neo-hieroglyphic inscriptions (note more particularly the sequence of five cultic signs in the middle of the drawing).

Fig. 34. Lambert Lombard, Album Arenberg, N 163a (MAR-LABO-CED-dpt1-D-163a)

A worthwhile source of information for the artists were the ancient coins and medals, which showed objects, buildings and human beings engaged in activities. This material was abundant, easy to handle and copy. Above all, the coins bear a legend giving the key to their symbolic meaning. The following table is a small sample of Republican and Imperial Roman coins whose influence on the artists' inspiration seems the most likely.

Coins	Ref.	Motif	Legend	Neo-hieroglyph
	Nerva, denarius, AD 97 (RIC 14)	clasping hands	Concordia exercitus[28]	Henri II's Joyous Entry Spada
	Nero, denarius, AD 65–66 (RIC 62)	temple	Vesta	*Hypnerotomachia*, 85
	Augustus, denarius, 30–29 BC (RIC 265)	trophies on a battle ship's prow	official titulary	*Hypnerotomachia*, 86

28 The legend for this very common motif can vary: *concordia*, but also fides (*exercitum* or *praetorianum*).

Coins	Ref.	Motif	Legend	Neo-hieroglyph
	Octavianus Caesar, denarius, 19–18 BC (RIC 37)	a comet	Divus Julius	*Hypnerotomachia*, 86
	Vespasian, sestertius, AD 74 (RIC 757)	two cornucopias with a caduceus	official titulary	Lombard N 163
	Augustus, denarius, 19 BC (RIC 89)	winged victory	official titulary	Lombard N 207
	Pompeius, denarius, 48 BC (Crawford 446/1)	battle ship's prow	official titulary	Herwarth von Hohenburg, *Thesaurus hieroglyphicorum*
	Titus, denarius, AD 80 (BMC 225,72; RIC 112)	anchor with dolphin	official titulary	*Hypnerotomachia*, 22
	Augustus, aureus, ca. 19 BC (RIC 316)	crab with butterfly	official titulary	Jean Frelon's printer and publisher mark
	Domitianus, denarius, AD 80 (BMC Titus 91. RIC Titus 266)	burning altar	Princeps juventutis	*Hypnerotomachia*, 11
	60 asses (Crawford 44/2)	eagle with spread wings	Roma	Alberici (Royal MS 12 C III—fol 19v)
	Vespasianus, denarius, AD 74 (RIC II, 686 var.)	winged caduceus	official titulary	*Hypnerotomachia*, 86; Lombard N207

Fig. 35. Roman coins as possible prototypes for neo-hieroglyphs

c) Classical written sources dealing with hieroglyphs

Humanists and artists in the Renaissance were deeply influenced by classical (mainly Greek) authors who dealt with some genuine hieroglyphic signs, giving their meaning and adding, in some cases, an explanation, most often without link with the actual encyclopaedia of Ancient Egypt. Authors that were progressively rediscovered, edited and translated like Diodorus, Plutarch, Clemens, Iamblichus, Plotinus, Porphyry, Ammianus, and Isidore occasionally dealt with some isolated hieroglyphs. In Chaeremon's and ps.-Horapollo's *Hieroglyphica*, more substantial lists of hieroglyphs were provided with a translation and a gloss. Table 4 gives a selection of some (mostly correct) equivalences between what was supposed to be a hieroglyphic sign and its meaning(s).[29] A quick look reveals that a sign can have more than one meaning, most often related ones, but occasionally different ones as well. The first three columns give the data coming from classical sources; the last two show how the signs were used in neo-hieroglyphic inscriptions and iconograms.

	Classical sources	Meaning	Neo-hieroglyphic	Meaning
Cl/Pl	child	"birth, beginning"		
Ch	child	"what is growing"		
Pl	child seated on a lotus bud	"rising sun"		
H	ear	"forthcoming task"		
Ch	weeping eye	"misadventure," "sorrow"		
	eye		Pol, Al, H_II, VdN	"god, divine"
Pl	eye	"foresight"	Sp	"wisdom"
H	feet on water	"impossibility"	MA	"impossibility"
Ch	stretched hands	"having not," "poverty"		
			Pol	"to moderate," "to offer the choice"
Di	right hand with extended fingers	"abundance"		
Di	left closed hand	"savings"		
H	hands with shield and arrows	"fight"		
Pl	heart over a burning fire	"sky"		

29 The following abbreviations have been used, in the first column: AM (Ammianus), Ch (Chaeremon), Cl (Clemens), Di (Diodorus), H (ps.-Horapollo), Is (Isidore), Ja (Jamblichus), Pl (Plutarch), Po (Porphyry); in the fourth column: Al (Alberici), H_II (Henri II's dedicatory inscr.), Lo (Lombard), MA (Maximilian's Arch), Mi (Mielemans), Pol (*Hypnerotomachia Poliphili*), Sp (Spada), VdN (van der Noot).

	Classical sources	Meaning	Neo-hieroglyphic	Meaning
Ch	man holding his chin and bending	"sorrow"		
Ja	man navigating	"supremacy over the world"		
Ja	man seating on a lotus bud	"intellectual superiority"		
Cl/Pl	old man	"death," "end"		
Ch	old man	"what is decreasing"		
H	tongue & eye	"capacity of speaking"		
H	tongue & hand	"capacity of speaking"		
H	two men shaking hands	"concord"	H_II Sp	"concord" "company"
	two angels holding something together		Pol	"to share something"
Ch	woman playing tambourine	"joy"		
H	ant	"sagacity"		
			Pol	"something small"
H	bee	"people obedient to the king"		
			Pol Sp	"slowly" "eloquence"
Ch/AM	bee	"king"		
Ch	bull	"earth"		
H	bull	"tempered virility"	MA Lo Lo	"modesty of the warrior" "work (force)" "man who cannot lie"
H	crocodile	"rapacious," "furious"		
Pl	crocodile	"impurity"		
Di	crocodile	"malice"		
Cl	crocodile	"impudent behaviour"	Lo	"he who behaves badly"
H	crocodile	"quick death"		
Ch	deer	"year"		
H	deer	"what lasts durably"	H_II	"durably"
			VdN	"to see," "to hear"
H	dog	"hierogrammateus"		
H	dog	"prophet"		
			Sp	"reputation"
H	dog	"embalmer"		
H	dog	"spleen"		

	Classical sources	Meaning	Neo-hieroglyphic	Meaning
H	dog	"capacity of smelling," "laugh," "cough"		
			Pol/H_II Sp	"friend(ship)"
Pl	dog	"to watch"		
H	dog (looking away)	"aversion"	Sp	"respect"
H	dog with a garment	"judge," "magistrate"	MA	"greatest among the princes"
H	dove with a laurel branch	"a man healing himself"		
H	eagle	"king living alone"	Po Al/MA	"empire" "emperor"
H	eagle carrying a stone	"a man living in a secure city"		
			VdN	"to see"
H/Cl/Ch/Pl	falcon	"god, victory"		
H/Ch	falcon	"soul"		
Ch	falcon	"sun"		
H	falcon with wings widely open	"air," "wind"		
H	fish	"iniquity," "stain"		
Cl/Pl	fish	"to abhor," "to hate"		
H	fly	"effrontery"	Lo	"impudence"
Ch.	frog	"rebirth"		
H	frog	"man not yet mature"	Lo	"person without scruples"
H	goose	"son"		
			Pol	"ward"
H	hippopotamus	"a division of time"		
Pl	hippopotamus	"impudent behaviour"		
Po	hippopotamus	"injustice"		
H	hippopotamus' nails	"unfair," "ungrateful"		
H	horn of an oxen	"labour," "work"		
Di	kite	"quickness"		
H	ibis	"heart"		
			Pol	"Egyptians"
Pl	ibis	"purity"		
H	lion	"ardour," "eargerness"	MA	"the strongest one"
			Lo	"prince," "great one"
H	lion's head	"ward," "watch"		

	Classical sources	Meaning	Neo-hieroglyphic	Meaning
H	lion's head	"terror," "fear"		
Ch	lion's fore part	"beginning"		
Ch	lion's fore part	"watchful," "vigilant"		
Ch	lion's hind part	"coercion"		
Pl	monkey	"impurity"		
H/Is	ouroboros	"eternity," "world"		
	circle		Pol, Al, Mi, H_II, VdN	"eternity, always"
H	pelican	"insane," "imprudent"		
H	phoenix	"everlasting soul"		
H	phoenix	"inundation"		
H	phoenix	"one coming back late from abroad"		
H	phoenix	"beginning of a new cycle"		
			Al	"century"
H	pig	"corrupt man"	Lo	"disrespectful"
Pl	pig	"impurity"		
H	raven (night)	"death"		
Ch	scarab	"birth"		
Ch	scarab	"he who begets himself"		
Ch	scarab	"male"		
Cl	scarab	"sun"		
H	scorpion	"slow death"		
H	snake	"mouth"		
			Pol, Al, H_II, VdN	"prudence"
			Pol	"hatred"
Pl	snake (aspic)	"immortality"	Sp	"eternity"
Pl	snake (aspic)	"quick(ness)"		
H	snake cut in two	"king who does not rule universally"	MA	"king ruling over the greater part of the world"
Ch	snake entering its hole	"enter," "descend"		
Ch	snake moving out of its hole	"leave," "ascend"		
H	stork	"the one who loves his father"		

	Classical sources	Meaning	Neo-hieroglyphic	Meaning
H	vulture	"capacity of seeing"		
	eagle		VdN	"to see"
AM	vulture	"nature"	Pol	"nature"
Ch	vulture	"woman giving birth"		
Ch	vulture	"mother"		
Ch	vulture	"time"		
Ch	vulture	"sky"		
H	wing	"air"		
			Pol	"speed," "haste"
H	wasp (flying)	"noxious man," "murderer"		
H	bunch of papyrus	"antiquity of birth"	MA	"of ancient nobility"
H/Ch	palm leave	"year (month—H)"		
			Pol, Al, VdN	"winner," "victory"
H	raining sky	"education"	MA	"erudite"
H	solar and moon	"eternity"		
H	star	"universal god"	MA	"divine"
	glossed as a comet		Pol	"Julius (Caesar)"
	six stars		Sp	"rebus for Carraccio"
H	sun	"god"		
H	sun	"dawn," "night"		
H	sun	"time"		
H	sun	"soul of a man"		
H	fire and water	"purity"		
			Pol, Al	"antonyms for war and peace"
	fire		Pol, Mi	"to consume"
	fire		Pol	"the worst"
	fire		Al	"love"
	fire		Al	"to act"
H	book (sealed)	"past," "ancestry"		
			H_II	"warning," "advice"
Ch	bow	"acute strength"		
Pl	sceptre	"authority," "rule"		
H	1095	"incapacity of speaking"		
H	16	"voluptuousness"		

Tab. 5. Equivalences between hieroglyphic signs as reported by classical authors and neo-hieroglyphic signs

This table calls for some comments. The majority of the signs described by the classical sources are animals. Humans engaged in activities or parts of the human body come next, followed by celestial phenomena. Flora and artefacts are underrepresented categories. Artists in the Renaissance did not use this material slavishly. For instance, signs that were very common in Egyptian hieroglyphs were never or very rarely reused later, as human beings engaged in some activities, or the scarab and the sun. Conversely, some signs that regularly show up in neo-hieroglyphic inscriptions are absent from the hieroglyphic repertoire, like the cornucopia ("abundance")—a common motive in classical Antiquity—and the fire ("to consume", "to do", "love", "war").

As is clear from the list given above, a hieroglyph as transmitted by classical authors could have one meaning (e.g. fly, goose, ouroboros, etc.) or several meanings (e.g. crocodile, dog, falcon, etc.); moreover, a single meaning could be expressed by several signs (e.g. air, birth, death, god, etc.). This flexibility and potential fluidity of the hieroglyphic sign was completely assimilated by the artists of the Renaissance (§ 2.1.4).

Some hieroglyphic signs whose extra-linguistic referent was very close could easily be mixed up in the Renaissance. This is the case for birds of prey like the falcon, the hawk, the kite, and the vulture, which had distinct values in hieroglyphic Egyptian, but were largely treated as synonyms in the Renaissance. Some signs could also be simplified, like the ouroboros (present in ps.-Horapollo's *Hieroglyphica*), whose meaning, "eternity, always", was systematically conveyed by a simple geometric circle.

There was thus no fixed repertory of signs. Nevertheless, a small stock of signs regularly reappears in inscriptions from different sources without too many changes in meaning. They almost all go back to Colonna's *Hypnerotomachia*, which set a standard for a century. The novel's influence was indeed considerable as shown by the success of some of its inscriptions (above all the first one) whose long sequences—sometimes four or five signs in a row—were borrowed by later authors.[30]

While there was no dictionary of neo-hieroglyphic signs, some lists were nevertheless compiled. Mention has already been made of Alberici's glossary which opens its catalogue of inscriptions. Each sign is described, and its value given along with its symbolic meaning. Although there is no direct link, the influence of ps.-Horapollo's *Hieroglyphica* cannot be denied as regards the general template of the notices. However, the hieroglyphs that are discussed in the *Hieroglyphica* apparently had no direct influence on Alberici, whose source of inspiration seems to be anchored in the culture of the Renaissance, as shown by the signs described in his opening glossary.[31]

30 The copy of some *Hypnerotomachia*'s inscriptions and iconograms in Salamanca is also worth mentioning (see above fn. 6).

31 For instance, the rudder, the helmet, the spades, the scales, the anchor, the arrows, the hooks, the vessels, and the crowns take the forms and shapes of the objects that were in use in the Renaissance.

Sketches by Lambert Lombard show that the artists occasionally made for themselves a list of equivalences between signs and meanings (fig. 35). In another sketch by the same artist, the meaning of each individual sign was added separately from the general signification of the composition (fig. 36). As is evident, there is no straightforward correspondence between the two. For instance, the hand holding a knife which cuts the line of life is glossed *trunca il filo*, but is rendered in the translation by the adjective *breve* (fig. 37).

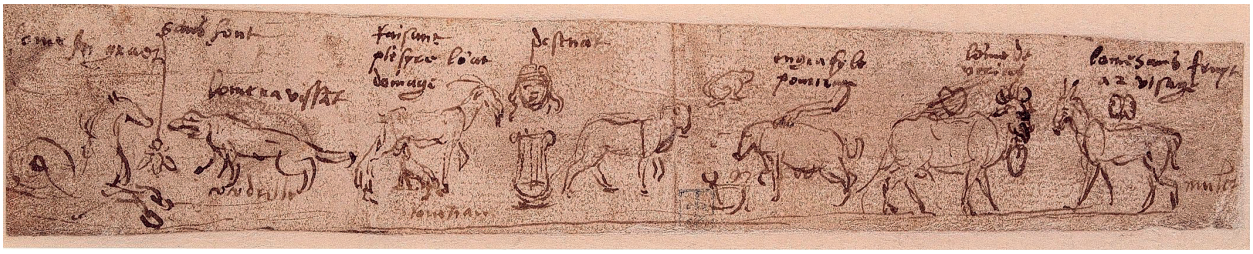

Fig. 36. Lombard, Esquisse Arenberg D 210

Fig. 37. Lombard, Esquisse Arenberg N 208

Those who were interested in understanding symbols or were looking for some ideas for composing neo-hieroglyphic inscriptions, for illustrating *emblemata* and *imprese*, or were interested in heraldry and numismatics could turn to what was for a time the ultimate reference, Piero Valeriano's *Hieroglyphica*, which was first published in Basel in 1556. This bible of symbolic thinking was an impressive collection of any item that could receive a symbolic meaning.[32] The *Hieroglyphica* are divided into chapters that describe the symbolic properties of the celestial and astronomical phenomena, of the human body (and parts thereof), of the animals, plants, stones, and some artefacts according to a taxonomy that proceeds systematically in a hierarchical order. One will note however

32 The *Hieroglyphica* were re-edited more than 30 times before the end of the 17th century, with translations in French and in Italian.

that the book is sparingly illustrated, which let every latitude to the artists for transposing into images what they read. As already observed by Balavoine 1982, the humanists were not interested in images, but in the texts. Thus, the insertion of drawings in ps.-Horapollo's edition or in Alciat's *Emblemata* proceeds from an interest of the editors who were preoccupied by economic reasons and viewed the addition of images as a commercial incentive for buying the book.

d) Medieval bestiaries

When looking at the classical sources dealing with Egyptian hieroglyphs (see above, c), one cannot be but impressed by the high proportion of animals, which, by a fair margin, make up most of the repertoire.[33] In this respect, one can wonder if medieval bestiaries—above all the *Physiologus*, a collection of animals (and some minerals) whose behaviour was linked to key elements of the Christian faith[34]—played a significant part in the constitution of the neo-hieroglyphic lexicon. Caution is required here, however. Many animals used by the artists of the Renaissance are indeed present in the *Physiologus*, but only exceptionally with the same symbolic meaning. For instance, the phoenix, a complex figure which is the recipient of classical (Greek) and oriental traditions (Lecoq 2008), usually means eternity or everlasting soul in neo-hieroglyphic inscriptions, according to what is reported in ps.-Horapollo's *Hieroglyphica*. While sharing the same naturalistic observations, the *Physiologus* gives it the symbolic value of Saviour, because it interprets them in a Christian way. The case of the griffin is similar: used with the meaning of "servant" by Alberici (Royal MS 12 C III—fol 19v), it is the symbol of archangel Michael and the Holy Virgin in the *Physiologus*. Another striking example is the lion, a powerful animal that was universally celebrated for its strength and power. In ancient Egypt, it was a common symbol for kingship or divinity as king (in the texts and in iconography, but without being "hieroglyphized"). This is how it was received in the Renaissance by Dürer for Maximilian's Arch (Winand 2023: fig. 30), and by Lombard (see above, fig. 2a). In ps.-Horapollo's *Hieroglyphica* (and partly in Chaeremon's), the sign of the lion means "ardor", "watch", "guardian", but also "violence", "irritation". For the *Physiologus*, however, elaborating upon the animal's supposed behaviour, it was first of all the sign of the Father who managed to sweep the traces of His divinity, then also the sign of the Saviour. It nonetheless shares with ps.-Horapollo the value of guardian (with the same naturalistic explanation). Another example is the eagle. While symbolizing kingship and royalty in ps.-Horapollo's *Hieroglyphica*, but also a man who can feel secure at home, in the *Physiologos* it means the one who rejuvenates himself by bathing in Christ's waters. As a final example, the case of the snake may be considered, here taken as a cover term for other reptilian varieties that are called in the texts either aspic or viper. According to ps.-Horapollo,

33 On the appellation birds-script (or language) for the hieroglyphic writing in the Classical (mainly magic), and later Arabic tradition, see Devauchelle 2014.

34 Zucker 2004.

the snake means the mouth, but also immortality, or quickness. Special cases are the snake cut in two, which is the symbol of a king who does not rule over the whole earth (ps.-Horapollo), and the snake coming out and entering its hole, which means "to leave, to go out" and "to enter, to go into", respectively (Chaeremon), the latter two being reminiscent of Egyptian  *ʿq* "to enter" and *pri* "to go out". These equivalences were more or less accepted and used in the Renaissance (see above, tab. 4). According to the *Physiologos*, however, the snake (or viper) means the one who murders his father or mother (*Phys*. 10), or the one who rejuvenates himself by living an ascetic life (*Phys*. 11).

2.2.4. *Meaning*

Even if the meaning of a sign might seem obvious when the translation has been kindly provided by the author, finding the solution when no clue was given remains a challenge. The reasons for this are twofold: firstly, the semantic or rhetoric paths leading to the meaning are very diverse, and secondly, it is not uncommon for one sign to accept different meanings.

The translators can basically be guided through this labyrinth by using four different kinds of resources: *a*) existing specialized lexica, *b*) existing translations, *c*) general encyclopaedias on symbolic expression, and *d*) retrieving the internal logics by applying some common semantic and rhetorical principles.

Before going into the details, it is worthwhile repeating that polyphony seems to be the rule as regards the possible relations between signs and meaning(s). It is not exceptional indeed for a sign to have multiple meanings (tab. 6), and for a meaning to be expressed by several signs (tab. 7). The lists given below are illustrative at best. I have sometimes included material coming from outside the restricted corpus of neo-hieroglyphic inscriptions and iconograms. The Renaissance did not of course make more complex a system where polysemy was the rule since Antiquity as shown by ps.-Horapollo's *Hieroglyphica*, where it is not exceptional to have four or five different meanings for one hieroglyph, and the *Physiologos*.

Sign	Meanings	References
anchor	"firm, stable"	Henri II, Alberici
	"slow"	*Hypn*.
	"to steal"	*Hypn*.
dog	"friendship"	*Hypn*.
	"guard"	*Hypn*., Henri II
eagle	"to see"	VdN
	"king, emperor"	Alberici, Maximilian's Arch
fire	"to act"	Alberici
	"to consume"	*Hypn*.
	"love"	Alberici
	"worst"	*Hypn*.

Sign	Meanings	References
plumb lines	"to erect"	*Hypn.*
	"what is correct"	Spada
snake	"eternity"	Spada
	"hate"	*Hypn.*
	"prudence"	*Hypn.*, Alberici, Henri II,

Tab. 6. One sign—several meanings

Meaning	Signs	References
"abundance"	cornucopia	passim
	hand with extended fingers[35]	Thevet
	ear of wheat	Lombard
"concord"	cup full of water	*Hypn.*
	two hands shaking	Henri II
	lyra	Lombard
"death"	cypress	Spada
	spindle	*Hypn.*
	sword	Spada
	two heads	VdN
"guard"	dragon	Alberici
	goose	*Hypn.*
	dog	*Hypn.*
"impudence"	fly	Lombard
	crocodile	Thevet[36]
"industrious labour"	bucranium	*Hypn.*
	hive	VdN
"long lasting"	deer	Horapollo
	ouroboros	passim
"love"	fire	Alberici
	burning vase	*Hypn.*
	two birds facing	Vdn
"to preserve"	helmet	Alberici
	chest	*Hypn.*

35 Cf. Diodorus III,4,1.

36 The hippopotamus could play the same role as evidenced by Plutarchus (*De Iside*, 350). This animal is also glossed "l'ome ingradt" by Lombard (Arenberg, D 210).

Meaning	Signs	References
"quick"	arrow	Alciat
	butterfly	Frelon
	dolphin	*Hypn.*
	sail	De Boodt
	wing(s)	*Hypn.*
"slow"	anchor	*Hypn.*
	crab	Frelon
	remora	Alciat
	turtle	*Hypn.*
"soul"	antic vase	*Hypn.*
	falcon	Horapollo, Chaeremon

Tab. 7. One meaning—several signs

a) Existing specialized lexica

Those who were interested in writing a neo-hieroglyphic inscription or compose an iconogram could find some help in the existing lexica. The *Hieroglyphica*, put under the name of Horapollo, gave a list of more than 250 equivalences between signs and meanings.[37] Because of its internal organization, the information could be very easily tabulated. The abridged list that Cyriacus of Ancona made for himself when returning to Egypt remains an isolated case, however. Although the famous explorer made this short memorandum to help himself understand ancient Egyptian monuments,[38] it is a proof of how the *Hieroglyphica* could be instrumentalized. Keeping with the spirit of the *Hieroglyphica*, Alberici composed a glossary as an introduction to the inscriptions that he had invented to seduce the English nobility at the beginning of the 16th century. He systematically added an explanation for the values he proposed for the signs that he sometimes seems to have invented. On some of his sketches, Lombard also noted some equivalences between signs and meaning. Finally, the meaning of some hieroglyphs was also transmitted by Classical authors (Winand 2020).

37 On the rooting of Horapollian hieroglyphs into ancient Egyptian writing, see Thissen 2001; Winand 2018: 224; 2022a: 46–49 (with additional bibliographical references).

38 This gave no tangible result. Cyriacus copied some inscriptions and sent them to Niccolo Niccoli, "the most capable man to understand them", but unfortunately the latter's death put an end to what could have been the first genuine attempt at deciphering ancient Egyptian hieroglyphic inscriptions.

b) Existing translations

Colonna's inscriptions and iconograms are systematically translated. The translation is usually preceded by a short description of the signs, which are identified even if, in some rare occasions, Poliphilo, the hero, declares his inability to identify what he sees. The Triumphal Arch of Maximilian and the dedicatory inscription for Henri II have also been glossed sign by sign. Sometimes, the equivalence between signs and meaning was provided later by someone else, as is the case for the funerary inscriptions made for Agostino Carracci in Bologna in 1603. It should be noted here that the equivalences given in the sources that everyone could have access to because they were made public (for instance, the Classical authors) were not necessarily blindly followed. There is indeed ample evidence showing that new signs were created for expressing some values that had already been expressed by neo-hieroglyphs. Moreover, existing signs with a well registered value could be attributed a new sense (§ 2.2.4d).

c) General encyclopaedias on symbolic expression

For this section, see § 2.2.3c.

d) Retrieving the internal logics by applying some common semantic and rhetorical principles

When considering the first three points, it is possible to find some logical rules at work in attributing a value to a sign, or, rather, in finding the proper iconic representation for a given meaning. When looking at neo-hieroglyphic inscriptions, one cannot but be strongly impressed by the artists' limitless inventiveness and creativity. What follows is a selection of some points that are worth considering and discussing.

1) There is a direct relation between the signifier and the signified. The sign expresses what is depicted like an Egyptian logogram would often do. There is however a significant difference between the two classes of signs. The Egyptian logogram is linked to a lexical word, which has a relatively fixed meaning, and above all a phonological realisation. The neo-hieroglyphic pictogram (see § 2.2.4e for the definition), on the other hand, while having a more or less stabilized lexical meaning, is not bound to any kind of phonetic realisation. As this type of associations is frequent in Egyptian hieroglyphs, it is exceptional in neo-hieroglyphs, which was after all to be expected for a writing system whose proclaimed intention was to challenge the reader's mind (tab. 8). For instance, in Egyptian,  , the hieroglyph of the lion, can mean "lion" (*m³i*), but as a neo-hieroglyph sing, the meaning is metaphorical: "great one", "prince". Pictograms are more frequent in iconograms, which follow more flexible rules than in the inscriptions. For instance, the soldier in *Hypnerotomachia* 86a is indeed a soldier (*militaris*), and the trophaeum in *Hypnerotomachia* 86b is a trophaeum.

Sign	Meaning	References
globe	"globe," "universe"	passim
Jupiter	"Jupiter"	*Hypn.*
soldier	"soldier"	*Hypn.*

Sign	Meaning	References
temple	"temple"	*Hypn.*
trophy	"trophy"	*Hypn.*
woman raising up / seating down	"woman raising up / seating down"	*Hypn.*

Tab. 8. Neo-hieroglyphic pictograms

2) There can also be an indirect relation between the signifier and the signified. The sign can express a meronymic relation. This is, for instance, the case with the rudder, which stands for the whole ship. The sign is then used metaphorically as denoting the State's ship. Hence, the [rudder] is most often used to express the activity of governing.[39]

3) There can further be a relationship of contiguity between the signifier and the signified. This is probably the most frequent type of semantic relationship. The following sub-classification can be made by applying an analysis of the semantic roles:

- the sign is the agent: this is, for instance, the case with the fire, a common neo-hieroglyphic sign, which means "to consume".[40]
- the sign is the instrument used to perform an activity. An admittedly somewhat artificial distinction can be made between signs expressing a type of relation that is widely, cross-culturally (if not universally) received (tab. 9), and those which are more closely dependent on a circumscribed cultural background (tab. 10).

Sign	Meaning	References
dog	"to watch"	*Hypn.*
foot pressing on something	"to dominate"	Henri II
hand	[POSSESSION]	*Hypn.*
knife	"to cut in two", "to divide"	*Hypn.*, Alberici
rope	"to link"	*Hypn.*
sole of a shoe	"to submit"[41]	*Hypn.*
sword	"to slain down"	*Hypn.*
yoke	"to unite"	*Hypn.*

Tab. 9. The sign expresses a universally known instrument used to perform an activity

39 *Hypnerotomachia*, fol. 11b, 85b; Royal MS 12 C III, glossary, and fol. 19v; dedicatory inscription for Henri II; van der Noot, *Lofsang van Braband*.

40 *Hypnerotomachia*, fol. 96a. The sign of the fire is highly polysemous, for it can also mean "love, desire", "a bad thing", "to act" (see below).

41 Also meaning "to supply".

Sign	Meaning	References
burning altar	"to consume"	*Hypn.*
group of coins	"money"	*Hypn.*
helmet	"to protect"	*Hypn.*
trident	"to dominate"	Henri II
(two) hook(s)	"to maintain," "to retain"	*Hypn.*
two funerary masks	"diis manibus"	*Hypn.*
two plumb lines	"to build"	*Hypn.*

Tab. 10. The sign expresses a culturally bound instrument used to perform an activity

– the sign is the instrument of an activity, and by metonymy expresses a quality (tab. 11).

Sign	Meaning	References
anchor	"firm(ness)," "stability"	*Hypn.*, Alberici
anchor	"slowly"	*Hypn.*, Alberici
arrow	"quick"	Alberici
closed chest	"to preserve"	*Hypn.*, Alberici
cornucopia	"abundant"	passim
military helmet	"protection", "protective"	*Hypn.*
pouring vase	"little by little"	*Hypn.*
spindle and ball of thread	"to reduce"	*Hypn.*
military weapons	"disciplined"	*Hypn.*

Tab. 11. The neo-hieroglyphic sign expresses the instrument of an activity

– the sign expresses the location of an activity: this the case in the dedicatory inscription for Henri II, where [prow of a ship] means "sea".
– the relationship between the sign and the meaning can sometimes be very degraded as it seems to be the case with [fire] which can very loosely mean "to act" (Royal MS 12 C III—fol 19v).

4) A sign representing an animal (or part of an animal) or a plant can metaphorically express the quality attributed to this animal or this plant (tab. 12).

Sign	Meaning	References
bees	"industrious"	VdN
bird's wing	"quick," "velocity"	*Hypn.*
branch of pine	"stable," "rigid"	*Hypn.*
dog	"friendly"	*Hypn.*, Spada
dolphin	"to hasten," "quick"	passim
eagle	"seeing from afar"	VdN

Sign	Meaning	References
fly	"cumbersome", "impudent"	Lombard
goose	"to watch, to guard"	*Hypn.*
lion	"brave," "strong"	Maximilian's Arch
snail	"to accommodate oneself according to the weather"	VdN
snake	"caution"	Alberici
spider	"malevolent intelligence"	Alberici
stag	"at length"	Herni II
turtle	"slowness"	*Hypn.*

Tab. 12. The sign expresses a quality supposedly characteristic of an animal or a plant

5) The meaning of the sign is symbolic. The list below (tab. 13) gives the meaning(s) attached to the neo-hieroglyphic signs. It is beyond the scope of this paper to explain each of them. The symbolic meaning can have its roots in natural or physical properties of the sign (arrow for speed), in some culturally bound situations (scales for justice), or in some equivalences already present in the classical sources (eye for divine). As was the case in Egyptian hieroglyphs, these signs contributed to transform the mostly trivial content of the inscriptions into an enigmatic writing, offering both a challenge and entertainment to the reader trying to decipher it.[42]

Sign	Meaning	References
arms stretched	"moderate," "to give the choice"	*Hypn.*
arrow	"quick"	*Hypn.*, Alberici
bee	"mildly"	*Hypn.*
bucranium with agricultural tools hanging from the horns	"labor"	*Hypn.*
bucranium with two palms	"patience"	*Hypn.*
burning vase	"ardent love"	*Hypn.*
burning vase	"war"	Alberici
caduceus	"peace"	*Hypn.*
chest with cypress	"to die"	*Hypn.*
circle	"always"	passim
crown	"king"	Alberici

42 Erasmus (*Adagia* 1001) observed that the hieroglyphic sign must be easy to decipher. It should not need the explanation offered by the epigramme (as in the *Emblemata*) to have its meaning elucidated. This recommendation was obviously not followed as shown by the difficulties of interpreting the neo-hieroglyphic inscriptions that have come down to us without a translation.

Sign	Meaning	References
crown of laurels	"victorious"	Henri II
cube	"stability"	Spada
cup full of fire	"discord"	*Hypn.*
cup full of water	"concord"	*Hypn.*
dolphin[43]	"save", "safely"	Alberici
eagle	"emperor"	Maximilian's Arch
eye	"divine", "god"	passim
fire	"desire, love"	Alberici
dragon	"to guard"	Alberici
feet on water	"impossible"	Maximilian's Arch
helmet	"to save", "defender", "vigilant"	*Hypn.*, Alberici
lamp	"life"	passim
letter A	"first principle", "beginning"	Spada
olive branch	"with mercy", "peace"	*Hypn.*
ouroboros	"eternal"	passim
palm branch	"winner"	Alberici
phoenix	"century"	Alberici
plate (a large)	"generous"	*Hypn.*
scales	"justice"	*Hypn.*
snake	"hate"	*Hypn.*
snake cut into two	"lord of the greater part of the world"[44]	Maximilian's Arch
spindle	"life", "destiny"	*Hypn.*, Lombard
star (or comet)	"divine"	Maximilian's Arch
sword	"king"	Alberici
broken sword	"death"	Spada
sword with crown and palms	"winner"	Alberici
sword with scales	"justice"	Alberici
thread	"death"	Lombard
two burning torches	"ardent love"	Alberici
two funerary masks	"inferior world"	Alberici
two ibis	"the Egyptians"	*Hypn.*
two plumb lines	"righteous"	Spada

43 In his glossary, Alberici discusses the case of the fish, and not of the dolphin.

44 According to ps.-Horapollo, *Hieroglyphica*, I, 63.

Sign	Meaning	References
two shaking hands	"concord"	Henri II
vase	"soul"	passim
wheel	"quick"	Lombard
winged Victory holding a crown	"good fortune"	Lombard

Tab. 13. Neo-hieroglyphic signs with a symbolic meaning

6) In some cases, the symbolic value remains enigmatic: this is the case with the vulture for "nature", and the gladius (Roman spade) for "Caesar".

7) A sign can visually express a quality by contrast with another sign, for instance by modifying its natural behaviour. This is illustrated for instance by the arrow when oriented leftwards. As the reading normally proceeds from left to right, the arrow in this case means "contrary, opposite". Expressing ideas by using antithesis was very much valued in the Renaissance, as shown by the commentary of Erasmus on the famous iconogram *Festina lente* visually expressed by the anchor and the dolphin (*Adagia* 1001, tab. 14).

Sign	Meaning	Opposite	Meaning	References
arrow	"quick"	remora	"slow"	Erasmus, Alciat
arrow flying right	"quick"	arrow flying left	"contrary"	*Hypn.*
burning vase	"war"	empty vase	"peace"	Alberici
butterfly	"quick"	crab	"slow"	Erasmus, Fallon
cornucopia	"what is better"	fire	"what is worse"	*Hypn.*
cup full of fire	"discord"	cup full of water	"concord"	*Hypn.*
cosmos with sun and moon in the upper half	"mundus superior"	cosmos with sun and moon in the lower half	"mundus inferior"	Alberici
crowned sword with scales	"justice"	broken sword with scales	"injustice"	Alberici
dog	"friendship"	snake	"hate"	*Hypn.*
dolphin	"quick"	anchor	"slow"	*Hypn.*
elephant	"big"	ant	"small"	*Hypn.*
raising up	"to raise"	sitting down	"to sit"	*Hypn.*
turtle	"slow"	sail	"quick"	De Boodt

Tab. 14. Antithetic pairs of neo-hieroglyphic signs

8) Finally, a sign can refer to a reality which has to be interpreted as a rebus in a specific language. This is apparently what happens twice in the second inscription of the *Hypnerotomachia* (fol. 86v). The two ears of wheat refer to the month of July, which gives the clue for retrieving the name of

Julius (Caesar).[45] In the same inscription, the two flails are indicative of the month of Augustus and thus are to be interpreted as writing the name of the emperor. A similar trick is at work in one of the short inscriptions made for Agostino Carracci. The sign of the cosmos with seven stars disposed as to invoke the constellation of the Great Bear, also called the *Grande Carro* in Italian, was chosen for writing the name of the painter. Another case is the branch of periwinkle, which is used for writing "to win", because the Latine name of the flower is *vinca*, hence the folk etymology.

9) When two signs are combined, the meaning can be iconically motivated. For instance, the complex sign of an eagle trampling fire means "magnanimity", which derives from the sign of the fire which can mean "war". A crowned sword with palms means "victory", a crowned sword with the scales means "justice".

e) Concluding remarks

Compared to the functioning of the Egyptian hieroglyphs, the underlying fundamental principles of neo-hieroglyphic inscriptions are both simpler to follow for the writer and more difficult to interpret for the reader. The neo-hieroglyphs seem closer to pictograms than ancient Egyptian hieroglyphs. Tab. 15 shows a taxonomy of the hieroglyphic sign functions (after Polis 2018). As the neo-hieroglyphic sign has a semantic value, without any precise phonological representation nor any specific morphological specificity (a helmet conveys the idea of protecting, saving, in any morphological class "to protect", "protector", "protection", etc.), and as it is used autonomously (one sign—one meaning), it naturally classifies as a pictogram.[46] By contrast to ancient Egyptian hieroglyphs, neo-hieroglyphs are never multifunctional, always staying at the level of the first articulation (meaning) (Loprieno 2003).

	+ SEMOGRAPHIC		− SEMOGRAPHIC
AUTONOMOUS	Pictogram	Logogram	Phonogram
NON-AUTONOMOUS	Classifier	Morphogram	Interpretant
	− PHONOGRAPHIC	+ PHONOGRAPHIC	

Tab. 15. A taxonomy of the hieroglyphic sign functions (Polis 2018: 301)

45 Pozzi 1982: 18.

46 The term ideogram could be used more aptly (Coulmas 2006: 309). However, as ideogram has been (or is still) frequently used as a synonym for logogram, I prefer to avoid it. For the exceptional presence of pictograms inside a conventional hieroglyphic line, see Polis 2018: fig. 10. As noted by Polis, making a difference between pictograms and hieroglyphs can be hazardous. One also has to take into account occasional uses of abbreviations (mostly classifiers used autonomously as logograms).

2.3. The morphology, syntax and pragmatics

When faced with a neo-hieroglyphic inscription, different kinds of problems must be solved. How to identify and interpret the signs was discussed in the preceding section. Admitting—which is obviously not the easiest part—that the signs have been correctly assigned to a meaning, one still must decide which morphological class they belong to, which function they have in the sentence, and, at the sentence level, which grammatical tense applies. Of course, the first task is to segment the text into sentences.

Fig. 38. *Hypnerotomachia*, first inscription (fol. 11v)

Let's consider the first inscription of *Hypnerotomachia* (fig. 38). The signs have been arranged in three lines; there is no space between the signs that could suggest a possible sentence boundary or any kind of grammatical grouping. The signs run from one border to the other, making it difficult to decide which is the correct direction of reading. In Egyptian hieroglyphic texts, the reading proceeds to meet the face of the living beings, like humans, quadrupeds, fishes, and birds. This convention was of course unknown in the Renaissance. For instance, the birds of the second line face left, but the dolphin faces right. Fortunately, the translation is provided by Poliphilo himself. I here give the Latin version and the French one, as published in Jacques Kerver's Parisian edition in 1546.

> *Ex labore deo nature sacrifica liberaliter, paulatim reduces animum deo subiectum. firmam custodiam vitae tuae misericorditer gubernando, tenebit incolumemque seruabit.*
> *Sacrifie liberalement de ton labeur au dieu de nature, peu a peu tu réduiras ton esprit en la subiection de dieu, qui par sa misericorde sera seure garde de ta vie, & en la gouvernant la conservera saine & sauve.*

The inscription follows the word order of the Latin version, which was thus the model for the neo-hieroglyphic text, as shown in the following table for the first sentence (tab. 16). The columns appended to the Latin and French versions give the ordering of the syntactic groups.

signs	Latin		French	
bucranium	*Ex labore*	1	*de ton labeur*	3
burning altar	*sacrifica*	4	*Sacrifie*	1
eye	*deo*	2	*au dieu*	4
eagle	*nature*	3	*de nature*	5
round plate	*liberaliter*	5	*liberalement*	2

Tab. 16. Comparison between the Latine and French version for the first sentence of the first inscription of the *Hypnerotomachia*

The apparent discontinuity of the groups 2–3–4 in the Latin version can be explained by the inclusion of the [eye] and the [eagle] into the [altar], a strategy to syntactically bind some elements more closely together (see below).[47] The precedence of Latin over French is clearly visible in the third inscription, where the verb *erexere* "they built", expressed by the [two plumb lines], stands at the end of the sentence (fig. 39).

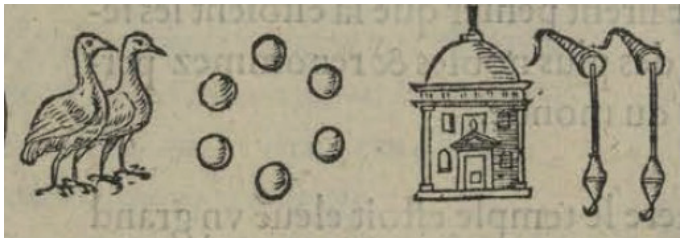

Fig. 39. Last part of *Hypnerotomachia*, third inscription.
Aegyptii communi aere suo exerere "The Egyptians built the temple with their own money"[48]

When trying to translate a neo-hieroglyphic inscription, it is thus important to guess correctly the underlying language. Latin might seem the obvious candidate, but this is perhaps only due to the overwhelming influence of Colonna's *Hypnerotomachia*. The dedicatory inscription made for the Joyous Entry of King Henri II was first redacted in French while Lambert Lombard, who had only a basic knowledge of Latin, preferred Italian.

The second problem to be solved is the grammatical category of each sign. The analysis for the *Hypnerotomachia*'s sentence under discussion is given below (tab. 17). As already observed, there is no particular link between a sign and a morphological category. For instance, the [eye] can be a

47 One will note that there is no indication in the text that a new sentence begins with the [inclined vase].

48 The Latin version (and the French one as well) does not translate the [temple]; but the French version makes it speak for itself ("Les Égyptiens m'ont érigé de leurs deniers communs").

noun "god" or an adjective "divine"; the [eagle] can be a noun, here "nature", but more commonly "king", or a verb "to see".

signs	Latin	
bucranium	*Ex labore*	noun
burning altar	*sacrifica*	verb
eye	*deo*	noun
eagle	*nature*	noun
round plate	*liberaliter*	adverb

Tab. 17. Morphological analysis of the first sentence of *Hypnerotomachia*'s first inscription

Next comes the syntactic analysis, how to connect the signs (words) to make an intelligible sentence. This is indeed the most challenging part of the analysis, for even with short sentences, several solutions can arise. One of Lambert Lombard's iconogram may be considered here (fig. 40).

Fig. 40. Lambert Lombard, Album Arenberg N 208

The translation, which stands above the drawing runs *Breve e veloci è la vita dei grandi*. Without this, it would have been perfectly possible to reassign the elements in a different order, for instance: the unstable [wheel][49] destiny [spindle] of the powerful ones [lion] can be quickly [dolphin] cut short [hand holding a knife].

There is no sign belonging to the close list of the so-called grammatical words, like pronouns, connectors, or verbal auxiliaries. Neo-hieroglyphic signs could obviously not be inflected. Colonna resorted to some visual effects for suggesting some syntactic links. Curiously enough, his very clever little inventions were short-lived as he was not imitated by his successors, even those who

49 The [wheel] is glossed *instabile* by Lombard and left untranslated.

obviously knew his work very well. Here is a quick overview of the devices he created for suggesting some grammatical cohesion between the signs. I successively consider the embedding of a sign into another (§ 2.3.1), the linking of two signs (§ 2.3.2), the holding of a sign by another (§ 2.3.3), the placement of a sign onto another (§ 2.3.4), the superposition of two signs (§ 2.3.5), the duplication or multiplication of signs (§ 2.3.6), and the isolating of some signs inside an inscription (§ 2.3.7).

2.3.1. *Embedding of a sign into another*

Embedding a sign into another is a simple visual strategy to suggest some kind of relation, which the reader will then have to evaluate properly. The first inscription of the *Hypnerotomachia* offers two examples of this (fig. 41). The first, an [eye] in a [shoe's sole] is translated *deo subiectus* "submitted to God"; the second, an [eye] and an [eagle] in a [burning altar] means *deo natur(a)e sacrifice* "make a sacrifice to the god of nature". In both, the relation of the [eye] depends on the valency of the host sign. One is subjected to someone (or something), and one makes a sacrifice to someone. The quality of God was sufficient to prevent an alternative analysis like "submitting God" or "sacrificing God". In the second group, the relationship between the [eye] and the [eagle], translated "the god of nature", is less straightforward. As the two signs are enclosed into the altar, one is forced to make a semantic and probably a syntactic link between them. The translation opted for a relation of dependency, which was perhaps suggested by the eagle's orientation. Another translation was however possible, if one opted for the translation "king" or "emperor" for the [eagle]. In this case, the [eagle] would have stood in apposition to God. One here very clearly sees the limits of the neo-hieroglyphic script both as a writing system and as a new linguistic medium.

Fig. 41. Embedding in *Hypnerotomachia*'s first inscription (fol. 11v)

Typologically, embedding a sign into another is not without parallel. In Egyptian hieroglyphs, this can be found for marking dependency. A well-known example is the name of Hathor *ḥw.t-ḥr* "the mansion of Horus", which is spelled  , i.e. with the falcon inserted within the sign of the castle.

2.3.2. *Linking two signs*

Colonna not unfrequently binds two elements together using a rope or rather an ornamental ribbon. As was the case with embedding, the link only indicates that two signs are related; the nature of the relation is left unspecified. In the first group (fig. 42a), translated *firmam custodiam* "firm guard", one understands that the [anchor] has been categorized as an adjective qualifying the [goose].

In the second group, the function of the ribbon is more difficult to assess. Colonna's translation "*incolumemque servabit*" "and it will safely save it" is open to two options. According to the first, the [dolphin] is firmly related to the [chest], functioning as an attribute. While this is the most obvious solution, it is also redundant as these two signs fill the third and last line entirely, which is in itself sufficient to tightly connect them visually. Another solution would be to interpret the role of the [ribbon] as rendering the connector in the translation, "and", but this would violate the principle that simple connectors are never expressed, especially for such a very simple function as that of coordinating two sentences.

Fig. 42. Linking in *Hypnerotomachia*'s first inscription (fol. 11v)

2.3.3. *Holding of a sign by another*

Colonna found a visually very effective mean for rendering possession, namely the hand firmly seizing something. The first example (fig. 43a) shows [a hand holding] fast a [lamp], which is rendered *vitae tuae* "your life". In the second example, a [soldier] holds a [snake]. The meaning is *militaris prudentia* "military caution". While there is no doubt that possession is intended in the first example, the question who is the possessor remains open. Colonna translated with a second person, which can only be deduced pragmatically as the discourse (imperative mood) is oriented towards a hearer, hence a second person. As for the second example (fig. 43b), the translation suggests that the intended relation is rather one of dependency than ownership. This strategy should then be interpreted as an alternative to embedding (§ 2.3.1), which could not be systematically applied for practical reasons. In all cases, however, the sign holding something is the head of the syntagm.

Fig. 43. Holding of a sign in *Hypnerotomachia* (fol. 11v and 86a)

2.3.4. *Placing a sign onto another*

Placing a sign onto another is a common way for expressing supremacy over something. This device has been used only once, in Henry II's dedicatory inscription, where a foot has been placed on the globe (fig. 44a). The rather long French translation reads:

> *si qu'à vous soit soumise toute la ronde machine de la terre*
> let be submitted to you the round machinery of the earth

While the submitted entity is clear, namely the earth, the identity of the one who has the supremacy has to be pragmatically inferred, here the king, the dedication's beneficiary. In Colonna's *Hypnerotomachia*, there is another case of a sign placed on another, a dog on a helmet (fig. 44b). In this case, the intended meaning is the coordination of two synonyms.

Fig. 44. Placement of a sign on another in *a*) Henry II's dedicatory inscription; *b*) *Hypnerotomachia* (fol. 22a)

In ancient Egypt, the iconography of the king trampling his enemies with his feet is well represented, for instance on the base of the royal throne. In hieroglyphic writing, words meaning trampling, stamping and the like can take the classifier of the moving legs (, or). This is however the generic classifier for expressing motion (e.g. *ỉwỉ* "to come", *šm(i)* "to go"). When the focus is set on the aggressive aspect of such an activity, the classifier of the arm holding a stick () or the crossed sticks (×), or a combination of the two () were preferred. The association of the crossed sticks with the moving legs is found with other modalities of motion, like *sw³* "to pass by", or with verbs expressing the repelling of someone like *tfỉ*. Occasionally, two hieroglyphic signs can form a monogram by positioning one onto the other as in *ḫr.t-hrw* "everyday". The reasons for such combinations are different from what is analysed in the neo-hieroglyphic examples.

2.3.5. *Superimposition of two signs*

Two signs can occasionally be superimposed, which is to be distinguished from the case of the complex signs made of several elements (see above). As already observed, the close association of two signs is a strong indication of some syntactic and semantic relationship, the precise nature of which is, however, left unexpressed. An example is offered, once again, in the first inscription of the *Hypnerotomachia* (fig. 45). The [rudder] drawn against an [olive branch] was translated by Colonna *misericorditer gubernando* "governing with mercy". In this case, the [olive branch] is treated as an adverb for qualifying the action of governing. The superposition of two signs is attested in Egyptian

hieroglyphic writing, but with a different purpose. The value of the two components—mostly phonetic (phonogram + phonogram or logogram + phonogram)—adds up to provide the intended reading, as in  *sf*,  *sm³*,  *spḫr*,  *w³ḏ*,  *šmʿ*,  *ḥw.t*,  *ʿḥ*, and  *ḫsf*.

Fig. 45. Superimposition of two signs in *Hypnerotomachia* (fol. 11v)

2.3.6. *Duplication or multiplication of signs*

As already mentioned (§ 2.2.2a), duplicating a sign is an easy visual way to suggest multiplicity. In an inscription discussed above (fig. 18), the [ibis] and the [plumb line] were repeated to express the plural. Another example is offered by the two [funerary masks] surmounted by two eyes for writing *diis manibus* (fig. 46). This strategy should not be confused with complex signs made of two similar elements for expressing intensity, like two torches "ardent love" or two cornucopias "opulent" (see above, § 2.2.2a).

Fig. 46. Duplication of signs in *Hypnerotomachia* (fol. 96a)

Repeating a sign is also known with Egyptian hieroglyphs. As there was a dual number in Egyptian, a logogram or a classifier could be written twice or thrice for expressing dual or plural respectively:  *ʿ.wy* "two arms",  *nṯr.w* "gods".

2.3.7. *Isolating some signs inside an inscription*

Isolating a group of signs inside an inscription has already been discussed above (§ 2.2.2d). When looking at the general layout of an inscription, some signs seem to form a sub-group. This reminds one of graphic compositions in late Egyptian epigraphy in the so-called enigmatic writing, but the

purpose and the means are different. In the following example (fig. 47), the elements of the graphic composition are constitutive of one single name, that of the god Khnum. The spelling of the god's name (usually written ) was reconfigured: with the principle of acrophony at work, the first sign is the radiant sun (*ꜣḫ* > *ḫ*) followed by a bunch of flowers (*nḫb* > *n*) arising from a basin (*mr* > *m*), providing the three consonants needed to write Khnum. The added value of such a spelling was to trigger an image in the reader's mind (as this only works at the graphic level), activating an additional layer of meaning, in this case, the solar god appearing each morning on a bud of lotus from the primaeval ocean.

Fig. 47. Enigmatic spelling of the god Khnum

Another case is worth considering here. In the inscription at the end of the publication of the *Cort Begryp der XII Boeken Olympiados*, van der Noot reused some iconograms found in Colonna's *Hypnerotomachia*, which he recategorized as simple signs. Fig. 48 shows the signs in van der Noot's work, fig. 49 the original iconograms that are displayed on the same page of Colonna's *Hypnerotomachia* (fol. 46a). While these two compositions stand alone as autonomous iconograms in the *Hypnerotomachia*, they were incorporated by van der Noot in his inscription. Instead of creating a new, synthetic meaning, he kept Colonna's translation *verbatim*. As is clear with the rest of van der Noot's inscriptions, he was interested in gnomic or sentential statements promoting temperance and balance of judgment as is shown by its reuse of the motto of the anchor with the dolphin and of the butterfly and the crab, two other iconograms that he also found in other sources (fig. 50).

Fig. 48. Van der Noot, *Cort Begryp der XII Boeken Olympiados* (details of inscription 1 and 2)
a) Sustenez & abstinez, heureux ceux la qui ont tenus la mediocrité
b) Voyant, oyant & taisant, temperez la hastivité seant, & la tardivite en vous levant

Fig. 49. *Hypnerotomachia*, fol. 46a
a) *Medium tenuere beati*
b) Velocitadem sedendo, tarditatem surgendo tempera

Fig. 50. Van der Noot, *Cort Begryp der XII Boeken Olympiados*

2.3.8. *Final remarks*

The sequence of signs could sometimes be changed to accommodate the general layout. For instance, in the following example, translated *Patientia est ornamentum, custodia, & protectio vitae*, "Patience is the ornament, guard and protection of life", the central element, the bucranium with the palms (*Patientia est ornamentum*), because of its symmetry and its syntactic relevance (subject and predicate), is surrounded by the helmet with the dog (*custodia, & protectio*) and the lamp (*vitae*). As a result, the syntactic dependency between the remaining elements is broken (fig. 51).

Fig. 51. *Hypnerotomachia*, fol. 22a

As should be clear by now, there is no hint at the temporal or modal frame in the inscriptions. The solution, if any, must be a pragmatic one. The nature of the monument can indeed give some useful clues. A funerary inscription, for instance, is more likely to convey past information, a dedication to a living monarch is more likely to enumerate qualities in the present and proclaim some vows and expectations for the future.

Conclusions

Neo-hieroglyphic inscriptions are typical of the Renaissance, being the product of the idiosyncratic re-interpretation of the functioning of hieroglyphs by humanists based on the sources they had access to. By juxtaposing signs (generally) invested of a symbolic meaning, they tried to make sentences that could be re-translated in a natural language. By so doing, they faced insurmountable obstacles that drastically limited the potentialities of this new type of writing for communicating broadly. Probably not by chance, the number of surviving inscriptions is extremely low (less than ten), and the number of signs in a single inscription remains limited, the average being around 12–15 signs. Another way for testing the limits of the system is offered by the attempts made for deciphering the inscriptions for which the translation is lacking.

As has been already noted, Roman and Greek authors described, commented, and explained a small set of hieroglyphic signs. There was never a drawing, nor any attempt to link a concept with an existing hieroglyphic sign. Even in the lists compiled by those who had some direct knowledge of hieroglyphs, like the late hierogrammateis, no equivalence between a sign—as a formal, fixed shape—and a meaning was provided. Last but not least, the signs were cut off from any linguistic representation, for there is no attempt to give a correspondence between a sign and a word of the Egyptian lexicon.[50] In other words, it was possible to know that the image of a rabbit conveyed the idea of opening, but there was no clue as how to draw the rabbit (posture, activity, etc.), and no hint that it could have been connected to the verb *wn* in Egyptian.

50 In one or two occasions, Classical authors provide the meaning of a sign and a possible phonetic content (see for instance Plutarch's explanations on the spelling of the name of Osiris, and much later the comment of Kircher on the sign *mw* "water" in connection with the name of Moses). This was not unfortunately pushed forward to draw the necessary conclusions on the nature of hieroglyphic writing.

The idea of assembling symbolic signs to form sentences that could be translated in a natural language was perhaps made more concrete by considering some remarks made by the Classical authors. Coming to mind is an allusion made almost identically by Plutarch (*De Iside*, 350) and Clemens of Alexandria to a hieroglyphic inscription composed of five signs: a boy, an old man, a falcon, a fish, and a crocodile. According to Clemens (*Stromata* V,7, 41,4–42,1), the following correspondences could be established:[51]

boy	birth
old man	senescence
falcon	divinity
fish	hatred
crocodile	impudence

The inscription was translated as follows:

> You who come to life and who die, God hates impudence
> (Ὦ γινόμενοι καὶ ἀπογινόμενοι, θεὸς μισεῖ ἀναίδειαν)

This passage is interesting as it nicely anticipates the mode of functioning of neo-hieroglyphic inscriptions. The source of the meaning can indeed be metaphorical or symbolic.[52] A sign can stand for a noun or a verb. There is nothing to suggest any precise syntactic connexion. It is up to the reader to organize the different elements into a meaningful sentence. Without altering its global meaning, this inscription could equally be translated:

> From birth to death, God hates impudence

As there is no indication to do it otherwise, the sentence is translated in present, as a general gnomic statement. This is indeed the tone adopted by most neo-hieroglyphic inscriptions of the Renaissance.

This aphorism could perhaps prove pivotal as shown by the number of illustrations in the Renaissance, even in otherwise only sparingly illustrated books. The following figures show how the sentence was put in hieroglyphs by Hadrianus and Valeriano, and was later reused by Kircher (fig. 52).[53]

51 Plutarch's version (*De Iside* 363F) is slightly different, replacing the crocodile by a hippopotamus, and situating the inscription in the temple of Sais instead of Diospolis, as in Clemens' version.

52 The five signs—the boy, the old man, the falcon, the fish, and the crocodile (or the hippopotamus)—can indeed be found in the Ptolemaic writing (Thissen 2006: 632–634).

53 There is another reconstruction of an hieroglyphic inscription by Valeriano (fol. 246, v°) inspired by a passage of Herodotus II, 102.

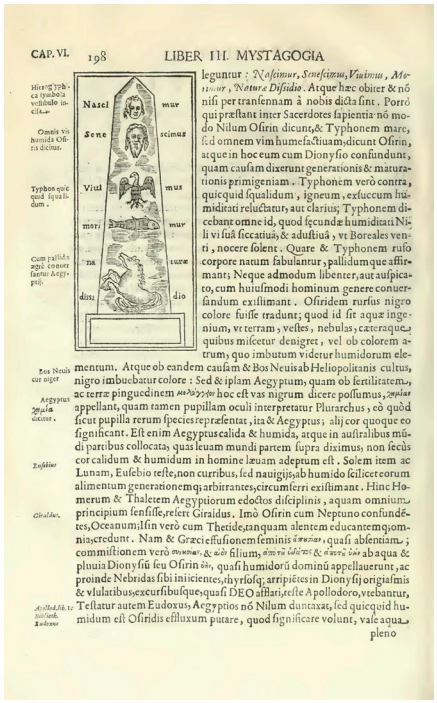

Fig. 52. *a*) Hadrianus, *Emblemata*, fol. 53;
b) Valeriano, *Hieroglyphica*, fol. 311;
c) Kircher, *Obeliscus Pamphilius*, p. 198

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The Semiotic Functions of Semantic Classifiers in Ancient Egyptian and Ancient Chinese Scripts: A Comparative Essay

(with Some Remarks on Semantic-Semantic Compounds–*Huìyì*)

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Abstract. The ancient Egyptian and ancient Chinese writing systems represent two of the most sophisticated and complex scripts of antiquity. Although these systems developed independently, both employ semantic classifiers—unpronounced signs that categorize and contextualize their associated words. This study examines the semiotic functions of semantic classifiers in these two scripts, highlighting their similarities while also addressing their distinctive features. The analysis is conducted through multiple lenses, including the positional distribution of classifiers, the parts of speech they classified, their interchangeability, instances of multi-classification, and the semantic relations between classifiers and their host words. Furthermore, particular attention is given to the unique role of classifiers denoting concepts of "missing ability" or "deficiency." The article concludes with a comparative discussion of **S**emantic-**S**emantic compounds (referred to as *huìyì* in traditional Chinese grammatology) and their capacity to generate pictorial scenes within compound signs in the ancient Egyptian and ancient Chinese writing systems.

Keywords. Semantic classifiers in writing systems, ancient Egyptian scripts, ancient Chinese scripts, comparative grammatology, **S**emantic-**S**emantic compounds (*huìyì*).[1]

1 We are grateful to Zev Handel for making all this possible. We also thank two anonymous reviewers for their insightful comments, which have greatly improved this study. Our thanks go to Prof. Dèng Zhāngyìng [鄧章應] for many fruitful discussions. We are indebted to Dr. Jorke Grotenhuis for many suggestions on different readings in *The Maxims of Ptahhotep*. Any remaining errors or oversights are solely our own.

1. Introduction[2]

Ancient Egyptian and Chinese *languages* exhibit striking dissimilarity across nearly all linguistic dimensions, encompassing phonology, morphology, and syntax. Ancient Egyptian (3000 BCE–1300 CE) is a branch of the Afroasiatic language family, characterized by several general linguistic features, for example, the ability to be inflected in various ways and the presence of bi- and tri-consonantal lexical roots (Loprieno 1995: 1–8, Satzinger & Stefanović 2021: 1–18). The chosen Egyptian corpus in this article, *The Maxims of Ptahhotep*, is a wisdom text placed within the phase of Ancient Egyptian known as Middle Egyptian (ME or Classical Egyptian, 2000 BCE–1450 BCE[3]), but also shows later versions in the New Kingdom. Old Chinese (OC, or Archaic Chinese), refers to the language in the late Shāng dynasty (1250 BCE–1046 BCE) down to the beginning of the Qín-Hàn period (221 BCE–156 BCE) in the broad sense. Old Chinese belongs to the Sinitic branch of the Sino-Tibetan language family (Baxter & Sagart 2014: 1, Schuessler 2018). It is a monosyllabic language, as most words consist of a single syllable corresponding to a single Chinese character in the script. It lacks any systematic or productive form of inflection and is a flexible word-class system, allowing words to function in multiple parts of speech without any marking (Norman 1988: 24, 105–133, Sūn 2020: 27–66, Bisang 2023: 590). The selected Chinese corpus in this article, the *Chǔ Bamboo Manuscripts Excavated in Guōdiàn*, belongs to the phase of Classical Chinese (or Late Archaic Chinese), which is the written language employed in the philosophical and historical texts of Confucius, Mencius, Lǎozǐ, and other authors from the 5th to the 3rd centuries BCE (Norman 1988: 105–106).

Writing renders language visible and enhances both cultural memory and communication. Writing enables the recording and transmission of information beyond time and space constraints. Different writing systems may exhibit similarities even when the spoken languages they represent are markedly distinct if they use the same semiotic mechanism. This is especially true for complex writing systems, such as ancient Egyptian and ancient Chinese scripts. Ancient Egyptian scripts encompass signs in hieroglyphs, cursive hieroglyphs, hieratic, and demotic. Specifically, our chosen Egyptian corpus in this article is written in hieratic, in ink (with a brush), on papyrus, ostraca, and

2 All original examples from ancient Chinese scripts were collected by Yànrú Xú from the Guōdiàn bamboo manuscripts retrieved from the *Intelligent Retrieval Network Database of Chinese Characters*, developed by the Center for the Study and Application of Chinese Characters in the East China Normal University. We are grateful to Prof. Zāng Kèhé [臧克和] and Prof. Liú Zhìjī [劉志基] for providing access to the digitized corpus of the Guōdiàn bamboo manuscripts. Some examples from oracle-bone inscriptions are cited from *Jiǎgǔwén Héjí* 甲骨文合集 (*Collection of Oracle-Bone Inscriptions*, abbreviated as "H"), while examples from bronze inscriptions are cited from *Yīnzhōu Jīnwén Jíchéng* 殷周金文集成 (*Compendium of Yīn and Zhōu Bronze Inscriptions*, abbreviated as "J"). All examples from the different manuscripts of the Egyptian wisdom text (*The Maxims of Ptahhotep*) were also collected by Xú. Goldwasser supplemented some additional examples from other Egyptian sources.

3 See Polis 2023: 10.

a wooden tablet. Ancient Chinese scripts (1250 BCE–156 BCE) contain oracle-bone inscriptions, bronze inscriptions, bamboo manuscripts, and signs on other writing materials such as stone, metal, and jade. Our chosen Chinese corpus was written in ink on bamboo strips during the Warring States period (475 BCE–221 BCE). The reasons for the choice of this corpus are discussed below in Section 2.

Ancient Egyptian and Chinese writing systems share some important common semiotic features. Signs in ancient Egyptian and ancient Chinese scripts have three essential functions: logograms, phonograms, and classifiers (Goldwasser & Handel 2024, Polis 2018, Stauder 2020).[4]

Classifiers in written language, as a shared feature of both writing systems, are unpronounced signs with additional motivated semantic information about the host words (Goldwasser & Handel 2024). For instance, in the word  *ḥm.t* "wife" (4389, pPrisse, 10,3),[5] the unpronounced classifier  [WOMAN] suffixes to the written representation of the lexeme *ḥm.t*, the host of the classifier. The lexeme is written by a biconsonantal phonogram *ḥm*, and the monoconsonantal phonogram *t* which is a grammatical marker indicating the gender. In Ancient Egyptian, the classifier is always in post position. The analysis of "determinatives" as classifiers was initially delineated in ancient Egyptian scripts by Goldwasser 2002, 2006, 2023a,[6] Kammerzell 1993, 2015, and Lincke & Kammerzell 2012 and subsequently expanded to cuneiform Selz et al. 2017, Anatolian hieroglyphs Payne 2017, 2024 and ancient Chinese scripts (Xú 2024, Chén 2016, 2024; for the modern Chinese script, see Handel 2023).[7]

4 Polis 2018 mentioned three other functions in Egyptian scripts: pictograms, morphograms (refers mainly to ancient Egyptian roots or radicograms), and interpretants (traditionally called "phonetic complements"). The last two sign functions are not active in ancient Chinese scripts.

5 The source of each example in Egyptian is cited in this format: the token ID in the corresponding databases in *iClassifier*, the abbreviation of the text, and its coordinates in the original text. The coordinate numbers in the citation of each example refer to the column number of the text and the line number where the word is located. For instance, the coordinate (10,3) in this example indicates that the word "wife" is on the 10th column and 3rd line in the papyrus Prisse.

6 For an important contribution to classifiers in Middle Egyptian with a classifier list and lists of classified words for each classifier, see Winand & Stella 2013: 131–178. For a discussion of the classifier lists and a classifier list collected in the Middle Kingdom text called today *The Story of Sinuhe*, see Goldwasser & Soler 2024.

7 Schwartz 2019 uses the terminology "classifier" for the analysis of Chinese characters.

In ancient Chinese scripts, the character  [8] 婦[9] (9660, *Liùdé*, 23,10)[10] is used to write the word "wife" (*fù*, OC **bəʔ*).[11] In this compound character, one can see the semantic element  女 "woman" on the left-top position and the phonetic element  帚 (*zhǒu*, OC **tuʔ*[12]) on the right position. The semantic element , which is prefixed to the phonetic element, is what we call the semantic classifier [WOMAN]. Classifiers in Chinese scripts can be in different positions within the written representation of the lexeme. In this compound sign , the classifier [WOMAN] is unpronounced but provides additional semantic information for the host word "wife".[13] According to this character, a wife in ancient China during the Warring States period (475 BCE–221 BCE) typically belongs to the category [WOMAN].

2. The corpus

This research is conducted within the framework of Corpus Linguistics (Biber et al. 1998, Paquot & Gries 2020). Unless otherwise stated, all examples in Egyptian presented in the article are quoted from the text known today as *The Maxims of Ptahhotep* (Žába 1956). There are eight extant copies of this text (or parts of it), preserved on various materials such as papyri, ostraca, or a writing tablet from different periods (Middle Kingdom and New Kingdom).[14] The text belongs to the genre of

8 All characters in the *Chǔ Bamboo Manuscripts Excavated in Guōdiàn* were sourced from images of ancient signs and cropped from the *Sign List of Chǔ Bamboo Manuscripts Excavated in Guōdiàn* (Zhāng et al. 2000).

9 In this article, the allograph in modern Chinese script (early 20th century-present, see Huáng 2014: 11–12) is presented after the ancient form as a standard transcription of the ancient form.

10 The source of each example in Chinese is cited in the same format as in Egyptian, but the coordinate numbers in Chinese indicate the bamboo strip number in the text and the character's position within that strip. For example, the coordinate (23,10) shows that this character is in bamboo strip no. 23 of the text *Liùdé* and is the 10th character in this bamboo strip.

11 Both the sound values of Modern Chinese (or Mandarin Chinese, for different opinions on the dating of Modern Chinese, see Wáng 2013: 35, and Peyraube 2017) and reconstructed Old Chinese are presented sequentially for convenience. Among the various reconstruction systems of Old Chinese, Schuessler 2009 is cited in this article for the sake of reader-friendliness, as suggested by Zev Handel.

12 The reconstructed sound value of the phonetic element 帚 **tuʔ* in Old Chinese is not close to the sound value **bəʔ* of the word 婦 "wife" in Schuessler's system. However, the reconstructed sound values proposed by Baxter & Sagart 2014, 帚 **[t.p]əʔ* and 婦 **mə.bəʔ*, exhibit a notable phonetic similarity. Several reconstruction systems of Old Chinese have been practiced, as stated by Schuessler 2018: "Therefore OC reconstruction is to some extent a matter of judgment that depends on methods, assumptions, interpretations of the material, and on the cultural background and native language of the researcher and any other languages he may be familiar with."

13 For the English translation "wife; lady; woman", see the online dictionary *Multi-function Chinese Character Database* on this site: https://humanum.arts.cuhk.edu.hk//Lexis/lexi-mf/search.php?word=%E5%A9%A6 (accessed: 20.1.2025). We adopt the Cognitive Linguistics approach, which conceptualizes words as mental representations. The conventions of complex writing systems permit elements of these mental representations to manifest in written form through classifiers, logograms, and Semantic-Semantic compounds, see Aitchison 2003: 41–42 and passim.

14 The copies and their approximate dates are as follows: Papyrus BM 10371+10435 (=L1)—12th Dynasty; Papyrus BnF 186–194 (=Prisse)—late 12th Dynasty; Tablet Cairo JE 41790 (=Carnarvon)—17th Dynasty; Papyrus BM EA 10509

wisdom texts, typically comprising "teachings" (Quack 2021) addressed by a high-ranking father to his son.[15] The total number of tokens, or occurrences, is approximately 6,300. This text was chosen as a *pilot comparative corpus* to the Chinese corpus because of its contents, which are somewhat parallel to the topics of the selected Chinese corpus. Its two primary manuscripts date to the "classical" period of the Egyptian language and script—the Middle Kingdom. The later manuscripts, dating to the New Kingdom, exhibit some significant diachronic changes in the classification, pointing to a fruitful future research direction.[16] Another research was conducted by Soler[17] on another literary manuscript from the Middle Kingdom, *The Story of Sinuhe*. Both texts have shown a list of classifiers very similar to the list (based on dictionary materials) compiled by Winand & Stella 2013.[18] These results fit one of the central premises of Corpus Linguistics, suggesting that every text (according to its length) will show the basic rules of the language and script of the particular system they use (see recently Grinewald 2024: 66–69).

Most examples in this article in ancient Chinese scripts are from the *Chǔ Bamboo Manuscripts Excavated in Guōdiàn* (Jīngmén Museum 1998, abbreviated as "Guōdiàn bamboo manuscripts", see fig. 1) composed of 18 texts. They relate to the philosophical texts of Taoism and Confucianism (Meyer 2012). The Guōdiàn bamboo manuscripts are excavated texts containing approximately 12,000 tokens written on over 730 bamboo strips. They were found in a single tomb but exhibited a few different handwritings. Other bamboo manuscripts come from unknown sources, and their authenticity has been questioned by a few scholars.[19] The exact date of each text in the Guōdiàn bamboo manuscripts is unknown, but it should be prior to the date of the burial in the tomb (mid-4th century BCE to early 3rd century BCE).[20]

The literary themes in these two distinct cultural contexts are not identical; however, we focus on their similarities. Both corpora in Egyptian and Chinese convey the educational and social expectations of decorum in these two ancient societies. They offer rules for ideal behavior with assumed correct personal qualities, such as leadership, loyalty, and maintaining proper relations with family. Both corpora are "moral self-cultivation" texts (Meyer 2012: 5).

(=L2)—late 18th Dynasty; Papyrus Turin 54014—19th Dynasty and Ostraca DeM 1232/1233/1234—late 19th or early 20th Dynasty, see Hagen 2012: 129–187.

15 For a recent study of *The Maxims of Ptahhotep*, see Hagen 2012.

16 The full results of the classifier study on *The Maxims of Ptahhotep*, including a classifier list, will be published in Xú forthcoming.

17 Soler published part of her results in Goldwasser & Soler 2024. A full detailed publication is included in Soler forthcoming.

18 Winand & Stella 2013: 129, 127–178 did not provide references to texts in their elaborate lists.

19 e.g., the Shànghǎi collection of Chǔ manuscripts, see Kern 2019: 8–9.

20 See the excavation report published by Jīngmén Museum 1997.

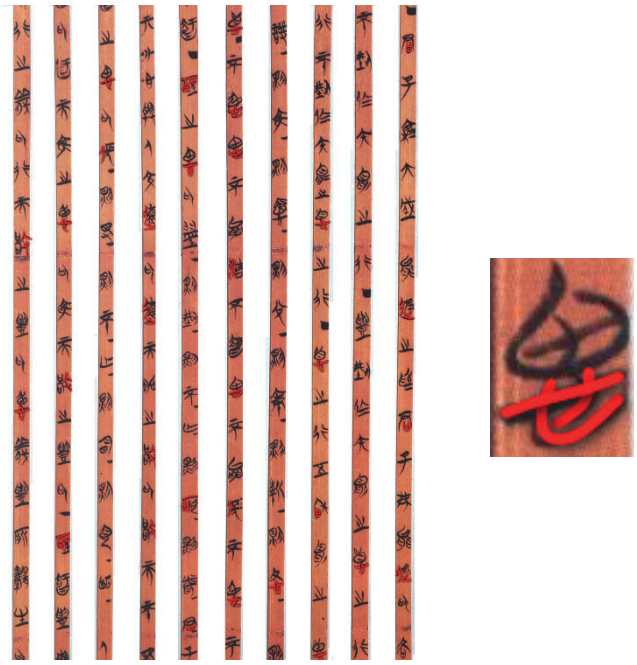


Fig. 1. A sample of classifier markings on the original Guōdiàn bamboo manuscripts, published by the Jīngmén Museum in 1998, highlighted in red by Xú. These bamboo strips are part of the text *Wǔxíng* 五行 (The Five Conducts), which comprises 51 bamboo strips in total. Each strip measures approximately 32.5 cm in height, 0.6 cm in width, and 0.1–0.2 cm in thickness. The most common classifier in this arbitrary example is the classifier 心 [HEART/SENSES & EMOTIONS]. It embraces the category of cognition and emotions and is the most prominent category in the Guōdiàn texts (Xú 2024). The enlarged image on the right shows the word 思 (*sī*, OC **sə*, "think"). 心 is the semantic classifier. The original logogram 囟 (*xìn*, OC **sens*, "top of head") functions here as the phonetic part. Yet the original semantic meaning of is still relevant to the final meaning of "think".

3. The digital tool *iClassifier*

This research was conducted by using the digital research tool *iClassifier* (© Goldwasser, Harel and Nikolaev).[21] The Egyptian and Chinese texts were studied under the same research conditions and methods. The selected texts were imported directly from the *Thesaurus Linguae Aegyptiae* (TLA) developed in Berlin-Brandenburgische Akademie der Wissenschaften, and the *Intelligent Retrieval Network Database of Chinese Characters* (IRNDCC), developed in the Center for the Study and Application of Chinese Characters in the East China Normal University.[22]

4. Positions of semantic classifiers in ancient Egyptian and ancient Chinese scripts

The positions of semantic classifiers in ancient Egyptian and ancient Chinese scripts demonstrate marked differences. In ancient Egyptian scripts, the semantic classifier typically appears at the end

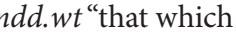
21 For the most recent presentation of *iClassifier*, see Harel et al. 2024.

22 See "Credits" below.

of words or compounds (post-position). Conversely, the position of semantic classifiers in ancient Chinese characters is more complicated, as illustrated in the following examples.

4.1. The position of semantic classifiers in ancient Egyptian scripts

The post-position of classifiers in ancient Egyptian scripts has been examined by Goldwasser 2002 and more recently by Goldwasser & Soler 2024. Additional examples of Ancient Egyptian from *The Maxims of Ptahhotep* are provided below to facilitate a comparative analysis of the position of classifiers in ancient Egyptian and ancient Chinese scripts.

As stated above, classifiers in ancient Egyptian scripts appear at the end of words. For instance, in the word  *mdw* "to speak" (3053, pPrisse, 4,4), the classifier  [SENSES & EMOTIONS][23] is positioned at the end of the word, following the phonological information. The same classifier is consistently found at the end of words derived from the same root *mdw* "to speak", such as  *mdw.t* "speaking" (3300, pPrisse, 5,14),  *mdw.y* "speech" (3697, pPrisse, 7,4) and  *mdd.wt* "that which is said" (3851, pPrisse, 7,9).

As a rule, classifiers in ancient Egyptian scripts precede specific grammatical markers and suffixes in nouns or verbal forms (Goldwasser & Grinevald 2012). For instance, in the clause  *n mdw.n=f* "It (lit. he) does not speak"[24] (pPrisse, 4,4), the sign  *n* functions as a grammatical marker indicating the past tense, and the sign *f* is a 3MS suffix pronoun. In this example, the classifier appears before the tense marker and the suffix pronoun, following the verbal root.

4.2. The positions of semantic classifiers in ancient Chinese scripts

Myers 2019: 50–54 delineates the potential positions of semantic classifiers (called "radicals" by him)[25] within the modern Chinese writing system, drawing upon data from online databases and dictionaries. We base our research on original bamboo manuscripts to stay as close as possible to the original characters.

Compared to Egyptian scripts, the positions of classifiers in ancient Chinese scripts are notably more complex and flexible. Classifiers can appear alongside other signs representing phonological

23 For the classifier , see recently Goldwasser & Soler 2024. Goldwasser 2005 suggested that this classifier reflects the conceptual metaphor [THE BODY IS A CONTAINER] described by Lakoff & Johnson 1980: 29–32. Speeches and acts that engage all senses and emotions, including thought procedures, are conceptualized as dwelling in the "body container". Examples of words in this category, aside from "to speak", include  *mri* "love" (4228, pPrisse, 9,5) and *snḏ* "to fear" (3805, pPrisse, 7,8), and  *kꜣi* "think" (3532, pPrisse, 6,10), and naturally *wnm* "eat" (3641, pPrisse, 7,2).

24 The sentence  *r gr n mdw.n=f* translated by Lichtheim 1973: 63 as "The mouth, silenced. Speaks not". The grammatical formulation *n sḏm.n=f* even if containing the past tense marker *n*, has come to be used as the "habitual present" negation.

25 The term "radical" is not entirely identical to "semantic parts" or "semantic classifiers". Their differences will be discussed in future publications.

information in various positions, such as left, right, top, or bottom of a character. For instance, the classifier 水/氵 [WATER][26] is positioned on the left in the word 江 "river" (*jiāng*, OC **krôŋ*; 46, *Lǎozǐ* A, 2,19) and the phonetic element 工 (*gōng*, OC **kôŋ*)[27] is in the right position. The classifier 戈 [DAGGER-AXE/WARFARE] is located on the right in the word 戰 "war" (*zhàn*, OC **tans*; 5876, *Chéngzhīwénzhī*, 6,14) and the phonetic element 單 (*dān*, OC **tân*) is situated on the left. The classifier 艸/艹 [GRASS/HERB] appears at the top in the word 芳 "fragrant" (*fāng*, OC **phaŋ*; 3576, *Qióngdáyǐshí*, 13,4) and the phonetic element 方 (*fāng*, OC **paŋ*) appears at the bottom. The classifier 日 [SUN/TIME] is found at the bottom in the word 冬 "winter" (*dōng*, OC **tûŋ*; 222, *Lǎozǐ* A, 8,27) and the phonetic element 終 (*zhōng*, OC **tuŋ*) is located on the top. The modern Chinese form of this word, written as 冬 following the scriptal tradition of the Qín Dynasty (221 BCE–207 BCE), no longer contains the [SUN/TIME] classifier.

Other less common positions of classifiers include half-surrounding and surrounding configurations.[28] For example, the classifier 辶/辶 [ROAD + FOOT/MOVEMENT] occupies a half-surrounding (left/bottom) position in the word 從 "to follow" (*cóng*, OC **dzoŋ*; 2386, *Zīyī*, 14,16). It half-surrounds the phonetic part 从 (*cóng*, OC **dzoŋ*). In addition, the classifier 口 [ENCLOSURE] assumes a surrounding position in the word 固 "solid" (*gù*, OC **kâ(k)h*; 939, *Lǎozǐ* A, 34,1). The pictorial representation of the sign depicts a walled enclosure, symbolizing the protection of the enclosed objects.[29] In this context, the classifier is activated not only on a semantic level but also on a pictorial level, visually encircling the element .[30]

In ancient Chinese scripts, a classifier within the same word may exhibit alternative positions without altering the word's meaning, as observed in the word 邦 "state, country" (*bāng*, OC **prôŋ*). For example, the classifier 邑 [AREA/STATE] appears on the right in one instance 邦 (11765, *Yǔcóng* 4, 6,15), and on the left (i.e.,) in another example 邦 (826, *Lǎozǐ* A, 29,21). However, since the Qín dynasty (221 BCE–207 BCE) its position is standardised on the right. The modern Chinese version 邦 continues the Qín tradition. Likewise, in the word 婦 "wife" (*fù*, OC **be?*), the classifier 女 [WOMAN] is situated on the right side of the rare example 婦 (6247, *Chéngzhīwénzhī*, 32,3).

26 The transcription of the classifier in modern Chinese script is 水, but it is usually abbreviated as 氵. The other two modern signs, 艹 and 辶 mentioned below, are also abbreviated forms in modern Chinese script.

27 The pictorial meaning of the sign is identified probably as "carpenter's square", see SWXZ 2014: 381–382.

28 Half-surrounding positions were analyzed by Myers 2019: 50–54 as left/bottom, left/right, top/bottom, top/left, and left/bottom/right, among others. He delineated the surrounding position as top/left/bottom/right.

29 The sign inside the enclosure was a logogram "shield, solid" (*gǔ*, OC **kâ?*) but normally used as a personal name or toponym in oracle-bone inscriptions (e.g., H3826, see SWXZ 2014: 154–155). When the enclosure was added to it, the sign functions as the phonetic component in the word "solid" but simultaneously takes a semantic value in the character .

30 See other examples in Appendix A below. A similar phenomenon is known in the Sumerian script (Selz & Zhāng 2024, Wagensonner 2021). Names of towns and walled settlements are written within a surrounding wall already in the earliest Egyptian texts, see Kahl 1994: 109–110.

We find the common example  婦 (9660, *Liùdé*, 23,10) in the same corpus where the  [WOMAN] classifier is consistently on the left-top position as mentioned above. The left-position convention of the classifier has persisted into modern Chinese script written as 婦.

However, some classifiers exhibit positional constraints influenced by their inherent semantic meanings. For instance, in the word  客 "guest" (*kè*, OC **khrâk*; 236, *Lǎozǐ* A, 9,9), the classifier  [HOUSE/STRUCTURE] consistently appears in the top position, and the phonetic part  各 (*gè*, OC **kâk*) is located at the bottom.[31] In the same way, in the word  均 "equal, even" (*jūn*, OC **kwin*; 551, *Lǎozǐ* A, 19,23), the classifier  土 [EARTH] typically occupies the bottom position,[32] and the phonetic part  匀 (*yún*, OC **win*) is found in the top position. The classifier 土 is on the left position in the modern Chinese character 均, pointing to a loss of positional constraints.

Furthermore, signs in ancient Chinese scripts have not yet been fully calibrated into squares like those in later stages. Therefore, the configurations of classifiers in ancient Chinese scripts exhibit diverse proportions. In certain instances, the proportion between a classifier and a phonetic component within the same character is overtly unbalanced in the original ancient Chinese texts. Such is the classifier  頁 [HUMAN + HEAD], which occupies a right-top position in the word 頌[33] "appearance" (*róng*, OC **loŋ*; 218, *Lǎozǐ* A, 8,23). Here, the classifier is significantly larger compared to the phonetic element  公 (*gōng*, OC **klôŋ*) located in the left-bottom corner. In another case, in the word  和 "harmony" (*hé*, OC **wâi*; 465, *Lǎozǐ* A, 16,23), its classifier 口 [MOUTH] positioned on the left-inner side occupies a much smaller proportion than the phonetic element 禾 (*hé*, OC **wâi*).

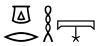
5. Parts of speech classified in Ancient Egyptian and Old Chinese

Nearly all parts of speech in Ancient Egyptian and Old Chinese languages can be classified by unpronounced graphemes within the script systems (Goldwasser & Handel 2024). Comparatively speaking, content words with specific meanings, including nouns, verbs, and adjectives, are more likely to be classified. Adverbs and function words such as pronouns and particles are less frequently classified in both scripts. The case of deverbals carrying classifiers is common in Ancient Egyptian, whereas a similar phenomenon is unknown in ancient Chinese.

31 For pictorial consideration within this character, see Goldwasser & Handel 2024.

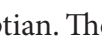
32 In a rare case in the Guōdiàn bamboo manuscripts, this classifier appears on the left in the word  壞 "ruin" (*huài*, OC **grûih*; 5542, *Tángyúzhīdào*, 28,8), and the phonetic part 褱 (*huái*, OC **grûi*) is on the right position.

33 The character 頌 is the modern transcription of the ancient form. In modern Chinese script, however, the word "appearance" is written by the character 容, which is a loaned phonogram, and the character 頌 is a loaned phonogram used to record the word *sòng* "to praise."

Noun–Egyptian: In the written form of the noun  *wgg* "weakness" (3029, pPrisse, 4,3), the classifier  [NEGATIVE] indicates that the word "weakness" is an "example of" the superordinate category [NEGATIVE] (for this category, see Kammerzell 2015). Another example is the noun  *grḥ* "night" (3627, pPrisse, 7,2), where the classifier  [NIGHT] functions as a repeater classifier,[34] depicting stars under the sky, thus representing a nocturnal scene.

Noun–Chinese: In the noun  幼 "the young one" (*yòu*, OC **ʔiuh*; 6301, *Chéngzhīwénzhī*, 34,9), the phonetic element  幽 (*yōu*, OC **ʔiu*) is situated on the top and the classifier  子 [CHILD] is positioned at the bottom. This classifier establishes a schematic relation with the noun "the young one", as being young is an inherent characteristic of [CHILD]. In another noun  忠 "loyalty/fidelity" (*zhōng*, OC **truŋ*; 2524, *Zīyī*, 20,9), the phonetic component  中 (*zhōng*, OC **truŋ*) is located on the top and the classifier  心 [HEART/SENSES & EMOTIONS] is situated on the bottom. In this case, "loyalty" is a good quality advocated in Confucianism and keeps a taxonomic relation to the superordinate category [HEART/SENSES & EMOTIONS].

Verb–Egyptian: In the written form of the verb  *sbꜣ* "to teach" (5331, pPrisse, 15,5), the classifier  [ACTION OF FORCE] shows a taxonomic relation with the verb "to teach", as the word "to teach" is an "example of" the superordinate category [ACTION OF FORCE]. In the verb  *sḏr* "to lie, to sleep" (3034, pPrisse, 4,3), the classifier  [35] [LIE/SLEEP] functions as a repeater classifier, depicting the scene to lie or sleep.

Verb–Chinese: In the verb  教 "to teach" (*jiào*, OC **krâuh*; 4943, *Tángyúzhīdào*, 4,8), the left part is the phonetic element  爻 (*yáo*, OC **grâu*) and the classifier  攴 [HAND + STICK/POWER] is positioned on the right. The verb "to teach" is an "example of" the superordinate category [HAND + STICK/POWER] parallelling the verb  in Egyptian. Those two classifiers,  and , show that in both cultures, "teaching" involved imposing discipline most probably also by some physical power. In another verb  來 "to come" (*lái*, OC **rə̂*; 11699, *Yǔcóng* 4, 2,10), the phonetic element  來 (*lái*, OC **rə̂*) is located at the top and the classifier  止 [FOOT/MOVEMENT] is positioned at the bottom. The foot is the primary body part for movement and the classifier functions as a superordinate category [MOVEMENT]. Consequently, the verb "to come" is categorized under [MOVEMENT] in a taxonomic relation. The [FOOT/MOVEMENT] classifier is among the most prevalent classifiers in ancient Chinese scripts, encompassing a broad category with numerous members (Xú 2024). It is a conspicuous parallel to the Egyptian classifier  [FEET/MOVEMENT].[36]

34 For the term "repeater," see the table in Section 8 below.

35 The classifier represents a mummy or a man lying on a bed, see Gardiner 1957: 447 (A55) and Goldwasser 1995: 32.

36 The two [MOVEMENT] classifiers in Egyptian and Chinese are discussed in detail, in Xú forthcoming.

Adjective–Egyptian: The word  *mḏ* is known in an adjectival use with the meaning "deep" (FCD: 123). It may take the classifier  [WATER]. "Being deep" is a prototypical characteristic of water. The classifier stands in schematic relations with the host word. The adjective  *bnr/bnỉ* "sweet" (2253, Version L2, 4,16)[37] employs the classifier  [(SWEET) ROOT]. Additionally, it incorporates the  [ABSTRACT/DEFAULT] classifier to convey the abstract meaning of this word.[38]

Adjective–Chinese: In the written form of the adjective  深 "deep" (*shēn*, OC **nhəm*; 8162, *Xìngzìmìngchū*, 23,4), the classifier  水/氵 [WATER] is on the left position and the phonetic part  罙 (*tàn*, OC **nhə̂m*) is in the right position. The pictorial sign  , depicting a flowing river, functions as a classifier for the category [WATER] (cf.  N35 "canal" in Egyptian, see Chén 2016). The adjective "deep" establishes a schematic relation with the concept [WATER] in Chinese as well. Other notable attributes of water or rivers, such as  清 "clean, pure" (*qīng*, OC **tsheŋ*; 3805, *Wǔxíng*, 8,11)[39] and  濁 "muddy" (*zhuó*, OC **drôk*; 254, *Lǎozǐ* A, 9,27),[40] are also classified by the [WATER] classifier.[41]

Adverbs–Egyptian: The adverbs  *ỉ* "here" and  *dy* "here, there" (Gardiner 1957: 155, FCD: 309)[42] may get the classifier  depicting a road. This classifier carries the general meaning [ROAD & DISTANCE]. It maintains a schematic relation with the adverbs "here" and "there", as they represent a specific point within the broader concept of distance.

Adverbs–Chinese: In the written form of the adverb  甚 "most, extremely" (*shèn*, OC **dəmʔ*; 8610, *Xìngzìmìngchū*, 42,12), the classifier  戈 [DAGGER-AXE/WEAPON/WARFARE] is positioned on the right side, compounded with the phonogram  甚 (*shèn*, OC **dəmʔ*; a rare example, as most examples typically show only phonograms).[43] The "sharp" feature of the weapon contains a schematic relation to denote the intensity or degree of thoughts and feelings. Notably, the classifier has not persisted in this adverb in modern Chinese script. It likely belongs to the sphere of classifiers that stand in metaphoric relations to the host word, portraying something as "sharp as a knife".

37 The phonogram *i* in this adjective exists in TLA but not in Žába's version.

38 See Kammerzell 2015 and Goldwasser & Soler 2024 for further discussion on this classifier.

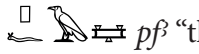
39 The phonetic part is  青 (*qīng*, OC **tshêŋ*).

40 The phonetic part is  蜀 (*shǔ*, OC **dok*).

41 For other examples, see Chén 2024. This valuable article compares schematic classifiers in Old Egyptian, Middle Egyptian and ancient Chinese.

42 It is possible that these are two spellings of the same adverb, see Peust 1999: 101–102. We are grateful to Andreas Stauder for this reference.

43 As a rare case in the Guōdiàn corpus, some scholars doubt whether the element is a classifier. Léi 2021: 277 commented that the element was a decorative mark in the word "most" (e.g., , 8618, *Xìngzìmìngchū*, 42,20) without taking any semantic meaning. Such kind of meaningless decorative mark also appears in the word "one" (*yī*, OC **ʔit*; 7854, *Xìngzìmìngchū*, 9,12) in the same text.

Pronouns–Egyptian: The demonstrative pronoun  *pꜣ* "that" is occasionally classified by the  [road & distance] classifier (Gardiner 1957: 85). This classifier is schematically related to the demonstrative pronoun "that". It potentially implies the spatial separation between the speaker and the object referred to by the deictic pronoun "that" (for further discussion, see Goldwasser & Soler 2024). In contrast, deictic demonstratives referring to "this" in Egyptian typically do not use the [road & distance] classifier, for example,  *pꜣy* and  *pw*. As a rule, "this" typically denotes a spatial proximity to the speaker. In Egyptian, personal pronouns may show pragmatic-referential classifiers referring to the gender (e.g.,  and ), essence (divine) (e.g., and), or status (e.g.,) of the actor (Goldwasser & Grinevald 2012).

Pronouns–Chinese: The demonstrative pronouns "that" and "this" in Old Chinese tell the same story as in Ancient Egyptian. The deictic written pronoun  彼 "that" (*bǐ*, OC **pai*ʔ)[44] is attested in excavated materials on Qín bamboo manuscripts (c. 200 BCE). It was classified by the classifier  彳 [(half) road], an abbreviation form of the classifier 行 [road] on the left position, and the phonetic part 皮 (*pí*, OC **bai*) is located on the right. On the other hand, the pronoun 此 "this" (*cǐ*, OC **tsheʔ*; 9933, *Liùdé*, 35,25) is a logogram depicting a profile of a standing man with the foot, probably indicating where he steps, i.e., "this". The binary concepts "that"—classified by [road]—and "this" that remains unclassified in both ancient cultures, are outstanding evidence of universal knowledge organization in human society.

All third-person singular pronouns in Modern Chinese have the *same sound value tā* (Wáng 2013: 267–269, Qiú 2013: 232–233). As a result, the classifier phenomenon is activated today in third-person singular pronouns in *written* Modern Chinese, which is influenced by the gender system in European language systems. For example, the 3ms pronoun 他 "he" is classified by 人/亻 [man],[45] the 3fs pronoun 她 "she" is classified by 女 [woman], and the third-person singular neutral pronoun 牠 "it" referring to animals is classified by 牛 [ox]. Non-animated objects are referred by 它 "it", and are non-classified. When the third-person singular pronoun refers exclusively to "God", it is written as 祂, with the phonetic part 也, classified by 礻[46] [divine]. This classifier is used in Chinese translations of the Bible, in reference to God. All the above semantic classifiers are *unpronounced*. We learn from these examples that modern Chinese script still uses productively the "semantic classifier" function of the script, creating new classifiers when necessary.

44 This example is cited from *Shuìhǔdì Qínmù Zhújiǎn* 睡虎地秦墓竹簡 (*Qín Bamboo Manuscripts Excavated in Shuìhǔdì*) published in 1990 on the bamboo strip no. 11 in the text *Wéilì Zhī Dào* 為吏之道. It was written as a phonogram 皮 (*pí*, OC **bai*; J425) in the early stage of bronze inscriptions.

45 When the sign is used as a logogram, its meaning could be "human, person". However, when it functions as a classifier in this case, it specifically conveys the semantic value "man, male", in contrast to the classifier 女 [woman].

46 The sign 礻 is the modern form of the classifier [divine/god], while its ancient form (depicting a stone or wooden ancestors' tablet) was normally transcribed as 示, see discussion in Xú 2024.

Particles–Egyptian: Particles in Egyptian are occasionally classified. The particle  *ḥ³* "would that" is accompanied by the classifier  [SENSES & EMOTIONS] (Gardiner 1957: 180). The semantic classifier  in this particle may signify an abstract notion of wish or desire.

Particles–Chinese: The word  唯 (*wéi*, OC **wi*; 1095, *Lǎozǐ* C, 1,9) is a modal particle,[47] classified by  口 [MOUTH] in the bottom position.[48] In this ancient example, the phonetic part 隹 (*zhuī*, OC **tui*) is located on the top. The classifier [MOUTH] in this context conveys implications related to emotions or moods (cf.  A2 in the example in Egyptian mentioned above). It also survived into modern Chinese script as in the character 唯, but the classifier is on the left position.

Deverbals–Egyptian: The verb  *rḫ* "to know" (3587, pPrisse, 7,1) classified by the classifier [ABSTRACT/DEFAULT] denotes an abstract meaning, while the word  *rḫ* "wise man" (5474, pPrisse, 15,12) derived from "to know" is a deverbal noun classified by  [MAN] acting as a category marker. It is also a mark of linguistic (grammatical) nominalizer on the language level (Lincke & Kammerzell 2012). The classifier [MAN] categorizes "wise man" as a member of the large superordinate category [MAN][49]. In contrast, the deverbal  *ḫm* "ignorant (man)" (3198, pPrisse, 5,9) in *The Maxims of Ptahhotep* derives from the verb  *ḫm* "to not know" (3520, pPrisse, 6,9) classified by the classifier [NEGATION]. In both cases, the classifier  acts simultaneously as a graphemic classifier and nominalizer.

Deverbals–Chinese: A similar phenomenon is unknown in Chinese. In Old Chinese, the morphological process for subject-nominalization is suffixation. Each of the syllabic morphemes (the verbal roots or the derivational suffixes) involved already has a conventional written form, so these forms are simply employed unchanged to write the derived word.[50] For example, the verb "to learn" 學 (*xué*, OC **grûk*; 1137, *Lǎozǐ C*, 3,8) was followed by the pronounced nominalizer 者[51] (*zhě*, OC **taʔ*; 1138, *Lǎozǐ C*, 3,9) to construct the deverbal word 學者 "one who learns" (*xuézhě*, OC **grûk-taʔ*).

6. Interchangeability of semantic classifiers—Alternative classification

6.1. Alternative classification in ancient Egyptian scripts

In ancient Egyptian scripts, classifier interchangeability is common (Goldwasser & Soler 2024). For example, the verb *whi* "to escape, to fail" can be classified by the classifier [ARM-RELATED

47 For this word, see Wáng 2001: 466–467. The translation is uncertain.

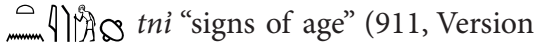
48 It was positioned on the left, left-bottom, or rarely the right(-bottom) in bronze inscriptions.

49 For superordinate categories in the Egyptian script, see Goldwasser 2002: 29–33.

50 We are grateful to Zev Handel for this remark.

51 https://humanum.arts.cuhk.edu.hk//Lexis/lexi-mf/search.php?word=%E8%80%85, in: MFCCD (accessed 20.1.2025). It was translated as "that which", "he/she/those who."

movement/action] written as  (5237, pPrisse, 14,12), or by a variant classifier  [negative] written as  (4341, pPrisse, 9,13) both in papyrus Prisse. The verb  *whh* is a geminated form of *whi* "to escape, to fail" to indicate a present participle, which is translated as "the one who fails". The word  "to escape, to fail" is an "example of" the superordinate category [arm-related movement/action] while the alternative classifier [negative] reveals its negative semantic meaning. It assigns the verb to the large superordinate category [negative] (Winand & Stella 2013: 130, 149–150).

In another example, the noun  *tnỉ* "signs of age" (6149, tCarnarvon, vso,1; 17th Dynasty) carries two classifiers (for multi-classification, see 7.1 below): the first classifier is  [old] (a semantic repeater) and the second one is [abstract/default] classifier. However, the second classifier was replaced in a little bit later version by another classifier  [illness/suffering], written as *tnỉ* "signs of age" (911, Version L2, 1,2; late 18th Dynasty). The classifier [52] [illness/suffering] assigns the noun "signs of age" to a more specific category than the [abstract/default] classifier. This implies that old age relates to illness.

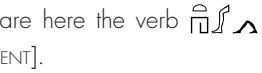
6.2. Alternative classification in ancient Chinese scripts

Alternative classification in the Guōdiàn corpus could be implemented using two distinct classifiers. For example, the character of the written word 欲 "desire" takes the classifier 心 [heart/senses & emotions] in 8 occurrences, e.g., 欲 (*yù*, OC **lok*; 2177, *Zīyī*, 6,15), while 4 other occurrences of this character in the corpus were classified by another distinct classifier 欠 [human + opened mouth], e.g., 欲 (*yù*, OC **lok*; 45, *Lǎozǐ* A, 2,18). All occurrences in the corpus were written with the same phonetic part 谷 (*yù*, OC **lok*).

In addition, in the Guōdiàn corpus, a character could take even three classifier variants. An intriguing example is the word "transgressions" (*guò*, OC **kôih*), classified by three different classifiers. In the example 過 (6359, *Chéngzhīwénzhī*, 36,18), the classifier 心 [heart/senses & emotions] is found at the bottom position. In another example of the same word, the character 過 (1733, *Lǎozǐ* C, 13,17) was classified by the classifier 辵 [road + foot/movement]. Moreover, another example of this word 過 (333, *Lǎozǐ* A, 12,16) carries the classifier 止 [foot/movement] at the bottom position. The phonogram 化 (*huà*, OC **hŋrôih*) is identical in those three examples.[53]

Among those three classifiers, 止[foot/movement] and 辵[road + foot/movement] both belong to the semantic field [movement], which suggests that "transgressions" ("crossing the line") are actions that are against the rules of social behavior or a moral principle and are therefore

52 The sign probably represents a pustule or gland, see Gardiner 1957: 593 (Aa1).

53 Compare here the verb  *thỉ* "to transgress" (FCD: 300) in Egyptian, which also gets the classifier [feet/movement].

wrong. However, the classifier [HEART/SENSES & EMOTIONS] emphasizes that those behaviors may be driven by the heart, suggesting the human agency of the wrongdoing.

7. Multi-classification

Multi-classification refers to a word that can take more than one classifier, which is a highly productive phenomenon in Egyptian scripts. Conversely, Chinese characters are predominantly classified by a single classifier. Therefore, multi-classification is much less prevalent in Chinese scripts. Nevertheless, some ancient Chinese characters exhibit multiple classifiers due to diachronic developments within the scripts.

Fig. 2. The word *mnmnt* "herd" takes five classifiers of five different quadrupeds in papyrus Boulaq 17, 6,7, in Goldwasser & Grinevald 2012.
For this kind of classification see Thuault 2020. Read from right to left

7.1. Multi-classification in ancient Egyptian scripts

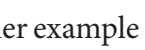
Previous studies on multi-classification in ancient Egyptian scripts reveal that up to five classifiers (e.g., fig. 2 above) can coexist in a single word. In addition, the order of co-existing classifiers in a word is rule-governed in most cases, i.e., classifiers that stand in schematic relations to the host word would precede classifiers in taxonomic relation.

The written word *wḥ‘* "fowler"[54] shows five classifiers. The [DUCK] and the [FISH] are the patients of the activity of fowling; the [ABSTRACT/DEFAULT] classifier marks a shift to the "agent classifier" mode [ACTION OF FORCE] and, finally, the most generic classifier [MAN]. Here, we can see the rule mentioned above, which is seldom broken in Egyptian. In multi-classification cases, classifiers that stand in schematic relations to the host word will appear first, and classifiers that stand in taxonomic relations will follow next. The most inclusive taxonomic category will be in the end (Goldwasser 2002: 16–17, Goldwasser & Grinevald 2012, Goldwasser & Soler 2024).

In *The Maxims of Ptahhotep*, for instance, the word *ḏ³is.w* "councilor, sage" (3225, pPrisse, 5,10) employs two classifiers. The first classifier [SENSES & EMOTIONS] indicates a distinguishing feature of this occupation, which stands in schematic relation to the host word.

54 https://thesaurus-linguae-aegyptiae.de/sentence/IBUBd0iaVjzNZUp8tV0p1rrVgQ0, in: *Thesaurus Linguae Aegyptiae* (accessed: 20.1.2025). Note that in this example the phonetic part of the word *wḥ‘*, the boat , adds information to the final meaning. The action is done from a boat (Goldwasser 2024). If analyzed as a Chinese sign, this is a Ps compound. The Phonetic part also offers some semantic information.

Councilors and sages should think about and feel situations. This classifier encompasses the modern notion of "emotional intelligence".[55] The second classifier which represents a generic Egyptian man  [MAN], stands in taxonomic relation to the host word, denoting that a "councilor or sage" is an "example of" the superordinate category [MAN].

Another example in *The Maxims of Ptahhotep* is the verb  *sk*³ "to plow" (3706, pPrisse, 7,5). The first classifier  [PLOW] represents the instrument used in this action, demonstrating a schematic relation to the verb "to plow". The role of the second classifier  [ARM] probably has two explanations: it might refer to the main body part involved in performing the action, which is schematically related to the verb. Another more likely analysis would be that the classifier indicates the action "to plow" is an "example of" the superordinate category [ARM-RELATED MOVEMENT/ACTION] (see 8.1 below).

7.2. Multi-classification in ancient Chinese scripts

A Semantic-Phonetic (SP) compound that can contain more than one semantic component in Chinese characters is very rare. Statistically, around 75 SP compounds with two or three semantic components were found in *Shuōwén Jiězì*, a dictionary containing 9353 characters, which accounts for about 0.8 percent (Péng & Féng 2014). This classical dictionary is based on the small seal scripts of the Qín dynasty (221 BCE–207 BCE). The dictionary, authored by Xǔ Shèn (58 CE–147 CE), the renowned scholar of Chinese script, represents the earliest scholarly analysis of Chinese character structure, based on the *liùshū* 六書 (Six principles of writing).

Multi-classification in ancient Chinese scripts occurs for different reasons.[56] Firstly, it could be caused by adding a more generic semantic component to an existing SP compound. For example, the written verb  奉 "to offer" (*fèng*, OC **phoŋ*^{B}; 9642, *Liùdé*, 22,13; see Qiú 2013: 155) in the Guōdiàn corpus is compounded by the phonetic element  丰 (*fēng*, OC **phoŋ*) on the top position and the semantic element  廾 [DOUBLE HAND] on the bottom position. Later in the small seal script, another semantic element  手 [HAND] was added to the verb "to offer", which did not change the meaning of the word. In this case, the verb "to offer" is written as  with double classifiers,  廾 [DOUBLE HAND] and 手 [HAND], both indicating a schematic relation as either a single hand or two hands are the main body part to complete the action. However, the added classifier could probably be considered a label of a superordinate category [HAND-RELATED MOVEMENT/ACTION], similar to the Egyptian superordinate category discussed above 7.1.

55 Both the notions of intelligence and feelings are classified under the classifier . For "Emotional Intelligence", see Goleman 2020.

56 For more discussions of multiple semantic elements in Chinese scripts, see Qiú 2013: 154–156 and Zhāng 2006.

In addition, multi-classification could be formed by adding a phonetic sign to a Semantic-Semantic (SS) compound[57] or even a Semantic-Semantic-Semantic (SSS) compound. For instance, the word 寶 "treasure" (*bǎo*, OC **pûʔ*, see SWXZ 2014: 593–594) in oracle-bone inscriptions was written as  (H3919), composed of three semantic elements:  "house" (*mián*, OC **men*[58]),  "shell (money)"[59] (*bèi*, OC **pâts*), and  "jade" (*yù*, OC **ŋok*), which depict prototypical treasures stored at a house. Gradually, a *phonetic* sign  缶 "vessel" (*fǒu*, OC **puʔ*) was added to the SSS compound . In bronze inscriptions, we find the same word written as  (J2144).[60] If is considered as a phonetic part, the written word "treasure" shows in bronze inscriptions three semantic classifiers, namely [HOUSE], [JADE], [SHELL/MONEY/WEALTH], classifying the phonetic part . However, the phonetic sign "vessel" probably contained also an additional semantic meaning of "vessel" that could be part of the treasure. If so, this new character can be considered as an SSSPs.[61] In the later Chǔ bamboo manuscripts, the word "treasure" was written as (Bāoshān 221).[62] It was composed of the same three semantic elements ([HOUSE], [JADE] and [SHELL/MONEY/WEALTH]) and one phonetic/semantic element "vessel" (see additional discussion on this word in appendix A below).

Moreover, a transformation of a semantic element in an SS compound could result in multi-classification, such as the word 聖 "sage" (*shèng*, OC **lheŋh*). It was written as  (H14295) in oracle-bone inscriptions,[63] which was composed of three semantic elements:  "a standing man (face to the right)",  "ear" and  "mouth". The SSS compound character depicted a person having a prominent ear and mouth, referring to "a person who is hearing when someone is talking",

57 Boltz 1994: 71–72 thinks that SS compounds do not exist in Chinese scripts. He believes that at least one of the elements in an SS compound serves as a "phonetic indicator", see the discussion below in Appendix A.

58 The reconstructed sound value is cited from Zhèngzhāng's system from the website *Gǔyīn Xiǎojìng*古音小鏡 http://kaom.net/ny_word8.php (accessed: 20.1.2025).

59 During the Shāng dynasty, shells served as a form of currency (Dai et al. 2022: 1).

60 A procedure of adding phonological elements to logograms probably to ascertain a correct reading is a common diachronic development in Egyptian. In fig. 4 in appendix B, the  *nw* vessel is added as a phonetic element to direct the reader more firmly to the reading *nw* "hunter". In the Egyptian case, the iconic meaning of the vessel should be dropped. The Chinese example is way more sophisticated. The meaning of the vessel must not be dropped and can be taken pictorially to be part of the elements that make the treasure in the house.

61 For all possible variations of this compound in ancient Chinese scripts that could not be discussed here, see *Gǔwénzì Lèibiān* 古文字類編 (Gāo & Tú 2008: 308).

62 This example is cited from *Bāoshān Chǔjiǎn* 包山楚簡 (*Chǔ Bamboo Manuscripts Excavated in Bāoshān*) published in 1991.

63 In oracle-bone inscriptions, the character used to write the word "sage" is not well attested due to damaged or limited contexts. The character was attested for recording the written word 聽 "hearing", which normally was written as (H5298), see the discussion in appendix A. However, it is widely accepted that the character is the form created for the word "sage" (see SWXZ 2014: 840, Lǐ 2012: 1047). We are grateful to Dr. Yuán Lúnqiáng [袁倫強] (Institute of Chinese Language and Literature, Southwest University, China) for this remark as well as many discussions in the seminar on oracle-bone inscriptions led by him during the autumn semester of 2024.

which best defines the ideal "sage". Being able to listen to complaints (ear) and being able to advise others (mouth) is the essence of the sage concept in ancient cultures (Chén 1986). What seems to be a deliberate prominent size of the ear above the man may indicate the crucial ability to listen carefully (Lǐ 1982: 3519, Qiú 2013: 132). From the bronze inscriptions on, the semantic part  "a standing man" changed into  "a person standing upright (face to the left)" (e.g.,  J271). The compound character is composed of two semantic parts  耳 [ear][64] and 口 [mouth], while the element "a person standing upright" (*tǐng*, OC **lhêŋʔ*) functions as a *phonetic* element. Thus, the character changed from an SSS compound into an SSP compound. In the new character , [ear] and [mouth] could be analyzed as two semantic classifiers. Yet one cannot ignore the additional *semantic* information carried by the new phonetic element . The sage is indeed an upright man! The phonetic part possibly carries some additional semantic information and thus should be described as Phonetic (+semantic). So, we actually have a combination of two (+one) semantic elements and a clear phonetic element (SSPs) in this character. Moreover, the combined character shows pictorial sensitivity to the semantics of the three components that make the sign. The "ear" and the "mouth" appear on the upper part of the character, respecting their relative position in the human body. In the Guōdiàn bamboo manuscripts, the word is written in the same way as an SSPs compound character, for example,  聖 (68, *Lǎozǐ* A, 3,13). It consists of two semantic parts,  耳 [ear] and  口 [mouth], with a phonetic/semantic element  "a person standing upright".

8. Host-word and classifier relations in semantic classifiers

Several possible semantic relations exist between host words and their classifiers, such as taxonomic, taxonomic-repeater, taxonomic-metaphoric and various schematic relations (Goldwasser 2002: 15–18). Goldwasser recently published a host and classifier relations table in the Egyptian script (Harel et al. 2024). To compare the possible classifier-host relations in ancient Egyptian and ancient Chinese scripts, a new table was created (see table 1 below). Examples from ancient Chinese and Egyptian were added by Xú.

64 This is the typical form of the ear character in bronze inscriptions, see SWXZ 2014: 873.

Classifier-host relations	Examples
Taxonomic A classifier in taxonomic relation is a chosen prototype of a superordinate category that represents the category as a whole.[65] Its hosts are members of the superordinate category standing in an "**example of**" relation to the classifier (Goldwasser 2002: 15–16, 29–33; 2009: 22–23; Lakoff 1987).	**Classifiers:** [FEET/MOVEMENT] & 止 [FOOT/MOVEMENT] The word *swtwt* "to walk about, to travel" (FCD: 218) is an "example of" the superordinate category [FEET/MOVEMENT]. The word 來 "to come" (*lái*, OC **rə*; 11699, *Yǔcóng* 4, 2,10) is an "example of" the superordinate category 止[FOOT/MOVEMENT]. The word 過 "transgressions" (*guò*, OC **kôih*; 333, *Lǎozǐ* A, 12,16) is classified by the 止 classifier (see discussion 6.2 above). **Classifiers:** [HOUSE/HABITAT] & [HOUSE/STRUCTURE] The word *iḥ.w* "stable" (FCD: 29) is an "example of" the superordinate category [HOUSE/HABITAT], a "type of" building or house (see Goldwasser 2023: 125). The word 廟 "temple, shrine" (*miào*, OC **mrauh*; 4967, *Tángyúzhīdào*, 5,7) is an "example of" the superordinate category [HOUSE/STRUCTURE] in ancient Chinese scripts.
Taxonomic-repeater A *repeater* is a hieroglyph repeating the same signified already presented phonetically in the word. It *repeats* the phonological information recorded by the phonograms with a semantic classifier, hence the name "repeater."[66] The relations are still taxonomic, e.g., in Egyptian *msḥ* "crocodile" is an "example of" the category [CROCODILE].[67]	**Classifiers:** [WOMAN] & 女 [WOMAN] In the word *ḥm.t* "woman" (5124, pPrisse, 14,4), the classifier [WOMAN] repeats the semantic information presented by the previous hieroglyphs functioning as phonograms. It represents the same information in the pictorial sign. In the word 婦 "woman" (*fù*, OC **bəʔ*; 11881, *Yǔcóng* 4, 10,13), the classifier 女 [WOMAN] repeats the semantic information presented by the phonogram 帚 (*zhǒu*, OC **tuʔ*).

65 A particular exception is the [HIDE & TAIL] (animal) classifier, see Goldwasser 2023.

66 For repeaters in classifier languages (pronounced repeaters), see Allan 1977, Senft 2002: 61–69, and Goldwasser & Grinevald 2012.

67 This category includes other examples of words referring to crocodiles, such as *ḫnty* "crocodile (as Seth)" or the crocodile god *sbk* "Sobek", or a voracious spirit *ʿḥm* "Horrifier (crocodile demon)" in the form of a crocodile (Gardiner 1957: 475, DZA 21.977.480). The same hieroglyph can function as a classifier in different semantic relations, e.g., as a metaphoric classifier in the verb *ʾd* "to be angry," hence the classification assigns the action to the crocodile as a metaphorical agent, highlighting a certain type of dangerous anger "to be angry as a [CROCODILE]" (See Goldwasser 1995: 105).

Classifier-host relations	Examples
Taxonomic-metaphoric A classifier can be linked to its host by metaphorical relations (Goldwasser 2005). In this case, the mute classifier represents a prototype of another, ad hoc category. The host word becomes temporarily a member in this category. (See Goldwasser 1995: 83–84 for "ad hoc" categories).	**Classifiers:** [PUFFER FISH] & 羊 [SHEEP/GOAT] In the word *špt* "to be angry"(FCD: 265)[68] the hieroglyph of the puffer fish stands as a prominent exemplar for the category [ANGRY SWOLLEN CREATURES], which is an ad hoc category. The angry person in a crowd of men is compared to this kind of fish in the crowd of fish. "He swells with anger like a puffer fish" (detailed discussion in Goldwasser 2005: 106–107). In the word 群 "assemble, gather together"[69](*qún*, OC **gwən*; 1057, *Lǎozǐ* A, 38,8), the classifier 羊 [SHEEP/GOAT] is a prominent exemplar of the ad hoc category [HERD ANIMALS]. The crowd of humans is compared here to a herd of sheep.
Schematic (metomymic) Various types of schematic (metonymic) knowledge relations may exist between a word and its classifier, such as *the component/integral object (part-whole)* or *the stuff/object ("made of")* relation (Goldwasser 2002: 33–35).	**Classifiers:** [HOUSE/HABITAT] & [HOUSE/STRUCTURE] The word *sšd* "window"[70] (FCD: 249) is a "part of"/ "component of" [HOUSE]. Various words for elements of the house stand in schematic (metonymic) relation to the category [HOUSE]. The word 室 "room" (*shì*, OC **lhit*; 1067, *Lǎozǐ* A, 38,18), is also a "part of"/ "component of" [HOUSE]. It is classified by [HOUSE/STRUCTURE] classifier, which is at the top position. In this character the phonogram 至 (*zhì*, OC **tits*) is on the bottom. **Classifiers:** [WOOD] & 木 [WOOD] The [WOOD] category features both taxonomic and schematic members (Goldwasser 2002, Chapter 2). An example of schematic relations with items "made of" [WOOD] is *w³s* "scepter" (5287, pPrisse, 15,2), a symbol of the power of the king. In ancient Chinese scripts, for example, 板 "board" (*bǎn*, OC **prânʔ*; 3404, *Qióngdáyǐshí*, 4,2) is "made of" 木[WOOD].

Table 1. Possible classifier-host relations in ancient Egyptian and ancient Chinese scripts

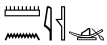
68 e.g., in DZA 30.047.890, in a text from the 6th Dynasty (2345–2181 BCE). For a discussion with a picture of the live fish, see Goldwasser 2005.

69 The position of the classifier [SHEEP/GOAT] is on the bottom in bamboo manuscripts. However, it is in the right position in modern Chinese script. The probable reason is that bamboo strips were crafted into narrow, vertical slips, but later on, writing materials such as stone and paper had more space for characters.

70 The window is conceptualized into the superordinate category [EYE]. The window may be understood as "the eye of a house", as one typically looks out of the window (Goldwasser 2005).

The special case of verb classifiers

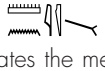
Kammerzell 2015 offered a detailed set of possible relations between a host verb and its classifiers in Egyptian. He proposed the relations AGENT, UNDERGOER (PATIENT), INSTRUMENT, SOURCE, GOAL, LOCATION, EXPERIENCER, MOVER, ZERO, CAUSEE and ABSENTEE.[71] Among them, AGENT, UNDERGOER (PATIENT), and INSTRUMENT relations are more frequently detected in both ancient Egyptian and ancient Chinese scripts.

In Ancient Egyptian, the written representation of the verb  *ḫnn* "to trouble" (1322, Version L2, 2,7) carries the classifier  [SETH], which is an image of the Egyptian god Seth, who masters storms, disorder, and warfare (Te Velde 1977). Therefore, when functions as a classifier, it is presented by the script as the AGENT who creates chaos and trouble. The second classifier  [ACTION OF FORCE] represents the superordinate category to which the action belongs. However, it can be understood as hinting to the AGENT as well. In this case, the trouble is caused by the intervention of Seth and its human agents (Goldwasser 2005, Allon 2007). In the verb  *stj* "to shoot" (3568, pPrisse, 6,11), the classifier [ARROW] portrays the INSTRUMENT as it is the tool to implement the action of shooting. In addition, more than one relation can coexist in one verb, such as the word  *mnj* "to moor" (3432, pPrisse, 6,6). The first classifier  [MOORING POST][72] functions as the INSTRUMENT, whereas the second classifier [BOAT] is a typical AGENT, indicating the activity "to moor" is done by boats.[73] In another verb  *skꜣ* "to plow" (3706, pPrisse, 7,5), the semantic role relation of both classifiers, [PLOW] and [ARM], is the prototypical INSTRUMENT. However, the second classifier [ARM] could be considered as a "part of" a human being. Therefore, it may also be interpreted as an AGENT. It could also function as a taxonomic classifier, see above 7.1.

In ancient Chinese scripts, the word 蠚 "to sting" (*hē*, OC **nhag*;[74] 926, *Lǎozǐ* A, 33,14) takes the classifier 虫 [INSECT] in the bottom position. It indicates that the insect is the prototypical AGENT of the action "to sting". The phonetic part 若 (*ruò*, OC **njag*) is in the top position. In the verb 馭 "to ride, to drive" (*yù*, OC **ŋah*; 6105, *Chéngzhīwénzhī*, 16,10), the classifier 馬 [HORSE] is the prototypical chosen UNDERGOER/TOOL in the royal and military circles. Its phonetic part 午 (*wǔ*, OC **ŋâʔ*) is in the bottom-right corner. The word 誅 "to kill, to punish" (*zhū*, OC **tro*; 11853, *Yǔcóng* 4, 8,4) was classified by 戈 [DAGGER-AXE/WARFARE], a traditional weapon of warfare in ancient China, which is the INSTRUMENT. The phonetic part 豆 (*dòu*, OC **dôh*) is in the left position.

71 See Lincke 2011 for these relations in the Pyramid Texts.

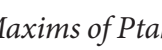
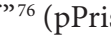
72 TLA encoded the sign as Aa 28, but it might be P11.

73 In the Coffin Texts, the verb  "to moor" (*CT* IV: 308,c,spell 335 (B9C)) has the variant classifier [DEATH] instead of [BOAT]. It indicates the metaphorical concept of "dying is mooring (the boat of life)". For the conceptual metaphor [LIFE IS A JOURNEY ON THE NILE] in the Egyptian script, see Goldwasser 1995: 97–98.

74 The reconstructed sound value is cited from Zhèngzhāng's system from the website *Gǔyīn Xiǎojìng* 古音小鏡 http://www.kaom.net/ny_word8.php (accessed: 20.1.2025).

9. The special case of classifiers of a "missing ability/element" —  "to be deaf"[75]

An intriguing phenomenon that exists both in Egyptian and Chinese texts is that a classifier could denote a missing ability or quality. In some cases, two words may appear in the same clause, and the classifier in one of the words shows the "missing ability".

In *The Maxims of Ptahhotep*, there is an interesting clause:  *ʿnḫ.wy ỉmr* "The two ears are deaf"[76] (pPrisse, 4,4). Both words in the clause,  *ʿnḫ.wy* "(pair of) ears" and *ỉmr* "to be deaf", were classified by the same classifier [EAR]. The classifier in the first word *ʿnḫ.wy* "(pair of) ears" is a repeater that appears twice (or the two ears are one classifier [DOUBLE EARS]). However, the second word *ỉmr* "to be deaf" also takes the schematic classifier [EAR], indicating a deficiency ("unable to hear") or a "missing ability/element" (see Goldwasser & Soler 2024).[77] In oracle-bone inscriptions, we find a very similar example. In the spelling of the word  聾 "deaf" (*lóng*, OC **rôŋ*; H21099), the semantic part 耳 [EAR] is positioned on the left and the phonetic part 龍 (*lóng*, OC **roŋ*) is located on the right. The sign functions as a classifier for the word "deaf". The pictorial sign depicts the imaginary sacred animal "dragon" in ancient China, but it functions as a phonetic component in the SP compound character "deaf".

Another example is found in the Guōdiàn bamboo manuscripts. In the context *dé yǔ wú shúbìng* 得與亡孰病 "Gain or loss, which is more debilitating?" (*Lǎozǐ* A, 36)[78] both words 得 "gain" (*dé*, OC **tə̂k*; 996, *Lǎozǐ* A, 36,3) and 亡 "loss" (*wú*, OC **ma*; 998, *Lǎozǐ* A, 36,5) were classified by the same classifier 貝 [SHELL/MONEY/WEALTH]. The word "loss" is classified by the "shell" , the "absent element". Another example is the sentence *hòucáng bì duōwú* 厚藏必多亡 "Profuse hoarding inevitably leads to considerable loss" (*Lǎozǐ* A, 36),[79] in which the two words 藏 "hoard, store" (*cáng*, OC **dzâŋ*; 1007, *Lǎozǐ* A, 36,14) and 亡 "loss" (*wú*, OC **ma*; 1010, *Lǎozǐ* A, 36,17) were both classified by the same classifier 貝 [SHELL/MONEY/WEALTH]. However, other occurrences of the written word "loss" (*wú*, OC **ma*) in the Guōdiàn bamboo texts are written only by a phonogram, for example, (*wú*, OC **ma*; 1046, *Lǎozǐ* A, 37,26).

75 See Goldwasser 1995: 92–93. A similar phenomenon exists in Anatolian hieroglyphs, see Payne 2017.

76 Lichtheim 1973: 63 translated as "ears deaf".

77 Chén 2024 brings Chinese parallels to "blind" and "deaf", with examples from the dictionary *Shuōwén Jiězì*.

78 The English translations of the Guōdiàn bamboo manuscripts are cited from Cook 2012: 281.

79 Cook 2012: 281.

Conclusions

Graphemic semantic classifiers[80] in ancient Egyptian and ancient Chinese scripts exhibit similarities in their parts of speech assignment, alternative and multi-classifications, and their relationships with their host words. In both scripts, the semantic classifiers are unpronounced. Only much later did the Chinese language develop a system of *pronounced numeral classifiers* that should be discussed separately.[81]

In ancient Egyptian scripts, classifiers are always post-positioned, whereas, in ancient Chinese scripts, classifiers are not only post-positioned (i.e., right and bottom positions) but also appear in pre-positions (i.e. left and top positions, see discussion above 4.2). Additionally, surrounding and half-surrounding positions of classifiers are observed in ancient Chinese scripts. It indicates that classifiers' positions are not necessarily confined to the end or the beginning of the written representation of host words in Chinese.

Both content words (nouns, verbs, adjectives and adverbs) and function words (pronouns and particles) may be classified in ancient Egyptian and ancient Chinese scripts. However, in Chinese, adverbs and function words are classified with lower frequency.[82]

Alternative classification is common in ancient Egyptian and ancient Chinese scripts. Written words classified by different classifiers reflect different categories, forming a complex and dynamic categorization network. They mirror the complex challenge of conceptualizing the world. With the standardization of the script by the Qín-Hàn period (221 BCE-156 BCE), most alternative classifications were discontinued.

Multi-classification is much more frequent in ancient Egyptian scripts than in ancient Chinese scripts. The presence of more than one classifier in a single word provides rich semantic information, indicating that the host word belongs to multiple categories simultaneously.

Relations between host words and classifiers in ancient Egyptian and ancient Chinese scripts include taxonomic, taxonomic-repeater, taxonomic-metaphoric and schematic relations, all exemplified in the table above. Taxonomic relations are the most frequent in both writing systems, followed by schematic and taxonomic-metaphoric relations.[83] Taxonomic-repeater is a rare phenomenon in Chinese but very common in Egyptian. In addition, the semantic roles of verb classifiers, such as AGENT, PATIENT, and INSTRUMENT, are frequently identified in both scripts. Furthermore, the special case where classifiers indicate a lack of ability of the classified is present in both writing systems.

80 "Phonetic classifiers" are not discussed in this contribution. For this term, see Goldwasser 2024, Chapter 6.1 and Werning 2018: § 13.

81 See Peyraube 1991. The spoken classifiers are a later phenomenon that probably appeared sporadically around the first century BCE and became more prevalent during the 9th-10th century CE.

82 More statistics will be published in Xú forthcoming.

83 For statistic information, see Xú forthcoming.

The reconstruction of the mental organization of the ancient world hinges predominantly on the analysis of material culture and the textual evidence preserved in diverse manuscripts and inscriptions. However, studying classifiers within complex writing systems opens a novel avenue of inquiry into the cognitive and cultural universe of ancient societies. As an emic source par excellence, graphemic classifier systems offer direct insight into how these cultures categorized and conceptualized knowledge. Scholars can undertake comparative studies across different writing systems by focusing on the structural and functional features of classifiers, unveiling cross-cultural patterns in knowledge organization.

The comparative analysis of semantic classifiers in the writing systems of ancient Egypt and China illuminated *both shared cognitive tendencies and distinctive cultural perspectives* of these civilizations. Such an investigation underscores the convergences in how these societies understood and classified the world around them and highlights the unique modalities through which each civilization constructed and transmitted meaning. These lenses offer a deeper understanding of the intricate relationship between language, cognition, culture, and script in the ancient world.

Appendix A

Supplementary Visual Scenarios or "Scene Characters": Examples from Semantic-Semantic (SS, *Huìyì*) Characters in the Oracle-Bone Inscriptions

Pictorial signs in ancient complex writing systems fundamentally differ from images, even if they are based on images. When they become signs in a writing system, they show calibrated sizes, accommodating relative positions, standardized forms, and may fill a few different semiotic functions (Goldwasser 1995: 80–103, Goldwasser 2016, Polis 2018, Goldwasser & Handel 2024). While the Egyptian hieroglyphic script remained iconic until the very last stages of its use, the earliest Chinese inscriptions on oracle bones that came down to us are comparatively more cursive and show a lower level of iconicity. Yet many of the characters in these early texts can still be identified pictorially.[84] In appendix A, we discuss, from a comparative perspective, examples of a special type of ancient Chinese characters called Semantic-Semantic (SS) compounds or *huìyì* in traditional Chinese scholarship.

Oracle-bone inscriptions are the earliest palaeographic evidence of the established ancient Chinese writing system as we know it today, dating back to c. 1250 BCE.[85] They are divinatory in content and are commonly inscribed on turtle plastrons (flat bottom shells) and the scapulae of oxen. So far, around 4,000 characters (around 6,000 if variants are included) have been attested in oracle-bone inscriptions and about half of them were safely deciphered (Shěn & Cáo 2001: 24–163).

In Egyptian hieroglyphs, almost all periods of the script (3150 BCE–394 CE)[86] show inscriptions of relatively high iconicity. Hieroglyphic inscriptions are commonly found on architectural elements, statuary, and a wide variety of objects, ranging from large to very small in scale (e.g., scarab seals). The content of the hieroglyphic inscriptions is mostly non-administrative.[87]

Semantic-Semantic (SS) *huìyì* compounds in Chinese

In ancient Chinese scripts, SS or SSS compounds (*huìyì*) are characters composed of two or more pictorial elements, each possessing an independent semantic value. These constituent components

84 e.g., examples of the written logogram "dog" in oracle-bone inscriptions,  (H1045) and  (H6485). Yet, pictorial features may still be active in the reading process of modern Chinese script. Until today readers of Modern Chinese identify some of the pictorial meanings of the characters such as "roof", "water", and "human".

85 For possible earlier precursors of the Chinese scripts, see Demattè 2022 and Baines & Cao 2024. On different semographies in early Egypt, see Stauder 2023.

86 See Stauder 2020: 880.

87 Administrative texts are usually written by a cursive variation of the hieroglyphs called "hieratic", see Grandet 2023: 62–69. Hieratic shows some different tendencies in classification, but guards all semiotic rules of classification known from the more iconic versions of the script.

may function autonomously within the script as logograms. However, when combined into a single character, they form a novel compound logogram, whose semantic meaning is modified and whose phonological value diverges from that of its individual constituents.

For example, the written word  聽 "hearing" (*tīng*, OC **lheŋ*; H5298) was compounded by three semantic elements: an ear  耳 (*ěr*, OC **nəʔ*) and two mouths  (口 *kǒu*, OC **khôʔ*). The sign "ear" is larger than the "mouth", which may highlight the ear's function. Given the intention to create the concept of "hearing", it is presented by the written character as a sense that one uses to hear human sounds. Therefore, two human mouths are depicted as combining with the prominent ear. The "mouth" was probably duplicated to depict more than a single voice. The duplicated mouth also creates an aesthetic balance. However, "hearing" was sometimes alternatively written only with a single mouth, as (H7768).[88]

Xǔ Shèn (58 CE–147 CE), the eminent early scholar of the Chinese scripts who laid the grounds for Chinese semiology, strongly believed in the existence of *huìyì* as stated in the post-face in his famous work *Shuōwén Jiězì* (Bottéro & Harbsmeier 2008, Lù 2015: 48–50). We find similar opinions in modern scholarship (e.g., Handel 1998, 2016, Qiú 2013: 124–137). In his highly influential study, Boltz (1994) fundamentally challenged the existence of Semantic-Semantic (SS) compounds in the Chinese script, a notion widely accepted by Chinese scholars. He contended that all compound characters traditionally analyzed as comprising two semantic elements must have originally contained a phonological value inherent in one of their components, even if this phonetic dimension can no longer be reconstructed. Consequently, Boltz argued that such characters should not be classified as SS compounds but rather as Semantic-Phonetic (SP) compounds, thereby redefining the structural principles underlying the script's composition. In the following discussion, we present a semiotic analysis of select *huìyì* characters in ancient Chinese scripts, wherein the *spatial* arrangement of constituent signs conveys meaning beyond the mere aggregation of individual elements. In certain SS or SSS characters, *positionality* functions as an additional dimension of signification, mirroring real-world scenes and enhancing the expressive power of the script.[89]

88 The related word 聞 "to hear" (*wén*, OC **mən*) normally was written as  (H5004), a logogram depicting a seated man with a prominent ear with his hand covering his mouth (see SWXZ 2014: 842, Lǐ 2012: 1048–1049, Niè 2022).

89 Positionality is a developed semiotic device in the hieroglyphic script system from the very beginning of the script; it will be discussed in a future publication. Given the high iconicity of the hieroglyphs, it is almost a given semiotic procedure. We find examples of compound elements creating the visual information "inside" (e.g.,  *Ḥw.t-Ḥr* "Hathor", the goddess is considered to be the mother of the falcon god Horus, so he was "inside" her). However, both elements cary phonological information and thus cannot be paralleled to *huìyì*. Sign TSL_1_4375, http://thotsignlist.org/mysign?id=4375, in: *Thot Sign List*, http://thotsignlist.org.

Example 1— "Scene Character":

The written form of the word  "treasure" (*bǎo*, OC **pûʔ*; H3919) in oracle-bone inscriptions is a Semantic-Semantic-Semantic (SSS) compound, which is composed of three distinct semantic elements:  "house" (*mián*, OC **men*),  "shell (money)" (*bèi*, OC **pâts*), and  "jade" (*yù*, OC **ŋok*). During the Shāng dynasty (1600 BCE–1046 BCE), both shells and jade held exceptional value: shells functioned as currency, while jade was esteemed as the quintessential precious stone and a highly sought-after material for elite use. The representation of these three elements—whose actual dimensions vary considerably in reality—was carefully calibrated in accordance with the fundamental principles governing the composition of the script.

However, in this case, we witness more than calibration. The character  is also sensitive to the *spatial* arrangement. The sign  is always positioned *above,* while the other two signs  and  are always below and *inside***.** The "shell" and "jade" are always put *inside* the house, i.e., their visual arrangement includes the concept of **inside**, creating a ***scene***. From this character, we learn that "treasure" means "currency and precious stones put **inside** the house". The conscious arrangement of the various elements in the compound character supplies additional visual information. On the addition of a phonetic part to this character in the bronze inscriptions, see discussion above 7.2.

Example 2— "Scene Character": "pen-raised animals (as offerings)"

Other pictorial sensitive scenic arrangements of semantic elements in compound charaters in oracle-bone inscriptions were also found in the word  牢 "pen-raised animals (as offerings)" (*láo*, OC **rûʔ*; H34165).[91] The character was compounded by two semantic elements:  "enclosure (of animals)"[92] and  牛 "(head of) ox" (*niú*, OC **ŋwə*; Lǐ 2012: 72, Shàn 2020: 122–123). The ox plays the role of the prototypical quadruped (see below). Here the combination of the two semantic elements "pen" and "ox" acquire *additional scenic information*—"the ox is **inside** the pen". The intriguing point in this example is that the object animal inside the enclosure could also be a sheep  (H15595). The competing prototypes tell us that the essence of this character's meaning is not the mere combination of "ox" and "pen" but the more general idea of "pen-raised animals". The

90 See the fn. 59 above.

91 For the discussion of "pen-raised animals", see Schwartz 2019 and Ottaviano et al. 2024.

92 The sound value of the "enclosure" sign is uncertain. The "enclosure" sign as a logogram was attested in very few examples in oracle-bone inscriptions (e.g., H33631). Some scholars suggest that the character is an SP compound and that the animal is a semantic classifier (SWXZ 2014: 92). In this case, the enclosure would be a metonymic representation of the "pen-raised animals". However, almost all examples show a combination of the enclosure and a prototypical animal.

compound character presents additional pictorial information about man's relation with these animals—he keeps them inside a man-built structure for his utilization.[93]

Statistically, "sheep" was more popular than "ox" in the early stage of oracle-bone inscriptions (see table 2 below). However, "ox" gradually becomes the predominant animal in the written representation of the word "pen-raised animals" at the later stage of oracle-bone inscriptions (Zhū 2019). The sign has already been standardized with an "ox" prototype from the Western Zhōu dynasty (1046 BCE–771 BCE). The "ox" is the "winning prototype" and continues into the modern Chinese character 牢.

Stages Forms	First Stage	Second Stage	Third Stage	Fourth Stage	Fifth Stage
牢–OX	157	9	330	505	670
宰[94]–SHEEP	835	320	168	105	21

Table 2. The table above, created by Zhū 2019 and translated into English by Xú, shows the number of examples of the word "pen-raised animals" in five stages in oracle-bone inscriptions. The oracle-bone inscriptions are divided into five periods by Dǒng 1933. The table shows that the character 牢 "pen-raised animals" with the 牛 "ox" inside the structure gradually becomes the dominant variant in the later stage (670 examples), while the number of examples of the sign 宰 with 羊 "sheep" inside the structure decreased dramatically (21 examples). The "ox" clearly defeated the "sheep".

93 On the relation of man and sacrificial animal in ancient China, see Sterckx 2019.

94 The sign 宰 is a transcription of the ancient form but is not in use nowadays.

Appendix B

Hunters and Dogs, and a "Walking Pot"—in the Search of *Huìyì* in the Egyptian Writing System

The hunter and the dog

In oracle-bone inscriptions, the verb 獸"to hunt"[95] (*shòu*, OC **hjuh*; H28773) was an SS compound (*huìyì)* created by two separate semantic elements: 單 "hunting tool" (*dān*, *OC *tân*) and 犬 "dog" (*quǎn*, OC **khwîn?*). In this case, we see the two essential elements for hunting according to the ancient Chinese scripts. It tells us that the dog was indispensable for the hunter, as much as his hunting tool. Interestingly, the agent—the hunter himself—is not represented in the Chinese SS character. The reader has to combine the hunting tool and the dog in his mind to create the "hunting" concept. Perhaps the fact that the dog and the tool could not create a combined correct meaning of "to hunt" without a human agent made the latter appearance superfluous. Only man could hunt with a dog and a hunting tool.

What seems to be the earliest example recording the word "hunter" in ancient Egypt is a pictorial logogram showing a walking man holding a stick, with a dog behind him  (a drawing by Kahl 1994: 923,[96] and the original fig. 3 below).

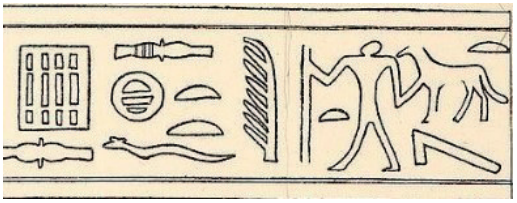


Fig. 3. The hunter hieroglyph on an early seal, after IAF no. 387

This Egyptian example (fig. 3) is close to the SS (*huìyì*) compound in Chinese. The standing man holding a stick, as well as the dog, are two hieroglyphs that can function independently as logograms in this period with the readings *sr* "dignitary" and *ṯsm*[97] "dog" (Kahl 1994: 923,

95 The character 獸 in the oracle-bone inscriptions acquires a different meaning in later Chinese texts. In the Classical Chinese literature, it extends to the object of hunting, namely wild animals 獸, especially quadrupeds (see Lǐ 2012: 1270). As a result, the verb "to hunt" is written in modern Chinese script by a different character 狩 *shòu* which is an SP character. In this character, the dog sign 犭 has the semiotic *function* of a classifier [DOG/ANIMAL]. It still marks the unbreakable conceptual connection between the dog and hunting.

96 Kahl reads here *nw* "hunter". The seal may already show a phonetic complement *nw*, itself an adze that may be relevant to the final meaning (U20/19 on the Gardiner list); see Sign TSL_1_6101, http://thotsignlist.org/mysign?id=6101. It could be compared to the Chinese hunting tool. The two *t* signs may relate to the reading of the adze as *nw.t* or *nw.ty*.

97 The phonological value of the dog hieroglyph in this early period is not certain.

Regulski 2010: 88, A21: d). However, when these two hieroglyphs are put together, they create a *new signified* "hunter" with a new phonetic value—*nw*. Due to the high iconicity level of the hieroglyphic script (unlike the two Chinese characters that are put one by the other, with no apparent visual connection), the man and the dog create a miniature realistic scene (fig.3).[98] The man *holds the dog on a leash*. The little image-hieroglyph keeps the relative size of the man and the dog. It looks as if he is walking the dog.[99] The compound hieroglyph presents the reader, on the *pictorial level*, with a visual specification of the *relations* between the hunter and the dog. "Hunter" in the earliest Egyptian script is not only "man"+"dog," but the hunter is *leading* the dog that accepts his authority.

A few hundred years later, the hunter-compound hieroglyph appears twice in an elaborate inscription carved in stone in the tomb of Metjen in Abusir (fig. 4a[100]). The hunter walks the dog on a leash. Yet, the hieroglyph functions now as a repeater classifier, as the full phonetic representation of the word is added before the compound classifier. The explanatory phonograms assert the correct phonological reading of the word *nw*, but only the classifier tells us about the dog.

Fig. 4a

Fig. 4b

Fig. 4a. The tomb of Metjen, a detail of the hieroglyph "hunter", from the inscription above the false door. Fig. 4b. A photograph of the sign in Fig. 4a, offering chapel of Metjen. https://upload.wikimedia.org/wikipedia/commons/0/07/Mastaba_-_tomb_of_Metjen_from_the_Old_Kingdom_04.jpg (accessed: 20.1.2025)

98 For this phenomenon in the hieroglyphic script, see Goldwasser 2009 and Goldwasser 1995. For earlier discussions of this phenomenon, see Fischer 1977a and Vernus 1987.

99 A careful beholder would observe that the man seems to hold one of the dog's legs.

100 This drawing was done by the Lepsius expedition in Egypt between1842–1845 CE. For other examples in the Old Kingdom, see Fischer 1977: 3–4 and n. 4.

Fig. 5a

Fig. 5b

Figs. 5a an 5b. The "overseer of the hunters". The complete scene offers additional information on the tomb owner's life (the hunter). It presents some possible patients of the hunt (drawing after Baines & Cao 2024: 110, Fig. 24, taken from Lepsius). In this early hand copy of the Lepsius expedition of the same hieroglyph, the dog walks without "pushing forward," his ears are upright, and his tail does not curl on his back as in the original. The Tomb of Metjen, a detail in color from the inscription of the left side of the false door. Offering chapel of Metjen in Berlin https://upload.wikimedia.org/wikipedia/commons/0/07/Mastaba_-_tomb_of_Metjen_from_the_Old_Kingdom_04.jpg (accessed: 20.1.2025)

The second example is located on the left side of the false door within the tomb (fig. 5a and 5b), occupying a more prominent position. It integrates three hieroglyphic elements—a hunter, a hunting tool, and a dog—into a dynamic composition. In this version, the man, wielding a large hunting implement, is depicted in a crouching stance that strikingly recalls the posture of the soldier hieroglyph 𓐍, rather than that of a dignitary. This positioning imparts a heightened sense of "alertness" to the combination of these three icons.

As in the former examples, the crouching hunter holds the dog on a leash; however, here, the leash is rendered with remarkable realism, coiled within his palm (fig. 5b). The hunting tool, resembling an oversized throw stick, replaces the walking staff seen in earlier instances. The dog incorporated into this composite sign is the prototypical canine representation used to denote "dog" in

hieroglyphic script for millennia.[101] Yet within this miniature "hieroglyphic scene," the dog exhibits a forward-thrusting motion, extending its neck in a gesture instantly recognizable to any dog owner. This movement is further accentuated by the positioning of the dog's ears, which are angled backward. Such a subtle variation intensifies the tension inherent in this hieroglyphic composition, imbuing it with a remarkable sense of dynamism.

Fig. 6. A facsimile image drawn by Jorke Grotenhuis from the original coffin (CT I,80,k, MC105, right side)[102]

Fig. 6 transports us to the Middle Kingdom, presenting an ink inscription on a wooden coffin. The hieroglyphic scriptolect[103] exhibited here is more cursive in style, closely resembling the ink script of the Chinese bamboo texts (see fig. 1 above).[104] In this linear example, the "hunter+dog" hieroglyph, which also functions as a repeater classifier, recalls the instances observed in fig. 3 and 4a–b. However, in this particular inscription (fig. 6), the man and the dog are arranged vertically, one above the other, and calibrated to the same scale. Unlike the former representations where the dog appears smaller, here it is depicted as equal in size to the man. The figure of the man, holding a walking stick, appears to "stand" atop the dog's back in a manner that defies naturalistic depiction. Rather than forming a pictorial scene, this variant adheres more rigorously to the fundamental principles of the writing system, wherein hieroglyphic images remain independent and do not engage in visual interaction. The meaning in this example (fig. 6) is created in a process somewhat similar to the Chinese SS character  presented above. The reader's mind makes the new semantic meaning by combining two semantic components: a dignitary with a stick and a dog.[105] It is important to note, that the Egyptian *nw* hunter was never an actual SS compound. Already in the earliest example, a phonetic element is added ( *nw*). The word in fig. 3 is already an SSP combination.In the later examples, the phonetic representation is strengthened by an additional phonogram—the *nw* vessel. It turned the hunter and his dog into a classifier.

101 The  represents the prestigious, "correct dog" of the Old Kingdom elite society (Goldwasser 2002: 91–110).

102 We are grateful to Jorke Grotenhuis for providing us with this example.

103 For this term, see Winand 2022.

104 For cursive hieroglyphs, see Konrad 2023: 58–61.

105 A full discussion of the diachronic development of the hunter hieroglyph will be presented in the future publication.

The "Walking Pot" 𓇍

Of special interest for comparing Egyptian character formation and Chinese character formation is the compound hieroglyph 𓇍 *inị* "bring, fetch". This *pictorial* combination creates a new, slightly surrealistic image, yet clear and attractive, of a 𓇍 "walking pot". It is built of the compounding of two independent logograms 𓎛 *nw* "pot"[106] and 𓂝 *iw* "to come". The compounded image 𓇍 read *inị*, provides pictorially meaningful information on the concept "bring" = "pot"+"come".[107] Until here, one could suggest that this is a case of an Egyptian *huìyì*. Yet, unlike the Chinese *huìyì*,[108] the alluring 𓇍 "walking pot", carries not only Semantic-Semantic information, but also abundant phonological information. The hieroglyph 𓎛 *nw* is a logogram that carries at once the semantic information "pot" and the *phonetic* information *nw*. As the Egyptian script system presents mostly consonants, when 𓎛 enters the compounded hieroglyph 𓇍 it provides not only an image of the patient but also brings along its *original phonetic meaning*, providing the consonant *n* for *inị*. As such 𓎛 in 𓇍 is a Sp,[109] as phonetic information is also encoded by it alongside the semantic meaning. The 𓂝 "walking legs" logogram may also contribute some phonological information, as its original reading is *iw*. So 𓇍 should be analysed as an SpSp compound and not a *huìyì*. Grammatically, the image presents the basic arguments of the verb—a human, an animated AGENT (walking human legs, schematic representation), and an inanimated prototypical PATIENT/UNDERGOER (*nw* pot, full representation). The walking legs simultaneously indicate the semantic property MOVEMENT. By the Late Period, nearly 3,000 years after 𓇍 earliest attestations, we observe an intriguing written variation of the word. In this instance, the hieroglyphic sign shifts toward a concrete and visually descriptive form 𓀀𓎛, with the agent fully represented and the 𓎛 pot explicitly depicted as the quintessential object being brought by the agent. This deliberate reversion to a non-systematic, idiosyncratic iconic representation underscores the script's enduring interplay of scriptural semiotic rules and pictorial fluidity. The "Return to the Icon" constitutes a significant—perhaps even regressive—development in the historical trajectory of the Egyptian writing system. In contrast, the Chinese script, which exhibited a more linear character from its inception (e.g., Baines & Cao 2024), never reverted to its earlier, more pictorial origins. Instead, it maintained a more systematic and ongoing evolution, resisting the seduction of the image.

106 Gardiner 1957: 531 (W34). This hieroglyph is mostly used as a phonogram, see TSL_1_6571, http://thotsignlist.org/mysign?id=6571, in: *Thot Sign List*, http://thotsignlist.org, edited by Université de Liège and Berlin-Brandenburgische Akademie der Wissenschaften.

107 For the definition of "pictorially meaningful," see Stauder 2020: 882.

108 𓇍 was defined as *huìyì* in Gǒng et al. 2009: 243.

109 Sp=Semantic-phonetic. The capital letter S signals the primary function in this case – Semantic. The secondary function is marked by the small letter p which marks the phonetic information still active in this case.

Credits

Digitized texts: Ancient Egyptian

Thesaurus Linguae Aegyptiae, Peter Dils, with contributions by Altägyptisches Wörterbuch, "Die Lehre des Ptahhotep" (Object ID PG6PVAQFHND67GCROZAIT3AA64), https://thesaurus-linguae-aegyptiae.de/object/PG6PVAQFHND67GCROZAIT3AA64, in: *Thesaurus Linguae Aegyptiae*, Corpus issue 19, Web app version 2.2.0, 11.5.2024, ed. by Tonio Sebastian Richter & Daniel A. Werning on behalf of the Berlin-Brandenburgische Akademie der Wissenschaften and Hans-Werner Fischer-Elfert & Peter Dils on behalf of the Sächsische Akademie der Wissenschaften zu Leipzig (accessed: 12.6.2024). Imported into *iClassifier* by Dmitry Nikolaev. Classifier marking and analysis by Yànrú Xú.

Digitized texts: Ancient Chinese

The Guōdiàn bamboo manuscripts, courtesy of *The Intelligent Retrieval Network Database of Chinese Characters* (East China Normal University, Shànghǎi). Digitized by Liú Zhìjī et al. Imported into *iClassifier* by Dmitry Nikolaev. Classifier marking by Yànrú Xú.

***iClassifier* digital tool**

Conceptualization – Orly Goldwasser; Computational realization, Research coordination – Haleli Harel; Programming – Dmitry Nikolaev; Financing – Orly Goldwasser.
iClassifier project reports. Edited by O. Goldwasser, H. Harel and D. Nikolaev. https://iclassifier.pw/reports (accessed: 7.12.24).

Authors' contributions

Yànrú Xú: Collection, analysis, and discussions of all Chinese characters; collection, analysis, and discussion of all Egyptian examples from *The Maxims of Ptahhotep*.
Orly Goldwasser: Classifier theory, additional examples from Egyptian texts, Appendix B.

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Abbreviations

CT De Buck, A. 1935–1961. *The Egyptian Coffin Texts*, vol. I–VIII. Chicago, University of Chicago Press.

DZA Digitized Slip Archive http://aaew.bbaw.de/tla/servlet/DzaBrowser (accessed: 01.04.2025).

FCD Faulkner, R. 1962. *A Concise Dictionary of Middle Egyptian*, reprinted 1988. Oxford, Griffith Institute.

Gǔyīn Xiǎojìng 古音小鏡 http://kaom.net/ny_word.php (accessed: 20.1.2025).

H Institute of Archaeology in Chinese Academy of Social Sciences [中國社會科學院考古研究所] (ed.) 1978–1982. Jiǎgǔwén Héjí 甲骨文合集 (*Collection of Oracle-Bone Inscriptions*). Běijīng 北京, Zhōnghuá Shūjú 中華書局. All signs of oracle-bone inscriptions in this article are cited from: Liú, Z., Hóng, Y., Zhāng, X.J. [劉釗 & 洪颺&張新俊] 2009. Xīn Jiǎgǔwén Biān 新甲骨文編 (A New Sign List of Oracle-Bone Inscriptions). Fúzhōu 福州, Fújiàn Rénmín Chūbǎnshè 福建人民出版社.

IAF Kaplony, P. 1963. *Die Inschriften der ägyptischen Frühzeit*, Band I, II, III, Ägyptologische Abhandlungen 8. Wiesbaden, Otto Harrassowitz.

IRNDCC The Intelligent Retrieval Network Database of Chinese Characters: https://wjwx.ecnu.edu.cn/ (accessed: 20.1.2025).

iClassifier Xú, Yànrú. Guōdiàn *iClassifier* reports. https://iclassifier.pw/reports/projectreport/guodianimported (accessed: 7.12.24).

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MFCCD Multi-function Chinese Character Database: https://humanum.arts.cuhk.edu.hk//Lexis/lexi-mf/ (accessed: 20.1.2025).

SWXZ Jì, X.S. [季旭昇] 2014. Shuōwén Xīnzhèng 說文新證 (*New Interpretation of Shuowen*). Táiběi 台北: Yìwén Yìnshūguǎn 藝文印書館.

TLA Thesaurus Linguae Aegyptiae: https://thesaurus-linguae-aegyptiae.de/home (accessed: 20.1.2025).

TSL Thot Sign List: https://thotsignlist.org/ (accessed: 20.1.2025).

Hieroglyphs-Extraordinary

Sign TSL_1_27_01
Token TSL_3_25988
MdC ≃ L7

A Variant of L7

Niv Allon

The Metropolitan Museum of Art

Function
Classifier/Repeater

Value
[Serqet]

Much has been written on the hieroglyph for Serqet (see Aufrère and Spieser 2021; Beau 2024). However, this specific hieroglyph has two objects looped to the divine image's elbows, resembling the sign for a cylinder seal. Since such a combination does not seem to be documented to date, its significance remains unresolved and requires further investigation.

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https://www.metmuseum.org/art/collection/search/544326

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Beaux, N. 2024. "Le signe composite L7 de la déesse Serket." In *Signs of Life: Ancient Egyptian Script, Language, and Writing. Studies in honour of Orly Goldwasser*, ed. by N. Allon, p. 21–26. Turnhout, Brepols. DOI: 10.1484/M.MRE-EB.5.137001.

Document: Coffin of Khnumnakht

Date: Middle Kingdom, Late 12 to mid-13 Dynasty (ca. 1850–1750 BCE)

Provenance: Sold by Khashaba to the Metropolitan Museum of Art, 1915. Probably from Meir

Current location: New York, The Metropolitan Museum of Art, Rogers Fund, 1915 (15.2.2a, b)

Object type: Coffin

Material: Painted wood

Hieroglyphic source

MdC: M17*F39&Aa1:M17*Aa1*M17:D21-O34:N35:N29*Z1-L7{{10,0,115}}**R12{{0,1130,96}}

Transliteration: *jm³ḫ.j ḥr snq(.t)*

Translation: Venerated before Serqet

Location: Foot end of the coffin, proper left column

Published in 4.2025

HIEROGLYPHS

Sign TSL_1_2446_00
Token TSL_3_26645
MdC ≃ E13

There is more than one way to draw a cat (E13)

Ari Jones Davidis

Columbia University / The Metropolitan Museum of Art

Function
Classifier/Repeater

Value
[Cat]

The most familiar version of the cat hieroglyph (Gardiner E13) depicts the animal with its tail tucked. However, there are several common variations with the tail pointing upwards behind its body, as in a cippus (E16881) in the collection of the University of Chicago's Institute for the Study of Ancient Cultures (), or with a tail stretching downward (see Lapp's Papyrus of Nu, pl. 6, line 60). Occasionally, these variants appear in the same text; for instance, there are two different versions across three (and a half) cats on plate 6 of the Papyrus of Nu alone, and a further one on plate 68 ( ; ). An even rarer variation is visible on the wooden funerary stela of Tabakenkhonsu (see figures 1 and 2), which portrays the cat with a long tail curled beneath its body and the end of the tail pointed upwards. Similar depictions can be found in some 18th Dynasty manuscripts of the Book of the Dead (Munro 1994: 47–49, lines 92–93; 65–67, line 763), but these have less curvature in their tails.

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Published in 4.2025

Document: Painted wooden panel of Tabakenkhonsu

Date: Third Intermediate Period, Dynasty 25 (Kushite), ca. 680–670 BCE

Provenance: From Thebes, Deir el-Bahari, Temple of Hatshepsut, Hathor Shrine, pit in hypostyle hall, Naville Excavations sponsored by the Egypt Exploration Fund, 1894–1895. Acquired by the EEF in the division of finds. Given by the EEF to the Museum for its contribution to the excavations, 1896.

Current location: New York, The Metropolitan Museum of Art, Gift of Egypt Exploration Fund, 1896 (96.4.4)

Object type: Painted wooden funerary stela

Material: Wood

Hieroglyphic source

MdC: G1&X1*W19*M17*E13*B1

Transliteration: *T³-mi(.t)*

Translation: Tamit (PN)

Location: Final line

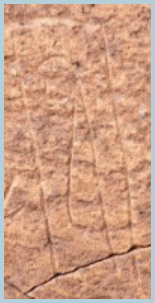
HIEROGLYPHS

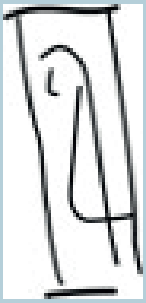
Sign TSL_1_7200
Token TSL_3_26650
MdC ≃ H6

Cryptographic Compositions of *s.t mꜣʿ.t*

Muhammad R. Ragab

Uppsala University—Sweden / The Ministry of Tourism and Antiquities—Egypt





Function
Compound logogram

Value
s.t mꜣʿ.t
"Place of Truth"

The Place of Truth *s.t mꜣʿ.t* was the name of a place in western Thebes associated with the work and living sites of the workmen's community of Deir el-Medina. These workmen held *s.t mꜣʿ.t* in great esteem, as reflected in its frequent inclusion in their official titles, such as *sḏm-ʿš m s.t mꜣʿ.t*, "the servant in the Place of Truth" or *sš m s.t mꜣʿ.t*, "the scribe in the Place of Truth". The term *s.t mꜣʿ.t* is attested in a variety of spellings, with one of the rarest found in Graffito 1463, located near the tomb of Thutmose IV in the Valley of the Kings. In this instance, the draughtsman Merysekhmet (iii) from the mid-20th Dynasty created a unique cryptographic composition of the name *s.t mꜣʿ.t*: a rectangle enclosing a *mꜣʿ.t* feather (H6). The rectangular structure is attested in papyrus Brooklyn 47.218.84 as a classifier for the word "place" (*s.t*) and likely symbolizes the outline or boundaries. The placement of the *mꜣʿ.t* feather within the rectangular structure for *s.t* formally resembles the hieroglyph of the goddess Hathor  (O10).

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Feder, F. with contributions by Altägyptisches Wörterbuch, Simon D. Schweitzer, Jonas Treptow, Daniel A. Werning, Token ID IBUBdQa5v4fmpUPFrjRB5AhxXs0 [https://thesaurus-linguae-aegyptiae.de/sentence/token/IBUBdQa5v4fmpUPFrjRB5AhxXs0], in: *Thesaurus Linguae Aegyptiae*, Corpus issue 19, Web app version 2.2.0, 11.5.2024, ed. by Tonio Sebastian Richter & Daniel A. Werning on behalf of the Berlin-Brandenburgische Akademie der Wissenschaften and Hans-Werner Fischer-Elfert & Peter Dils on behalf of the Sächsische Akademie der Wissenschaften zu Leipzig (accessed: 1.13.2025).

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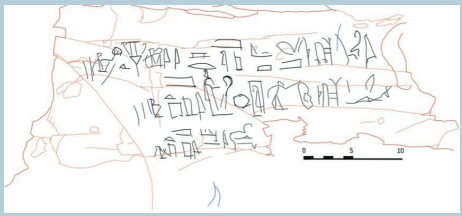
Published in 4.2025

Sign TSL_1_7200
Token TSL_3_26650
MdC ≃ H6



Document: Graffito 1463 in the Valley of the Kings

Date: New Kingdom, Ramesside, Dynasty 20, Ramesses IV, year 22–Ramesses VI, year 4 (ca. 1153–1147 BCE)

Provenance: Valley of the Kings

Current location: *In situ*

Object type: Graffito

Material: Limestone

Hieroglyphic source

MdC: (H8-Z1):I9-Y3-Aa28-D18-A26-O39\171\R90**H6 {{165,120,98}}-N5-C10C-Aa15\101**M17{{0,379,61}}**Q3{{215,543,61}}**X1{{637,379,61}}**O1{{460,713,61}}-A50-Aa11\R270-P8

Transliteration: *sꜣ=f sš-ḳd sḏm-ʿš (m) s.t mꜣʿ.t ḥḳꜣ-mꜣʿ.t-rʿ-m-jp.t mꜣʿ-ḫrw*

Translation: His son the draughtsman and servant (in) the Place of truth Hekamaatre-emope (Hekamare-enope in Davies 1999), justified

Location: Second line

HIEROGLYPHS

Sign TSL_1_1982
Token TSL_3_26647
MdC ≃ D18

An Alternative Writing of *sḏm*: the Use of the Human Ear (D18)

Muhammad R. Ragab

Uppsala University—Sweden / The Ministry of Tourism and Antiquities—Egypt

Function
Logogram

Value
sḏm

Graffito 1463, located near the tomb of Thutmose IV in the Valley of the Kings, presents a rare variation in the writing of the verb *sḏm* within the title *sḏm-ʿš*, meaning "the servant" or "the one who hears the call". In this instance, the draughtsman Merysekhmet (iii) from the mid-20th Dynasty employed the hieroglyph of a human ear (D18) instead of the traditional cow's ear (F21) to write *sḏm*. A similar phenomenon is also observed in Graffito 1157, created by the contemporaneous royal scribe Amennakht (v) in the Valley of the Queens. In this example, the human ear (D18) is followed by that of a cow (F21) to further clarify the intended meaning. Furthermore, the human ear hieroglyph (D18) is also attested as an alternative to the cow's ear (F21) in the writing of the word *jdn* (see Roberson 2020: 55).

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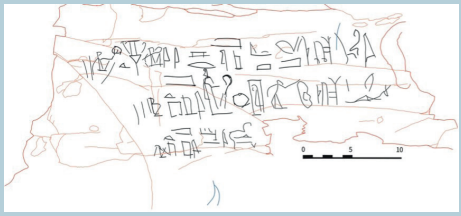

Document: Graffito 1463 in the Valley of the Kings

Date: New Kingdom, Ramesside, Dynasty 20, Ramesses IV, year 22–Ramesses VI, year 4 (ca. 1153–1147 BCE)

Provenance: Valley of the Kings

Current location: *In situ*

Object type: Graffito

Material: Limestone

Hieroglyphic source

MdC: (H8-Z1):I9-Y3-Aa28-D18-A26-O39\171\R90**H6 {{165,120,98}}-N5-C10C-Aa15\101**M17{{0,379,61}}** Q3{{215,543,61}}**X1{{637,379,61}}**O1{{460,713,61}}-A50-Aa11\R270-P8

Transliteration: *sꜣ=f sš-ḳd sḏm-ʿš (m) s.t mꜣʿ.t ḥḳꜣ-mꜣʿ.t-rʿ-m-jp.t mꜣʿ-ḫrw*

Translation: His son the draughtsman and servant (in) the Place of truth Hekamaatre-emope (Hekamare-enope in Davies 1999), justified

Location: Second line

HIEROGLYPHS

Sign TSL_1_5112_01
Token TSL_3_25960
MdC ≃ P71

A Detailed *mskt*-bark

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Function
Logogram / Classifier

Value
[*mskt*-bark]

The hieroglyph from the pyramid of Unas (W) shows an elaborate representation of a *mskt*-bark ("evening bark") with two falcon standards inside, a vertical element between these, and the *šmsw*-execution device, including the knife, behind. The same passage in the pyramid of Pepi II (N) shows an altogether different form resembling the *ḥnw*-bark:  ; the form in Neith (Nt) could be derived from that in N (with the horned/caprid head/trophy moved from the prow to inside the bark):  . The form as in W is found elsewhere in the Pyramid Texts both with the *mskt*-bark and with the *m'nḏt*-bark ("morning bark"), along with a number of other, less elaborate forms (Speelers 1934: 35–36). Double falcon standards can be seen in the *m³'t*-bark (the bark of the Sun; Speelers 1934: 35). A bark with a *šmsw*-execution device at its back is known from two Dynasty 3 ink inscription from Elephantine (ID 3365–3366) and recurrently on the (Dynasty 5?) Palermo stone, in all cases in the phrase *šmsw-ḥr* "Following of Horus". The barks in Dynasty 1–2 instances of the same phrase do not have a *šmsw*-device inside, contrary to what the shape of the hieroglyph p4 in the lists of Kahl and Regulski would suggest. In a *mskt*-bark, the *šmsw*-device (but not the double falcon standard) is seen again notably on Hatshepsut's Karnak Obelisk (Base, North, 20, = Urk. IV 366.7), a millennium later:  .

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Sign TSL_1_5112_01
Token TSL_3_25960
MdC ≃ P71

Document: Pyramid of king Unas

Date: Old Kingdom, end of Dynasty 5, reign of Unas (mid-24th century BCE)
Provenance: Saqqara
Current location: *In situ*
Object type: Wall in burial chamber
Material: Stone

Hieroglyphic source

MdC: s*m_-k_-t*t_-P71
Transliteration: *mskt*
Translation: mesketet-bark (night-bark)
Location: Burial Chamber, South Wall, Column 15 (B/S/15)
Remark: For this actual form, see Lapp, VG+ P201.