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

	vectoriality		interpretation			
	unpre- dictable	strictly linear	transla- tion	gloss	nothing	signs as iconemes
neo-hieroglyphs		X	Х			no
iconograms	Х		Х			yes
isolated symbolic elements	Х			X		no
decorative neo-hieroglyphs		X			Х	no

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).

Tab. 1. A taxonomy of Renaissance hieroglyphs⁴

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.

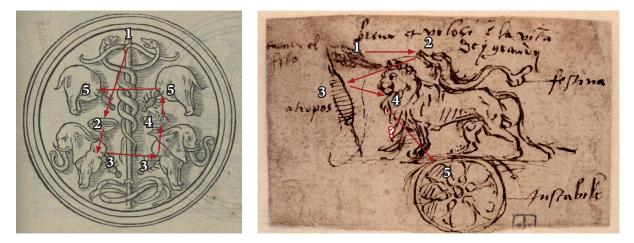


Fig. 2a. Colonna, Hypnerotomachia Poliphili, 1561, fol. 86 2b. Lombard, Fonds Arenberg, N 208

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

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-hiero-glyphic 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		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

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 <i>Book of Extasis</i>	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 $^{\rm 8}$

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 <i>Book of Extasis</i> (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, <i>Ecce homo</i>	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.

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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.

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 \backsim , 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 \land vs. \checkmark ("to move in", "to enter" vs. "to move out", "to leave"), and \backsim vs. \eqsim ("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. 21ν

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

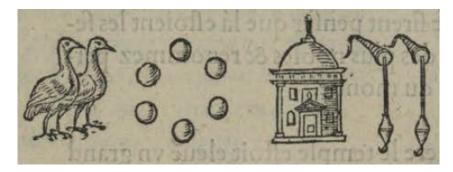


Fig. 18. Hypnerotomachia 1546, 85b



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

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*).

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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).

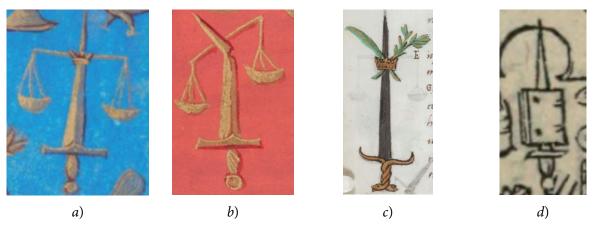


Fig. 26. Royal MS 12 C III, a) fol. 19v, b) 21v, c) glossary, d) Henri II

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 motio Princeps subditorum incolumitatem procurans (Emblem 144), while reserving the motio 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.

Writing in (Neo-)Hieroglyphs in the Renaissance



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
CONTRACTOR OF	Nerva, denarius, AD 97 (RIC 14)	clasping hands	Concordia exercitus ²⁸	Henri II's Joyous Entry Spada
A B B B B B B B B B B B B B B B B B B B	Nero, denarius, AD 65–66 (RIC 62)	temple	Vesta	Hypnerotomachia, 85
	Augustus, denarius, 30–29 BC (RIC 265)	trophies on a bat- tle ship's prow	official titulary	Hypnerotomachia, 86

Coins	Ref.	Motif	Legend	Neo-hieroglyph
DIVVE . IVIIVS	Octavianus Caesar, denarius, 19–18 BC (RIC 37)	a comet	Divus Julius	Hypnerotomachia, 86
A REAL PROPERTY OF THE PROPERT	Vespasian, sestertius, AD 74 (RIC 757)	two cornucopias with a caduceus	official titulary	Lombard N 163
A CONTRACTOR	Augustus, denarius, 19 BC (RIC 89)	winged victory	official titulary	Lombard N 207
PROPER	Pompeius, denarius, 48 BC (Crawford 446/1)	battle ship's prow	official titulary	Herwarth von Hohenburg, <i>Thesaurus</i> <i>hieroglyphicorum</i>
C. C	Titus, denarius, AD 80 (BMC 225,72; RIC 112)	anchor with dolphin	official titulary	Hypnerotomachia, 22
C. MICH	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
Roma	60 asses (Crawford 44/2)	eagle with spread wings	Roma	Alberici (Royal MS 12 C III—fol 19v)
Poor Port	Vespasianus, denarius, AD 74 (RIC II, 686 var.)	winged caduceus	official titulary	<i>Hypnerotomachia</i> , 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"		
Н	ear	"forthcoming task"		
Ch	weeping eye	"misadventure,""sorrow"		
	eye		Pol, Al, H_II, VdN	"god, divine"
Pl	eye	"foresight"	Sp	"wisdom"
Н	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"		
Н	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"		
Н	tongue & eye	"capacity of speaking"		
Н	tongue & hand	"capacity of speaking"		
Н	two men shaking hands	"concord"	H_II Sp	"concord" "company"
	two angels holding something together		Pol	"to share something"
Ch	woman playing tambourine	"joy"		
Н	ant	"sagacity"		
			Pol	"something small"
Н	bee	"people obedient to the king"		
			Pol Sp	"slowly" "eloquence"
Ch/AM	bee	"king"		
Ch	bull	"earth"		
Η	bull	"tempered virility"	MA Lo	"modesty of the war- rior" "work (force)"
			Lo	"man who cannot lie"
Н	crocodile	"rapacious," "furious"		
Pl	crocodile	"impurity"		
Di	crocodile	"malice"		
Cl	crocodile	"impudent behaviour"	Lo	"he who behaves badly"
Н	crocodile	"quick death"		
Ch	deer	"year"		
Н	deer	"what lasts durably"	H_II	"durably"
			VdN	"to see," "to hear"
Н	dog	"hierogrammateus"		
Н	dog	"prophet"		
			Sp	"reputation"
Н	dog	"embalmer"		
Н	dog	"spleen"		

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

	Classical sources	Meaning	Neo- hieroglyphic	Meaning
Н	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"
Н	pelican	"insane,""imprudent"		
Н	phoenix	"everlasting soul"		
Н	phoenix	"inundation"		
Н	phoenix	"one coming back late from abroad"		
Н	phoenix	"beginning of a new cycle"		
			Al	"century"
Н	pig	"corrupt man"	Lo	"disrespectful"
Pl	pig	"impurity"		
Н	raven (night)	"death"		
Ch	scarab	"birth"		
Ch	scarab	"he who begets himself"		
Ch	scarab	"male"		
Cl	scarab	"sun"		
Н	scorpion	"slow death"		
Н	snake	"mouth"		
			Pol, Al, H_II, VdN	"prudence"
			Pol	"hatred"
Pl	snake (aspic)	"immortality"	Sp	"eternity"
Pl	snake (aspic)	"quick(ness)"		
Н	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"		
Н	stork	"the one who loves his father"		

	Classical sources	Meaning	Neo- hieroglyphic	Meaning
Н	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"		
Н	wing	"air"		
			Pol	"speed," "haste"
Н	wasp (flying)	"noxious man," "murderer"		
Н	bunch of papyrus	"antiquity of birth"	MA	"of ancient nobility"
H/Ch	palm leave	"year (month—H)"		
			Pol, Al, VdN	"winner,""victory"
Н	raining sky	"education"	MA	"erudite"
Н	solar and moon	"eternity"		
Н	star	"universal god"	MA	"divine"
	glossed as a comet		Pol	"Julius (Caesar)"
	six stars		Sp	"rebus for Carraccio"
Н	sun	"god"		
Н	sun	"dawn,""night"		
Н	sun	"time"		
Н	sun	"soul of a man"		
Н	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"
Н	book (sealed)	"past,""ancestry"		
			H_II	"warning," "advice"
Ch	bow	"acute strength"		
Pl	sceptre	"authority," "rule"		
Н	1095	"incapacity of speaking"		
Н	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 faith³⁴—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 e q "to enter" and e 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"	<i>Hypn.</i> , 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	Нурп.

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, 2, the hieroglyph of the lion, can mean "lion" (m?i), 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"	Нурп.

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"	<i>Hypn</i> ., 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"	Нурп.
cup full of water	"concord"	Нурп.
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"	Нурп.
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.

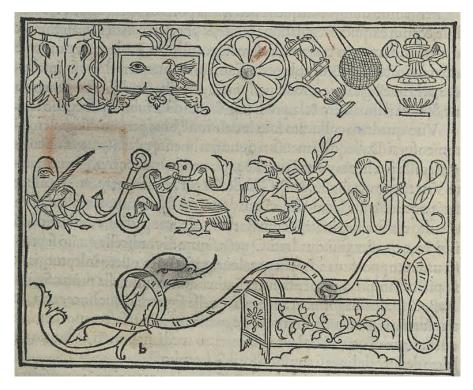


Fig. 38. Hypnerotomachia, first inscription (fol. 11v)

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).

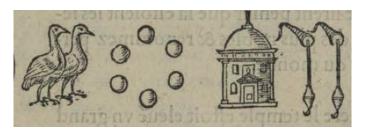


Fig. 39. Last part of *Hypnerotomachia*, third inscription. Aegyptii communi aere suo exerere "The Egyptians built the temple with their own money"⁴⁸

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

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 hw.t-hr "the mansion of Horus", which is spelled \mathbb{N} , 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 $(\frown, \square, \square, \square, \square)$. This is however the generic classifier for expressing motion (e.g. iwi "to come", im(i) "to go"). When the focus is set on the aggressive aspect of such an activity, the classifier of the arm holding a stick (\sqsubseteq) or the crossed sticks (x), or a combination of the two ($\stackrel{\checkmark}{\rightharpoonup}$) were preferred. The association of the crossed sticks with the moving legs is found with other modalities of motion, like sw, "to pass by", or with verbs expressing the repelling of someone like tfi. Occasionally, two hieroglyphic signs can form a monogram by positioning one onto the other as in $\stackrel{\boxtimes}{\cong} hr.t-hrw$ "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*, \swarrow *sm*³, # *sphr*, \Re *w*³*d*, # *šm*⁴, \Re *hw.t*, # *h*, and # *hsf*.



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: $\therefore wy$ "two arms", $\prod ntr.w$ "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 b = b) was reconfigured: with the principle of acrophony at work, the first sign is the radiant sun (h > h) followed by a bunch of flowers (nhb > 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

Writing in (Neo-)Hieroglyphs in the Renaissance



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

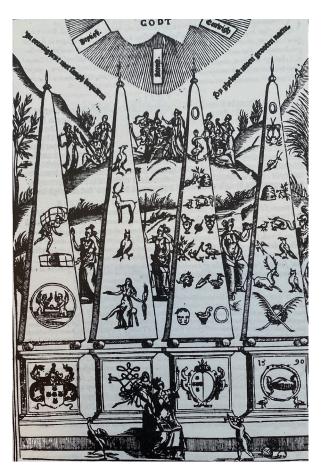


Fig. 50. Van der Noot, Cort Begryp der XII Boeken Olympiados

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).

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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

(Ω 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.

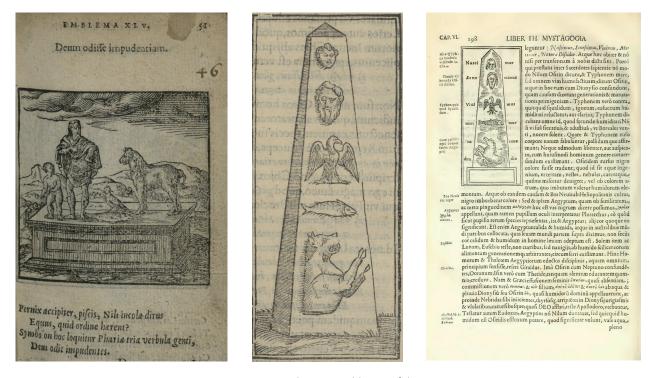


Fig. 52. a) Hadrianus, Emblemata, fol. 53;
b) Valeriano, Hieroglyphica, fol. 311;
c) Kircher, Obeliscus Pamphilius, p. 198

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