

An Egypto-Grammatology: Why and How¹

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ABSTRACT. Grammatology as a field of study in Egyptology, though having by now quite old roots, remains difficult to define. It is commonly confused with palaeography. The latter, however, is limited to the formal aspects of a hieroglyph and its variations. Setting aside the theories developed by Ignace Gelb and Jacques Derrida, Egypto-grammatology addresses all cultural aspects of the writing system and its components. The present article summarises the main difficulties the grammatological process should address and gives some examples of what one can expect from it. Relying first on philological, lexicographical and palaeographical analyses in a diachronic perspective, the aim of Egypto-grammatology is to recover what was the cultural meaning of a hieroglyph for the ancient Egyptians. To reach this goal, it uses all possible information given by iconography and archaeological remains and, whenever possible, the theological signification embedded in the hieroglyphic image. This approach makes it possible to identify correctly what a hieroglyph represents and thence to give it its proper place in a taxonomic system. Ultimately, Egypto-grammatology brings into the validity of some principles and limitations imposed by the Unicode Standard for the implementation of Egyptian hieroglyphs.

KEYWORDS: Hieroglyphs, grammatology, taxonomy, Unicode, typography

1. Grammatology

1.1. Grammatology. Preliminary remarks

As a discipline, grammatology is a relative newcomer in Egyptology, with important forerunners, however, in Pierre Lacau and Henry G. Fischer.² Its practice is in its infancy and generally flawed, as we will see, by an excessive influence of printers' catalogues of hieroglyphic typefaces, compounded by the scarcity of available published monumental, epigraphic sources from which

1 I warmly thank Andréas Stauder and an anonymous reviewer for having read through the article and improved the English.

2 Lacau 1954; among Fischer's abundant publications, one may mention Fischer 1976 and Fischer 1996.

genuine hieroglyphic data could be harvested. Fortunately this situation is evolving quickly and in a positive direction with an increasing amount of monuments published in good-resolution photographs or reliable facsimiles. Palaeographies of monuments from different periods are also being published. However, grammatology is often thought to be more or less akin to palaeography. The latter discipline is, to be sure, a prerequisite for grammatological studies as it provides the basic material for its practice. But palaeography is mainly limited to the formal aspects of signs and their variations, as these can help dating a text or reveal specific habits of a sculptor or a painter. Philological information is usually included in this type of study. This tradition of study is inherited from older palaeographical practices as they applied to ancient or modern handwriting, whether alphabetical or syllabic. But when faced with a mixed, logo-phonetic, and highly pictorial writing system such as Egyptian hieroglyphs, such an approach is extremely limiting. Grammatology, by contrast, aims at a much broader spectrum of what a sign can tell us. Once analysed in context and then singled out, the iconic sign with all known variations, the details it shows in carefully carved examples, possibly even its colours, opens, in most cases, to what is not directly visible: the cultural implications of the sign. To reach these goals different tools must be made to work together, as we will see.

The very term “grammatology” could be seen as ambiguous or misleading since it could be applied to very different objects. In contemporary European languages the term, to the best of my knowledge, first appeared in 1874 in Émile Littré’s *Dictionnaire de la langue française*.³ The definition given, “traité des lettres, de l’alphabet, de la syllabation, de la lecture et de l’écriture” strictly limits grammatological practice to alphabetic writing systems, in type or handwritten. I have been unable to trace the term in English or German dictionaries from before the twentieth century. However, a forerunner, “grammatography,” was used already in 1861 in the English title of a book on writing translated from a German original which does not use it, as Ignace Gelb reminds us.⁴ In his *Study of Writing* (1963; first published in 1952), Gelb defined what he thought grammatology should be as a scientific discipline: “the aim of this study is to lay a foundation for a new science of writing which might be called grammatology... The new science attempts to establish general principles governing the use and evolution of writing on a comparative-typological basis.”⁵ So far so good. However, the way Gelb developed and illustrated these rather general statements has been strongly criticised. William Edgerton⁶ and Siegfried Schott⁷ expressed their deep disagreement about one basic principle that he proposed, which conflicts with what is known of Egyptian

3 Littré 1874: 1914.

4 Gelb 1963: 23 and n. 46.

5 Gelb 1963: v.

6 Edgerton 1952.

7 Schott 1953.

hieroglyphic writing: “in reaching its ultimate development writing, whatever its forerunner may be, must pass through the stages of logography, syllabography, and alphabetography in this, and no other, order.”⁸ As both these Egyptologists stressed, Egyptian writing is purely consonantal and, as proved by solid facts, not syllabic. Thus, Gelb’s whole treatment of Egyptian writing cannot be accepted, the more so since the author poses as an unbreakable rule (see the quote above) a linear evolution of all scripts with an ultimate goal: the alphabet. Hieroglyphic writing over the more than three millennia of its existence never moved toward this goal, even while different cultures close to the Nile valley created and developed alphabetic systems.⁹

Unfortunately for research in Egyptology, the concept of “grammatology” was popularised with considerable success by the French philosopher Jacques Derrida.¹⁰ His knowledge of ancient Egyptian writing, however, was close to none and seems to have derived only from a short and rather simplistic contribution by Jean Sainte-Fare Garnot.¹¹ Moreover he was obviously influenced by the Greek vision of Ancient Egypt, as handed down by philosophers such as Plato. After writing that “all graphemes are of a testamentary essence” Derrida qualifies Thot in a lengthy note as “the Egyptian god of writing, evoked in *Phædrus*, inventor of the technical ruse”, that is, hieroglyphs.¹² Moreover, relying on the work of Jacques Vandier on ancient Egyptian religion,¹³ he rather daringly interprets a well-known Egyptian myth: “Let us recall that in a sequence of Egyptian mythology, Seth, helper of Thot (god of writing here considered as a brother of Osiris), kills Osiris by trickery. Writing, auxiliary and supplementing, kills the father and light in a same gesture.”¹⁴ Plainly, real hieroglyphic writing cannot be viewed through these lenses. Moreover, Derrida was also unconsciously influenced by what was written about hieroglyphs before their decipherment by Jean-François Champollion, since he devotes an important part of his reflections to such authors as Jean-Jacques Rousseau or Bishop William Warburton.¹⁵ Even if his basic philosophical tool, “deconstruction,” could be regarded interesting since it tries to highlight what is implicitly embedded in a sign to show all that is concealed behind its immediate appearance, more generally his conception of “grammatology” would only lead to mere illusions and dangerously hamper any serious study of

8 Gelb 1963: 201.

9 Harris 2014: 1–4 examines the ideas of Ignace Gelb and Jacques Derrida critically. He develops his own conceptions of grammatology in his book taking contextualisation, constraints of communication, and macrosocial parameters into account. Another critical analysis of Derrida’s ideas and the difficulty of applying them to hieroglyphs is developed by Galgano 2003.

10 Derrida 2016 (first published in 1976).

11 Derrida 2016: 395 n. 45. See Garnot 1963.

12 Derrida 2016: 74 (below) and 386 n. 31.

13 Vandier 1949: 46.

14 Derrida 2016: 401 n. 4.

15 For Rousseau, see Derrida 2016 in general; for Warburton, see Derrida 1977.

Egyptian writing. This caveat also applies to other non-European writing systems, for instance that of Chinese.¹⁶

Since “grammatology” as defined by both Gelb and Derrida is misleading, Renaud de Spens has recently proposed to abandon this term and to replace it with “glyphology.”¹⁷ One may hesitate to give up well-known terminology that is used in other fields.¹⁸ In China, grammatical studies have a very long history.¹⁹ One may even say that this scientific discipline was born in China almost two millennia ago out of the necessity to compile catalogues of all graphs known from a given period in order to provide writers with a reliable compendium.²⁰ The method and analyses in the standard work of Qiu Xigui on Chinese grammar, extremely inspiring as they are, cannot be applied to the Egyptian grammar even though the author ventured to offer some comparisons with Egyptian hieroglyphs.²¹ In Egyptology, to the best of my knowledge, “grammatology” was first used by Aleida and Jan Assmann, but in an article devoted to the quest of the meaning of hieroglyphs before their decipherment by Jean-François Champollion, a quest considered by the authors to have been the origin of grammar applied to ancient oriental scripts.²² A couple of years later, aware of the shortcomings of Gelb’s theory, I stressed the necessity of a new definition of “grammatology” based upon a palaeographical corpus of hieroglyphs.²³ To sum up, if it is preferable to retain a well-established term in different philological and palaeographical disciplines, it seems convenient to use “Egypto-grammar”, to avoid any confusion or ambiguity.

1.2. Grammar and Unicode

Any grammatical study requires access to an extensive corpus of hieroglyphs, ideally collected from photographs or facsimiles, and registering all signs known from publications, whether on paper or digital. Though two centuries old, Egyptology has not compiled such a corpus. With the growing interest in the study of hieroglyphic writing, because of this lacuna and given the considerable time probably needed to constitute such a corpus, a choice was made to rely on existing printers’ catalogues of characters, lead or digital. In recent years the Unicode Consortium undertook to build up a repertoire of all known characters registered in all printers’ catalogues, completed with various unpublished sources.²⁴ This repertoire contains a little less than 8000 characters and

16 Han-liang 1988.

17 de Spens 2022: 12–13 with n. 45.

18 For instance Rizza 2014: 167, who uses the term without proposing a definition.

19 Qiu Xigui 2000: xvii, where the original Chinese title of the work *Wenzixue gaiyao* is translated as “The Essentials of Grammar”.

20 On these compendia, see Qiu Xigui 2000: 48–50.

21 Qiu Xigui 2000: 8–9 for instance.

22 Assmann and Assmann 2002.

23 Meeks 2004: V and XVIII.

24 Suignard 2020, with the related database.

is intended to pave the way for a definitive encoding of all of them in order to set an international norm, as now exists for Latin or Chinese characters. The resulting repertoire is, of course, extremely useful and relieves Egyptologists from this admittedly tedious task. The whole project is supported by a circle of expert Egyptologists advising the leading members of the Consortium in charge of the implementation of Egyptian hieroglyphs.

As it is, the Unicode project is intended to give all necessary tools for those who wish to develop and design hieroglyphic fonts, no matter what computer system is used. From a philological and grammatological point of view, some rules or principles decreed by Unicode raise thorny questions. First of all, according to Unicode a character, no matter what script or period it was in use, exists only if it is documented in print. However, as Carl-Martin Bunz notes:

[...] the attempt to draw up an abstract encoding even for one single language dependent writing system is useless, because in the course of its long history no standardization has ever been made. What has come down to us from the extensive text production of the ancient Near East are exclusively manuscripts in the very sense of hand-writings showing up features of date, writing school, office, but also the particular features of the scribe's personal manner of handling pencil. Deriving standard shapes from more than a sixscore of ductus of different scriptoria [...] would mean to introduce something intrinsically alien to cuneiform writing.²⁵

This is of course true of carved or painted hieroglyphs. Considering this statement of Bunz, Alfredo Rizza asks a pertinent question: “What does the process of deriving standard shapes have to do with the collection of a character repertoire if the character is an abstraction from the specific shape variants?”²⁶

These quotes suggest some further remarks. First, a hieroglyph exists because it exists on monuments. Giving a kind of ontological pre-eminence to Egyptologists' hieroglyphs over the original Egyptian hieroglyphs is unscientific. In addition, a significant number of hieroglyphs from older periods (from the Archaic period to the Middle Kingdom) are poorly represented in fonts, even though essential knowledge for a better understanding of the writing system as a whole could be derived from these. Second, the strict distinction made by Unicode between “character”, as an abstraction of shapes, and “glyphs” as the actual shapes in a text, is hardly pertinent when original examples of Egyptian hieroglyphs are considered.²⁷ Hieroglyphs represent beings and objects, not geometric forms like Latin letters for instance, or shapes inherited from ancient calligraphic

25 Bunz 2000: 24.

26 Rizza 2012: 231.

27 This also true of less sophisticated writing systems: “While glyphs are needed in order to illustrate how a character is typically represented in writing, they are sometimes not enough to specify what the character really means” (Haugen 2013: 105).

traditions, like Arabic or Chinese signs. As Stephen Houston and Andréas Stauder write in an essay comparing hieroglyphic writing in the Maya and the Egyptian traditions:

Unlike writing systems based on the discrete combination of lines or strokes (e.g., cuneiform scripts and Chinese after their initial pictorial stages), hieroglyphs are not reducible to substitution classes. They build on shapes; they have outlines, an inside and an outside, even an implied or real three-dimensionality. They possess visual referents beyond the signary itself, steeping themselves in a broader graphic inventory of imagery. [...] Although helpful in some ways, fonts do another disservice by muting scribal wit and ingenuity, and by discounting agentive vitality and the artful use of space, even the specificity of signs—the details of this text, in that place and time, near those images.²⁸

Indeed, what could be an abstract “character” of an elephant and its representations as “glyphs” over the three millennia during which the hieroglyphic writing was in use? The abstract image of the animal varied according with its accessibility, or otherwise, in the natural environment.²⁹ This is not a typographical problem but an Egyptological one, more precisely a palaeographical and a grammatological one. To quote Alfredo Rizza, “the difference between the grapheme and the character is that the grapheme is a scientific problem, the character is not.”³⁰ In other words, since Unicode is only concerned with typography, its treatment of Egyptian hieroglyphs cannot be scientific, the more so since the advice of expert Egyptologists could, perforce, comment only on typographical aspects, even when it comes to building up a taxonomy, as we will see.

The already complex issue is compounded by the lack of a corpus of hieroglyphs attested on monuments and in publications (as pointed out above), from which examples published only in hand copies and hieroglyphic type must be excluded. This deficiency has led researchers to take typographic signs into account as if they were like actual hieroglyphs, which they are not. The numerous (morphologically and semantically significant) variants of a single sign that must be used in grammatological study are said by Unicode to “pollute the repertoire”,³¹ while expert Egyptologists think that such a proliferation “can be quite confusing, even for seasoned encoders.”³² The question is still about typographical techniques and encoding, not Egyptology strictly speaking. The statements just quoted could seem puzzling, but they have a technical rationale that is hardly known outside

28 Houston & Stauder 2020: 12.

29 See my remarks in Meeks 2004: XVI–XVII. See also Grotenhuis, Nerderhof, Polis *et al.* 2021: 1 on the figurative dimension of hieroglyphs and the difficulty to characterise an abstract entity.

30 Rizza 2012: 238.

31 Anderson 2020.

32 Grotenhuis, Nerderhof, Polis *et al.* 2021: 3.

the Unicode circle, professional printers, and digital font designers, and this is clearly explained by a group of Egyptologists participating in the hieroglyphic project of Unicode:

One should also bear in mind the difficulties of implementing the control characters in OpenType, which is at present the most widely promoted font technology. An OpenType font can only contain up to 65,535 characters. Because dynamic scaling is not possible, each sign has to be represented several times in different scalings. To render left-to-right as well as right-to-left text, a mirrored copy is needed of each scaling of each sign. Having, say, seven scalings for 5,000 signs would therefore already surpass the limits of OpenType technology. In reality, the situation is even worse, as the process of scaling and positioning requires internal code points that need to come out of the above-mentioned 65,535 characters. In addition, we wish to introduce control characters for rotation and shading (hatching) which will require further characters. Consequently, prospects of creating a signlist of considerably more than 3,000 (graphical variants of) signs may at first delight some users who hope to use Unicode for palaeographic purposes, but later disappoint them if it turns out no font can be implemented that includes that many signs.³³

This means that professional Egyptologists, not only grammatologists but all who wish to publish hieroglyphic texts of some length, especially from earlier or later periods, cannot use Unicode fonts at least in the present state of the technology. The technology will probably evolve in the future, but one wonders why the Unihan, the united Chinese Han set of many tens of thousands characters registered by Unicode, has not inspired those who are implementing Egyptian hieroglyphs.

Notwithstanding these technological constraints, some Egyptologists have already created fonts and typesetting software that allows dynamic scaling of signs and their arrangement in quadrats: the JSesh software by Serge Rosmorduc,³⁴ iGlyph (Mac), and VisualGlyph (PC) by Günther Lapp and Barbara Lüscher (Basel University), for instance.³⁵ Obviously typography and fonts on the one hand, and palaeography and grammatology supported by a philological analysis on the other hand, could be closely linked, meeting the needs for publications using font(s) based on grammatological sources. Each typeface would be first drawn as a facsimile and then modified as little as possible, just to respect the requisites of a universally usable font, with the closest possible resemblance to real Egyptian hieroglyphs. This is what I have attempted with the hieroglyphs used in the present article.³⁶

33 Grotenhuis, Nederhof, Polis *et al.* 2021: 12.

34 Rosmorduc, JSesh.

35 See links in Bibliography.

36 For the typesetting I use Illustrator™ and Fontographer™ to design my hieroglyphs.

1.3. Grammatology. A challenge for the future

It is only fair to say that Unicode becomes progressively more flexible over some of its rules and recognises, implicitly, the specificities of Egyptian hieroglyphic writing, probably under the influence of the expert Egyptologists involved. But as typography remains the basis on which all the architecture of Unicode rests, it seems difficult for a grammatological study to take advantage of the considerable work done by the whole team involved in the project.

In recent years a good deal of projects have been launched in order to collect hieroglyphs from actual monuments and classify them, but each project has different goals. After a period of reflexion, discussions and maturation, the [Thot Sign List](#) database, supported by the universities of Liège and the Academies of Berlin and Leipzig, was released in 2019. Though its structure certainly permits a progressive incorporation of all known hieroglyphs, the chosen orientation is mainly typographic since the targeted users, at least for the moment, are text editors, encoders, software developers, font specialists etc., as well as students who can use it as a learning tool since the database lists also the different values/readings of hieroglyphs.³⁷ Fortunately enough, for each registered hieroglyph (under a typographic heading sign) access is given to their corresponding examples taken from monuments, usually small photographs. This area of the database, however, exhibits some inconsistencies (§3 below). Another important tool was recently presented: the platform *iClassifier*, which will provide a commented and minutely analysed catalogue of the classifiers (or determinatives) used in Egyptian and, in the future, also compare these to classifiers in other ancient Near Eastern writing systems. The authors expect to highlight a “phonetic classification versus semantic classification in the Egyptian script.”³⁸ As this programme will, as far as possible, also add a source image (a photograph) taken from monuments for each sign that is analysed, it will contribute significantly to the constitution of a global corpus. The project [Hieroteka 3D](#), directed by Marc Gabolde (University of Montpellier, Centre franco-égyptien d'étude des temples de Karnak) will use photogrammetry and orthophotography to generate 3D reproductions of the architectural blocs of Amenhotep I scattered within the Karnak precinct. Single hieroglyphs will be extracted from these digital models in order to generate a palaeographical database. The same method, once tested, could certainly be applied to almost all reliefs at Karnak and provide a diachronic palaeography of this monument.

Where preserved, coloured hieroglyphs give essential information for the grammatologist. Two projects are specifically devoted to this under-explored field: the [Painted Hieroglyphs Gallery](#), which is one of the programmes of the Epigraphic Survey of the Institute for the Study of Ancient Cultures (formerly the Oriental Institute) of the University of Chicago, and the [Polychrome Hieroglyph](#)

37 Hafemann 2018; Polis, Desert, Dils *et al.* 2021.

38 Harel, Goldwasser, Nikolaev 2023: 139.

Research Project of the Université libre de Bruxelles.³⁹ Though the catalogues they provide are so far extremely modest, consulting them proves instructive for identifying what a hieroglyph represents.

What one would perhaps dream of is to see all these projects cooperate in a kind of network. This is probably envisioned by some of them. The amount of data already collected from photographic sources could build a hieroglyphic corpus of considerable scope and give a decisive impulse to grammatological studies.

2. Egypto-grammatology and the taxonomy-typography challenge

2.1. Taxonomy: a glance backward

This brings us to defining what are the crucial needs for any grammatological study: first, a clear identification of every single hieroglyph based not only on its outward appearance but on all that can be drawn from its cultural and possibly theological significance, etc.; second, a system of classification, that is, a taxonomy based upon a properly argued analysis; third, registration of all variations of a single sign, because each variation provides a useful piece of information, be it simply for the period during which it was in use. There is a tendency to believe that the identification of what a hieroglyph represents poses no serious problems, except for a small proportion of signs. In many cases this is an illusion, even for signs depicting human activities or attitudes. The rather optimistic perception one can have about this question is largely influenced by the way what one calls “sign lists” have evolved up to now and the information they convey.

Hieroglyphs used during three millennia are extremely numerous, and their exact number will probably never be known. There is no logical limit to their number. Even if Egyptian hieroglyphic writing is no longer in use, every year publications or republications of monuments reveal new signs or unusual forms of signs already known. To find a sign in a list, there needs to be a clear method of classification based upon easily understood principles and accepted by all Egyptologists. Soon after their decipherment, Jean-François Champollion, in his *Grammaire de l'égyptien*, was faced with the necessity of classifying them into different categories, designated by capital Latin letters (A to N).⁴⁰ This list was significantly extended and improved in his *Dictionnaire égyptien* published a few years later.⁴¹ The number of signs he listed was still modest, while what many of them really represent not been identified precisely.

On September 19, 1874, during the International Congress of Orientalists held in London, a group of eight Egyptologists met at the residence of Samuel Birch, then Keeper of the department

39 Note that Champollion 1836: 7–11 already saw the importance of the colours. The work of de Spens 2022 represents the first, and successful, real attempt to study polychrome hieroglyphs in detail for grammatological analysis.

40 Champollion 1836: 535–548.

41 Champollion 1841–1842: 465–486. The catalogue is divided into chapters, but the different categories are no more identified by a letter.

of Oriental Antiquities of the British Museum. They examined three proposals of Richard Lepsius that addressed what were considered the most urgent questions to be settled. The first concerned the conventional transliteration system into modern characters, the third creating a critical edition of the Book of the Dead that would be as complete as possible. The second was defined as follows:

it is eminently desirable to possess a recognized complete list of the hieroglyphical signs, arranged according to classes. Not only should these classes themselves be fixed and determinate, but the individual signs should be assigned to their respective classes, not arbitrarily, but according to definite rule. For the purpose of such arrangement the objects represented by hieroglyphs rather than the sounds indicated must be mainly kept in view. [...] It is confidently expected that the directors of museums in particular will note whatever new and admissible signs may be found in their respective collections.⁴²

Even today one can adhere to this proposal without hesitation, and all the more so since it had apparently among its goals to collect hieroglyphs from monuments kept in museums. The year after the proposal was adopted, Richard Lepsius published a sign-list based on the collection and classification made by Ludwig Stern.⁴³ If the sign-list was so readily printed, it is simply because it presented not hieroglyphs painstakingly collected in museums but the font of typographic types created by Ferdinand Theinhardt that had been in use since 1848. The list contained a little more than 1360 characters distributed over twenty-five categories identified by a capital letter (A to Z). This system survives until now, with slight modifications, and was adopted not only by Alan H. Gardiner in his *Sign List* but also by Unicode for its repertoire. One should note that a curious feature was preserved all along, even by Unicode: the absence of a category “J”.⁴⁴ This choice was apparently imposed by the fact that capital letters “I” and “J” were easily confused in nineteenth-century handwriting. Preserving this peculiarity for ever would, in my opinion, be a mistake. We need this supplementary category in order to reorganise our taxonomy.⁴⁵

With an awareness of these problems, and to quote the terms of the resolution taken in London, “the individual signs should be assigned to their respective classes, not arbitrarily, but according to definite rule.” Experience shows that this was hardly done and that its concrete realisation had to overcome many obstacles. These are considerably more numerous than is usually thought. Only a grammatological analysis could ultimately surmount them because only such an analysis can help in identifying difficulties that are not apparent at first glance. It is impossible to present in a

42 Douglas 1876: 441–442. Soon after the meeting Lepsius published the resolutions adopted in London in the German journal of Egyptology: Lepsius 1875a: 1–5, see p. 2–3 for the sign-list.

43 Lepsius 1875b.

44 Lepsius 1875b: 2; Gardiner 1957: 545; Suignard 2021: 3.

45 My proposal in Meeks 2004: XIX–XXII (this now needs some improvements).

single article all the traps the grammatologist has to avoid. In the following I outline only the most important difficulties.

2.2. Taxonomy: identification

As entries on hieroglyphs in different sign lists usually do not provide references to monumental sources where they are attested, their identification rests mostly on what is said in the scholarly literature and frequently reproduced without further re-evaluation. Identifying what a single hieroglyph represents is a complex task as it involves many different approaches. The collection of as many examples as possible of the sign from all historical periods and the development of a diachronic palaeography is frequently not enough, because in many cases this process provides no information about the cultural background of the hieroglyph.

Special attention should be given to misidentified and thence wrongly catalogued hieroglyphs. While a trained eye can recognise some of them when browsing sign lists, rare or unique hieroglyphs, lost in publications, are ultimately recognised by chance, or they still awaiting the unlikely moment when someone will finally link them to their monumental source (see below §3 *in fine*). Egyptologists do not browse sign list catalogues, and few people scrutinise texts in publications, still less monuments, for such a purpose. Thus, a top-down approach, from typography to monuments, should not be preferred. The bottom-up process, from monuments to typography, however, is extremely time-consuming when practised systematically, and it seems that no one has ventured to embark on such an undertaking.⁴⁶

Some examples will suffice to illustrate the kind of confusions that can occur (fig. 1). As the classification of the IFAO catalogue of signs was chosen by Unicode as the point of departure for its taxonomy,⁴⁷ I have selected some characteristic examples from it, almost at random among many other possibilities (fig. 1 top row).

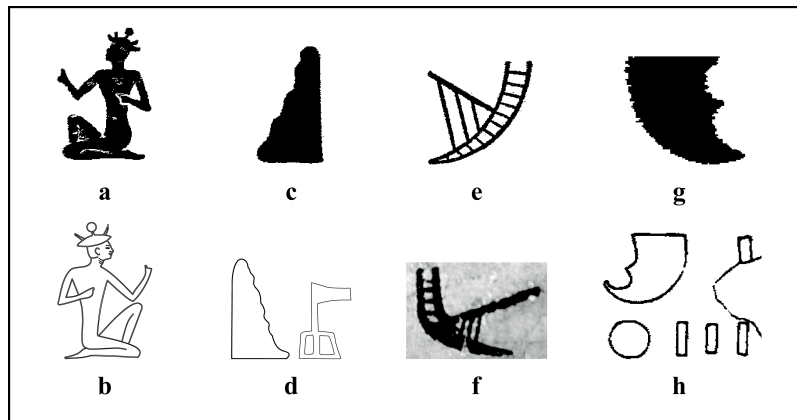



Fig. 1. Misinterpreted hieroglyphic types (top) and their monumental sources (below)

46 I have been collecting hieroglyphs for the past fifty years, and I still do so, but with each new publication of texts or new edition of a monument I observe how much remains to be done.

47 Suignard 2020: 1.

The first example (fig. 1a)⁴⁸ was considered a mere variant of the extremely common A1 of the Gardiner *Sign List* ()⁴⁹. If the character is enlarged one can see the specific headdress. This detail is clear enough to identify it as the helmet of a Sherden warrior. The hieroglyph appears in the texts of the Battle of Qadesh (reign of Ramesses II); the facsimile given here was made after the one published by Charles Kuentz because the sign on the monument is now damaged (fig. 1b).⁵⁰ It might be convenient to create a subfamily (see fig. 8) for hieroglyphs representing foreign soldiers. The second example (fig. 1c) was thought to represent a stairway.⁵¹ This is in fact an image of the rocky slope joining the Nile valley to the desert plateau, that is, the area in which most necropoleis were located in Antiquity. The hieroglyph is used here as a determinative of *hrt-ntr* “necropolis” (fig. 1d).⁵² The third example is placed in the lists among parts of boats (fig. 1e).⁵³ In fact it is a plough.⁵⁴ The hieroglyph shown here is taken from the tomb of king Ay of the end of the 18th Dynasty (fig. 1f).⁵⁵ The last example (fig. 1g) is not the scale of a fish given in the lists⁵⁶ but a copper ingot (fig. 1h).⁵⁷

One should stress again that none of the existing sign catalogues was conceived as a research tool and to use them as such would perpetuate a considerable number of mistakes, inconsistencies or errors. That would be of no consequence for typographers or even for an extremely limited professional use, but the taxonomy devised by Unicode ignores the fundamentals of ancient Egyptian culture too frequently for it to be universally accepted.

2.3. Taxonomy: one sign, multiple identities

Western observations of phenomena are usually defined, named or represented in an unequivocal way. Ancient Egyptian perceptions of the world allowed multiple identities or representations for a single reality, depending on which aspect among all possible ones was chosen. This approach is seen also in writing. A good example is provided by the sun. In the Gardiner *Sign List* (N5), what

48 Cauville, Devauchelle, Grenier 1983: 1 (9); Unicode catalogue A-01-008, Suignard 2020: 140.

49 Gardiner 1957: 442 (A1).

50 Kuentz 1928: pl. VI (3). Sherdens were used as auxiliary troops during the Ramesside period and many of them were integrated in the Egyptian society, see Schneider 2023: 145–148.

51 Cauville, Devauchelle, Grenier 1983: 319 (9); Unicode catalogue O-20-004, Suignard 2020: 358.

52 My facsimile from the stela Cairo CG 20535 (Middle Kingdom), Lange & Schäfer 1902: pl. XXXIX (top left). The same hieroglyph is used in typography as a determinative of *ḥ-dsr* “sacred ground” (i.e. “graveyard”), Lacau 1903: 109, 117, 123 (Middle Kingdom).

53 Cauville, Devauchelle, Grenier 1983: 337 (10); Unicode catalogue P-09-007, Suignard 2020: 371.

54 See the ploughing scene in the tomb of Nakht, Davies 1917: pl. XIX (below).

55 Hawass 2006: 238, photograph retouched by me; the determinative of *šn* “turn away” in a copy of the chapter 130 of the *Book of the Dead*.

56 Cauville, Devauchelle, Grenier 1983: 228 (14); Unicode catalogue K-02-007, Suignard 2020: 299.

57 From the temple of Seti I at Abydos, Calverley & Broome 1958: pl. 62D (logogram *hmt* “copper”).

is considered its usual hieroglyphic representation is a circle with another small circle inside (☉), a curious feature explained by the fact that the sign represents the Sun God's eye (fig. 2a–c).⁵⁸ The circle in the middle depicts the slightly protruding part of the cornea (fig. 2b–c). This is a symbolic, mythological rendering of the “sun” concept, as is confirmed by some polychrome hieroglyphs of the eye sign (*Sign List D4*) where the iris is coloured in red and the pupil reduced to a small black dot (fig. 2e).⁵⁹ The sun as a star (fig. 2d) is represented in a more realistic way as a red circle hooped by a white glowing light (fig. 2d).⁶⁰ A rigid taxonomic classification would separate these two forms, one in “parts of human body”, the other in “Sky, Earth, Water”. This, however, would be an awkward solution as it would place them in different categories although they both represent the same reality considered from two different points of view. Indeed, in terms of ancient Egyptian logic, both belong to the category “Sky, Earth, Water”.

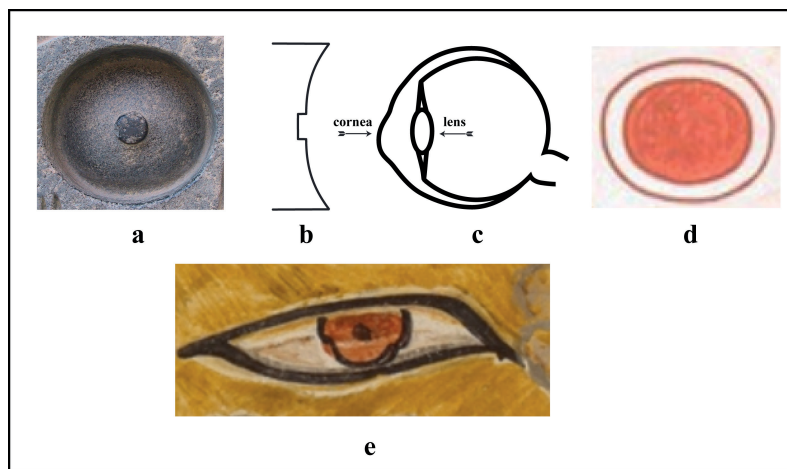


Fig. 2. The Sun God's eye (a) and the sun as a star (d)

Categorisation choices could be much more tricky in some cases like the puzzling example provided by the so-called “rosette” (*Sign List M42*, fig. 3a).⁶¹ That it could be understood as a flower is proved by the blue rosettes on the ceiling of the tomb of Kakemut in Qubbet el-Hawa North (Aswan).⁶²

58 Fig. 2a, Luxor temple, seated colossus of Ramesses II (19th dynasty) at the entrance of the main colonnade; author's photograph.

59 Fig. 2e, from the tomb of queen Nefertari, wife of Ramesses II (19th dynasty). Facsimile of one of the paintings by Nina de G. Davies, New York, Metropolitan Museum of Art 30.4.145, <https://www.metmuseum.org/art/collection/search/557768?ft=Davies&offset=0&rpp=40&pos=3> (Public Domain), accessed April 30, 2023.

60 Fig. 2d, from Theban Tomb 226, reign of Amenophis III (18th dynasty). Facsimile of one of the paintings by Nina de G. Davies, New York, Metropolitan Museum of Art 15.5.1, <https://www.metmuseum.org/art/collection/search/548355?ft=Davies&offset=0&rpp=40&pos=2> (Public Domain), accessed April 30, 2023.

61 Gardiner 1957: 484 defines the sign as “flower?” with a question mark.

62 Fig. 3b, author's photograph. The tomb is dated to the end of the New Kingdom.

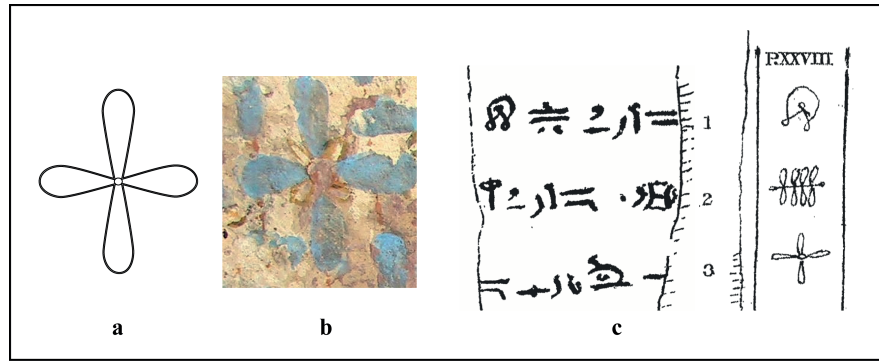


Fig. 3. The “rosette”, a picture and its definition in the Tanis Sign Papyrus

However a different reality emerges from the Roman Period Tanis Sign Papyrus, which lists less than five hundred hieroglyphs, giving for each of them its hieratic equivalent and a brief description of what it represents. In this ancient list, the “rosette” is clearly classified as a “rope” (fig. 3c).⁶³ The text of this excerpt reads as follows: line 1 “foundation rope” (*nwh n snṯ*); line 2 after the hieratic sign for *zʿ*, “protection rope” (*nwh n zʿ*); line 3 “*wnw*, that is, ro[pe of ...]” (*wnw dd nw[h n ...]*).⁶⁴ Unfortunately the end of the line is lost and we do not know what kind of rope this might be. An in-depth grammatological analysis, which is beyond the scope of this article, would show the similarities in different periods between variants of the *zʿ* hieroglyph and those of the *wn* hieroglyph. In this case the best solution is to retain the *wn* sign in the category of “trees and plants.”

2.4. Taxonomy: misleading similarities

The epigrapher copying texts is hardly misled by hieroglyphs with similar or identical shapes but different semantic content. The context helps to differentiate what seems identical, for instance a rare sign from a similar, very common one. Without context it is difficult or impossible to allocate a sign to a specific category. This has long been admitted for geometrical shapes such as a circle (○), which could be used as a simplification of many different hieroglyphs.⁶⁵ Present codifications, in general, do not differentiate clearly between all possible semantic values, usually considering that a single code is enough for a geometrical shape, no matter what its semantic content may be. This approach is of course not acceptable for a grammatological taxonomy, especially when hieroglyphs that are similar in shape are not clearly identified by preliminary palaeographical study. Semi-circular hieroglyphs provide a good example of such a situation (fig. 4).

63 Griffith & Petrie 1889: pl. VI–VII, rearranged in order to bring together what is displayed on two different plates.

64 The horizontal line crossed by a stroke is not the determinative of *wnw*, but the late hieratic abbreviation for (*r*) *dd*, Verhoeven 2001: 208 (Z11b).

65 For instance Grotenhuis, Nerderhof, Polis *et al.* 2021: 7.













	nb basket		ḥnkw scales pan
	ḥb basin		ḥnmt sieve/strainer
	ḥt brazier		ḥnmt cistern
	wh3t cauldron		mjnbt axe blade
	rhd t bowl		bj3 well
			t bread (reversed)

Fig. 4. Some semi-circular hieroglyphs

Most of these hieroglyphs are used as determinatives, and this is why and how their identity could be ascertained. Very few of them are registered in printers' catalogues because a shape like *nb* () could be used indifferently in typography instead of almost any other semi-circular hieroglyph.⁶⁶ A grammatological corpus will register them independently and allocate them to the appropriate category.

2.5. Taxonomy. Profusion and scarcity

Some hieroglyphs were in use during three millennia, and this temporal spread accounts for the largen umber of variations in their details. One task of grammatology will be to identify such clusters and to determine if particular variations could belong to a specific period. The so-called “alphabetic” signs provide a good example of such diversity. Fig. 5 gives a selection of sign forms from different periods, all with the value š.⁶⁷ For the scribes, these could have had different associative nuances, beyond their identical phonetic value.

66 The Unicode repertoire registers under H-10-005 a *nb*-like sign that is supposed to behalf of an egg shell, Suignard 2020: 288. This sign is borrowed from *Wb* IV, 74, 3 *swḥt* “Npaf o. ä. (ob: halbes Straussenei?)”. This, however, is a ghost word due to a misreading of an inscription in the tomb of Sarenput I in Qubbet el-Hawa. It should be corrected to *ḥnb's wh(?)t* 10 “*ḥnb's*-sweet, ten cauldron-like (containers)”, see Edel 1971: 31 and fig. 10. The sign is therefore an example of *wh3t* “cauldron” as in fig. 4.

67 Fig. 5a = Wild 1966: pl. 149 (5th dynasty); 5b = Wild 1966: pl. 152 (5th dynasty); 5c = El Awady 2009: pl. XIV (5th dynasty); 5d = Simpson 1976: fig. 20 (6th dynasty); 5e = Petrie 1900: pl. XXXVIII (First Intermediate Period); 5f = Cotteville-Giraudet 1933: pl. 35 (n°139) (13th dynasty); 5g = Rondot 1997: pl. 8 (n°14) (19th dynasty); 5h = Caminos 1974: pl. 46 (18th dynasty); 5i = Leclant & Croisiau 2001: pl. XXI (col. 24, 25) (6th dynasty); 5j = Parker, Leclant, Goyon 1979: pl. 18 (25) (25th dynasty); 5k = Habachi 1985: pl. 24 (22) (12th dynasty); 5l = Blackman & Apted 1953: pl. XXXIV (6th dynasty); 5m = Kanawati & Evans 2014: 113 (162) (12th dynasty); 5n = Bruyère & Kuentz 2015: pl. VI, VIII (end of the 18th dynasty); 5o = Guilmant 1907: pl. LXXXI (19) (20th dynasty); 5p = Bareš & Smoláriková 2008: 115 (middle, col. 4) (end of 26th dynasty); 5q = Chun Hung Kee 2014: 113, 119 (26th dynasty or later); 5r = Schäfer 2011: 163 (l. 14) (early ptolemaic); 5s = Schäfer 2011: 163 (l. 15) (early ptolemaic); 5t = Kockelmann & Winter 2016: 71 (n° 65) (ptolemaic); 5u = Leitz 2010: 301 (33) (ptolemaic); 5v = Cauville 2022: 35 fig 34 (6) (Roman Period). The Unicode repertoire registers a, c, e, f, j, r, s, u, v, Suignard 2020: 331.

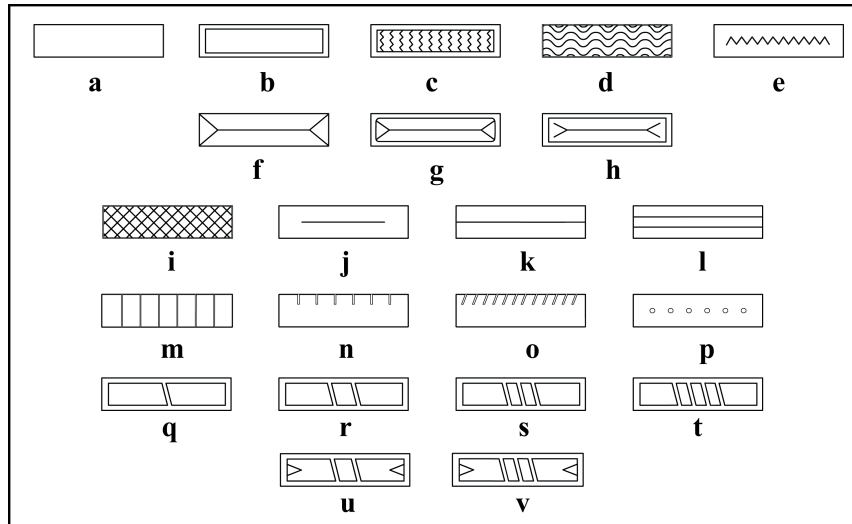


Fig. 5. The sign “s” and some of its variations

All these forms are of importance for the grammatologist, who will moreover try to find more variations to make as exhaustive a catalogue of this sign as possible.⁶⁸ As can be seen in fig. 5, such a catalogue could easily serve as a basis for creating unlimited numbers of characters in a font that would be closely linked to their monumental models. In my opinion what Egyptology needs is not only universally accepted codes for each sign and its variations based upon a developed scientific taxonomy, but also fonts based upon epigraphical sources and software that can use scalable characters. Of course, such software will not be text processors but “drawing processors”. Indeed such softwares already exist.⁶⁹ One will then have an improved way to recover the unlimitedness and flexibility of ancient metallic typography.

Another feature of great interest for grammatologists is the presence of rare or unique signs that have never been included in a font catalogue or have never been used among printed hieroglyphs. These are much more numerous than one would expect. Apparently they are beyond the scope of Unicode. Such signs could be divided broadly into two categories: rare or uniquely attested signs (fig. 6); and damaged signs, especially those with shapes that are easy to reconstruct (fig. 7).

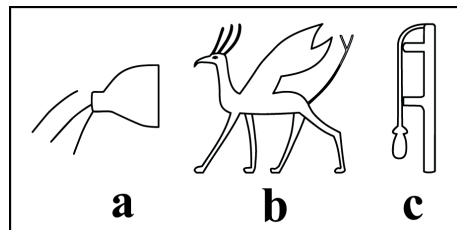


Fig. 6. Some signs not used yet in typography

68 For some of my colleagues such an approach will result “in a never-ending series of additions to the sign list”, Grotenhuis, Nederhof, Polis *et al.* 2021: 12. But from an Egyptological point of view, not a typographical one, this is precisely what is expected.

69 See above §1.2 with notes 34 and 35.

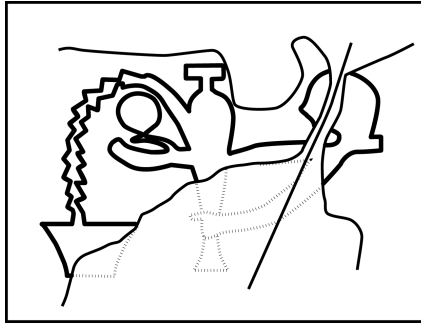



Fig. 7. Damaged sign and a proposed reconstruction of its outline

The sign in fig. 6a represents a breast producing (or pouring, as the Egyptians would think) milk.⁷⁰ It is used as a determinative of the verb *whʿt* “throw off, empty out” in the epithet of the Hathor cow *whʿt jrṯt* “she who produces milk”. The griffin (fig. 6b) is the best preserved example among those known from texts of the reigns of Ramesses II and Ramesses III.⁷¹ All are used as determinatives of *ḥḥ* “griffin” in metaphorical comparisons with the warrior king pursuing enemies.⁷² The remarkable raptor’s head of this figure is inspired by the Levantine iconography.⁷³ Later examples of the hieroglyph show clearly a winged canid with a more Egyptian-looking style ().⁷⁴ The object depicted by the hieroglyph in fig. 6c is a plumb line designed to test the verticality of a wall. Curiously enough, the sign is not used as a determinative of the name of the object but of the substantive *ḥʿw* “right, proper place” (where one should stand) in a text of the 12th dynasty.⁷⁵ Like the sign in fig. 6a it is a hapax. But a real example of the object that is almost identical in form to the hieroglyph was found in the tomb of Sennedjem (reign of Ramesses II).⁷⁶ These short remarks show the advantages that can be gained from including rare signs in our corpus.

The sign in fig. 7 is reproduced from a text in the pyramid of Merenre (6th dynasty).⁷⁷ Though damaged, one can complete its outline with no difficulty because the offering gesture and what is offered are well known. It should be included in the grammatical corpus of signs.

70 Seele 1959: pl. 5 (below right, in front of the Hathor cow) (end of 20th dynasty).

71 The present example is taken from *Epigraphic Survey* 1936: pl. 4 (17) (20th dynasty).

72 Hsu 2011: 53–55, who seemingly misinterprets the hieroglyph as a “jackal.” In these texts, however, the king in his chariot pulled by horses is reminiscent of the young Horus in his chariot pulled by a griffin similar to the hieroglyph. See Berlandini 1998: 48–54 for the iconography.

73 Compare Montet 1937: 112–114.

74 From Schäfer 2011: 133 (l. 9), early Ptolemaic period.

75 El-Khadragy 2008: 230 (translation), 234–235 col. 32 (facsimile). I rely on this facsimile as it is more precise than the one in Kahl & Shafik 2021: 246 (U39H).

76 See the photograph in the exhibition catalogue *Ramsès le Grand* 1976: 176.

77 Pierre-Croisiau 2019: pl. I (top, bandeau) (6th dynasty).

3. By way of conclusion

In this article I have insisted on the problems posed by taxonomy. While one could think that taxonomy is not the main goal of Egypto-grammatology, this is only partly true. All those working on texts or studying the hieroglyphic writing system need generally accepted codes attached to each hieroglyph and to each of its variants. These codes should be stable. This means that it is absolutely necessary for a new coding system to accept new signs and new variations easily and smoothly, without modifying the existing codifying. No matter how many additions are made over the years, the coding should stay clear and logical. Only the grammatological approach will make it possible to classify hieroglyphs collected in the corpus in the correct category and then in the correct family and subfamily, following a bottom-up process (fig. 8).⁷⁸ Typographical signs that use tokens (defined below) as templates will have the same code.

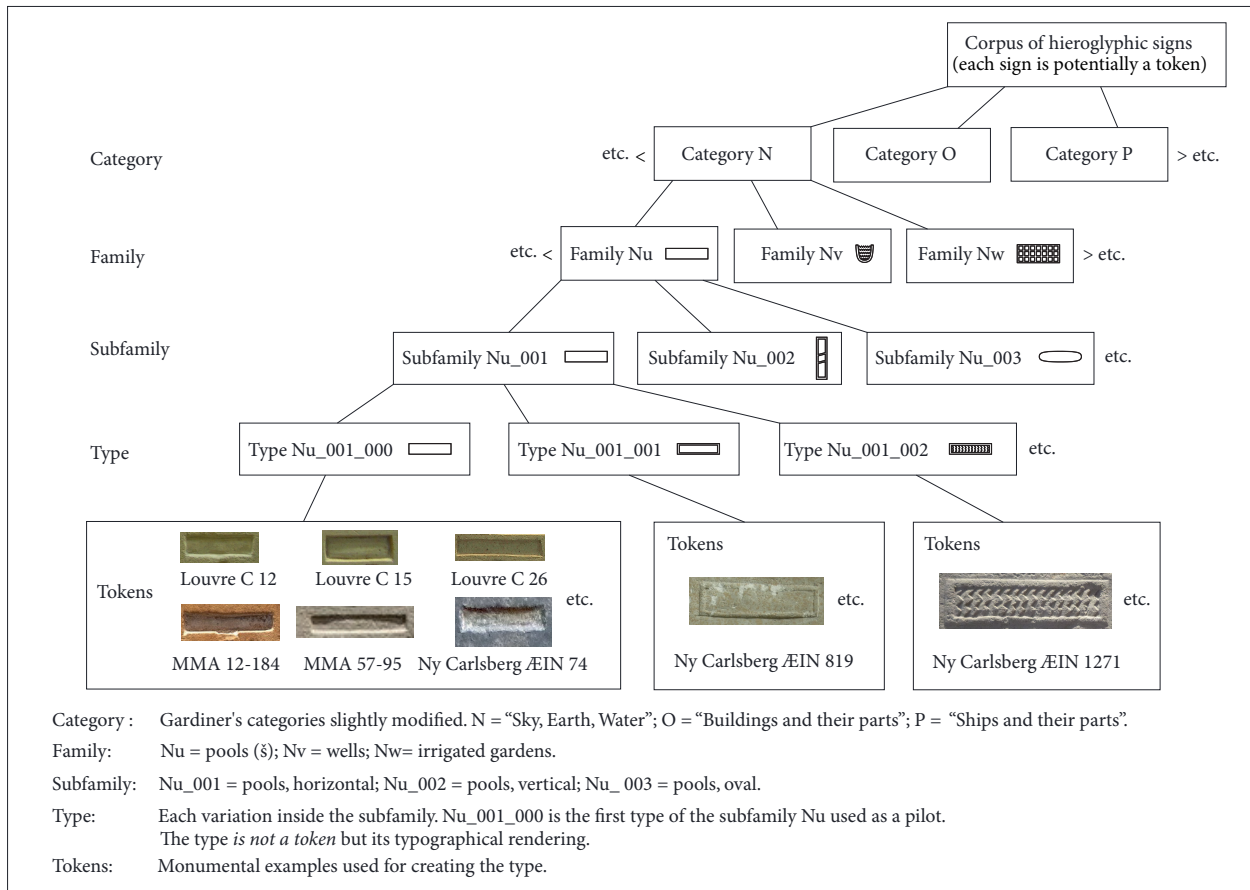




Fig. 8 The bottom-up process of classifying hieroglyphs

78 I already suggested such a process in Meeks 2013. Since that date my collection of hieroglyphs (see above n. 47) has increased in a very substantial way. Louvre and Ny Carlsberg museums hieroglyphs are author's photos, Metropolitan Museum of Art (MMA) are "Public domain".

All those interested in these problems of classification are fully aware of the necessity to follow this process. But, as already stated, they are confronted by the absence of a sufficiently large corpus of hieroglyphs. A very elaborate database like the *Thot Sign List*, although it collects hieroglyphs from monuments, is forced to use an empirical approach until the catalogue becomes large enough to enable the necessary improvements to be made.⁷⁹ Moreover, the kind of relation that will be selected between the token and its corresponding sign depends on the definition of what constitutes a “token”. Usually, the definition given by Unicode has been adopted without real questioning:

Token—particular sign in situ, a photography, a facsimile, a character in a font, or a hand-drawn character in a book. In practice, the token will always be a specific drawing, from a font or from a file, perhaps referring to an actual source.⁸⁰

Such a definition, however, is too widely cast and is not really satisfactory because it misses a very important point: “Tokens are signs based on one–one correlations between single items.”⁸¹ This is precisely what is illustrated in fig. 8. Different shapes are clearly differentiated, and identical ones are grouped together in a one–one relation, not only between one another, but also with the typographic character generated from them. A grammatological approach cannot accept “perhaps” in relation to supplying a reference to a source.

The aim of the bottom-up process, helped by palaeography and philology, is to remove uncertainties and ambiguities and thus to enable the correct classification of seemingly identical signs (as in fig. 4) in the correct category, family, or subfamily. In this way, the rectangular \check{s} () representing a pool, should not be confused with the near-identical sign representing a land surface used as a determinative of $\check{h}t$ “field”, for instance.⁸² The same shape could have the value zn , but in this case it is a variant of the oval bread ()⁸³ and should not be confused with the two preceding instances. All three should be classified differently.

Ghost hieroglyphs created by Egyptologists are not easily spotted in printers’ catalogues. In many cases they were included in old publications that almost nobody consults. When a reference exists, a more or less complicated investigation finally leads to a source where the correct form can

79 *Thot Sign List* > “About” > “2. Goal, data model and audience of TSL” > “2.2 TSL data model”. The authors of the database adopt roughly the same process as mine, but they proceed from existing fonts in their quest to identify the corresponding monumental hieroglyphs.

80 Suignard 2021: 3.

81 Harris 2014: 71.

82 Very common in texts of earlier periods. See, among many others, Duell 1938: pl. 37 (16) (6th dynasty); Blackman & Apted 1953: pl. XVI (in front of Pepi-ankh) (6th dynasty).

83 Gardiner 1957: 532 (X 4), 491 (N 37).

be identified.⁸⁴ Just one example is given here. The Unicode repertoire registers, among the category “vessels of stone and earthenware”, a curious object (𐦏).⁸⁵ With some luck and patience, one finds that this ghost sign was taken from an entry for *wšb* in the Berlin *Wörterbuch*, where it is defined as a kind of gold vessel.⁸⁶ The reference given by this dictionary points to the text of the Osirian ritual celebrated during the month of Khoiak and carved on the walls of a chapel in the temple of Dendara. The rendering of the sign in modern publications reveals that this is in fact a situla (𐦏).⁸⁷

I hope that the preceding discussion and examples will convince the reader that a grammatical study of hieroglyphs is a necessity. But this task needs determined and persistent scholars as it is time consuming, not always rewarding, and sometimes discouraging. Clearly grammar requires a good understanding of texts of all periods as it gives significant results only in a diachronic process; there must also be a good perception of the lexical meaning of the words in which a hieroglyph is used. But it also requires an ability to identify what each of the signs represents, using pictorial and archaeological data, without forgetting the social context, as well as a sound knowledge of Egyptian religion. In an article on the *hnt*-hieroglyph (𐦏)⁸⁸ and its numerous variants I have tried to show how far one can be led through textual, epigraphic, religious, cultural, and other byways and intersections before reaching a result. That treatment may serve as a case-study illustrating the main aspects presented in the present article.

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84 This is not the place to discuss the question of “false” ghost signs, such as the dwarf wearing a kilt mentioned in Grotenhuis, Nederhof, Polis *et al.* 2021: 13 as a “ghost”. That hieroglyph really exists, see Fischer 1978: 48.

85 Suignard 2020: 447 (W-11-106).

86 *Wb I*, 373 (ó).

87 Cauville 1997: 29 (3) with pl. 25 (19); Chassinat 1966: 211–212 with pl. I (19). Both published photographs are not in high resolution, but the shape of the situla is recognisable. Note that *wšb* is probably an orthographic variant of *wšm* a designation a metal vessel (*Wb I*, 374 1–3).

88 Meeks, forthcoming.

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