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Díaz Iglesias-Llanos, Lucía

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### LINEAR HIEROGLYPHS

الهيرو غليفية الخطية

Lucía Díaz-Iglesias Llanos

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### LINEAR HIEROGLYPHS

### الهير وغليفية الخطية

Lucía Díaz-Iglesias Llanos

Lineare Hieroglyphen Hiéroglyphes linéaires

Linear hieroglyphs formed a script comprising signs that maintained the iconic power of hieroglyphs but were more schematically written. Although they are attested from as early as the Old Kingdom, they became visually distinct from other writing types only from the Middle Kingdom onward. This script was restricted to specific functions and contexts, mainly related to the ritual and funerary domains. Linear hieroglyphs displayed specific traits and conventions in the forms of the signs (covering a wide spectrum of formality, iconicity, and embellishment) and the layout of the texts (with an arrangement that favored columns of rightward-facing signs that were to be read in a retrograde manner). They had the added values of prestige and expense and were often indexical of temple manuscripts. There is an urgent need to compile repertoires of linear hieroglyphs to help further define aspects such as forms of signs, regional variety, historical changes, technological issues, and the influence of other Egyptian scripts.

كانت الكتابة الهيروغليفية الخطية نوعًا من الكتابة التي تشتمل على علامات حافظت على شكليات الكتابة الهيروغليفية، ولكن تمت كتابتها بشكل تخطيطي أكثر. على الرغم من أنها موثقة منذ عصر الدولة القديمة، إلا أن الكتابة الهيروغليفية الخطية لم تختلف بشكل واضح عن النصوص الأخرى حتى عصر الدولة الوسطى. كانت مقتصرة على وظائف وسياقات محددة، تتعلق بشكل أساسي بالمجالات الطقسية والجنائزية. غالبًا ما كانت تستخدم في كتابة مخطوطات المعابد. أظهرت العلامات درجات متفاوتة على نطاق واسع من الشكليات والزخرفة. نظام نسق النصوص فضل ترتيب الأعمدة بالعلامات المواجهة لليمين والتي يجب قراءتها بطريقة عكسية. كانت الهيرو غليفية الخطية تعتبر مرموقة ومكلفة. توجد اليوم حاجة كبيرة لتجميع النصوص المكتوبة بالهيرو غليفية الخطية المساعدة في زيادة فهمنا لأشكالها وتنوعها الإقليمي، والتغيرات التاريخية، وتأثير النصوص المصرية الأخرى عليها.

ursive hieroglyphs, sometimes called linear hieroglyphs according to the terminology coined by Jean-François Champollion (1841, chap. 1, § II: 24-30; Gasse 2016: 61-62), formed a script comprising signs that maintained the figurative materiality and iconic power of hieroglyphs, but that were more schematically traced and

often lacked inner details. Strictly speaking,

cursive denotes the idea of "flowing often with the strokes of successive characters joined and the angles rounded" (Merriam Webster). Since this definition better suits the hieratic script, the term linear hieroglyphs should perhaps be retained, as has been suggested by Vernus (1990: 44) and Parkinson (2002: 73; 2009: 146-148) and endorsed by Verhoeven (2015: 25). The script is also known as "semi-

cursive" or "book-writing"—Buchhieroglyphen or Buchschrift—(Lepsius 1867: 10-11; Fischer 1976: 40; Ali 2002: 29). The term Totenbuch-Kursive has also been coined, given the wide use of this script for writing spells belonging to the corpus of the Book of Going Forth by Day / Book of the Dead. However, this term is misleading and should not be employed to refer to a specific variant of cursive hieroglyphs (Lucarelli 2020).

Linear hieroglyphs were normally painted using rushes and black and red inks, though they could also be incised into harder surfaces. Therefore, although the script was usually associated with manuscript media, it could also appear in monumental settings. Technological issues (i.e., types of materials, surfaces, and implements chosen for writing) are of utmost importance given the impact they had on the signs' forms. Hard surfaces of wood and stone precluded the carving or incising of detailed hieroglyphs; the resulting graphemes can therefore resemble linear hieroglyphs. They would be better classified as solid hieroglyphs (with their interior filled or excised), or as simple hieroglyphs equivalent to Fischer's category 3a. Fischer, however, considers these a sub-type of the semi-cursive style (see Fischer 1976: 41, fig. 4, 3a; and 42, with examples from the Middle Kingdom through the Third Intermediate Period in notes 48-51). In comparison to simple hieroglyphs, linear ones are characterized by the scarce use of double lines, the simplification of tails, heads, and legs in animals, and open (v. closed) outlines.

Linear hieroglyphic writing tended to be associated with a columnar format with an abundant use of vertical dividing lines, with signs facing rightward (less frequently, leftward), and was often coupled with a retrograde orientation when texts were copied in either columns or lines. Retrograde refers here to the reading order of the texts—that is, with columns running in the same direction in which the signs faced. A leftward orientation of linear hieroglyphic signs was usually adopted when the texts accompanied figures oriented in that direction (e.g., the Ramesseum Dramatic Papyrus = pLondon BM EA 10610 and BD 151), in general conformance to the

conventions displayed by captions in scenes from monumental art (Parkinson and Quirke 1995: 24-26). However, exceptions also occurred: in the harpists' songs of TT 60, linear hieroglyphs were turned right, while the harpists and their hieroglyphic captions looked left (Davies and Gardiner 1920: pl. 27).

Linear hieroglyphs are first attested in the Old Kingdom in administrative papyri and on tomb walls, and their use gradually expanded into other domains. They were employed until the Ptolemaic Period, resulting in an abundance of sources written in this script. During the Middle Kingdom there was a notable increase in the number of sources set down in linear hieroglyphs, an increase that can be related to the gradual rise of the documentary milieu. In this period the script became restricted to a limited number of specialized registers, was considered a specific mark of religious texts (comprising formulae of funerary, ritual, and magical-medical content), and was often indexical of temple libraries and the performance of rituals. Over time, this functional specialization was maintained. The connection of linear hieroglyphs with textual corpora from the funerary domain was strengthened during the New Kingdom, lasting subsequent periods. The hieroglyphic script was especially used for the production of artifacts written with spells from the Book of Going Forth by Day, otherwise known as the Book of the Dead (many examples are published in the catalogs of exhibitions edited by Taylor 2010 and Scalf 2017; fig. 1; see also figs. 6 and 10 below).

#### Definition, Delimitation, and Differences of Linear Hieroglyphs v. Hieroglyphs v. Hieratic

There has been intense debate among scholars concerning the origin of the linear hieroglyphic script, focused on whether linear hieroglyphs derived from monumental/iconic hieroglyphs (Gardiner 1957b: 9-10 § 8; Schlott 1989: 82; Allam 2007: 36-37; Graefe 2015: 123; Verhoeven 2015: 38, 46-47, Abb. 13) or from archaic hieratic (Möller 1909: 3, n. 1; Černý 1947: 26; Brunner 1959: 46; Ali 2001: 12; 2020:



Figure 1. Book of the Dead spells, rendered in linear hieroglyphs, on the ceiling of the burial chamber of Djehuty (TT 11), Eighteenth Dynasty.

573, 575), or whether they represented a mixed or intermediate form between both scripts (Allam 2007: 34; Goelet 2010: 127; Servajean 2020: 541). For discussions on the position of other authors in this debate, see Verhoeven (2015: 41-45).

Linear hieroglyphs were closely connected to monumental hieroglyphs through an array of features: the similarity coincident proportions and general outlines of signs; the versatility of writing orientations (although linear hieroglyphs usually faced right, there are attested examples of leftward orientation, as mentioned above); the spelling conventions of words (both scripts included signs that were not common in hieratic such as the red crown [S3] and the flat m [Aa13], and they favored orthographic variation in contrast to hieratic's tendency towards fixed spellings); the organization of signs (following the arrangement in quadrats and dispensing with ligatures and abbreviations); and the slow pace of palaeographic transformation. Despite tending towards simplification, via the frequent use of short strokes and marginal stippling (the use of small specks or dots) and a reduction of the number of inner details in graphemes, linear hieroglyphs retained most of the original forms of the pictorial signs. This trait makes them easily recognizable. The strong figurative character added an aesthetic quality to this writing, so that it retained some of the monumental and decorative associations of hieroglyphs (Goelet 2003: 11). However, and in contrast to monumental hieroglyphs, linear hieroglyphs rarely featured black infilling between the strokes composing the signs (Haring 2006: 8)—except in the case of the scarab beetle L1—and are not polychromous. The application of blue ink seems to be a peculiar trait of the cursive hieroglyphs used to inscribe Coffin Text spells from Assiut (Konrad 2022: 60).

These traits relate linear hieroglyphs more closely to formal and monumental hieroglyphs than to tachygraphic (i.e., rendered in shorthand) hieratic. Although both linear hieroglyphs and hieratic were executed with streamlined strokes, the latter script made wider use of simplification and abbreviation to increase the speed of writing, and more diacritical features were introduced to retain a distinction between similar signs (Goedicke 1988: viii; Polis 2020; Fischer-Elfert 2021). It is most likely that scribes were trained in linear hieroglyphs at an advanced stage in their careers, as a sort of specialization stage after they had learned to write hieratic (Goelet 2010: 122-124; Lucarelli 2020: 586). consequence of this learning system, hieratograms (signs written in hieratic) are frequently found in texts written in linear hieroglyphs.

A further characteristic of this form of writing is a degree of stasis, in the sense that there was some reluctance toward the introduction of diachronic change, which was instead a hallmark of hieratic. In spite of this characteristic, hieratic seems to have had a material or palaeographical influence over linear hieroglyphs (the sway of hieratic on monumental and linear hieroglyphs has been dealt with by Gutbub 1982; Meeks 2004: xivxv; Haring 2006: 9; Meeks 2007: 6-10; Polis 2020: 554-555). This influence is visible, for example, in various aspects of New Kingdom linear hieroglyphs, including the ductus (i.e., the precise characteristics of the strokes that constitute a grapheme); the closeness displayed by signs with similar forms that correspond to dissimilar hieroglyphic signs; and the addition of diacritic strokes. Nevertheless, this stance should be approached cautiously as the features mentioned do not necessarily indicate a direct derivation from hieratic, since many were common in contemporary and earlier linear hieroglyphs (Haring 2006: 8-9; 2010: 33-34; 2015: 74-75).

Regarding text orientation, hieratic was exclusively a right-to-left script, although as James Allen indicated, individual signs were normally written from left to right, with the exception of right-to-left diagonals (Allen, J.

2002: 77; and see already Brunner 1959: 44). In Eighteenth-Dynasty burial chambers decorated with funerary texts written in linear hieroglyphs (e.g., TT 11: Djehuty: Galán 2013, 2014; Díaz-Iglesias Llanos fc.; TT 61: Useramun; and TT 87: Nakhtmin, where the present author is carrying out epigraphic research: Díaz-Iglesias Llanos 2020), the order in which the strokes were executed was also from left to right except for the diagonals mentioned. Examples of comparable funerary contexts from the Twenty-Fifth Dynasty are examined by Molinero Polo and Rodríguez Valls (2018: 74-85) and have shown similar findings. Moreover, hieratic and linear hieroglyphs also shared a tendency to finish long horizontal and vertical lines at both ends with short strokes (Haring 2006: 9; although the variability in linear hieroglyphs is larger and only one short stroke at the right and lower end of a line can be marked). Both writings also tended to reduce the pairs of legs or feet of animals and humans to one horizontal line (Haring 2006: 9, 11). Whether the similarity in execution of the two scripts derived from the influence of hieratic on linear hieroglyphs, or from some practical issues related to the natural flow of rush pens on the writing surface, is a line of inquiry meriting future analysis and probably necessitating the use of experimental epigraphy.

As attested in hieratic texts—where multifunctional signs appear (Gülden and van der Moezel 2016: 10-11)—the absence of inner details in certain linear hieroglyphic signs would render them indistinguishable were it not for the context of their use (Servajean 2011: v; Haring 2015: 77, fig. 6).

The addition of diacritic marks, a hallmark of hieratic, is conspicuous in some linear hieroglyphic graphemes, such as the ox ear (Gardiner F21: Haring 2006: 9, 56 § 71; Servajean 2011: 30 § 54); the papyrus stem (M13: Haring 2006: 8, 77 § 122 stresses that it was not common in hieratic); the tethering rope (V14: Haring 2006: 9, 124 § 247; Servajean 2011: 109 § 214); the fire drill (U28); and the roll of bread (X5: Haring 2006: 9, 134 § 272).

Despite the fact that the independent status of linear hieroglyphs from both hieroglyphic

and hieratic scripts has often been called into question (Lüscher 2015: 100), it should be noted that linear hieroglyphs displayed specific features, as outlined above: they were usually written in columns with signs mostly facing to the right, a retrograde reading orientation was often adopted, and they were usually executed with rushes using ink (red and black) on papyri and tomb walls.

Although linear hieroglyphs have often been considered a quicker and more fluid form of executing hieroglyphs (Lüscher 2015: 100) and indeed have been considered the product of scribes untrained in the latter (Ali 2002: 29; Graefe 2015: 123; Ali 2020: 575)—they had additional values. Manuscripts written using this graphic register have been described as being less accessible than those in hieratic, formal, prestigious, and (Parkinson and Quirke 1995: 24, 26). They required the work of qualified personnel and access to a rarified set of skills. Thus, linear hieroglyphic manuscripts were certainly more costly and harder to execute than hieratic ones, and these traits would have meant a higher level of investment and added prestige to the final product (Goelet 2003: 11, 13; 2010: 126-127). It should be emphasized that Pascal Vernus has recognized one of the marks of sacralization of written productions in the use of linear hieroglyphs as an alternative to the use of hieroglyphs. With signs that display a figurative character that made performative and sacralizing, but easier and quicker to write than monumental hieroglyphs, linear hieroglyphs were especially suitable for compositions that were meant to last and that defined the archetypical order of the world (Vernus 1990; 2017: 475-482). They were thus generally reserved for more prestigious and formal texts, removed from the everyday and contingent practice of administrative or iuridical activities and from literary productions.

An outstanding phenomenon of ancient Egyptian textual production is the appearance of linear hieroglyphic signs in texts written in another script, such as hieroglyphic inscriptions (in quarries in Sehel or Wadi Hammamat: Gasse 2015; on early New

Kingdom stelae and statues: Fischer 1976: 44, n. 58; on funerary equipment from the Libyan and Kushite Periods: Sheikholeslami 2010: figs. 9, 10); and in hieratic texts (on ostraca: Gasse 2009: 72, pl. 1b; in graffiti: Ragazzoli 2017: 159-165). This phenomenon should be compared with the intrusion of hieratograms in compositions written in linear hieroglyphs (Díaz-Iglesias Llanos 2022).

Moreover, linear hieroglyphs could be used together with, but separated from, other script types on the same kind of object, as the following four examples show. First, the heading or opening lines could be emphasized by writing them in the more formal linear hieroglyphs, as seen in hieratic administrative documents of the Old Kingdom (fig. 2). Kingdom Second, on Middle coffins, monumental and more detailed hieroglyphs were chosen for writing offering formulae, while Coffin Texts spells were employed below these formulae in columns of linear hieroglyphs (Baines 2012: 59-61; Donnat 2014: 205-207; an example in BM EA30842). Third, on New Kingdom papyri, monumental hieroglyphs were used for the initial vignette and hymns that headed the manuscript, while the Book of the Dead spells that followed were recorded with linear hieroglyphs (Lucarelli 2020: 584). Examples can be found in the Ramesside papyri of Ani (pLondon BM EA 10470: cf. frames 1-4, in monumental hieroglyphs, with succeeding frames written in linear hieroglyphs) and Qenena (pLeiden T2, where the more important elements—the solar hymn and judgement of the dead-were executed in polychrome, with detailed hieroglyphs, while the rest of the text was written in a linear version of the signs). Fourth, some New Kingdom visitors' graffiti written in hieratic show the name, title, and genealogy of the individual for whom the inscription was made highlighted by the use of linear hieroglyphs. This feature has been considered as a reference to the domaine du manuscrit and monde des scribes, with which this script was intimately connected (Ragazzoli 2017: 36, 43, E.2.10, 155-156, fig. 4.11, O.2.7, 186-187). In the same type of graffiti, the offering formula could also be copied in linear hieroglyphs, with the intention of sacralizing and monumentali-



Figure 2. Combination of hieratic and linear hieroglyphic signs on Fourth Dynasty papyrus H from Wadi el-Jarf. Linear hieroglyphs formalize the opening lines.

zing this section of the text (Ragazzoli 2017: 36, E.2.14, 159-165).

#### Contexts of Use across Time

The time span during which linear hieroglyphs are attested ranges from the Old Kingdom to the Ptolemaic Period. This span includes witnesses copied on a variety of media, from light, portable objects (ostraca, papyri), to durable and fixed surfaces (tomb walls, cult structures, rock inscriptions), as well as on a diversity of funerary artifacts (coffins, shrouds, canopic chests, stelae, mummy bandages), although the widest use of this script is found on papyri (Goelet 2003: 10).

The difficulty in determining the origins of this script derives from a lack of clear boundaries between the earliest painted hieroglyphs, the first linear hieroglyphic signs, and archaic hieratic. Signs written in ink on pottery and stone vessels that were found in funerary contexts and that are dated to the Early Dynastic Period have been considered to be the earliest examples of cursive writing from Egypt, gradually giving way to hieratic (Regulski 2009; 2010: 21, 292-293) or "des hiéroglyphes maladroits que l'on pourrait déjà qualifier de cursifs" (Gasse 2016: 63). Early hieratic sources from the late Third and Fourth Dynasties were written in a mixture of linear

hieroglyphs and hieratograms (Fischer-Elfert 2021: 62-89). Similarly, the administrative papyri from the end of the reign of Khufu retrieved at Wadi el-Jarf (Tallet 2017b, 2021; see fig. 2) are classified as the first hieratic sources, but written in a "graphie peu distincte de celle des hiéroglyphes cursifs" (Gasse 2016: 63-64, figs. 3-4). The delimitation of linear hieroglyphic and hieratic writing became clear by the First Intermediate Period (Polis 2020: 551) and, especially, during the Middle Kingdom, when the shape of the signs, the layout of the texts, and the contexts of use differed for each script type.

During the Old Kingdom, linear hieroglyphs were sometimes used to record headings with indications of tasks, titles, and—occasionally names of officials in administrative documents found at a variety of sites (Collombert and Tallet 2021), including Wadi el-Jarf (papyrus H: Tallet 2017a: 103, and fig. 2); Gebelein (grain and cloth accounts found in an anonymous tomb: Posener-Kriéger and Demichelis 2004: pls. 10-13, 19-23, 30); and two sites at Abusir (lists of tasks and inventory of temple furniture in the archives of the funerary temple of Neferirkara-Kakai: e.g., Posener-Krieger and de Cenival 1968, pls. III-IV, XXII, XXV; and rosters, accounts, and lists of temple-cult tools and offerings in the archives of the funerary temple of Raneferef: e.g., Posener-Kriéger,

Verner, and Vymazalová 2006: pls. 4, 8, 33-34, 54-55, 82, and Part III with palaeographic tables where "the individual signs are arranged according to the degree of simplification, namely, from the types closest to the hieroglyphic original [according to their most simplified types]": Posener-Kriéger, Verner, and Vymazalová 2006: 441).

Linear hieroglyphs are also found in some captions accompanying apparently unfinished scenes in Old Kingdom tombs (Junker 1940: pls. IX and X for lists of objects) and in captions recording the colloquial speech of individuals (Schlott 1989: 175-176, with examples drawn from Junker 1940: pl. VII).

Rock inscriptions carved in quarries and mining areas are attested in the Old Kingdom, First Intermediate Period, and Middle Kingdom, and continue in the New Kingdom and Late Period. Hieroglyphs were used for official formal inscriptions in these venues, though due to their execution technique and their medium, most signs lack inner details and elaborate renderings, and thus resemble linear hieroglyphs (Žába 1974: 259-260; for Elkab, see Vandekerckhove and Müller-Wollermann 2001: 347-374; at Wadi Hammamat, Gasse 2015: 232 [following Goyon 1957: 16] indicates that the gliding of linear hieroglyphs in hieroglyphic inscriptions is mostly attested in texts belonging to private individuals). As mentioned earlier, the same is true of signs incised on objects, such as heart scarabs, made of hard materials (examples in Taylor ed. 2010: Cat. 113 and 114).

Mohamed Sherif Ali coined the term "hybrid script" to refer to the palaeography of some rock inscriptions formed by a combination of hieroglyphs and hieratograms and by signs written with an intermediate form that can be positioned between hieroglyphic and hieratic, with features that correspond to those of linear hieroglyphs (Ali 2002, 2020). A specific type of graffiti classified as builders' inscriptions or mason's marks, comprising quarry marks, anthroponyms, measures, and building indications, could also be written in linear hieroglyphs (for examples from the Old Kingdom, see Verner 1997; New Kingdom cases have been published by Lipińska 1977: 21-25 and by Budka, who dubbed the markings left by workmen's teams "semi-hieratic or cursive hieroglyphic notes" [2009: 183]), although most witnesses of this practice are attested in hieratic (see Haring fc.).

During the First Intermediate Period and Middle Kingdom, the style of linear hieroglyphs became more cursive (Fischer 1976: fig. 4, 3b) and the script was mainly used in temple repositories to archive religious, ritual, and medical/veterinary texts. Although such compositions were often transmitted in hieratic, some manuscripts written in linear hieroglyphs were found in temple precincts, urban settlements, and tombs:

- From the town of el-Lahun and the Valley Temple of the pyramid complex of Senusret II (Collier 2009; Nassar 2019), manuscripts written in this script include: UC 32110E (religious text), 32117E verso (healing composition), 32091C (religious corresponding to the oldest attestation of the daily temple ritual: Contardi 2016), and 32036 (Lot LV.2, veterinary prescriptions) (Griffith 1898: 12-14, pl. VII; Collier and Quirke 2004: 7, 11, 54-57, 67).
- Among the papyri retrieved from a late Middle Kingdom tomb at the site of the Ramesseum (Parkinson 2009: 138-160; Meyrat 2019; Miniaci 2020), several liturgical and medical rolls that could have originally derived from the temple sphere, but seem to have been privately assembled, were written in linear hieroglyphs and bore: a royal ritual (the socalled Ramesseum Dramatic Papyrus = pRamesseum B = pLondon BM EA 10610: Sethe 1928; Quack 2006; Lorand 2009; Geisen 2018); a funerary liturgy for ceremonies at a mastaba (pRamesseum E = pLondon BM EA 10753: Gardiner 1955a: pl. 28; 1955b; Díaz Hernández 2014); hymns (pRamesseum VI = pLondon BM EA 10759: Gardiner 1955a: pls. 18-21; 1957a; fig. 3); medical prescriptions (pRamesseum V = pLondon BM EA 10758: Gardiner 1955a: pls. 15-17); and magical spells for protection, with numerous mythological references (pRamesseum VII = pLondon BM EA 10760: Gardiner 1955a: pls. 22-26; Meyrat 2019: 6-25, 279-296).

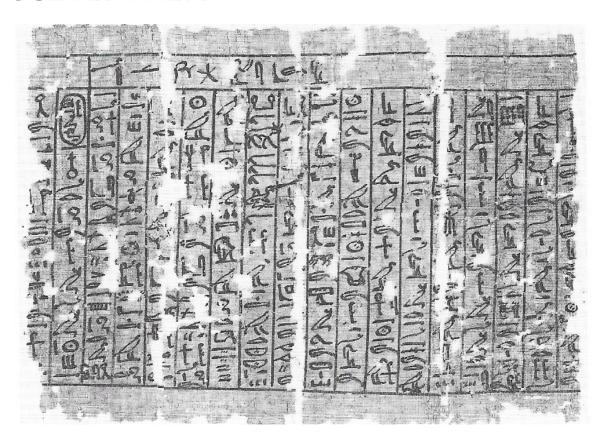


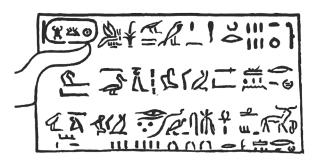
Figure 3. Hymns to Sobek in linear hieroglyphs on pLondon BM EA 10759.3, Middle Kingdom.

• The (archive belonging to the?) temple of the pyramid complex of Pepy I at South Saggara vielded several late Middle Kingdom manuscripts copied in linear hieroglyphs (Leclant and Clerc 1987: 317-318; Berger el-Naggar 1999): a spell to enter the temple; a liturgical text related to festivals of Ptah and Sokar, with vignettes and bearing the name of Senusret III; and MAFS T 2147, with a nonpersonalized copy of several Pyramid Text spells (Berger el-Naggar 2004) that could have been used ritually, for the recitation of texts in the king's cult, or instrumentally, as a master copy to monumentalize inscriptions or for archiving purposes. This last document is composed of two different papyri, glued together: the earliest one (of the late Sixth Dynasty or the Eleventh Dynasty) is written in "une cursive très rapide proche du hiératique," while the most recent one (of the Twelfth Dynasty) is copied retrogradely "en hiéroglyphes rapides, linéaires" (Berger el-Naggar 2004: 86-88), which

look more like elaborate hieroglyphs (Baines 2012: 57).

A funerary recitation and a hymn to Hathor that are associated with the archives described above and with the idea of performance were reproduced in retrograde columns of linear hieroglyphs in the early Twelfth Dynasty tomb TT 60, of Senet and Intifokar (Davies and Gardiner 1920: 24-25, pls. 27, 29). The use of this script probably served to convey the idea that the funerary and religious texts had been copied from a temple manuscript as a sort of facsimile (Morenz 1996: 58-71, Abb. 4-5b; Goelet 2010: 125, n. 27). A liturgical character may also underlie the songs intended to eulogize Sarenput, copied in prograde linear hieroglyphs in his tomb at Qubbet el-Hawa (Parkinson and Franke 2007). The texts in TT 60 and other Middle Kingdom examples are discussed further by Donnat (2014: 202-205).

In several Middle Kingdom tombs at Beni Hassan linear hieroglyphs were used, with various functions and intentions, alongside the funerary decoration. Some depictions of boards or papyri, held in the hands of officials, display information concerning nomads, hunting, and the inventory of livestock in a variety of cursive scripts, from hieratic to linear hieroglyphs (fig. 4). The selection of the latter script would have served to "evoke the cursive while remaining within the symbolic register of hieroglyphic forms" (Baines 2012: 43, figs. 2.5 b and c). It would also have created for the beholders a sense of reality and of proximity to the events depicted by denoting the sphere of use of cursive writings in the administration (Donnat 2012: 155-158; Ragazzoli fc.).



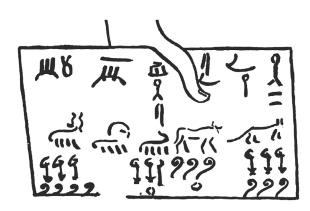


Figure 4. Depiction of documents held in the hands of officials, written in a variety of cursive scripts, and bearing administrative information related to the Asiatics' caravan and the desert hunt in the tomb of Khnumhotep II at Beni Hassan, Twelfth Dynasty.

First Finally, in the Intermediate Period/Middle Kingdom, linear hieroglyphs were also used in funerary contexts to decorate mortuary goods and the walls of burial chambers. This writing codified the funerary and magical spells of the period that were needed to preserve knowledge of how to reach, and survive in, the Beyond. Although some examples of Coffin Texts are attested in hieratic, most were inked or incised in linear hieroglyphs (fig. 5). Publications of these sources are numerous (see, especially, Polz 2007 for comprehensive photographs of two inscribed coffins). The use of linear hieroglyphs for Coffin Texts was indexical of sacred knowledge intended to convey the idea of a personal library containing all the information that would be useful for the deceased (Donnat 2014: 206-207). Here, as elsewhere, the linear hieroglyphic script was normally associated with a columnar format, often coupled with a retrograde orientation when the texts were copied in either columns or lines. Some of the linear hieroglyphic papyri associated with the archiving of religious or medical knowledge described above share the following traits with the Coffin Texts: tabular format (lined columns with horizontal titles on top) and retrograde orientation (Altenmüller 1969: 58-59). The Coffin Texts are said to have initiated a trend for the use of linear hieroglyphs that was to endure through later periods, resulting in their ultimate emergence in the form of the Book of the Dead. This trend entailed that spells with a ritual or magical function were written in retrograde columns on funerary objects or structures that remained unseen after burial and were mainly provided for the deceased.

During the New Kingdom, hieratic became the dominant written form for everyday documents of literary, administrative, medical, and religious content; thus temple rolls were often written in this script (in the variant called sacerdotal hieratic), whereas linear hieroglyphs prevailed in the funerary sphere. Some of the early witnesses of the Book of the Dead written in various media were conveyed in hieratic, while others were written in linear hieroglyphs: i.e., coffins (for example, München ÄS 7163: Grimm and Schoske 1999: 2, 12-20); shrouds



Figure 5. Mid- to late Twelfth Dynasty coffin lid of Khety with Coffin Texts in linear hieroglyphs, MMA 32.1.133a-k, with detail to the right.

(Díaz-Iglesias Llanos 2017 - 2018 with further references); and burial chamber walls (e.g., TT 87: Guksch 1995: pls. 14-18; Díaz-Iglesias Llanos fc.; and TT 11: see fig. 1), which were decorated to resemble unrolled manuscripts (papyri) or shrouds enveloping the deceased. By the time of the joint reign of Hatshepsut and Thutmose III, linear hieroglyphs dominated Book of the Dead productions, replacing the hieratic script that had been used for the earliest examples of the late Second Intermediate Period and early New Kingdom on coffins and shrouds (Dorman 2019: 27-33, 35-37). The association of linear hieroglyphs with this corpus of funerary literature was so intense that this script has been traditionally called Totenbuchschrift in the academic literature (Lucarelli 2020). In fact, linear hieroglyphs found their most extensive use on papyri decorated with spells from this corpus (fig. 6, and see figs. 1 and 10). The publication of Book of the Dead sources of the Theban recension has grown considerably in the last few decades (for Eighteenth Dynasty papyri, see Lapp 1996, 2004; Lüscher 2008; Lapp 2014; Munro and Fuchs 2015; for Ramesside sources, see Faulkner et al. 1994; Munro 1997), and most manuscripts are available online (e.g., on museum websites and in the database of the Totenbuch Projekt).

During the early New Kingdom, royal burial chambers were sometimes decorated with the Amduat and the Litany of Ra, displayed on the walls with linear hieroglyphs and stick-like figures mimicking an unrolled papyrus (for the



tomb of Thutmose III, see Hornung et al. 2008). The choice of script might have been indicative of ancient "secret" papyri (Goelet 2010: 128). Moreover, the preliminary versions of the texts copied in some tombs in the Valley of Kings were executed in red with signs akin to linear hieroglyphs, while more detailed hieroglyphic graphemes were written on top of



Figure 6. Papyrus of Yuya with spells of the Book of the Dead in linear hieroglyphs, reign of Amenhotep III, Cairo CG 51189.



Figure 7. Ostracon Louvre N 684bis, recto: master copy from which texts in linear hieroglyphs were copied onto the walls of the burial chamber of Nakhtmin, TT 87, Eighteenth Dynasty.

them with black ink and later carefully carved out (Hornung 1971: pls. 49-59).

In the New Kingdom, master copies used for transferring compositions onto the walls of chambers decorated with linear hieroglyphic texts, and in some cases also with monumental hieroglyphs, were most likely written in linear hieroglyphs. A clear example of the former is provided by the ostraca bearing funerary texts that were found in and around the shaft leading to the burial chamber of Nakhtmin (TT 87: Lüscher 2013, 2015). (These ostraca are described by Lüscher 2015: as "mobile Zwischen-Vorlagen für den ausführenden Handwerker von Ort'-that is, portable temporary templates for the craftsmen on site; fig. 7.) The latter, exemplified by ostraca found in the courtyard of the tomb of Menkheperraseneb, were written upon with linear hieroglyphs and bore captions to tomb scenes later executed with detailed and polychrome hieroglyphs (TT 79: Guksch 1995: 125-126, 165, Abb. 60, Taf. 41, 47 a and b). A possible template or draft of the decoration of a royal tomb pillar, showing captions partially written in linear hieroglyphs, is discussed by Rummel (2003). Moreover, trial pieces on ostraca for the decoration of tombs or funerary objects were also written in linear hieroglyphs (for Ostracon Fitzwilliam E.GA.6149.1943, see Hagen 2011: 40, pl. 53).

These findings have recently raised some debate on the type of script used to compose master copies (Haring 2015; Laboury 2020: 95-96), opening up the possibility that ostraca with linear hieroglyphic signs were also used as models-sometimes in combination with hieroglyphic and hieratic models—to inscribe sarcophagi and statues (Lüscher 2013: 25-26, n. 3; Gnirs 2016). On the other hand, some secondary copies of carved hieroglyphic inscriptions were probably executed in linear hieroglyphs as well (Demarée 2002: No. 66303, 45, pls. 205-207). This is probably the case of the ostraca, inscribed with sections of the Duties of the Vizier in a mixture of linear hieroglyphs and hieratic, retrieved from an area next to the tomb of Amenemope (TT 29: Tallet 2005, 2010; Haring 2015: 70-71). These ostraca are currently considered to be in situ copies of

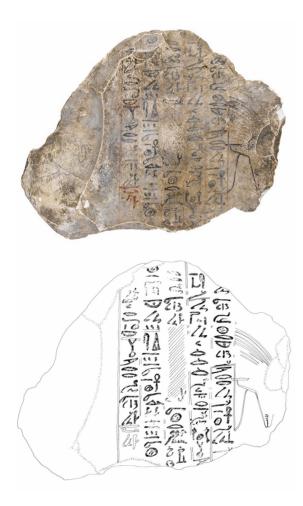


Figure 8. Ostracon Fitzwilliam E.4758.1943, with extract of the Book of Kemyt, written in a mixture of archaic or cursive hieratic and linear hieroglyphs, New Kingdom.

texts from the tomb of Rekhmira (TT 100), made in order to transfer the compositions to the nearby tomb of Amenemope (TT 29) (Laboury 2022: 44-47).

The training of scribes in linear hieroglyphs during the New Kingdom—a time of peak production of Book of the Dead papyri written in this script—is exhibited in copies of the Book of Kemyt, "a letter-like composition made up of texts from different textual genres, [...] apparently used to teach New Kingdom scribes the conventions of classic textual genres" (Motte 2022: 338). In some copies of

the latter, either an elaborate archaic script (cursive hieratic from the First Intermediate Period and the Middle Kingdom with no ligatures), or a mixture of this script with linear hieroglyphs in a columnar format (Goelet 2010: 125; 2013: 116), was employed: see Gasse (2005: 86-162) and Motte (2022). Examples of such copies are oBM EA 29548 recto (Demarée 2002: 25, pl. 76) and oFitzwillian E. 4758.1943 (Hagen 2011: 14, pl. 56; fig. 8). Goelet has suggested that those in charge of decorating tombs and funerary equipment with religious texts written in columns of linear hieroglyphs would have developed some of their required scribal skills by copying the above-mentioned Kemyt exemplars (2003: 20-125-126; 2013: 2010: 118-119). Additionally, writing exercises with the repetition of isolated linear hieroglyphs have been found at Deir el-Medina (e.g., CGT 57300).

Linear hieroglyphs are also attested in New Kingdom graffiti. To the above-mentioned instances of the insertion of linear hieroglyphs in hieratic graffiti in order to monumentalize or sacralize the relevant portions of the inscription should be added the so-called restoration graffiti in the temple of Medinet Habu. These graffiti, dated to the post-Amarna Period (Epigraphic Survey 2009: 64-67, pls. 96-98; fig. 9), were intended as guides for those repairing areas damaged by Atonists (Laboury 2022: 54-56). Linear hieroglyphs were used here as a system for communicating information between scribes and artists/carvers.

Linear hieroglyphs continued to be used in the Third Intermediate Period, on funerary papyri. They were employed in manuscripts of the Book of the Dead tradition, where examples of linear hieroglyphs (Naville 1912; Nagel 1929: 7-9) and of hieratic coexist, while on papyri of the Amduat type (Sadek 1985), and on those bearing extracts of the Litany of Ra, linear hieroglyphs coexist with solid hieroglyphs (examples of all productions in Lenzo Marchese 2019). Linear hieroglyphs reappeared in the Kushite Period on papyri (Munro 2009; fig. 10) and in some Theban monumental tombs in the decoration of the



GR. 418

Figure 9. Post-Amarna Period restoration graffito at Medinet Habu.



Figure 10. Text of Tashepenkhonsu, pMoscow Puskhin-Museum I, 1b, 121, Twenty-fifth Dynasty.

burial chamber (Molinero Polo and Rodríguez Valls 2017; 2018: 81-82). They are also attested on coffins dated to the Twenty-fifth and Twenty-sixth Dynasties: on some examples of the group belonging to the priests of Montu (Gauthier 1913: pls. IX-X, XII); on certain examples, probably produced by the same atelier, found by Schiaparelli in reused tombs in the Valley of the Queens (Guzzon 2018: 342-345); on examples provided Sheikholeslami (2010: fig. 4); and for the coffin of Seshepenmehyt, c. 600 BCE, London BM EA 22814. Some Late and Ptolemaic Book of the Dead manuscripts were composed in a script akin to linear hieroglyphic but with signs that display a return to more pictorial forms (von Falck 2006; Munro and Vittmann 2019).

Linear hieroglyphs are attested in other domains and on other types of artifacts, but they were not prevalent in any of these contexts. Such is the case of statues and stelae, which were normally inscribed with the more

formalized and value-laden hieroglyphs. Scarcity of resources, or lack of expertise of the scribe/carver, for instance, could explain the use of a more cursive script—mainly linear hieroglyphs but with interspersed hieratic signs—in examples from different periods: for an Old Kingdom statue, see Schaefer (1908: 7); for examples of Middle Kingdom stelae, see Martin (2005: No. 22, 31); for New Kingdom cases of stela-ostraca, see Dorn (2011: Kat. 47, Taf. 53; Kat 197, Taf. 187); and for Ptolemaic stelae, see Allen (1936: 43-44, pl. XX). Linear occasionally hieroglyphs occurred inscriptions on monumental constructions (e.g., cult structures at the early Ptolemaic Period animal necropolis of Tuna el-Gebel: Schlüter 2017) and on funerary artifacts, such as Letters to the Dead (Donnat 2014: docs. 12 and 13, 65-67, 194, 199), shabtis (Schneider 1977: pl. 11, No. 3.1.1.19), open-work coffins and cartonnages, and hypocephali (small amuletic disks placed under the head of the

deceased) (Mekis 2020: no. 71, pl. XVIII; no. 75, pl. XVIII). There are few examples of Middle Kingdom works of literature copied in this script, mainly versions of the Teaching of Amenemhat on ostraca with signs written between ruled lines. The choice of linear hieroglyphs could indicate an apprentice context similar to that of the educational Kemyt text (Parkinson 2002: 73, and see examples in Goedicke and Wente 1962: pls. 1-2).

# Palaeography: Diachronic Stability and Synchronic Variability

A characteristic of linear hieroglyphs often emphasized by scholars is the tendency of the morphology of the signs to remain stable throughout the centuries (Munro 1988: 194; Ali 2001: 10; Haring 2006: 8, n. 6; Allam 2007: 36-37; Lucarelli 2020: 581-582, 587-588; Servajean 2020: 543). Linear hieroglyphic writing has thus been qualified as sehr normiert (Munro 1988: 194; Lüscher 2015: 100), and the hitherto palaeographical attempts to use the form of certain signs as a dating criterion (Munro 1988: 194-197, 257, and Liste 20 for the sign Gardiner A1) have met with some criticism (Lüscher 2008: 5-6, 36-37; 2015: 100). Some tendencies have, however, been highlighted by scholars; such is the case of the archaizing trend detected on papyri and coffins of the late New Kingdom and early Third Intermediate Period reflecting a return to the elaborate linear hieroglyphs Ramesside models (Niwiński 1989: 92, tables VII a and b). A similar trend from the Twentyfifth Dynasty led to the imitation of monu mental hieroglyphs and an increase in the number of inner details added to the graphemes (Lucarelli 2020: 585; see fig. 10). Finally, a new style seems to have come into vogue in the productions from the Twenty-Sixth Dynasty to the Ptolemaic Period (Konrad 2022: 60-61, figs. 31 a and b).

Although at a diachronic level few changes in this script have been discovered, from a synchronic point of view linear hieroglyphs covered a wide spectrum of forms, formality, iconicity, and embellishment, ranging from detailed signs to schematic ones, and the repertoire often included hieratic and mixed, or hybrid, signs (Lüscher 2008: 4-5; Graefe 2015: 122-123; Molinero Polo and Rodríguez Valls 2018: 80-81). The variety of forms of the grapheme Gardiner D2 attested in a single document is illustrative of this trait (fig. 11): some scribes used forms closer to hieroglyphs, others tended towards hieratic, while others directly included hieratograms (Möller 1909: Nr. 80) or opted for hybrid graphemes, i.e., a special category of signs that cannot be taken as simply hieratic or linear hieroglyphs, respectively (Ali 2002: 14, 27; Allam 2007: 35; Lüscher 2015: 100; other examples are analyzed by Graefe 2015: 123-124, Abb. 12-14). In methodological terms, this wide variety of forms poses a problem for a modern analytical search for distinct categories, and it should be recognized that the boundaries between the abbreviated form of a linear hieroglyph and a hieratic sign are often fuzzy (Gasse 2015: 246; Dorman 2019: 39, n. 101; Díaz-Iglesias Llanos 2022).

Additionally, there are a considerable number of variations in individual handwriting within a given linear hieroglyphic text. There are many explanations for this variability and for the fluid exchange between regular and abbreviated forms, and between linear hieroglyphs and hieratic signs, attested for a single scribal hand: constraints imposed by the physical medium, such as a lack or abundance space; material and psychological circumstances of execution, including the pace of work and mood of the scribe; mechanical mistakes (errors made unconsciously during the copying process); scribal habits; and individual choices dependant on the skills, educational background, and experience of the copyist. These possibilities and their support in scholarship have been summarized in Díaz-Iglesias Llanos (2022).

Finally, it bears repeating that the usual orientation of linear hieroglyphs was toward the right and that scribes were most accustomed to writing in that direction, which was also prevalent in hieratic. Accordingly, left-facing linear hieroglyphic signs, normally applied to adjust the orientation of the signs to the direction of the leftward figures they ac-



Gardiner	Visual Glyph	TT 11					
D2	<b>\pi</b>	<b>♥ № 9 9 9 2</b> WI77 WII31 CVx+7 WI13 CI35 CI49	Nr. 80				

Gard.No.	MR Ram.Pap.			18 Dyn.			19 Dyn.		21 Dyn.
Möller No.	V	VI	VII	Th/Am	Iuya	Nbsny	Hu.	Ani	M.k.R.
D.2 80	12 (19 PM 74	0 2 1 0 3 4 0 4 0 4 5 4 4 7 2 7 2	013 014 0x 6 0x 1 0x 5	T.XXIII T.XXIII T.XXIII *Q* •Q* •Q* AXLI	19-19 17-23 Constitution of 2 101	17.48 17.48 • QP 137.6 • QP 137.13 • QP	8 8 2 21	T P	Q 15 (

Figure 11. Variants of the sign Gardiner D2 in cursive hieroglyphs, illustrating the variety of forms within a single scribal hand and differences between copyists in a given manuscript.

companied, may have been less skillfully rendered because of scribal inexperience (examples in Molinero Polo and Rodríguez Valls 2017; 2018: 81-82; see also Haring 2006: 10-12).

History of Research, Present Research Questions, Future Priorities

Linear hieroglyphs have remained on the sidelines of palaeographic studies, which have traditionally centered on hieratic (Gülden et al. 2020; Polis 2020) and, more recently, on hieroglyphs (Meeks 2007; Servajean 2020). The reasons adduced for this imbalance are the ease with which the linear hieroglyphic signs can be identified and the slow pace of diachronic

change they effected, meaning that they were not catalogued as a tool for reading documents because it was not necessary to do so (Molinero Polo and Rodríguez Valls 2018: 71; Konrad 2022: 58).

Nevertheless, despite these circumstances, the history of palaeographic research on linear hieroglyphs has advanced in several waves. In the 1980s, pioneering scholars produced short commentaries on, and comparative tables of, some linear hieroglyphic signs in Book of the Dead papyri of the New Kingdom (Munro 1988: 194-197, 257, Liste 20) and Third Intermediate Period (Niwiński 1989: 91-93, Tb. VIIa-c). An earlier attempt at gathering a palaeography of linear hieroglyphs by Ali

(2001) was never followed up. More recently, important steps forward have been represented by the publication of palaeographies of simple monumental hieroglyphs in some New Kingdom tombs at Deir el-Medina (TT 1: Haring 2006; TT 335: Servajean 2011). While Haring (2006: 7-8) classifies the signs in these tombs as monumental hieroglyphs with a simple appearance, Servajean describes the signs as "une écriture qui ressemble à une sorte de cursive hiéroglyphique de grande taille" (2011: v) and Goelet (2010: 127-128) refers to them as solid cursives or solid painted hieroglyphs. Despite these terminological discrepancies, the studies by Haring and Servajean are characterized by an effort to trace the influence of linear hieroglyphs written in contemporary papyri on the signs of these monuments.

Other milestones were the publication of the repertoire of linear hieroglyphs inscribed in a Kushite burial chamber (TT 223: Molinero Polo and Rodríguez Valls 2017), and the study of the specific form of some signs from the Third Intermediate Period (Gardiner V28: Taylor 2006; A50 and V16: Sheikholeslami 2010). A most important boost for the palaeographic analysis of this script is Ursula Verhoeven's Altägyptische Kursivschriften: Digitale Paläographie und systematische Analyse des Hieratischen und der Kursivhieroglyphen (the <u>Aku-</u> Project). Launched in 2015, the project has an estimated duration of 23 years. It aims to compile a digital palaeography of the cursive scripts—including hieratic, abnormal hieratic, and cursive hieroglyphs-intended as an archive for the repertoires of signs in all stages of development, from the Early Dynastic through the Roman Periods. This palaeography is accompanied by, or based on, a complex database with complete metadata that will enable the pursuit of research questions about the links among the scripts and about aspects of the cultural and material context of writing (Gülden and van der Moezel 2016; Verhoeven and Gülden 2017). Currently, the linear hieroglyphic section of this project is preparing various sub-modules with First Intermediate Period-Middle Kingdom sources inscribed with Coffin Texts (coffins, burial chambers, and a canopic chest) and New Kingdom manuscripts containing Book of the

Dead spells (information kindly provided by Tobias Konrad, of the *Aku*-Project: personal communication, February 2022).

A compilation of detailed palaeographies of linear hieroglyphs written on various media, with different tools and belonging to various genres, periods, and regions, is a desideratum that will help us recognize the characteristic features of this writing typology. It will help clarify whether the forms of the signs sustained diachronic changes and whether the script can be used for dating purposes. Moreover, it will open the way to the wider socio-cultural picture, and thus allow us to recognize the variability of forms within this script and to evaluate whether specific linear hieroglyphic signs tended to be rendered in hieroglyphic versions (as suggested by Graefe 2015: 124, Abb. 15) or followed hieratic forms (Ali 2001: 14, 19, 20, for W1). It would be advisable to organize the signs from their simple to their complex forms in palaeographic charts (as in Posener-Kriéger, Verner, and Vymazalová 2006: 442-451).

Such compilations of morphologies of linear hieroglyphs will also be useful to our understanding of why some scribal errors were made (for example, the simplification of the outer shape and details of linear hieroglyphs can result in two distinct signs looking alike: some examples are gathered by Lüscher 2015: 102). Furthermore, a comparative study of the shapes of linear hieroglyphs with those of hieroglyphs and hieratograms will serve to establish the analogies and differences among the three scripts, helping us to delineate the specificities of each of them. Further analysis of the ductus, with the observation of the strokes that compose a linear hieroglyphic sign, will assist our determination of whether scribes followed certain rules when tracing a grapheme (Ali 2001: 10), or whether hieratic had any technological influence on this script. The pursuit of these research priorities would significantly advance the knowledge of scribal education and idiosyncrasies currently available to us. Finally, a systematic comparison between linear hieroglyphs written on various media in a given period (for example, Book of the Dead spells on shrouds, papyri, and walls of burial

chambers of the early Theban recension [Díaz-Iglesias Llanos fc.], or copied onto the walls of Twenty-fifth and Twenty-sixth Dynasty burial chambers and coffins [Molinero Polo and Rodríguez Valls fc.]) would further indicate

whether scribes specialized in writing a certain type of text or on a specific type of object (Sheikholeslami 2010: 407, 408-409).

### Bibliographic Notes

Linear hieroglyphs have remained on the periphery of our studies of Egyptian script forms and palaeographies, which have traditionally centered on hieroglyphs and hieratic. It is significant that no entry is devoted to them in the *Lexikon der Ägyptologie* (but see contributions by Lucarelli 2020, Stauder 2020: 875-876, and Konrad 2022 in recent handbooks of Egyptian epigraphy and writings). There are brief comments on linear hieroglyphs in several publications: Fischer (1976: 39-43); Munro (1988: 193-197); Parkinson and Quirke (1995: 24-26); Goelet (2003: 10-13) and (2010: 127-128); Lüscher (2015: 99-102); Verhoeven (2015: 38-39); and Gasse (2016: 62-65). Although contributions to their study have flourished since the new millennium (Ali 2001; Allam 2007; Graefe 2015; Lucarelli 2020), their detailed analysis has not been undertaken. However, important publications of repertoires of linear hieroglyphic or related signs (Haring 2006; Servajean 2011; Molinero Polo and Rodríguez Valls 2017), and the work of the *Altägyptische Kursivschriften* (*Aku*-)Project, are paving the way for a more detailed exploration of this script.

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- Figure 1. Book of the Dead spells, rendered in linear hieroglyphs, on the ceiling of the burial chamber of Djehuty (TT 11), Eighteenth Dynasty. (© Djehuty Project/José M. Galán.)
- Figure 2. Combination of hieratic and linear hieroglyphic signs on Fourth Dynasty papyrus H from Wadi el-Jarf. Linear hieroglyphs formalize the opening lines. (Tallet 2017a: fig. 6 © Gaël Pollin.)
- Figure 3. Hymns to Sobek in linear hieroglyphs on pLondon BM EA 10759.3, Middle Kingdom. (Parkinson and Quirke 1995: fig. 12.)
- Figure 4. Depiction of documents held in the hands of officials, written in a variety of cursive scripts, and bearing administrative information related to the Asiatics' caravan and the desert hunt in the tomb of Khnumhotep II at Beni Hassan, Twelfth Dynasty. (Donnat 2012: fig. 6 top; fig. 7 bottom.)
- Figure 5. Mid- to late Twelfth Dynasty coffin lid of Khety with Coffin Texts in linear hieroglyphs, MMA 32.1.133a-k. (© Metropolitan Museum of Art.)
- Figure 6. Papyrus of Yuya with spells of the Book of the Dead in linear hieroglyphs, reign of Amenhotep III, Cairo CG 51189. (Photograph by the author.)
- Figure 7. Ostracon Louvre N 684bis, recto: master copy from which texts in linear hieroglyphs were copied onto the walls of the burial chamber of Nakhtmin, TT 87, Eighteenth Dynasty. (Lüscher 2015: Taf. 15.)
- Figure 8. Ostracon Fitzwilliam E.4758.1943, with extract of the Book of Kemyt, written in a mixture of archaic or cursive hieratic and linear hieroglyphs, New Kingdom. (Hagen 2011: pl. 56.)
- Figure 9. Post-Amarna Period restoration graffito at Medinet Habu. (Epigraphic Survey 2009: pl. 97.)



Figure 10. Text of Tashepenkhonsu, pMoscow Puskhin-Museum I, 1b, 121, Twenty-fifth Dynasty. (Munro 2009: Taf. 4.)

Figure 11. Variants of the sign Gardiner D2 in cursive hieroglyphs, illustrating the variety of forms within a single scribal hand and differences between copyists in a given manuscript. Top: examples drawn from the burial chamber of TT 11, Eighteenth Dynasty (prepared by the author). Bottom: examples drawn from Ali (2001: 16).

#### In-Text Links

Aku-Project <a href="https://aku.uni-mainz.de/">https://aku.uni-mainz.de/</a>

BM EA 10470 <a href="https://www.britishmuseum.org/collection/search?keyword=EA&keyword=10470">https://www.britishmuseum.org/collection/search?keyword=EA&keyword=10470</a>

BM EA 22814 <a href="https://www.britishmuseum.org/collection/object/Y">https://www.britishmuseum.org/collection/object/Y</a> EA22814 <a href="https://www.britishmuseum.org/collection/object/Y">https://www.britishmuseum.org/collection/object/Y</a> EA29548 <a href="https://www.britishmuseum.org/collection/object/Y">https://www.britishmuseum.org/collection/object/Y</a> EA30842

Merriam Webster – cursive <a href="https://www.merriam-webster.com/dictionary/cursive">https://www.merriam-webster.com/dictionary/cursive</a>

MMA 32.1.133a-k <a href="https://www.metmuseum.org/art/collection/search/555675">https://www.metmuseum.org/art/collection/search/555675</a>

Open-work coffins and

cartonnages

https://tt99.fitz.ms/finds/openwork.html

Qenena (Leiden T2) <a href="https://www.rmo.nl/collectie

=&period=&material=&place=&inventory

Totenbuch Projekt <a href="http://totenbuch.awk.nrw.de/">http://totenbuch.awk.nrw.de/</a>