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The Egyptian Hieroglyphic Sign for the Sky 🚐

Philippe COLLOMBERT

Université de Genève

Abstract. After refuting previous interpretations, it is argued that the Egyptian hieroglyphic sign for the sky rest represents the two closed lower hinges of a door. The sky itself, infigurable by nature, would therefore only be represented by the entrances through which it could be reached. This hypothesis fits perfectly with the standards of the Egyptian iconographic and scriptural repertoire from the earliest periods, when the sign first appeared, while at the same time echoing the sign rest that represents a concrete element of the material world, the door hinge. It also resonates with conceptions of the Egyptian imaginary world as revealed in ancient texts (the famous motif of the "doors of the sky").

Keywords. Egyptian hieroglyphs, hieroglyphic repertoire, sky, doors of the sky, hinge.

Most of the signs in the Egyptian hieroglyphic repertoire reproduce the concrete realities of the physical world and are therefore easily identifiable, even to the untrained eye. This is true, for example, of most of the signs representing animals,¹ or those reproducing elements of material culture. Others, more exclusively linked to Egyptian iconographic codes, are no less easily identifiable once these codes have been penetrated.

However, the interpretation of a number of hieroglyphs, including some representing some of the most fundamental Egyptian concepts, remains controversial to this day, at least in part of their details. This is the case, for example, of the sign of the divine \exists , which most researchers agree to interpret as a mast surrounded by a piece of cloth,² but no absolute proof of this interpretation has

In a more nuanced presentation of the facts, it should be pointed out that certain signs representing animals remain difficult to identify, both because of the imprecision of the representations available to us and because of certain deceptive iconographic "effets de réel" (according to a Western conception of the image); the difficulty of interpretation is of course just as obvious in the case of hybrid or stylised animals.

² See Meeks 2004: 167, § 452. Newberry 1947: 90–99 described the sign as "a pole wrapped round with a band of cloth, bound by a cord, the end projecting as a flap or streamer." The identification is repeated in more or less the same way thereafter (see for example Hornung 2005: 22–24, who describes it more simply as "Stab mit Bändern"

yet been produced.³ The same is true of the sign ², the symbol of life in Egyptian culture, which is now proposed to be understood as a knotted cloth,⁴ or the sign ¹, standing for the concept of "stability," which should probably be interpreted as the stepped representation of four columns, one behind the other.⁵ Throughout the history of Egyptological research, all these signs have been interpreted in very different ways. In the course of their millennia-long history, the ancient Egyptians themselves reinterpreted certain signs and discussed their interpretation.

The sign $regimes_{i}$, which represents the sky in both Egyptian iconography and the hieroglyphic repertoire, is one of these commonplace motifs, so commonplace that we often forget to wonder about the origin of their iconography. The sign is one of the well-known components of scenes symbolising the cosmos, in association with a motif representing the ground or earth, and separated by two " w^3s -signs," the whole delimiting the space in which figurative scenes are inscribed (fig. 1). In most lists of signs in modern grammars, the sign regimes is simply referred to as the "representation of the sky."⁶



Fig. 1. Scene symbolising the cosmos (after Schäfer 1928: 114, fig. 40).

["rod with bands"], and who cites other similar interpretations). It should be noted that Schäfer 1896: 159, n. 3 already suggested that the sign should be understood as "vielleicht wirklich ursprünglich eine Fahne?" ("perhaps really originally a flag?"). See Baines 1991: 29, who presents and comments on all these references. See also the still relevant comments of Petrie 1892: 32. It should be noted that in the early days of Egyptology, J.-Fr. Champollion had interpreted the sign as an axe (Champollion 1841: 345, published posthumously).

- 3 There is still a degree of imprecision regarding the exact interpretation of each of the sign's components: is the vertical element a mast or a simple stick? Is the surrounding fabric a strip or a simple cloth? The answers to these questions are fundamental to our understanding of the ancient Egyptians' relationship with the divine.
- 4 See Meeks 2004: 206, § 563; Meeks 2019: 3–10 (listing numerous previous interpretations).
- 5 See Bergerot et al. 2018: 31–40; Fissolo 2022: 201–208.
- 6 See, for example, my own description of the sign: Collombert 2010: 96, § 170: "représentation imagée, avec les pointes à chaque extrémité qui permettent au ciel de s'appuyer sur les étais qui le soutiennent" ("a pictorial representation, with the spikes at each end allowing the sky to rest on the supports that hold it up").

In a strange attempt at empiricism, some Egyptologists have occasionally tried to imagine how this motif/sign could fit into a three-dimensional reality, blending physical realities and Egyptian representations (fig. 2)! And so appears the question of the three-dimensionality of the motif/sign: rectangular or circular? Flat or curved? With or without a continuous extension of the terminal spikes? (figs. 3 and 4).⁷ It is doubtful whether such perspectives would have seemed really relevant to ancient Egyptian thinkers. What is more, the multiplicity of approaches so characteristic of the ancient Egyptians' system of thought and representation does not mean that all the representations composed with the sky motif are coherent; we know that the Egyptian pictorial system accommodates—and even proposes—assemblages of motifs that are often quite different, as long as these compositions remain aesthetically acceptable.



Fig. 2. A free attempt to match the Egyptian representation of the sky with actual representation of the earth (after Maspero 1895: 17).

Schäfer 1928: 95. See also Maspero 1895: 17–18: "Le ciel s'étendait au-dessus, pareil à un plafond de fer, plat selon les uns, voûté selon les autres. La face qu'il tourne vers nous était semée capricieusement de lampes suspendues à des câbles puissants, et qui, éteintes ou inaperçues pendant le jour, s'allumaient la nuit ou devenaient visibles à nos yeux. Comme il ne pouvait demeurer arrêté au milieu des airs sans être appuyé de quelque support, on avait inventé de l'assurer au moyen de quatre colonnes, ou plutôt de quatre troncs d'arbre fourchus, semblables à ceux qui soutenaient la maison primitive; mais on craignit sans doute qu'ils ne fussent renversés dans quelque tourmente, car on les remplaça par quatre pics sourcilleux, dressés aux quatre points cardinaux et reliés par une chaîne de montagnes ininterrompue." ("The sky stretched out above like an iron ceiling, flat according to some, vaulted according to others. The face which it turned towards us was capriciously strewn with lamps suspended from powerful cables, and which, extinguished or unnoticed during the day, lit up at night or became visible to our eyes. As it could not remain stationary in mid-air without some form of support, it was invented to secure it by means of four columns, or rather four forked tree trunks, similar to those that supported the original house; but it was doubtless feared that they would be toppled in some storm, for they were replaced by four supercilious peaks, erected at the four cardinal points and linked by an unbroken chain of mountains.")



Fig. 3. A free interpretation of the three-dimensionality of the motif/sign (after Schäfer 1928: 95, fig. 13).



Fig. 4. Another free interpretation of the three-dimensionality of the motif/sign (after Schäfer 1928: 95, fig. 15).

At the very least, could the sign is not refer to any concrete reality? In fact, the ancient Egyptians themselves, in the famous list of signs they collected in Roman times, defined the sign is a nothing other than "sky."⁸ However, this lapidary formulation cannot be taken as definitive; we know that the origin of a great many signs at this very late date had long since been lost or reinterpreted. Furthermore, this papyrus does not aim to give a precise description of each of the signs it lists, especially those whose interpretation was probably obvious to the majority of hierogrammates. This brief description of the sky sign—which is not, after all, a description in itself—is also found elsewhere in the same papyrus for other signs.⁹

Finally, refusing to look for a more or less material origin for the sky sign should be a last resort: the ancient Egyptians overwhelmingly preferred to represent concepts or elements of their imaginary world through motifs that referred in one way or another to a concrete element. To illustrate this point, consider once again the examples of the signs \exists, \dagger and \ddagger mentioned above.

From this perspective, the sky sign = has nevertheless been the subject of some research into the origin of its iconography, interpretations that can be grouped under four main headings, which I discuss in turn:

- the sign represents, or is at least inspired by, the image of a ceiling (§ 1);
- the sign represents, or is at least inspired by, the image of an upside-down world (§ 2);
- the sign \models represents, or is at least inspired by, the image of an item of furniture (§ 3);
- the sign \models represents, or is at least inspired by, the image of a canopy (§ 4).

⁸ Griffith & Petrie 1889: 15 (XIII, 5) and pl. III.

⁹ Thus, for example, the horizon sign △ is simply described as "horizon" (Griffith & Petrie 1889: 15 [XIV, 2] and pl. III) and not as a *"sun rising between two hills," which it obviously was for any hierogrammate.

1. The sign represents, or is at least inspired by, the image of a ceiling

The interpretation of the sky sign that seems to prevail today is that it represents a ceiling. In his posthumous dictionary, J.-Fr. Champollion¹⁰ began his list of Egyptian hieroglyphic signs with this one, and was the first to analyse it as a "plafond" ("ceiling"), completing its definition as a "caractère symbolico-figuratif, signe de l'idée ciel" ("symbolic-figurative character, sign of the idea of sky"). He was followed by many authors.¹¹

There is in fact a word $h^{3}.t$ that undeniably means both "roof, ceiling" and "sky,"¹² attested with both meanings from the Middle Kingdom onwards. The second word in the title *smsw* $h^{3}y.t$, attested from the Old Kingdom onwards and most often translated as "elder of the gate," a judicial title,¹³ is clearly based on the same root. The term $h^{3}y.t$ is commonly translated as "porch, gate" and variants.¹⁴

It seems clear that these two words, $h^{3}.t$ and $h^{3}y.t$, stemming from the same root, are linked to the roofing of a building and that the term $h^{3}y.t$ refers to a "roofed structure, a portico or the like."¹⁵ Both $h^{3}.t$ and $h^{3}y.t$ are attested with the sign = as a determinative, from the Middle Kingdom onwards. However, the earliest attestations of the root (attested only in the title *smsw* $h^{3}y.t$), in the Old Kingdom, do not show this sign, but an elongated rectangle = ¹⁶ (see for example fig. 5 here, with a formally analogous, but probably different, sign for writing the root m^{3} .



Fig. 5. Examples of the elongated rectangle <u>—</u> in the mastaba of Hetepherakhty (Museum of Leiden) © Philippe Collombert.

- 10 Champollion 1841: 1.
- 11 See, for example, Regulski 2010: 147: "sky hieroglyph representing heaven as a ceiling."
- 12 Wb. II, 476, 12–13: "Himmel; Dach eines Gebäudes"; Gardiner 1947, II: 210*–211*.
- 13 See Jones 2000: 902–904.
- 14 Wb. II, 476, 4–11: "Halle, Vorhalle."
- 15 Gardiner 1947, I: 61*.
- 16 See the attestations listed by Fischer 1996: 228–229.

It should be noted that a very rare variant from the late Old Kingdom uses an exceptional sign \square , which H.G. Fischer has convincingly interpreted as representing a bag filled with magistrates' staffs, a symbol of their power and of the function of this $h^3y.t.^{17}$ However, this exceptional variant cannot be used to help identify the more common one \square , which clearly has nothing to do with this sign \square ; the latter should rather be considered as a hierogrammate's "sportive writing," with no descendants. Although it has parallels in the figurative representations of the period, it differs in that it is used horizontally (\square) and not vertically as in the more realistic iconographic representations, as if an attempt had been made to adapt the general layout of the rare sign \square to the more usual spellings using \square .

So what might this sign - represent? Even if H.G. Fischer "doubt[s] that its subsequent transformation into - provides a clue to its original significance,"¹⁸ it seems to me that A.H. Gardiner's proposal¹⁹ to interpret this sign - as a wooden beam or a stone roof slab is a simple and convincing solution, which resonates with the notion of a ceiling.²⁰ Interpreting it as a representation of a "baton, i.e., a short stick," as H.G. Fischer seems to suggest²¹—particularly in view of the variant with the determinative of the wood sign - attested in at least three examples from the Old Kingdom²²—is certainly not impossible, but we would more readily expect a vertical rather than a horizontal sign in this case. The other variants of the determinative attested for this word $h^3y.t$ in the Old Kingdom are entirely consistent with the interpretation, proposed here, of the sign as a wooden beam: the determinative of the sign for wood - (see above); in the Middle Kingdom, we also find the representation of a roofed structure.²³

From this long digression, it is worth remembering for our purposes that the sky sign = has no recognised link, in the hieroglyphic system of the Old Kingdom, with the notion of a ceiling, which seems to use a sign = instead.

Finally, if we should consider that the sign = represents a ceiling, how should we interpret the two spikes at the ends of the sign? It is not clear what architectural reality these essential elements might relate to.²⁴ An abstract representation, with no link whatsoever to an architectural reality,

- 17 Fischer 1996: 227-232.
- 18 Fischer 1996: 232.
- 19 Gardiner 1947, I: 60*–61*.
- 20 Despite the arguments to the contrary, which in my view are not decisive, put forward by Fischer 1996: 232, n. 446. Of course, we should not group together all rectangular signs with a similar appearance under the same identification of "beam," as they may refer to many different realities despite their similarity, given the basic nature of the rectangular sign.
- 21 Fischer 1996: 229.
- 22 Examples listed by Fischer 1996: 229 and n. 418.
- 23 See CGC 20017, mentioned by Gardiner 1947, I: 60*.
- 24 My own earlier interpretation, recalled above, n. 6, is not based on any parallel.

simply indicating the downward direction, would remain pure speculation, with no attested parallel in the iconographic and hieroglyphic repertoire.

While the interpretation of various ceilings as representations of the sky is undeniable in Egyptian symbolism, this connection does not seem to be at the origin of the creation of the sign. On the other hand, it is possible, even probable and logical, that the connection between "sky" and "ceiling" *subsequently* led to the use of the sky sign in a number of architectural terms involving the notion of covering. Similarly, Egyptian iconography contains many representations of buildings in which the sky sign serves as a ceiling.

2. The sign = represents, or is at least inspired by, the image of the world turned upside down

H. Schäfer,²⁵ in his study of the representation of the world according to the ancient Egyptians, seems to think that the sky sign raccing is inspired by the representation of two hills, which would represent the earth*par excellence*and which appears in the hieroglyphic repertoire (<math>raccing); it is also found in certain models of granaries (from the Middle Kingdom). This sign would simply have been reversed to represent the sky. It should be noted, however, that the correspondence would only be very loose, given that the two signs, beyond a vague formal resemblance, differ so much from each other.

3. The sign = represents, or is at least inspired by, the image of an item of furniture

W. Westendorf sought to demonstrate in a long article that "die geschichtliche Form des sogenannten 'Himmelsdaches' [...] sei wie das Raubkatzenbett eine Nachbildung der Himmelsraubkatze, allerdings inzwischen bis zur Unkenntlichkeit vereinfacht und entstellt" ("the historical form of the sky sign [...] would be, like the feline bed, a reproduction of the celestial feline, but in the meantime simplified and deformed beyond recognition").²⁶ This idea is based on the (hypothetical) recognition that the sky, before being imagined by the Egyptians in the form of a cow or a woman, would have been thought of as a giant feline. The sky sign would represent a (very) stylised bed, itself a representation of the celestial feline.

The explanation as a whole remains convoluted, to say the least, and is based on a series of interpretations of rather obscure texts that are not supported by contemporary iconography. All the iconographic representations and hieroglyphic signs of beds, chairs and tables attested in the Old Kingdom are always very different in every detail from the sky sign. The variants closer to the

²⁵ Schäfer 1928: 91–95; Hornung 1977: 1215–1218.

²⁶ Westendorf 1991: 426. See already Westendorf 1980: 61 and Westendorf 1966: 12–14.

Middle Kingdom cited by W. Westendorf, most of which are derived from hieratic (!) signs in the *Coffin Texts*, cannot be taken into consideration, as they are far removed both in time and in the writing system from the necessary original hieroglyphic patterns.

An example such as seal Kaplony, no. 393 (fig. 6), presented by W. Westendorf as a convincing indication of the accuracy of his identification, seems far too crude (just compare the sign with the other motifs on the seal, which are just as crude) and too isolated to be taken into consideration in a demonstration.²⁷



Fig. 6. Seal no. 393 (after Kaplony 1963: n° 393).

The main problem remains this supposed stylisation, which W. Westendorf is obliged to propose as there is nothing in contemporary iconography to validate his theory.

4. The sign represents, or is at least inspired by, the image of a canopy

Very recently, J.-L. Fissolo suggested that this sign = should be seen as a representation of a canopy, set on four uprights; the triangular ends would represent the shape taken by the fabric at the four corners of such an utensil (fig. 7).²⁸



Fig. 7. Free representation of a canopy as model for the sign of the sky (after Fissolo 2022: 203, fig. 2).

- 27 Finally, H.G. Fischer, a great specialist in hieroglyphic palaeography, explains in a footnote that he "cannot believe, with Westendorf, that the hieroglyph for *pt* represents a bed, seat or table" (Fischer 1996: 207, n. 232).
- 28 Fissolo 2022: 201–208, and especially 203.

However interesting this interpretation may be, it is not reflected in the material culture (which could easily be explained by the fragility of the material) or, more problematically, in Egyptian iconography, despite the wealth of sources. The only similar device attested in Egyptian iconographic documentation is that of the portable one-sided sunshade, present in certain scenes as early as the Old Kingdom, but which bear no similarity to the sky sign²⁹ (for example, fig. 8).³⁰



Fig. 8. Representation of a portable sunshade from the mastaba of Hesi at Saqqara (after Kanawati & Abder-Raziq 1999: pl. 55).

The variant form is most often interpreted as an influence of hieratic writing.³²

- 29 See Fischer 1972: 151–156 (= Fischer 1977: 63–68 and 182–183) and the other references cited by Fissolo 2022: 208, n. 24.
- 30 Kanawati & Abder-Raziq 1999: pl. 20 and 55.
- 31 See Fischer 1968: 86, n. 383; Vernus 1973: 226, n. l.
- 32 See Callender 2019: 215, § 314.

5. Yet another hypothesis

As we have just seen, none of the hypotheses put forward so far seems to stand up to close scrutiny, especially if, as is necessary when trying to trace the genesis of a sign, we take into account both the date of attestation of the various pieces of evidence and the iconographic and conceptual contexts in which they are found.

In the iconography of early Egyptian history, the sky may have been represented by a crescent. This is attested by the group \widehat{f} , which depicts a sky surmounting a snake/flash. The group-sign appears both engraved on certain labels from the U-j tomb³³ and painted as a mark on almost contemporary pottery.³⁴ The motif also seems to have survived into the 3rd Dynasty, on both sides of the enigmatic pillar of Netjerykhet.³⁵ Here, the zigzagging snake is again associated with the curved sign;³⁶ it should be noted, however, that the curved sign is not used in association with the snake in the lower part, but is instead used above the *serekh*, as if it were topping the inscription.³⁷

On the famous ivory comb dated to the reign of King Djet (1st Dynasty) (fig. 9), the sky appears to be represented by a pair of curved wings, whose evolution can be followed up to the famous winged solar disc of later times. Above it sails a divine bark carrying a falcon god. Beneath the wingtips, on either side, two "w's-signs" are reminiscent of those found, in later periods, at the edge of the frame, beneath the definitive sky sign (see above and fig. 1).



Fig. 9. lvory comb of the reign of King Djet (Cairo Museum JE 47176) (after Schäfer 1928: 113, fig. 39).

- 33 Dreyer 1998: pl. 33, n° 142 et 143.
- 34 Dreyer 1998: fig. 55, p. 82; Randall-Maciver & Mace 1902: pl. XVII (30). Regulski 2010: 147 interprets it, following G. Dreyer, as an ancient form of the hieroglyphic sign T, defining it as a "combination of crescent with lightning," which Morenz 2004: 93 doubts. For a detailed study of this group-sign, see the article to be published soon by Fr. Förster, St. Hendrickx, M. Eyckerman & A. Stauder, in ArchéoNil.
- 35 See Hawass 1994: 45–56 (monument kindly pointed out to me by A. Stauder).
- 36 Hawass 1994: 46, fig. 1.
- 37 Hawass 1994: 47, fig. 2.

These motifs seem to show a certain variation in the way the sky was represented in these early periods of Egyptian history, if the sky is to be seen here at all.

On the contrary, once the hieroglyphic system had been fully codified, the sign/motif appeared as it would later be attested throughout Egyptian history; the first attestations currently recorded date from the 2nd Dynasty; the motif is used as an iconographic element on a doorpost from the time of King Khasekhemwy (late 2nd Dynasty) found at Hierakonpolis (fig. 10)³⁸ and as a hieroglyphic sign on certain seal impressions from the time of Nynetjer³⁹ and, later, Netjerykhet (fig. 11).⁴⁰



Fig. 10. Door jamb of the reign of King Khasekhemwy (Cairo Museum JE 33896) © Dominique Farout.



Fig. 11. Seal no. 304 (after Kaplony 1963: n° 304).

- 38 See Quibell 1900: pl. II. My warmest thanks to D. Farout for the photograph and the permission to publish it. Ph. Seyr kindly points out to me that there may exist an early Dynastic relief fragment from Gebelein, which possibly antedate the door post of Khasekhemwy and may depict a sky full of stars (but the broken relief doesn't show the two ending spikes): see Morenz 1994: 217–238.
- 39 Regulski 2010: 514 (N1). Unpublished.
- 40 Kaplony 1963: no. 304. Note also seal no. 568 (fig. 12), difficult to date, but more or less contemporary with these first attestations (see Kaplony 1963: no. 568; Engel 2021: 28 and 126).



Fig. 12. Seal no. 568 (after Kaplony 1963: n° 568).

These examples all represent the sign in what will henceforth be the usual form: $rac{-}$, with the exception of a few insignificant variants. However, there is a contemporary sign/motif whose shape represents exactly half a sky $rac{-}$. The motif is attested on the six panels of Netjerykhet, behind the king;⁴¹ it should be noted that it is represented twice each time (fig. 13). It is also found carried by various officiants during ceremonies depicted in the reliefs of the solar temple (fig. 14)⁴² and the funerary temple of King Niuserre (fig. 15);⁴³ here too, the motif is represented twice.



Fig. 13. Relief Panels of King Netjerykhet at the Step Pyramid Complex (after Friedman 1995: 30, fig. 17).

- 41 Friedman 1995: 22 and fig. 2 on p. 3.
- 42 von Bissing & Kees 1923: pl. 16, 18, 19, 21, etc.
- 43 Borchardt 1907: 85, fig. 62a.

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Fig. 14. Relief of the solar temple of King Niuserre (after von Bissing & Kees 1923: pl. 18).



Fig. 15. Relief of the funerary temple of King Niuserre (after Borchardt 1907: 85, fig. 62a).

This strange motif, still often reused after the Old Kingdom in the same type of scene, has been the subject of numerous interpretations; the most recent and most solid one, by J. Spencer, concludes that the object represented "a part of the sky."⁴⁴ The fact that this motif sometimes alternates, albeit relatively late, with a complete sky sign is would seem to support this view.⁴⁵

Before J. Spencer and as early as 1905, G. Jéquier had also suggested interpreting them as the two halves of the sky.⁴⁶ L. Borchardt, for his part, proposed interpreting these elements as the "Thürangeln des Tempels" ("door hinges of the temple")⁴⁷ or "die großen Zapfenbeschläge der

- 45 Under the reign of Thutmose III: *LD* III, 36b; see also the references cited by Kees 1912: 129 and 237, n. 111.
- 46 Jéquier 1905: 174-175.
- 47 Borchardt 1900: 97.

⁴⁴ Spencer 1978: 54–55; the bibliography on the sign is given on p. 52, n. 2 and p. 54, n. 15. See also the more recent study by Miatello 2022: 100, who translates the two signs as "the two limits of the sky" and thus adopts J. Spencer's conclusions for these symbols.

Tempeltore" ("large pivot fittings for the temple doors").⁴⁸ In 1911, G. Jéquier agreed, describing the two elements as "deux gonds de porte" ("two door hinges").⁴⁹ The following year, H. Kees, in a fundamental study, confirmed this interpretation, relying in particular on the use of this same sign in certain spellings of the word *tph.t* "cavern, niche, chapel," as early as the *Pyramid Texts*.⁵⁰

In fact, the two interpretative hypotheses (door hinge fittings *vs.* half of the sky) are not contradictory, if we consider that the sky sign, poorly defined until now as we have seen, actually represents two door hinges facing each other. In other words, *the sign* rackrown would evoke the sky as a spacethat is closed, but capable of opening up. The sky itself, infigurable by nature, would therefore only berepresented by the entrances through which it could be reached.

6. Archaeological parallels

This type of fitting, which was inserted into the lower and upper parts of wooden doors in Egyptian buildings in order to reinforce the wood structure and acted as hinge, is well attested in archaeological material, albeit mostly from the Late Period (see for example fig. 16); some surviving examples may date back to the 18th Dynasty.⁵¹ However, O. Koenigsberger, in his book on the Egyptian door, assumes that these elements existed as early as the Predynastic period. He also explains that he found some traces of green shavings in a door-socket from the funerary temple of Userkaf (5th Dynasty), which he interprets as the remains of these bronze elements.

As can be seen from the examples found, the lower fitting was distinguished from the upper fitting by a curved angle rather than a 90° angle. This difference is due to a practical necessity: the lower pin, on which the entire weight of the door leaf rests, has a slightly curved angle that allows it to pivot more easily on the door-socket (see fig. 17).⁵²

The sky sign would therefore refer to the lower hinge, given this particular feature.

- 48 Borchardt 1907: 85.
- 49 Jéquier 1911: 183, n. 3.
- 50 Kees 1912: 128–131. See also Westendorf 1992 (reference kindly provided by Ph. Seyr).
- 51 See Koenigsberger 1936: 20–23 on these elements.
- 52 See Lacau 1954: 73–74; Collombert 2010: 115, § 216.

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Fig. 16. Bronze hinge of the 26th Dynasty (Louvre Museum N 659) © 2018 Louvre Museum / Christian Décamps.



Fig. 17. Representation of the mechanism of the Egyptian door hinge (after Lacau 1954: 74).

7. The hinge sign and textual evidence

As we have said, the hinge sign \neg is also attested in the *Pyramid Texts*, as a determinative of the word <u>tph</u>.t "cavern, niche, chapel" (fig. 18).⁵³



Fig. 18. Inscription with the word tph.t from the pyramid of Pepy II (© Philippe Collombert).

There may be textual evidence of the object dating from the Old Kingdom. In the Abusir papyri, mention is made of a door and its component parts, namely two leaves, eight closing rings and two ${}^{3}m^{\circ}.t$, which the editor has translated as "hinge"⁵⁴ because of the material of which the latter are made—copper; the radical ${}^{3}m^{\circ}$, which seems to convey the notion of articulation, would be entirely appropriate to designate such an element.⁵⁵ The editor had initially opted for a hieroglyphic transcription \circ for the hieratic determinative used in both ${}^{3}m^{\circ}.t$ and db° , apparently defined as "closing ring," but later preferred to transcribe it as Ω , given the open space present in the lower part of the sign in some of the examples (fig. 19). This sign is therefore not that of the hinge \Box , but it does bear a strong resemblance to the sign \circ which is sometimes found placed below it (\Box).⁵⁶ Could it be the representation of an element related to the hinge (the hole of door-socket or something else)?



Fig. 19. Hieratic determinatives for the words ³m^c.t and <u>db^c</u> (after Posener-Krieger & de Cenival 1968: pl. XII Pal).

- As Ph. Seyr kindly points out to me, it is noteworthy that a similar sign $\neg \neg$ appears as classifier of the *npnp.t*-cloth in the Pyramid of Pepy I (see Pierre-Croisiau 2015: 117 & 121).
- 54 Posener-Krieger 1976: 442; Posener-Krieger 1971: 77-78.
- 55 Breasted 1930: 215–216 and 293–294; von Deines & Grapow 1961: 7–8.
- 56 As early as the Pyramid Texts, see Pyr. 810c (N).

8. The door leaf motif/sign

The difference in the design of the lower (curved angle) and upper (90° angle) rotary axes is also clearly visible, both in iconography and in the somewhat detailed examples of the hieroglyphic sign of the door leaf, from the earliest times.⁵⁷

The importance attached by scribes to what might appear to be a mere detail can be gauged from its insistent presence in hieroglyphic inscriptions from the earliest periods. The first recorded example, which is particularly remarkable and detailed, appears on the Narmer palette (fig. 20). The same characteristic can be found even in some cursive examples, in the inscriptions painted on Thinite-period vases found in the galleries underneath Netjerykhet's pyramid (fig. 21).⁵⁸



Fig. 20. Sign of the door leaf on the Narmer Palette (© Philippe Collombert).



Fig. 21: Cursive sign of the door leaf on a Thinite-period vase (after Lacau & Lauer 1965: fig. 148).

- 57 See Regulski 2010: 548. See Kahl 1994: 638–639 for attestations of the sign.
- 58 See Lacau & Lauer 1965: 10, and some well-marked examples in pl. X.3 and p. 76, fig. 148.

Fine examples can also be found in representations of Old Kingdom tombs (fig. 22).

Fig. 22: Representation of a door leaf in the mastaba of Wepemnefert at Giza (after Hassan 1936: fig. 219, after p. 190).

The technical necessity of this shape for the lower hinge ensures that a reverse development of use, where the hinge would take on its characteristic shape by imitating the pre-existing shape of the sky sign, cannot be envisaged under any circumstances.

9. Opposite door leaves

The depiction of two door leaves facing each other is attested on a seal from the time of King Djet (fig. 23).⁵⁹ This makes the connection with the sky sign even more striking.



Fig. 23. Seal of the time of King Djet (after Kaplony 1963: n° 176).

The representations of palace façade with false doors that surround the sarcophagus of King Merenre in his burial chamber also show, at the level of the lower part of the leaves, an aspect that is absolutely identical to that of the sign of the sky, taken in isolation (fig. 24).

⁵⁹ Kaplony 1963: no. 176 = Petrie 1900: pl. XVIII (4). The supposed example of the sign cited by Petrie 1927: pl. 21 (481) (= Petrie 1900: pl. VIII [6]) comes from a context that is too incomplete to be used; is it really the sky sign?

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Fig. 24. Representation of a false door on the palace façade in the pyramid of King Merenre (after Pierre-Croisiau 2019: pl. VII).

In certain three-dimensional representations of false doors in Old Kingdom mastabas, such as those of Mereruka (fig. 25) or Seshemnefer II (fig. 26), the similarity is just as remarkable.



Fig. 25. Representation of a false door in the mastaba of Mereruka at Saqqara (after Sakkarah Expedition 1938: pl. 107).

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Fig. 26. Representation of false doors in the mastaba of Seshemnefer II at Giza (after Junker 1938: fig. 34, after p. 190).

10. An iconographic detail

Another palaeographic detail could well support the proposed comparison: in certain representations of doors from the Old Kingdom, the two lower hinges at the ends of the door are distinguished from the upper part of the leaf by a different colour.⁶⁰ A particularly interesting example can be found in the representation of the false doors painted around the sarcophagus in the burial chamber of Queen Behenu: the appendages are painted black, and thus clearly distinguished from the upper part of the leaves (fig. 27); the black colour most likely refers to the metal of which the hinge was made (see below). The same feature is found in the tomb of Khuy, dated to the 5th Dynasty, in the cemetery of Djedkare (fig. 28).⁶¹



Fig. 27. Representation of a false door on the palace façade in the pyramid of Queen Behenu at Saqqara (© MAFS - Emmanuel Laroze).

- 60 Jéquier 1929: pl. XII, XIV, XVI. As Ph. Seyr kindly points out to me, black-coloured lower door hinges occur already in the 3rd Dynasty. See Quibell 1913: pl. X, XV, XXI, XXII.
- 61 My warmest thanks to Mohamed Megahed for the photograph and the permission to publish it.

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Fig. 28. Representation of a false door in the tomb of Khuy at Saqqara (© Djedkare Project).

A separating line, which may recall the difference in colour, appears on some examples of the sign , although this detail seems to have only been spotted in hieroglyphs from the Middle Kingdom onwards.⁶² Given that the only evidence of this difference of treatment in the Old Kingdom can be found on representations that have retained their colour, its absence in the hieroglyphs may be explained by the disappearance of colour on signs for this period.⁶³



Fig. 29. Inscription from the temple of Sethy I at Abydos (© Philippe Collombert).

- 62 Blackman 1915: pl. 11 at the top (incorrectly indicated as pl. 9 in Collombert 2010: 96, § 170, n. 2). As Ph. Seyr kindly points out to me, this peculiarity already appears in certain examples on coffins of the late First Intermediate Period or early Middle Kingdom, see for example Steindorff 1901: pl. XIX. This horizontal dividing line is still sometimes found later (see for example Servajean 2011: 62, § 117; Epigraphic Survey 2009: pl. 47 and 121, where the line is attested both for the sign of the sky and for the two hinges). See also here, fig. 29 (New Kingdom: Temple of Abydos, Sety I).
- 63 I have identified one example of the sky sign in blue colour (see Mysliwiec 2004: 179 and pl. LXXIV), but in a context where the colours of the signs are more in opposition to each other in the general motif of the inscription than used to echo a material reality. Another example, in red colour (see Smith 1946: 367), is equally uninformative. In our case, the question of the sign's colour does not shed any decisive light on the origin of the motif.

In another iconographic example from the Old Kingdom at Deshasha, the dividing line is drawn a little higher up on the leaf, in order to highlight, perhaps even more accurately in the representation, the element of metal reinforcement that must necessarily have engaged in the lower part of the leaf, in whole or in part (fig. 30).⁶⁴



Fig. 30: Representation of a door leaf in the tomb of Shedu at Deshasha (after Kanawati & McFarlane 1993: pl. 49).

11. The doors of the sky

If we accept the hypothesis put forward here that the sign of the sky represents the two lower hinges of a door—or at the very least two bottom of door leaves—facing each other, the symbolism conveyed by this choice of figuration becomes transparent: it can be linked directly to an extremely common concept in Egyptian religious thought, namely the fact that, for the ancient Egyptians, the sky was a place that was reached after passing through its gates.

The "doors of the sky" are indeed a recurrent motif in religious literature, from the *Pyramid Texts* to the end of Egyptian history.⁶⁵ Suffice it here to quote the refrain so often heard in the *Pyramid Texts*: "The doors of the sky are open; the doors of the Cold Region are pulled open." ⁶⁶

The opening of the doors of the sky is also an Egyptian topos with many possible variations. One famous example is the identification between the doors of the sky and those of the naos, which are opened in the privacy of the sanctuary in order to enter into contact with the divine forces.⁶⁷ Our proposed identification may also open up new avenues of interpretation; we know, for example,

⁶⁴ Kanawati & McFarlane 1993: pl. 49 (line not figured in Petrie 1898: pl. XXI).

⁶⁵ See Brunner 1986: 782–783; Zivie 2009: 16–23; Berlandini-Keller 2009: 27–43; Bergerot et al. 2020: 3–28.

⁶⁶ PT 325, 479, 563, 573, etc.

⁶⁷ See, for example, Brovarski 1977: 107–115; Černy 1948: 120.

that the doors of the sky are sometimes said to be made of metal;⁶⁸ and if the sky itself is often said to be made of *bj*³, could this not be an allusion to the material from which its hinges were made?⁶⁹

In the end, although not totally certain, the hypothesis proposed here has the advantage over previous interpretations of satisfying two important premises. Firstly, it fits in perfectly with the standards of the Egyptian iconographic and scriptural repertoire from the earliest periods, when the sign first appeared, while at the same time echoing the sign \neg that represents a concrete element of the material world, the door hinge. And it resonates with conceptions of the Egyptian imaginary world as revealed in ancient texts.

References

- Almansa-Villatoro, J. 2019. "The Cultural Indexicality of the N41 Sign for *bj*³," *Journal of Egyptian Archaeology* 105: 73–81.
- Baines, J. 1991. "On the symbolic context of the principal hieroglyph for 'god'." In: Religion und Philosophie im Alten Ägypten. Festgabe für Philippe Derchain zu seinem 65. Geburtstag am 24. Juli 1991. Orientalia Lovaniensia Analecta 39, ed. by Ursula Verhoeven & Erhardt Graefe: 29–46. Leuven, Peeters & Departement Oosterse Studies.
- Bergerot, L., et al. 2018. "Ptah et l'énigmatique sceptre djed," Égypte, Afrique & Orient 91: 31-40.
- Bergerot, L., et al. 2020. "Ouvrir les vantaux du ciel," Égypte, Afrique & Orient 99: 3-28.
- Berlandini-Keller, J. 2009. "Résidences et architectures célestes." In: *Les portes du ciel: visions du monde dans l'Égypte ancienne*, ed. by Marc Étienne: 27–43. Paris, Musée du Louvre, Somogy.
- von Bissing, F.W.F. & Kees, H. 1923. Das Re-Heiligtum des Konigs Ne-Woser-Re (Rathures), II: Die kleine Festdarstellungen. Leipzig, J.C. Hinrichs.
- Blackman, A.M. 1915. *The Rock Tombs of Meir: Part II. The Tomb-Chapel of Senbi's Son Ukh-hotp (B, No 2)*, Archaeological Survey of Egypt 23. London, Egypt Exploration Fund.
- Borchardt, L. 1900. "Vorläufiger Bericht über die Ausgrabungen bei Abusir im Winter 1899/1900 I. Das Re-Heiligtum des Königs Ne-woser-re," Zeitschrift für ägyptische Sprache und Altertumskunde 38: 94–100.
- Borchardt, L. 1907. *Das Grabdenkmal des Königs Ne-user-Re.* Wissenschaftliche Veröffentlichungen der Deutschen Orient-Gesellschaft 7; Ausgrabungen der Deutschen Orient-Gesellschaft in Abusir 1902–1908 1. Leipzig, Hinrichs
- Breasted, J.H. 1930. *The Edwin Smith Surgical Papyrus. Text*, Oriental Institute Publication 3. Chicago, The Oriental Institute.
- Brovarski, E. 1977. "The Doors of Heaven," Orientalia 46: 107-115.
- Brunner, H. 1986. "Tür und Tor. E. Himmelstore," Lexikon der Ägyptologie VI: 782-783.
- Callender, V.G. 2019. *El-Hawawish: Tombs, Sarcophagi, Stelae. Palaeography*, Paléographie hiéroglyphique 8, Cairo, Institut Français d'Archéologie Orientale.
- Černy, J. 1948. "Note on '*wy pt* 'Shrine'," *Journal of Egyptian Archaeology* 34: 120.
- 68 See Almansa-Villatoro 2019: 76.
- 59 See also the interpretation, not necessarily exclusive of the one proposed here, of Almansa-Villatoro 2019: 73–81.

Champollion, J.-Fr. 1841. Dictionnaire égyptien en écriture hiéroglyphique. Paris, Firmin Didot.

- Collombert, Ph. 2010. *Le tombeau de Mérérouka. Paléographie*, Paléographie Hiéroglyphique 4. Cairo, Institut Français d'Archéologie Orientale.
- von Deines, H. & Grapow, H. 1961. *Wörterbuch der medizinischen Texte: Erste Hälfte (³-r)*. Grundriss der Medizin der alten Ägypter 7(1). Berlin, Akademie-Verlag.
- Dreyer, G. 1998. *Umm el-Qaab I. Das prädynastische Königsgrab U-j und seine frühen Schriftzeugnisse*. Archäologische Veröffentlichungen, Deutsches Archäologisches Institut, Abteilung Kairo 86. Mainz, Philip von Zabern.
- Engel, E.-M. 2021. Private Rollsiegel der Frühzeit und des frühen Alten Reiches. Versuch einer Einordnung, MENES 8. Wiesbaden, Harrassowitz.
- Epigraphic Survey, 2009. *The Eighteenth Dynasty Temple, Part I. The Inner Sanctuaries*, Medinet Habu IX, Oriental Institute Publication 136. Chicago, The Oriental Institute.
- Fischer, H.G. 1968. *Dendera in the third millennium BC down to the Theban domination of Upper Egypt*. Locust Valley & New York, J.J. Augustin.
- Fischer, H.G. 1972. "Sunshades of the Marketplace," Metropolitan Museum Journal 6: 151-156.
- Fischer, H.G. 1977. "Sunshades of the Marketplace," *Ancient Egypt in the Metropolitan Museum. Volumes 1–11 (1968–1976)*, New York, Metropolitan Museum of Art: 63–68; 182–183.
- Fischer, H.G. 1996. Varia Nova. Egyptian Studies III. New York, Metropolitan Museum of Art.
- Fissolo, J.-L. 2022. "Un pour tous! Le pilier-djed et la stabilité du monde." In: Une aventure égyptologique. Mélanges offerts à Christine Gallois, Égypte Afrique & Orient, Supplément au n° 105, ed. by Guillemette Andreu-Lanoë, Thierry-Louis Bergerot: 201–208. Montségur, Centre d'égyptologie.
- Friedman, F.D. 1995. "The Underground Relief Panels of King Djoser at the Step Pyramid Complex," *Journal of the American Research Center in Egypt* 32: 1–42.
- Gardiner, A.H., 1947. Ancient Egyptian Onomastica, I & II. Oxford, Oxford University Press.
- Griffith, F.L. & Petrie, W.M.F. 1889. *Two Hieroglyphic Papyri from Tanis: I. The sign papyrus (a syllabary); II. The geographical papyrus (an almanack).* Memoir of the Egypt Exploration Fund 9. London, Egypt Exploration Fund.
- Hassan, S. 1936. *Excavations at Gîza: 1930–1931*. Excavations at Gîza II. Cairo, The Faculty of Arts of the Egyptian University; Government Press, Bulâq.
- Hawass, Z. 1994. "A Fragmentary Monument of Djoser from Saqqara," Journal of Egyptian Archaeology 80: 45-56.
- Hornung, E. 1977. "Himmelsvorstellungen," Lexikon der Ägyptologie II: 1215–1218.
- Hornung, E. 2005. Der Eine und die Vielen: altägyptische Götterwelt, 6th ed. Darmstadt, Primus.
- Jéquier, G. 1905. "À propos d'une stèle éthiopienne," Recueil de Travaux 27: 170-175.
- Jéquier, G. 1911. "Petites critiques I.," Sphinx 14: 172-185.
- Jéquier, G. 1929. *Tombeaux de particuliers contemporains de Pepi II, Fouilles à Saqqarah*, Cairo, Institut Français d'Archéologie Orientale.
- Jones, D. 2000. An Index of Ancient Egyptian Titles, Epithets and Phrases of the Old Kingdom 1 & 2, BAR International Series 866. Oxford, Archaeopress.
- Junker, H. 1938. Gîza III: Bericht über die von der Akademie der Wissenschaften in Wien auf gemeinsame Kosten mit Dr. Wilhelm Pelizaeus unternommenen Grabungen auf dem Friedhof des Alten Reiches bei den Pyramiden von Gîza. Die Mastabas der vorgeschrittenen V. Dynastie auf dem Westfriedhof. Wien & Leipzig, Hölder-Pichler-Tempsky.
- Kahl, J. 1994. Das System der ägyptischen Hieroglyphenschrift in der 0.-3. Dynastie, Göttinger Orientforschungen, 4. Reihe: Ägypten 29. Wiesbaden, Harrassowitz.

- Kanawati, N. & Abder-Raziq, M. 1999. *The Tomb of Hesi.* The Teti Cemetery at Saqqara V, Australian Centre for Egyptology: Reports 13. Sydney, Australian Centre for Egyptology.
- Kanawati, N. & McFarlane, A. 1993. *Deshasha. The Tombs of Inti, Shedu and Others*, Australian Centre for Egyptology: Reports 5. Sydney, Australian Centre for Egyptology.
- Kaplony, P. 1963. Die Inschriften der ägyptischen Frühzeit. III. Band, Ägyptologische Abhandlungen 8. Wiesbaden, Harrassowitz.
- Kees, H. 1912. Der Opfertanz des ägyptischen Königs: Inaugural-Dissertation zur Erlangung der Doktorwürde der hohen philologischen Fakultät der K.B. Ludwig-Maximilians-Universität zu München, vorgelegt am 5. Mai 1911. München.
- Koenigsberger, O. 1936. Die Konstruktion der ägyptischen Tür, Ägyptologische Forschungen 2. Glückstadt, J.J. Augustin.
- Lacau, P. 1954. Sur le système hiéroglyphique, Bibliothèque d'étude 25. Cairo, Institut Français d'Archéologie Orientale.
- Lacau, P., Lauer, J.-Ph. 1965. *La pyramide à degrés* V. *Inscriptions à l'encre sur les vases*, Fouilles à Saqqarah. Cairo, Institut Français d'Archéologie Orientale.
- Maspero, G. 1895. Histoire ancienne des peuples de l'Orient classique: les origines, Égypte & Chaldée. Paris, Hachette.
- Meeks, D. 2004. *Les architraves du temple d'Esna. Paléographie*, Paléographie hiéroglyphique 1. Cairo, Institut Français d'Archéologie Orientale.
- Meeks, D. 2019. "Le signe *ânkh*, ses origines et sa signification," *Égypte, Afrique & Orient* 95: 3-10.
- Miatello, L. 2022. "Reading an Enigmatic Formula of Protection Strictly Related to the King's Ritual Run," *Göttinger Miszellen* 266: 93–117.
- Morenz, L. 1994. "Zur Dekoration der frühzeitlichen Tempel am Beispiel zweier Fragmente des archaischen Tempels von Gebelein," In: Ägyptische Tempel: Struktur, Funktion und Programm. Akten der Ägyptologischen Tempeltagungen in Gosen 1990 und in Mainz 1992, Hildesheimer Ägyptologische Beiträge 37, ed. by Rolf Gundlach & Matthias Rochholz: 217–238. Hildesheim, Gerstenberg.
- Morenz, L. 2004. *Bild-Buchstaben und symbolische Zeichen*. *Die Herausbildung der Schrift in der hohen Kultur Altägyptens*, Orbis Biblicus et Orientalis 205. Fribourg & Göttingen, Academic Press, Vandenhoeck & Ruprecht.
- Mysliwiec, K. et al. 2004. Saqqara I. The Tomb of Merefnebef. Varsovie, Éditions Neriton.
- Newberry, P.E. 1947. "The Cult of the ¹-pole," Journal of Egyptian Archaeology 33: 90–91.
- Petrie, H. 1927. Egyptian Hieroglyphs of the First and Second Dynasties. London, Quaritch.
- Petrie, W.M.F. 1892. Medum. London, Nutt.
- Petrie, W.M.F. 1898. Deshasheh, Memoir of the Egypt Exploration Fund 15. London, Egypt Exploration Fund.
- Petrie, W.M.F. 1900. *The Royal Tomb of the First Dynasty I*, Memoir of the Egypt Exploration Fund 21. London, Egypt Exploration Fund.
- Pierre-Croisiau, I. 2015. "Les signes en relation avec les vêtements et l'action de vêtir dans les Textes des Pyramides."
 In: *Cinquante ans d'éternité: jubilé de la Mission archéologique française de Saqqâra*, Bibliothèque d'étude 162, Mission archéologique française de Saqqarah 5, ed. by Rémi Legros: 97–136. Cairo, Institut Français d'Archéologie Prientale.
- Pierre-Croisiau, I. 2019. *Les textes de la pyramide de Mérenrê: édition, description et analyse*. Mémoires publiés par les membres de l'Institut Français d'Archéologie Orientale 140; Mission archéologique franco-suisse de Saqqara 9. Cairo, Institut Français d'Archéologie Orientale.
- Posener-Krieger, P. 1971. "Noms des parties de portes dans les documents d'Abousir," *Zum 70. Geburtstag von Herbert Ricke*, Beiträge zur Ägyptischen Bauforschung und Altertumskunde 12: 75–85. Wiesbaden, Franz Steiner.

- Posener-Krieger, P. 1976. *Les archives du temple funéraire de Néferirkarê-kakaï* I & II, Bibliothèque d'étude 65. Cairo, Institut Français d'Archéologie Orientale.
- Posener-Krieger, p. & de Cenival, J.L. 1968. *The Abu Sir papyri*. Hieratic Papyri in the British Museum 5. London, The Trustees of the British Museum.
- Quibell, J.E. 1900. *Hierakonpolis* I, British School of Archaeology in Egypt and Egyptian Research Account 4. London, British School of Archaeology in Egypt & Bernard Quaritch.
- Quibell, J.E. 1913. *Excavations at Saqqara (1911–12): the tomb of Hesy*. Excavations at Saqqara. Cairo, Institut Français d'Archéologie Orientale.
- Randall-Maciver, D. & Mace, A.C. 1902. *El Amrah and Abydos 1899–1901*. Special Publication of the Egypt Exploration Fund. London, Egypt Exploration Fund.
- Regulski, I. 2010. A Palaeographic Study of Early Writing in Egypt, Orientalia Lovaniensia Analecta 195. Leuven, Peeters & Departement Oosterse Studies.
- Sakkarah Expedition. 1938. The mastaba of Mereruka: part I, chambers A 1–10; part II, chambers A 11–13, doorjambs and inscriptions of chambers A 1–21, tomb chamber, exterior. Oriental Institute Publications 31 & 39. Chicago, University of Chicago Press.
- Schäfer, H. 1896. "Neue Altertümer der "new race" aus Negadeh," Zeitschrift für ägyptische Sprache und Altertumskunde 34: 158–161.
- Schäfer, H. 1928. Ägyptische und heutige Kunst und Weltgebäude der Alten Ägypter. Berlin & Leipzig, Walter de Gruyter & Co.
- Servajean, Fr. 2011. *Le tombeau de Nakhtamon (TT 335) à Deir al-Medina. Paléographie*, Paléographie hiéroglyphique 5. Cairo, Institut Français d'Archéologie Orientale.
- Smith, W. St. 1946. A History of Egyptian Sculpture and Painting in the Old Kingdom. New York, Hacker Art Books.
- Spencer, A.J. 1978. "Two Enigmatic Hieroglyphs and their Relation to the Sed-Festival," *Journal of Egyptian Archaeology* 64: 52–55.
- Steindorff, G. 1901. Grabfunde des Mittleren Reichs in den Königlichen Museen zu Berlin, II: der Sarg des Sebk-o: ein Grabfund aus Gebelên. Mittheilungen aus den orientalischen Sammlungen 9. Berlin, Spemann.
- Vernus, P. 1973. "La stèle C 3 du Louvre," Revue d'Égyptologie 25: 217-234.
- Westendorf, W. 1966. Altägyptische Darstellungen des Sonnenlaufes auf der abschüssigen Himmelsbahn, Münchner Ägyptologische Studien 10. Berlin, Verlag Bruno Hessling.
- Westendorf, W. 1980. "Die Tierfell-Hieroglyphe mit dem Lautwerk k," Göttinger Miszellen 40: 57–62.
- Westendorf, W. 1991. "Die "Löwenmöbelfolge" und die Himmels-Hieroglyphe," *Mitteilungen des Deutschen Archäologischen Instituts Kairo* 47: 425–434.
- Westendorf, W. 1992. "Die geteilte Himmelsgöttin." In: *Gegengabe: Festschrift für Emma Brunner-Traut*, ed. by Ingrid Gamer-Wallert and Wolfgang Helck: 341–357. Tübingen, Attempto Verlag.
- Zivie, C.M. 2009. "Avant-propos," In: *Les portes du ciel: visions du monde dans l'Égypte ancienne*, ed. by Marc Étienne: 16–23. Paris, Musée du Louvre, Somogy.