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The origin of the alphabet from Egyptian hieroglyphs

In memory of Karl-Theodor Zauzich † March 23, 2021

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Karl-Theodor Zauzich was a German Egyptologist, Demotist, and Full Professor of the Chair of Egyptology at the University of Würzburg. The development of the alphabet was one of his main areas of research and publication. This article is based on findings from his book "*Hieroglyphen mit Geheimnis. Neue Erkenntnisse zur Entstehung unseres Alphabets*" (Darmstadt, 2015).

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1 The Egyptian writing systems

The development of Egyptian hieroglyphic writing around 3200 BC was a milestone in the history of writing. Egyptian hieroglyphs are pictograms of living beings, objects or geometric shapes drawn in varying degrees of detail. However, relatively few hieroglyphs stand for the being or object they depict (ideograms).[2] Most hieroglyphs represent a consonant or a group of two to four consonants (phonograms). The fluent speaker of a language is able to add the vowels to a sequence of consonants. For Egyptian words where the consonant set was not sufficient for correct word recognition, a specific hieroglyph called a determinative or classifier was added to indicate the semantic category to which the word belonged. The total number of hieroglyphs until the Ptolemaic period is estimated at 1,500–2,000.[3] Accordingly, writing was a special skill in which only a

[2] Ideograms are accompanied by a vertical stroke (ideogram stroke).

[3] Ref 1, pp 138–139.

relatively small proportion of ancient Egyptians were trained.[4]

The monumental hieroglyphs (*mdw.w nṯrj* "divine words") were engraved or chiseled into tablets, cylinder seals, walls and statues. For texts on papyri, plastered walls, wooden coffins, wooden panels, pottery, ostraca, or linen, scripts that were more practical for writing with a slanted plant stem and ink[5] were developed as early as the Old Kingdom. These were either simplified cursive-linear hieroglyphs for religious texts or the Hieratic script (from the Greek *hierá* "sacred, priestly"). The characters of the Hieratic script, called hieratograms,[6] still give an idea of the original hieroglyphs and were used for all types of texts (Fig. 1). In the Late Period, this development was completed by the Demotic script (from the Greek *demotiká* "popular, vernacular") using characters that no longer resembled hieroglyphs. The most recent stage of the Egyptian language, Coptic (from the 2nd century AD), was written with a variant of the Greek alphabet and some additional characters. Since the Islamic conquest in 640 AD, Arabic has been spoken and written in Egypt.

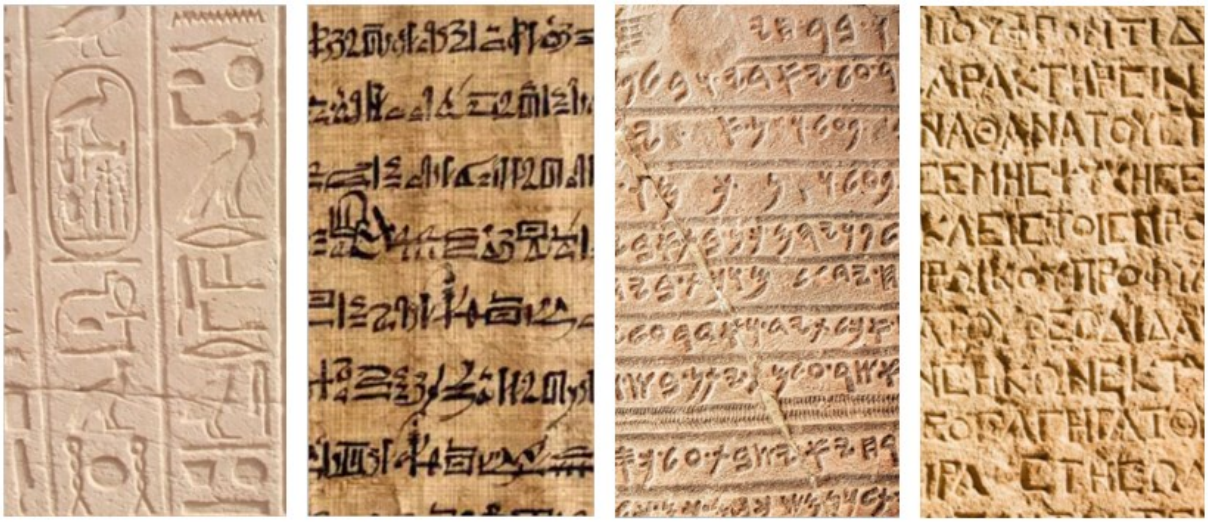

Fig. 1: From left to right: Monumental hieroglyphs; Hieratic script (on papyrus); Phoenician alphabetic script; Ancient Greek alphabetic script.

4 Literate women were the absolute exception in ancient Egypt. Ref 2, pp 127–129.

5 Black or red ink was composed of minerals and organic pigments mixed with water.

6 The term "hieratogram" was coined by Ursula Verhoeven. Ref 3; Ref 4, p 1.

2 From Egyptian hieroglyphs to the Greek alphabet (Hieratic theory)

With the conquest policy of the kings of the New Kingdom, the Egyptian writing systems came into the annexed Syro-Palestinian territories. In the 13th century BC,[7] Egyptian hieroglyphs were used as models to shape linear characters for a new alphabetic writing system of the Northwest Semitic language (Phoenician). This Phoenician alphabet, which was used in the area of present-day Israel, Lebanon and northwestern Syria, consisted of 22 letters, one for each consonant or semiconsonant. This reduced the number of characters to the necessary minimum (compared to the hundreds of characters in Egyptian scripts and West Asian cuneiform scripts), and made learning to write much easier. The Phoenician alphabet is probably the oldest alphabet and the mother of the Greek alphabet and its derivatives (Fig. 1).[8]

However, the evolutionary path from the Egyptian hieroglyphs to the Phoenician alphabet is controversial. The "proto-Sinaitic theory" proposes the proto-Sinaitic script[9] as the intermediate step between the monumental hieroglyphs and the Phoenician letters, while the "Hieratic theory" proposes the Hieratic script as the intermediate step. The common final stretch of both theories, i.e. the development of the Phoenician alphabet into the Greek alphabet in the 9th century BC, is by and large undisputed.

According to the Hieratic theory, the developers of the Phoenician script selected from Egyptian character lists[10] hieroglyphs with a phonetic value whose initial consonant matched a consonant in the Phoenician language (acrophonic principle). The Hieratic versions of these hieroglyphs were then used to create new letters. About four centuries later, the Phoenician alphabet was adopted in Greece, where the letters were mostly rotated or mirrored and/or modified in shape. The fact that the shapes of the Greek letters Beta, Pi, Rho, and Sigma are closer to the Egyptian hieratograms than to the Phoenician letters suggests that there were at least two Northwest Semitic/Phoenician writing traditions.[11] Letters for consonants that did not exist in ancient Greek were reused for vowels. The Greek names of the letters reflect phonetic shifts and were adapted by the addition of a vocalic or adjectival ending (*-a, -i*, *-mikron* ["small"], *-psilon* ["simple, mere,

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7 The oldest surviving Phoenician texts date from the end of the 13th century BC.

8 Developments from the Phoenician alphabet: a) the Greek alphabet, precursor of the Cyrillic and Latin alphabets; b) the ancient Hebrew alphabet, precursor of the modern Hebrew script; and c) the Aramaic alphabet, precursor of ancient Iranian, ancient Indian, and the modern Arabic scripts. Ref 5.

9 The proto-Sinaitic (or proto-Canaanite) alphabet of 22 linear characters is known only from a few short rock inscriptions (Serabit el-Khadim in the southern Sinai Peninsula, Wadi el-Hol in Upper Egypt). The inscriptions are dated between 2000 and 800 BC. Several attempts to decipher them have yielded completely different results. Ref 6; Ref 7, p 26.

10 A preserved character list is the "Tanis Sign Papyrus" from the Roman Period (British Museum EA10672). However, such character lists certainly existed in the Egyptian scribal schools much earlier.

11 Ref 7, p 126.

bare"]).[12] The whole process took centuries, as evidenced by the local variations of the time.[13]

W. Weidmüller was the first to suggest that even the name of each letter was derived from the image of the selected hieroglyph.[14] Thus, it should be possible to infer the underlying hieroglyph from the name of the letter. The Phoenician letter names are well known because they entered the Hebrew language via Ancient Hebrew. Zauzich agreed with Weidmüller's view, although he did not fully share his conclusions. He found interesting solutions to problems that some letters had caused the earlier proponents of the Hieratic theory.[15] His findings will be explained letter by letter in the following sections.[16] It will become clear that the history of the alphabet was in part a history of misunderstandings.

2.1 Aleph (Alpha)

The Phoenician Aleph was  . The underlying hieroglyph was  in its New Kingdom Hieratic[17] spellings,  or  . This image of a seated man touching his mouth with one hand was used as the classifier for words related to speech, such as the Egyptian word  *j* (*ĭ*) for “to say" or "utterance”.[18] The Phoenicians interpreted the hieroglyph as *j n r*ꜣ ("utterance of the mouth") and consequently translated it as *ꜣ-l-p*, which means "utterance of the mouth" in ancient Hebrew.[19] The name "Aleph" was derived from the transliteration of *ꜣ-l-p* to *a-l-p*.

The ancient Greek  looks like the Phoenician letter. It was later rotated 90° to the right to become the modern **A**.[20] The addition of an *-a* ending to *a-l-p* (⟶ *alpa*) eventually led

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12 Ancient Greek words can only end in a vowel or the consonants Ny, Chi, Rho, or Sigma.

13 During the reign of the Archon Euclid around 403 BC, the Ionic Greek alphabet was introduced as the official standard alphabet in Greece.

14 Ref 8.

15 Ref 7. The book contains additional interesting linguistic aspects which are beyond the scope of this article.

16 Note: Ancient characters were copied from Ref 7 and Ref 15. Hieroglyphs were written using the open source software JSesh. The writing direction from right to left is that of the Hieratic, Phoenician, archaic Greek and Old Latin scripts. Linguistic relationships are presented in a simplified manner. Alphabetic letters are written in uppercase, sounds (consonants, vowels) and transcriptions in italic lowercase. Where appropriate, a diacritical mark is placed above a vowel to indicate its length (long: crossbar as in ā; short: rounded hook as in ĭ).

17 Hieratograms from the late New Kingdom (19th and 20th Dynasties) were selected, unless otherwise noted. This period (~1300–1100 BC) covers the time when the Phoenician alphabet was developed.

18 Ref 16, p 9.

19 Hebrew is most closely related to Phoenician via Ancient Hebrew.

20 The font "Arial" without serifs is used here for modern letters.

to the name "Alpha".[21]

Zauzich opposed the proponents of the proto-Sinaitic theory with this view. They see the proto-Sinaitic bovine head  , rotated 90° to the right, as the model for the Phoenician  . This fits with the Hebrew *ʾlp* (written together) for "cattle".[22] It is the most commonly cited letter in support of the proto-Sinaitic theory. Zauzich, however, argued that "speech of the mouth" is a more meaningful beginning of an alphabet.

2.2 Beth (Beta)

The Phoenician Beth was  . This character was based on the hieroglyph  in its Hieratic spelling  . This image of a loop of string was a two-consonant phonogram for *wꜣ*. The was mirrored vertically and its lower arch was omitted to create the Phoenician . The letter name was formed from the Egyptian word  *wꜣ.t* for "string, cord" (*.t* is the feminine ending).[23] The Phoenicians transcribed this word as *bjt* (*bĭt*), since they transcribed the Egyptian *w* as *b*, and the *ꜣ* as *j*. The letter name "Beth" evolved from *bĭt* through a phonetic shift of the *ĭ to ĕ.*[24]

The ancient Greek letter shape,  (modern), was much closer to the original hieratogram . With an *-a* ending, the Greek name became "Beta".

2.3 Gimel (Gamma)

The Phoenician Gimel was  or  . This letter can be traced back to the hieroglyph  in its Hieratic spelling . This image of a throwing stick was a three-consonant phonogram for *qmꜣ*. Unlike the hieratogram, the Phoenician letter had the hook projecting at a right or acute angle. The Egyptian word *qmꜣ* meant "throwing stick" and "to throw", but also "to create, to generate".[25] The Phoenicians chose the second meaning, "to create", for their letter name and consequently translated *qmꜣ* as *gml* (ancient Hebrew: "to create", pronounced *gamal*). Why *gamal* eventually became *gimel* is unclear.

The ancient Greek letter shapes were  ,  , or , while in the modern Gamma , the hook points to the right (i.e., the modern direction of writing). The *a* in the stressed syllable of the Greek name "Gamma" reflects a phonetic shift of the *ĭ* to *ă.*

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21 13 of the 27 Greek letter names end in *-a.*

22 Ref 7, p 34.

23 Ref 9, vol 1, p 244.4.

24 The vowel shifts are summarized in Ref 7, pp 83–88.

25 Ref 9, vol 5, pp 33–35.

2.4 Daleth (Delta)

The Phoenician Daleth was  . This character was based on the hieroglyph in its hieratic spelling  . This image of a hand was a single-consonant phonogram for *d*. The Phoenicians reduced the hieratogram to a simple equilateral triangle. In the late New Kingdom, the Egyptian word for "hand" was  *dr.t*.[26] The vowel of this word can be reconstructed as *ā* (*dārt*).[27] The Phoenicians transcribed the Egyptian *r* as *l*, so that the new letter was called *dāl(e)t*.

The Phoenician equilateral triangle was used virtually unchanged for the Greek letter  (isosceles triangle in the modern **Δ**). The name "Delta" arose from the phonetic shift of the *ā* to *e*.[28]

2.5 He (Epsilon)

The Phoenician He was  or . Its origin was the hieroglyph  in its Hieratic spellings,  or . This image of the floor plan of a simple hut or animal enclosure was a single-consonant phonogram for *h*. The Phoenician letter was created by rotating the hieratogram 90° to the right. The consonant *h* was given a weak vowel *ĭ* so that it could be pronounced as *hĭ* to become the Phoenician letter name.

The Phoenician was preserved in Greece, but was mirrored vertically to become  (modern **E**). It was not used for a consonant, but for the vowel *e*. In the Greek name “Epsilon”, the original *ĭ* underwent a phonetic shift to *ĕ* and the initial *h* was omitted (*e psilon* means "bare *e*").

2.6 Waw (Diagamma)

The Phoenician Waw was  or . This letter was based on the hieroglyph  in its Hieratic spellings,  or . This image of a quail chick was a single-consonant phonogram for the semiconsonant *w*. The Phoenicians flipped the variant of the hieratogram horizontally to create the Phoenician . The Egyptian word for "quail chick" is unknown and was apparently not accessible to the Phoenicians either. Instead, they used the Egyptian word

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[26] The Middle Egyptian noun *ḏr.t* (Ref 9, vol 5, p 581.1) was transformed (depalatinized) to *dr.t* in later parlance and writing.

[27] Such reconstructions are based on known Late Egyptian and Coptic forms and dialects.

[28] The direct phonetic shift of an *ā* to *e*/*ē* is rather unusual. Usually the *ā* changed to *ū* (and not infrequently *ū* to *ē*). In Coptic, *ā* mostly became *ō*. In Old Ethiopian, *ā was* mostly preserved. Ref 7, pp 85–88.

 (*ww*, probably pronounced *waw*) for "district, region",[29] and named the new letter after it.

The ancient Greek shapes,  and  , were derived from the hieratogram  by rotating it 180° to the left. The modern Greek  has the horizontal strokes pointing in the modern direction of writing. The Greek name "diagamma" (double gamma) described as two gammas () stacked vertically.

Other scholars derive the Phoenician letter name "Waw" from a precursor of the Hebrew word *waw*, which they believe is a general word for “hook". However, this is not entirely correct, because the Hebrew *waw* refers to a very specific hook for the curtains of the Old Testament tabernacle. Zauzich therefore argued that this hook was named after the letter "Waw" (similar to how we speak of an S-bend or U-turn, for example), rather than the letter after the hook.

2.7 Zajin (Zeta)

The Phoenician Zajin was  or  . It can be traced back to the Egyptian double hieroglyph  in its Hieratic spellings,  or . This image of two stems of a rush and was a double-consonant phonogram for *nn*. The Phoenicians rotated it 90° to the right to obtain the new letter . In the variant , the vertical line became diagonal. However, the Phoenicians mistakenly assigned the Egyptian word *zw.t* (probably pronounced *zāwt*[30]) to the hieroglyph , and therefore interpreted the double hieroglyph as "two *zw.t*".[31] Thus, to form the letter name, they used the syllable *zā* and added the Semitic ending of the dual (*-jin*) ⟶ *za-jin* ("two *zā*").

The ancient Greek shape corresponded to the Phoenician , while the modern Greek corresponds to the Phoenician variant . The feminine *.t* ending of *zw.t* (*zāwt*) reappeared in the Greek name “Zeta”. The Phoenician dual was ignored, and the vowel *ā* underwent a phonetic shift to *ē*.[32]

2.8 Ḥeth (Eta)

The Phoenician Ḥeth was  or . The letter was based on the Egyptian hieroglyph  in

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[29] Ref 9, vol 1, pp 243.2, 289.

[30] Ref 10, p 93.

[31] *zw*/*zw.t* actually belongs to the hieroglyph , another type of rush. The two rushes, and , can easily be confused in Hieratic spellings.

[32] In Coptic, *ā* changed to *ō* (*zā* ⟶ cω *sō*). Ref 7, p 86; Ref 10, pp 93–94.

its late New Kingdom Hieratic spelling  . It is the image of a building in top view with a door in front view.[33] It stood for the word *ḥ(w).t* (“house”, “tomb”) or *ḥ3.t* ("tomb"),[34] pronounced *ḥāwt.* The crossbar in the hieratogram  did not appear before the mid-19th Dynasty,[35] so the Phoenician Ḥeth cannot have been created earlier. The name-giving Egyptian word underwent a phonetic *ā* to *ē* shift to become the Phoenician letter name.[36]

The ancient Greek letter shapes,  and (modern ), have a single crossbar like the hieratogram. Similar to the He/Epsilon, the Phoenician name "Ḥeth" lost the initial *ḥ* and became “Eta”.

2.9 Ṭeth (Theta)

The Phoenician Ṭeth was  . It was derived from the hieroglyph  in its Hieratic spelling  . This image of a five-pointed star in a circle was used as the ideogram or classifier for the Egyptian word  *d3.t* for "underworld" (pronounced *dūat*).[37] The Phoenicians simplified the star to an isosceles cross. (The same change occurred in the Egyptian Demotic script.) They transcribed *d3.t* as *djt* (*dĭt*) or, for unclear reasons[38], as *tjt* (*tĭt*). The change from *tĭt* to *tēt* can be explained by a phonetic shift of the vowel *ū* of the Egyptian pronunciation (*dūat*) to *ē*.[39]

The cross shape was retained in the ancient Greek letter  (simplified to  in the modern Greek uppercase). The Greek name "Theta" reflects the phoneme *tēt* and possibly the Old Coptic ⲧⲏ/*tē* (“underworld”).

2.10 Jod (Jota)

The Phoenician Jod was  or . It originated in the hieroglyph  in its Hieratic spellings, , , or . This image of the Egyptian vulture (*Neophron percnopterus*) was a single-consonant phonogram for the semiconsonant *3* and the ideogram in the Egyptian word  *3* for the vulture.[40] In Phoenician writings based on Egyptian texts, the

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[33] It is not uncommon for ancient Egyptian art to depict two views of an object at the same time.

[34] Ref 9, vol 3, pp 1.4–12, 2.1–10, 12.19.

[35] Ref 11, vol 2, p 31 (no 345); Ref 15.

[36] In Coptic the *ā* changed to *ō* (ϩω *ḥō*), in Old Ethiopian the *ā* was preserved (*ḥāut)*. Ref 7, pp 49, 86.

[37] Ref 9, vol 5, p 415.3.

[38] Perhaps influenced by the Egyptian word *tj.t* for “character, hieroglyph”. Ref 9, vol 5, p 239.1–3.

[39] The phonetic shift of an *ū* to *ē* is documented in the Egyptian and Old Coptic languages. Ref 7, pp 50, 88.

[40] Ref 9, vol 1, p 1.1.

semiconsonant *j* was regularly transcribed as *j*. The Phoenician letters,  or , were created by rotating the hieratograms 180° to the left. Since the Egyptian word *j* for "vulture" was no longer in use in the New Kingdom, the Phoenicians derived their letter name instead from a word that probably had a long *ā* as the (unwritten) vowel, and a feminine *.t* ending.[41] In dialectical pronunciation this ending was softened to *-d*.

The Greek letter shapes, and (preserved in the modern **I**), did not have a horizontal bar. The Greek name "Jota" reflects a phonetic shift of the *ā* to *ō* and supports the assumption of a feminine *.t* ending in the name-giving Egyptian word.

2.11 Kaph (Kappa)

The Phoenician Kaph was , , or . This letter goes back to the hieroglyph in its Hieratic spelling . This image of the male sexual organs was occasionally used as a two-consonant phonogram for *kj*, but more often as the classifier for terms related to virility. The Phoenician was created by rotating the hieratogram more than 90° to the right. The Phoenicians chose the word *kj* ("bull") as the basis for the letter name. The classifier of this word (the bull hieroglyph), with its Hieratic spellings, or , can easily be confused with the masculine personal pronoun (*ff*).[42] The Phoenicians were not fully aware of Egyptian classifiers and misread the word (*kj*) as *kjf*.[43] Since there was no *f* in the Phoenician language, they transcribed *kjf* as *kap*, which eventually led to the name "Kaph".

The Phoenician was mirrored vertically to create the ancient Greek letter (modern **K**). The Greek name "Kappa" was derived from the Phoenician transcription *kap*.

2.12 Lamed (Lambda, Labda)

The Phoenician Lamed was or . Most earlier proponents of the Hieratic theory suggested that the origin of this letter was the hieroglyph in its Hieratic spellings, or .[44] This image of a lying lion was used as a two-consonant phonogram for *rw* and additionally as a substitute for the consonant *l* in non-Egyptian names, since the liquida *l*

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41 Zauzich suggested *(j)ȝ.t* ("short timespan, moment"). Ref 7, pp 51, 176. In my opinion, *(j)ȝ.t* ("standard, guidon" [Ref 9, vol 1, pp 2, 26.7]) is another reasonable candidate.

42 Ref 11, vol 2, p 64 (no. 10, Papyrus Harris I, 20th Dyn.).

43 Ancient Semitic students of the Hieratic script often misinterpreted classifiers as phonograms, as is known from texts. Ref 7, pp 52–53.

44 Ref 7, p 172.

did not exist in the Egyptian language. However, this explanation lacks a plausible answer to the question of how the name “Lamed” came about.

Zauzich's suggestion was therefore that the original hieroglyph was  in its Hieratic spellings,  or  . This image of a cow's tongue was a two-consonant phonogram for *ns*. It was additionally used as an abbreviation for  *m-r*, which in turn was an abbreviated spelling of the word *jmj-r*ꜣ (“supervisor, principal”, literally: “he who is in the dictum”).[45] In the late New Kingdom, the group  *m-r* was written in full using the hieratogram  , which is nearly indistinguishable from the hieratogram for the word  *mt* ("to die” or “death"[46]).[47] On the other hand, the later Demotic script had a two-consonant character for *mr,* which was additionally used to render the non-Egyptian syllable *la* in foreign names. The Phoenicians did not recognize the difference between the Hieratic *m-r/mt* and the Demotic *mr/la.* They flipped the cow’s tongue hieratogram horizontally to create their letter  and called it "La-met".[48] In a late Hieratic spelling variant of  *mt* (), the *t* had a shape that could easily be confused with *d* ().[49] This may have eventually led to the letter name "Lamed". The origin of the Phoenician Lamed is therefore due to the fact that the Phoenicians consulted several Hieratic and Demotic character lists and made a chain of misunderstandings.

In Greece, the Phoenician was rotated nearly 180° to the right to become  or mirrored vertically to become . Even the modern Greek strongly resembles the Phoenician Lamed. The Greek name "Lambda" or "Labda" comes from a Greek transcription of the Septuaginta manuscripts, where the Lamed appears as *lamd* or *labd*, which apparently merged into *lambd* in other texts.

2.13 Mem (My)

The Phoenician Mem was  or . It originated from the hieroglyph  in its Hieratic spellings, or . The three stacked zigzag lines symbolize water. The hieroglyph was used as a two-consonant phonogram for *mw*, as the ideogram for the word “water”

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45 The abbreviation of *jmj-r*ꜣ with the cow’s tongue hieroglyph was a play on words, because due to the ambiguous meaning of *r*ꜣ, *jmj-r*ꜣ could also mean “the one in the mouth”.

46 Ref 9, vol 2, pp 165.8–10, 166.10–12.

47 Ref 11, vol 2, p 64 (nos. 13, 14).

48 An Egyptian character list may have had  / or / explained as “*la mt*”.

49 Ref 11, vol 2, p 64 (no. 14, Papyrus Harris I, 20th Dyn.).

( , *mw,* pronounced *măw*),[50] and as the classifier for words related to water and other fluids. In the hieratogram  , the three lines were straight and drawn from left to right, with the downward hook at the right end of each line resulting from the sudden termination of the drawing motion. The Phoenicians, with the monumental hieroglyph in mind, drew a single jagged water line and integrated the downward hook of the hieratogram as a greatly elongated formal element ( ,). The name "Mem" probably came from *majim*, the Phoenician word for "water". According to an alternative explanation, “Mem” came from the Egyptian word  *mwy* (“to be wet”),[51] where the first set of water lines is the phonogram for *mw* and the second set of water lines is the classifier, which was erroneously co-transcribed ⟶ *muymu*.

In Greece, the Phoenician mutated to via and . In its modern form, **M**, the central downward pointing apex reaches the baseline. The evolution of the letter name from the Egyptian word *măw* proceeded via a phonetic shifts: *mŏw* (Bohairic-Coptic ⲙⲱⲟⲩ) ⟶ *mou* ⟶ *mu (my)*.[52] The Name “My” arose from the fact that the Greek letter Ypsilon, after its adoption by Etruscan Italy, represented both the semiconsonant *w* and the vowel *u* (see section 3).

2.14 Nun (Ny)

The Phoenician Nun was . It was based on the hieroglyph  in its Hieratic spelling . The two stacked zig-zag lines were used to write the name of the mythological primordial body of water called “Nun” ( *nn.w*, pronounced *nān*).[53] To create the letter , the Phoenicians reduced the hieratogram, , to the ligature and the lower horizontal line, thereby elongating the downward hook at the right end as they had previously done with the Mem (section 2.13). The name of the new letter resulted from a phonetic shift of the *ā* to *ū* (Coptic ⲛⲟⲩⲛ *noun*).

The ancient Greek letter shapes, and , were created by setting the Phoenician upright. In the modern Greek **N**, however, the letter was mirrored vertically. The archaic Greek name “Noun” (in the Septuaginta) became “Nu” with the loss of the second *n,* and later changed to “Ny” because *u* was written with the letter Ypsilon (as in the Mem/My, see above).

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50 Ref 9, vol 2, p 55.7.

51 Ref 9, vol 2, p 53.5.

52 The phonetic shift of an ă to ŏ is documented for the period from the reign of king Amenhotep III to ~450 BC.

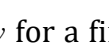
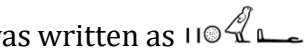
53 Ref 9, vol 2, p 214.18–19.

2.15 Samekh (Xi)

The Phoenician Samekh was  . It was based on the hieroglyph  in its Hieratic spellings,  or  . This image of a special pillar ("Djed-pillar") was used as a two-consonant phonogram for *ḏd* and as the ideogram for the Djed-pillar ( *ḏd*, pronounced *ʤĭd*). In murals and amulets, it was very often a symbol of stability and permanence. The Phoenician letter  was virtually unchanged from the "footless" variant of the hieratogram (), which was characteristic of the period from the Second Intermediate Period to the reign of Thutmose III.[54] The name "Samekh" is the Phoenician/Ancient Hebrew word for "strut, pillar".

In Greece, the Phoenician  was slightly modified to  , but the modern Greek uppercase letter Ξ lacks the vertical line. For the letter name, the Greeks adopted the Egyptian word *ḏd* (*ʤĭd)*. In a dialectical pronunciation, however, the initial sound *ʤ* mutated into *ks*. After the resulting *ksid* had lost the *d*, it became *ksi* (Xi).

2.16 Ajin (Omicron)

The Phoenician Ajin was  . The origin of this letter was the hieroglyph  . A Hieratic spelling of this hieroglyph,  , is documented for the mid-18th Dynasty.[55] It served as the classifier for the word  *ᶜwᶜw* for a finger ring, which was given as a reward in the New Kingdom.[56] The two-consonant group *ᶜw* was probably pronounced *ou*. In cursive hieroglyphs, the ring was drawn with a single line, as with the Phoenician letter . The Phoenicians apparently had a character list available where *ᶜwᶜw* was written as  *ᶜw sp 2* ("*ᶜw*, two times").[57] They transcribed *ᶜw* as *a* and added the ending of the dual ⟶ *a-jin* ("two *a*").[58]

In Greece, the Phoenician was adopted, but occasionally written with a central dot (). The modern Greek Omicron is **Ο**. The Greeks used the Egyptian two-consonant group *ᶜw* (the dual was ignored), transcribed it more faithfully to the Egyptian pronunciation (*ou*) and thus the archaic letter name was "Ou". The later name "Omicron" means "small o" (to distinguish it from Omega, "big o", which did not exist in the

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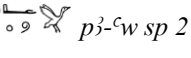
54 Ref 15, no. R11.

55 Ref 15, no. S21.

56 Ref 9, vol 1, p 51.9. Herodot described the semiconsonant *ᶜ* as a sound "similar to the belch of a camel". Egyptologists have agreed on the auxiliary pronunciation as *ā*.

57 The spelling was also used in the Egyptian name of the ancient Libyan city of  *pꜣ-ᶜw sp 2* (= *pꜣ-ᶜwᶜw*). Ref 12, p 144 (§ 32).

58 The Semitic ending of the dual, as in the Zajin (section 2.7).

Phoenician alphabet).

2.17 Pe (Pi)

The Phoenician Pe was  . It was based on the hieroglyph  in its Hieratic spelling  . This image of a simple house plan was used as a two-consonant phonogram for *pr*, as the ideogram for the word  *pr* for "house", and as the classifier for buildings. The Phoenician  bore little resemblance to the hieroglyphic model or hieratogram, but the letter name can be derived from the Egyptian language. From the late New Kingdom onwards, a terminal *r* was either neglected or replaced by the semiconsonant *j* (*pj*). The Phoenicians transcribed the Egyptian *j* as *j*, so that the new letter was called *pj* (*pǐ*), and its pronunciation changed to *pě*.[59]

The ancient Greek letter shapes,  or (preserved in the modern form Π), reveal the Hieratic origin () much better. The Greek name "Pi" was adopted from Phoenician but did not undergo the phonetic *ǐ* to *ě* shift.

2.18 Ṣade (Sampi)

The Phoenician Ṣade (*tsāde*) was  or  . Its origin was the Egyptian verb  *ḏd* ("to speak"),[60] which was written  in the late New Kingdom Hieratic script[61]. The shape of the Phoenician can be seen as a strongly abstracted version of the hieratogram. The unwritten vowel of the Egyptian word *ḏd* was *ǐ,* which regularly changed to *ă* (*ʤǐd* ⟶ *ʤăd)*.[62] Due to dialectal pronunciation of the initial sound, it eventually became *tsăd* (⟶ Ṣade).

The pre-classical Greek letter **Ϻ** called “Sampi”, which represented a *(t)s*-sound, had already formally moved far away from the Phoenician . In classical Greek antiquity, it was only used as a numerical symbol for 900. Another spelling of the Sampi,  , looked very similar to the Greek Mem (). The modern Sampi, **Ϻ**, differs from Mem (**Μ**) in the position of the middle apex. The derivation of the name “Sampi” is unclear. It could refer to the position of the letter in the alphabet immediately after Pi: “San[63] [after] Pi” ⟶ *sanpǐ* ⟶ *sampǐ* (the adjacent consonants *np* mutated into *mp,* as it often did). According to an

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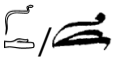
59 Phonetic shift of the *ǐ* to *ě*, as in the He/Epsilon (section 2.5).

60 Ref 9, vol 5, p 618.

61 Ref 11, vol 2, p 67 (no. 41, Papyrus Harris I, 20th Dyn.).

62 Phonetic shift of the *ǐ* to *ă,* as in the Gimel/Gamma (section 2.3).

63 “San” is another letter of the Greek alphabet which represents an s-sound (see section 2.21).

alternative explanation, an Egyptian character list may have listed  / as *ḏd m r*ꜣ ("speaking with the mouth"). A partial translation combining the late Egyptian *ʤăd* and the Semitic *min pĭ* (meaning "with the mouth") gave *ʤă(d)-min-pĭ* ⟶ *tsă(d)-min-pĭ*, further contracted to *tsampi* and adopted in Greece as “Sampi”.

2.19 Qoph (Qoppa)

The Phoenician Qoph was  or  . It was derived from the hieroglyph  in its Hieratic spellings,  or  . This image of a stand for storage jars with a conical bottom represented the consonant *g*. Only the first vertical line with the semi-ellipse was taken from the hieratogram to create the Phoenician letter . Since the Old Egyptian word with an initial *g* for the jar stand was no longer in use at this time, the Phoenicians used the word  *gw* (“bull”) to form the name "Qoph".[64] As with the Kaph (section 2.11), they misread the hieratogram of the bull classifier,  or  , as the masculine personal pronoun  ( *=f*), and thus the word *gw* as *gwf.* The vowel *o* probably reflects the Egyptian vocalization and the *f* was transcribed as *p* (*g(o)w* ⟶ *g(o)wf* ⟶ *qŏf* ⟶ *qŏp*).

The ancient Greek letter shapes,  or  (modern), were similar to the Phoenician shapes. Qoph was initially used for the consonant *k* before *ou*. This is the reason why in Latin and Romance languages, *q* is always followed by *ou* or *u*. The Greek name "Qoppa" was derived from Phoenician phoneme *qŏp*.

2.20 Reš (Rho)

The Phoenician Reš was  or  .[65] The letter was derived from the Egyptian word  *r*ꜣ for "mouth" in its Hieratic spelling  .[66] In the late New Kingdom, the word was pronounced like *rŏa*. The Phoenicians rotated the hieratogram 180°. In the Tanis Sign Papyrus, an Egyptian character list, / is listed as *r*ꜣ *n rmṯ* ("mouth of man"). The Phoenicians apparently worked with a similar character list which had *r*ꜣ *n zj* ("mouth of a man"). The partial translation *r(ꜣ)-îš* (*îš*, Hebrew "man, person") may explain the name “Reš”.

In Greece, the Phoenician letter was mirrored vertically to become . The small oblique

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64 Bull of a certain type of cattle. Ref 9, vol 5, 159.5.

65 It is easy to confuse with the Betha .

66 Ref 11, vol 2, p 68 (no. 51, „Pentoere“, mid-19th Dyn.)

downward stroke in its Boeotian shape variant,  , was elongated to the base line in the Latin . The small oblique stroke can be explained as a reproduction of the Egyptian classifier for words related to meat and body parts, which is the image of a small piece of meat and was added to the word "mouth" from the late New Kingdom onwards ().[67] Since no other Phoenician or Greek letter has an Egyptian classifier integrated into the shape, it was probably done by mistake. The name "Rho" was derived from the Egyptian *r(ŏ)ʒ*, Coptic po (*rō).*

With this explanation, Zauzich disagreed with the proponents of the proto-Sinaitic theory. They consider the proto-Sinaitic character,  or  , supposedly a stylized head in profile, to be the model for the Phoenician  and thus trace its name back to the Hebrew word *roš* for "head".

2.21 Sin (San)

The Phoenician Sin was  . Its origin was the hieroglyph  in its Hieratic spellings,  ,  , or . This image of a downward pointing arrow was a two-consonant phonogram for *sn* and used, among others, in the word  *sn* for "brother", pronounced *san* in the New Kingdom (Coptic ϲⲁⲛ *san*).[68] The Phoenicians probably called this letter "Sin" in harmony with its sister letter Šin (see below).

The ancient Greek letter shapes,  and  , are vaguely reminiscent of the hieratograms. The Greek name “San” reflects the late Egyptian and Coptic pronunciation.

2.22 Šin (Sigma)

The Phoenician Šin was  . It was derived from the hieroglyph  in its Hieratic spellings,  or  . This image of a tape sling was a two-consonant phonogram for *šn.* It was used, among others, in the word  *šn.w* for "ring" (literally "the round one").[69] *šn* was probably pronounced *šĭn* and the Phoenician letter was named accordingly.

As shown above, the Sin and the Šin were identical in the Phoenician script and were very similar in the Hieratic script. Likewise, the archaic Greek letter shapes,  or  , were

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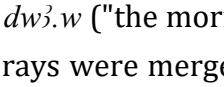
67 This is also the spelling in the Tanis Sign Papyrus, a character list from the Roman period of Egypt.

68 Ref 9, vol 4, p 150.8–12.

69 Ref 9, vol 4, p 491.6.

shared by the two letters.[70] In the classical Greek alphabet, the San was dropped in favor of the Sigma to represent the only s-sound of ancient Greek. The modern Sigma is **Σ**. The participial ending *w* of the Egyptian word *šn.w* was retained in the development of the letter name "Sigma".[71] This evolution can be described as š(*ĭ*)*n.w* ⟶ š*ĭnwa* ⟶ š*ĭnwwa* (consonant doubling as in Gamma, Kappa and Qoppa) ⟶ š*ĭgma* (*nww* regularly mutated into *mg*) ⟶ s*ĭgma.*

2.23 Taw (Tau)

The Phoenician Taw was 𐤕 or 𐤗. It was derived from the Egyptian hieroglyph  in its Hieratic spellings,  or  . This five-rayed star (unlike the Ṭhet, without an outer ring) was a three-consonant phonogram for *dwꜣ* or *sbꜣ* and was used, among others, to write the word  *dwꜣ.w* ("the morning").[72] In the Hieratic spelling of the late New Kingdom, the two lower rays were merged into one; the resulting cross became the model for the Phoenician 𐤕 or 𐤗. However, the Phoenician name probably came from *dj.w* (*dĭw* "five"), because otherwise the *ă* in "Taw" cannot be convincingly explained.

The ancient Greek letters with 𐤕 and 𐤗 were identical to the Phoenician letters. The Greek name "Tau" arose from the fact that both the semiconsonant *w* and the vowel *u* were represented by the letter Ypsilon in the classical Greek alphabet.

3 From the Greek alphabet to the Latin alphabet

The Greek alphabet was expanded to include the letters Ypsilon (**Υ**), Phi (**Φ**), Chi (**Χ**), Psi (**Ψ**), and Omega (**Ω**).[73] The Greek alphabet became the mother of the Latin and Cyrillic alphabets. Via western Greece it reached Middle Italy, where it become the Old Italic alphabet of the Etruscans (not including Ṭhet, Samekh, Phi, Psi, and Omega). They modified the Y, which represented both the semiconsonant *w* and the vowel *u,* to V and assigned the Jota to the semiconsonant *j*. In the 6th century BC, the early Romans (Roman Kingdom) adopted the Old Italic alphabet and modified it into the Old Latin alphabet. The Zeta was initially dropped due to a lack of use in Old Latin. The Gamma was replaced by the C, which was used to write both the voiced *g* and the voiceless *k.* The Diagamma, which had been abolished in Greece around 400 BC, was adopted by the Romans for the

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70 It was only in the Hebrew script after the 5th century AD that Sin and Šin were distinguished by diacritical marks (points).

71 In contrast to Taw, where the semiconsonant *w* changed to the vowel *u* (section 2.23). In the English pronunciation of *w,* the relationship between *w* and *u is* still clearly audible.

72 Ref 9, vol 5, p 422.1.

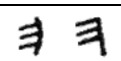
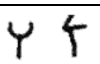
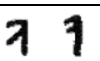
73 These five additional letters, too, may be derived from hieratograms, even if there were no Phoenician intermediates. Ref 7, pp 102–107.

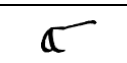
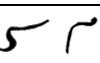
consonant *f*, as was the Xi for the two-consonant sound *ks.* When Greece became part of the Roman Empire in 146 BC, the Greek Zeta and Ypsilon were reincorporated into the Latin alphabet for the spelling of Greek words, but placed as “foreign” letters at the end of the alphabet. In the classical Latin alphabet of the 1st century BC, the consonant *g* was given its own letter G. In the early Middle Ages, the W was created by doubling the V for the Germanic and Slavic languages. During the Renaissance, the spelling variants of certain two letters became independent letters: The Jota split into the I for the vowel *i* and the J for the semiconsonant *j* which is pronounced variably as *i, j, ʒ*, or *ʤ* in the Romance and Germanic languages. The V, which before the invention of the W had represented both *w* and *u*, split into the V for the fricative *v* and the U for the vowel.

The following table summarizes Zauzich's theory of the evolution of Greek and Latin capitals via hieratograms and Phoenician letters.[74]

[74] Ref 7. Minuscules, which began to appear in late antiquity, are not included in this table.

Table 1: Greek and Latin uppercase letters evolved from Egyptian monumental hieroglyphs via hieratograms and Phoenician alphabetic letters.

No.	1	2	3	4	5	6
Egyptian	(classifier)	*wꜣ*	*qmꜣ*	*dr.t*	*h*	*w*
Monum. hieroglyphs						
Hieratograms[75]						
Phoenician	Aleph	Beth	Gimel	Daleth	He	Waw
						
Greek	Alpha	Beta	Gamma	Delta	Epsilon	Digamma
Ancient						
Modern[76]	**A**	**B**	**Γ**	**Δ**	**E**	**F**
Latin	**A**	**B**	**C, G**	**D**	**E**	**F**

No.	7	8	9	10	11	12
Egyptian	*nn*	*ḥw.t*	*dꜣ.t*	*jꜣ.t* (?)[77]	*kꜣ*	*jmj-rꜣ*
Monum. hieroglyphs						
Hieratograms						
Phoenician	Zajin	Ḥeth	Ṭeth	Jod	Kaph	Lamed
						
Greek	Zeta	Eta	Theta	Jota	Kappa	La(m)bda
Ancient						
Modern	**Z**	**H**	**Θ**	**I**	**K**	**Λ**
Latin	**Z**	**H**		**I, J**	**K**	**L**

[75] Hieratograms from the late New Kingdom (~1300–1100 BC]) were selected.

[76] Here in the font “Arial” without serifs.

[77] See note 41.

No.	13	14	15	16	17	18
Egyptian	*mw*	*nn*	*ḏd*	*ꜥwꜥw*	*pr*	*ḏd*
Monum. hieroglyphs						
Hieratograms						
Phoenician	Mem	Nun	Samekh	Ajin	Pe	Ṣade
Greek	My	Ny	Xi	Omicron	Pi	Sampi[78]
Ancient						
Modern	**M**	**N**	**Ξ**	**O**	**Π**	**Ϻ**
Latin	**M**	**N**		**O**	**P**	

No.	19	20	21a	21b	22	23
Egyptian	*g*	*rꜣ*	*sn*	*šn*	*dwꜣ*	
Monum. hieroglyphs						
Hieratograms						
Phoenician	Qoph	Reš	Sin	Šin	Taw	
Greek	Qoppa	Rho	San	Sigma[79]	Tau	Ypsilon
Ancient						
Modern	**Ϙ**	**P**		**Σ**	**T**	**Y**
Latin	**Q**	**R**		**S**	**T**	**U, V, W, Y**

[78] Sampi was a pre-classical Greek letter, used in classical Greek antiquity only as a numerical symbol for 900. Ref 7, p 73.

[79] Unlike in the Hebrew alphabet, where the two s-sounds Sin and Šin continue to exist separately, in the Greek alphabet only Sigma has been preserved. Ref 7, pp 78–79.

No.	24	25	26	27		
Egyptian						
Monum. hieroglyphs						
Hieratograms						
Phoenician						
Greek	Phi	Chi	Psi	Omega		
Ancient						
Modern	**Φ**	**Χ**	**Ψ**	**Ω**		
Latin		**X**				

Glossary

Dual: Grammatical number (in addition to singular and plural) used in some languages to refer to exactly two persons or objects; Fricative: consonant produced by forcing air through a narrow channel formed by placing two parts of the mouth close together; Hieratogram: character of the Hieratic script; Ideogram: hieroglyph that means what it depicts; Ligature: a connecting line between two letters in handwriting; Liquida: consonant formed by air passing either side of a central oral obstruction.; Monumental hieroglyphs: detailed graphic hieroglyphs (mostly on monuments and statues); Ostracon (plural: ostraca): inscribed pottery shard or limestone fragment (the “notepads” of the time); Phonogram: hieroglyph that represents a consonant or group of consonants; Semiconsonant: voiced consonant that sounds almost like a vowel but functions as a syllable boundary like a consonant.

Abbreviations

AD: Anno domini (Christian era); BC: before Christian era; Dyn.: dynasty; IFAO: Institut Français d'Archéology Orientale; MIFAO: Mémoires publiés par les membres de l'Institut Français d'Archéology Orientale du Cairo; Monum.: monumental; No./nos: number(s); p/pp: page(s); Ref/Refs: reference(s); vol/vols: volume(s); ZÄS: Zeitschrift für ägyptische Schrift und Altertumskunde.

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