

CULTURE CONTACTS AND THE MAKING OF CULTURES

Papers in Homage to
Itamar Even-Zohar



Edited by

Rakefet Sela-Sheffy and Gideon Toury

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Rakefet Sela-Sheffy
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THE ADVANTAGE OF CULTURAL PERIPHERY THE INVENTION OF THE ALPHABET IN SINAI (CIRCA 1840 B.C.E)

Orly Goldwasser

For Itamar Even-Zohar who taught me many years ago that the essence of scholarship is to ask the correct questions

Position Paper

“...Everybody is born with, and carries throughout life, the neurophysiological 'apparatus' of innovation...”

Larry R. Vandervert, *The Neurophysiological Basis of Innovation*: 27

“...Michael Faraday, who had little mathematics and no formal schooling beyond the primary grades, is celebrated as an experimenter who discovered the induction of electricity. He was one of the great founders of modern physics. It is generally acknowledged that Faraday's ignorance of mathematics contributed to his inspiration, that it compelled him to develop a simple, nonmathematical concept when he looked for an explanation of his electrical and magnetic phenomena. Faraday had two qualities that more than made up for his lack of education: fantastic intuition and independence and originality of mind.”

Marshall McLuhan, Quentin Fiore. *The Medium Is the Massage*: 92



The Statue of “N-c-m chief miner”

Sinai 346 top and front (after Hamilton 2006: Fig. A9)

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1. Introduction: Some Notes on Earlier Research and on Egyptian Hieroglyphs

Almost all scholars who have studied the birth and development of the Canaanite alphabet – the ancestor of all modern alphabets – think that the Egyptian script played a major role in this great intellectual leap. However, they differ in their reconstructions as to where the invention originated (Canaan, Egypt, or Sinai), the Egyptian source used as the basis of the invention (hieroglyphs, cursive hieroglyphs, hieratic), and the exact role of the source in the actual process of invention.¹

While few scholars favor hieratic (a very cursive version of the Egyptian hieroglyphs),² most scholars tend to see the pictorial hieroglyphs as the source of influence on the inventors.³ Recently, Darnell and Hamilton strongly advocated a “mixed” source – some models of signs taken from hieroglyphs and some from hieratic or cursive hieroglyphs.⁴ An important suggestion was put forward recently, proposing

¹ The literature on the invention of the alphabet is extensive. For background, the reader is referred to Goldwasser 2010a – “**How the Alphabet was Born from Hieroglyphs**” – a general introduction to the topic (also Goldwasser 2010b and 2010c), and Goldwasser 2006a for a detailed discussion with extensive bibliography. Gardiner “broke the code” of the new script in 1916 (Gardiner 1916). He always believed the script was invented in Sinai in the Middle Kingdom (Gardiner 1961). The fundamental book on the corpus of the alphabet in Sinai is still Sass 1988. Sass dated the invention to the Middle Kingdom. However, recently, he seems to have adopted a different opinion, of a much later date for the invention; see Sass 2004/2005, Sass 2005. The latest book on the topic is Hamilton 2006. As a scholar of Ancient Semitic languages and scripts, his assumptions are different from mine, and his reconstruction of the invention of the alphabet is correspondingly different. Darnell’s discovery of the two lines of Proto-Canaanite inscription in Wadi el-Ḥôl is of the utmost importance; see Darnell et al. 2005 with extensive discussions.

² Recently Kammerzell 2001; I cannot discuss here the elaborate presentation of Kammerzell on the order of the alphabet. However, the very early date he suggests for an Egyptian “Ur-order,” i.e., early 2nd millennium, still fits my reconstruction. For bibliography on the topic of hieratic sources, see Darnell et al. 2005: 90, notes 138–140.

³ Gardiner 1916, who deciphered the script; Sass 1988 and others.

⁴ Darnell et al. 2005; Hamilton 2006. Both believe that the script was invented somewhere in Egypt at the beginning of the Middle Kingdom, and that these

“real life” models for some of the signs of the newly invented system.⁵ However, all scholars, *the present writer excluded*, today share the basic assumption that the inventors were, at least to a certain extent, educated in the Egyptian language and had a knowledge and understanding of the mechanism of the Egyptian scripts. According to these opinions, the alphabetic script must have been invented by scribes, or by people educated by Egyptian scribes, whether in Canaan, Egypt or Sinai.⁶

This assumption is rooted in two different conceptual biases:

Modern spectators regard the invention of the alphabet with great admiration. It is considered by Western scholarship as a great breakthrough, a turning point in human intellectual history. The inventors were able to leave behind the cumbersome, old-fashioned, multi-sign writing systems (hieroglyphic and cuneiform systems), while creating a much “better” communication system. Such an ingenious invention could have been born, in their minds, only in educated elite circles, e.g., that of scribes.⁷ Darnell recently suggested that the alphabet was born in the milieu of military scribes in Egypt, in “a plurality of cultural contexts” (Darnell et al. 2005: 90–91).

The second reason is embedded in one of the qualities of the *Egyptian* writing system. The Egyptian script system includes, among the hundreds of signs it uses, a small group of signs that looks like an “alphabet” to the *modern spectator*. This superficial similarity has tempted scholars to believe that it is this Egyptian “system” that was behind the concept of the new alphabet (See recently Darnell et al. 2005: 90). Let me explain.

The signifiers of the hieroglyphic system are all pictorial icons that stand in different semiotic relations to their signified. Signs may be used either as *logograms*, *phonograms* or *classifiers*⁸ (*determinatives*, in the old terminology).


hypothetical earliest inscriptions still await discovery.

⁵ Hamilton 2006; Goldwasser 2006a; and lately Rainey 2009; see below discussion of *waw*.


⁶ Recently Rainey 2009, but also Sass 2005 and Hamilton 2006.


⁷ See the recent debates between Goldwasser and Rainey (Goldwasser 2010b, 2010c; Rainey 2010), and Rollston 2010.


⁸ The classifiers of the Egyptian script will not be discussed here. For bibliography on the classifier phenomenon in the hieroglyphic script, see Goldwasser




In the case of *logograms*, a sign used iconically refers directly to a pictorial signified, i.e., the picture of a dog  serves as signifier for the word “dog.”⁹

However, in many cases, the very same icons are often used as “triconsonantal” or “biconsonantal” signs. In the case of “triconsonantals” and “biconsonantals,” the pictorial signifier (originally a logogram), is voided of its *semantic* reference. It has to be read as a phonetic¹⁰ signifier, which represents a chain of two or three consonants. This chain, in turn, can be used with *different* vowel combinations *between, before* and *after* the consonants.¹¹

For example, the icon (*logogram*) , “offering table,” “altar,” represents the *triconsonantal* root *h-t-p*, see Fig. 1. It may be used in many words that are built on the skeleton of this consonantal root, such as “be happy” or “pleasure” (Gardiner 1957: 501 [R4]).

The icon (*logogram*) , “head” represents a *biconsonantal* root *t-p*. It may refer to different words built on the word “head” in Egyptian. (Fig. 1)

The hieroglyph  is a *uniconsonantal* sign (see below) which is usually activated as a “phonetic sign” *p*. (Fig.1, and below 5.2.2)

The triconsonantal icon  *k-3-p*, which pictures a “censer for fumigation,” may be used to write the word  *k-3-p*, “harem,” built with the same consonantal skeleton but bearing no clear semantic connection to the original icon. The hieroglyph  plays the role of classifier for all notions related to [HABITAT]. In its iconic use it is the

2002, 2005, 2006b.


⁹ In the case of an initiated reader, also to a phonetic signified, see my most recent discussion in Goldwasser 2009.



¹⁰ The term “phonetic” will be used in this article being the term used by most Egyptologists and semioticians, even if a term such as “phonological” would have been more accurate.


¹¹ Two consonant signs are used freely in this process while three consonants are often bound to various derivations of the root, see Meltzer 1980.


logogram for “house,” originally pronounced *p-r*. In our example □□ carries no phonetic value and has only an iconic signified – [HABITAT].¹²




A common hieroglyph is the icon , which represents three skins of fennec foxes tied together.¹³ It was used as a logogram for the verbal root *ms(i)*, “give birth” and all its derivatives. However, it was also used as a phonogram with words that include the consonant combination *m-s* and have no connection to the etymon “give birth.”

This word is still known in Coptic. The verb “bear a child” was written **mi**ϥ. The derivate nouns  *ms* “young one” and *ms*  “calf, young animal” were written **ma**ϥ and **ma**ϥϥ in Coptic. The metaphoric extension, “interest” (“what was born”), usually referring to “grain received as interest,” was written **mi**ϥϥ (Crum 1939: 186).





When used as a mere phonogram in the verb  *msd* or *mst*, “hate,” we find in Coptic the writing **mi**ϥϥϥ.¹⁴

Another common triconsonantal icon , “mast,” (Gardiner 1957: 499, P6) was used freely in words that had no obvious semantic relation

¹² Gardiner 1957: 501 (R5). The hieroglyph □□ is activated here as a “phonetic complement.” It has a role in repeating some partial phonological information of the triconsonantal root. As the prototype of all sorts of houses, buildings (extended to institutions), and even animal abodes (dens, stables, nests) the □□ sign has a widespread use in the role of the classifier [HABITAT]. Nevertheless it may always be used in the roles of logogram for “house” and phonogram in words containing the phonetic skeleton *p-r*, such as  *pr(i)*, “go.”


¹³ On the erotic function of fennec foxes, see discussion and bibliography in Goldwasser 1995: 20.

¹⁴ Coptic is the latest development of the Egyptian language. It is written in a number of Greek-based letters, supplemented by several characters, mostly from Demotic. Vowels are regularly represented. For all the above examples in Coptic, see Černý 1976: 90–91.

to the icon. Such is the word ḥ^{w} , “lifetime,” , or a measure called ḥ^{c} ,  (Faulkner 1962: 48, 47). It is also used in the noun $m^{\text{ḥ}^{\text{c}}t}$, , “tomb,” “cenotaph.”¹⁵ The word gets the  [HABITAT] classifier being the final, eternal habitat.

Thus a single pictorial signifier representing a skeleton of a consonant combination could refer to different phonetic signifiers (root + different vowel patterns) and different semantic signifieds.¹⁶

Thus, *triconsonantals* and *biconsonantals* may be activated as *phonograms*, i.e., signs that denote a skeleton of a *phonological signifier* that may acquire different signifieds.

Nevertheless, there are about 25 uniconsonantal signs in the Egyptian script system (such as the *p*  discussed above). These signs refer to a *single* consonant. Uniconsonantals are activated as a rule as phonograms, and very rarely as logograms, and thus their semiotic use reminds the *modern spectator* of the system of the Semitic alphabet. In the Semitic alphabet of today, and also probably in the oldest alphabet, each letter could refer to a *consonant* in accordance with the given context.

The uniconsonantal signs were assembled by modern scholars and were put in separate lists (see Table 1) that are sometimes called the “Egyptian Alphabet.”¹⁷ However, there is not a single shred of evidence from pharaonic times that the Egyptians themselves regarded the group of these uniconsonantals in their script as a separate subsystem, an “alphabet.” Never was a separate list of these signs found in ancient Egypt. Had they acknowledged the uniconsonantals as a separate alphabetic option, the Egyptians could have renounced their entire

¹⁵ Faulkner 1962: 105. This word may be a noun built on the root ḥ^{c} with an *m* prefix. The original meaning may have been connected to the eternal “standing” nature of the tomb. Compare the Hebrew *מספדה*; see Appendix C.

¹⁶ On root, stem and etymon in Semitic languages, see Goldenberg 2005; Prunet 2006; and Faust and Hever 2010. See also Appendix C below.

¹⁷ Gardiner 1957: 26-27, Schenkel 2005: 59-61. The modern lists usually contain 25-27 signs.

complicated system of triconsonantals and biconsonantals (which amount to hundreds of signs) and represented all *sounds* of the Egyptian language with the small group of uniconsonantals. But one must wait until the Late Period to find inscriptions with even a few words written exclusively in uniconsonantals, possibly under the influence of the Semitic alphabets that were already in full bloom during this period.¹⁸ Indeed, already in the Pyramid Texts, the religious texts that adorn the walls of the pyramids of the kings of the 5th and 6th Dynasties (ca. 2350–2250 B.C.E.), we find words written exclusively in uniconsonantals. We should always bear in mind, however, that uniconsonantal writing never became a wide-spread phenomenon and was never used as an *independent system of writing* by the Egyptians at any time in their history.

I propose that the invention of the alphabet has nothing to do with this phenomenon of the Egyptian script.

2. My Hypothesis – General Overview

1. I do agree with the scholars who believe that the pictorial models for the new Canaanite letters were taken from Egyptian *hieroglyphs in Sinai*.¹⁹

¹⁸ Since the early days of the 20th century, some Egyptologists have suggested the influence of Greek on such Egyptian spellings (recently Jansen-Winkel 1998). However, it is much more likely that the influence (if at all) was by a Semitic system as nowhere in these spellings is there an attempt to represent vowels.

¹⁹ In general, this suggestion was already put forward very early by Gardiner 1916, 1961, Ullman 1927. Sass 1988: 143 writes that “Hebeded and the other Semites in Sinai during the Middle Kingdom had at their disposal a selection of hieroglyphic inscriptions. ... which included prototypes of almost all the Proto-Sinaitic letters... .Ullman ... suggested that the signs of one Egyptian inscription, Sinai 53 ... could by themselves have sufficed for the origin of most of the Proto-Sinaitic letters. To this I would add at least Sinai 92 ... in which Hebeded is mentioned, the god Ptah is depicted standing in a shrine, and the shape of the letters is reminiscent of the Proto-Sinaitic inscriptions.” In Goldwasser 2010 I attributed the resemblance between the hieroglyphs of stela 92 and the alphabet in the mines (especially the “incorrect” classifier) to the fact that the writer of this stela, probably a Canaanite, already knew the alphabetic script and *mixed* the two writing systems – Egyptian hieroglyphic script and Canaanite alphabet.

Even so, I insist that all prototypes for the new letters are available as hieroglyphs from the *Middle Kingdom* inscriptions in Sinai. In Goldwasser (2006a), I demonstrate that almost all models for borrowing are clearly present in the Egyptian inscriptions *in the area of the mines and on the way to them*. A few letters use “real life” models.

2. Unlike all other scholars, I believe the *inventors of the alphabet were illiterate*. This hypothesis changes the reconstruction of the invention in a number of ways.

While it is impossible to fully prove this hypothesis, it seems to me to be the one with the strongest explanatory power.

2.1 Sinai as the Most Plausible Location for the Invention

In previous publications, I have argued in detail why I believe the invention should be reconstructed in Sinai. There are three arguments that support this hypothesis.

2.1.1 Accumulation of Inscriptions in the Mining Area

About 30 early alphabetic inscriptions have been found in Sinai. Most of them come from the areas of the mines (some were written inside the mines) in Serabit el Khadem, and a few have been found on the roads leading to the mines. In the temple precinct itself, only four statuettes bearing alphabetic inscriptions have been found. In the mines themselves, some inscriptions were engraved very close to each other. They give the impression of compact and energetic activity in the same place, and probably during a relatively short span of time.²⁰ Some of the inscriptions were short texts comprising a few phrases. They are the *longest* texts in the new alphabetic script known in the 2nd millennium B.C.E.

In Egypt itself, on the other hand, two lines of alphabetic inscription have been found to date. They are probably from the late Middle Kingdom. They were discovered very close to each other on the same rock on a desert road in southern Egypt (Wadi el-Ḥôl; see Figs. 2a, 2b).²¹

²⁰ The Proto-Sinaitic Inscription 375c (Hamilton 2006: 377–378) may have been written later, during the time of the expeditions of the Late Bronze Age. The *’ālep* is similar to the *’ālep* of the Lachish ewer (Sass 1988: 61 Fig. 156).

²¹ According to my tentative reading of the Wadi el-Ḥôl inscription (Fig. 2a), the


Another tiny ostrakon was found in the Valley of the Queens and should probably be dated to the New Kingdom (Figs. 3a, 3b) (Leibovich 1940; Sass 1988: 104). There are four clear letters on the upper part: *'ālep*, *mem*, *kap* (reversed) and *taw*. The *mem* is the “Egyptian” vertical *mem* (see discussion in Appendix B below).


In the entire region of Canaan and Lebanon, less than a dozen inscriptions dating from the 17th to the 13th centuries B.C.E. have been discovered. Moreover, they were found at different sites far apart from each other. There is hardly a site that has yielded more than a single inscription, and most inscriptions comprise names only, or at most, very short phrases.


2.1.2 Proximity of all Available Prototypes

In Goldwasser (2006a), I argued that almost all signs of the new alphabet letters in Sinai have clear prototypes in the Middle Kingdom Egyptian hieroglyphic inscriptions that surround the mines and in a few other inscriptions found on the roads to the mines.

sign  is not alphabetic. It may represent a gender classifier- [MALE(HUMAN)]

The hieroglyphic version  may also appear in a cursive version in Egyptian





 (Goldwasser 2006a: 146–149). If my reading is correct, this is an intrusive cultureme from the Egyptian script system (for a possible intrusion of the same classifier in the problematic inscription in Timna, see Wimmer 2010: 4). Such an intrusion is not really a surprise, as this is the only Middle Kingdom alphabetic inscription found to date in *Egypt*. Sass does not identify a four letter inscription found in Kahun as an alphabetic inscription; he also doubts its dating to the Middle Kingdom; see Sass 1988: 104. The Wadi el-Ḥôl inscription belongs to the formative period of the alphabetic system (18th century B.C.E.) when the alphabet was still centuries away from any process of standardization. In this early stage, signs have various pictorial representations (i.e., there is no single canonized picture that represents a single letter) and there is no school system that would prevent interference from any local systems. See discussion in Appendix B.

I have been able to show that all models for the new letters can be found in the hieroglyphic inscriptions (all dating to the Middle Kingdom) at the site (see Tables 2a, 2b). I called the attention of scholars to the fact that Gardiner, Černý and Peet, the great Egyptologists who excavated at Serabit and published the inscriptions from the site (*Sinai* I-II), mentioned the fact that the letter  *h* of the alphabet is a clear borrowing of the famous “Middle Kingdom” hieroglyph from Sinai




; an obscure title, known almost only in Sinai during the Middle Kingdom, which they translated as “*Rêis*.”²² This title appears in hundreds of examples in the Middle Kingdom inscriptions but is absent from the later Sinai inscriptions (see also discussion below, 5.2.4).

I have also shown (Goldwasser 2006a: 144, 151, and Goldwasser 2010a: 45–46) how an unexpected connection can be drawn between a *hieroglyphic inscription* of the highest Canaanite dignitary known to work in the Middle Kingdom with the Egyptian expedition, Khebeded (Sinai Stela 92, see Figs. 4a, 4b) and the new alphabetic script, in a special study on the origin of the letter *bêt*. My main claim in this case is that it seems that the writer of the inscription on Stela 92 mixed the al-

phabetic letter *bêt*  with the correct Egyptian hieroglyph for “house” . The gist of this claim, if it is accurate, is that some Canaanites, either Khebeded, or someone in his entourage, *was already versed in both Egyptian hieroglyphs and in the newly invented Canaanite alphabetic script*.²³ The somewhat imperfect knowledge of the hieroglyphic script of the person who wrote on Stela 92, and his concurrent acquaintance with the alphabetic system, may have caused him some confusion. It led him to incorrectly exchange, in a few cases, the Egyptian hieroglyph  for the new alphabetic sign  that carried the same *iconic* meaning. This writer was probably not the inventor, as he knew Egyptian hieroglyphs. Yet as an educated Canaanite, he could have

²² *Sinai* II: 67, note 1: “It seems to be due to its frequent occurrence in the Sinai

inscriptions that the sign ( O.G.) has passed into the Proto-Sinaitic alphabet.”

²³ For individual scribal “graphic bilingualism,” see Cromwell forthcoming.

learned the new script of his fellow workers in the mines, a strange writing-game that must have been a real curiosity at the time among the Canaanites at the site.

This connection points very strongly to a link between the inventors of the alphabet and the writer of Stela 92, which in its turn anchors the date of the invention at around 1850 B.C.E.

2.1.3 A Psychological-Religious Trigger in Sinai

A unique situation was created in Sinai where some illiterate (although surely not “primitive” or “less advanced”) workers with strong Canaanite identity were put in unusual surroundings for months: extreme isolation, high, remote desert mountains, dangerous and hard work. There was nothing in the area of the mines to divert their attention – except *hundreds of hieroglyphic pictures* inscribed on the rocks. No town, no buildings, no roads, no distractions of civilization. Although we know of a few Canaanite dignitaries who were in close contact with the Egyptians,²⁴ and are mentioned in the Egyptian inscriptions inside the temple precinct, it is very probable that *most of the Canaanite working force was denied regular access to the temple precinct*, which was surrounded by a wall. Thus, they may have been in minimal contact, if at all, with the Egyptian scribes, architects, treasurers, scorpion charmers, physicians, overseers of workers, builders and professionals of other sorts. Dragomans were regularly mentioned as part of the Egyptian expeditions, a fact that hints at a language barrier to be bridged. There was nothing but mines, desert and hieroglyphs and a strong urge to contact the gods.

The Egyptian pictorial script was the *necessary tool* for the invention of the alphabet. The Egyptian signs presented the inventor with the *hardware* for his invention: the icons, the small pictures that he could easily recognize and identify. Without this basic material, which he utilized in a completely innovative way, the invention would probably not have taken place.

The rare combination of desert isolation, strong religious urge and the excessive “writing to the gods” in pictures all around may have

²⁴ The most celebrated one is Khebeded. See my discussion in Goldwasser 2006a, and Sass above note 19.

created a unique timing and the right conditions for a great mind to break a new path.²⁵



3. Literacy vs. Illiteracy – an Evaluation of the Data

The main divergence of my hypothesis from earlier ones is that I believe that the inventors were illiterate. This difference has significant repercussions for the reconstruction of the invention of the alphabet. I would like to turn now to some evidence for this hypothesis.

3.1. The Hieroglyph Regarded as Picture – “in the Eyes of the Beholder”

The inventors interacted only with the *pictorial aspect* of the hieroglyphic source. This process may be considered a kind of “pictorial translation.” In this procedure, an Egyptian hieroglyph was “read” by the inventors, independently of its correct meaning or role in Egyptian, sometimes also independently of its correct *pictorial* meaning within the Egyptian source script. After the identification of the *picture*, it was given a Canaanite *name*.

In *all cases*, the Canaanite “translation” in Sinai differs from the correct use of the hieroglyph in Egyptian, even if the hieroglyphs were correctly identified as images.²⁶

Indeed, in most cases the Canaanites properly recognized the hieroglyphic images. The eye hieroglyph  was identified as **ayin*, “eye,” the water hieroglyph  as **mêm*, “water,” and so on. However, in the Egyptian system, the “eye” hieroglyph carries the meaning “do” and the sound *iri* and the “water” hieroglyph is mostly used phonetically as uniconsonant *n* which plays different grammatical roles but carries no semantic connection whatsoever to “water.”

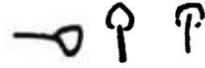
²⁵ On the psychological “allure” of the hieroglyphs, see Goldwasser and Laor 1991.



²⁶ Some resemblance on the phonetic level may have existed in the case of the



Egyptian  *h* and the Proto-Sinaitic letter  = *h*.

It also seems that real life objects may have played a role in the choice of prototypes for the alphabet letters.²⁷


An interesting example is the alphabet letter *waw*





The models for this sign are most probably the two very different Egyptian hieroglyphs depicting “oar,”  (P8),²⁸ and “mace,”  (T3).²⁹ Some cursive versions of these signs in the Egyptian inscriptions of Si-


nai, such as   (Table 2a), look very similar to the Canaanite letter *waw*. Both signs may have served as the pictorial prototype for borrowing.

But why would the inventors choose these particular signs?


Since they could not read Egyptian, they were not aware and probably did not care that the horizontal hieroglyph that looks so similar to the vertical is actually a different hieroglyph in the Egyptian system. The horizontal Egyptian hieroglyph ³⁰ may be the prototype for the horizontal *waw*, well known in the Sinai Canaanite corpus of alpha-

²⁷ As for real life models as the source for the letters: *pê* (**pi't-*)  “corner” (Hamilton 2006: 195, note 248), I suggested that an actual building tool may be the source for this sign (Goldwasser 2006a: 141–142). As for the letter *kāp* (**kapp*) , such a hieroglyph is unknown in Egyptian, and it seems that a real life palm was the prototype. As for *šin* (**θann-*), “bow,” a real life model may have also played the role of prototype. Many of the Canaanites in the expeditions to Sinai were employed as soldiers (Černý 1935; Valbelle and Bonnet 1996).


²⁸ This enumeration refers to the sign list in Gardiner 1957: 438 ff.


²⁹ Hamilton 2006: 86–90 also regards  T3 as the model for this letter. However, he differs from me in that he looks for hieratic models and models from Egypt, whereas I look for all models of letters in Sinai. Darnell et al. (2005: 85) suggest the hieroglyph O29 as a possible source.

³⁰ This example, which is a cursive version of the P8 “oar” hieroglyph, is taken from an inscription in Wadi Maghârah, on the way to Serabit. See *Sinai I*: Pl. XI, 27.

betic letters (e.g., Inscription 351 and also  from Wadi el-Hôl; see Fig. 2a).

The word *waw* carries the meaning “hook” or “loop” in Canaanite.³¹ Rainey recently suggested: “The examples of *w* in the pictographic script look like a common Canaanite object, the toggle pin. That would explain the Biblical form, ווים...”³² Toggle pins were a necessary part of the typical Canaanite dress of the Middle Bronze Age, used to fasten the robe together (see Fig. 5) (Ziffer 1990: 59*–61*; Shalev 1989).

It is possible that the hieroglyph  reminded the inventors of this necessary element of their dress, which was also a distinctive “Canaanite” item. It is possible that in their dialect, this article was called *waw*, as suggested by Rainey. Looking for the sound *w*, they chose the hieroglyphs that reminded them of their toggle pins, disregarding completely its Egyptian pictorial meaning or its function in the Egyptian script system.

Thus, if Rainey is correct, in this case the Canaanites may have “translated” the Egyptian hieroglyphs (“mace” and “oar”)  into their own cultural world, as the picture of the toggle-pin. Rainey's suggestion is that it is the “real world” toggle pins *alone* that played as models for the letter *waw*. However, on the one hand, the alphabet letter never shows the typical upper part of the toggle pin (see above, Fig. 5).³³ On the other hand, it bears a strong similarity to the Egyptian hieroglyphs. These facts lead me to believe that behind the letter *w* stands a process of “pictorial translation” of the hieroglyphs into the local Canaanite culture. The final result is a combination of the Egyptian hieroglyph and the concrete Canaanite toggle pin.




³¹ Already Naveh 1997: 27, “peg.”




³² ווים = “*wawim*,” Rainey 2009: 85.

³³ One possible example may be Inscription 376, first letter on the leftmost column, see drawings in Hamilton 2006: 88 and 378.

3.2 Two Different Hieroglyphs Serve as a Model for a Single Letter

Two hieroglyphs that constitute diverse signs that can never be exchanged for one another in the Egyptian hieroglyphic system often serve as the model for a single letter.


A possible example is the letter *resh*  ³⁴. Here two hieroglyphs may have served as models – D1  and D2 . In Egyptian they can never be interchanged. D1 carries the meaning “head” and D2 carries the meaning “face.”

A second clear case is the letter *nûn*. Again, two snakes, the Egyptian cobra (I9)  and the viper (I10) , which have very different meanings in the hieroglyphic script, seemed to serve as model for a single alphabetic letter — *nûn* —  (Hamilton 2006: 154). For the inventors, they were simply “snakes.”

3.3 “Incorrect” Direction of Writing

Another phenomenon that strongly points to the fact that the inventors did not know how to read hieroglyphs is that in all the alphabetic inscriptions in Sinai the direction of writing is incorrect according to Egyptian rules. In Egyptian, signs that have fronts and backs must all face the beginning of the inscription.³⁵ (See Fig. 6 and Fig. 7 from an inscription at the mines.)

Written in Egyptian stela form, imitating the Egyptian base lines system, the alphabetic Inscription 349 (Fig. 8) is one of the better examples of the early alphabetic inscriptions.³⁶ It was found in the entrance

³⁴ See  (Sinai 364) in Hamilton 2006: 224 (Fig. 2.70), and Sinai 365b, Hamilton 2006: 369.

³⁵ There is a very rare phenomenon in Egyptian where inscriptions may partially be written in other directions. However, this is a rare, sportive, use.

³⁶ It seems that the “Canaanite direction” is the direction preferred by the uninitiated who does not know Egyptian rules of reading. Students in my beginner classes almost always try the “Canaanite direction” as the first option for tack-

to Mine L. Yet it clearly shows the *incorrect* direction of writing, according to its proposed decipherment by all Semitists. On line 2 one can read “*rb nqbnm*,” “chief (of) miners.” The letters are written in the “wrong” direction, according to the Egyptian rules of writing.

3.4 Instability in Directions and Sizes in a Single Inscription

In most inscriptions with more than one word, and when not using base lines as in the example above, the direction of writing can be very confused.³⁷ This can be seen in what seems to be one of the better examples of the alphabetic inscriptions, the small block statue which carries the inscription, “on behalf of *N-c-m* chief miner.”³⁸ By virtue of his title and by virtue of the fact that the statuette was found within the temple precinct, one may suggest that its owner was one of the leaders of the Canaanite miners, who had been allowed to place his statue in the temple, close to the goddess' service. I believe it is reasonable to assume that it is a “prestige” Canaanite find. However, in Figs. 9a, 9b one can follow the “winding road” of his inscription on the right side of the statue.

Another phenomenon is letters in *different sizes* that can be detected in the very same inscription (Fig. 10, Inscription 352).

If Hamilton's drawing of Inscription 375a is correct (Fig. 11), we have on the very same line of inscription two letters clearly facing in different *directions*: the bull looks to the right, and the fish looks to the left (Also Sinai Inscription 358).

Another inscription, 357, contains two *'ālep* bulls that look to the left (vertical line), and in the continuing lower horizontal line the same bull sign faces the other direction (Fig. 12).

Such methods of writing would be unthinkable for anybody versed in any standardized writing system of the period.

ling a row of hieroglyphs.

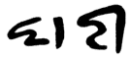
³⁷ See already Sass 1988: 107 “All that was required was that the pictograph be identifiable.”


³⁸ “על נעמ רב נקבן;” see Sass 1988: 15.

4. The Unnecessary Hypothesis of Hieratic Sources

Another major difference between Hamilton's and Darnell's theories and mine is that the other two scholars advocate for a *mixed* source of sign loans, namely, from both hieroglyphic and hieratic sources (Darnell et al. 2005; Hamilton 2006). Such an assumption requires literacy as a precondition. According to Darnell and Hamilton, the inventors must have been versed in hieratic as well as hieroglyphic scripts.

Hieratic signs lost their iconicity in most cases, and individual signs could not be identified iconically by an uninitiated beholder (for an example of hieratic of the 12th Dynasty, see Fig. 13). The hieratic parallels or sources of borrowing suggested by Darnell and Hamilton seem to be *iconically* much more remote from the Proto-Canaanite letters than

hieroglyph models. For example, the hieratic head signs 

 presented by Darnell³⁹ as possible models of imitation for the inventors seem to have much less in common with most of the early

alphabet head signs in Sinai



and in Wadi el-Hôl



(see Figs. 2a, 2b) than their hieroglyphic coun-

terparts



. The heads of the early alphabet more closely resemble hieroglyphic prototypes or seem to be *idiosyncratic reproductions* of the signifier "head" in a naturalistic, non-specific form such as the

15th century B.C.E. example from Lachish




(Sass 1988: Fig. 140, Lachish Dagger). A case in point is the independent reproduction of a typical Canaanite image of a head, wearing the distinctive Canaanite

"mushroom" coiffure in Wadi el-Hôl





. This likeness was already noted by Hamilton, who suggested the comparison to the statue of the early Hyksos ruler from Tell el-Dab'a (Fig. 14) (Hamilton 2006: 226–

³⁹ Contemporary hieratic signs after Darnell et al. 2005: 76, Fig. 3

227). Does the second head from Wadi el-Hôl  show a heavily-bearded, possibly “Asiatic,” man?

The hieratic prototypes presented by Hamilton are not really more fitting as models and are mostly too early or too late in date (e.g., the discussion of the letter *pê*; Hamilton 2006: 190). For example, the alleged hieratic sources of letter *bêt* suggested by Hamilton come either from a hieratic letter of the very beginning of the 12th Dynasty (Upper Egypt), or from a literary papyrus from late Hyksos times. Most examples from the end of the 12th and 13th Dynasties presented by Hamilton (Hamilton 2006: 41) do not resemble the Canaanite *bêt*. The main

direction of development of the house  (O1) sign in hieratic is towards an open basis and not a closed square. A survey of the *bêt* letters that could be identified with certainty in Sinai show a very unstable sign that oscillates between a full square, a square open on the side as well as house plans that are unknown in any Egyptian source of any kind of writing. It is also quite plausible that Canaanites ignorant of

Egyptian sometimes used the hieroglyph  as a prototype, iconically representing a shelter in the field (see discussion below). Yet it is not used iconically (for “house”) in the Egyptian source system but is activated as the uniconsonantal *h*. As I have suggested above, Canaanites interacted only with the pictorial meanings of the signs.⁴⁰

In my opinion the hypothesis of hieratic models for the Sinai letters is unnecessary, complicates the discussion and has a much *weaker explanatory power*.

5. Semiotic Analysis of the Invention

In the next chapter I shall present through a few examples a semiotic analysis of hieroglyphic reading vs. alphabetic reading of the same icon.

⁴⁰ See my detailed discussion on the *bêt* and the house hieroglyphs in the Egyptian sources in Goldwasser 2006a: 143–146.

5.1 Why Hieroglyphs and not Simple Pictures?

By choosing pictures from the hieroglyphic system as their models, and not just random pictures of objects, the inventors signal that the marks and pictures they draw on the walls of the mines and around the mines should be treated as “writing.”

By mainly using the hardware of the Egyptian script (instead of inventing a new set of pictures), they say to the beholder, “We write,” “this is an inscription!”



The new, revolutionary semiotic approach of the inventors of the alphabet was lucid, relatively simple and *repetitive*. A single semiotic procedure was used in all cases.

In their first step, the inventor/s selected a *limited* number of pictures from among the hundreds of hieroglyphic images that they saw around them in Egyptian inscriptions at the mines, or on the roads to the mines. In a few cases, they created their own picture, an image of an artifact that was meaningful and important in their own world. In fact, they might not have “selected” a certain number at all – they could have chosen pictures one at a time – without any forethought about creating a “system” – on the basis of concrete need. This might have given rise to a situation in which there were “extras,” more than what was strictly necessary for representing phonemes.

Their second step was to establish a new, single semiotic rule for all pictures they used:

They now called the chosen picture (hieroglyph) by its *name* in their language, Canaanite;⁴¹ and *as a rule* they took only the initial “sound”⁴² from this name. Henceforth, they no longer thought of the *meaning* of the *picture*!


Let us take an example:


The Proto-Sinaitic sign  is the earliest ancestor of the Old Hebrew  *rêš*,⁴³ (later Latin *R*; see below Table 3). It is a Canaan-

⁴¹ All scholars today agree that the language represented in the early Proto-Sinaitic and Proto-Canaanite inscriptions is a Canaanite dialect.

⁴² I believe the term “sound” fits better this reconstruction (Naveh 1997: 23), more than the terms *phone*, *allophone* or *morpheme*.

⁴³ *Rosh* is the Modern Hebrew pronunciation. The Canaanite original was prob-

ite variation of a very common and eye-catching hieroglyph , well known in Sinai during the Middle Kingdom period (see Table 2b


above, e.g., ). Once a reader has identified the icon of the head, he should call it by its “name” in *Canaanite*, in this case *rʾš*. The next step would be to take only the initial “sound” of the word, i.e., *r*. In this stage the phonetic signified of the head icon in the *alphabetic system* is no longer the *whole* word, but only the *initial sound r*. The sign



has now become a mere signifier for a minimal phonetic signified (*r* alone) that holds no *semantic* value of its own, and no longer any connection whatsoever to the original meaning of the *picture*, “head.”




The sign is to be read *acrophonically*, by the new rule of the alphabet. Thus the final signified in this process is a *new phonetic signified* emptied of any *meaning*, standing for the sound *r*.

In the original *Egyptian* script, the very same icon  is read *tp*.⁴⁴ The phonetic signified of this hieroglyph in the original Egyptian system is always the biconsonantal *t-p* (Fig. 1) and it always carries the meaning “head.” The sign is never read acrophonically in Egyptian. However, it can be used in two⁴⁵ very different ways in the Egyptian script system:

1. The sign can be used as a *logogram* for the word “head” *tp*,⁴⁶ and as such be part of a large number of metaphorical derivatives of the word, such as *tpy* “heady” = “first.”

ably vocalized with an *a-* or *i-* vowel, see Hamilton 2006: 230 with bibliography.


⁴⁴ Gardiner 1957: 449 (sign D1). As the Egyptian script presents only consonants, it is difficult to safely reconstruct the vowels that connected the *t* and *p* in the Egyptian word *tp* “head.” The word did not survive as such in Coptic.

⁴⁵ It seems that the strong iconic identity of the sign  stands in the way of its use as a mere phonogram.

⁴⁶ *tp* is the earliest word for “head” known from the Egyptian sources. Another noun with the meaning “head” – *d3d3*, appears regularly in the Egyptian texts

2. Another major use of the very same sign in the script system is as a *classifier* (See Goldwasser 2002 and 2005) (*determinative*). In this use it appears at the end of the word classifying different words that relate to

it metonymically – such as    ḥꜣ CL[HEAD] “back of the head,” “behind,” to the superordinate category [HEAD]. When the hieroglyph


 functions as *classifier* it has *no phonetic value* (it is a “mute sign”) yet it keeps its full value as an iconic signifier/signified “head,” classifying the above word into the category [HEAD].


5.2 The Semiotics of the New Canaanite System – Some Examples

One can identify the iconic signifiers of the following earliest alphabetic letters with a high degree of plausibility. Let us follow the semiotic path taken by the inventors. Each discussion of the Semitic letter will be followed by a discussion of the semiotic procedures of reading of the source hieroglyph in Egyptian.

5.2.1 Head of Bull

New Canaanite system

Proto-Sinaitic sign 

Compare Egyptian hieroglyph in Sinai 

Stage 1

Choosing the iconic signifier: – [head of bull]

Reading in Canaanite: ‘ālep “bull”

Stage 2

Taking only the **initial sound** ’ from the full phonetic signified (plosive laryngeal) (See Naveh 1997: 27)

but only since the Middle Kingdom. It might have carried a somewhat different meaning or more probably belonged to a less canonical, non-written social dialect which surfaced in writing only in the Middle Kingdom.

Final phonetic signified ³

Iconic meaning “bull” is *always* discarded.

Only new phonetic signified retained

Used as the letter **x**


Egyptian system

The hieroglyph  (F1)

Iconic signifier – [head of bull]

Phonetic signified: *k-3*.

This metonymic representation is used mostly as *logogram* for “bull.” Typical of offering lists e.g., Fig. 15 (inscription on the way to the mines).


Use of  in Egyptian:

Logogram – “bull” (iconic signified + phonetic signified)

5.2.2 House

New Canaanite system

Proto-Sinaitic signs  compare to Egyptian

hieroglyphs in Sinai, e.g. . This icon carries a different meaning in Egyptian – “stool.” Possibly also real life models of houses were used as prototypes for this letter.

Stage 1

Choosing the iconic signifier: – [house] (in the eyes of the Canaanite beholder)

Phonetic signified in Canaanite: *bêt* “house”

Stage 2

Taking only the initial sound from the full phonetic signified.

Final phonetic signified *b*.

Iconic signified “house” is *always* discarded.

Only new phonetic signified retained

Used as the letter **𐤁**

Egyptian system


The hieroglyph  (Q3)

Iconic signifier – [stool]⁴⁷

Phonetic signified – *p* (see Fig. 1).

Used mainly for representation of the uniconsonantal phoneme *p*.



Wide-spread use in all Egyptian inscriptions in Sinai.

Use of  in Egyptian:

Phonogram – *p* (phonetic signified only iconic signified discarded)


5.2.2 Note on the Canaanite Letter *bêt* 𐤁:



Note on the Canaanite letter *bêt* 𐤁:

The correct Egyptian hieroglyph for “house”  looks very different. In more cursive hieroglyphs, and sometimes even in standard hieroglyphic inscription,⁴⁸ this sign gets the typical form .

No Proto-Canaanite example follows these “correct” Egyptian prototypes. It seems that in some cases (only one such possible example


⁴⁷ Word still known in Coptic – *pōi*, “bench” (Gardiner 1957: 500, Q3).


⁴⁸ Cursive hieroglyphs are known in Middle Kingdom inscriptions in Sinai, e.g., *Sinai* I: Pl. XXVI no. 114 S. edge, lower part. The version  is well known in Sinai, even in inscriptions around the mines, e.g., *Sinai* I: 47, 48, 53.


exists in Sinai –  , Inscription 353) the Egyptian hieroglyph  (uniconsonant *h*) served as the *pictorial* model for “house.”⁴⁹

It was probably identified pictorially as a “house in the fields” also by an illiterate beholder. Gardiner mentions the fact that this kind of reed-shelter house still exists in Egypt today (Gardiner 1957: 493, O4).


The most interesting phenomenon presented by the *bêt* letter is that in not a few cases writers of the new Canaanite script seem to use real


life models they pictured in their minds, such as  (compare the



minimal house  of the pastoral nomads from the Israelite settlement of Izbet Sartah; Finkelstein and Silberman 2001: 108, Fig. 12). Of


special interest is the version  . Such a hieroglyph for “house” is definitely unknown in the Egyptian script system.

This alphabetic sign might have been triggered by a typical house model (called a “soul house” in Egyptology) known from this period in

Egypt⁵⁰  (See also Fig. 16).

⁴⁹ In some Egyptian inscriptions from Egypt and also in Sinai we find the hybrid hieroglyph  (*Sinai* I: 142, N. edge). This is a “mixed” sign made of the cor-



rect hieroglyph for “house”  and the hieroglyph  which denotes in the Egyptian script system the uniconsonant *h*. However, it seems that for the an-

cient observer, the  looked perfectly like a “house.” For a detailed discussion with examples, see Goldwasser 2006a: 143–146.

⁵⁰ This option was already suggested by Hamilton 2006: 40.

5.2.3 Fish

New Canaanite system

Proto-Sinaitic sign  compare to Egyptian hieroglyphs in Sinai
 (e.g. *Sinai I*: Mines, 53, line 14, below Fig.)

Stage 1

Choosing the Iconic signifier – [*fish*]

Phonetic signified in Canaanite: **dag* – “fish”

(Hamilton 2006: 74 with discussion of other possible readings)

Stage 2

Taking only the initial sound *d* from the full phonetic signified

Final phonetic signified: *d*.

Iconic signified “fish” is *always* discarded⁵¹

Only new phonetic signified retained

Used as the letter **ד**

Egyptian system

The hieroglyph  (K1)

Iconic signifier – [*fish*]


Phonetic signified: *in*

Common use in hieroglyphs in Sinai as phonogram – in e.g., *Sinai I*: Mines, 54, lines 7–8 (part of the word *int* “valley”) yet known also as logogram for “fish.”

⁵¹ It is very probable that at this early stage of the invention, with no standardization or central control, two options for representing *d* existed in the script. Finally the other option the noun **dlt* “door” won the permanent place in history, and the fish name disappeared; see Sass 1988: 113–114, and Hamilton 2006: 61–75. The possibility that this sign refers to the phoneme *s* cannot be discussed here.



Iconic meaning: completely discarded when used as a phonogram *in*, kept when used as a logogram for “fish.”

In the Egyptian system this hieroglyph may be used also as a classifier. In these cases it classifies mainly all sorts of fish. In this semiotic role it appears at the end of the word suggesting the generic category [FISH]. In this use it has no **phonetic** signifier/signified. It is a “mute” sign.

In Egyptian  may have *three different uses* according to context:
 Logogram – “fish” (iconic signified + phonetic signified)
 Phonogram – *in* (phonetic signified only iconic signified discarded)
 Classifier [FISH] – (iconic signified only phonetic signified discarded)

5.2.4 “Shouting Man”

New Canaanite system

Proto-Sinaitic sign  compare to Egyptian hieroglyph  in Sinai.

Stage 1

Choosing the iconic signifier – [shouting overseer (?)] in the eyes of the Canaanite beholder

Possible phonetic signified in Canaanite: *hoy!* (or the like)

Stage 2

Taking only the initial sound *h* from the full phonetic signified


Final phonetic signified: *h*.

Iconic signified “shouting man” is *always* discarded

Only new phonetic signified retained

Used as the letter \aleph

Egyptian system

The hieroglyph  (A28)

Iconic signifier – [man with raised arms]

phonetic signified – *k3*

Used as logogram to write the word *k3* “high.” The same hieroglyph is often used as classifier for words related to “being high” (also metaphorically) such as “rejoicing” and “mourning.”



In standard Egyptian used in two ways:

Logogram – *high* (iconic signified + phonetic signified)

Classifier [HIGH] – (iconic signified only phonetic signified discarded)

However, this sign appears in a unique use in the Sinai Egyptian inscriptions as *logogram* for an unknown title such as “overseer of workers.” Gardiner et al. suggest the tentative translation *Rêis* (Arabic; see above note 22). Hundreds (!) of examples of this special use are known in the Sinai inscriptions of the Middle Kingdom. However, there are also few occurrences in Sinai of the hieroglyph with the standard meaning “high.”



Special use of in Egyptian inscriptions in Sinai:

Logogram – *Rêis* (iconic signified + phonetic signified [unknown])


5.3 The role of the Icon in the Early Stages of New Alphabet

In this early alphabet (which endured for more than 600 years, circa 1850-1200 B.C.E.), the *iconic signifier* still plays an important role, even if a limited one, in the reading process. The sign is “motivated,” in Saussurian terms. The reader was able to identify the *name* of the sign = letter, through its motivated *icon*. In this early stage there is a motivated connection between the *form* of the letter and the *name* of the letter, unlike the letters of today’s alphabets.

Once the *name* of the letter was remembered, the *form* of the letter could always be *reconstructed anew*. This mnemonic device kept the script alive for hundreds of years, with no schools, teachers or institutions. This is probably the reason we find many variations of the *form* of a single letter. “Head” (*rêš* – *r*) can be reproduced as a Canaanite head

with a “mushroom hair dress”  (Wadi el-Hôl), or as an imitation

of the Egyptian hieroglyph for head  (*tp*, Sinai), rarely also as an

imitation of an “en face” head in Egyptian  or as a simple “generic” head .

Yet, after reaching the *name* of the letter the reader should extract only the *first sound* from the name. This first *sound* is the final signified that should remain by the end of the process of reading a Proto-Canaanite, early alphabetic, sign. Thus the final signified in this process is a *new phonetic signified* emptied of any *meaning*.

The new phonetic signified (initial “*sound*”) can now function as a phonetic “building block” in different ways to create new combinations of sounds that create different *words*. It becomes what we know as a “*letter*.”

6. From Periphery to Center—Early Phoenician Script in Canaan?

In three recent publications and in this paper I argue that the invention of the alphabet, one of the greatest media revolutions in history, was not born in any cultural center and was not adopted by any center-repertoire. It was the child of a great mind (or minds) who lived among the Canaanite staff working in the mines in the remote mountains of Serabit el Khadem.

A typically subversive innovation of the cultural and geographical periphery, it remained on the fringes of the canonical script-repertoires of the Ancient Near East for at least 600 years. It was not promoted by any institution, state or group of power holders. The carriers of the invention – soldiers, caravaners, donkey drivers, miners, all sorts of marginal populations who lived on the fringe of urban societies, roaming outside the towns of the Late Bronze Age in Canaan and Egypt — were not part of the elaborate writing traditions of the centers.

Within the Canaanite city-states of the Middle and Late Bronze Age, Canaanite scribes wrote letters to the pharaohs. These letters were written in a local dialect in the multi-sign cuneiform script.⁵² From the 13th century B.C.E. on, this written variety was sometimes used for com-

⁵² The tradition of writing to the pharaoh in cuneiform might have started with the Hyksos kings in Avaris. A small piece of a cuneiform tablet has recently been unearthed in the Hyksos palace; see Bietak 2010a. For the dialect of the Amarna Letters, see Izre’el 1998.

munication among the local Canaanite centers. A new *cuneiform* alphabet (Horowitz et al. 2006) was also rarely used (see Appendix A below).

Egyptian scribes residing in Canaan during the Late Bronze Age and most probably working as envoys of the Egyptian administration also wrote in hieratic at different centers, mainly in the southern part of Canaan.⁵³ Egyptian stelae and other monumental inscriptions, adorned with Egyptian hieroglyphs, were erected in the Late Bronze Age at a few urban strongholds of the Egyptian administration, such as Jaffa, Lachish, Megiddo, Beth-Shean and, most probably, Gaza.

Carriers of the early pictorial alphabetic script, according to my reconstruction, were part of the mixed segments of populations that resided and roamed regularly on the margins of the towns in Canaan and had a semi-nomadic or nomadic way of life. As Canaanite desert professionals, they surely came in close contact with the local pastoral nomads situated around the urban centers in Canaan. They were not part of the urban society of the towns and its elite knowledge tradition.⁵⁴

The earliest alphabetic inscriptions of the early Iron Age appear on the Judean *Shephelah* (Low Hills Region), on the border areas of urban Canaanite culture. The sites of Beit Shemesh (Naveh 1997: 35–36), Qubur el Walayida (Naveh 1997: 36), Izbet Sartah (Naveh 1997: 37), Qeiyafa (Garfinkel et al. 2010) and Tel Zayit⁵⁵ are all border sites of the large urban centers.

Finkelstein describes the Izbet Sartah settlers as “pastoral nomads undergoing a profound transformation” (Finkelstein and Silberman 2001: 112). These pastoral nomads lived in enclosures that were certainly used as shelter for herds as well as living quarters for people (Fig.

⁵³ Hieratic ostraca were found at different sites in southern Canaan, which was part of the Egyptian sphere of influence during the 19th–20th Dynasties. This tradition survived into the Iron Age numerals used in Hebrew ostraca; see Goldwasser 1984, 1991; Goldwasser and Wimmer 1999; Sweeney 2004 and Wimmer 2008.

⁵⁴ For the difference among the social segments in Canaan during the Bronze Age – city dwellers, highland and desert-fringe pastoralists – see Finkelstein and Silberman 2001: 110–119.

⁵⁵ The abecedary from Tel Zayit is somewhat later: see Tappy et al. 2006 and Rollston 2008: 81–83. The Ostrakon from Tell aş-Şāfi (Tel Tzafit/Gath) is also relatively late, see Maeir 2008.

17). The roaming populations, the carriers of the pictorial alphabet, belonged to a similar social milieu and surely were occasionally hosted with their animals in enclosures such as that of Izbet Sartah, as well as in other such settlements.⁵⁶

Only when some segments of the *carriers* of the new script were able to change their political and cultural status and move from the periphery onto the center-stage of history did the alphabetic script become a success in the cultural market in Canaan. They transformed into the people known in history books as Israelites, Moabites and Aramaeans. These carriers, probably a mixture of local Canaanite farmers, pastoral nomads and their roaming associates, met on the edges of the declining urban centers in places such as Izbet Sartah. It seems that sometime in the early Iron Age they began to move into a central position on the Canaanite political stage, carrying with them their “own” script. This alphabetic script meandered in their milieu throughout the Late Bronze Age and was the only script available to them. By the end of the Late Bronze Age, the scribal system of the Canaanite towns had collapsed, and was, in any event, alien to these social groups. A new script may have become a necessary tool and later a building block in the gradual construction of new national identities (Sanders 2004).

The only problem raised by this reconstruction is the 22 letter phenomenon. It has been an accepted notion since Albright’s days and since the discovery of the Ugaritic alphabetic script system, that the original pictorial alphabet of the 2nd millennium contained at least 27 letters (Albright 1966; Cross and Lambdin 1960). If the caravaneers transmitted their script to the local Canaanite population in the Shephelah, a 27-letter script should have emerged in the early Iron Age in Canaan.

However, when the Proto-Canaanite alphabet surfaces at the early Iron Age sites (e.g., Izbet Sartah and later at Tel Zayit), it contains only 22 letters, a system that according to Naveh would fit a *Phoenician* Canaanite dialect of the Late Bronze Age (Naveh 1997: 42, 53–57). It does not fit the tradition of the 2nd millennium alphabet, nor does it fit the Canaanite dialect known later as Hebrew, that would require according to its *phonological* repertoire a larger number of letters.

⁵⁶ On the origin of the Israelites in the Canaanite pastoral nomads, with a discussion of Izbet Sartah settlement, see Finkelstein and Silberman 2001: 111–113.

So *where* and *why* was the number of letters used in Canaan reduced to fit a “Phoenician” dialect of only 22 letters?

The 22 letter repertoire prompted most scholars to believe that the pictorial script first moved somehow to “Phoenicia” and was then newly adopted as a system by the “Hebrews.”

Where were these “Phoenician” centers in the early Iron Age? And where were the *borders* of the territory in which a Canaanite dialect fitting a 22 letter alphabet was used?

In a recent article, Rollston, following Naveh, insists that all early Iron Age inscriptions found in Canaan (e.g. Kfar Vradim bowl, Izbet Sartah abecedary, Gezer calendar, and Tel Zayit abecedary) are all written in a *paleographical dialect* which he defines as “Phoenician.” He concludes his discussion of the Tel Zayit abecedary with “...the evidence suggests that during the 10th century the ancient Israelites continued to use the prestige Phoenician script...” (Rollston 2008: 89).

According to this reconstruction, the fragmented populations that later become Israelites or Moabites, met the script in Phoenicia (where, when and how?) and adopted it from the Phoenicians.



I would like to suggest a somewhat different, albeit more complex, reconstruction. The non-standardized early pictorial alphabet was always known in the social and ethnic environment that later gave birth to the proto-Israelites and other new nations. However, the script was *standardized* by some groups or centers that used a “Phoenician” dialect. This standardized palaeographic and linguistic Phoenician dialect emerges already in the early Izbet Sartah abecedary, i.e., it shows a 22 abecedary and main characteristics of the Phoenician paleographical dialect, as described by Rollston (Rollston 2008).

The clue to this question may reside in the fact that the proto-“Israelites” that were comprised of different Canaanite segments spoke different Canaanite dialects. Some of these components may have spoken a dialect which today fits the description of “Phoenician.” Such a component could be, for example, the group called *Asher* in the Bible.

Asher is described as “settled down” in the Galilee and on the seashore, while its border reaches Phoenicia, also known as “Zidon Raba” (Joshua 19: 28).



In the second half of the 13th century B.C.E., “the ruler of *Asher*,” which recalls the biblical name of the Israelite tribe, is mentioned in an

Egyptian literary letter of the Ramesside period in reference to a place near Megiddo.⁵⁷ This papyrus includes an illuminating description of Canaan, its towns and people at the end of the Late Bronze Age.⁵⁸ The

word *Asher* takes the compound classifier of “foreign places”  typical of *localities*’ names in the papyrus. In the following line, after the mention of *Asher*, the word *Shasu* appears; it is a known Egyptian designation for warlike roaming elements in Canaan, probably known in the Bible as “Shossim” – שׁוֹסִים. The *Shasu* are described in the papyrus as tough, merciless giants. The word *Shasu* gets a different classifiers combination, that of “foreign people”  and not of place, which shows correct knowledge and correct classification by the Egyptian scribe.

If indeed there is a mention of the biblical *Asher* in the Egyptian text, some segments that later were identified as “Israelites” may have originally been local populations living in towns in the Jezreel Valley and by the northern sea-shore (already in the 13th century B.C.E.), probably speaking a dialect that was closer to “Phoenician.” Such populations may be the “missing link” between the original script tradition of the 27-letter dialect and a still unknown Canaanite center or centers where the script underwent a process of standardization, ultimately resulting

⁵⁷ *Papyrus Anastasi I* see Fischer-Elfert 1986: 192–193.

⁵⁸ Goldwasser 1987. The linguistic register of the geographical description of Canaan includes many identifiable Canaanite words such as *d-b* צבא, “army” inserted into the Egyptian text as a regular lexeme (*pAn I*: 23.9). The loan-word “army” is classified by  [FOREIGN] +  [PEOPLE] classifier. The [FOREIGN] classifier may already refer here to the classification of the *word* as “foreign” and not to the semantic signified of the word; here compare Allon 2011. The text is so “Canaanized” that it contains two full sentences in a Canaanite dialect: “you are lost as a ram (or lion), pleasant *Maher*” “אבדת כמו איל־ארי מהר נעים” (*pAn I*: 23). The second phrase cites the sarcastic “*Shasu* talk” assessing the low performance of the Egyptian military scribe – “סופר יודע!” (*pAn I*: 17.7–8). In the geographical description of northern Canaan in this Egyptian text there are many toponyms ending with the lexeme *El*. Many such toponyms also exist in the biblical text, describing the land of *Asher*; compare Joshua 24: 3. The mention of *Asher* in the early biblical Song of Deborah is in fact also settlement-related. The tribe is said to have resided on the sea-shore (Judges 5: 18).

in the shorter, 22-letter version of the alphabet today called “Phoenician.” Such proto- “Israelite” elements of these northern towns may have been the *agents* that moved the old/new, now standardized “Phoenician” alphabetic script tradition to the settlements of the Judean Shephelah.

One of the best examples of “Phoenician” script in the early Iron Age comes from Kefar Veradim in the Galilee. Rollston (2008: 78–79) describes this find as “...a prestige item of a very high quality from a tomb in the Galilee.... The script of this inscription is stunning, reflecting the consummate work of a fine engraver.... There can be no question about the fact that this inscription is written in the Phoenician script. In fact, it is a superb Phoenician script, and of fundamental importance is the fact that it was discovered in Israel. That is, the Phoenician script is attested in Israel, and this fact cannot be contested.”

Thus, it should be noted that the earliest “Phoenician” alphabetic inscriptions are known from Canaan and not the Phoenician (Lebanese) coast.⁵⁹ It is difficult to estimate who the Phoenician speaking institutions were that had taken over the script and standardized it. Theoretically it may be postulated that the standardization of the script occurred in a “Phoenician”-speaking town in northern Canaan. Finkelstein recently postulated the existence of new centers in Iron Age I in the Galilee which he dubbed “New Canaan.”⁶⁰

7. Cultural and Geographical Periphery as an Intellectual Advantage

I would like to argue that it is precisely the “cultural peripheral” condition of the inventors that made this great intellectual leap possible.⁶¹ Enjoying a superficial, naïve familiarity with the hieroglyphs that sur-

⁵⁹ For a recent list of the finds, see Rollston 2008. To this list one should add the arrowheads of Qubur el- Walayida and a few other arrowheads; see Naveh 1997: 37-40 and Sass 2010.

⁶⁰ Finkelstein 2003. Today he prefers to call them “Revived Canaan” as most of them (with the exception of Kinnereth) are revivals of older, Late Bronze II-III cities (Keisan, Megiddo, Rehov, Yokneam etc. (Finkelstein, personal communication.) For the discussion of the possible Phoenician centers see Sass 2010, 65, and Lipinski 2006: 163-164.

⁶¹ For cultural and geographical periphery as an advantage for intellectual innovations, see Yamaguchi 1992 and Rowlands 1987.

rounded them, and not being pre-programmed by any rules or solutions of other script systems of their time, the inventors could *freely renegotiate* the signifiers and signifieds of the pictorial graphemes of the hieroglyphic script, and create a new semiotic system. *They invented a new **single** semiotic process connecting a small number of hieroglyphic pictures they chose – to sounds of the language or languages they spoke.*

In the 19th century B.C.E., when the alphabet was invented according to my reconstruction, each of the prevailing writing systems of the Ancient Near East (hieroglyphic and cuneiform), used hundreds of signs, and long schooling and a familiarity with a complex system of semiotic rules were necessary in order to read and write. These scripts were born and promoted by institutes and states, and the impetus for their naissance and development at the dawn of the 3rd millennium B.C.E. were growing administrative and political needs and a search for ideology and power display by the emerging Sumerian and Egyptian regimes.

On the other hand, the impetus for the invention of the alphabet seems to be *spiritual*. It was the personal urge to communicate with the gods, pray and eternalize one's own name in their presence. All early known texts to date are very short and are comprised mainly of names of gods, personal names and titles, sometimes the word "offering." There is no sign of institutional involvement in this process.

The inventor/s used pictures that were clear and accessible to their own people and culture, e.g. bull (sacred animal of the great god), house, fish, door, toggle pin, lamp's wick, arm, palm, ox-goad, water, snake, human eye, plant,⁶² head, bow. They had no interest in the standardized Egyptian *form* or *meaning* of the hieroglyph, only in its *pictorial meaning*, as they understood it.

The greatness of the invention lies in the reduction of the many semiotic rules needed to read hieroglyphs to a single steady semiotic process. Moreover, there was a constant mnemonic device that connected the *friendly pictures* to the abstract *sounds* in *Canaanite* that should have been reached.

⁶² The choice of pictures reflects Canaanite pastoral identity. Hamilton suggested a strong influence of "Egyptian Delta culture." The only sign that may carry Egyptian Delta identity is the plant, see below table 2b, no.15. For the "Delta culture" see Arnold 2010.

If indeed Sinai is the site of the invention, there is not a trace in Sinai of any “intrusion” of the Egyptian hieroglyphic system that would be expected had the inventors been versed in hieroglyphs. Not a single rule of the Egyptian writing system is complied with. The “golden chains” of the Egyptian way of thinking did not bind the mind of the inventors.

Appendix A:

A Call from the Center: The Case of the Ugaritic Alphabet

The small corpus of alphabetic inscriptions from 2nd millennium Egypt and Canaan shows affinities to the Sinai corpus in terms of production, social environment and content. They are informal private inscriptions comprising personal names, gods' names and, rarely, a mention of a gift to a god. It seems that the script was not produced too often, and underwent no standardization process by any school or center. At least until the 13th century B.C.E. it keeps its original pictographic nature. No one was really interested in this "ugly" marginal system of the roaming caravaneers and soldiers.

Yet somewhere, sometime in the 13th century B.C.E., the sophisticated scribes of Ugarit on the northern coast of Lebanon discovered the "primitive" alphabet.⁶³ Speaking a Semitic language, they recognized the genius of the idea. Yet the letters probably looked too unstable and non-standardized to them, as some bad imitation of Egyptian hieroglyphs. They "converted" it to what they regarded as their better, civilized cuneiform sign system.⁶⁴ They created a parallel system of cuneiform alphabetic letters, adding at the end a few letters they judged necessary to make the system better.


If this reconstruction is correct, we may witness here a movement of a cultureme from the periphery of a culture to its center. This phenomenon is well known in cultural studies. It can also be considered an example of "cultural interference" through a domestication process. The source product was used as a model for the creation of an original new local product (Even-Zohar 2005).

Yet the success of the new Ugaritic cultureme in the cultural market of the Levant was partial. It spread to Canaan, but being a "center product," it came to an end when the center fell from power and disappeared around the 11th century. The script system disappeared along with its urban carriers, scribes in Ugarit and in the urban centers of Canaan.

⁶³ For a discussion of the date of the Ugaritic script, see Pardee 2007.

⁶⁴ Sanders suggested that the alphabet was invented to write the Ugaritic national literature; see Sanders 2004.

It is possible that the learned scribes of Ugarit were also the first to create the “alphabet order.”⁶⁵ They first listed all the signs borrowed from the crude caravaneers’ script creating the “order,” and then added at the end of the list their own additional letters. For the first letter in

the sequence of the alphabet, they may have chosen the *’ālep* , the icon of the religiously loaded word, “bull,” later to become the Greek *alpha* and Latin *A*. The bull was the sacred animal of the storm god, the champion Canaanite god (Green 2003). It might have been fitting in their eyes to choose this letter to be the first in the order of the alphabet.

Yet, it is also possible that the “order” or “orders” of the alphabet was already forged by its original carriers, the caravaneers, perhaps accompanied by a rhyme (like today’s alphabet), to help the uninitiated to remember and recreate the letters.

⁶⁵ There was another alphabet order known in Ugarit, Canaan and possibly Egypt; see Pardee 2007, Horowitz, Oshima, and Sanders 2006: 157–160; Quack 1993; Kammerzell 2001.



Appendix B


An Exodus from Egypt—The Iron Age Canaanite Paleographic Dialect

The main paleographic difference between the two early examples of the alphabet – the inscriptions in Sinai and the inscriptions in Wadi el-Hôl in Egypt, lies in the execution of two letters – *bêt* and *mem*.


bêt


The inscriptions in Sinai present a plethora of *bêt* forms that are mainly based on a “closed square with opening” iconic version (see discussion above).⁶⁶

The horizontal inscription of Wadi el-Hôl presents a different *bêt*  which probably takes after the hieroglyph  that was taken by the Canaanites also as ground plan of a “house.”

The variation of the Sinai “square” *bêt* can still be found in Canaan on the Gezer sherd  (Fig. 18), a non-stratified find dated by most scholars close to the invention time due to the high iconicity of the letters (E.g., Hamilton 2006: 397).

However, besides the Gezer sherd, all Late Bronze examples of Proto-Canaanite alphabetic script in Canaan show the “Egyptian” *bêt*. One of the Lachish bowl fragments shows three “Egyptian” *bêts* on one bowl (See Sass 1988: Fig. 164), which are very close to the Egyptian

original hieroglyph (e.g. , and see Fig. 19). The second Lachish

bowl shows a version  which is already remote from the Egyptian original.⁶⁷ Descendents of this *bêt* continue into the Early Iron Age with

the El Khader arrowheads (e.g., ) and the Byblos cone . The

⁶⁶ Middle Bronze houses in Tell el-Dab^a show in general a side opening; see Bietak 1996: 24, Fig.2.

⁶⁷ See Sass 1988: Fig. 166. In this period the letters do not yet show a stable orientation.

Khirbet Qeiyafa Ostrakon




⁶⁸



as well as the example



of Izbet Sartah show similar *bêts*.

mem


All examples in Sinai consistently show a horizontal *mem* 

, following the standard Egyptian hieroglyph . However, the horizontal inscription of Wadi el-Hôl presents two verti-

cal versions



(Fig. 2b; After Darnell et al. 2005: 75 Fig. 2) of the

mem.⁶⁹ The vertical inscription in Wadi el-Hôl (Fig 2a) nevertheless shows a standard horizontal *mem* .

The New Kingdom Proto-Canaanite ostrakon found in the Valley of the Queens in Egypt continues the *Egyptian-Canaanite* paleographic tra-

dition showing a vertical



mem as well (Fig. 3a, 3b).

Interestingly, by the end of the Late Bronze and early Iron Age almost all inscriptions from Canaan that contain the letter *mem* show the

vertical version, e.g., Qubur el-Walaida bowl



, Tell Rehov sherd



the Byblos cone A



, the *yt'* arrowhead




,⁷⁰ The Bronze and the

⁶⁸ Garfinkel, Ganor and Hasel. 2010: 48, with Fig. 7. The Qeiyafa Ostrakon shows the same “three dots” division as the 13th century Lachish ewer (Sass 1988: 61, Fig. 156, see also Naveh 1973.). The orientation of the letters in the ostrakon is unstable and the letters are actually “rolling around.”

⁶⁹ For the origins of this variation see Darnell et al. 2005: 78. For a different reconstruction of the source of this *mem* in Egypt, see Goldwasser 2006a: 147 and Fig. 26.


⁷⁰ Sass 1988: Fig. 204. On the arrowheads in general with bibliography, see recently Sass 2010.

Azarbaal Inscription  (Rollston 2008: 73, Fig. 2), and Khirbet Qeiyafa

Ostrakon .⁷¹

This paleographic peculiarity suggests that the script moved from Sinai probably in two directions. Some carriers moved to Canaan from Sinai as suggested by the Gezer sherd. However, other carriers moved to Egypt desert roads, where they “recreated” the script according to their own memory of the writing, a tradition that might have been moving verbally. Some carriers may have been literate (in alphabetic writing) or partially literate, but none were professional scribes.

It is somewhat surprising that the early Iron Age tradition of Canaan mostly follows the *Egyptian-Canaanite* paleographical dialect, and not the original Sinai dialect. It seems that the new alphabetic script wandered to Egypt in the Middle Bronze Age. Some of its carriers may have moved back to Canaan by the end of the Bronze Age. The paleographic dialect that surfaces in Canaan has some strong affinities with the *Egyptian paleographic dialect* – the *bêt* and the *mem*.

However, in Canaan, the paleographic dialect is strictly alphabetic, and the few “contaminations” from the Egyptian hieroglyphic system that are recorded in Wadi el-Ḥôl, such as the possible use of classifiers (Fig. 20) or a different “Egyptian” version of *kap*,  did not enter the Iron Age tradition of alphabet in Canaan and the Levant.⁷²

⁷¹ Misgav, Garfinkel, and Ganor 2009, Garfinkel, Ganor, and Hasel 2010. The letter *mem* is not safely identified in the Izbet Sartah Ostrakon.

⁷² Wimmer suggests the existence of such a *kap* in the problematic inscription from Timna, see Wimmer 2010. This inscription, if indeed an example of an unknown paleographic dialect, also contains the [MALE(HUMAN)] classifier.

Appendix C

If Hebrew were Written in “Hieroglyphs”

Modern and old Hebrew alphabetic writing system presents us with ספר, *s-p-r*, a “naked” root to which the reader must add different vowels to create his chosen signified. The Hebrew letters, unlike the Egyptian hieroglyphs, present the reader with an “unmotivated” signifier, in Saussurian terms.

In modern Hebrew, the word written as ספר represents the abstract skeleton of a combination of three consonants *s+p+r* and could be read *sepher* (“book”), *sappar* (“hairdresser”), *sopher* (“scribe”), *sipper* (“re-counted”) or *saphar* (“[he] counted”). No vowels are represented by the signifier ספר.

In the Egyptian system, due to the fact that its sign system is motivated (in Saussurian terms), *one specific manifestation* of the root may stand for *all* possible combinations of *root+vowels*. The reader in the Egyptian system faces an additional semiotic task in which he first must “free” the abstract root from its concrete pictorial meaning. In this process the classifier system of the script offers substantial help as the classifier, usually added at the end of the word, is instrumental in the cognitive process of “reference tracking.”⁷³


Were Modern Hebrew written in a pictorial writing system like Egyptian, all the words built on the root ס-פ-ר *s-p-r* could be written by a single iconic representation of one occurrence of the root, e.g.,



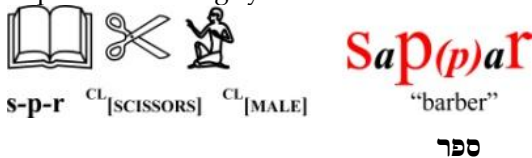
This sign (used in this word as logogram) could be used as written signifier for all the above different signifieds built on the root *s-p-r* even though it semantically represents only *one variation* of the root + certain vowel patterns. The word *sopher* (“scribe”) might be written:

⁷³ For “reference tracking,” see Croft 1994 and Goldwasser and Grinevald forthcoming.

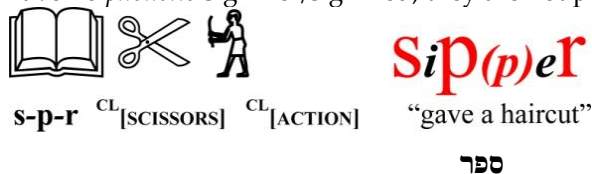




Here the appearance of the  [MALE(HUMAN)] classifier directs the reader to the deverbal noun “scribe.”

The word *sappar* (“barber”) could be written in our invented Hebrew pictorial writing system as:



The “modern classifier” [SCISSORS] and then the [MALE(HUMAN)] would direct the reader to extract the root’s *sound* skeleton, and leave the signifier/signified “book” behind. It would then direct the reader to the correct signified by the classifiers. The classifiers contain relevant meronymic and taxonomic information, i.e., “central tool” and generic category to which the searched-for signified belongs. In the meantime, the classifiers of the deverbal noun present, in the pictorial alone, the semantic roles of [INSTRUMENT] and [AGENT (NOMINALIZER)]. The classifiers have no *phonetic* signifier/signified; they are not pronounced.

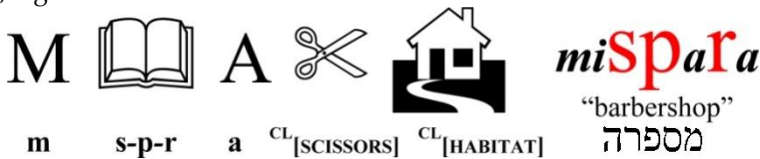



Here the  human [AGENT] classifier is shown in action, not as the non-active nominalizer .

In the real Modern Hebrew alphabetic script, the reader is represented only with a “naked” root skeleton and the correct signified can

be realized only through the surrounding context of the written word. The word ספר, if represented alone in Hebrew, shows no clue to which signified it should refer. In our invented hieroglyphic-like Hebrew script presented above, the word could stand alone, and the reader could easily reach the correct signified.

The Hebrew “triconsonantal” root ספר also forms the basis for other nouns built on the root with additions of a consonant prefix and/or suffix, e.g.:



Like the invented Hebrew script, in similar cases in Egyptian,⁷⁴ the Egyptian hieroglyphic script would add “uniconsonantals” to the root, creating a new word. See the above example, *m^ch^t*, , “tomb.”

Acknowledgments

I am grateful to my student Dan Elharrar for assisting me diligently with all the complex technical aspects of this article, and to Myrna Polak for editing the English. Prof. Benjamin Sass was kind enough to read the manuscript, and made very important remarks. I have also benefited from many illuminating discussions with Prof. Joseph Naveh, who helped me to understand the Phoenician script phenomenon.

After this article was submitted for publication, I received the book, *The Invention of Hebrew*, by Seth Sanders (2009). Sanders is close to me in his understanding of the alphabetic phenomenon during the early Iron Age.

Of special interest for my thesis is his reading of the Nahal Tabor cuneiform text, which in his opinion “displays a distinctive feature of what would later become Phoenician” (p. 96). This may strengthen my assumption that speakers of the Canaanite dialect called “Phoenician” were indeed present in the *Jezreel* Valley in the early Iron Age.

⁷⁴ Compare here Kammerzell 1995: XXX-XXXIII.

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Figures:**Fig. 1. Examples of uniconsonantal, biconsonantal, and triconsonantal signs**




	<i>p</i>	UNICONSONANTAL
	<i>t-p</i>	BICONSONANTAL
	<i>h-t-p</i>	TRICONSONANTAL

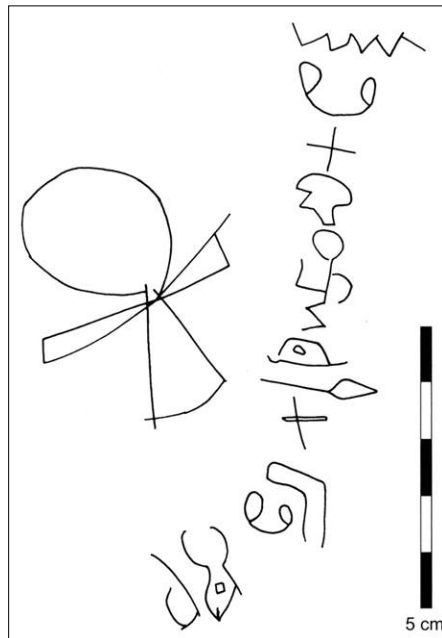
Fig. 2a. Wadi el-Hôl inscription 1 (after Darnell 2005, Fig. 2a)

Fig. 2b. Wadi el-Hôl inscription 2 (after Darnell 2005, Fig. 16a)

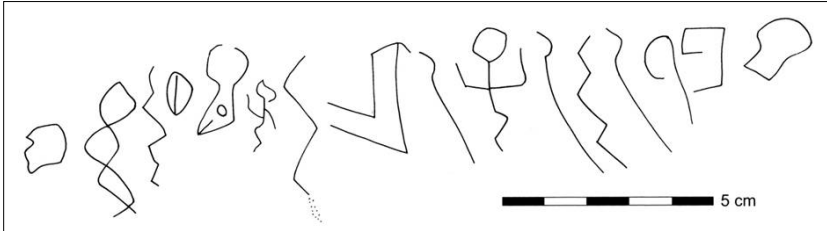


Fig. 3a. Valley of the Queens ostracon (after Sass 1988: 286)



Fig. 3b. Valley of the Queens ostracon (after Leibovich 1940)

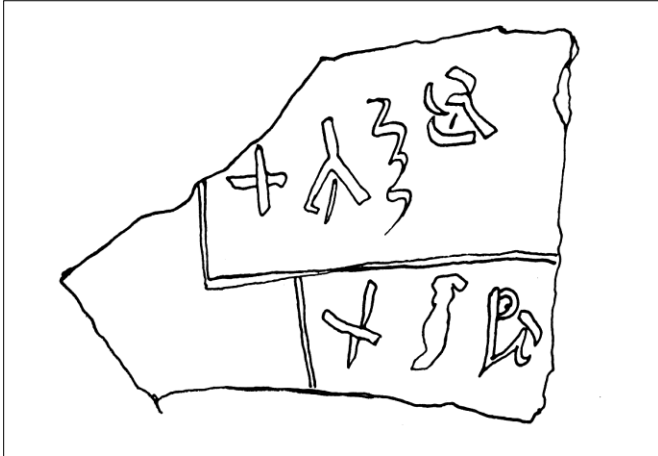


Fig. 4a. Sinai Temple. Stela 92 inscription of Khebeded (after *Sinai I*, pl. XXVII)

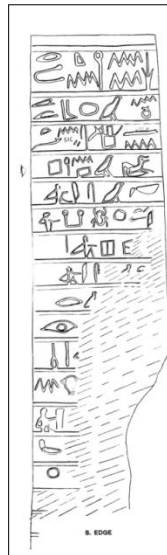


Fig. 4b. Sinai Temple. Stela 92 inscription of Khebeded with marked "house" signs

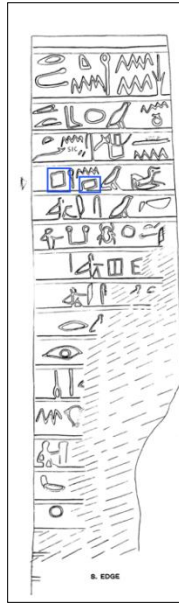


Fig. 5. Toggle pins from Tell el-Dab^ca (after Bietak 1968, Fig. 9/340, 343, 375, pl.XXXIII d)

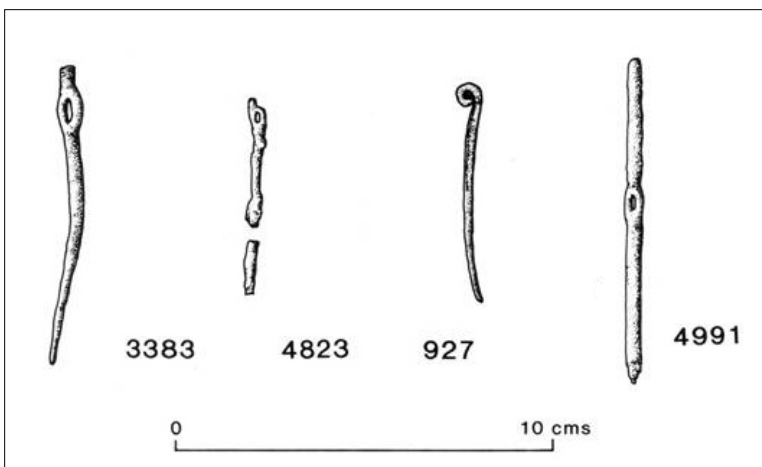


Fig. 6. Directions of writing in Egyptian Hieroglyphs

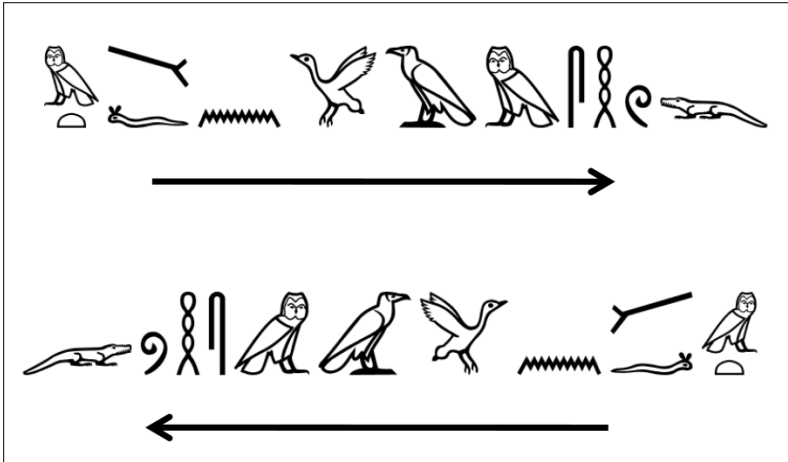


Fig. 7. Direction of reading in an Egyptian stela (after *Sinai I*, pl. XVII, Serabit, mines 53)

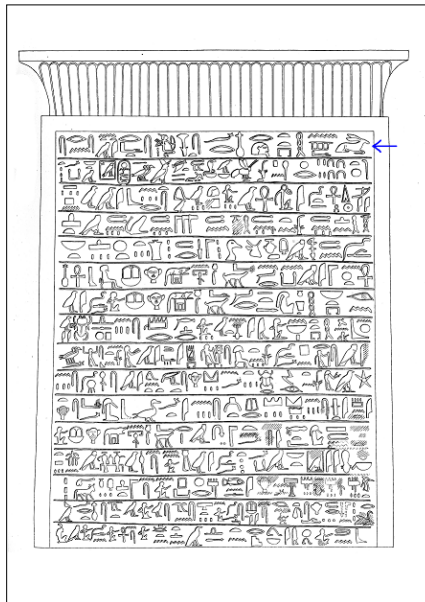


Fig. 8. Direction of reading in a Proto-Sinaitic inscription (after *Sinai I*, 349 Mine L entrance)

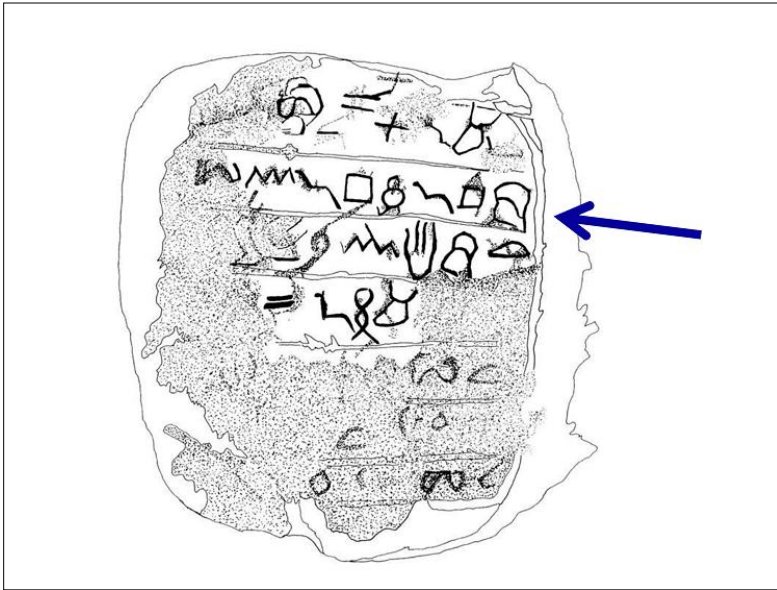


Fig. 9a. The statue of N-c-m arrangement of words (after *Sinai I*, Temple, 346b, right side)

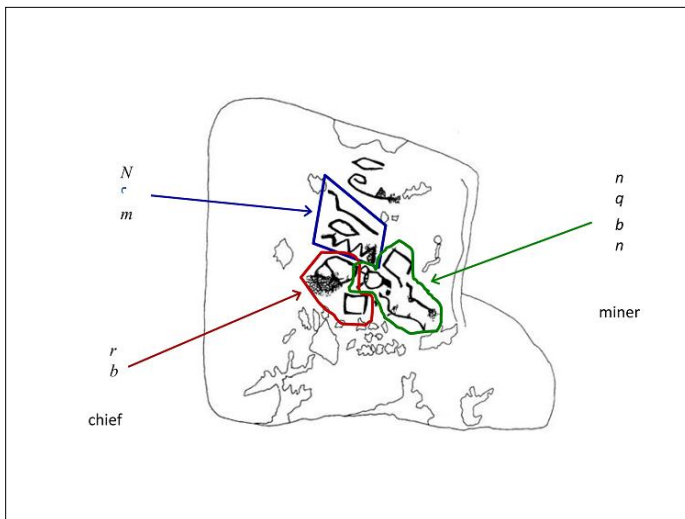


Fig. 9b. The statue of N^c - m direction of reading (after *Sinai I*, Temple, 346b, right side)

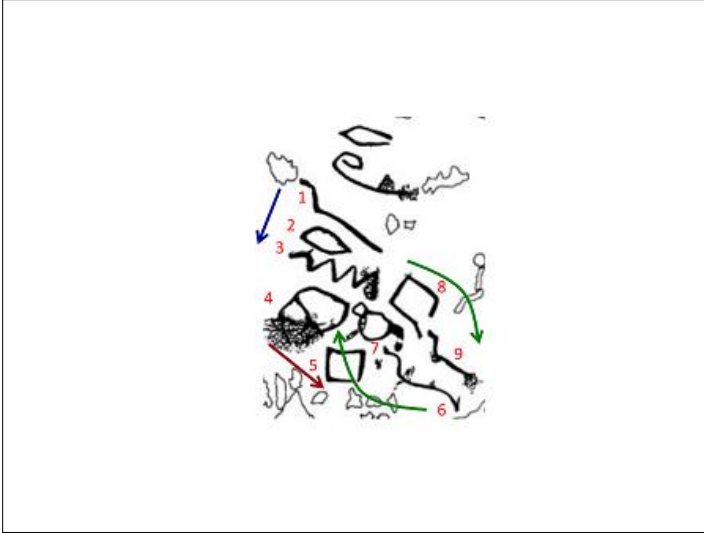


Fig. 10. Letters of different sizes (after *Sinai I*, 352 Mine L)



Fig. 11. Letters facing different directions (after *Sinai I*, 375a Mine M)

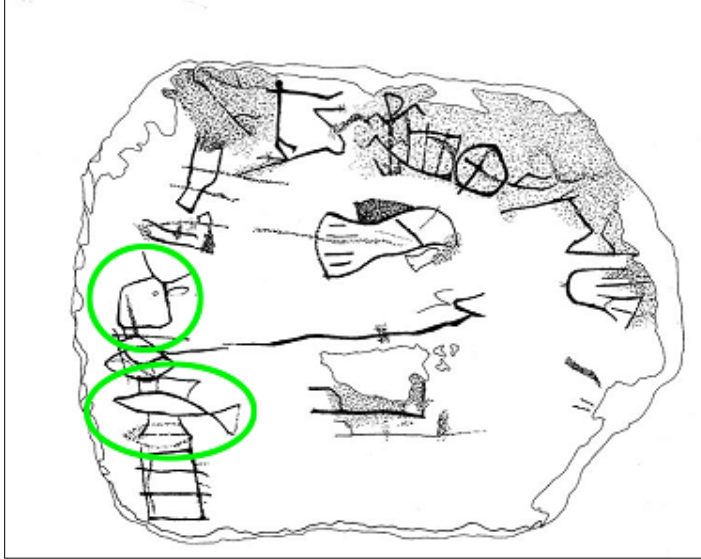


Fig. 12. "Bull" signs facing different directions (after *Sinai I*, 357, after Sass 59, mine L)

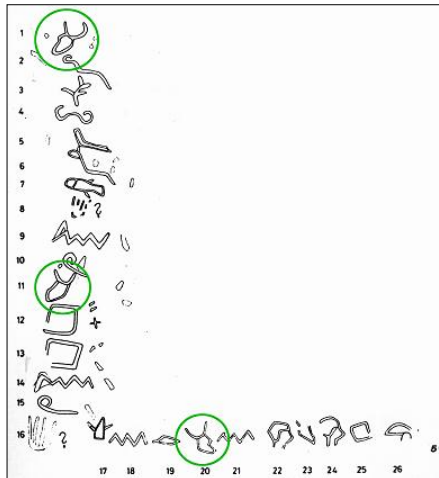


Fig. 13. Hieratic inscription from the 12th Dynasty, after Möller 1927: 20 (Illahun).

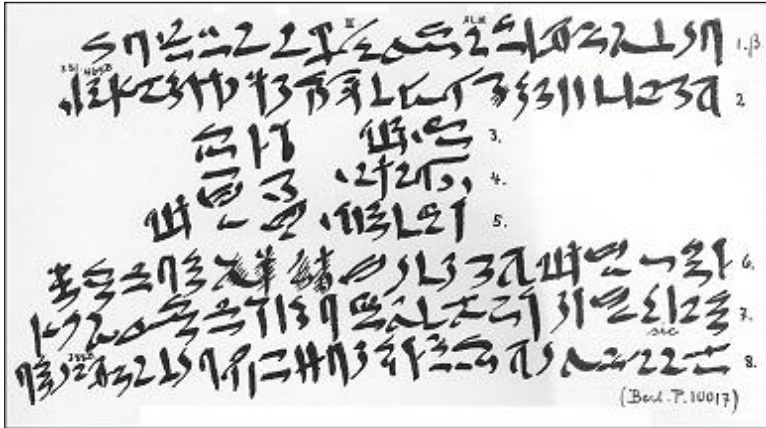


Fig. 14. The Canaanite ruler from Tell el-Dab^ca (after Bietak 2010b, 148, Fig. 6)

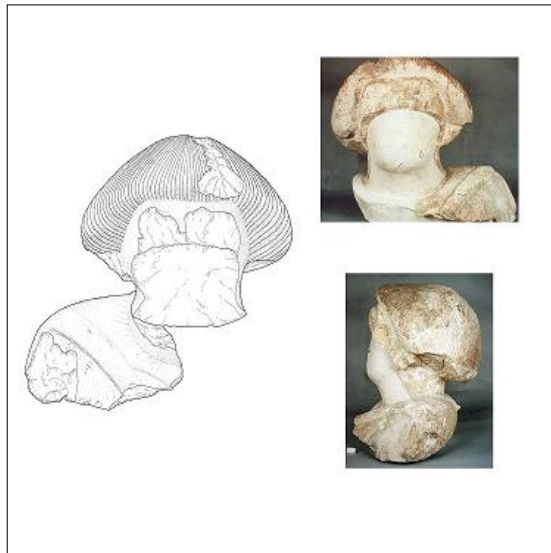


Fig. 15. Bull's head on an offering table from Gebel Magharah (after *Sinai I*, pl LXXXIX no 500)

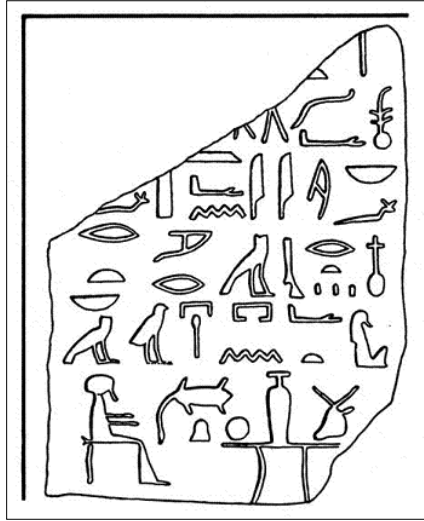


Fig. 16. Clay house model from Egypt (Reference unknown)



Fig. 17. Model of a nomadic enclosure (after Finkelstein and Silberman 2001, 111, Fig. 13)

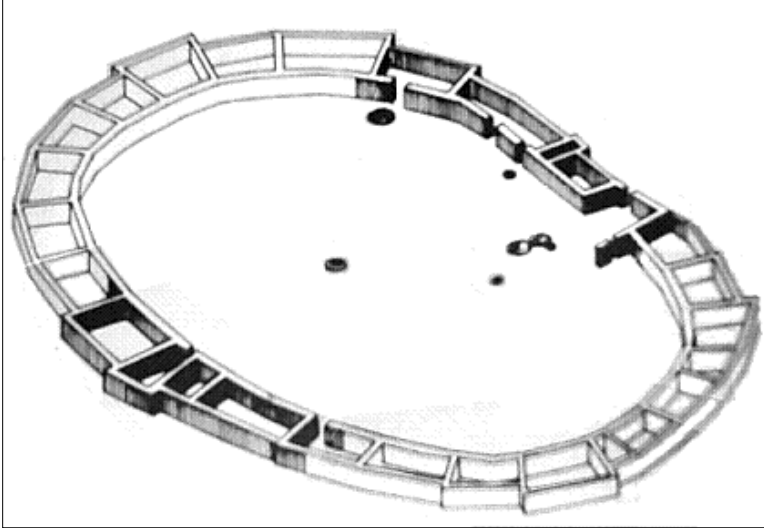


Fig. 18. Gezer sherd (after Sass 1988, Fig. 145)

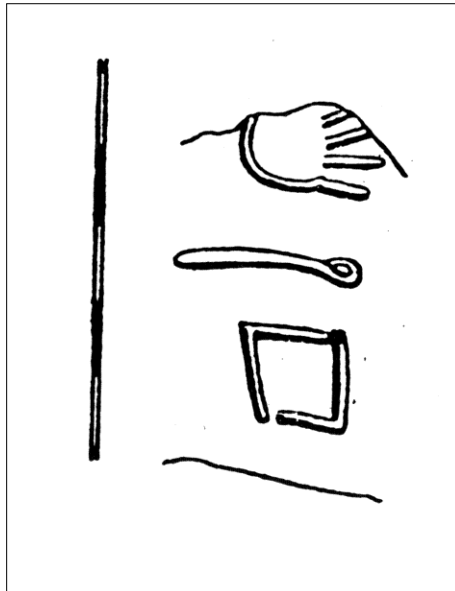


Fig. 19. Lachish bowl fragment (after Sass 1988, Fig. 164)

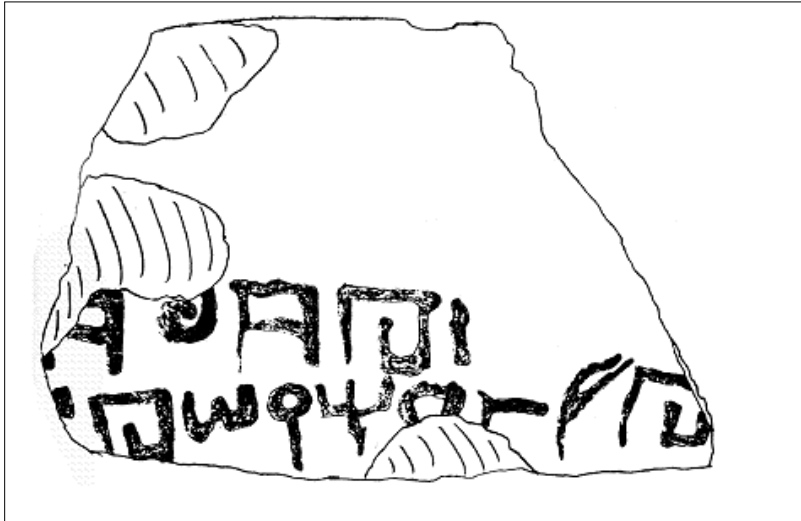
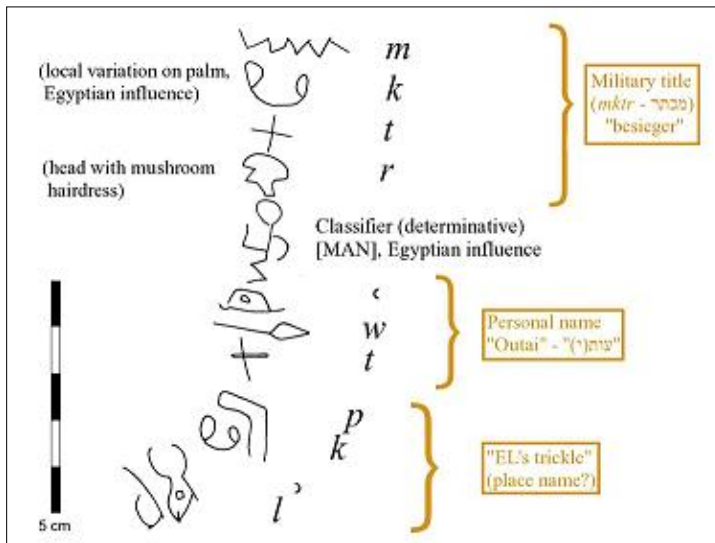


Fig. 20. Optative reading of the Wadi el-Hôl inscription 1 (Orly Goldwasser)



Tables:

Table 1. Uniconsonantal signs in Egyptian (after Gardiner 1957)

THE ALPHABET				
SIGN	TRANS-LITERATION	OBJECT DEPICTED	APPROXIMATE SOUND-VALUE	REMARKS
	<i>t</i>	Egyptian vulture	{the glottal stop heard at the commencement of German words beginning with a vowel, ex. <i>der Adler</i> .	{corresponds to Hebrew ט 'aleph and to Arabic ا 'alif hamzatum.
	<i>i</i>	flowering reed	{usually consonantal <i>y</i> ; at the beginning of words sometimes identical with <i>i</i> .	{corresponds to Hebrew י yodh, Arabic ع 'ay.
	<i>y</i>	{(1) two reed-flowers {(2) oblique strokes	<i>y</i>	{used under specific conditions in the last syllable of words, see § 20.
	<i>r</i>	forearm	a guttural sound unknown to English	{corresponds to Hebrew ר 'ayin, Arabic ع 'ayin.
	<i>w</i>	quail chick	<i>w</i>	
	<i>b</i>	foot	<i>b</i>	
	<i>p</i>	stool	<i>p</i>	
	<i>f</i>	horned viper	<i>f</i>	
	<i>m</i>	owl	<i>m</i>	
	<i>n</i>	water	<i>n</i>	{corresponds to Hebrew נ nun, but also to Hebrew נ 'amedh.
	<i>r</i>	mouth	<i>r</i>	{corresponds to Hebrew ר 'ayin, more rarely to Hebrew ר 'amedh.
	<i>h</i>	reed shelter in fields	<i>h</i> as in English	{corresponds to Hebrew ח 'et, Arabic ح 'ad.
	<i>h</i>	wick of twisted flax	emphatic <i>h</i>	corresponds to Arabic ح 'ad.
	<i>h</i>	placenta (?)	like <i>ch</i> in Scotch <i>loch</i>	corresponds to Arabic ح 'ad.
	<i>h</i>	animal's belly with teats	perhaps like <i>ch</i> in German <i>ich</i>	{interchanging early with <i>h</i> , later with <i>h</i> , in certain words.
	<i>s</i>	{(1) bolt {(2) folded cloth	<i>s</i>	{originally two separate sounds: (1) <i>s</i> , (much like our <i>s</i> ; (2) <i>s</i> , unvoiced <i>s</i> .
	<i>s</i>	pool	<i>sh</i>	early hardly different from <i>sh</i> .
	<i>k</i>	hill-slope	backward <i>k</i> ; rather like our <i>q</i> in <i>queen</i>	{corresponds to Hebrew ק 'aph, Arabic ك 'af.
	<i>k</i>	basket with handle	<i>k</i>	{corresponds to Hebrew כ 'aph, Arabic ك 'af. Written <i>ch</i> in hieratic.
	<i>g</i>	stand for jar	hard <i>g</i>	
	<i>t</i>	loaf	<i>t</i>	
	<i>t</i>	tethering rope	originally <i>th</i> (<i>t</i> or <i>tj</i>)	{during Middle Kingdom persists in some words, in others is replaced by <i>th</i> .
	<i>d</i>	hand	<i>d</i>	
	<i>d</i>	snake	originally <i>dh</i> and also a dull emphatic <i>s</i> (Hebrew <i>z</i>)	{during Middle Kingdom persists in some words, in others is replaced by <i>dh</i> .

Tables 2a, 2b. The letters of the Protosinaitic alphabet and their presumed correspondents from Middle Kingdom hieroglyphic inscriptions in Sinai (after Goldwasser 2006a). I am grateful to Nicola Math for the help in creating the table.

PROTOSINAITIC							EGYPTIAN HIEROGLYPHS FROM SINAI						
1													
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													

12												
13												
14												
15												
16												
17												
18												
19												
20												
21												

Table 3. An evolving Alphabet (after Goldwasser 2010a)

An Evolving Alphabet

	Hieroglyphic	Proto-Sinaitic	Phoenician & Paleo-Hebrew	Early Greek	Greek	Latin

Goldwasser, Orly 2011. "The Advantage of Cultural Periphery: The Invention of the Alphabet In Sinai (Circa 1840 B.C.E)." In *Culture Contacts and the Making of Cultures: Papers in Homage to Itamar Even-Zohar*. Sela-Sheffy, Rakefet & Gideon Toury eds. Tel-Aviv: Tel Aviv University, Unit of Culture Research, pp. 255-321.

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