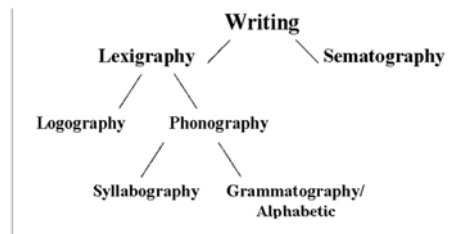


HISTORY AND PRINCIPLES IN THE STUDY OF WRITING

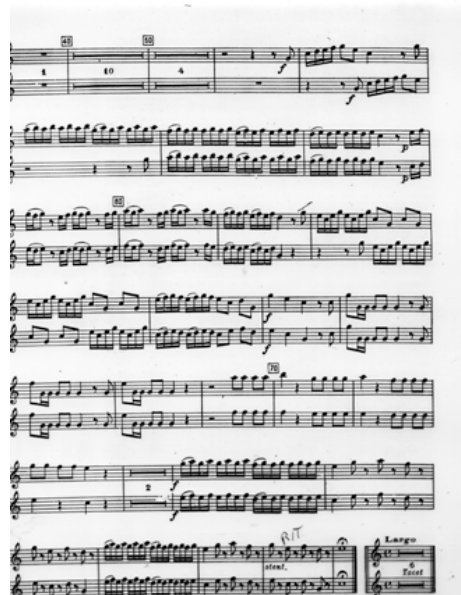
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In talking about writing it pays to have a familiarity with the general history of writing and with the theory of writing, what is possible and why, because history and theory can explicate events otherwise isolated and perplexing. Let's begin with this chart, which gives a stemma I want to work with today, really an outline of this paper, not an historical stemma, but a stemma of structural relationships among different kinds of writing. In history these different kinds of writing combine and get mixed up. I want to work from the top of the stemma down to the bottom.



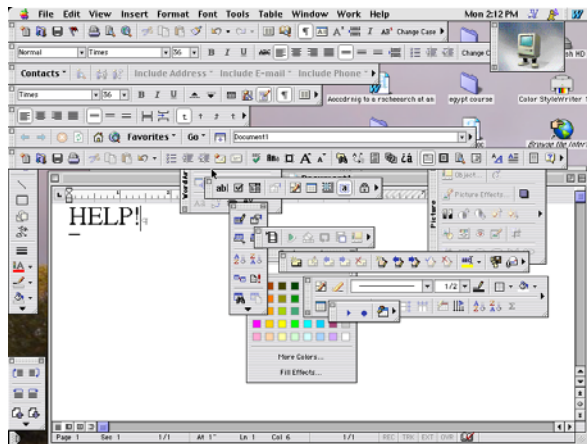
WRITING is hard to talk about, because of an entrenched indifference to consistent names for real categories. The word “writing” itself is variously defined, but let us agree that it is a system of markings with a conventional reference, that is, writing is material (not spiritual or emotional or mental) and the meaning of such markings, we might say their intellectual dimension, does not come from nature and it does not come from God. It comes from man. So let us look



at a certain kind of writing, what the chart calls Sematography, or “sign-writing”: and so is this in case you want to FIND FOUR NUMBERS SUCH THAT THE PRODUCT OF ANY TWO OF THEM IS ONE LESS THAN A PERFECT SQUARE.

$$\begin{aligned} a &= m, \\ b &= n(mn + 2), \\ c &= (n + 1)(mn + m + 2), \\ d &= 4(mn + 1)(mn + m + 1)(mn^2 + mn + 2n + 1); \\ ab + 1 &= (mn + 1)^2, \\ ac + 1 &= (mn + m + 1)^2, \\ ad + 1 &= (2m^2n^2 + 2m^2n + 4mn + 2m + 1)^2, \\ bc + 1 &= (mn^2 + mn + 2n + 1)^2, \\ bd + 1 &= (2m^2n^3 + 2m^2n^2 + 6mn^2 + 4mn + 4n + 1)^2, \\ cd + 1 &= (2m^2n^3 + 4m^2n^2 + 6mn^2 + 2m^2n \\ &\quad + 8mn + 4n + 2n + 3)^2. \end{aligned}$$

This is sematography too, I’m afraid, the nightmarish realm of computer icons, a system of communication not far different from Mesopotamian protocuneiform of the late fourth millennium BC. Sometimes we can guess what such icons mean, but most of them have to be learned one by one, or are never learned.



Musical and mathematical notation and computer icons are certainly writing, markings with a conventional reference, but they are always sematographic in nature. Such writing, not tied to speech, works through symbolic means to communicate a variety of kinds of information that can bear great aesthetic, scientific, and social power—including computer icons.

We can sometimes decipher computer icons from the thing they picture, a kind of “pictographic writing.” Pictographic writing is a form of sematography that always turns up in discussions of writing and there is a general impression, certainly mistaken, that writing began as pictures, then eventually became the alphabet.

Pictographic writing should be writing in which we recognize the picture of something, like the lock or the binoculars. Pictograms do not therefore stand for words but for an action or the thing itself.

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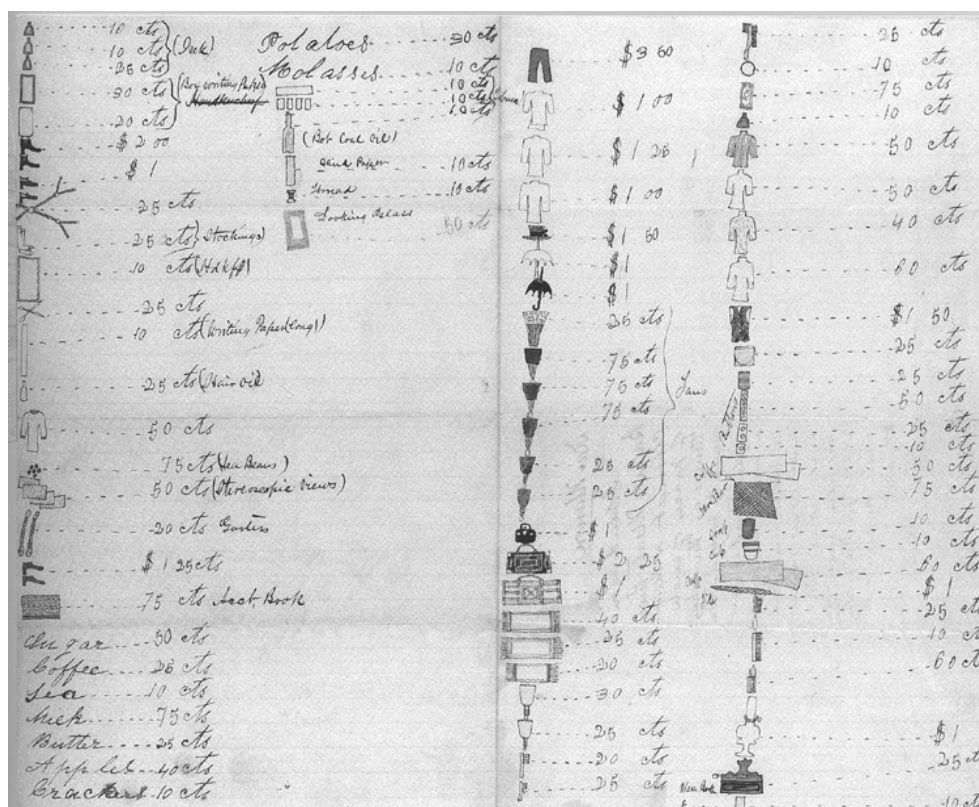
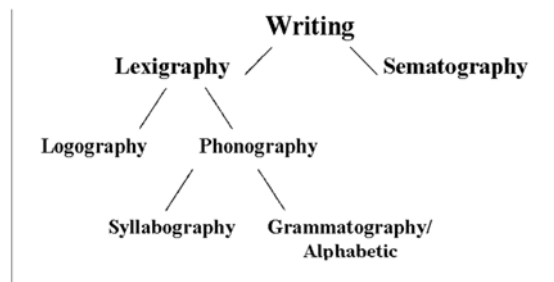


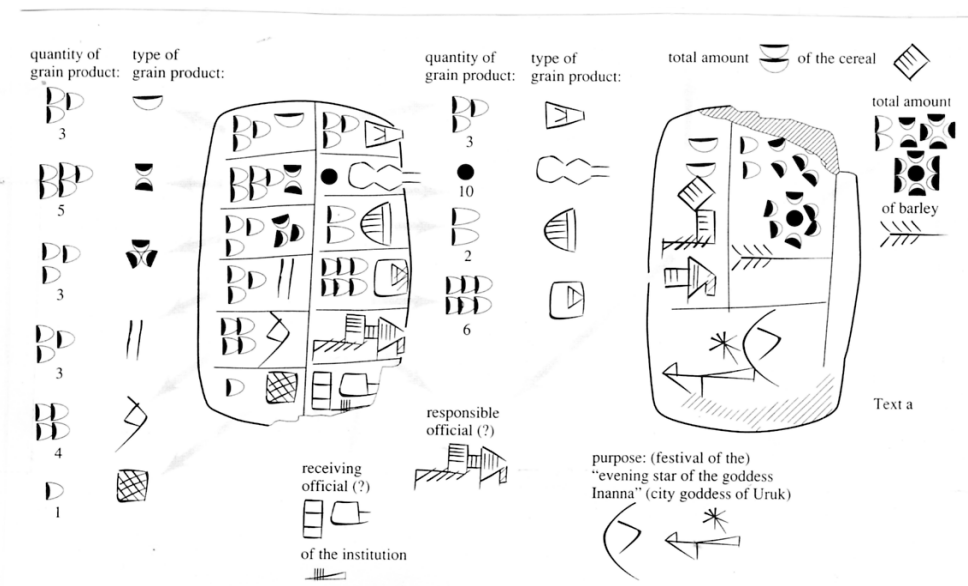
Fig. xxx. Account in a ledger book by Buffalo Meat, a Cheyenne warrior, 1890

The American Indians used pictograms from the earliest times, to judge from the Paleo-Indian petroglyphs found in many places in North America, and they were still writing pictographically in the times of George Armstrong Custer. In a late nineteenth century so-called ledger drawing made by a Cheyenne Indian warrior shipped from Montana to a prison in Florida, we find this record. The upper three bell-shaped items, marked ten, ten, and 25 cents by a combination of word signs and abbreviated English in Roman script, are ink bottles, as the Roman characters also inform us, of different colored inks. The pictures are color-coded. The Cheyenne warrior, whose name was Buffalo Meat, seems to be working with a guard at the prison who has annotated these two rectangles as “handkerchiefs,” then corrects to “box with paper.” He himself was confused about what the picture represents. Many items are so annotated. This item, “account book,” is interesting because it is the very kind of book in which this drawing, and a whole genre of Native American art, was made by means of the very inks illustrated for sale at the commissary. The colors of the pictogram reproduce the marbled backs of these

books. But the limitations of pictographic sematography are clear when it comes to “chugar,” “coffee,” and “tea.” Among the northern Amerinds there never was development of any kind from pictograms to writing tied to speech, or **lexigraphy**, the second category into which we can divide the general category **writing**.



In fact clay accounting tablets from late fourth millennium Uruk in what is today southern Iraq [strata III and IV] discourage any notion of a straightforward historical evolution from pictographic sematography to lexigraphy.



Protocuneiform tablets from Uruk.

The left tablet is divided into “cases,” as they are called. The vertical semicircular impressions represent single units and the solid circle represents ten units. The other signs in the cases represent commodities, apparently different kinds of grain products. The second to last case in the lower right hand column is different, perhaps the name of an official. Perhaps the first two of three signs in the last case, one of them a head on its side, could refer to the receiving official, and the lowest sign to the institution he represents.

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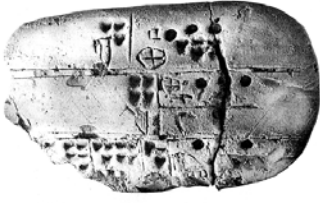
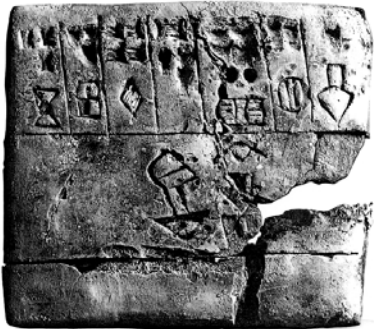
The obverse gives the total of some kind of cereal and of barley needed to produce the products on the other side, though we cannot reconstruct how these figures were reached or, because of the complexity of counting systems in protocuneiform, even what the sums are. Perhaps “ten” of this cereal and then some barley. Again signs for the official and, at the bottom, more or less intelligible, a star for **goddess**, the symbol for **Inanna**, and a sign rather like the sign for “**day**” but here probably meaning “evening star.” Notice that signs do not come in a linear order within the cases into which the tablets are ruled, but can be arranged in almost any order.

In the tablets from the same layers [III and IV] at the site of ancient Uruk, about 3400 or 3200 BC, of which this is an example, we seem to be looking in on the moment just before the discovery of *lexigraphic* writing. We wish we knew more how these signs for officials are working, if that’s what they are, but we cannot place them in a system of markings with conventional phonetic value. All these signs appear to be sematographic, though scarcely pictographic. They are working within an accounting system whose general functioning is illustrated on the famous Uruk vase contemporary with the protocuneiform tablets, recently stolen and returned to the Baghdad Museum. Here is a drawing of the design. In alternating registers, first grain crops, then domestic animals, then naked men carrying baskets of produce, then in the lost portion the king, or *En* preceded by a naked priest in the presence of Inanna. This must be her temple, represented by the ring-post signs, apparently door posts for a structure made of reeds. The ring-post is already the symbol for Inanna, and we just saw it on the accounting tablet in a stylized form. Produce consisting of livestock and baskets of grains are being brought to the temple, the structure on top of which two votaries stand, and again the symbol for the goddess. Perhaps the ram, goat, cheetah, and vases behind the standards, but turned toward them, represent produce already within the temple precinct, in fact just where the protocuneiform accounting tablets were found.

Produce and livestock, then, are being brought to the building as if an offering to the goddess, whose province is richness. These commodities the authority of the *En* will redistribute according to service and need in a **redistributive** economy dependent on sedentary populations, irrigation agriculture, and a system of written accounting. In this brave new world of wealth and power the tasks imposed on information storage have multiplied a thousandfold. On the one hand is the Uruk vase, which tells a kind of story in pictures, but includes the sematogram for Inanna, and on the other we have on contemporary clay tablets abstract non-pictographic sematograms without phonetic value or necessary correspondents in speech. The

“star” must mean goddess but is not the picture of a goddess. The ring-post derives from the picture of some bundled reeds but it means “Inanna.”

We have pictures of things we recognize that stand for something else and drawings of things we do not recognize.

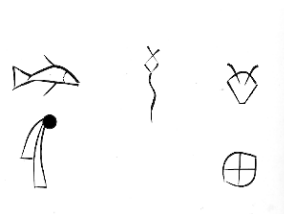
Token Type		Pictograph	Translation
1. Animals			
	3: 14		lamb
	3: 51		sheep (fig. 93)
	3: 54		ewe
	14: 3		cow
	14: 8		dog
 			
<p>93. Sign ATU 761/ZATU 575 "sheep," Uruk (W 2141B.4), Iraq. Courtesy Deutsches Archäologisches Institut, Abteilung Baghdad.</p> <p>94. Sign ATU 750/ZATU 503 "sweet (honey?)," Uruk (W 20511.1), Iraq. Courtesy Deutsches Archäologisches Institut, Abteilung Baghdad.</p>			

Most now accept in some form Denise Schmandt-Besserat's once seemingly wild claim that both the form and the meaning of many of the protocuneiform sematograms descend directly from a much older use of geometrically shaped clay tokens found over a large area of the Middle East (but not Egypt) from as early as 8,000 BC. In the illustration token shapes are given in the left hand column. The middle column gives analogous impressions in clay, and the third column gives meanings established from later traditions. Note in the lower left tablet two examples of the crossed circle for *sheep*, and a tally. The lower right tablet shows more tallies where, again, the commodities are represented by abstract symbols that

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have analogs in the shapes of prehistoric accounting tokens. The head and the bowl appear to mean “disbursement” and then the day sign.

Notice that Schmandt-Besserat has labeled the middle column of this example “pictograph” and as in the Cheyenne ledger we do have pictures of commodities that stand for what they look like, if this looks like a cow and this looks like a dog. Yet the purely geometric forms are the older. At the moment when marks are about to acquire a conventional reference within human speech, then, at the moment of the discovery of lexigraphy, signs have different origins. Some represent the things they look like, fish, snakes, and oxen, or they symbolize something, as the sign for Inanna, or they depend on a primordial accounting system within which abstract shapes represent commodities. They appear nonetheless to be all sematograms. They can be understood, if at all, without reference to speech.



Although such signs do not stand for “words” in speech, “words” in speech nonetheless easily attach themselves to them. For example, the pictograph of a human head, which we’ve seen several times, is easily associated with the sound /sag/ because that is the Sumerian word for “head.” Here are some other examples of the phonetization of earlier sematographic signs, and their later stylized forms that we call “cuneiform, wedge-shaped.” On numerous tablets from [Uruk III,] about 3000 BC, we find clear evidence that the discovery has been made of the phonetic principle that made lexigraphic writing possible, whereby the sounds of elements of speech have become attached to markings. For example, the pictogram for an arrow the word for which is in Sumerian [ti], seems to be used to represent the unrelated Sumerian word /til/, “life,” according to the *rebus principle*.

ku cat	ish pig	mulen bird	gi reed	sag head	kiri orchard
gin/gub walk/stand	anle donkey	gu ox	dug pot	lu hand	gishmar date-palm
le barley	ud day	ab cow	pu well	a water	ku fish

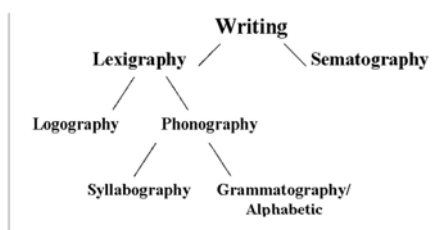
4 Table of cuneiform signs showing for each sign the pictographic form (c. 3000 bc), an early cuneiform representation (c. 2400 bc), and the Late Assyrian form (c. 650 bc), now turned through 90 degrees, with the Sumerian phonetic equivalent and meaning.

We cannot precisely trace the discovery of the rebus in Mesopotamia, but assume that the dropping of semantic value while preserving the phonetic value of sematograms associated with specific words, as in [ti] “arrow” for [til] “live”,

depended on the need in the exploding economy of late fourth millennium Mesopotamia to record the names of people and places, where the produce was coming from and who was making sure it wasn't stolen along the way.

Once discovered, the rebus principle tied writing to speech in a rough and ready way, and as such cuneiform writing was conditioned by linguistic features of the Sumerian language. Sumerian is an agglutinative language whereby each fundamental concept, nominal or verbal, is expressed by a single unchanging syllable, usually, to which you can add prefixes and suffixes. Of course modern Turkish is an agglutinative language, and sometimes English is too, as in English "man-li-ness" made up of the syllable "man," a thing, "li" a suffix meaning "like," and a second suffix "ness" meaning "the quality of." Hence Sumerian signs used lexigraphically came out mostly as monosyllabic syllabograms with a certain versatility. Not only names of people and places could be written out syllabically, but to some extent syllabograms could also designate grammatical relationships, occasionally.

We count about 1200 signs in protocuneiform from around 3200 BC, but once the writing became lexigraphic the signary was quickly reduced to around 600 signs, a number which in standard cuneiform script remained average for the next two and a half thousand years.



The 1200 signs of protocuneiform may qualify it as a purely logographic system, the possibility of whose existence Ignace Gelb and others have denied. Although logographic writing is a kind of lexigraphy, at least on this chart, we need to understand that logograms, "word-signs," do not have phonetic value. The point is highly confusing and has caused endless trouble, but there is no necessary equivalent in speech to a logogram, although logograms do stand for words. Hence the now universal logographic Arabic numerals 1, 2, and 3 stand each for a whole word, One, Two, and Three, or Eins, Zwei, Drei, Bir, Iki, üç, or [KOREAN ONE TWO THREE]. Such nonphonetic signs do not stand for the *ideas* of unity, duality, and trinity (in which case they would be *ideograms*, if there are such things), but for the appropriate words in the user's language, whatever that might be. In phonography, by contrast, the signs have phonetic value. If protocuneiform should in fact be a logography, we might say that the intellectual world of Sumerian administrators was restricted to around 1200 things, but that's a lot.

The Sumerian inventor of lexigraphic writing, who lived we think some time in the late fourth millennium, must consciously have sought out a usable phonetic

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repertory for his new system of tying writing to speech. From the beginning it must have been a self-contained system. He sought out names that could be attached to old sematograms or he invented brand new signs that might justify the right syllabic sound. He invented new logograms to go with his phonetic repertory to create the mixed writing we call logo-syllabiic writing.

Logograms remained an important feature of cuneiform writing throughout its 3,000 year history. Logograms mixed in with syllabic signs standing for open and closed syllables and for the vowels [a], [e], [i], [u] (but not o) was complicated by *homophony*, when several signs have the same value, and by *polyphony*, where a single sign has more than one value. For example, fourteen separate cuneiform signs have the value [gu]. The sign called KA, in origin a head with the mouth shaded in and meaning “mouth,” is also used to mean “shout,” which in Sumerian is [gu]. So the sign called KA can have the value /ka/ or /gu/. It can also be used for /zu/ “tooth,” /du/ “speak,” and /nim/ “word.” The French Assyriologist Juan Bottero called cuneiform “this hellish script,” yes, but in comparison to what? In comparison to Mayan writing?

Fortunately the generous use of classifying signs, determinatives or semantic classifiers, helped understanding. Such semantic classifiers do not have phonetic value and do not stand for words, but place the intended expression in a certain category, much as the “star” on the protocuneiform tablet placed Inanna among the gods.

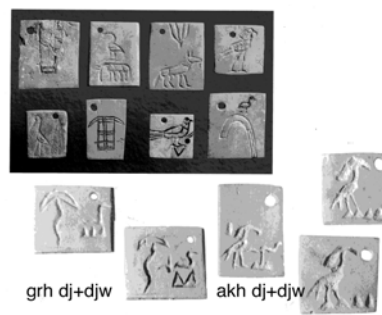
In spite of its complex, illogical, and maddening features Sumerian cuneiform writing became a flexible medium for the expression of phonetic elements in human speech when it was applied to the foreign and wholly unrelated Semitic Akkadian language sometime in the middle of the third millennium BC. We do not know who the Sumerians were, but speakers of Semitic languages overcame them and took their arts. Semitic words have triconsonantal roots, for example *mlk*, something to do with “king,” on which frame you can build verbs and nouns through internal vowel change. The triconsonantal roots are also combined with prefixes and suffixes. Because no single Sumerian sign could carry the meaning of an Akkadian word, as a single sign often did in Sumerian, logography lost ground to phonography in order to write the foreign Akkadian words, although Akkadian scribes went on using Sumerian logograms, but now to refer to Akkadian words. The Japanese behaved in similar ways when adopting Chinese writing to their wholly unrelated language, and of course so did the Koreans. The Semitic Akkadians extended still further the bewildering practice of homophony and polyphony.

Lexigraphic writing—writing tied to speech—had appeared in response to radical changes in human economic life, then in turn caused deep seated new changes in the economy and in the whole way of human life. We might wonder why it took human beings one million years, if they are that old, to discover the phonetic principle in graphic representation. Curious that at the same time as these goings-on in Mesopotamia, in the southeastern tip of the fertile crescent, in Egypt, should appear another writing built on similar principles. We should vigorously dismiss any notion that writing appeared independently in Egypt and in Mesopotamia at the end of the fourth millennium in the world's two earliest riverine redistributive economies. Clear evidence of international trade and commerce between Mesopotamia and Egypt during the Egyptian predynastic period, in the second half of the fourth millennium BC¹ precludes any such happenstance. In the fourth millennium Mesopotamians are in close contact with Egyptians and are probably living there.

The inventor of Egyptian writing seems to have got the idea of writing from the Mesopotamians and to have had direct knowledge of it. Yet he created a new writing, making use of local motifs, designs, and symbols, and in the curious omission of vowel qualities in the phonetic structure of his new system, he changed his model's interior design. Still, both cuneiform and Egyptian writing consist of non-phonetic logograms, phonetic syllabograms, and non-phonetic semantic classifiers; they have about the same number of signs; and they work in similar ways.

The earliest examples of Egyptian writing now appear to be the celebrated ivory and bone labels that a German excavator discovered recently in Upper Egypt in what is thought to be the tomb of a mysterious King Scorpion of Dynasty 0, dated to around 3400 BC.

We seem to be able to read some of the labels. The lightning bolt in classical Egyptian has the value *grh*, all consonants; the serpent *dj*, a single consonant; and the mountains *djw*, two consonants. This should mean “mountains of the night,” because in classical Egyptian *grh* means night and *djw* means “mountains.” The crested Ibis in classical Egyptian has the value *akh*, which means “shining” so the three right hand labels may refer to the “mountains of day.” The labels may indicate the place of origin of commodities to which they were once attached, namely the eastern and western banks of the Nile where the sun



























¹ [W. H. Stiebing, Jr., *ancient Near Eastern History and Culture*, 2003, 107, 112]

HISTORY AND PRINCIPLES IN THE STUDY OF WRITING

risers and sets.

THE ALPHABET

SIGN	TRANS- LITERATION	OBJECT DEPICTED	APPROXIMATE SOUND-VALUE	REMARKS
	<i>i</i>	Egyptian vulture	{the glottal stop heard at the commence- ment of German words beginning with a vowel, ex. <i>der Adler</i> .	{corresponds to Hebrew א <i>aleph</i> and to Arabic ا <i>alif hamzatun</i> .
	<i>j</i>	flowering reed	{usually consonantal <i>y</i> ; at the beginning of words sometimes identical with <i>i</i> .	{corresponds to Hebrew י <i>yodh</i> , Arabic ي <i>ya</i> .
	<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 <i>rayin</i> , Arabic ر <i>raim</i> .
	<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 <i>nen</i> , but also to Hebrew נ <i>lamodh</i> .
	<i>r</i>	mouth	<i>r</i>	{corresponds to Hebrew ר <i>resh</i> , more rarely to Hebrew ר <i>lamodh</i> .
	<i>h</i>	reed shelter in fields	<i>h</i> as in English	{corresponds to Hebrew ח <i>het</i> , Arabic ه <i>ha</i> .
	<i>h</i>	wick of twisted flax	emphatic <i>h</i>	corresponds to Arabic ح <i>ha</i> .
	<i>h</i>	placenta (?)	like <i>ch</i> in Scotch <i>loch</i>	corresponds to Arabic ح <i>ha</i> .
	<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 ח <i>het</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>sh</i> , unvoiced <i>s</i> .
	<i>sh</i>	pool	<i>sh</i>	early hardly different from <i>s</i> .
	<i>h</i>	hill-slope	backward <i>h</i> ; rather like our <i>y</i> in <i>guysen</i>	{corresponds to Hebrew פ <i>peph</i> , Arabic ف <i>feh</i> .
	<i>h</i>	basket with handle	<i>h</i>	{corresponds to Hebrew פ <i>peph</i> , Arabic ف <i>feh</i> . Written <i>h</i> is 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>trh</i> (<i>t</i> as <i>trj</i>)	{during Middle Kingdom persists in some words, in others is replaced by <i>ch</i> <i>t</i> .
	<i>d</i>	hand	<i>d</i>	
	<i>d</i>	snake	originally <i>dj</i> and also a dull emphatic <i>s</i> (Hebrew ז)	{during Middle Kingdom persists in some words, in others is replaced by <i>ch</i> <i>d</i> .

OBS. Later alternative forms are *q* for *w*, *≡* for *m*, *h* for *n*, and *j* for *t*. Of these, *q* arose from an abbreviated form of *h* in Middle Kingdom hieratic, so that it appears in our transcriptions of hieratic texts belonging to a time when *q* was not yet written in hieroglyphic;² *≡* and *j* originate in the biliteral signs for *im*³ and *tt* respectively, while *h* is taken from the word *nt* 'crown of Lower Egypt'.⁴ Note also that *h* is used for *g* in a few old words.

¹ The form *h* usually employed in printed books is not found on the monuments until a quite late period; early detailed forms are *h* and *h*. ² *AZ.* 29, 47. ³ As *m* not before Thutmose I, *AZ.* 35, 170. ⁴ Already sporadically as *n* from early XII Dyn., ex. *PATRIUM, Giesek and Fifeh* 13 g.

Fig. xxx. The Egyptian unilaterals, from Sir Alan Gardiner's *Egyptian Grammar*

The omission of information about the quality of the vowels in Egyptian writing is an extraordinary anomaly and has never been explained satisfactorily. The conundrum has led to a long sometimes acrimonious debate about how we are

to understand Egyptian writing and its relation to the origin of the alphabet, whatever we mean by the alphabet, that seems to descend in some way from Egyptian writing. The great Chicago Assyriologist Ignace Gelb insisted in his famous book *A Study of Writing*, which first appeared a half century ago in 1952, that the division of Egyptian phonetic signs into three categories, *triliterals*, such as the lightning stroke, which embodies three consonants; *biliterals*, perhaps the mountains; and *uniliterals*, the snake, which functions on this label as a phonetic complement (notice it is missing from the other labels)—this division does not reflect the way the writing actually worked, Gelb thought. The signs must all really represent syllables, one, two, or even three, such that to separate out the around 24 uniliterals as an alphabet embedded within the overall system of around 600 Egyptian signs, as in a still standard grammar, is highly misleading and wrong.

Although the uniliterals inform the reader only about what we call the consonantal value of a single syllable, Gelb argued, nonetheless the sign stands for a whole syllable and the reader, a native speaker, will know how to pronounce it.

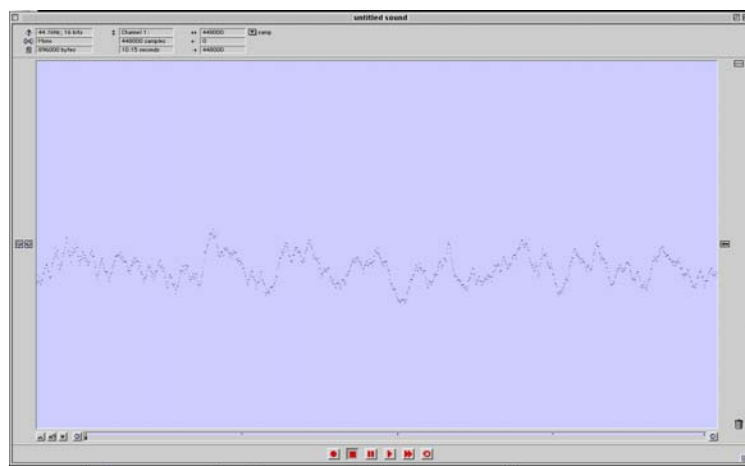


Fig. xxx Spectrograph of LENNY BRUCE

I'm afraid that we are now swimming in a terminological morass, and you are likely to feel the pressure, but surely we should allow Gelb's rejection of the category "alphabet" within the Egyptian writing system, if the word alphabet means anything. Human beings are incapable of distinguishing sounds in speech smaller than the syllable unless trained in some form of the Greek vocal alphabet, as repeated studies have shown, and the Greek alphabet was not invented until around 800 BC. Nor is human speech made up of little pieces, of phonemes as

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alphabet users want to believe, awaiting graphic representation. Speech is in fact a wave, a continuum, although illiterates *can* separate out syllabic units if prompted. If alphabetic signs represent phonemes, the smallest elements of speech, the Egyptian unilaterals certainly did not do this.

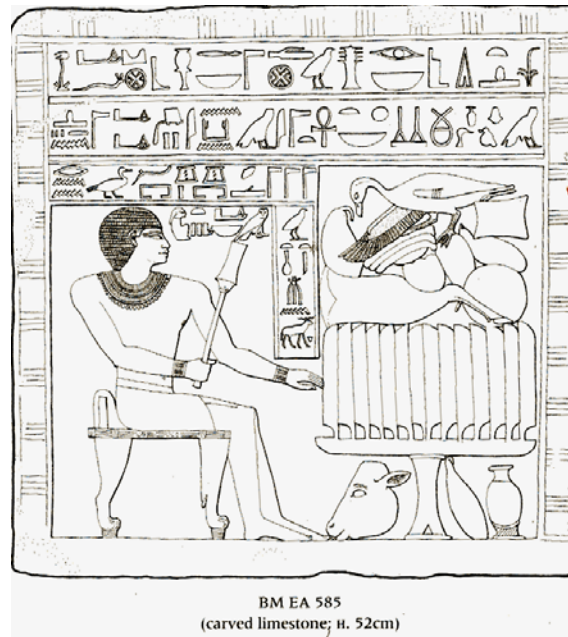


Fig. xxx. Egyptian stele, 12th Dynasty

We are curious to know how Egyptian was taught, that is, how were the phonetic signs in the system pronounced, whether with a colorless vowel, or certain vowels with certain signs. We have absolutely no information. No doubt it was all mixed up, but still the signs must have been pronounced as syllables. The inventor of hieroglyphics was one of those unknown geniuses who changed human life forever. No wonder the Egyptians attributed the invention of writing to the Ibis and baboon god Thoth. In analyzing the syllables that make up speech, whose natural boundaries are suggested by monosyllabic nouns and verbs, this god-man deliberately omitted any comment on the intended quality of the sound that the vocal chords make when they vibrate in speech. Instead he catalogued the permutations of the lips, tongue, and throat. We call such formations consonants because they “sound along” with vowels, but the separation between consonant and vowel is a fiction based on the odd way in which the Greek alphabet works to

create a graphic verisimilitude of speech. You cannot pronounce consonantal signs in Greek, or in English, without adding a colorless vowel, but you pronounce the vowels by themselves very well.

Through analysis the inventor of hieroglyphics, who somehow knew about Mesopotamian cuneiform writing, sought out a phonetic repertory whose elements were built on the rebus from things and objects familiar in the world around him—plants, offering mats, bread loaves, another bread loaf, a chair, an eye, a basket, a mysterious pillar, a chick, a hand ... all lexigraphy for “An offering which the king gives to Osiris, Lord of Djedu.” In this most pictographic of scripts pictures are there to serve the needs of a lexigraphy that has come into being at one time as a coherent system through intent and design.

Commentators have complained for generations about the Egyptians’ neglect to discard the majority of their clumsy, but handsome, repertory of around 600 signs, consisting of logograms, syllabograms, and semantic complements, and just use their unilaterals, their so-called “alphabet,” by which they might easily have “recorded their language.” Surely West-erners accept, and with good reason, that their own alphabetic writing, whatever its exact nature, is superior to logo-syllabic writing and certainly to logography. How odd that the Egyptians did not make use of the “alphabet” when it was staring them in the face! They might have aspired to universal literacy, like us, and even Shakespeare and Homer.

Even if the Egyptian unilaterals are in fact *not* an alphabet, as Gelb argued long ago, nonetheless how can we deny a connection between this Egyptian repertory of around 24 uniliteral signs, extrapolated by modern scholars, and the highly similar inventory of signs in West Semitic writing, which many have long called an “alphabet” and many still do. Here’s the earliest example of the repertory of the exceedingly important family of scripts called West Semitic, which includes Phoenician, Hebrew, Arabic and many other scripts. “East Semitic” scripts are simply cuneiform scripts. The repertory is cast in the odd, unique non-linear Ugaritic signary, from about 1300 BC.

In 1999² the *New York Times* reported a find of the oldest “alphabetic” graffiti” ever found, in the Wadi el Hol, the “Gulf of Horror,” in the western desert near Egyptian Thebes, dated to perhaps 1800 BC.

QuickTime?and a
TIFF (Uncompressed) decompressor Wadi Hol, Richard Jasnow, Jim Darnell
are needed to see this picture.

² [Nov. 13th, 1999 New York Times]

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QuickTime?and a
TIFF (Uncompressed) decompressor
are needed to see this picture.

Fig. xxx. The cliff face in the Wadi el Hol, “Gulf of Terror,” with early inscription, c. 1800 BC [After <http://www.nytimes.com/library/national/science/111499sci-alphabet-origin.1.jpg.html>]

These are taken to be West Semitic signs, so-called alphabetic, even the earliest evidence for so-called alphabetic signs. You can make out the zig-zag Egyptian sign for water, which according to some is the origin of the alphabetic letter M. Not sure what this is, but here is the cross, that becomes alphabetic T, and maybe this is an *ain*, that becomes alphabetic O. The large design on the left, with little arms, looks like the Egyptian *sa* sign, used in protective amulets, or the related *ankh* sign.

The Wadi el Hol discovery accords with one made in 1905 by the great Flinders Petrie at the turquoise mines at Serabit el-Khadim a long ways away on the Sinai Peninsula. The badly weathered inscriptions, conventionally dated to around 1700 BC, seem to consist of 20 to 30 Egyptian hieroglyphs, although they cannot be read as such.



Fig. xxx, Sphinx with protosinaitic inscription. (British Museum 417148)

They evidently represent a new script. In 1916 the British Egyptologist Sir Alan Gardiner noticed a repeated series of signs, which he interpreted as standing for the Semitic *elbalat*, “to the lady,” that is to Hathor, whose name is written in ordinary hieroglyphs on the other side of this sphinx. Hathor was the tutelary goddess of the turquoise mines at Serabit el-Khadim, where substantial ruins from her temple survive. Ingeniously Gardiner proposed that Semitic workers at the mines took

hieroglyphic signs, discarded their phonetic values in Egyptian writing, gave Semitic names to the signs, then reduced *their* values to the first sound of the name according to the so-called acrophonic principle.

But Gardiner could decipher no other words and the script remains undeciphered. We should be cautious about announcing the nature of our finds when our finds, if sensational, are not yet understood. El Balat looks very good, but if Gardiner's "acrophonic principle" were real, we should have done better, but probably the acrophonic principle is not real. The names of West Semitic signs seem to have been tag names to enable learners to remember the associated sounds. They do not therefore preserve the names of primordial pictograms that later took on phonetic value, as you will read in every book. Most West Semitic signs do not in fact look like anything. The much, much later names associated with signs in the West Semitic signary are only sometimes meaningful and some signs have more than one name. Apparently the names of West Semitic signs were like the American military Bravo Alpha Romeo Romeo Yankee to spell my own first name.

It is plausible, but remains unproven, that the need to record the personal names of Semitic slaves working for the Egyptians led to the invention of West Semitic writing, of which the Wadi el Hol and the Serabit el Khadim inscriptions from the Middle Bronze Age may be early exemplars. We can nonetheless make these observations. First, if protosinaitic and related scripts are in fact wholly phonetic, although hardly "alphabetic" as are signs in the Greek alphabet, a powerful need must have driven their invention; the need to record personal names could provide that motivation, as it encouraged the discovery of the phonetic principle in Mesopotamia in the first place.

Second, whoever invented West Semitic writing *knew* Egyptian writing, the first writing to remove from its phonetic repertory sounds made by the vibration of the vocal chords. If you abstract the system of 24 or so so-called consonantal unilaterals from Egyptian writing you come up with the same phonetic repertory that makes up West Semitic writing, as we have just seen. We should probably reject Gardiner's explanation in toto about how West Semitic might have grown out of Egyptian. Through the mists it appears as if a Semite, educated in Egyptian writing, consciously understood the possibilities inherent in the 24 unilaterals, that they might constitute a wholly phonetic signary capable of recording the rough structure of personal names, for which the state had a need. This great genius, a second Thoth, assigned Semitic names and associated signs to the *values* of the preexisting phonetic repertory of unilaterals, one of the greatest exercises of abstract thought ever. Not the pictures, then, but the sounds came first.

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At the same time that the wholly phonetic, yet unpronounceable, West Semitic writing came into being some time in the second millennium, another family of phonetic writing, also unpronounceable appeared on the islands of the Aegean Sea, which had intimate contacts with the very Levantine ports near where early examples of West Semitic have been found. Aegean writing emerged under the clear influence of Mesopotamian, not Egyptian, traditions. Mesopotamian influence is conspicuous in their writing on clay tablets, the usual medium in Crete. The structuring of the economy and society around a central palace that controlled agricultural production and the distribution of commodities closely parallels Mesopotamian models, as does the use of writing to serve this economic structure.

The earliest attested use of Linear B is from around 1550 BC and the last from around 1200 BC. Mainland Greeks must have occupied Crete and adopted the local writing, and the local scribes, to conduct an economy similar in basic features to the Minoan world they had usurped. As against the 22 or 25 signs of the West Semitic signaries, there are in Linear B 59 purely phonetic syllabic signs, five of them vowels, 54 of them open syllables. In addition there is a large repertory of logographic signs that stand for objects or commodities, but the logographic signs are not used as logograms within the system of syllabograms, as was conspicuous in Egyptian hieroglyphic writing and Mesopotamian cuneiform.

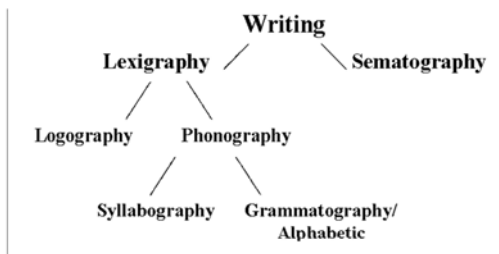
Once decried as unsuitable for the Greek language, as if phonetic accuracy were an ideal toward which all writing strove, we now prefer to view Linear B as well suited to the demands placed upon it, to manage the collection and distribution of commodities. You need the name of the donor, the name of the commodity, and the quantity of the commodity, for which Linear B, and its predecessors, was well designed.

Cretan writing was a powerful tool and did not disappear with the Bronze Age collapse of 1200 BC. Its direct descendant on Cyprus, the so-called Cypriot syllabary, was used for hundreds of years side by side with linear West Semitic and then the Greek alphabet and lasted until 200 BC. The famous bronze tablet of Idalion from the early fifth century, shown here, is a contract between physicians and the city of Idalion during a Persian siege, an imitation in bronze of a wooden writing tablet, the longest example of the Cypriote syllabic writing to survive. The



tablet proves that complex texts were possible in Aegean syllabic writing, but nothing comparable has been found.

This timeline will place all this in context. By 800 BC, therefore, a time when most scholars would place the invention of the Greek alphabet, two wholly phonetic writings had existed side by side in the Eastern Mediterranean for hundreds of years.



One tradition was destined to be transcendent and to become the basis for Western writing, today understood throughout the world.

In this conversation we have to keep saying “the Greek alphabet,” in case someone understand “alphabet” to mean the West Semitic family of writings that we have been regarding, including Phoenician, Hebrew, Moabite, and Aramaic, or even the Egyptian 24 uniliterals, as some kind of syllabary. We should probably adopt the German term *Vokalalphabet* to refer to the Greek alphabet, because that was the principal feature to this writing, that it informed the reader, in a rough and ready way, of the actual sounds of speech, or rather, of the sounds of hexametric verse, in which most early Greek inscriptions are cast. Some scholars prefer the term “grammatography” to balance “syllabography” but we can probably never get rid of “alphabet.”

In any event it is misleading extremely to say that the inventor of the Greek alphabet “added vowels” to a previously vowelless script. The inventor of the Greek alphabet divided the phonetic signs of the very old and very short West Semitic signary, all signs of one nature, into two unequal groups of signs of different natures. He established the rigorous spelling rule that a sign from the small group, those in red, must always accompany signs from the large group. The five signs in the small group, which represented a selection of five vowel qualities from a larger range in Greek speech, were pronounceable by themselves, as vowel signs had been in Aegean and cuneiform writing. But the signs in the second and larger group were *not* pronounceable by themselves, as they had been in West Semitic writing, but must “sound along” with the pronounceable vowel signs. The inventor’s spelling rule, devised for a practical purpose, inadvertently created the illusion that speech consists of particulate phonemes and the prejudice that writing exists to record speech. The inventor certainly had no such intentions.

The invention was highly fortuitous and improbable in the utmost. First we require the anomalous and unexplained inattention of Egyptian writing to the vibration of the vocal chords. Then we require the mysterious interaction of

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undoubtedly foreign peoples with this odd Egyptian writing to create a wholly phonetic but unpronounceable writing, reduced to a handful of signs. Then we require the special need of still another foreign people, in this case the troublesome Greeks, who lived at the edge of the civilized world. Evidence is strong that the need to record Greek hexameter verse inspired the inventor of the Greek alphabet, but the result was to make the Greek vocal alphabet as different from its model West Semitic as West Semitic was from its model Egyptian. For the first time writing communicated through a sensual intimacy with forms of speech, speech which in the Greek miracle was itself swiftly transformed by the new expression that alphabetic writing offered. Very true but

AOCCDRNIG TO RSCHEEARCH AT CMABRIGDE UINERVVISY, IT DEOSN'T
MTTAER IN WAHT OREDR THE LTTEERS IN A WROD ARE, THE OLN
IPRMOETNT TIHNG IS TAHT THE FRIST AND LSAT LTTEER BE AT THE RGHIT
PCLAE. THE RSET CAN BE A TOTAL MSES AND YOU CAN SITLL RAED IT
WOUTHIT PORBELM. TIHS IS BCUSEAE THE HUAMN MNID DEOS NOT RAED
ERVEY LTETER BY ISTLEF, BUT THE WROD AS A WLOHE.

Yes, that's right, if you are schooled in reading from the shape, as English readers are, and use phonetic signs only as hints, but not direct representations, of phonetic elements. One doesn't behave in this way because our minds are made just so, as the passage suggests, but because we have learned to act in this way.

Greek writing does not work like that at all. In this reconstruction of an early text of the opening of the *Iliad* the only way to tell what it means is to extract the sounds from the signs, listen to the sounds, then recognize what is meant. The work is tedious and hard going. The primacy of sound is emphasized by the lack of word division and the absence of diacritical marks even one thousand year's after the vocal alphabet's invention. The inventor of the vocal alphabet has rigorously excluded visual semantic information from his system, a quality he shares with his West Semitic model, YES, but even West Semitic scripts ordinarily divided the words.

[illegible]

The Greek alphabet's curse of hyperphoneticism tied written expression to what people might say, who without training might say anything and always in a different way and with a different sound. That makes it hard to learn Greek. Still, in the Western world, thanks to the Greeks, academics must learn German, Italian, and French just to chat about an obscure line in Homer. Sometimes Spanish and Russian too. The Greek vocal alphabet's system for phonetic representation can be applied indifferently to any human speech, and that is the problem.

The Greek adapter's invention took place once only. On one side stood the phonetic but unpronounceable West Semitic writings, and on the other the now pronounceable Greek vocal alphabet and its manifold offshoots. In spite of its hyperphoneticism, which roots understanding in a specific speech, alphabetic writing opened a restricted literacy to anyone who learned the very simple semiotic system. Suddenly Etruscans, Phrygians, Carians, Lydians, and Iberians can read and write, at least well enough to place their names and titles on a tombstone. The genius of West Semitic writing was in how it was learned, as a short list of signs in a fixed order, whose phonetic values were encoded in a name, sometimes meaningful and sometimes not. Mesopotamian cuneiform and Egyptian hieroglyphic writing were not so easily learned. The inventor of the Greek vocal alphabet took over the West Semitic system of learning lock stock and barrel and of course we still use it today.

History is a muddle, and the frog may jump this way or that. What happened did not have to happen as it did. Yet the possibilities were limited. My impression is that the history of writing is poorly understood, in general, but that an understanding of what can happen will help us see what did.