





What's this thing called

Writing Part III

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The problems of decipherment

- No multilingual text
- Language unknown
- Type of writing system unknown
- How many signs ?
- Direction of writing? To be covered by Ashraf
- Is there a core signary ? To be covered by Ashraf
- What is the grammar ?



No "Rosetta Stone"

Multilingual inscriptions with the same text written using different scripts or writing systems, one of which is known or easy to decipher, are invaluable for deciphering unknown scripts.

Most famous example: A stele issued at Memphis, Egypt in 196 BCE on behalf of Ptolemy V – discovered in 1799 at town of Rashid (Rosetta) by Pierre-Francois Bouchard

Although very quickly realized that three versions of the same text provided key to deciphering hieroglyphics – eventual decipherment still took two decades

From "Picture Writing" to Phonetics

Dominant idea at the time: Hieroglyphs are "picture-writing"!

Silvestre de Sacy (1811): Foreign (non-Egyptian) names will be spelt out phonetically as there are no corresponding hieroglyph symbols

Cleopatra cartouche



Thomas Young

Champollion

Thomas Young (1814): Hieroglyph characters used phonetically to spell the Greek name "Ptolemaios"

Jean-Francois Champollion (1822): constructed an alphabet of phonetic hieroglyphic characters

Showed even native Egyptian names written phonetically using hieroglyph symbols (using his knowledge of Coptic)



From Hieroglyphic to Alphabetic

Unlike writing itself, alphabetic writing is believed to have been invented only once and then diffused to different civilizations

Around 2000 BCE, Egyptian scribes are believed to have used the principle of *acrophony* ("acro"=uppermost + "phonos"=sound) with ~24 Egyptian hieroglyphic sounds

- \Rightarrow only the first consonant of the word (instead of the word itself) was represented by the sign
- \Rightarrow transition to phoneticism eventually leading to alphabetic writing



The consonantal "alphabet" of Egyptian hieroglyphic writing

The Origin of Alphabetic Writing

Strong evidence that all alphabetic systems in use derive from the Hieroglyphic consonantal "alphabet" via a semitic writing system that originated north of Sinai

LEFT SIDE

Most well-known examples of the Proto-Sinaitic alphabet found in Serabit el-Khadem, a site in west-central Sinai where turquoise mining was carried out during the Middle and New Kingdom eras (20th c. – 12th c. BCE) by Egyptians

> About 30 early alphabetic inscriptions – including four in the temple dedicated to the Egyptian goddess Hathor

Red sandstone sphinx, Temple of Hathor, Serabit el-Khadem, c. 1800 BCE Image: NASA



Proto-Sinaitic (mid 19th century – 16th century BCE)

The earliest trace of alphabetic writing and the common ancestor of both Ancient South Arabian script and the Phoenician alphabet

Rebus principle : use existing symbols, such as pictograms, purely for their sounds regardless of their meaning, to represent new words.



statuette, Temple of Hathor, Serabit el-Khadem

Image: A H Gardiner, "The Egyptian Origin of the Semitic Alphabet" (1916)



Image: W F Albright, The Proto-Sinaitic Inscriptions and Their Decipherment

The line running from the upper left to lower right may read "I-b-'-I-t" or "I-'ba-al-at" meaning "to Baalat" - the female form of the Semitic god Baal



Evolution of Alphabets

"Nearly all modern alphabets are descended from an alphabet invented 4000 years ago, probably by a group of people related to the ancient Hebrews, Phoenicians, and Canaanites, living in what is now the Sinai desert. They got the idea from the Egyptians, but used their own simplified pictures to represented consonant sounds. The Phoenicians and others of the region simplified the pictures further and often rotated them, but if you use your imagination, you can still make out where most of the 22 letters came from."

Dr. C. George Boeree



"Customised" Writing: The case of Hangul

Hangul, the official writing system for Korean, made up of 14 consonants & 10 vowels \Rightarrow alphabet of 24 letters.

Korean letters are written in syllabic blocks with the alphabetic letters arranged in two dimensions.

Prior to Hangul, writing used large number of ideographic Chinese symbols making it difficult to learn To promote literacy in socirty, King Sejong the Great (1397-1450) created and promulgated a new alphabet., possibly invented by council of learned scholars mandated by the kind who considered a number of existing writing systems before coming up with Hangul

Incorporates features of alphabetic, as well as, syllabic writing

Structure of Korean syllables

Korean syllable always starts with a consonant. The second one always is a vowel. And the third one – can be empty or consonant.



Character design in Hangul: Speech made visible

The consonant characters in Hangul were created by drawing the position of the tongue in the mouth and the mouth shape when making certain sounds.

The "first sounds": categories of Hangul consonants



Velar



Alveolar



Dental



Bilabial



7 Part of tongue touches molar teeth

Tongue curves so that tip touches the palate

Blowing through passage created by tongue and teeth Upper & lower lips are joined Glottal O

Throat assumes a round shape

Consonants

フ	L	Ľ	2		Н	ト	0	ス	え	ヲ	E	I	ŊO
K or G	Ν	D or T	R or L	Μ	B or P	S	NG	J	СН	К	Т	Ρ	Н

For details see http://www.dellacivetta.org/goldandjade/wp-content/uploads/sites/11/2020/07/Hangeul-The-Korean-Alphabet-SeongMyeongSu.pdf

mage: www.britannica.com

Behistun: The Cuneiform "Rosetta Stone"



wikipedia http://www.crystalinks.com/cyrustablets.html Babylonian ket fata from face Elamite (Susian) Old Persian Inscription on Mount Behistun is western Iran issued by Persian Emperor Darius between 522-486 BCE

Three versions of the same text written in three different cuneiform scripts: Babylonian, Elamite and Old Persian

Georg Friedrich Grotefend realized by 1802 that Old Persian cuneiform was alphabetic – fully deciphered by Rawlinson by 1838

The deciphered old Persian text helped in deciphering Elamite and Babylonian

Decipherment without bilingual texts

Example: Linear B

A syllabic writing system for Mycenaean Greek used around 15th century BCE

Approximately 200 signs: now known to have 87 syllabic signs with phonetic values and many ideograms with semantic values



Kober's triplets

If Linear B uses inflections then word endings change predictably



Alice Kober (1950): pointed out the occurrence of five groups of three words ("Kober's triplets") each that had same beginnings but different endings – suggested syllables of type CV

> The different terminal syllables may share the same vowel





Lyktos

From the triplets Kober built a table of ten symbols which shared vowels or consonants

The different terminal syllables may share the same consonant



Amnisos

Ventris' Grid

Kober's insight used by Michael Ventris to construct grid of possible vowel & consonant combinations – eventually allowed assigning sound values for the signs (by guessing they spelt Greek place names)







Mycenaean tablet (MY Oe 106) inscribed in Linear B – mentions an amount of wool which is to be dyed (Natl Archaeological Museum, Athens, n. 7671)

Decipherment & controversy: "But this isn't <u>writing</u> (as we know it)!?"



Michael Ventris (1922-1956)

Ventris' decipherment of Linear B challenged for a long time because a writing system that leaves out endings and includes only word stems [po-lo rather than polos, (Gr., Horse)] seems strange from the point of view of modern alphabetic writing.

However, it was primarily used for "recording accounts, inventories and similar brief notes; there is no example of continuous prose." (Chadwick, 1992).

Example: Mayan "Hieroglyphs"



de Landa alphabet: The Mayan "Rosetta Stone"

"the refusal to recognize Mayan glyphs as writing because of pre-conceived notions about what writing should be, proved to be one of the biggest obstacles to its eventual decipherment [by Knorosov]" (Coe, 1992)

Yuri Knorosov (1922-1999)



So for a successful decipherment...

It helps to guess the underlying language

and/or

know the writing system used for another language

Allomorphy

How do we recognize two signs in an inscription as representing two distinct graphemes or just stylistic variations of the same grapheme ?

Although most of these signs can be recognized as the letter A of the Latin alphabet, there is no single feature which is common to all of them – e.g., having a pointed top, a horizontal crossbar (or even a crossbar) or being open at the bottom

How do we then come to the conclusion that two apparently distinct signs encode distinct sound and/or meaning or just a variant (allimorph)



Are these Indus signs allographs ?



Multiple		U	₩	Ŧ	Ж п		₽
Sequence	ΕŢ	U	X	ЩШ			
Alignment		U	$\overset{*}{}$	Ĩ),*) ⊙⊙ ,*∖		
Using frequently used "words" from		U	*	Щ	UPO		
anchors to align		U	*	Щ	ן און און און און און און און און און או		
gaps for better match betn		U	$\overset{*}{\swarrow}$	Щ	11	\bigcup	
sequences		U	$\overset{*}{}$	Щ	∞ ₩ ₩ "(\mathfrak{S}	
Helps identify groups of signs with	Ē	U	$\overset{*}{}$	Ψ			
similar form/function		U	\mathbb{X}	Ŧ		\mathfrak{S}	
-		U	$\overset{*}{}$	щ		\diamond	
		U	X	Ψ		$ \mathbf{R} $	

First steps towards an Indus "grammar" ?

The alignment may also help in identifying syntactic rules

Example of a grammar:

$$S \rightarrow SI + S2$$

 $SI \rightarrow SI + S3, \{a, b\}$
 $S2 \rightarrow \phi, S2 + S4, \{c, d, e\}$
 $S3 \rightarrow \{f, g\}$
 $S4 \rightarrow \{j, k\}$

