THE STORY OF WRITING
Sasha Nikolaev (CAS)
The Map of the Talk

origin of writing
historical overview of the major types of writing systems and their evolution
  logographic scripts (sign = one word)
  syllabaries (sign = one syllable)
  abjads (sign = one consonant)
  alphabets
some (yet) undeciphered scripts
The Real Map
What is and what isn’t writing
What is and what isn’t writing

Yukaghir love letter    Cheyenne Indian Letter
What is and what isn’t writing

Writing

- Semasiographic
  - represents concepts by material marks with a conventional reference

- Glottographic
  - relies on systematic linguistic basis
The beginning of glottography

The tokens: system of record-keeping

starting around 8000-7500 BCE
Tokens sealed in an envelope (*bulla*) safeguarded the contract.

Next step: impressions of tokens on the clay envelope = table of contents.
The Beginning

Archaeological finds:

X-Ray
The Beginning

Later version of a *bulla*: a cuneiform tablet in an envelope repeating the text
The Beginning

Next step: no token, just an impressed tablet
The Beginning

Next step: pictographic tablets

Tell Brak (4000 BCE)
The Beginning

Record-keeping system gives rise to writing:
tokens
  → plain envelopes holding tokens
    → impressed envelopes
      → impressed tablets
        → pictographic tablets

What’s next?
Next step: logographic script

basic principle of logography:  
1 sign = 1 word

We will look at two oldest systems today:  
Egyptian hieroglyphs  
and Sumerian-Akkadian cuneiform

(Other logographic systems are Chinese and Mayan hieroglyphs)
Cuneiform
Cuneiform
Egyptian hieroglyphs

*hieroglyphs* “sacred carvings”
Development from pictograms

Sumerian picture

90°rotated

<table>
<thead>
<tr>
<th>šah</th>
<th>mušen</th>
<th>gi</th>
<th>sag</th>
</tr>
</thead>
<tbody>
<tr>
<td>pig</td>
<td>bird</td>
<td>reed</td>
<td>head</td>
</tr>
</tbody>
</table>
Development from pictograms

Egyptian:

 Dio /r3/ ‘sun’, ☹ /msdr/ ‘ear’

hieroglyphic script  hieratic script
Elaboration of the signs

Structure of the writing system: differentiation:

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>![Head]</td>
<td>![Head with Diacritic]</td>
<td>![Mouth]</td>
<td>![Mouth with Diacritic]</td>
</tr>
</tbody>
</table>

A diacritic mark is added to the symbol for ‘head’ in order to produce ‘mouth’
**Elaboration of the signs**

**Structure of the writing system:**

**semantic compounds:**

<table>
<thead>
<tr>
<th>/sag/</th>
<th>‘head’</th>
</tr>
</thead>
<tbody>
<tr>
<td>/a/</td>
<td>‘water’</td>
</tr>
<tr>
<td>/a/</td>
<td>‘in’</td>
</tr>
<tr>
<td>/naŋ/</td>
<td>‘drink’</td>
</tr>
</tbody>
</table>

/naŋ/ ‘to drink’ is formed by adding ‘water’ to ‘head’
Expanding the code

1. Semantic extension

Egyptian:

- ☥️ /r3/ ‘sun’ → ☥️ /hrw/ ‘day’
- ☥️ /msdr/ ‘ear’ → ☥️ /sdₘ/ ‘hear’

Sumerian:

- ★ /du/ ‘to go’ → ★ /gub/ ‘to stand’
- ★ /an/ ‘heaven’ → ★ /di₇ir/ ‘god (of heaven)’
Expanding the code

2. phonetic extension or rebus

Egyptian:

♀️ /h₂r/ ‘face’ > ♀️ /h₂r/ ‘upon’
♂️ /r/ ‘mouth’ > ♂️ /r/ ‘towards’

Sumerian:

∽ /a/ ‘water’ ← → ∼ /a/ ‘in’
Expanding the code

The result of these processes: loss of pictographic element and increasing amount of **phonography** in the script.

\[ \sim/a/ \quad \text{‘water’} \rightarrow \sim/a/ \quad \text{‘in’} \]

could have become the Sumerian letter “a”, but did not
Cuneiform

Phonographic script: syllabary
one sign = one syllable

template: (C)V(C)

\[ \\
\text{انتقال} /u/ \\
\text{عمال} /ma/ \\
\text{تاب} /tab/ \\
\]
In cuneiform a lot of redundancy

\[ \text{ox} \rightarrow \begin{array}{c}
\text{triangle} \\
\text{square}
\end{array} \rightarrow \begin{array}{c}
\text{square} \\
\text{triangle}
\end{array} \]  

in Sumerian ‘ox’ is /gu/

Now, \[ \text{triangle} \] ‘thread’ is also /gu/

hence: two ways of writing /gu/

(in transliteration: gú, gù, gu₃, gu₄…)
Egyptian

Egyptian has developed tri-, bi- and monoconsonantal phonetic signs using the process called *acrophony*
the writing symbol no longer stands for one (or several) concepts, but it has the phonetic value of the **initial sound(s)** of the name of this object
Egyptian

logogram ‘hand’, Egyptian *drt* becomes a symbol for [d]

*nfr* ‘beautiful’ can be written as *nfr-n-f*
Mayan

Another example of a mixed logographic system is Mayan script
Mayan
Japanese

Another example of this mixture: Japanese

Three writing systems:

*kanji* (Chinese characters; Chinese writing is logographic): roots

*hiragana*: inflectional morphemes

*katakana*: loanwords, telegrams, etc.
Japanese

*kanji* characters (Chinese)
How do speakers of Japanese read them?

‘mountain’

Chinese ṣan
Japanese *san* or *yama*

= *on* and *kun* readings

*Fuji Yama* = *Fuji San*
On and Kun

Sumerian to Akkadian: the script designed for one language is used to write another one
on- and kun readings in Akkadian
Consonantal script (*abjad*)

Another type of script: **consonantal script** or *abjad* (one sign = one consonant, no vowels written)

Phoenician, Aramaic, Arabic, Hebrew… (and ultimately all not-Chinese based writing systems used today)

Emerged around 1500 BCE somewhere in Syria or Palestina
Semitic languages

- East Semitic (Akkadian, Babylonian, Assyrian, Eblaite...)
- West Semitic
  - Central West Semitic (Ugaritic, Phoenician, Hebrew, Moabite, Arabic...)
  - Southern West Semitic (South Arabian, Ethiopic: Ge’ez, Amharic)

Diagram:
- Proto-Semitic
  - West Semitic
    - Central Semitic
      - Old South Arabian Languages
      - Northwest Semitic
        - Canaanite
      - Ugaritic
      - Phoenician
    - Ethiopean
      - Nothern
      - Southern
        - Assyrian
        - Babylonian
        - Modern South Arabian Languages
Origin of consonantal script

From Egyptian hieroglyphic script or from Akkadian cuneiform syllabary?
both have morphographic component which *abjads* do not have
but Egyptian did not write vowels
and it would have been possible to write Egyptian using only monoconsonantal symbols
How Semitic languages work

**Classical Arabic:**

**Verbal stem forms:**
- *katab-a* ‘wrote’
- *kattab* ‘caused to write’
- *kaatab* ‘corresponded’
- *?aktab* ‘dictated’
- *takaatab* ‘kept up a correspondence’
- *ktatab* ‘copied’

**Noun forms:**
- *kutub-un* ‘books’
- *katb-un* ‘writing’ (document)
- *kaatib* ‘writing’ (process)
- *kitaabah* ‘writing profession’
- *kattaab* ‘author’
- *miktaab* ‘writing instrument’

![Diagram]

```
C V CVC
```

```
root tier
```

```
skeletal tier
```

```
inflection
```

“root-and-pattern morphology = non-concatenative morphology
perhaps there is a correlation with the type of the script
Proto-Canaanite script

The Sinai Sphinx found in 1905, dated to ~ 1500 BC
Proto-Canaanite script

Similarity with Egyptian hieroglyphs?

<table>
<thead>
<tr>
<th>Egyptian hieroglyphic</th>
<th>Sinai script</th>
<th>Early Semitic</th>
<th>Name of letter</th>
</tr>
</thead>
<tbody>
<tr>
<td>?aleph</td>
<td></td>
<td>𐤀</td>
<td>‘ox’</td>
</tr>
<tr>
<td>bet</td>
<td></td>
<td>𐤁</td>
<td>‘house’</td>
</tr>
<tr>
<td>waw</td>
<td></td>
<td>𐤂</td>
<td>‘hook’</td>
</tr>
<tr>
<td>kaph</td>
<td></td>
<td>𐤃</td>
<td>‘open hand’</td>
</tr>
<tr>
<td>mem</td>
<td></td>
<td>𐤄</td>
<td>‘water’</td>
</tr>
<tr>
<td>nahas</td>
<td></td>
<td>𐤅</td>
<td>‘snake’</td>
</tr>
<tr>
<td>?ajin</td>
<td></td>
<td>𐤆</td>
<td>‘eye’</td>
</tr>
</tbody>
</table>
Proto-Canaanite script

The Proto-Sinaitic signs match nicely the later Phoenician script:

![Proto-Sinaitic signs matching later Phoenician script]
Origin of *abjad*

Scenario: a Semitic speaker was using Egyptian writing for his language

Principles: 1) translation of signs into Semitic
2) *acrophony*

Eg. [per]    Sem. [bet]

The result is a symbol for [b], not /p/, /per/ or /pr/
Further avatars of *abjad*

The Phoenicians were to play a pivotal role in the story of the alphabet.
Greece before alphabet

Minoan civilization on Crete (2500-1500)
(named after the mythical king)
Undeciphered hieroglyphs and later Linear A script
Greece before alphabet

1627-1570 BCE: Santorini volcanic eruption put an end to Minoan civilization (may have inspired the myth of Atlantis, told by Plato)
Greece before alphabet

Soon the place of Minoans was taken by the speakers of an Ancient Greek dialect, called Mycenaean. They developed Linear B on the basis of the Minoan script.
Greece before alphabet

Linear B was deciphered in 1952
It turned out to be a syllabary with 91 syllabic sign (e.g. da, de, di, do, du)
In addition: over 100 logograms: sheep, spear, etc.

me-re-ti-ri-ja  WOMAN – 7  ko-wa -10  ko-wo 6
“grinders”     (not gu-ne)  “girls”  “boys”
The Phoenicians

Speakers of a West-Semitic language, tireless seafarers and merchants
The Phoenicians

Late form of Phoenician language is *Punic* (Carthage)
The Phoenicians

The Phoenicians used a version of abjad, closely resembling the Canaanite and other West Semitic scripts.

Sarcophagus of King Ahiram of Byblos
The emergence of the alphabet

Greek alphabet is based on a Semitic abjad

Arguments:
1) the order of the letters
2) the names of the letters: ἀλφα, etc. are meaningless in Greek, but acrophonic in Semitic: א (Proto-Semitic root כ-ל-f ‘domesticate’ > Ugaritic ʿalpu ‘bull’, Hebrew ʿelef)
The emergence of the alphabet

<table>
<thead>
<tr>
<th>Hebrew Letter</th>
<th>Phoenician</th>
<th>Greek</th>
</tr>
</thead>
<tbody>
<tr>
<td>beth</td>
<td>b</td>
<td>beta</td>
</tr>
<tr>
<td>gimel</td>
<td>g</td>
<td>gamma</td>
</tr>
<tr>
<td>daleth</td>
<td>d</td>
<td>delta</td>
</tr>
<tr>
<td>waw</td>
<td>w</td>
<td>digamma</td>
</tr>
<tr>
<td>kaph</td>
<td>k</td>
<td>kappa</td>
</tr>
<tr>
<td>lamed</td>
<td>l</td>
<td>lambda</td>
</tr>
<tr>
<td>mem</td>
<td>m</td>
<td>mu</td>
</tr>
<tr>
<td>nun</td>
<td>n</td>
<td>nu</td>
</tr>
<tr>
<td>reš</td>
<td>r</td>
<td>rho</td>
</tr>
<tr>
<td>šin</td>
<td>sh/s</td>
<td>sigma</td>
</tr>
<tr>
<td>taw</td>
<td>t</td>
<td>tau</td>
</tr>
<tr>
<td>pe</td>
<td>p</td>
<td>pi</td>
</tr>
</tbody>
</table>
The emergence of the alphabet

Some minor adjustments:
Problems?

Phoenician (as other Semitic scripts) was written right to left, while Greek is written left to right. Problem? In fact, older Greek texts are often written in **boustrophedon** (‘as an ox ploughs’): alternatingly from left to right and right to left.

THIS TEXT IS
FO ELPMAXE NA
BOUSTROPHEDON,
GNINRUT XO EHT
METHOD OF WRITING
EREHWESLE DNA ECEERG TNEICNA NI
Problems?

*abjad*: script without signs for vowels

*alphabet*: script with signs for V and C

The great adjustment: Greeks invented signs for vowels using leftover symbols for sounds that weren’t in the Greek language but were in the Phoenician language, thus creating the first true alphabet.
Abjad becomes an alphabet

Possible scenario:

*Phoenician*: (drawing Δ)

“this is 𐤀alif, it stands for /æ/” ([আa])

*Greek* (no /æ/ in the phonological inventory)

“Gotcha, this one stands for /a/…”

Same story with other vowels:
From Greece to Rome

Principal intermediaries between Greeks and non-Greeks in the West: *Etruscans*

Etruscans learned the alphabet from the Greeks and transmitted it to the Romans. Most of their language is unknown and the texts mostly consist of names of people and places.
Gold leaves from Pyrgi
~ 500 BCE
Bilingual Etruscan and Phoenician

 horrified by X and Zao

lrbt l'strt 'sr qds
for the Lady, for Astarte (is) this holy place
Greeks in Ancient Italy

The Greeks settling in Italy came from different regions of Greece

**metropolises:**
- Locris (Central Greece)
- Achaea (North.Peloponnese)
- Sparta (Peloponnese)
- Euboea
From the Greeks to Etruscans

Etruscans learned the version of Greek alphabet used by colonists from Euboea (different from the “standard” Attic one!)

The reason why Roman X ≠ Greek X

<table>
<thead>
<tr>
<th>Greek</th>
<th>Euboea, etc.</th>
<th>East Ionia, Attica, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Φ</td>
<td>$ph$</td>
<td>$ph$</td>
</tr>
<tr>
<td>Χ</td>
<td>$ks$</td>
<td>$kh$</td>
</tr>
<tr>
<td>Ξ</td>
<td>-</td>
<td>$ks$</td>
</tr>
<tr>
<td>ψ</td>
<td>$kh$</td>
<td>$ps$</td>
</tr>
</tbody>
</table>
From the Greeks to Etruscans

Etruscans learned the version of Greek alphabet used by colonists from Euboea (different from the “standard” Attic one!)

Euboea, etc. East Ionia, Attica, etc

H (ḫēt) [h] [ē] The reason why Roman H ≠ Greek Ἑ
The Etruscans

The Etruscan language had a phoneme [f] which Greek did not have (they had [pʰ]). Another case of linguistic intuition in the antiquity: F + [ʍ] = voiceless [ʍ] ~ [f]:

Hence: F for [f] in Roman alphabet
The Etruscans

The Etruscan language had no distinctive voiced consonants

- Β and Δ were not used
- all letters were preserved in abecedaria
- Π (gamma, Semitic gimel \(^\wedge\)) was used for [k], just as K and Q

Abecedarium
Abecedarium = Alphabet inscriptions
The Romans

Latin had voiced stops, so Romans had to add a stroke to \text{\textbackslash C} (letter “C”) to get G for voiced velar stop [g], and kept the Etruscan rule of using Q before [u] and K before [a].
Theoretical recap

No strict division into phonographic and logographic systems. Rather, there is a phonography-logography continuum.
Theoretical recap

No natural progression from logography to syllabary to alphabet (a.k.a. the principle of unidirectional development)
For instance, Semitic abjad developed into East Asian *brahmi* and Ethiopian *abugida*
where each character denotes a consonant accompanied by a specific vowel

+ + + +
ka  ki  ku  ke  ko
Future Challenge: Phaistos disk

~ 1700 BCE (Crete); 45 different impressions; 2-7 signs in a field
Future Challenge: Indus Valley

Settlements from 3600
Mohenjo-daro and
Harappa
Future Challenge: Indus Valley
Future Challenge: Indus Valley

Frequent symbol: unicorn seal
Future Challenge: Indus Valley

Sample tablets:
Future Challenge: Indus Valley

Problems:
- No bilingual texts
- Mostly very short texts (5 glyphs)
- No assignment to specific language
  (usual hypothesis: Dravidian)
- Over 400 signs,
  40% of which is attested only once
Future Challenge: Rongorongo

Easter Island (Rapa Nui)
Future Challenge: Rongorongo
Future Challenge: Rongorongo
Thank you!

- to Carol Neidle for organizing
- to BULA and UCA for sponsoring
- to Danny Erker for providing the clicker
- to all of you for coming tonight
- and above all to the mankind for inventing writing