

السادس في خروج شاكوئ من الحلوة والمحايدة ٥

خرج من الحلوة ووصل خبره إلى الخاوص والعاص والزيفاد علموا بأنه قد خرج من الحلوة والأزواب وهو يطلب المالك له بيت فطر بالها ان تعمل له طعاماً وقد مه يمن يده ليكون أول كله عندها وكان لها سرح من البقر فامرت حتى لقيه بقنة وجلبها وسلكها وأما وكم إقاموا صدقة طحونوا مثلها طحنت لبيته فلما فرغوا من الطعام يمن يده فقد يده إلى الأطعمة ولعطيها الشاش

Writing Systems of the World's Languages

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საქართველოს განვითარების
მინისტრის მიერ განვითარების
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კონსტანტინე ბასილევს

(სეავლა მიმდინარეობს საცხოვრის ღა
ეპონის განვითარების საშუალების

30 a 30 ഉത്തരം

WINDOWS XP, WORD, EXCEL, INTERNET, PHOTOSHOP, COREL

რესთაველის №28 III სართული

რუსთაველი	რუსთაველი
№28	№28
III სართულ	III სართული
99 73 57	99 73 57

ቻ፡ አሸና፡ ማሮ ተቀባዩ፡ ዘመኑ ቅርቡ
በዚህ ማረጋገጫ ጥሩ ይሁት፡ ይሁት የ
ስልክ፡ ይሁት፡ የ፡ በዚህ ትኩ፡ እኩ-
ያኩ ቅርቡ እኩ የሚከተሉበት ቅ-
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በኩር፡ ለኩር፡ የኩር፡ የኩር፡ የኩር፡

Projecto de Reabilitação do Umbul Binangun Tamansari realizado com o apoio da Fundação Calouste Gulbenkian, foi inaugurado por S. Exa. O Sultão Hamengku Buwono X, no dia 22 de Agosto de 2004.

HENK

Sri Sultan Hamengku Buwoño X

Tom Blumer

Dr. José Blanco

雍和宮

雍和宮
蒙古文：雍和宮



In English, words look like this:	word
Tibetan:	བླାଙ୍କ
Korean:	한글

Why do we use different scripts?
Do these scripts work differently?
How are they spread out in the world?

Agenda:

1. Introduction
2. Typology — types of writing systems
3. History of writing
4. World distribution

a b c d e f g

h i j k l m n

Introduction

o p q r s t u

v w x y z

Introduction

~7,000 spoken languages in the world (SIL)

spoken language

- universal, unlearned
- "language" — English, Spanish, Japanese

written language

- minority, learned
- "writing system" (/ "script") — Latin alphabet, Japanese script

Introduction (cont.)

language ≠ script!!!

Latin alphabet (abcde...)
used by both English and Spanish

Romanian language
uses both Latin (abcde...)
and Cyrillic (абвгд...)

Introduction (cont.)

Language	Writing system	Example
English	Latin alphabet	Spanish is a Romance language that originated in Spain.
Spanish	Latin alphabet	El idioma español o castellano es una lengua romance del grupo ibérico.
Japanese	Japanese script	スペイン語もしくはカスティーリヤ語は、インド・ヨーロッパ語族イタリック語派に属する言語。
Romanian	Latin alphabet	Privea în zare cum pe mări Răsare și străluce, Pe mișcătoarele cărări Corăbii negre duce.
Romanian	Cyrillic alphabet	Привя ын заре кум пе мэрь Рэсаре ши стрэлуче, Пе мишкэтоареле кэрэргэ Корэбий негре дуче.

Introduction (cont.)

glyph: A A Ä A A æ Å Á

grapheme: <A>

typeface: Arial Antiqua
 Fraktur SætAC

Introduction (cont.)

diacritic:

French:	a	→	â
Greek:	ω	→	ጀ
Hindi:	द	→	ଡ

Typology

Typology

6 basic types of writing system:

1. alphabet
2. abjad
3. syllabary
4. abugida
5. logography
6. mixed system

Alphabets

graphemes → consonant and vowel sounds

English:

cats and dogs
c v cc v c c c v c c

Georgian:

ქართული
< k a r t u l i >

Abjads

graphemes → only consonants

Arabic:

العربية
< h y b r 3 l ' >

Hebrew:

= 'al3arabiyyah
ישראל
< l ' r s y >

= yisra'el

Abjads (cont.)

optional vowel diacritics; uncommonly used

Hebrew:

שְׁרָאֵל
yisra'el

< | ' r s y >
e a - i
= yisra'el

Syllabaries

graphemes → syllables

Japanese:
(hiragana)

たべられる
< ta be ra re ru >

Ndyuka:

ke mi gadu | mi masal
< ke mi gadu | mi masal >

Abudigas

vowels are diacritics on consonants

Hindi:

द → दे

<d> <de>

न → ना

<n> <nā>

र → री

<r> <rī>

Abudigas (cont.)

vowels are diacritics on consonants

Hindi:

देवनागरी
< de v n ā g rī >

Amharic:

በ = <bä>

ገ = <gä>

ደ = <dä>

አበጋዳ
< ä bu gi da >

Abudigas (cont.)

consonants may have an **inherent vowel** and a diacritic to suppress it:

Burmese:

န



မြန်မာ

< na >

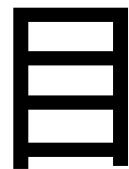
< mra n ma >

Logographies

graphemes → sound and meaning

Mandarin

Chinese:



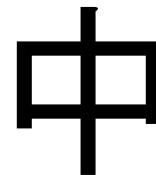
< mù >

"eye"



< yī >

"one"



< zhōng >

"center"



< mù >

"tree"



< yī >

"clothes"



< yāng >

"center"

Logographies (cont.)

logographies are NOT "picture writing"

Mandarin
Chinese:



< lúo >
"mule"

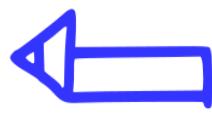
Sumerian cuneiform:



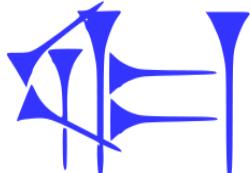
1



2



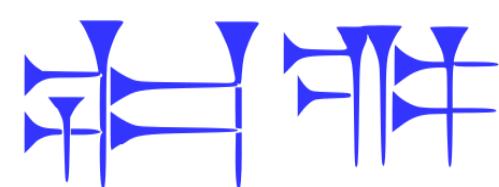
3



4



5



6

< sag >

"head"

Mixed systems

use a combination of the previous systems

Japanese:
(logography
+ syllabary)

食べられる
< TA be ra re ru >
"to be eaten"

食品

< SHOKU HIN >
"food products"

Mixed systems (cont.)

Egyptian hieroglyphs:
(logography
+ abjad)



< j t r w WATER >
[j?t?r?w]
"the Nile"

→ <ꜥ3 ḥpr n rꜥ>
"great is the image
of Ra"
(name of
Thutmose II)

Let's test our knowledge!



የኢትዮጵያ የክፍተት ብቻ

<'ywg 'mdh>

<'t3wlb>

የታደሰለ

<'trgg>

የታደሰለ

<'bl>

በለ

<'3yrš>

የታደሰለ

<'trbqw3>

የታደሰለ

<'dbk>

ብድብ

<'trrm>

የታደሰለ

<'tylwk>

የታደሰለ

<'tmwrgt>

የታደሰለ

የመንግሥት <'hwm>

<'pmwl yrṭq>

የመንግሥት

<'twt'r>

የታደሰለ

<'lht>

ለት

<'mrg hwm>

የታደሰለ ማንግሥት

<'kmwts'>

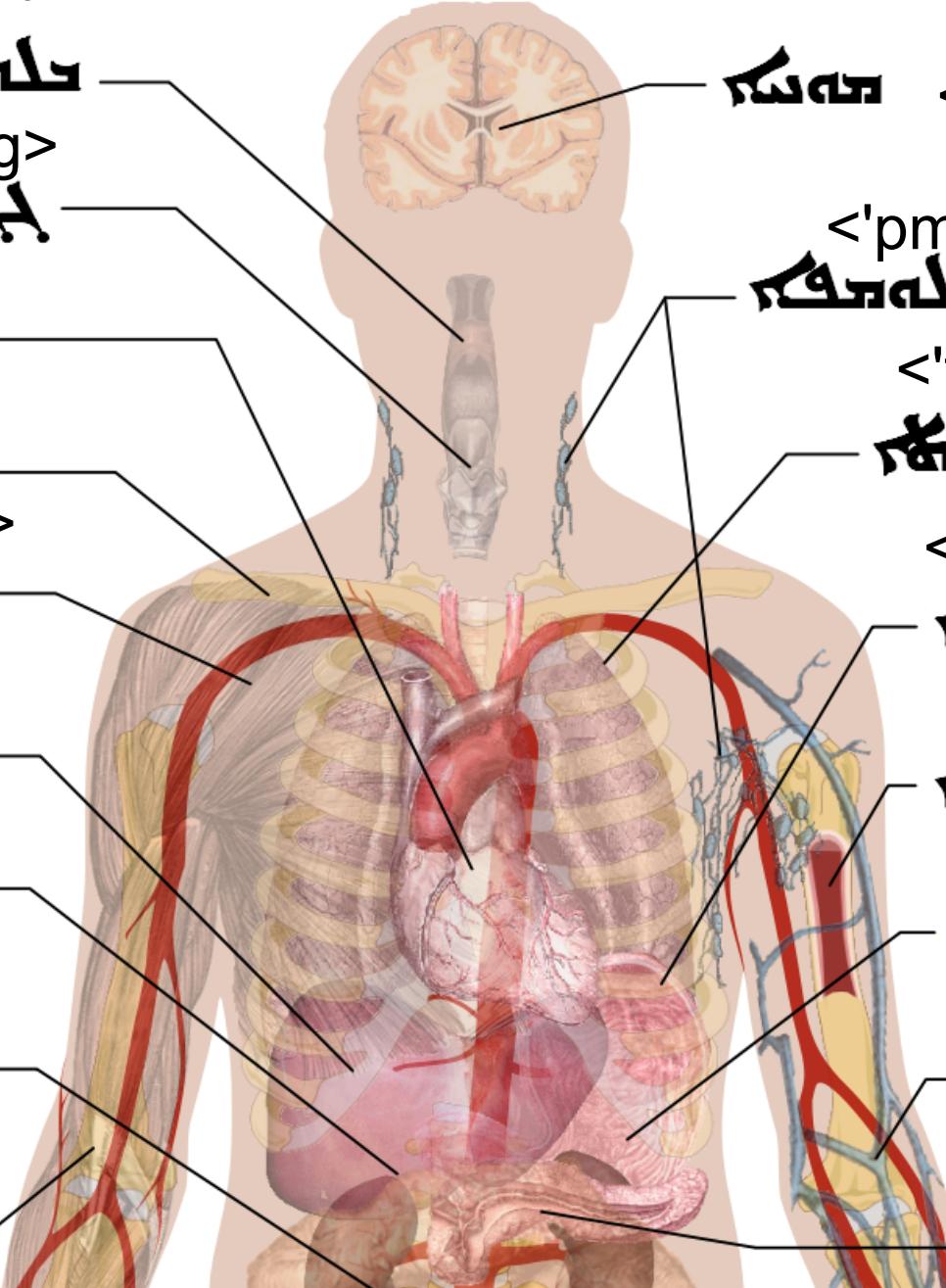
የታደሰለ

<'dyrw>

የታደሰለ

<'tplš>

የታደሰለ



< tsalagi gunadeloquasdi dudatsisgvi >

GWY JESGTL^{OL} SL^hET

Cherokee Central Schools

RAVENSFORD DR.

ΛΡΣΜΛ

< l a k i n e >

ΧΥΡΜΗΝ↑

< ta m a n i u >

<ΛΣΕ

< ke l s e >

□◊ΣΡ↑

< bu r s a u >

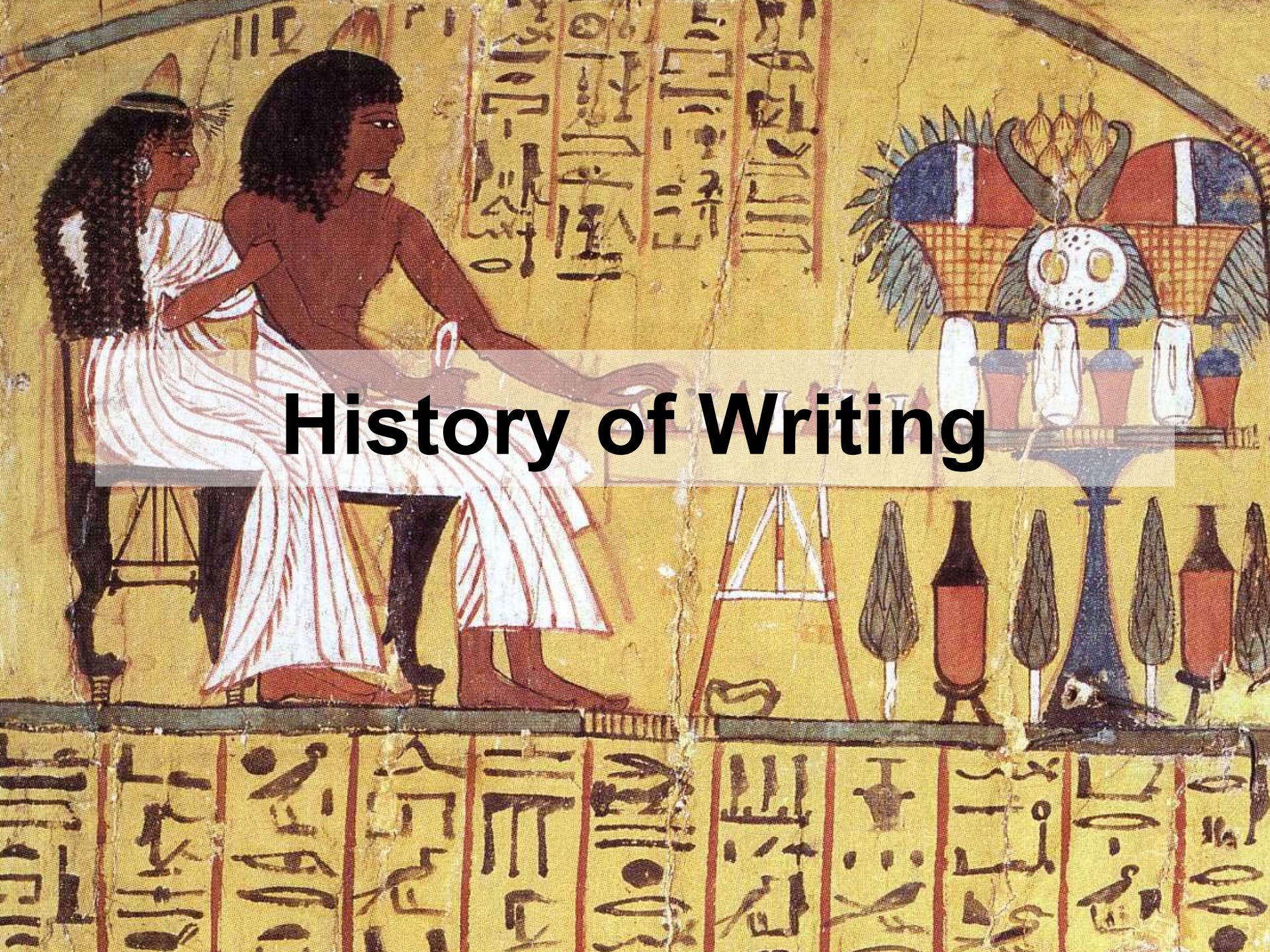
ΜΡΛ

< i a ka >

Ρ◊ΡΨΣ

< a r a ti ko s >

History of Writing



History of Writing

writing = human invention

earliest known writing:

~3200 BCE

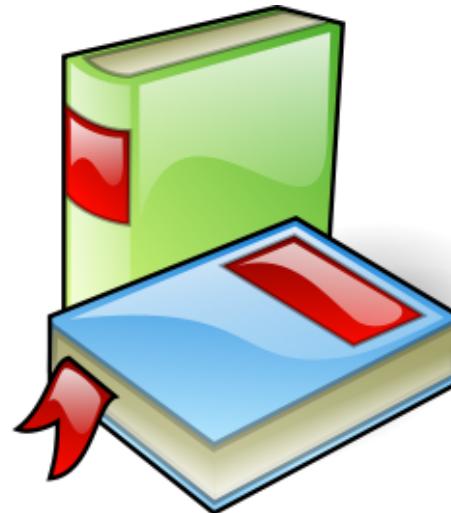
Sumerian cuneiform

Mesopotamia



History of Writing (cont.)

Q: How does an unwritten language get a script?



A: 3 different methods:

Independent Invention

Method 1: Independent Invention

- Sumerian cuneiform ~3200 BCE



- Chinese writing ~1200 BCE



- Mesoamerican writing ~900 BCE



Independent Invention (cont.)

Q: *Why* and *how* did this happen?

A: development from **pictographs**

- Sumerian cuneiform - bookkeeping
- Chinese writing - oracle bones
- Mesoamerican writing - calendrical?

Cultural Diffusion

Method 2: Cultural Diffusion
= spread of the idea of writing

Example: Cherokee script

- inventor: Sequoyah
- ~1809 CE
- inspired by Latin script
- syllabary



Cultural Diffusion (cont.)

Egyptian Hieroglyphs are assumed to have been inspired by cuneiform ~3200 BCE



Borrowing

Method 3: **Borrowing**

= spread of a particular script

Latin: LVGETE·O·VENERES·CVPIDINESQVE

English: Mourn, O Venuses and Cupids.

Hebrew:

כל בני האדם נולדו בני חוריין

Yiddish:

יעדר מענטש וווערט געבעירן פרי

Phoenician script

~1800 BCE from Egypt
originally used for
Canaanite languages:

Phoenician,

Hebrew,

Aramaic

maritime trade

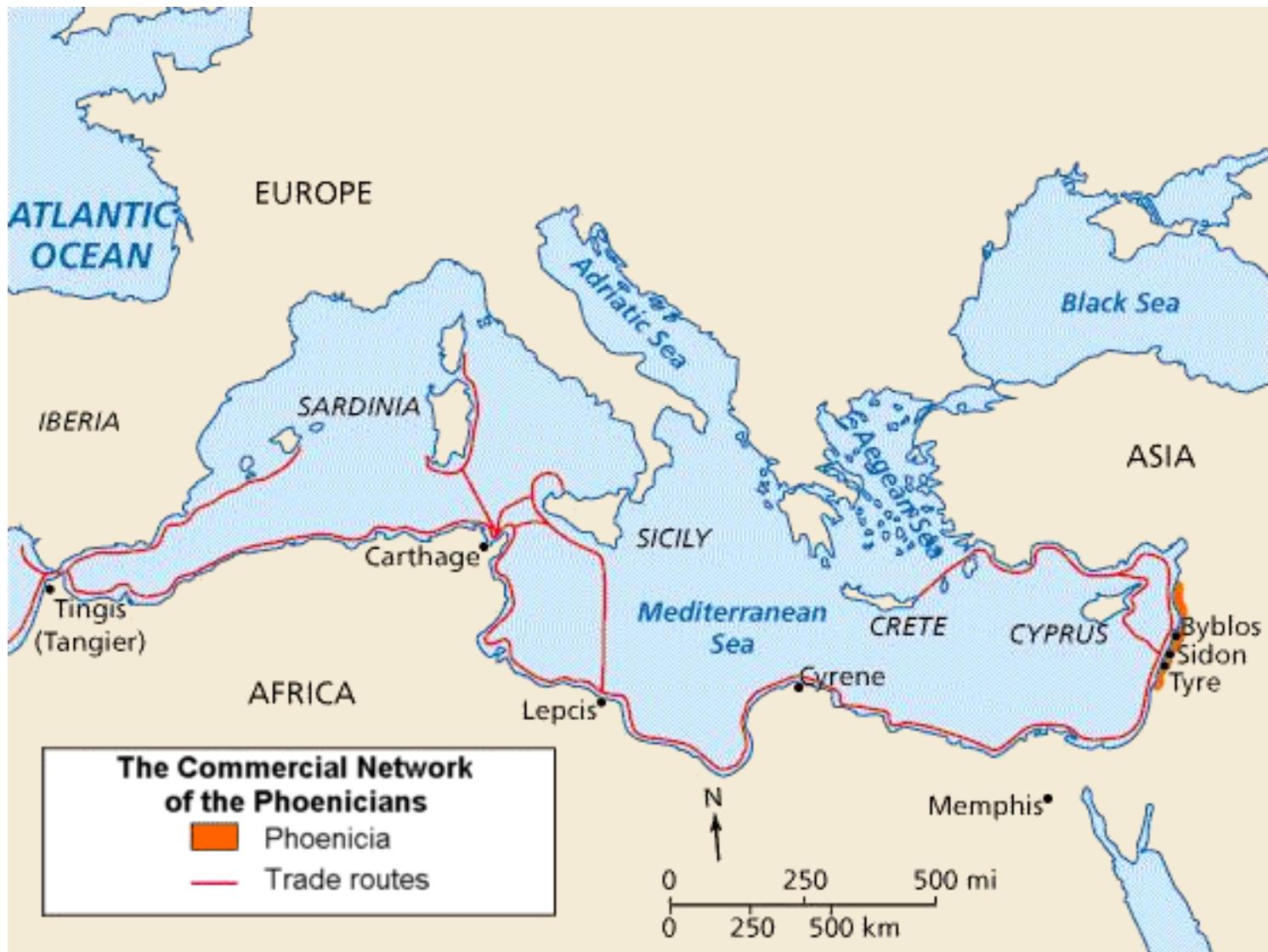
→ **borrowed by**

Greeks

(8th century BCE)

𐤀	,	𐤕	P
𐤁	Y	𐤔	S
𐤂	K	𐤁	Q
𐤃	L	𐤄	R
𐤄	M	𐤅	Š
𐤆	N	𐤈	T
𐤇	W	𐤉	Z
𐤋	H	𐤌	S
𐤍	'	𐤎	‘

Phoenician script (cont.)



Phoenician script (cont.)

Compare these Phoenician and Greek letters:

𐤀 → A

𐤁 → B

𐤁 → Γ

𐤄 → Δ

𐤆 → E

𐤉 → Z

Q: What has happened here?

Evolution

A: **evolution** — a game of telephone

Phoenician: w 𐤉𐤈𐤀 𐤌 𐤉

Ionian Greek: ΠΕΡΙΚΛΕΣ

Attic Greek:



Latin:

PERIKLES

Typological Evolution

Rebus principle:

Egyptian:  <S3> "pintail duck"
→ <s3>

Mayan:  <KAH> "fish fin"
→ <ka>

Invention of the Greek alphabet:

Phoenician:	𐤁 < b >	𐤃 < d >
Greek:	Β < b >	Δ < d >

Summary so far

3 ways for writing to spread

- **independent invention**
- **cultural diffusion**
- **borrowing**

in the process grapheme shapes and typology
can change through **evolution**

independent inventions of writing:

- **Sumerian cuneiform**
- **Chinese writing**
- **Mesoamerican writing**

Family Tree of Modern Writing

Western scripts:

Phoenician



Greek: Α Β Γ Δ Ε Ζ Η Θ Ι Κ Λ Μ Ν Ξ Ο...



Latin: A B C D E F G H I J K L M N O...

Cyrillic: А Б В Г Д Е Ж З З И К Л М Н О...

Family Tree of Modern Writing (cont.)

Middle Eastern scripts:

Phoenician



Aramaic & Hebrew:

א ב ג ד ה ז ח ט ي ك ل م ن س ع ف ص ق

Arabic:

ا ب ج د ه و ز ح ط ي ك ل م ن س ع ف ص ق
ر ش ت ث خ ذ ض ظ غ

Family Tree of Modern Writing (cont.)

Indic scripts:

Aramaic



Brahmi

+

ka ki ku ke ko

+

kā kī kū kai kau



Indic scripts

ଓଲ୍ଯାଙ୍ଗ

ଓଡ଼ିଆ ଶୁଣି

କମ୍ପ୍ୟୁଟର

ହିନ୍ଦୁମ୍ବାର୍ଦ୍ଦା ନବଭାରତ ଟାଇମ୍ସ

CORRESPONDING ENGLISH	ARCHAIC ROMAN	ARCHAIC GREEK	PHOENICIAN	BRĀHMA	DEVELOPMENTS OF BRĀHMA					MODERN NĀGARĪ
A	A	A	፩	କ	କ	ମ	ଅ	ଶ	ଶ୍ରୀ	ଶ୍ରୀ
K	K	K	କ	ତ	+	ତ	ତ୍ତ	ତ୍ତ୍ତ୍ଵ	ତ୍ତ୍ଵୀ	ତ୍ତ୍ଵୀ
G	C	ି	ି	ଈ	ଈ	ପ	ନ୍ତ	ନ୍ତ୍ର	ନ୍ତ୍ରୀ	ନ୍ତ୍ରୀ
T	T	T	ତ	ଥ	ଥ	ତ୍ର	ତ୍ର୍ତ୍ତ	ତ୍ର୍ତ୍ତ୍ଵ	ତ୍ର୍ତ୍ତ୍ଵୀ	ତ୍ର୍ତ୍ତ୍ଵୀ
TH*	⊗	⊗	ଠ	ଓ	ଓ	ବ୍ର	ବ୍ର୍ତ	ବ୍ର୍ତ୍ତ	ବ୍ର୍ତ୍ତୀ	ବ୍ର୍ତ୍ତୀ
D'	D	ଦ	ଦ	ଦ	ଦ	ଦ୍ଵ	ଦ୍ଵ୍ର	ଦ୍ଵ୍ର୍ତ	ଦ୍ଵ୍ର୍ତୀ	ଦ୍ଵ୍ର୍ତୀ
P	ର	ର	ର	ର	ର	ପ୍ର	ପ୍ର୍ତ	ପ୍ର୍ତ୍ତ	ପ୍ର୍ତ୍ତୀ	ପ୍ର୍ତ୍ତୀ
B	B	B	ବ	ବ	ବ	ପ୍ର୍ତ୍ତ୍ଵ	ପ୍ର୍ତ୍ତ୍ଵୀ	ପ୍ର୍ତ୍ତ୍ଵୀ	ପ୍ର୍ତ୍ତ୍ଵୀ	ପ୍ର୍ତ୍ତ୍ଵୀ

Family Tree of Modern Writing

(cont.)

East Asian scripts: Chinese → Japanese

Kana Development Chart											
Hiragana 平仮名					Katakana 片仮名						
あ 安	い 以	う 乎	え 衣	お 於	ア 阿	イ 伊	ウ 宇	エ 江	オ 才	う 於	
か 加	き 机	く 久	け 计	こ 己	カ 加	キ 機	ク 久	ケ 介	コ 己	ク 己	
さ 左	し 之	す 寸	せ 世	そ 曾	サ 散	シ 之	ス 須	セ 世	ソ 曾	セ 曾	
た 太	ち 知	つ 川	て 天	と 止	タ 多	チ 千	ツ 川	テ 天	ト 止	ト 止	
な 奈	に 仁	ぬ 奴	ね 祐	の 乃	ナ 奈	ニ 仁	ヌ 奴	ネ 祐	ノ 乃	ノ 乃	
は 波	ひ 比	ふ 不	へ 部	ほ 保	ハ ハ	ヒ 比	フ 不	ヘ 部	ホ 保	ホ 保	
ま 末	み 美	む 武	め 女	も 毛	マ 末	ミ 三	ム 牀	メ 女	モ 毛	モ 毛	
や や		ゆ 由		よ 与	ヤ も	ト 以	ユ 由	エ 衣	ヨ 与	ヨ 与	
ら 良	り 利	る 留	れ 礼	ろ 呂	ラ 良	リ 利	ル 流	レ 礼	ロ 呂	ロ 呂	
わ 和	ゐ 爲		ゑ 恵	を 遠	ワ 和	ヰ 井	于 宇	エ 恵	ヲ 乎	ヲ 乎	

Family Tree of Modern Writing (cont.)

East Asian scripts (cont.):

diffusion → Korean Hangeul



Summary

Cuneiform → Egyptian → Phoenician

1. → Greek → Latin, Cyrillic
2. → Aramaic/Hebrew → Arabic
3. → Aramaic/Hebrew → Brahmi → Indic

Chinese → Japanese, Korean

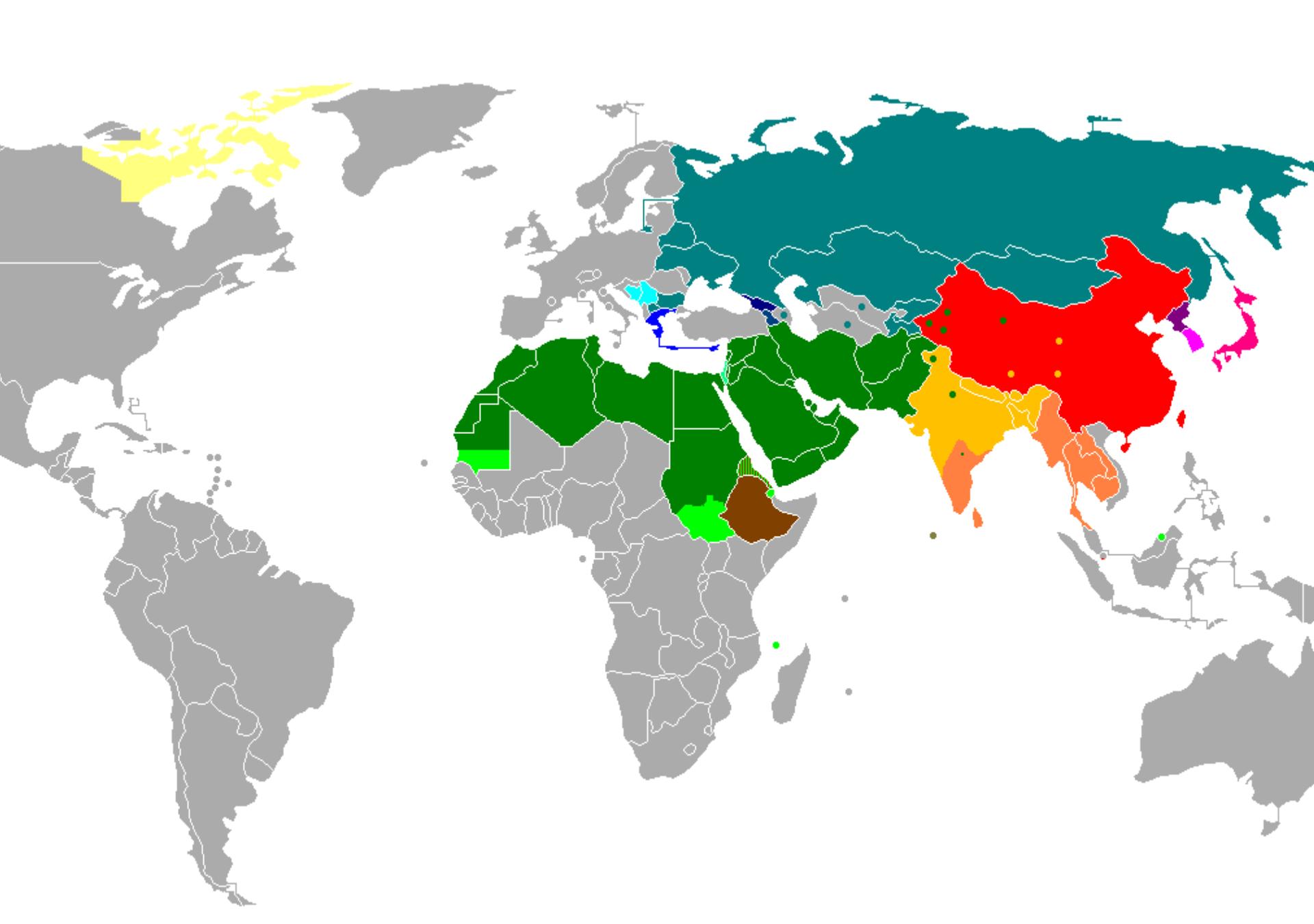
World Distribution



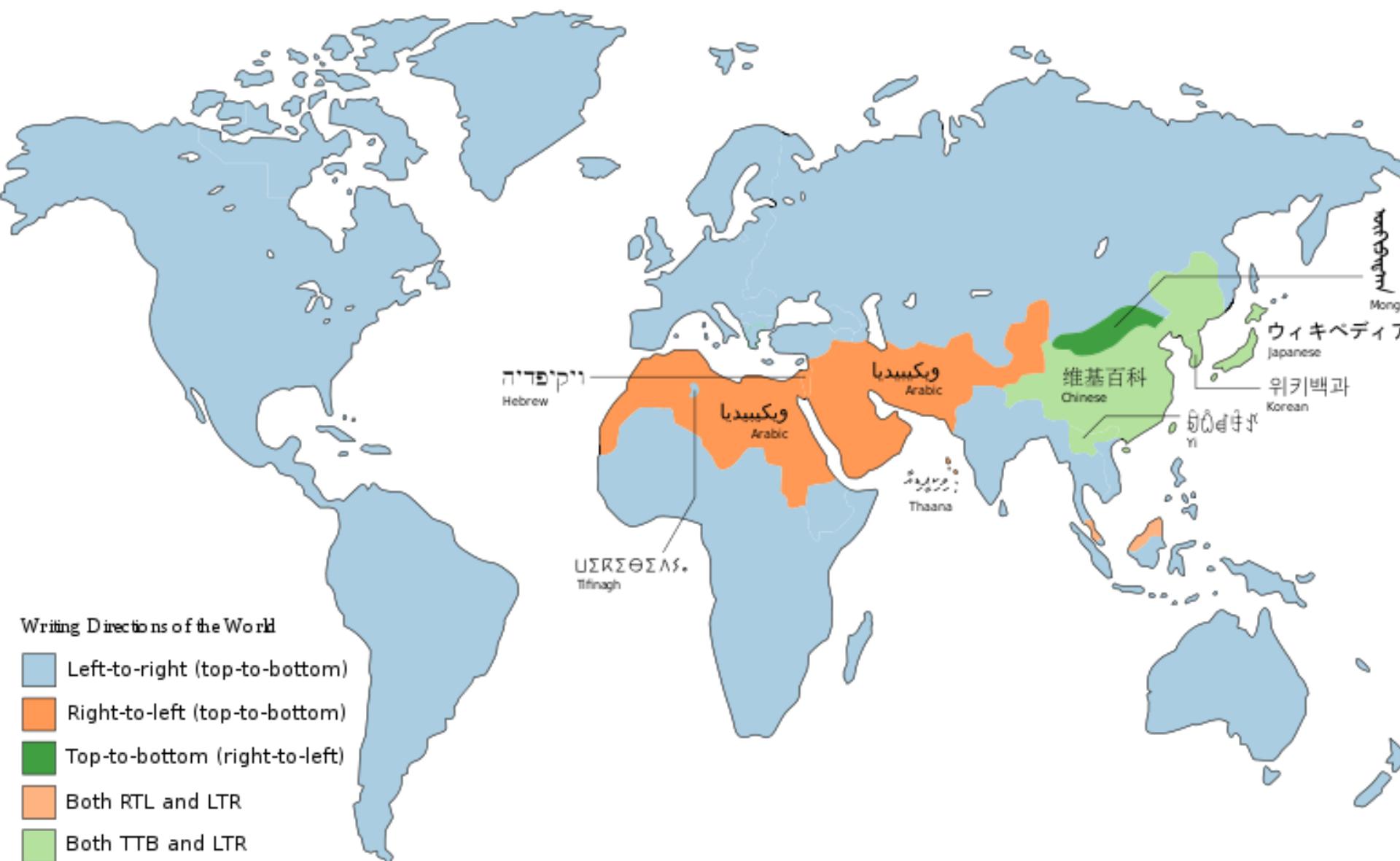
Overview

The vast majority of people in the world use one of the following scripts:

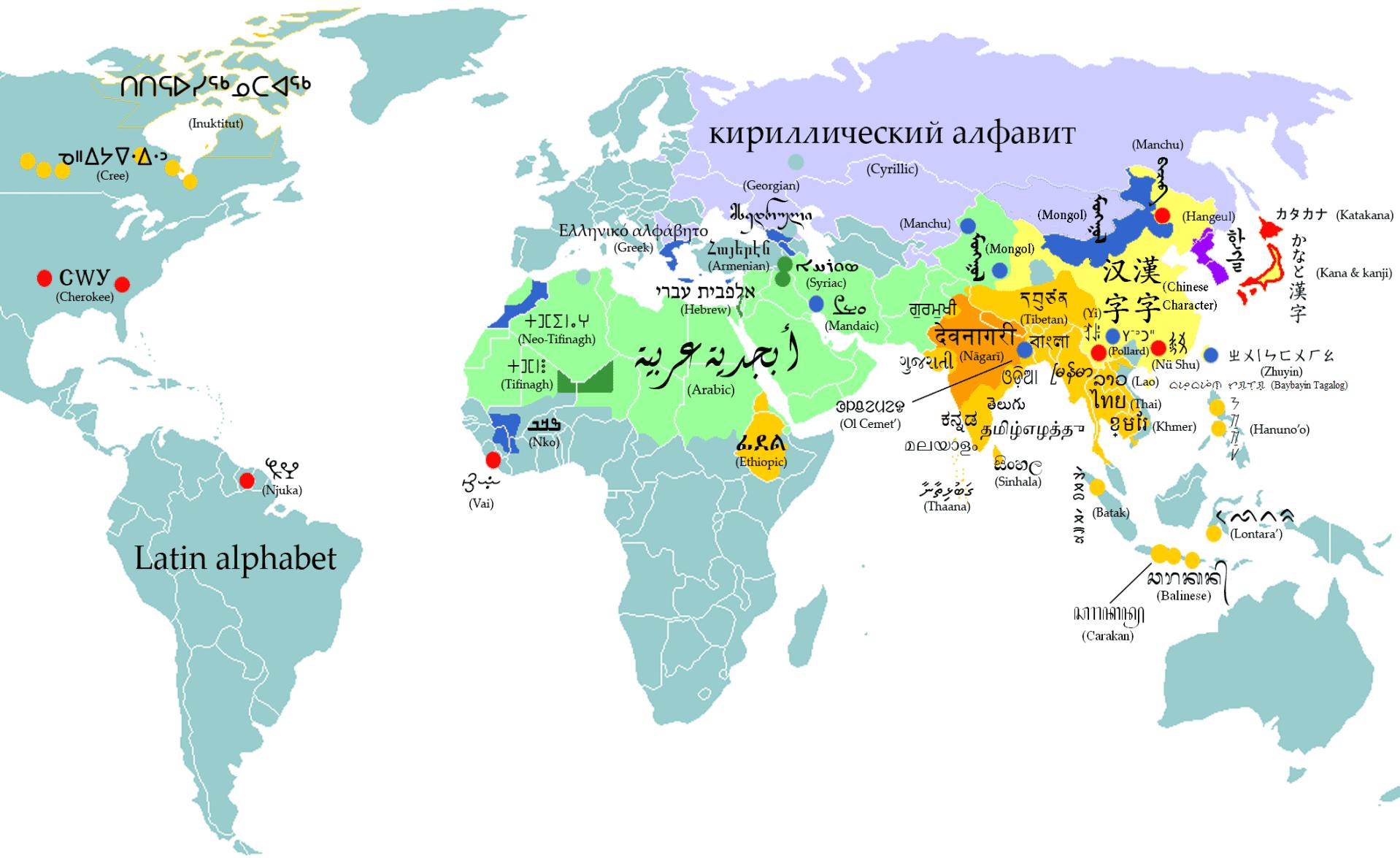
- Latin
- Chinese (漢字)
- Indic (ନାଗରୀ, বাংলা, தமிழ், ...)
- Arabic (أَبْجَدِيَّة عَرَبِيَّة)
- Cyrillic (Кириллица)



Directionality



Obscure Scripts



Thaana (තුවානා)

used in the Maldives to write the Dhivehi language



invented in 18th century based on numerals, the local Indic script, and Arabic

1 <1> → ɿ <h>
2 <2> → ɿ <š>
3 <3> → ɿ <n>

Thaana (cont.)

vowels written with obligatory vowel markings

Vowels

ނ	ރ	ބ	ޅ	ކ	އ
ވ	މ	ފ	ދ	ތ	ލ



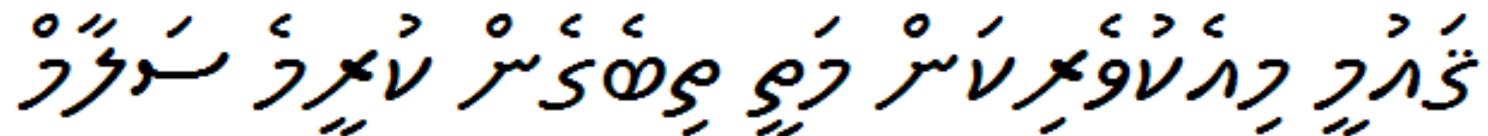
alifu sukuun

Vowels

I	a	ā	i	ī	u	ū
II	e	ē	o	ō		

Thaana (cont.)

example:

A horizontal row of Thaana characters, which are stylized, rounded, and somewhat abstract symbols used for writing the Maldivian language.

< gaumee mi ekuverikan matee tibegen kureeme salaam >

Q: What type of writing system is this?

Voynich manuscript

Pecores offerez ceteros etenq; ceteros
glosses a haec collera follo recte eod
glossa qd citoq; qd ecclia pocc
decors recte eod et eod decors das
glossa citoq; qd citoq; qd das
zor et haec olla ceteri cros dant
Pecores recte qd glossa cetera qd
dant cros qd dant cetera follo recte eod
decors offam offam dant cros cros
follo recte qd glossa cetera offam cros
offam offam cetera dant
dant offam offam cros
ceteri dant



thank you

شکرا

благодаря

謝謝

ευχαριστώ

ধন্যবাদ

շնորհակալություն