Orthographies

Enriching Language Creation & World Building

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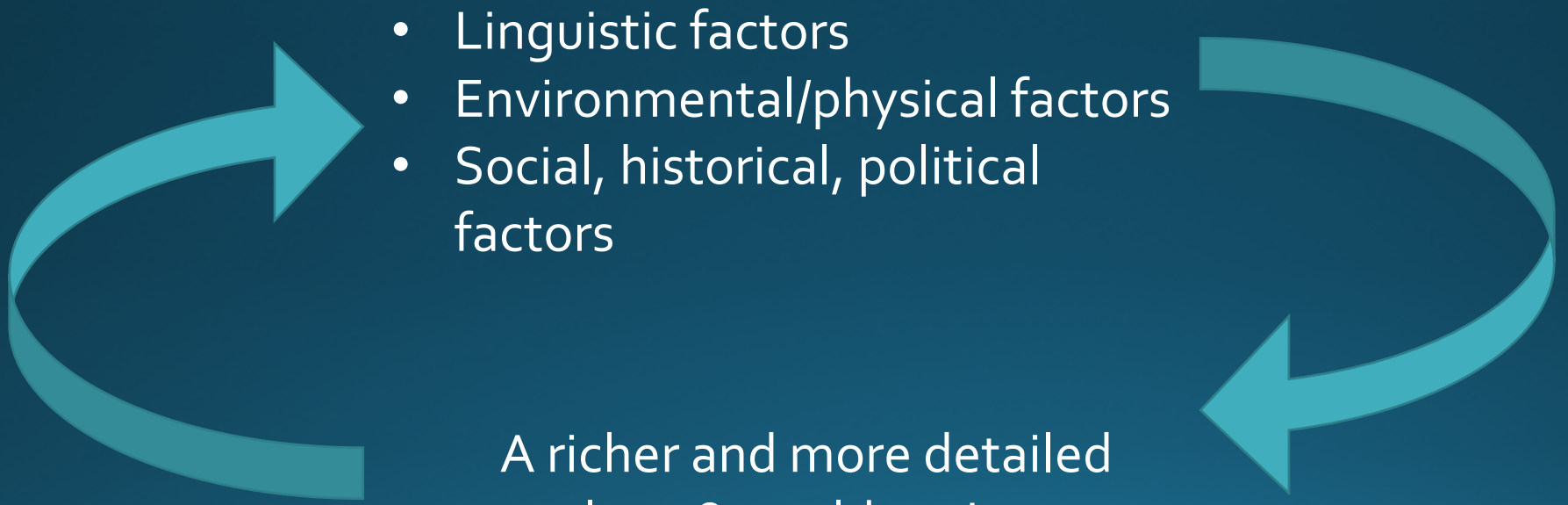
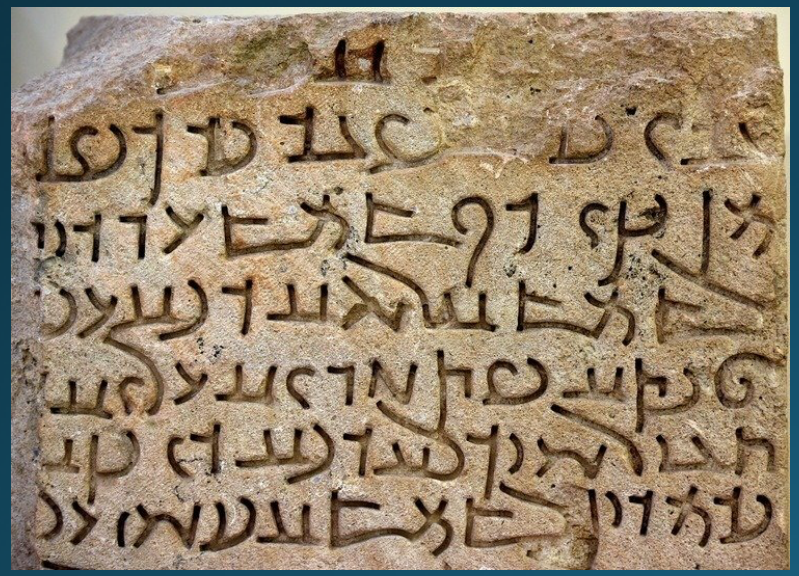
Topics

- Overview of some orthography types (with examples)
- Things to consider when creating a (naturalistic) orthography

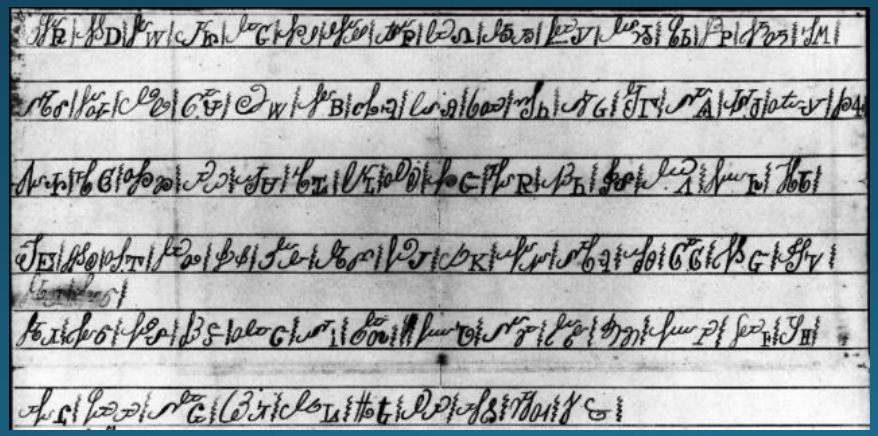


Orthography

- Writing system of a language
- Alphabets, syllabaries, abjads, abugidas, logograms, combinatory systems, etc.



Aramaic alphabet



Cherokee syllabary

Mayan logosyllabary

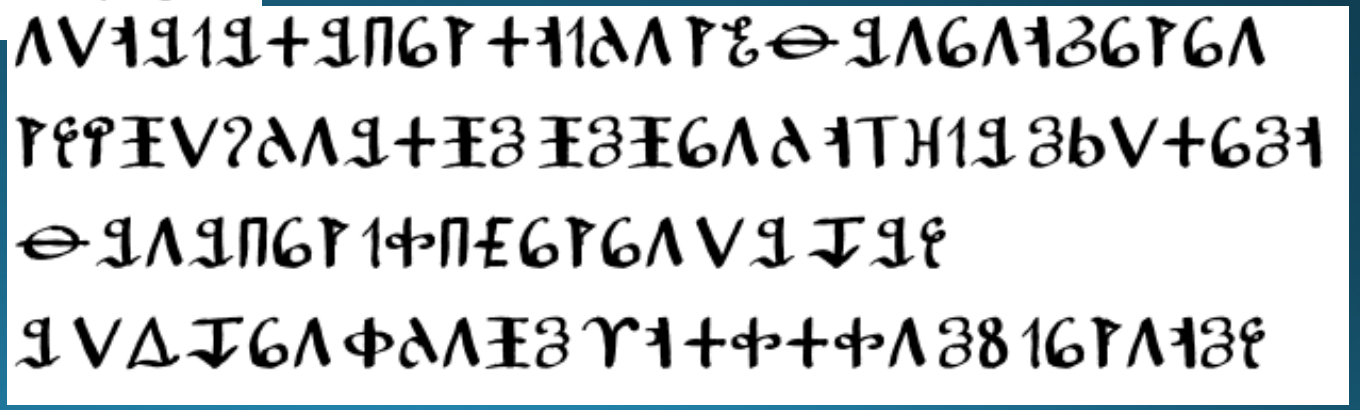
Alphabets

- One phoneme to one symbol basis
- Obvious exceptions, typically as the language undergoes sound changes, but the orthography remains set

Բոլոր մարդիկ ծնվում են ազատ ու հավասար՝ իրենց արժանապատվությամբ և իրավունքներով: Նրանք օժտված են բանականությամբ ու խղճով, և պարտավոր են միմյանց նկատմամբ վարվել եղբայրության ոգով:

Armenian alphabet

Rílin alphabet



Syllabaries

- One symbol per syllable basis

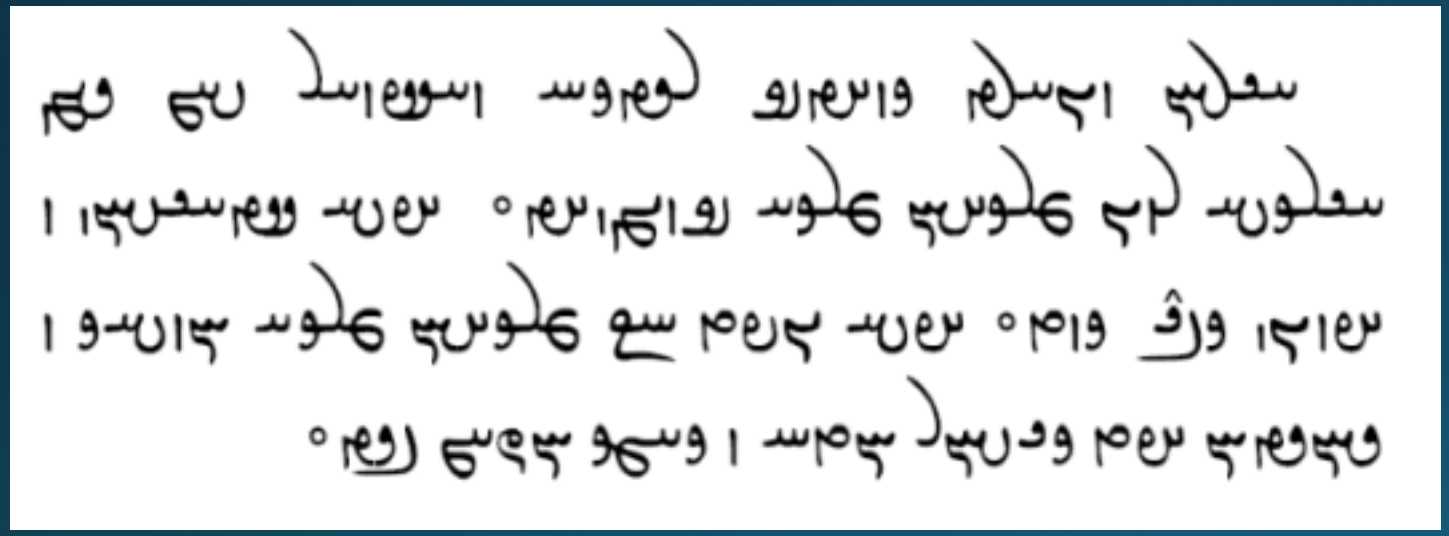
ᐃ ᐄ i	ᐅ ᐆ u	ᐊ ᐋ a	ʰ h
ᐱ ᐲ pi	ᐳ ᐴ pu	ᐸ ᐹ pa	ᑉ p
ᑎ ᑏ ti	ᑐ ᑑ tu	ᑕ ᑖ ta	ᑦ t
ᑭ ᑮ ki	ᑯ ᑰ ku	ᑲ ᑳ ka	ᒃ k
ᒋ ᒌ gi	ᒍ ᒎ gu	ᒐ ᒑ ga	ᒡ g
ᒥ ᒦ mi	ᒪ ᒫ mu	ᒪ ᒧ ma	ᒻ m
ᓂ ᓃ ni	ᓄ ᓅ nu	ᓇ ᓈ na	ᓐ n
ᓯ ᓰ si	ᓱ ᓲ su	ᓴ ᓵ sa	ᓪ s
ᓕ ᓖ li	ᓗ ᓘ lu	ᓚ ᓛ la	ᓪ l
ᔨ ᔩ ji	ᔪ ᔫ ju	ᔭ ᔮ ja	ᔾ j
ᕀ ᕁ vi	ᕂ ᕃ vu	ᕆ ᕇ va	ᕈ v
ᕇ ᕈ ri	ᕆ ᕇ ru	ᕋ ᕌ ra	ᕍ r
ᕿ ᖀ qi	ᖁ ᖂ qu	ᖃ ᖄ qa	ᖅ q
ᖏ ᖐ ngi	ᖑ ᖒ ngu	ᖓ ᖔ nga	ᖕ ng
ᖖ ᖗ nngi	ᖘ ᖙ nngu	ᖚ ᖛ nnga	ᖜ nng
ᖦ ᖧ łi	ᖨ ᖩ łu	ᖪ ᖫ ła	ᖬ ł

Inukitut syllabary

Zezhi syllabary

Abjads

- Typically only consonants are represented



Middle Persian script (224-651 AD)

Sabaean/Sabaic abjad (pre-Islamic Arabia), ca 500 BCE

Abugidas

- Consonants represented as main symbols, vowels usually indicated via secondary marks to those (diacritics, etc.) (can be considered type of syllabary)
- Many symbols have an inherent vowel component and this can be changed with smaller additions

Odia **(ଓଡ଼ିଆ)** script (Indo-Aryan language)

Logogram

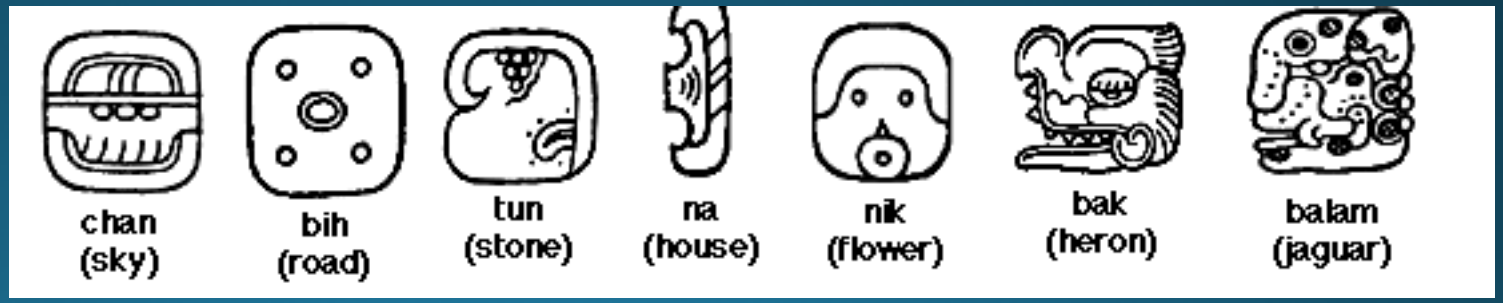
- Typically represent words or morphemes
- May be part of a semanto-phonetic system, in which some phonetic content is referenced or indicated

馮 píng - to gallop 駕 jià - to ride, drive, pilot 騙 piàn - to cheat, swindle, deceive

騷 sāo - to disturb, agitate, worry, stinking 騾 luó - mule 駝 túo - camel

驚 jīng - to startle, surprise, frightened, to marvel 驫 biāo - horses, to run, high speed

Chinese



Mayan logograms

Conscripts

- When creating a conscript, it's often helpful to consider
  - Linguistic factors
  - Environmental factors
  - Social, historical, political, cultural factors
- Thinking about these can lead to a richer conlang and conworld,
- A richer conlang/conworld can feed back into considering further factors that enrich these systems

Linguistic Factors

- What type of system lends itself to the structure of the language?
  - E.g. why it would be very hard to make a syllabary for English (hint: you'd need about 10,000 symbols)
  - Consider syllable structure, phonemic representation, whether a language has significant dialectal variation, etc.

Linguistic Factors

- Sometimes more obvious to consider in making a conscript
  - E.g. The Bwezhi language has largely CV structure (with a few limited codas), so lends itself well to a syllabary

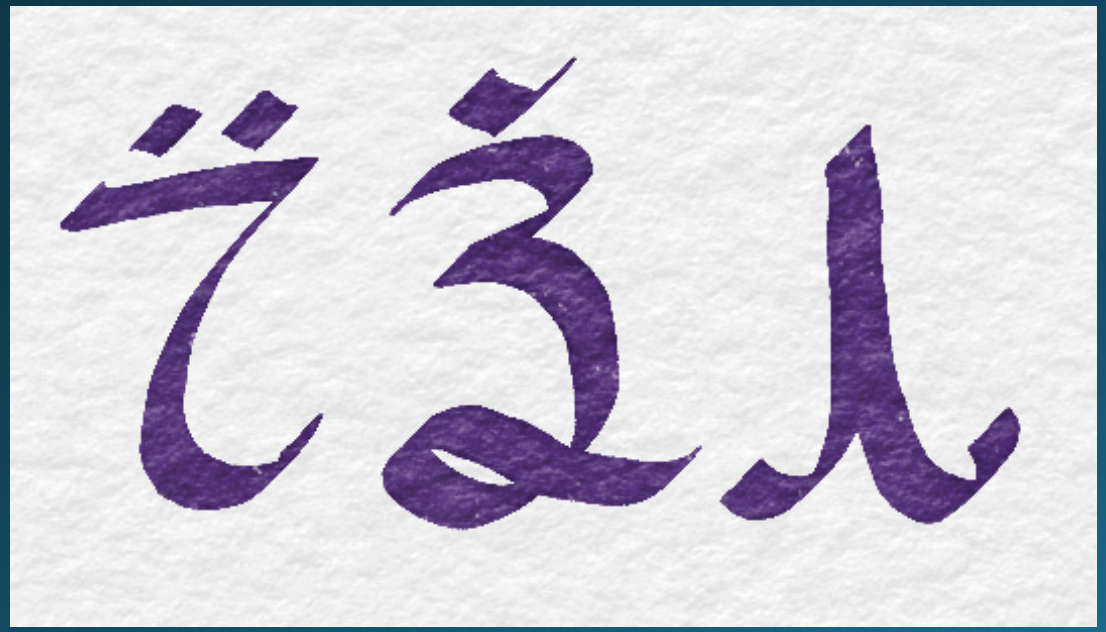
puneri "platform"

denma "new-comer"

sukubi "tasty"

Linguistic Factors

- Seloi has C(C)V(C) syllable structure (with limited options for 2nd component of complex onsets) so works decently with an abugida that has no inherent vowels



tylae 'grain' (TY-LA-E)

stippa "rock back and forth" (S-TI-P(p)A)

Linguistic Factors

- Does your language have a lot of dialectal variation?
- Do you want the orthography to be usable with all dialects/varieties?
- If you will privilege one dialect, which one?
- Some inconsistencies between dialects (or in general) arise due to language change or dialectal differences…

Sources of orthographic inconsistency

- Example from dialects of Rílin:
  - Two main dialects: Sunuli and Lunauli
  - Major physical/social separation of two subpopulations of Ríli
    - Different responses to foreign invasion
    - Sunuli: remain in place, develop defense, ally with other countries for assistance, develop trade, etc.
    - Lunauli: flee north, establish some underground settlements (caves, etc.) establish new government (monarchy), retain pacifism, readopt older more stratified social structure, retain isolationism

Mergers

- Mergers happened in Lunauli dialect:

  /f/ and /ɸ/ → /f/
  /v/ and /β/ → /v/
  /w/ and /ɬ~ɭ/ → /w/
  /ʂ/ and /ʃ/ → /ʃ/

- This led to inconsistency in spelling in Lunauli words

Lunauli		Sunuli	
fa	'breeze'	ɸa	'breeze'
evaka	'faction'	eβaka	'faction'
ewun	'spy'	eɬun	'spy'
heʃɛɣɛ	'corn bread'	heʂɛɣɛ	'corn bread'

Orthographical change in Lunauli

Sunuli

- 𐤆 /ɸ/
  𐤉 /f/
- 𐤁 /β/
  𐤆 /v/
- 𐤇 /ʟ/
  𐤉 /w/
- 𐤊 /ʃ/
  𐤋 /ʂ/

Lunauli

- 𐤆 /f/
  𐤉 /f/
- 𐤁 /v/
  𐤆 /v/
- 𐤇 /w/
  𐤉 /w/
- 𐤊 /ʃ/
  𐤋 /ʃ/

Result:

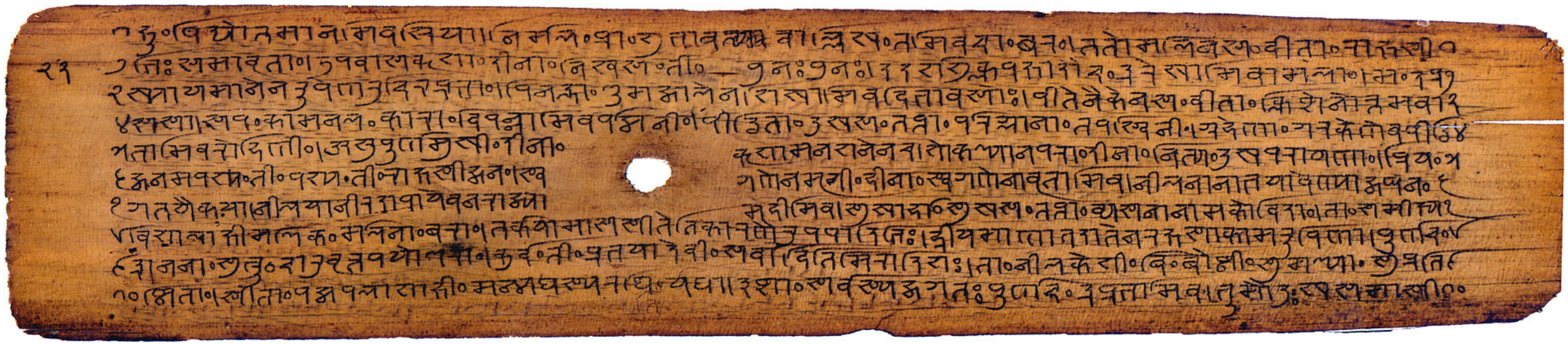
There is more than one way to write the same phoneme in Lunauli in several instances.

Environmental questions

- What kind of environment do your writers live in?
- What materials do they have easy access to (cloth, stone, clay tablets, metal sheets, papyrus, vellum, bamboo, wood slips, tree bark)?
- How much work are they going to put into creating or obtaining such materials?

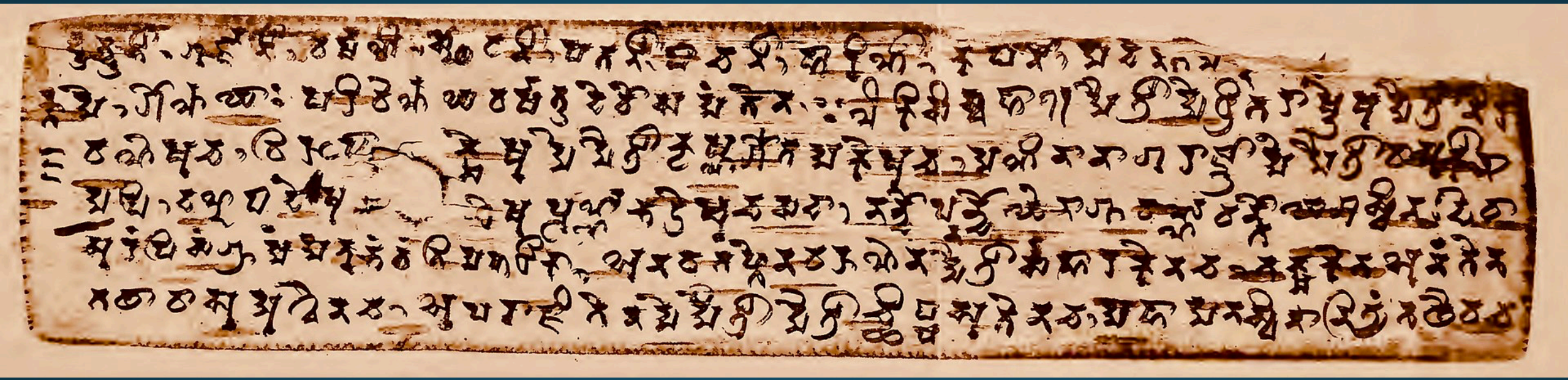
Writing materials/tools

- Different materials and tools used will affect the appearance and method of the writing system
- Take into consideration presence or lack of pigment, pigment source and nature (ink, paint, blood, etc.)
- Is there inherent pigment (e.g. graphite, chalk, colored wax) or is it an assisted method (additional pigment, e.g. pen, brush, mechanical pencil)?
- What are people writing ON? How durable is it?
- See if you can even make a mock-up of the original materials and try it out yourself. How easy is it write on a leaf, for example, with a wax crayon? What kind of leaf?



Nadinagari script on palm leaf
(method from at least 500 BCE, Indian subcontinent & Southeast Asia)

- Palm leaves cooked and dried
- Incisions made with knife pen
- Ink/pigment rubbed over the surface, staying in grooves
- Excess pigment wiped off surface



Bower Manuscript, 5th-6th century, NW China,
Sanskrit treatises found near Buddhist memorial stupa

- Written on birch bark in Gupta script
- Method dates back to 1st century
- Also seen as material for Russian texts written in th
  Old Novgorod dialect (9th-15th c.)

Effort~Cost

- If every-day people write, what can they easily afford to write on? What might be reserved for special documents? How much effort does it take to write on this material (e.g. carving into stone)?
- Would poorer people write on something different?
- Would practice writing be done on an “erasable” surface (e.g. chalk, wax tablet)

Materials may affect glyph design

- Certain shapes are easier to write on certain materials (e.g. straight lines of runes on stone).
- Symbols may develop in certain directions over time (for speed and efficiency) from being written on a given material
- This may lead to…

…Variation!

- Different scripts, versions of glyphs, fonts, etc. are quite common in real orthographies
- Development and change of glyph shape over time is highly likely
- Different writing modalities may call for different varieties of scripts

Development and variations of Chinese characters over time

Bone (Oracle script)

Bronze seal

Bamboo slip

Clerical script

Regular script

Semi-cursive

Cursive

Regular (simplified)

𐌄𐌆𐌑𐌓𐌔𐌕𐌖𐌖 *iŵŭŝatse* [ɪɸɯˈʃɑtsɛ] ‘malachite’ (Rílin)

Social, educational

- Who is writing?
  - Orthographies may develop based on…
  - How many people are literate/able to write, who is doing the writing
- How long does it take to teach a person to write this language?
  - Who has access to such education?
- Large numbers of glyphs/complex systems require more education to acquire

Historical

- What is the history of the people?
- What has happened to them so far in the story of their existence?
- What are their beliefs, ideologies, needs, preconceptions, etc.?
- What other cultures or groups do they interact with?

Bayën logographic-phonetic system

- **Issues**:
  - Thousands of glyphs
  - Lot of regional variations

  But:
  - Bayën populations tend to have higher access to education for young people
  - **Result**: high literacy rates, but Bayë interact frequently with other languages and cultures, so most Bayë learn to write many systems of surrounding areas
  - Bayën is even starting to be written in other systems! (To much controversy.)

calisseth "seashells"

Bayën written in outside scripts!?

- Resistance from more conservative groups, older generations
- Adopted mainly by those Bayë that are involved in trade and those who live amongst/near other species/cultures
- Very few non-Bayë can use Bayën logographs, since they're not widely understood outside of communities that use them
- Non-Bayë who learn Bayën learn to write it using other scripts (typically Lomi script, which is used to write languages in Quarios, or some modified version of a script from Ei).

Another case study: the Vinuvu script

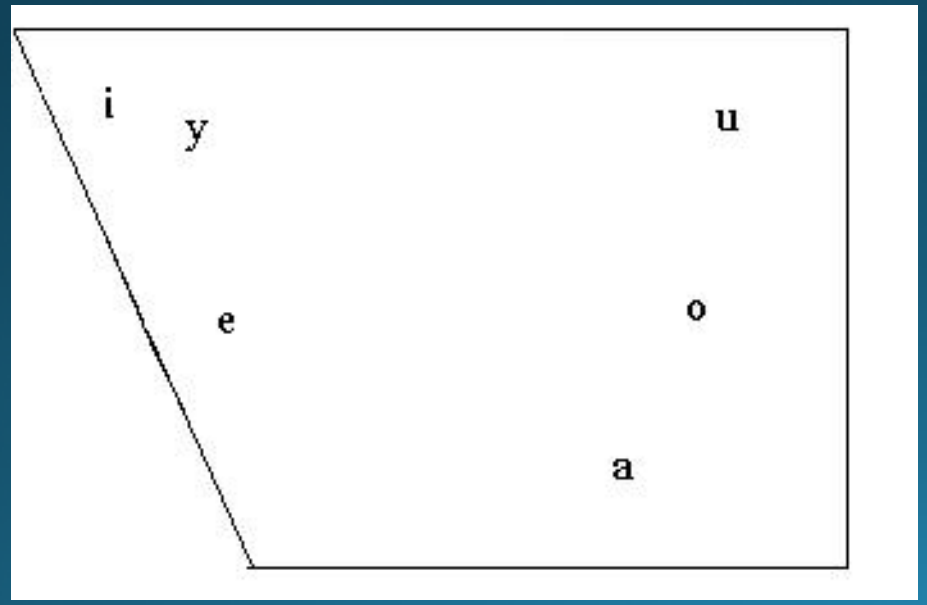
- Abugida script originally created for the Seloi language (Selupa)
- Modifications and use by other nearby cultures/languages at different times
- Cursive + regular modes

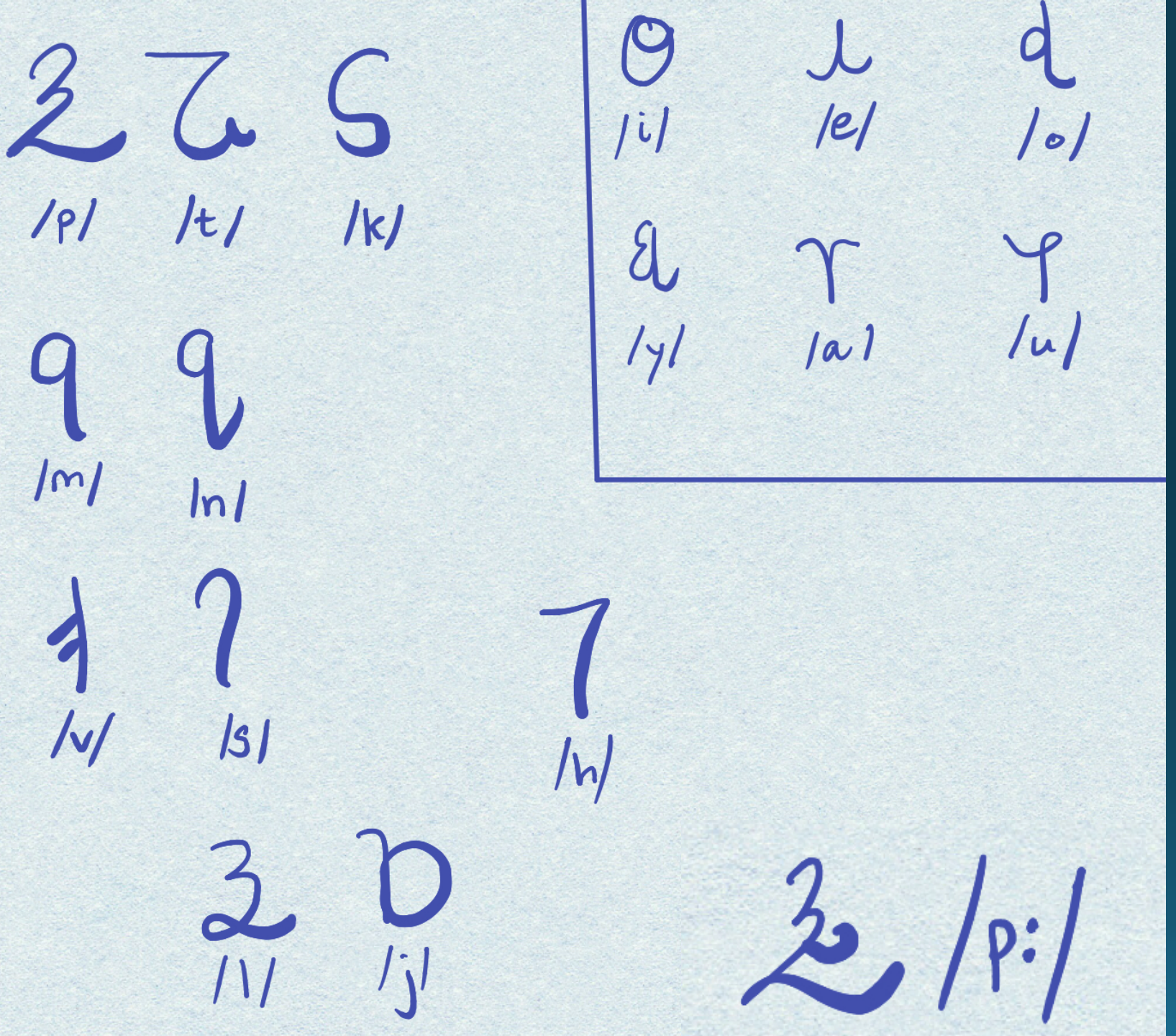
- Originated in Selupava (for the Seloi language)
- Adopted by Karkin (and modified)
- Adopted again by Tosi

- Selupa: higher technology than neighbors, thus some degree of cultural influence
- Script arrived last on the mainland and eventually helped the Tosi create a massive empire
- Shaped history of civilization in Izoi

Seloi phonemes (are few)

p	t		k	
m	n			
v	s			h
	l			
		j		

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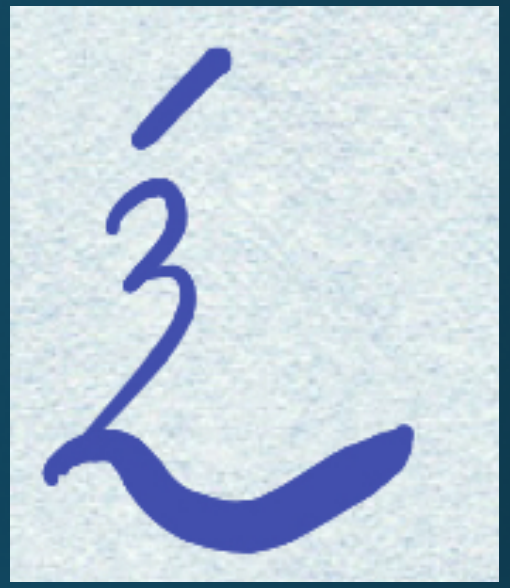


/po/

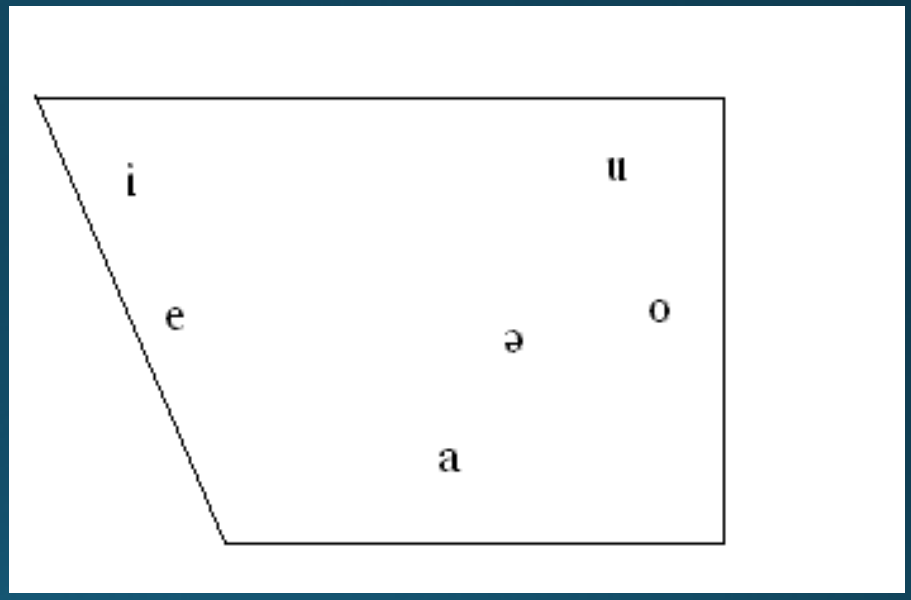
/pu/

/pe/

/pa/

Karkin phonemes (are many)

p b	t d	c ɟ	k g	q ɢ	ʔ
f v	s z	ʃ ʒ	x ɣ	χ ʁ	h
m	n	ɲ	ŋ	ɴ	
w		j			
	l	ʎ			
	r				



/iː/ /ɯː/

/eː/ /əː/ /oː/

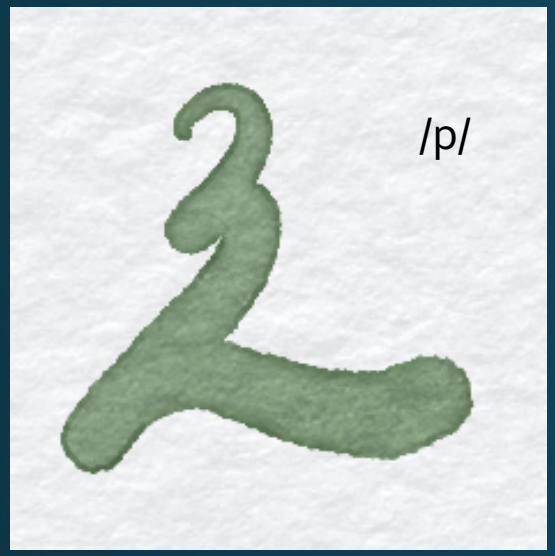
/aː/

Modifications needed

- More places of articulation
- More voice states
- Addition of [+cont] feature to some phones
- Includes /ə/, does not have /y/
- Phonemically long vowels

Karkin Modifications to Vinuvu

- Mirroring of glyphs + internal diacritic (various) → [±voice]
- Additional strokes (various types) → different manner
- Lower line diacritic → more back place
- Addition of miniature <h> → [+cont]
- Reduplication of vowel diacritic → long vowel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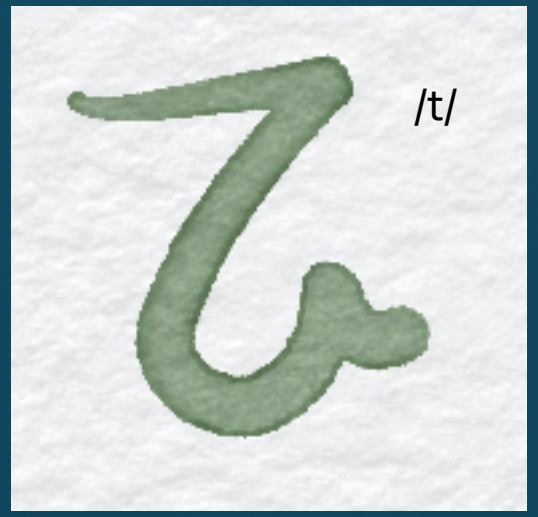
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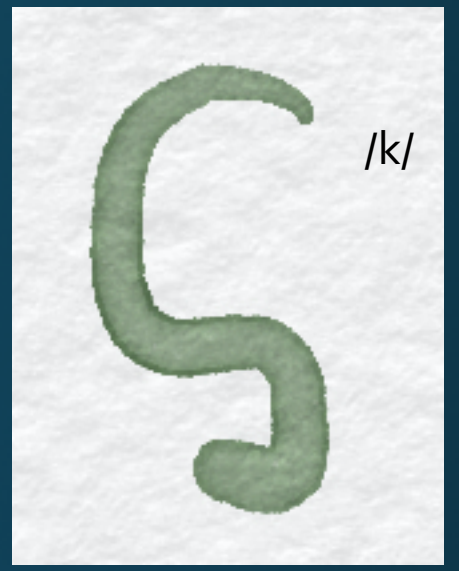
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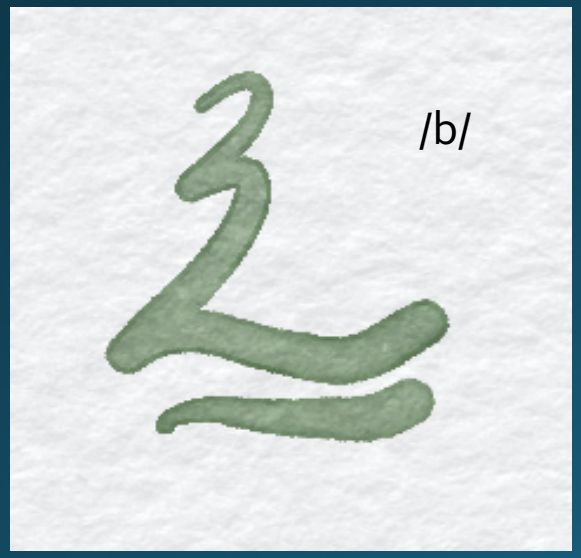
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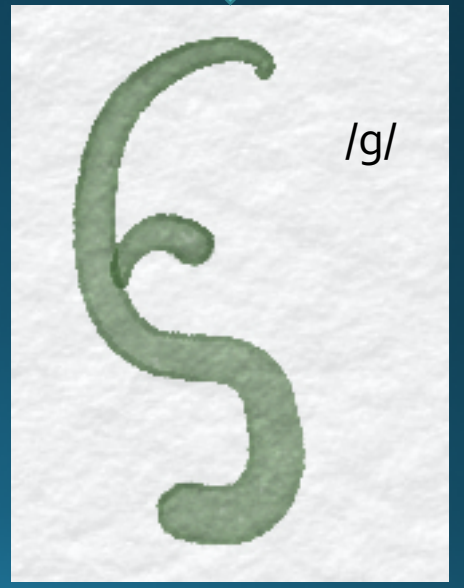
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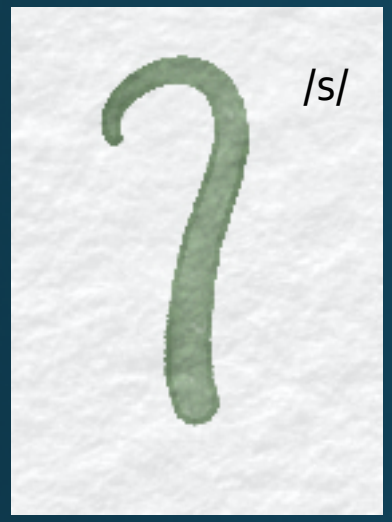
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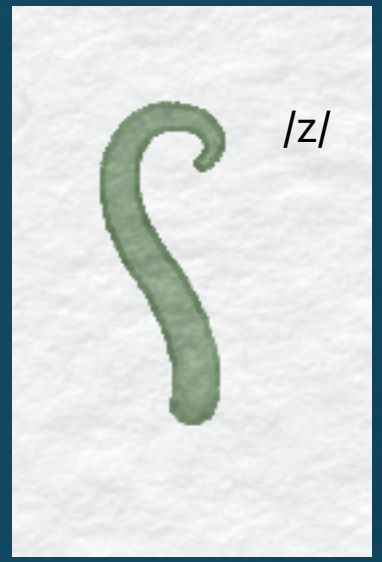
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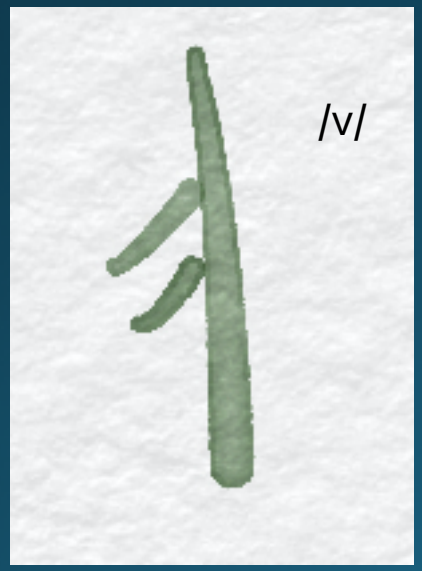
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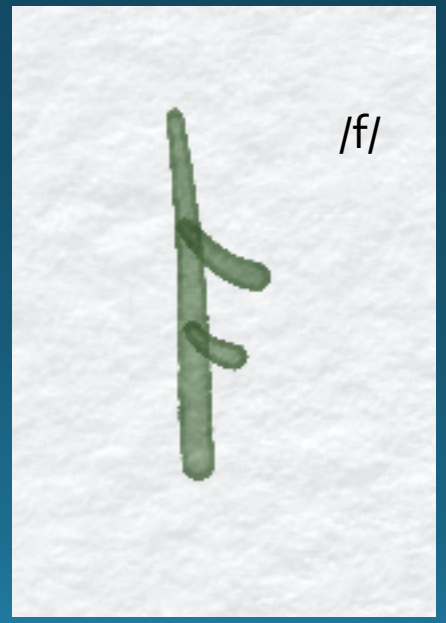
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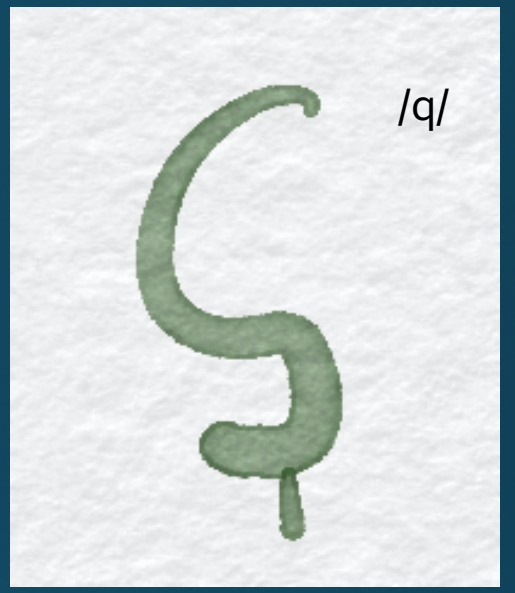
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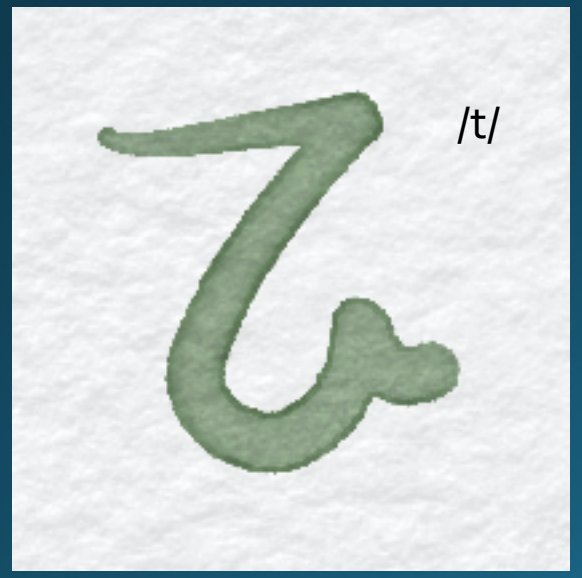
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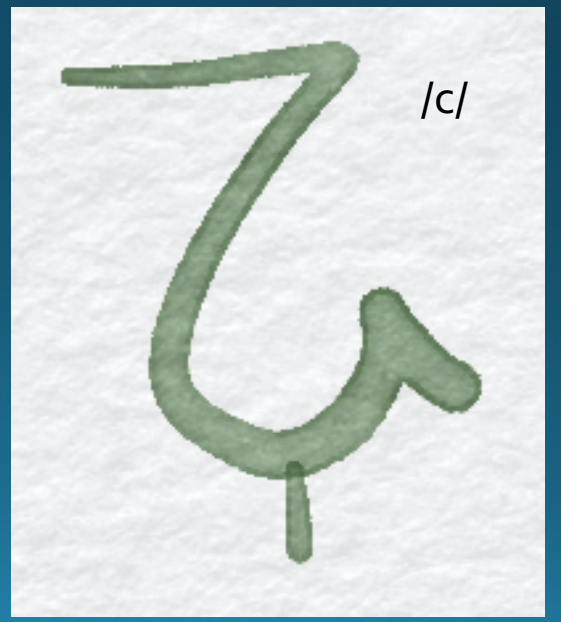
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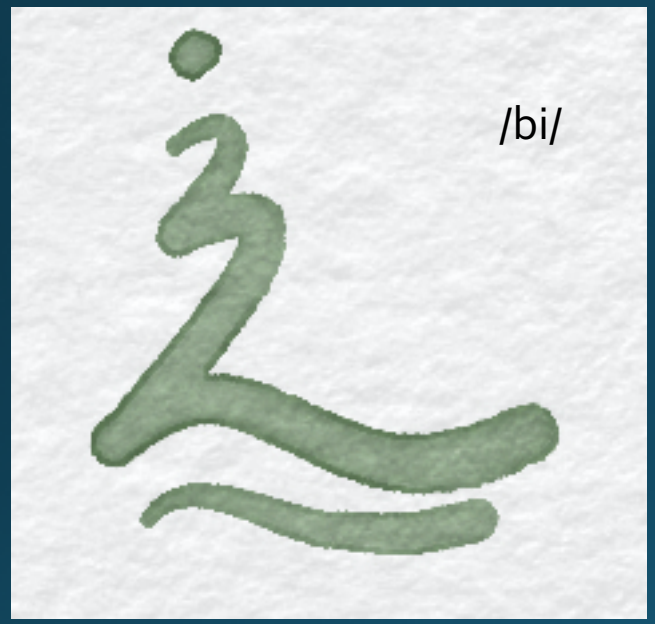
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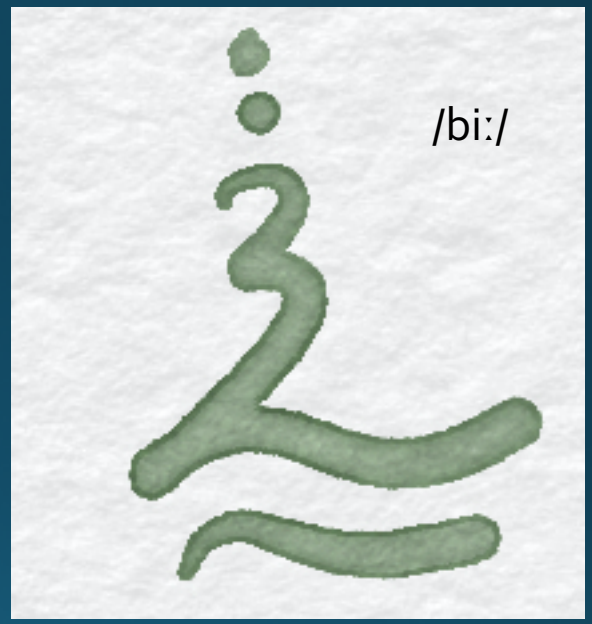
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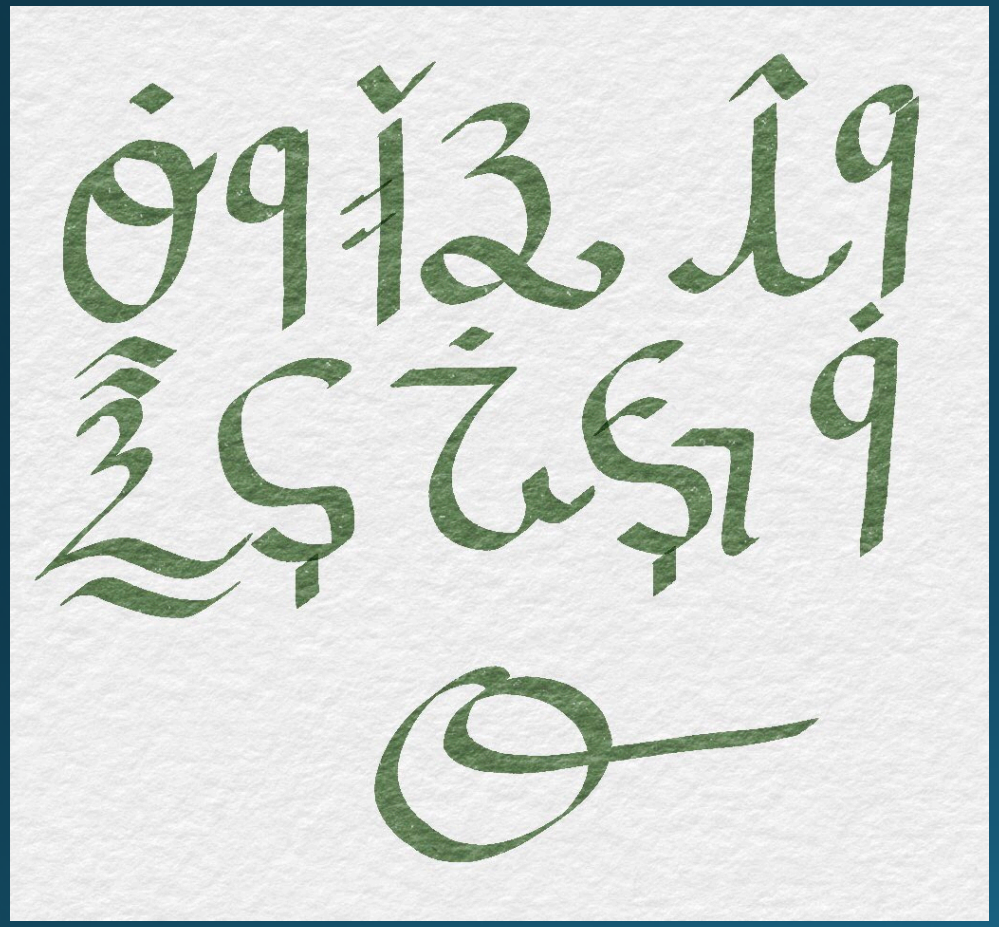
Tosi phonemes

p b		t d	t ʃ	d ʒ	k g
m		n			ŋ
	f v	s z	ʃ	ʒ	x ɣ
w				j	
		l			
		r			

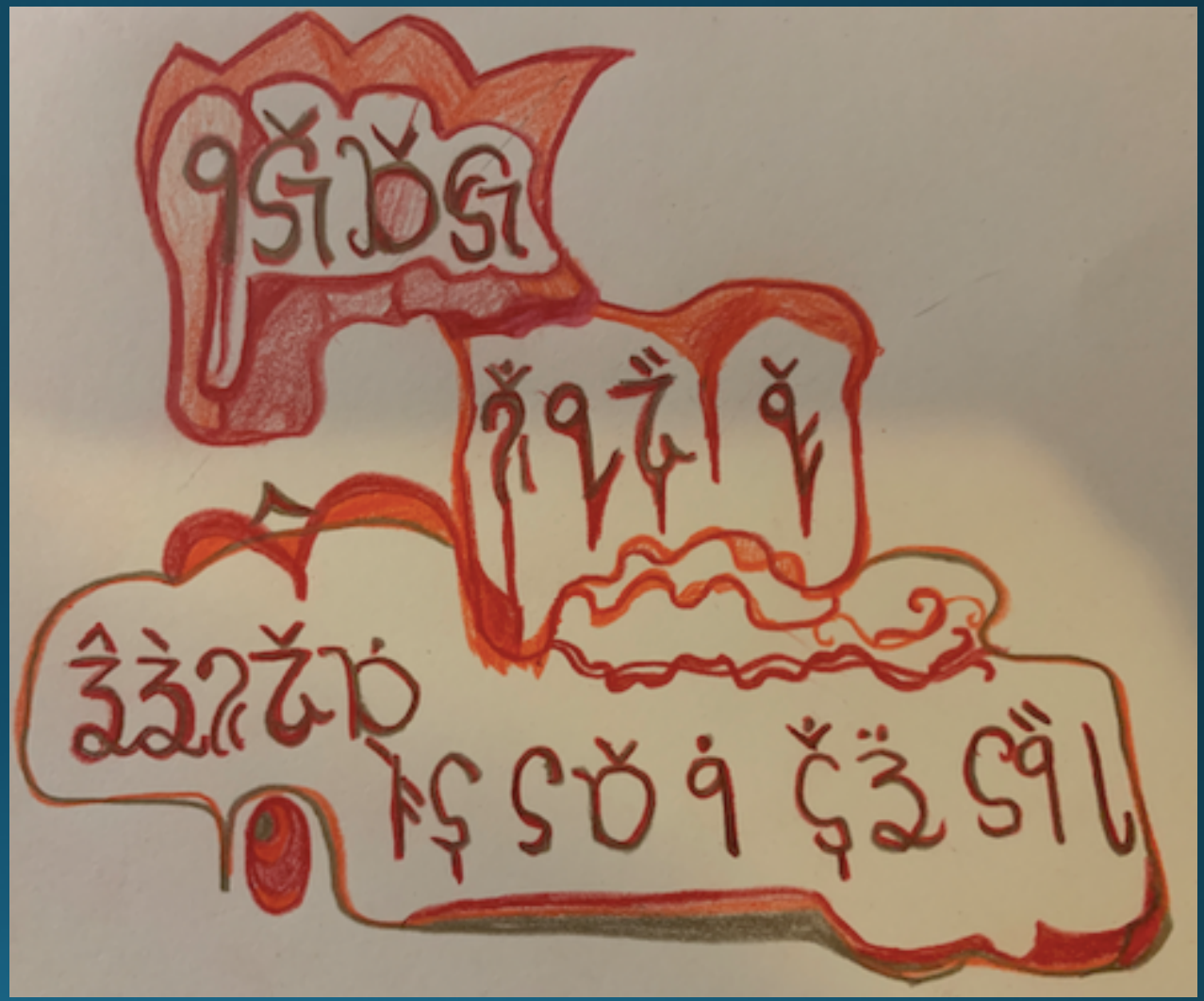
i iː u uː

e eː o oː

a aː

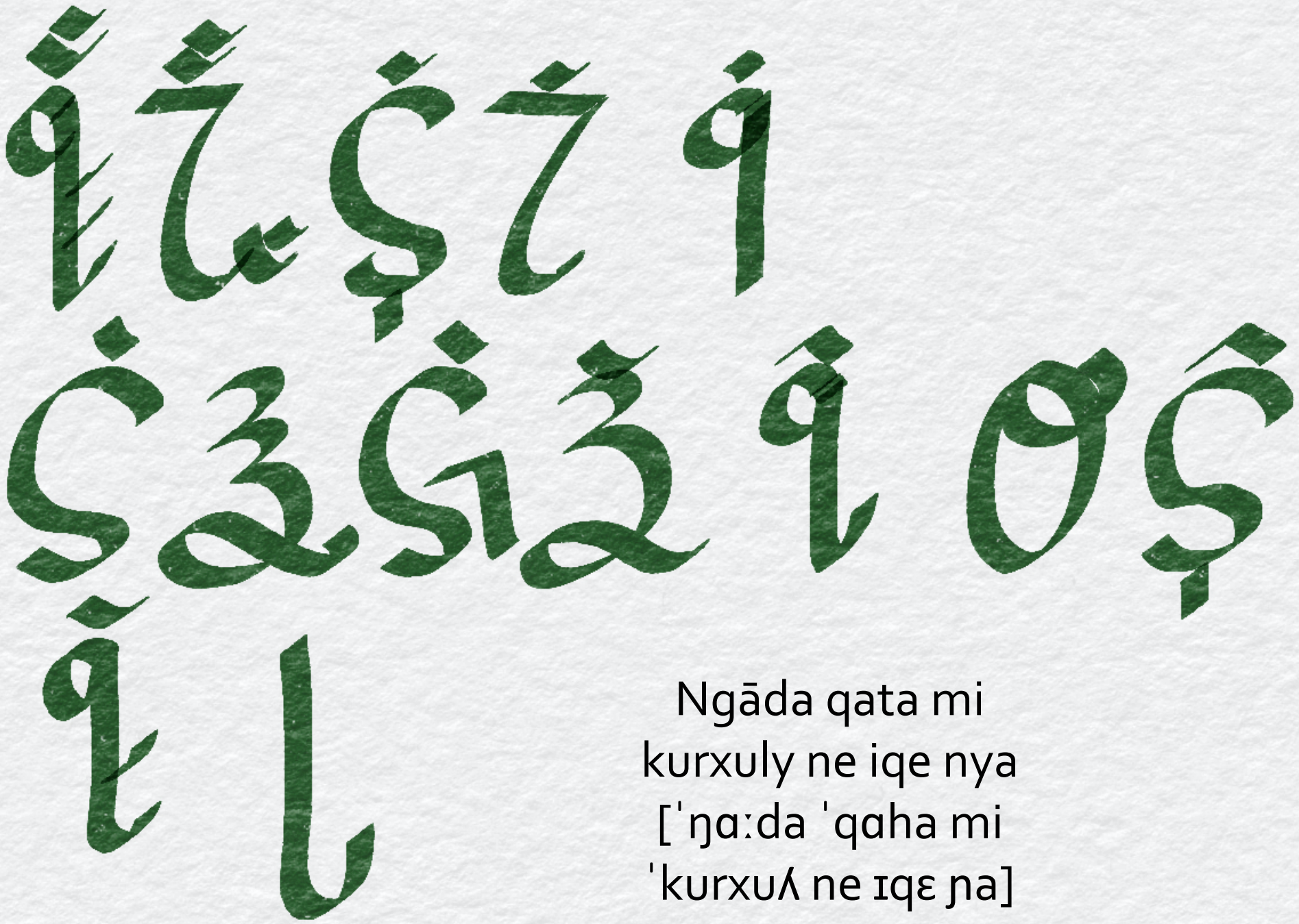


Īmval ēm bēqtirr mi !
[ˈiːmval eːm ˈbeːqtɪʁ mi]
“Happy New Year!”



Mxayagh shaincū nya lelushtayi vuq kya mi qailë kmū

[ˈmxɑjɑɣ ʃainˈcuː ɲa lɛˈluʃtaji vuq kʲɑ mi ˈqailə kmuː]

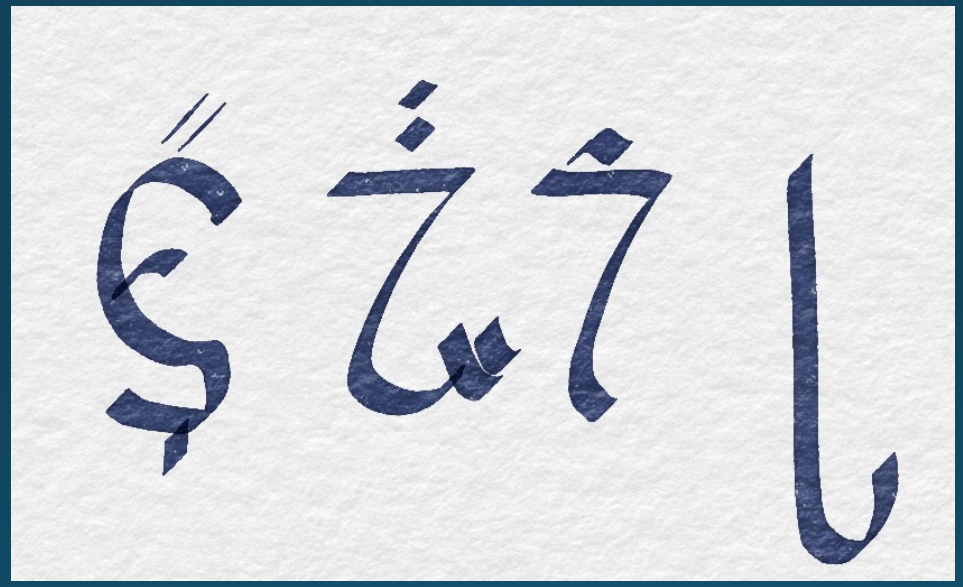


Ngāda qata mi
kurxuly ne iqe nya
[ˈŋɑːda ˈqɑha mi
ˈkurxuʌ ne ɪqɛ ɲa]

Cultural notes on Vinuvu

- Selupava understood in-world as origin of the script
- Myth about Tosi having adopted the script first (due to supposed cultural "superiority" and stigma attached to Karkin culture)
- But: individual clan within Karkin that adapted script had in fact began modifications before Tosi had even made contact with Karkin or Selupava

Orthography ~ Language ~ World

- These three components can be interlinked in myriad ways
- The building of one can assist the building of another
- Ideally, this creates a feedback loop of detailed creation
- Result: all systems are richer, more detailed, more naturalistic, and more fun

Ggō dvīhe!
Thank you!