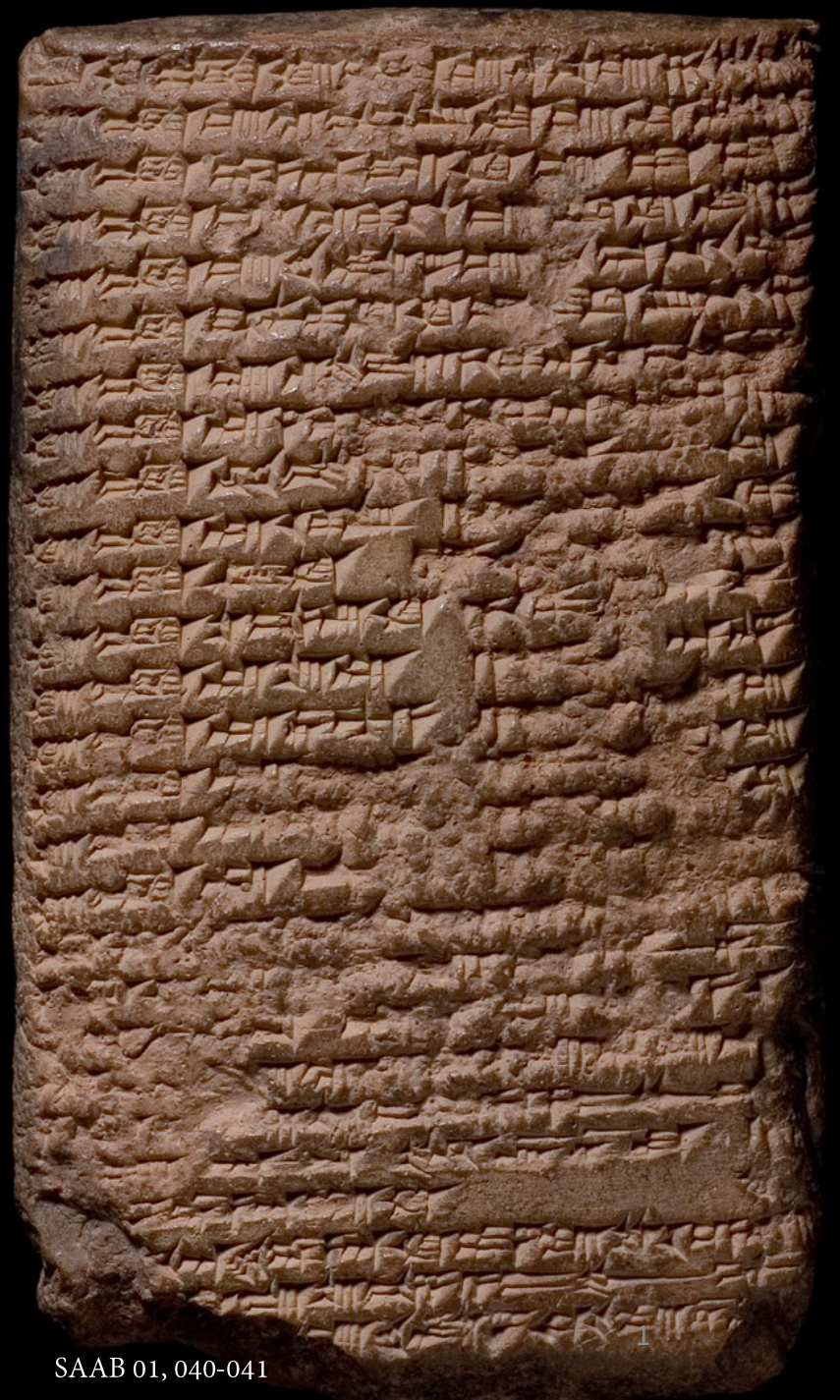
THE UNIVERSITY of EDINBURGH
School of Philosophy, Psychology and Language Sciences

Theoretical linguistics on historical languages:

Developing grammatical tests for dead languages by the example of the Akkadian verb

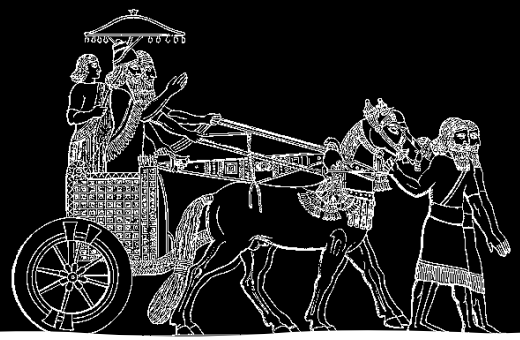
Iris Kamil

GSAS Workshop in Indo-European and Historical Linguistics, 31.01.2025



SAAB 01, 040-041

Roadmap



Akkadian verbal morphology

Hypothesis: ROOT classes

Testing ROOT classes

Results: ROOT classes

Morphological chemistry

Theoretical linguistics on historical languages

Deciphering the Akkadian verbal template

Selected bibliography:
Arad (2005), Faust & Hever (2010), Kastner (2019), McCarthy (1981), but also Ussishkin (2000) for stem-based approach

√XYZ + Template

Table 1: Derivations of the root √šrq 'steal'

Template	Function		Form	Meaning	
XaYāZu	infinitive	⇨	*šarāqu*	'to steal'	} verbs
naXYuZu	passive infinitive	⇨	*našruqu*	'to be abducted'	
XaYYaZu	participle.M	⇨	*šarrāqu*	'thief'	} nouns
XaYYaZītu	participle.F	⇨	*šarrāqītu*	'female thief'	
XaYZu	verbal adjective	⇨	*šarqu*	'stolen'	} adjectives
XaYYiZu	participial adj.	⇨	*šarriqu*	'thieving'	

Order matters!

√šqr 'to pierce'
√qrš 'to chop (up)'

Deciphering the Akkadian verbal template

Selected bibliography:
Al Kaabi & Ntelitheos (2019), Arad (2005), Arbaoui (2010), Doron (2003), Kastner (2020),

In most Semitic languages three general template 'patterns' are differentiated:

- A base pattern, characterised by 'minimal'/unmarked morphology.
- A doubling pattern, characterised by a geminated second root radical.
- A 'causative' pattern, characterised by a H/S affix, in Akkadian a *š-*, prefixed to the root.

Table 2: Conjugations in the template patterns

	Base	**Doubling**	**'Causative'**
infinitive	*XaYāZ-u*	*XuYYuZ-u*	*šu-XYuZ-u*
perfective	*i-XYuZ*	*u-XaYYiZ*	*u-ša-XYiZ*
imperfective	*i-XaYYaZ*	*u-XaYYaZ*	*u-ša-XYaZ*
Stative	*XaYiZ*	*XuYYuZ*	*šu-XYuZ*

Common labels

Base	**Doubling**	**Causative**
G	D	Š
simple	intensive	causative

Deciphering the Akkadian verbal template

		G	D	Š
		/	factitive	causative
			‘intensive’	
Class	**Root**	**G**	**D**	**Š**
Unaccusative	√mqt	fall, collapse (intr.)	collapse (tr.)	cause to fall
	√wsm	be(come) fitting	make fitting	cause to be(come) fitting

Deciphering the Akkadian verbal template

		G	D	Š
		/	factitive	causative
			‘intensive’	
Class	**Root**	**G**	**D**	**Š**
Unergative	√hbb	murmur, chirp	hiss	make so. gurgle
	√ʔlk	go, walk	/	cause to go, walk
	√dʔl	roam, run around	treat with indifference	make so. run around

Deciphering the Akkadian verbal template

		G	D	Š
		/	factitive	causative
			‘intensive’	
Class	**Root**	**G**	**D**	**Š**
Active-transitive	√prs	cut off	chop off	cause to cut off
	√ṣbt	seize	seize	cause to seize

Deciphering the Akkadian verbal template

		G	D	Š
		/	factitive	causative
			‘intensive’	
Class	**Root**	**G**	**D**	**Š**
Non-active transitive	√lmd	learn, understand	inform	cause to learn
	√wld	bear, give birth	beget	cause to give birth, breed

Interim Summary

- Three template patterns
  - A base pattern that allows every transitivity, lexical aspect, and some voice alternations
    - A doubling pattern that has two main functions: Factitive & intensive
      - A causative pattern that functions as a causative

1. How can we account for the factitive & intensive functions in the D stem? How do we know which roots derive which functions?
2. What is the difference between D causatives and Š causatives?

Hypothesis: ROOT classes

Kouwenberg (1997, 2010) suggests the causativisation split we have seen until now:

- Unaccusatives & EXPERIENCER-transitives use the D stem to denote a causative alternant
- Unergatives & AGENT-transitives use the Š stem to denote a causative alternant

But it is not as simple (Kamil, Accepted a):

- Certain classes of unaccusatives (e.g., verbs of existence, following Levin 1993) only causativise through the Š stem
- Classes of unergatives (e.g., verbs of emission) show mixed behaviour causativising through the D, Š, or both stems

Hypothesis: ROOT classes

Kamil (Accepted a)

Table 1: Emission ROOTS causativisation patterns

		G	Transitive D	Transitive Š
a.	√ršk	'drip'	'drop'?	/
b.	√ršš	'glow'	'heat up'	/
c.	√ṣrr	'drip, flow'	'pour out'	/
d.	√brq	'flash'	/	'cause lightning to strike'
e.	√brr	'flicker'	/	'cause to flicker'
f.	√ṣrḫ	'flare up, twinkle'	/	'cause to flare up'
g.	√šgm	'thunder, roar'	/	'make resound'
h.	√ḫlʾ	'shine'	'make bright'	'illuminate'
i.	√ntk	'drip'	'drop'	'let drip'
j.	√nwr	'shine'	'make bright, light fire'	'make shine, light fire'
k.	√qtr	'smoke (intr.)'	'smoke (tr.)'	'cause to smoke'

Hypothesis: ROOT classes

Kamil (In preparation): ROOTS can be broken down to primitives that pose syntactic and semantic restrictions on the derivational trajectories they may undertake

Two core restrictions

- Semantic: aspectual compatibility of ROOT and causative morpheme
  - This entails two causative morphemes, D and Š, which have differing aspectual encoding
- Syntactic: argument roles and their syntactic features
  - This entails two causatives morphemes, D and Š, which introduce different arguments into the derivation

Testing ROOT classes

… but how do we determine the syntactic and semantic properties of a ROOT?

Three tests:

- Syntactic
  - *Stative* test
- Syntactic/semantic
  - Verbal adjective (VA) test
- Semantic
  - Prefixing-conjugation test

Testing ROOT classes

- Syntactic
  - *Stative* test

- Kamil (2023, Accepted b): The *Stative* denotes a resultative state, i.e., a state that comes about as the result of a preceding, completed event.

- Its derivational restrictions conform to cross-linguistic observations: a ROOT requires an internal argument, in order to be able to form a *Stative*
  - Unergatives fail in *Stative* formation; rare non-resultative *Statives*

Testing ROOT classes

- Syntactic
  - *Stative* test

(1) ***maqit*** *bēl* *mešr-em=ma*
√mqt.‘fall’.STAT.3.SG.M lord.CSTR riches-GEN=CONJ
“(Even) the lord of riches is fallen” (Lambert BWL 80:187)

(2) ****alik***
√’lk.‘walk’.STAT.3.SG.M
“He is walked”

(3) **UD.3.KAM** *ina* *bīt-i* ***ašib***
3 days in house-OBL √wšb.‘sit’.STAT.3.SG.M
“(You draw a line around a sick person’s bed,) he will stay home for three days” (AMT 88,2:6)

Testing ROOT classes

- Syntactic
  - *Stative* test

(1) ***maqit*** *bēl* *mešr-em=ma*
√mqt.'fall'.STAT.3.SG.M lord.CSTR riches-GEN=CONJ
"(Even) the lord of riches is fallen" (Lambert BWL 80:187)

(4) ***ṣiḫr-ēt*** *ūl* *eṭl-ēt* *ūl* *šārt-um* *ina* *līt-i=ka*
√ṣḫr.'small'-STAT.2.SG.M NEG man-STAT.2.SG.M NEG hair-NOM in cheek-OBL=your.M
"Are you a baby? Are you no man? Is there no beard on your cheek?" (ARM 1 108:6)

	Y/N	**COS-event encoded**	**COS-event ✗ encoded**
Stative	Y	Eventive unaccus.	PC ROOT

Testing ROOT classes

Selected Bibliography:
Beavers et al. (2021)

- Syntactic/semantic
  - Verbal adjective (VA) test

(5)
a. *ṣeḫru* 'small'
b. *bīšu* 'malodorous, stinky'

VA entails no change

c. *maqtu* 'fallen'
d. *baṭlu* 'ceased, interrupted'

VA entails change

	Y/N	**COS-event encoded**	**COS-event ✗ encoded**
Stative	Y	Eventive unaccus.	PC ROOT
VA	Y	Aspectual ROOT	Emission ROOT

Testing ROOT classes

- Semantic
  - Prefixing-conjugation test

- *Perfectives*
  - Punctual/completed event
- *Imperfectives*
  - Durative/ongoing event

Testing ROOT classes

- Semantic
  - Prefixing-conjugation test

(6) *ūm-u u arḫ-u la* ***ni-bṭil*** *ša la dull-a u nēpiš-i*
day-NOM and month-NOM NEG 1.PL-√bṭl. 'cease'.PFTV REL NEG ritual-OBL and ceremony-OBL
"(As long as the gods kept him living,) we did not cease a day or a month without ritual or ceremony" (ABL 450 r. 8)

(7) *ša elat ina ūm-u* ***i-baṭṭil-Ø=u***
REL over in dat-NOM 3-√bṭl. 'cease'.IMPFV-SG.M=SUBJ
"He who stops working for over one day" (YOS 6 4:9)

Testing ROOT classes

- Semantic
  - Prefixing-conjugation test

(8) *Nusku* *ša* ***ta-dlip-Ø=u*** *mušīt-u*
DN REL 2-√dlp. 'stay awake'.PFTV-SG.M=SUBJ night(time)-OBL
You, Nusku, who stayed awake all night, go now to the temple of Ekur." (KAR 58 r. 35)

(9) *ard-ān-i=šu* *akê* *issi=šunu* ***i-dallib-ū***
servant-PL-OBL=their.M how with=them.M 3-√dlp.'stay awake'.IMPFV-PL.M
"See how their servants were sat up with them all night" (ABL 1370:12)

Results: ROOT classes

Table 2: ROOT classes in Akkadian

	Stative			**VA**		***perfective***		***imperfective***	
		COS-event encoded	COS-event X-encoded	COS	X-COS	punctual/ completed	durative /ongoing	punctual/ completed	durative /ongoing
PC ROOTS	✓		✓		✓	✓		✓	✓
Eventive unacc.	✓	✓		✓		✓			✓
Inchoative ROOTS	✓		✓	✓		✓		✓	
Durative ROOTS	✓	✓		✓	✓	✓	✓	✓	✓
Psych-ROOTS	✓?		✓		✓	✓		✓	✓
Unergatives			(✓)		(✓)	✓			✓
AGENT motion			(✓)		(✓)	✓			✓
Labile motion			(✓)		(✓)	✓			✓
Emission ROOTS			(✓)		✓	✓	✓		✓
AGENT transitives	✓	✓				✓			✓
Labile transitives	✓	✓				✓			✓
EXPERIENCER tr.	✓	✓				✓			✓

Results: ROOT classes

Table 3: ROOT classes in Akkadian (revised)

	Stative			**VA**		***perfective***		***imperfective***		**Causative**
		COS-event encoded	COS-event X-encoded	COS	X-COS	punctual/ completed	durative /ongoing	punctual/ completed	durative /ongoing	
PC ROOTS	✓		✓		✓	✓		✓	✓	D
Eventive unacc.	✓	✓		✓		✓			✓	D
Inchoative ROOTS	✓		✓	✓		✓		✓		Š
Durative ROOTS	✓	✓		✓	✓	✓	✓	✓	✓	D
Psych-ROOTS	✓?		✓		✓	✓		✓	✓	D
Unergatives			(✓)		(✓)	✓			✓	Š
AGENT motion			(✓)		(✓)	✓			✓	Š
Labile motion			(✓)		(✓)	✓			✓	D
Emission ROOTS			(✓)		✓	✓	✓		✓	D
AGENT transitives	✓	✓				✓			✓	Š
Labile transitives	✓	✓				✓			✓	D
EXPERIENCER tr.	✓	✓				✓			✓	D

Morphological chemistry

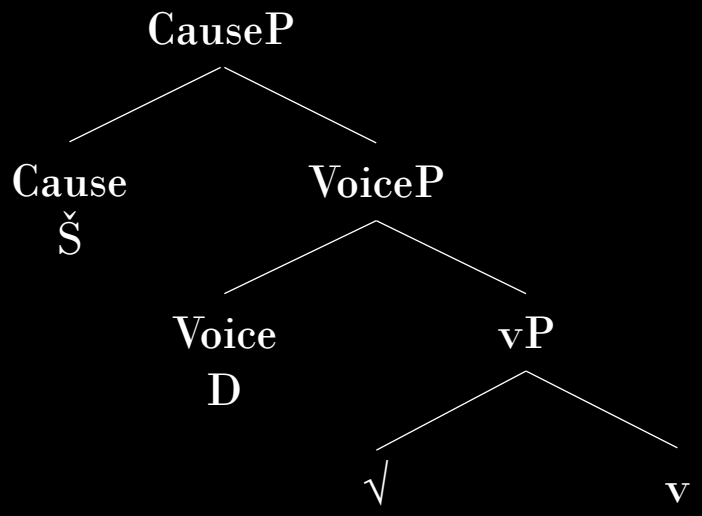
Selected bibliography:
Kratzer (1996), Kastner (2020)

Distributed Morphology (DM): Morphology follows the rules of syntax

- Everything is a morpheme; every morpheme is semantically encoded

Some architectural assumptions:

- D and Š differ in
  - Semantic content
  - Height of attachment



Morphological chemistry

The core architectural puzzle to solve is why some ROOTS are incompatible with D morphemes

- There appear to be no Š restrictions

D features

- [AGENT], [imperfective]
  - Direct, ongoing causation

Š features

- [CAUSER], [perfective]
  - Indirect, punctual causation

Morphological chemistry

D features

↢ [AGENT], [imperfective]

⇊ Direct, ongoing causation

Š features

↢ [CAUSER], [perfective]

⇊ Indirect, punctual causation

Unaccusative ROOT

↢ [PATIENT]

⇊ [PATIENT] + [AGENT] = causativisation

Unergative ROOT

↢ [AGENT]

⇊ [AGENT] + [AGENT] ≠ causativisation

⇊ [AGENT] + [AGENT] = intensive

Morphological chemistry

D features

⊢ [AGENT], [imperfective]

⫫ Direct, ongoing causation

Š features

⊢ [CAUSER], [perfective]

⫫ Indirect, punctual causation

Unaccusative, durative-aspectual ROOT

⊢ [PATIENT], [imperfective]

⫫ [PATIENT], [imperfective] + [AGENT], [imperfective]

= causativisation

Unaccusative, inchoative-aspectual ROOT

⊢ [PATIENT], [perfective]

⫫ [PATIENT], [perfective] + [AGENT], [imperfective]

≠ causativisation

⫫ [PATIENT], [perfective] + [CAUSER], [perfective]

= causativisation

Morphological chemistry

The core derivational restrictions are thus:

- Syntactic: argument structural encoding *must not* overlap with Merged causative
  - ROOTS never encode causers, so no trouble for Š
- Semantic: aspectual encoding *must* overlap with Merged causative

“Theoretical linguistics on historical languages”

A few things to be weary of:

- We rely on attestations
  - Only core Akkadophone regions: OB, OA, MB, MA, NB, NA
- We rely on translations / non-native intuitions
  - Retranslations
  - Semitic parallels
  - …

… improvement to previous methodology

Conclusions

Verbal derivational morphology in Akkadian can be reduced to semantically-encoded primitives

- ROOTS consist of multiple primitives
- Templatic morphemes consist of multiple primitives

We can test for these primitives

- Stative test, VA test, inflection test
  - The different combinations of these tests result in different ROOT classes
  - ROOT classes differ in their derivational behaviour

Conclusions

ROOT and causative morpheme

- Must Agree in aspectual specification
- Must not Agree in argument(-structural) specification

Due to their [AGENT], D stems have higher restrictions than Š stems

… the tests developed here for Akkadian are to present knowledge the most "objective" way of determining different ROOT properties

Bibliography

Arad, Maya. 2005. *Roots and patterns: Hebrew morpho-syntax*. Vol. 63. Springer Science & Business Media.

Arbaoui, Nor Elhouda. 2010. *Les dix formes de l'arabe classique à l'interface syntaxe/phonologie: pour une déconstruction du gabarit*. Paris 7 PhD Thesis.

Beavers, John, Michael Everdell, Kyle Jerro, Henri Kauhanen, Andrew Koontz-Garboden, Elise LeBovidge & Stephen Nichols. 2021. States and changes of state: A crosslinguistic study of the roots of verbal meaning. *Language*. Linguistic Society of America 97(3). 439–484. https://doi.org/10.1353/lan.2021.0044.

Faust, Noam & Ya'ar Hever. 2010. Empirical and Theoretical Arguments in Favor of the Discontinuous Root in Semitic Languages. *Brill's Journal of Afroasiatic Languages and Linguistics* 2(1). 80–118. https://doi.org/10.1163/187666310X12688137960704.

Kamil, Iris. 2023. t-Forms of the Akkadian Stative. *Brill's Journal for Afroasiatic Languages and Linguistics* 15(1). 262–290.

Kamil, Iris. Accepted a. Anticausativisation Strategies in Akkadian – Inherited and Innovated. In [*Typological Studies in Language*], Guglielmo Inglese, Giulia Mazzola & Eugenio Goria (eds.). Amsterdam: John Benjamins.

Kamil, Iris. Accepted b. Deriving the Akkadian Stative: A deadjectival verb? In [*Advances in historical linguistics*], Laura Grestenberger, Viktoria Reiter & Melanie Malzahn (eds.). Berlin: LangSci Press.

Kamil, Iris. In Preparation. Intention, aspect, and argument structure: The morphosyntac and morphosemantics of the Akkadian verb. University of Edinburgh PhD thesis.

Kastner, Itamar. 2019. Templatic morphology as an emergent property. Natural Language & Linguistic Theory 37(2). 571–619. https://doi.org/10.1007/s11049-018-9419-y.

Bibliography

Kastner, Itamar. 2020. *Voice at the interfaces: The syntax, semantics and morphology of the Hebrew verb*. Berlin: Language Science Press. https://doi.org/10.5281/zenodo.3865067.

Kouwenberg, N. J. C. 1997. *Gemination in the Akkadian verb*. Uitgeverij Van Gorcum.

Kouwenberg, N. J. C. 2010. *The Akkadian Verb and its Semitic Background* (Languages of the Ancient Near East 2). Winona Lake: Eisenbrauns.

Kratzer, Angelika. 1996. Severing the external argument from its verb. In J. Rooryck & L. Zaring (eds.), *Phrase structure and the lexicon*, 109–137. Dordrecht: Kluwer.

McCarthy, John J. 1981. A Prosodic Theory of Nonconcatenative Morphology. *Linguistic Inquiry* 12(3). 373–418.

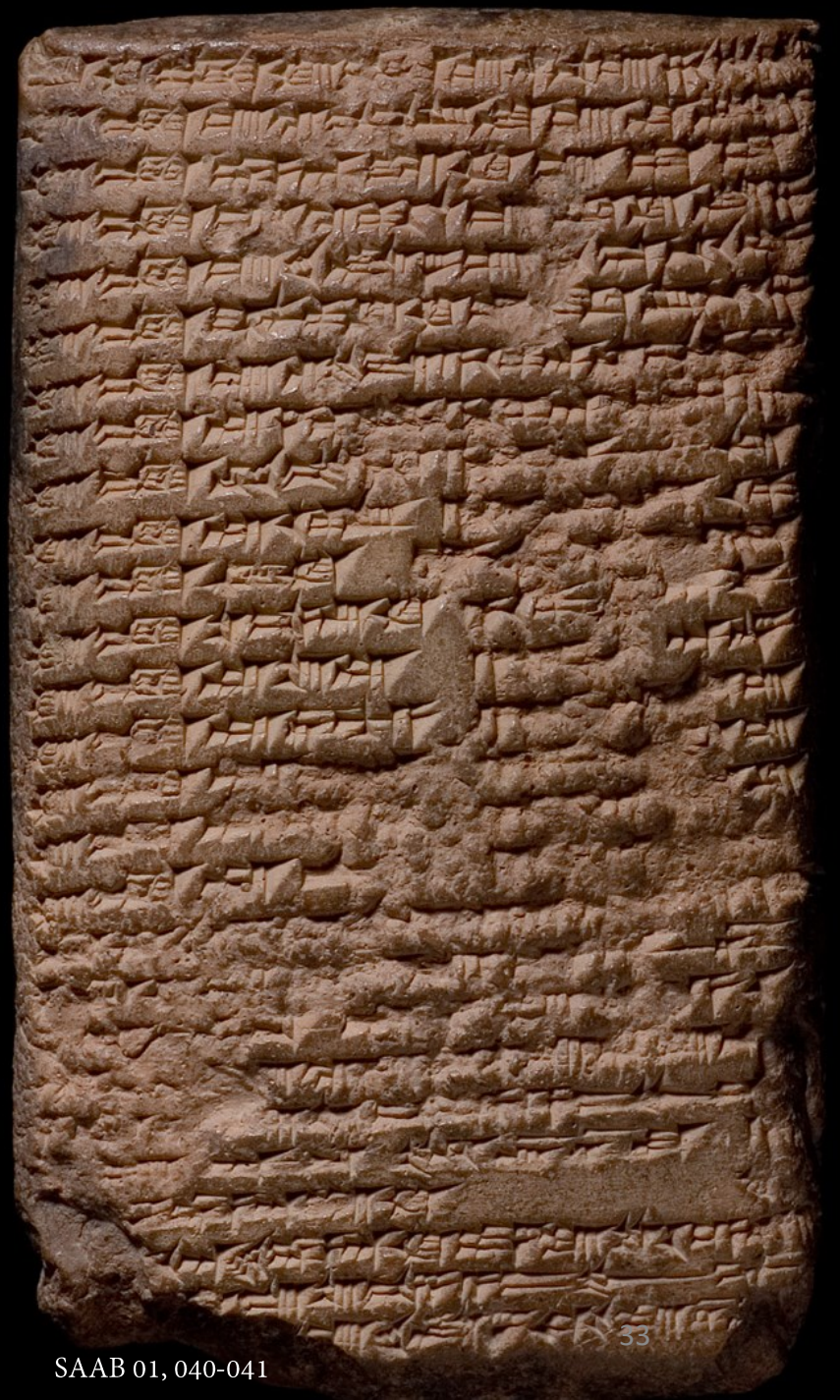
Ussishkin, Adam. 2000. Root-and-pattern morphology without roots or patterns. In North East Linguistics Society 30(18).

Image credits:
https://cdli.mpiwg-berlin.mpg.de/dl/photo/P336796.jpg
https://www.britishmuseum.org/collection/image/23125001

THE UNIVERSITY of EDINBURGH
School of Philosophy, Psychology and Language Sciences

Thank you for your attention!

Iris Kamil
iris.kamil@ed.ac.uk
iriskamil.com



SAAB 01, 040-041