

ḥašš- ‘ash’, *ḥašša-* ‘hearth’, and the properties of non-primary derivatives in Hittite and Indo-European



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'ash' and 'hearth' in Hittite

- (1) a. Hitt. *hašš-* 'ash; dust; soap'
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- ▶ Hittite attests the formally similar and semantically related animate nouns in (1).
- ▶ Both have well-established cognates in the Nuclear Indo-European (NIE) languages (see *EWA* I:182–3; Kloekhorst 2008:318–19, 322–3; de Vaan 2008:49, i.a.).

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- ▶ Both have well-established cognates in the Nuclear Indo-European (NIE) languages (see *EWA* I:182–3; Kloekhorst 2008:318–19, 322–3; de Vaan 2008:49, i.a.).
- ▶ Previous reconstructions fail to account for the prosodic properties of Hittite nouns in (1a) and especially (1b) (cf. §§2–3 below).

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► **Goals** — new account of (1a) and (1b); core proposals:

- (1a) continues an **ó/é*-ablauting root noun, which developed stress mobility in prehistory of Hittite.
- (1b) reflects an **-eh₂*-formation with fixed suffixal stress, derived from (1a) with root vocalism transferred from its synchronic Hittite base.

§1 Introduction

§2 Analyzing Hitt. *ḫašš-* ‘ash; dust; soap’

- ▶ Attestation & spelling
- ▶ Hitt. *ḫašš-* as root noun — previous reconstructions
- ▶ Emergent mobility in Hitt. *ḫašš-*

§3 Analyzing Hitt. *ḫašša-* ‘hearth’

§4 Conclusions & discussion

'ash' in Hittite — direct cases

(2)	NOM.SG	⟨ <i>ḥa-a-aš</i> ⟩	(KBo 21.22 obv. 22; KBo 4.2 i 45; KBo 32.17 obv. 17)
		⟨ <i>ḥa-aš-š=a</i> ⟩	(KBo 8.47 rev. 3)
	ACC.SG	⟨ <i>[ḥa]-a-aš-ša-an</i> ⟩	(KBo 32.19 ii 38, 41)
		⟨ <i>ḥa-aš-ša-an</i> ⟩	(KBo 4.2 i 39; KUB 29.7+KBo 21.41 rev. 23/32, 25/34)
	NOM.PL	⟨ <i>ḥa-a-aš-še-š=a</i> ⟩	(KBo 32.16 iii 2)
	ACC.PL	⟨ <i>ḥa-a-aš-šu-uš</i> ⟩	(KBo 15.34 ii 11; KBo 12.112 rev. 11)
		⟨ <i>ḥa-aš-šu-uš</i> ⟩	(e.g., KBo 24.57 i 8; KUB 9.1 iii 23; KUB 36.83 iv 8)

▶ Hitt. *ḥašš*– 'ash; dust; soap' (MS+) exhibits an (orthographic) complementary distribution (cf. *HW*² III: 388–91):

- ▶ In direct cases root vowel is (optionally) spelled **plene** — i.e., (2).
- ▶ In oblique cases root vowel is never spelled plene — i.e., (3).

'ash' in Hittite — oblique cases

(3)	INS	⟨ <i>ḥa-aš-ši-it</i> ⟩	(KUB 43.74 obv. 4)
	ABL	⟨ <i>ḥa-aš-ša-az</i> ⟩	(KUB 24.12 iii 7)
	D/L.SG	⟨ <i>ḥa-aš-ši-i</i> ⟩	(KUB 45.5 iii 10)

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 - ▶ In direct cases root vowel is (optionally) spelled plene — i.e., (2).
 - ▶ In oblique cases root vowel is never spelled plene — i.e., (3).
- ▶ Once attested with **plene** spelling of DAT/LOC.SG ending.

‘ash’ in Hittite — oblique cases

- (4) *nu=ššan* 1/2 NINDA KU₇ *hašši* *hariyandan*
CONN=PTC half bread sweet ash:LOC.SG bury:PTCP:C.ACC.SG
[ANA^D]UGDÍLIM.GAL^{TU₇} *gangati[ti]aš dai*
in.pot g-soup:GEN.SG place:3SG.NPST.ACT

‘He places half of a (loaf of) sweet bread, buried in ash, into a pot of g-soup.’

(KUB 45.5 iii 10–11; MH/NS)

- DAT/LOC.SG form of *hašš-* with plene spelling of inflectional ending is securely attested in (4) (cf. *HW²* III: 389).

- (5) PIE **h₂eh₁s-* ‘dry out (from heat)’: (cf. *LIV*²: 257–8)
- a. Lat. *ārēre* ‘be dry’
 - b. TA/B *asatār, osotār* ‘dries out’
-
- Broad agreement that Hitt. *ḫašš-* continues an inherited root noun derived from (5) (Puhvel 1991:211, 224, Harðarson 1994:37, Rieken 1999:19–22, Kloekhorst 2008:318–9, Melchert 2011:397).
- (5) is perhaps neo-root to **h₂eh₁-* ‘(be) hot’ (> Pal.*ḫa-* ‘id.’; cf. Melchert 1984:41–2, Adams 1995).

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 - ▶ (5) is perhaps neo-root to **h₂eh₁-* ‘(be) hot’ (> Pal.*ḫa-* ‘id.’; cf. Melchert 1984:41–2, Adams 1995).
- ▶ But exact formal reconstruction remains disputed.

'ash' in Hittite — a mobile root noun?

(6) Mobile (*é/∅) reconstruction of Hitt. *ḫašš-*: (Kloekhorst 2008:318)

a. **h₂éh₁s-ms*

b. **h₂h₁s-éi*

- ▶ Kloekhorst (2008:318) reconstructs mobile root noun with *é/∅-ablaut.

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 - ✓ Accounts for **plene** spelling of inflectional ending in (6b) and consistent non-plene spelling of root vowel in oblique cases.
 - ✗ Fails to account for **plene** spelling of the root vowel in direct case-forms like ACC.PL (6a).

‘ash’ in Hittite — a mobile root noun?

(7) $*Vh_1sV > *VssV > \text{Hitt. } V\check{s}\check{s}V$ (Melchert 2010:59; cf. 1994a:78)

- a. $*h_2\acute{e}h_1s\text{-}ms$ $\not>$ Hitt. *hāššus* [χá:sɪ-os] ‘ashes’
b. $*h_1eh_1\text{-}s\text{-}éi$ $>$ Hitt. *iššī* [isɪ-í:] ‘in the mouth’
c. $*\acute{e}h_1\text{-}s\text{-}(e)ntu$ $>$ Hitt. *makkeššantu* [makɪ-é:sɪ-ant:u] ‘let them multiply’

► Formal problems for Kloekhorst’s (2008:318) reconstruction:

- Geminate $-\check{s}\check{s}-$ in (7a) necessarily arises via $*h_1$ -assimilation in $*Vh_1sV$ sequences, as in (7b–c).

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 - No $*h_1$ -deletion/compensatory lengthening in this context, since it is preceded(/bled) by assimilation (i.e., $*Vh_1sV \not> *V\check{s}V$; see Appendix I).

'ash' in Hittite — a mobile root noun?

(8) *[á] / ___C]_σ > Hitt. *ǎ* [á] (cf. Melchert 1994a:147)

- | | | | | | |
|----|---|---|---------------------|-----------------------|------------|
| a. | * <i>h₂éh₁s-ms</i> | ∕ | Hitt. <i>hāššus</i> | [χá:s:-os] | 'ashes' |
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| c. | * <i>péh₂s-or</i> | > | Hitt. <i>pahša</i> | [páχ:s-a] | 'protects' |
| d. | * <i>h₂ét-or</i> | > | Hitt. <i>hatta</i> | [χát:-a] | 'pierces' |
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 - ⇒ Stressed full-grade root **h₂éh₁s-* cannot account for root **plene** spellings in direct case forms like (8a) (see Appendix II on NOM.SG).

‘ash’ in Hittite — “acrostatic II” root noun?

(9) AS II reconstruction of Hitt. *ḫašš-*:

(Melchert 1994b:236)

a. **h₂óh₁s-ms*

b. **h₂éh₁s-ei*

- ▶ Melchert (1994b:236) reconstructs “acrostatic II” (AS II) root noun with *ó/é-root ablaut (cf. Rieken 1999:19–22, Melchert 2011:397).

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✓ Accounts for **plene** spelling of root vowel in direct case-forms like (9a) (*ó > Hitt. *ā* [á:]; Melchert 1994a:146–7).

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b. **h₂éh₁s-ei* ≠ Hitt. *ḥaššī* [χas:-í:] ‘in ash’

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- ✗ Fails to account for **plene** spelling of inflectional ending in (9b).

'ash' in Hittite — AS II root noun with emergent mobility

(10) AS II + emergent mobility in Hitt. *ḫašš-*:

- a. **h₂óh₁s-ms* > Hitt. *ḫāššus* [χá:s:-os] 'ashes'
b. **h₂éh₁s-ei* > —
>> **h₂eh₁s-éi* > Hitt. *ḫašši* [χas:-í:] 'in ash'

- **Proposal:** Hitt. *ḫašš-* continues root noun with original AS II inflection, but which underwent (11) prior to Hittite:

(11) **EMERGENT MOBILITY:** (Yates 2021b)

Stress shifts from the root to “weak” inflectional endings, with the result that a paradigm with fixed root stress becomes mobile.

- Diachronic tendency for AS root nouns to undergo (11) was identified by Schindler (1972) (likewise other AS categories; see Yates 2021b).

§1 Introduction

§2 Analyzing Hitt. *ḫašš-* ‘ash; dust; soap’

§3 Analyzing Hitt. *ḫašša-* ‘hearth’

- ▶ Attestation & spelling
- ▶ Hitt. *ḫašša-* as “proterokinetic” $*-eh_2$ -stem
- ▶ Hitt. *ḫašša-* as $*-éh_2$ -stem and non-primary derivative

§4 Conclusions & discussion

‘hearth’ in Hittite — direct cases

- (12) NOM.SG <^dḥa-a-aš-ša<-aš> (KBo 43.75: 7)
<ḥa-aš-ša-a-aš> (KBo 17.105 ii 19)
- ACC.SG <ḥa-a-aš-ša-an> (e.g., KBo 17.1 iv 8; KBo 20.9: 13; KBo 25.31 iii 18)
<ḥa-aš-ša-a-an> (KBo 25.31 ii 17; KBo 17.105 ii 23)

- ▶ “The paradigm of *hassa-*, from Old Hittite onward, is notable for the preponderance of the plene-spellings...” (Puhvel 1991:224).
 - ▶ In direct cases **root or desinence** is (optionally) spelled plene — i.e., (12).
 - ▶ In oblique cases root or desinence (optionally) spelled plene — i.e., (13).

‘hearth’ in Hittite — oblique cases

- (13) GEN.SG < *ḥa-a-aš-ša-aš* > (KBo 14.80+ ii 3)
< *ḥa-aš-ša-a-aš* > (e.g., KBo 17.18 ii 8; KBo 17.15 obv. 15,16; KUB 43.26 i 12)
- ALL.SG < *ḥa-aš-ša-a* > (KBo 17.36 i 4, ii 15; KBo 20.22: 2)
- ABL < *ḥa-aš-ša-a-az* > (KBo 17.11 i 23)
- D/L.SG < [*ḥa*]-*aš-ša-a-i* > (KBo 25.36 iii 18)
< *ḥa-a-aš-ši* > (IBoT 1.10 ii 1)
< *ḥa-aš-ši-i* > (e.g., KBo 6.2 i 54; KBo 17.6 ii 9; KUB 43.30 ii 2,5,11,15)

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<^(d) *ḥa-a-aš-ši-i* > (KBo 17.11+KUB 43.26+ i 10/51; KBo 25.171 i 8)

- ▶ “The paradigm of *hassa-*, from Old Hittite onward, is notable for the preponderance of the plene-spellings...” (Puhvel 1991:224).
 - ▶ In direct cases root or desinence is (optionally) spelled plene — i.e., (12).
 - ▶ In oblique cases **root or desinence** (optionally) spelled plene — i.e., (13).
 - ▶ Twice attested in DAT/LOC.SG with plene of **root and desinence**.

'hearth' in Hittite — etymology & morphology

(14) **-eh₂*-stem cognates of Hitt. *ḫašša-* 'hearth':

a. Osc. **aasa-**, Lat. *āra-* 'altar'

b. Lyc. *xaha-*[?], Lyd. [*k*]*asa-*[?] 'hearth, altar' (cf. CLuw. *ḫaššanitt(i)-* 'id.')

- ▶ (Now) broad agreement that Hitt. *ḫašša-* (Harðarson 1994:35–9; Melchert 1994b:235–6, 2011:397, 2014b:259; Rieken 1999:247–8; Kloekhorst 2008:322–3, 2014:262, i.a.):
 - ▶ Continues an **-eh₂*-stem like its cognates (14a) in Italic and (14b) elsewhere in Anatolian (contra Hart 1980:14, Puhvel 1991:224, i.a.)
 - ▶ Is a non-primary formation, a derivative of (the root noun ancestral to) Hitt. *ḫašš-* 'ash' (cf. Puhvel 1991:224).

‘hearth’ in Hittite — PK $*-eh_2$ -stem?

(15) (Remodeled) PK reconstruction of Hitt. *ḫašša-*:

NOM.SG	a.	$*h_2\acute{e}h_1s-h_2$	>>	b.	$*h_2\acute{e}h_1s-eh_2-s$
ACC.SG		$*h_2\acute{e}h_1s-h_2-m$	>>		$*h_2\acute{e}h_1s-eh_2-m$
OBL.SG		$*h_2h_1s-\acute{e}h_2-$	>>		$*h_2eh_1s-\acute{e}h_2-$

- ▶ Standardly traced back to $*-eh_2$ -stem with “proterokinetic” (PK) inflection, i.e., (15a) (Harðarson 1994:35–9, Melchert 1994b:235–6, i.a.).
- ▶ Rieken (1999:247–8) reconstructs the intermediate paradigm in (15b) with leveled full-grade in **root** and **suffix** (cf. Kloekhorst 2008:323).

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ACC.SG		$*h_2\acute{e}h_1s-h_2-m$	>>		$*h_2\acute{e}h_1s-eh_2-m$
OBL.SG		$*h_2h_1s-\acute{e}h_2-$	>>		$*h_2eh_1s-\acute{e}h_2-$

- ▶ Assessing the (remodeled) PK reconstruction — oblique cases:

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NOM.SG	a.	$*h_2\acute{e}h_1s-h_2$	>>	b.	$*h_2\acute{e}h_1s-eh_2-s$
ACC.SG		$*h_2\acute{e}h_1s-h_2-m$	>>		$*h_2\acute{e}h_1s-eh_2-m$
OBL.SG		$*h_2h_1s-\acute{e}h_2-$	>>	$*h_2eh_1s-\acute{e}h_2-$	> c. Hitt. <i>ḫaššāš</i>

► Assessing the (remodeled) PK reconstruction — oblique cases:

- ✓ Accounts for plene spelling of desinence, e.g., in GEN.SG (15c) ($*-\acute{e}h_2- + E$ >> $*-\acute{a}- + E$).

'hearth' in Hittite — PK $*-eh_2$ -stem?

(15) (Remodeled) PK reconstruction of Hitt. *ḫašša-*:

NOM.SG	a.	$*h_2\acute{e}h_1s-h_2$	>>	b.	$*h_2\acute{e}h_1s-eh_2-s$	
ACC.SG		$*h_2\acute{e}h_1s-h_2-m$	>>		$*h_2\acute{e}h_1s-eh_2-m$	
OBL.SG		$*h_2h_1s-\acute{e}h_2-$	>>		$*h_2eh_1s-\acute{e}h_2-$	✗ c. Hitt. <i>ḫaššaš</i>
						d. Hitt. <i>ḫāššaš</i>
						e. Hitt. <i>ḫāššī</i>

► Assessing the (remodeled) PK reconstruction — oblique cases:

- ✓ Accounts for plene spelling of desinence, e.g., in GEN.SG (15c) ($*-\acute{e}h_2- + E >> *-\acute{a}- + E$).
- ✗ Fails to account for plene spelling of root, e.g., in GEN.SG (15d) and DAT/LOC.SG (15e) (per §2 above $*h_1$ assimilates in $*Vh_1sV$; no deletion / CL of unstressed root vowel!).

'hearth' in Hittite — PK $*-eh_2$ -stem?

(15) (Remodeled) PK reconstruction of Hitt. *ḫašša-*:

NOM.SG	a.	$*h_2\acute{e}h_1s-h_2$	>>	b.	$*h_2\acute{e}h_1s-eh_2-s$	
ACC.SG		$*h_2\acute{e}h_1s-h_2-m$	>>		$*h_2\acute{e}h_1s-eh_2-m$	✗ f. Hitt. <i>ḫaššān</i>
OBL.SG		$*h_2h_1s-éh_2-$	>>		$*h_2eh_1s-éh_2-$	

► Assessing the (remodeled) PK reconstruction — direct cases:

'hearth' in Hittite — PK $*-eh_2$ -stem?

(15) (Remodeled) PK reconstruction of Hitt. *ḫašša-*:

NOM.SG	a.	$*h_2\acute{e}h_1s-h_2$	>>	b.	$*h_2\acute{e}h_1s-eh_2-s$	
ACC.SG		$*h_2\acute{e}h_1s-h_2-m$	>>		$*h_2\acute{e}h_1s-eh_2-m$	✗ f. Hitt. <i>ḫaššān</i>
OBL.SG		$*h_2h_1s-éh_2-$	>>		$*h_2eh_1s-éh_2-$	

► Assessing the (remodeled) PK reconstruction — direct cases:

- ✗ Fails to account for plene spelling of desinence, e.g., in ACC.SG (15f) ($*-eh_2-m > *[-a:m] > \text{Hitt. } -an [-an]$ via PA shortening of unstressed $*\bar{V}$).

'hearth' in Hittite — PK $*-eh_2$ -stem?

(15) (Remodeled) PK reconstruction of Hitt. *ḫašša-*:

NOM.SG	a.	$*h_2\acute{e}h_1s-h_2$	>>	b.	$*h_2\acute{e}h_1s-eh_2-s$	
ACC.SG		$*h_2\acute{e}h_1s-h_2-m$	>>	$*h_2\acute{e}h_1s-eh_2-m$	✗	f. Hitt. <i>ḫaššān</i>
OBL.SG		$*h_2h_1s-éh_2-$	>>	$*h_2eh_1s-éh_2-$		

► Assessing the (remodeled) PK reconstruction — direct cases:

- ✗ Fails to account for plene spelling of desinence, e.g., in ACC.SG (15f) ($*-eh_2-m > *[-a:m] > \text{Hitt. } -an [-an]$ via PA shortening of unstressed $*\bar{V}$).
- Kloekhorst (2014:261 n. 940) suggests desinential long vowel is analogical to oblique cases (but no independent evidence for such leveling!).

'hearth' in Hittite — PK $*-eh_2$ -stem?

(15) (Remodeled) PK reconstruction of Hitt. *ḫašša-*:

NOM.SG	a.	$*h_2\acute{e}h_1s-h_2$	>>	b.	$*h_2\acute{e}h_1s-eh_2-s$	
ACC.SG		$*h_2\acute{e}h_1s-h_2-m$	>>		$*h_2\acute{e}h_1s-eh_2-m$	✗ f. Hitt. <i>ḫaššān</i>
OBL.SG		$*h_2h_1s-éh_2-$	>>		$*h_2eh_1s-éh_2-$	g. Hitt. <i>ḫāššan</i>

► Assessing the (remodeled) PK reconstruction — direct cases:

- ✗ Fails to account for plene spelling of **desinence**, e.g., in ACC.SG (15f) ($*-eh_2-m > *[-a:m] > \text{Hitt. } -an [-an]$ via PA shortening of unstressed $*\bar{V}$).
 - Kloekhorst (2014:261 n. 940) suggests desinential long vowel is analogical to oblique cases (but no independent evidence for such leveling!).
- ✗ Fails to account for plene spelling of **root**, e.g., in ACC.SG (15g) (cf. $*\acute{e}/\emptyset$ -reconstruction of Hitt. *ḫašš-* 'ash', untenable per §2 above).

'hearth' in Hittite — PK $*-eh_2$ -stem?

(15) (Remodeled) PK reconstruction of Hitt. *ḫašša-*:

NOM.SG	a.	$*h_2\acute{e}h_1s-h_2$	>>	b.	$*h_2\acute{e}h_1s-eh_2-s$	
ACC.SG		$*h_2\acute{e}h_1s-h_2-m$	>>		$*h_2\acute{e}h_1s-eh_2-m$	✗ f. Hitt. <i>ḫaššān</i>
OBL.SG		$*h_2h_1s-éh_2-$	>>		$*h_2eh_1s-éh_2-$	g. Hitt. <i>ḫāššan</i>

► Assessing the (remodeled) PK reconstruction — direct cases:

- ✗ Fails to account for plene spelling of **desinence**, e.g., in ACC.SG (15f) ($*-eh_2-m > *[-a:m] >$ Hitt. $-an$ [-an] via PA shortening of unstressed $*\bar{V}$).
 - Kloekhorst (2014:261 n. 940) suggests desinential long vowel is analogical to oblique cases (but no independent evidence for such leveling!).
- ✗ Fails to account for plene spelling of **root**, e.g., in ACC.SG (15g) (cf. $*\acute{e}/\emptyset$ -reconstruction of Hitt. *ḫašš-* 'ash', untenable per §2 above).
 - Direct cases thus cannot be basis for analogical root long vowel in oblique (contra Kloekhorst 2014:262 n. 942), even if such leveling were plausible.

'hearth' in Hittite — PK **-eh₂-stem?*

(15) (Remodeled) PK reconstruction of Hitt. *ḫašša-*:

NOM.SG	a.	<i>*h₂éh₁s-h₂</i>	>>	b.	<i>*h₂éh₁s-eh₂-s</i>
ACC.SG		<i>*h₂éh₁s-h₂-m̄</i>	>>		<i>*h₂éh₁s-eh₂-m</i>
OBL.SG		<i>*h₂h₁s-éh₂-</i>	>>		<i>*h₂eh₁s-éh₂-</i>

► Assessing the (remodeled) PK reconstruction — overall:

- ✗ Mismatches attested distribution of desinential plene spelling.
- ✗ No paradigmatic forms in which plene spelling of root is *lautgesetzlich*, although it is attested both in direct and oblique case-forms.

'hearth' in Hittite — toward a new analysis

(16) Orthography & phonological interpretation of Hitt. *ḥašša-*:

ACC.SG	a.	Hitt. <i>ḥaššān</i>	[χa:s:-a:n]
	b.	Hitt. <i>ḥāššan</i>	[χa:s:-a:n]
OBL.SG	c.	Hitt. <i>ḥaššāš</i>	[χa:s:-a:s]
	d.	Hitt. <i>ḥāššaš</i>	[χa:s:-a:s]
	e.	Hitt. <i>ḥāššī</i>	[χa:s:-i:]

- ▶ Distribution of plene is not consistent with a paradigm in which vowel length alternates (as a function of stress).
- ▶ Distribution of plene points to an invariant stem shape [χa:s:-a:-], which accounts for:
 - ✓ (Optional) plene spelling of **root** or **desinence** both (16a–b) in direct case-forms and (16c–d) in oblique case-forms.
 - ✓ Plene spelling of both **root** and **desinence** in DAT/LOC.SG (16e).

'hearth' in Hittite — a new analysis

(17) Proposed PIE reconstruction of Hitt. *ḫašša-*:

ACC.SG **h₂eh₁s-éh₂-m*

OBL.SG **h₂eh₁s-éh₂-*

⇐ *ḫāšš-* 'ash'

- ▶ **Proposal:** Hitt. *ḫašša-* continues the PIE **-eh₂-* stem in (17) which:
 - ▶ Has fixed suffixal stress (cf. Eichner 1980:162).
 - ▶ Is derived from Hitt. *ḫašš-* 'ash' (per standard view, but crucially).

'hearth' in Hittite — a new analysis

(17) Proposed PIE reconstruction of Hitt. *ḫašša-*:

ACC.SG	<i>*h₂eh₁s-éh₂-m</i>	>	a.	Hitt. <i>ḫaššān</i>	[χa:s:-á:n]	←	<i>ḫāšš-</i> 'ash'
			b.	Hitt. <i>ḫāššan</i>	[χa:s:-á:n]		
OBL.SG	<i>*h₂eh₁s-éh₂-</i>	>	c.	Hitt. <i>ḫaššāš</i>	[χa:s:-á:s]		
			d.	Hitt. <i>ḫāššaš</i>	[χa:s:-á:s]		
			e.	Hitt. <i>ḫāššī</i>	[χa:s:-í:]		

► Reconstruction in (17) with suffixal stress accounts for:

- ✓ In oblique desinential **plene** in, e.g., GEN.SG (17c) and DAT/LOC.SG (17e).
- ✓ In direct cases desinential **plene** in, e.g., ACC.SG (17a).

'hearth' in Hittite — a new analysis

(17) Proposed PIE reconstruction of Hitt. *ḫašša-*:

ACC.SG	<i>*h₂eh₁s-éh₂-m</i>	>	a.	Hitt. <i>ḫaššān</i>	[χa:s:-á:n]	←	<i>ḫāšš-</i> 'ash'
			b.	Hitt. <i>ḫāššan</i>	[χa:s:-á:n]	e.g.	[χá:s:-OS] (ACC.PL)
OBL.SG	<i>*h₂eh₁s-éh₂-</i>	>	c.	Hitt. <i>ḫaššāš</i>	[χa:s:-á:s]		
			d.	Hitt. <i>ḫāššaš</i>	[χa:s:-á:s]		
			e.	Hitt. <i>ḫāššī</i>	[χa:s:-í:]		

► Reconstruction in (17) with suffixal stress accounts for:

- ✓ In oblique desinential **plene** in, e.g., GEN.SG (17c) and DAT/LOC.SG (17e).
- ✓ In direct cases desinential **plene** in, e.g., ACC.SG (17a).
- Hitt. *ḫašša-* 'hearth' acquires analogical root long vowel from its synchronic derivational base *ḫašš-* 'ash', which accounts for:
 - ✓ In oblique cases **root plene** in, e.g., GEN.SG (17d) and DAT/LOC.SG (17e).
 - ✓ In direct cases **root plene** in, e.g., ACC.SG (17b).

Base-derivative length transfer in Hittite

(18) Length transfer in Hittite non-primary derivatives:

- a. Hitt. *āššus* ‘good’ ⇒ *āššuwanni* ‘for goodness’
[á:s:u-s] (ADJ.C.NOM.SG) [a:s:w-á:nn-i] (N.DAT/LOC.SG)
āššuwātar ‘goodness’
[a:s:w-á:tar] (N.NOM/ACC.SG)
- b. Hitt. *iwāru* ‘dowry’ ⇒ *iwārwāyer* ‘bestowed a dowry’
[iwá:ru] (N.NOM/ACC.SG) [iwa:rw-á:y-er] (3PL.PST.ACT)
- c. Hitt. *idāluš* ‘bad’ ⇒ *idālawešta* ‘turned out badly’
[itá:lu-s] (ADJ.C.NOM.SG) [ita:law-é:s:-ta] (3SG.PST.ACT)
-

- Analogical transfer of long vowel from base to non-primary derivative is synchronically regular in Hittite, a common source of **plene** in unstressed σ — e.g., (18a–c) (Yates 2017:91–3; cf. Kimball 1999:129).

Base-derivative length transfer in Hittite

(18) Length transfer in Hittite non-primary derivatives:

d. Hitt.	<i>hāššus</i>	'ashes'	⇒	<i>hāšši</i>	'(in)to the hearth'
	[χá:s:-OS]	(C.ACC.PL)		[χa:s:-í:]	(DAT/LOC.SG)
				<i>hāššan</i>	'hearth'
				[χa:s:-á:n]	(C.ACC.SG)
				<i>haššān</i>	'hearth'
				[χa:s:-á:n]	(C.ACC.SG)

⇒ In parallel transfer of root vowel length in (18d) is also expected.

'hearth' in Hittite — assessing the analysis

(17) Proposed PIE reconstruction of Hitt. *ḫašša-*:

ACC.SG	<i>*h₂eh₁s-éh₂-m</i>	>	a.	Hitt. <i>ḫaššān</i>	[χa:s:-á:n]	←	<i>ḫāšš-</i> 'ash'
			b.	Hitt. <i>ḫāššan</i>	[χa:s:-á:n]	e.g.	[χā:s:-os] (ACC.PL)
OBL.SG	<i>*h₂eh₁s-éh₂-</i>	>	c.	Hitt. <i>ḫaššāš</i>	[χa:s:-á:s]		
			d.	Hitt. <i>ḫāššaš</i>	[χa:s:-á:s]		
			e.	Hitt. <i>ḫāššī</i>	[χa:s:-í:]		

- ▶ Hittite facts consistent with an invariant stem shape [χa:s:-á:-].
- ▶ Proposed analysis provides a principled explanation for this shape:
 - ▶ Invariant stem-final long vowel is due to stem-final stress (< **-éh₂-*).
 - ▶ Invariant root long vowel transferred from base just like other Hittite non-primary derivatives.

Roadmap III

§1 Introduction

§2 Analyzing Hitt. *ḫašš-* ‘ash; dust; soap’

§3 Analyzing Hitt. *ḫašša-* ‘hearth’

§4 Conclusions & discussion

- ▶ Implications of Hitt. *ḫašš-* for (P)IE morphophonology
- ▶ Implications of Hitt. *ḫašša-* for (P)IE morphophonology, esp. of non-primary derivatives

(11)

EMERGENT MOBILITY:

(Yates 2021b)

Stress shifts from the root to “weak” inflectional endings, with the result that a paradigm with fixed root stress becomes mobile.

- ▶ Historical development of Hitt. *ḫašš-* ‘ash’ (per §2 above):
 - ▶ Continues an original AS II root noun (cf. Melchert 1994b:236, 2011:397; Rieken 1999:19–22).
 - ▶ Developed stress mobility prior to Hittite.

(11)

EMERGENT MOBILITY:

(Yates 2021b)

Stress shifts from the root to “weak” inflectional endings, with the result that a paradigm with fixed root stress becomes mobile.

- ▶ Historical development of Hitt. *ḫašš-* ‘ash’ (per §2 above):
 - ▶ Continues an original AS II root noun (cf. Melchert 1994b:236, 2011:397; Rieken 1999:19–22).
 - ▶ Developed stress mobility prior to Hittite.
- ⇒ Additional evidence that AS root nouns and AS formations generally tend to undergo (11) diachronically.

Implications of Hitt. *ḫašš-* ‘ash’

(11)

EMERGENT MOBILITY:

(Yates 2021b)

Stress shifts from the root to “weak” inflectional endings, with the result that a paradigm with fixed root stress becomes mobile.

- ▶ Historical development of Hitt. *ḫašš-* ‘ash’ (per §2 above):
 - ▶ Continues an original AS II root noun (cf. Melchert 1994b:236, 2011:397; Rieken 1999:19–22).
 - ▶ Developed stress mobility prior to Hittite.
- ⇒ Important question going forward: (cf. Yates 2021b)

○ **Why are AS categories frequently subject to (11)?**

Implications of Hitt. *ḫašša-* ‘hearth’

(19) IE reflexes of PIE **h₂eh₁s-éh₂-*:

- | | |
|---|------------------------------|
| a. Hitt. <i>ḫašša-</i> [χ <u>a</u> :s-á:-] ‘hearth’ | d. Umb. aasa- ‘altar’ |
| b. Lyc. <i>xaha-</i> [?] ‘hearth; altar’ | e. Lat. <i>āra-</i> ‘altar’ |
| c. Lyd. [k]asa- [?] ‘hearth, altar’ | |

► Historical development of Hitt. *ḫašša-* ‘hearth’ (per §3 above):

- Continues PIE **-eh₂-* stem in (19) with stressed full-grade of suffix just like its Italic and (possible) Anatolian cognates.
- Acquired root long vowel in Hittite due to synchronical derivational relationship with *ḫašš-*.

Implications of Hitt. *ḫašša-* ‘hearth’

(19) IE reflexes of PIE **h₂eh₁s-éh₂-*:

- | | |
|---|------------------------------|
| a. Hitt. <i>ḫašša-</i> [χ _a :s-á:-] ‘hearth’ | d. Umb. aasa- ‘altar’ |
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| c. Lyd. [k]asa- [?] ‘hearth, altar’ | |

▶ Historical development of Hitt. *ḫašša-* ‘hearth’ (per §3 above):

- ▶ Continues PIE **-eh₂-* stem in (19) with stressed full-grade of suffix just like its Italic and (possible) Anatolian cognates.
- ▶ Acquired root long vowel in Hittite due to synchronical derivational relationship with *ḫašš-*.

⇒ Less evidence for reconstructible PK inflection in **-eh₂-* stems and generally (cf. Kiparsky 2010; Keydana 2013; Kümmel 2013, 2014; Lundquist 2015).

Non-primary derivation in Hittite and PIE

(18) Length transfer in Hittite non-primary derivatives:

- c. Hitt. *idāluš* ‘bad’ ⇒ *idālawešta* ‘turned out badly’
[itá:lu-s] (ADJ.C.NOM.SG) [ita:law-é:s:-ta] (3SG.PST.ACT)
- d. Hitt. *hāššus* ‘ashes’ ⇒ *hāššī* ‘(in)to the hearth’
[χá:s:-os] (C.ACC.PL) [χa:s:-í:] (DAT/LOC.SG)
-

- ▶ Hittite base-derivative vowel length transfer in (18c–d) recalls Schindler’s (1975:260) observation about IE non-primary derivation:

“Es besteht dabei generell die Möglichkeit, dass spezifische Ablautstufen der zugrundeliegenden Primärbildungen auch in den sekundären Ableitungen erscheinen.”

Non-primary derivation in Hittite and PIE

(20) Transfer of root vocalism in PIE non-primary derivatives:

- a. PIE *wét-es- ‘year’ ⇒ *wet-s-ó- ‘having a year’
> Gk. ἔτος ‘year’ Ved. *vatsá*- ‘calf’
- b. PIE *b^héid^h-e/o- ‘persuade’ ⇒ *b^heid^h-ói- ‘persuasion’
> Gk. πείθω ‘persuade’ Gk. πειθῶ ‘persuasion’
Lat. *fīdō* ‘trust’

- ▶ Some base-derivative transfer effects appear to be reconstructible for PIE (Yates 2019, 2021a, to appear; cf. Höfler 2015, 2017).
 - ▶ Stressed root vowel of base preserved pretonically in non-primary nominal derivatives like (20a–b).

Non-primary derivation in Hittite and PIE

(20) Transfer of root vocalism in PIE non-primary derivatives:

c.	PIE	* <u>n</u> ew-o-	‘new’	⇒	* <u>n</u> ew-éh ₂ -	‘make new’
>	Hitt.	nēwan	‘new’		nēwah _h hanzi	‘make new’
		[né:wa-n]			[ne:w-áχ:-antsi]	
>(>)	Lat.	novum	‘new’		(re)novāre	‘make new’
>(>)	Gk.	νέον	‘new’		νεάω	‘plough (fallow land)’

- ▶ Some base-derivative transfer effects appear to be reconstructible for PIE (Yates 2019, 2021a, to appear; cf. Höfler 2015, 2017).
 - ▶ Stressed root vowel of base preserved pretonically in non-primary verbal derivatives like (20c).

Non-primary derivation in Hittite and PIE

(20) Transfer of root vocalism in PIE non-primary derivatives:

c.	PIE	* <u>n</u> ew-o-	‘new’	⇒	* <u>n</u> ew-éh ₂ -	‘make new’
>	Hitt.	nēwan	‘new’		nēwahḫanzi	‘make new’
		[<u>né</u> :wa-n]			[new-áχ:-ant̪si]	
>(>)	Lat.	novum	‘new’		(re)novāre	‘make new’
>(>)	Gk.	νέον	‘new’		νεάω	‘plough (fallow land)’

- ▶ Some base-derivative transfer effects appear to be reconstructible for PIE (Yates 2019, 2021a, to appear; cf. Höfler 2015, 2017).
 - ▶ Stressed root vowel of base preserved pretonically in non-primary verbal derivatives like (20c).
- ★ In Hittite long vowel is *lautgesetzlich* in base, but not in derivative!

Non-primary derivation from PIE to Hittite

(21) Diachronic development of Hittite base-derivative length transfer:

- a. PIE *new-o- ‘new’ ⇒ *new-éh₂- ‘make new’
- b. Hitt. *nēwan* ‘new’ ⇒ *nēwahḫanzi* ‘make new’
[né:wa-n] (ADJ.C.ACC.SG) [ne:w-áχ:-antsi] (3PL.NPST.ACT)
- c. Hitt. *idāluš* ‘bad’ ⇒ *idālawešta* ‘turned out badly’
[ita:lu-s] (ADJ.C.NOM.SG) [ita:law-é:s:-ta] (3SG.PST.ACT)

► **Proposal:** PIE root vocalism transfer is source of Hittite length transfer:

Non-primary derivation from PIE to Hittite

(21) Diachronic development of Hittite base-derivative length transfer:

- a. PIE **néw-o-* ‘new’ ⇒ **new-éh₂-* ‘make new’
A dotted line connects the *e* in **néw-o-* to the *e* in **new-éh₂-*.
- b. Hitt. *nēwan* ‘new’ ⇒ *nēwahḫanzi* ‘make new’
[né:wa-n] (ADJ.C.ACC.SG) [ne:w-áχ:-antsi] (3PL.NPST.ACT)
- c. Hitt. *idāluš* ‘bad’ ⇒ *idālawešta* ‘turned out badly’
[itá:lu-s] (ADJ.C.NOM.SG) [ita:lauw-é:s:-ta] (3SG.PST.ACT)

► **Proposal:** PIE root vocalism transfer is source of Hittite length transfer:

- (i) Hittite inherits pairs like (21a) with base-derivative transfer of root vocalism.

Non-primary derivation from PIE to Hittite

(21) Diachronic development of Hittite base-derivative length transfer:

- a. PIE *new-o- ‘new’ ⇒ *new-éh₂- ‘make new’
- b. Hitt. nēwan ‘new’ ⇒ nēwah₂hanzi ‘make new’
[né:wa-n] (ADJ.C.ACC.SG) [ne:w-áχ:-antsi] (3PL.NPST.ACT)
- c. Hitt. idāluš ‘bad’ ⇒ idālawešta ‘turned out badly’
[ita:lu-s] (ADJ.C.NOM.SG) [ita:law-é:s:-ta] (3SG.PST.ACT)

► **Proposal:** PIE root vocalism transfer is source of Hittite length transfer:

- (i) Hittite inherits pairs like (21a) with base-derivative transfer of root vocalism.
- (ii) After stressed \acute{V} of base was lengthened in pre-Hittite, derivational relationship renewed by (21b) analogically lengthening it in derivative.

Non-primary derivation from PIE to Hittite

(21) Diachronic development of Hittite base-derivative length transfer:

- a. PIE *new-o- ‘new’ ⇒ *new-éh₂- ‘make new’
- b. Hitt. nēwan ‘new’ ⇒ nēwahḫanzi ‘make new’
[né:wa-n] (ADJ.C.ACC.SG) [ne:w-áχ:-antsi] (3PL.NPST.ACT)
- c. Hitt. idāluš ‘bad’ ⇒ idālawešta ‘turned out badly’
[itá:lu-s] (ADJ.C.NOM.SG) [itá:law-é:s:-ta] (3SG.PST.ACT)

► **Proposal:** PIE root vocalism transfer is source of Hittite length transfer:

- (i) Hittite inherits pairs like (21a) with base-derivative transfer of root vocalism.
- (ii) After stressed \acute{V} of base was lengthened in pre-Hittite, derivational relationship renewed by (21b) analogically lengthening it in derivative.
- (iii) Length transfer extended productively to inner-Hittite formations like (21c) (cf. Watkins 1971:86)

Non-primary derivation from PIE to Hittite

(21) Diachronic development of Hittite base-derivative length transfer:

- a. PIE *new-o- ‘new’ ⇒ *new-éh₂- ‘make new’
- b. Hitt. *nēwan* ‘new’ ⇒ *nēwahḫanzi* ‘make new’
[né:wa-n] (ADJ.C.ACC.SG) [ne:w-áχ:-antsi] (3PL.NPST.ACT)
- c. Hitt. *idāluš* ‘bad’ ⇒ *idālawešta* ‘turned out badly’
[ita:lu-s] (ADJ.C.NOM.SG) [ita:law-é:s:-ta] (3SG.PST.ACT)

► Some implications of this proposal:

- Hittite length transfer supports reconstructing transfer of root vocalism as a regular property of PIE non-primary derivation.
- Hittite length transfer illustrates how an inherited morphophonological process can be transformed and survive in altered guise.

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<http://www.adyates.com/research/>).

Development of Vh_1sV in Hittite

- (A1)
- a. PIE $*h_{2/3}ih_{1/3}s-éh_2-$ > Hitt. *ḫišša-* ‘hitch-pole’ (cf. Ved. *īṣā-* ‘id.’)
 - b. PIE $*h_1éh_1s-or$ > Hitt. *ēša* ‘sits down’
 - c. PIE $*h_1és-or$ > Hitt. *ēša* ‘sits down’
>> CLuw. *aša[r]* ‘sits down’
 - d. PIE $*h_1ĕs-ti$ > Hitt. *ēšzi* ‘sits, abides’
>> HLuw. *isnu(wa)-* ‘seat’

► Kloekhorst (2008:72) claims development is stress-conditioned:

(i) $*Vh_1sV̇ > VššV̇$ in (A1a).

(ii) $*V̇h_1sV >$ Hitt. $V̇šV$ in (A1b) (analogically undone in ‘ash’ and ‘hearth’).

Development of Vh_1sV in Hittite

- (A1)
- a. PIE $*h_{2/3}ih_{1/3}s-éh_2-$ > Hitt. *ḫišša-* ‘hitch-pole’ (cf. Ved. *īṣā-* ‘id.’)
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 - d. PIE $*h_1ĕs-ti$ > Hitt. *ēšzi* ‘sits, abides’
>> HLuw. *isnu(wa)-* ‘seat’

- ▶ Kloekhorst (2008:72) claims development is stress-conditioned:
 - (i) $*Vh_1sV > V\acute{s}\acute{s}V$ in (A1a).
 - (ii) $*V\acute{h}_1sV > \text{Hitt. } V\acute{s}V$ in (A1b) (analogically undone in ‘ash’ and ‘hearth’).
- ▶ But Hitt. *eša-* is better derived as in (A1c) — i.e., as middle of “Narten present” in (A1d) (Melchert 2014a; cf. Oettinger 2004).

Development of Vh_1sV in Hittite

- (A1)
- | | | | | |
|----|-------------------------------|----|------------------------|---|
| a. | PIE $*h_{2/3}ih_{1/3}s-éh_2-$ | > | Hitt. <i>ḫišša-</i> | ‘hitch-pole’ (cf. Ved. <i>īṣā-</i> ‘id.’) |
| b. | PIE $*h_1éh_1s-or$ | > | Hitt. <i>ēša</i> | ‘sits down’ |
| c. | PIE $*h_1és-or$ | > | Hitt. <i>ēša</i> | ‘sits down’ |
| | | >> | CLuw. <i>aša[r]</i> | ‘sits down’ |
| d. | PIE $*h_1és-ti$ | > | Hitt. <i>ēšzi</i> | ‘sits, abides’ |
| | | >> | HLuw. <i>isnu(wa)-</i> | ‘seat’ |

- ▶ Kloekhorst (2008:72) claims development is stress-conditioned:
 - (i) $*Vh_1sV > VššV$ in (A1a).
 - (ii) $*Vh_1sV >$ Hitt. $VšV$ in (A1b) (analogically undone in ‘ash’ and ‘hearth’).
 - ▶ But Hitt. *eša-* is better derived as in (A1c) — i.e., as middle of “Narten present” in (A1d) (Melchert 2014a; cf. Oettinger 2004).
- ⇒ Lacking support and faced with counter-evidence (ii) should be rejected; instead (i) occurs regardless of stress.

The NOM.SG of ‘ash’ in Hittite

(A2)	PIE	PA	HITTITE
a.	*/h ₂ óh ₁ s-s/	→ *[h ₂ ó:h ₁ s] > *[h ₂ ó:h ₁ es]	> ^x <i>hāišš</i> ‘ash’
b.	*/h ₂ eh ₁ -s/	→ *[h ₂ á:h ₁ s] > *[h ₂ á:h ₁ es]	> ^x <i>hāišš</i> ‘ash’
c.	*/h ₁ óh ₁ -s/	→ *[h ₁ óh ₁ -s] > *[h ₁ óh ₁ -es]	> <i>aīšš</i> ‘mouth’

- ▶ NOM.SG Hitt. *hāišš* ‘ash’ is very likely analogical.
 - ▶ Expected outcome is probably Hitt. ^x*hāišš*, whether reconstructible as (A2a) “acrostatic II” (per §2) or (A2b) mobile (Kloekhorst 2008:318).
 - ▶ For development of stem-final sequence compare ‘mouth’ in (A2c) (per Melchert 2010).

⇒ NOM.SG cannot be analogical source of root vowel length on the “mobile” reconstruction.

Deriving ‘hearth’ in PIE

- (A3)
- a. $*h_2ó/éh_1s-$ ‘burning; ash’ > Hitt. $ḫašš-$ ‘ash’
 - ⇒ b. $*h_2eh_1s-ó-$ ‘burning, afire; ashy’ > Ved. $áśa-$ ‘ash’
 - ⇒ c. $*h_2eh_1s-eh_2-$ ‘place for burning’ > Hitt. $ḫašša-$ ‘hearth’
Osc. **aasa-** ‘altar’

- ▶ Direct derivation of $*-eh_2-$ -stems from root nouns is weakly (?) supported in IE languages.
- ▶ Possible alternative derivation in (A3):
 - ▶ From root noun in (A3a) is derived possessive thematic adjective in (A3b) (with “morphological zero-grade” in $*TeT$ roots).
 - ▶ Adjective in (A3b) is substantivized with animate $*-eh_2-$ in (A3c).
- ▶ Historical derivation of ‘hearth’ telescoped in Hittite, such that (A3a) was treated as base of (A3c) and so acquired its root long vowel.

The relationship between ‘ash’ and ‘hearth’ in Hittite

(A4) *n=ašta* ANA GU[NNI *ḥašš*] *uš* *arḫa arranzi*
CONN=PTC from.hearth ashes:C.ACC.PL away wash:3PL.NPST.ACT
‘They wash the ashes from the hearth.’ (KUB 9.1 ii 15–16)

- ▶ If correctly restored (A4) would add support for a synchronic relationship between ‘ash’ and ‘hearth’ in Hittite (cf. *HW*²: 389).

Cyclicity in cross-linguistic perspective

- ▶ Cyclic effects are cross-linguistically common — e.g., in present-day American English (Hayes 1982, Pater 2000, Bermúdez-Otero 2012, *i.a.*).
 - ▶ When a word contains a sequence of three pretonic light syllables (/LLLσ/), the **first** regularly receives secondary stress ([̀LLLσ]).

(A5) Non-cyclic stress in American English (monomorphemic nominals):

àbracadábra

dèlicatéssen

Mèditerránean

Kàlamazóo

Cyclicity in cross-linguistic perspective

- ▶ Cyclic effects are cross-linguistically common — e.g., in present-day American English (Hayes 1982, Pater 2000, Bermúdez-Otero 2012, *i.a.*).
 - ▶ But derived nominals like (A6) preserve primary stress of their base as secondary stress, blocking its regular assignment to initial syllable.

(A6) *Cyclic stress in American English (derived nominalizations):*

- a. *imá*gine ⇒ *imà*gination ^x*ì*maginátion
- b. *orí*ginal ⇒ *orì*ginality ^x*ò*originálicity
- c. *divís*ible ⇒ *divì*sibility ^x*divisibí*lity
- d. *phenó*menon ⇒ *phenò*menology ^x*phèn*omonólogy