



Vedic *sūṣá*– ‘powerful’ and the diachrony of vowel deletion in Indo-European

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Roadmap

- ▶ Introduction
- ▶ Vedic *śavas-*, *śūṣá-*, and their historical relationship
- ▶ PIE **kuh_x-*: a zero-grade root and its derivatives
- ▶ The diachrony of vowel deletion in IE
- ▶ Conclusions & discussion



Prosody of PIE non-primary derivatives

- **What were the prosodic properties of synchronically derived non-primary formations in Proto-Indo-European (PIE)?**
- With these terms understood in the following sense:
 - Prosodic properties \approx ablaut, stress
 - Non-primary \approx denominal, deverbal derivatives (traditionally “secondary,” “tertiary,” etc.)
 - PIE \approx snapshot of the moment before Anatolian split from rest of IE.



Ablaut in PIE non-primary derivatives

- Given a primary base with non-zero-grade root and non-zero-grade suffix (e.g., neuter $*-es-$, $*-men-$ stems).
- Suppose a PIE speaker wanted to add a stress-attracting suffix (e.g., possessive ADJ $*/-\acute{e}/\acute{o}-/$, denominative v-forming $*/-y\acute{e}/\acute{o}-/$).

○ What happened to the vowels in the base?



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→ More concretely — what would occur in this context?



Austen Yates, '24

This is Achilles.

Achilles won imperishable **kléw-os*.

Now Achilles is _____.

(← **kléw-o/es-* + *-é/ó-*)



Vowel deletion in IE non-primary derivatives

(1) Vowel deletion patterns in Indo-European (schematic):

- a. **kléw-/es-* ‘fame’ \Rightarrow **klew-es-ó-* ‘famous’
- b. **kléw-/es-* ‘fame’ \Rightarrow **kleu-s-ó-* ‘famous’
- c. **kléw-/es-* ‘fame’ \Rightarrow **klu-s-ó-* ‘famous’

- Attested IE languages support as many as three possible answers:¹
 - a. NON-DELETION: no base vowels are deleted.
 - b. BOUNDED DELETION: only the vowel in the stem-final suffix of base is deleted.
 - c. ITERATIVE DELETION: suffixal vowel(s) in the base and root vowel are deleted.

¹cf. Höfler 2015, 2017, i.a.



Vowel deletion in IE non-primary derivatives

(2) Vowel deletion patterns in Indo-European (attested):

- a. **témh_x-^o/es-* ‘darkness’ ⇒ **temh_x-es-ó-* ‘dark’
- b. **wét-^o/es-* ‘year’ ⇒ **wet-s-ó-* ‘having a year’
- c. **kéh_x-^o/es-* ‘swelling’ ⇒ **kuh_x-s-ó-* ‘swollen’

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 > Ved. *támas-* ‘id.’ Ved. *tamasá-* ‘id.’
 > OAv. *təmah-* ‘id.’ YAv. *təmaṇha-* ‘id.’
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- b. **wét-o/es-* ‘year’ ⇒ **wet-s-ó-* ‘having a year’³
 > Gk. ἔτος ‘id.’ Ved. *vatsá-* ‘calf’
 (Myc. *we-to*)
- c. **kéuh_x-o/es-* ‘swelling’ ⇒ **kuh_x-s-ó-* ‘swollen’

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³See Stüber 2002: 31, 187–8, Schaffner 2004: 292–3, Meissner 2005: 153 n. 82, 165, i.a. (differently Vine 2009).



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- Narrow question for today:

○ Was Ved. *sūṣá-* derived as in (2c) via ITERATIVE DELETION?

⁴See Burrow 1955: 162–3 [= 1973: 162–3], Hamp 1990: 187 n. 13, EWA II: 652, Rau 2009: 128, Blanc 2011: 240 (recently maintained by Vine 2016: 136, Höfler 2017: 466)



Vowel deletion in PIE non-primary derivatives

(3) Vowel deletion in PIE non-primary derivatives:

- a. **kúh_x-o/es-* ‘swelling’ ⇒ **kuh_x-s-ó-* ‘swollen’
 > Gk. *κύος* ‘fetus’ Ved. *śūṣá-* ‘powerful’

- A (i) specific claim:

i. Ved. *śūṣá-* was historically derived as in (3a) via BOUNDED DELETION from a neuter **-o/es-* stem with root zero-grade (cf. Vine 2022: 445).



Vowel deletion in PIE non-primary derivatives

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- b. **kléw-o/es-* ‘fame’ ⇒ **kleu-s-ó-* ‘famous’
 > Gk. κλέος ‘id.’
 > Ved. *śrávas-* ‘id.’
 > OIr. *clú* ‘id.’

- A (i) specific claim and a (ii) broader proposal:

- i. Ved. *śūṣá-* was historically derived as in (3a) via BOUNDED DELETION from a neuter **-o/es-* stem with root zero-grade (cf. Vine 2022: 445).
- ii. BOUNDED DELETION was the regular synchronic pattern in PIE non-primary derivatives formed with stress-attracting suffixes, as in (3b).



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 - Ved. *śūṣá-* and *śávas-* in Indo-Iranian context
 - Ved. *śūṣá-* and *śávas-* in Proto-Indo-Iranian
 - **ćáuH-as-* beyond Proto-Indo-Iranian?
- ▶ PIE **k_uh_x-*: a zero-grade root and its derivatives
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Ved. śūśá– and śávas–: attestation & meaning

- Ved. śūśá– is attested 23x in the *R̥gveda* (9x in Family Books).
 - With the sense ‘powerful’, e.g., in RV IX.97.54a.
 - But more often ‘empowering, fortifying,’ esp. as modifier of the poetic act (±overt noun).

(4) RV I.154.3 (tr. Jamison & Brereton 2014: 331):

*prá viṣṇave śūśám etu mánma
girikṣíta urugāyáya vṛṣṇe
yá idám dīrghám práyataṃ sadhásthām
éko vimamé tribhír ít padébhiḥ*

Let my fortifying thought go forth to Viṣṇu, the mountain-dwelling, wide-ranging bull, who alone with just three steps measured out this dwelling place here, long and extended.

¹cf. Wackernagel & Debrunner 1954: 236



Ved. śūṣá– and śávas–: attestation & meaning

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 - With the sense ‘powerful’, e.g., in RV IX.97.54a.
 - But more often ‘empowering, fortifying,’ esp. as modifier of the poetic act (±overt noun).
- Clearly connected with very well-attested Ved. śávas– ‘power’ (> 150x in RV).
 - Occurs in *figura etymologica* with its derivative.¹

(5) RV I.62.1 (tr. Jamison & Brereton 2014: 182):

prá manmahe śavasānāya śūṣám
āṅgūṣám gírvaṇase aṅgirasvát
suvṛktíbhi stuvatá ṛgmiyāya
ārcāma arkám náre víśrutāya

We think up a fortifying song for the forceful one who longs for hymns, just as the Aṅgirasas did. A chant with the good twists of a praiser we chant to the one worthy of chant, to the widely famed superior man.

¹cf. Wackernagel & Debrunner 1954: 236



Ved. *śávas-* and OAv. *savah-*

- Ved. *śávas-* directly reflects a formation of at least Proto-Indo-Iranian (PIIr.) date in view of its cognate OAv. *savah-*.
- Different meaning in Avestan, likely due to semantic broadening.
 - ‘benefit’ per Humbach
 - ‘opulence’ per Kellens & Pirart (1988: 185)
 - ‘salvation’ per Insler (1975: 109)

(6) Y. 51.20 (tr. Humbach 1991: I.191):

taṣṭ vā nā hazaōšāñhō vīspāñhō daidiiāi sauuō
aṣəm vohū manañhā uxδā yāiš ārmaitiš
yazəmnāñhō nəmanñhā mazdā rafəδrəm cagədō

In order that all of You, who are in harmony, grant us that **benefit**, (we are worshipping) truth with good thought, (as well) the statements with which right-mindedness (is associated), worshipping (them) in reverence to the Wise One who extends support.



PIIr. **ćuH-s-á-* and **ćáuH-as-*

(7) Word-formation in Proto-Indo-Iranian:

- a. **ćáuH-as-* ‘power’ ~ **ćuH-s-á-* ‘powerful’
 > Ved. *śávas-* ‘power’ Ved. *śūṣá-* ‘powerful’
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- Thus plausible to reconstruct a prototypical neuter **-as-* stem, PIIr. **ćáuH-as-* ‘power’.
- And beside it a thematic adjective **ćuHs-á-* ‘powerful’.
- Semantics compatible with the derivational relationship at this stage.



PIIr. **ćuH-s-á-* and **ćáuH-as-*

(7) Word-formation in Proto-Indo-Iranian:

- | | | | |
|----|-------------------------------|---|---|
| a. | * <i>ćáuH-as-</i> ‘power’ | ⇒ | * <i>ćuH-s-á-</i> ‘powerful’ |
| b. | * <i>támH-as-</i> ‘darkness’ | ⇒ | * <i>tamH-as-á-</i> ‘dark’ |
| | > Ved. <i>támas-</i> ‘id.’ | | Ved. <i>tamasá-</i> ‘id.’ |
| | > OAv. <i>təmah-</i> ‘id.’ | | OAv. <i>təmaṇha-</i> ‘id.’ |
| c. | * <i>wáč-as-</i> ‘speech’ | ⇒ | * <i>wač-as-á-</i> ‘skillful at speech’ |
| | > Ved. <i>vácas-</i> ‘id.’ | | Ved. <i>vacasá-</i> ‘id.’ |
| | > OAv. <i>vácah-</i> ‘id.’ | | |
| d. | * <i>twáy-as-</i> ‘trembling’ | ⇒ | * <i>tway-as-á-</i> ‘associated with trembling’ |
| | > — | | YAv. <i>θβaiianḥa-</i> ‘danger’ |

- But formally, derivation in (7a) cannot be the result of synchronic PIIr. word-formation.
- Productively derived, morphologically parallel formations do not exhibit iterative deletion (nor bounded deletion) but rather **non-deletion** — e.g., in (7b–d).



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⇒ If the derivational relationship in (7a) once existed, it must have been established prior to Proto-Indo-Iranian (as traditionally assumed).



**ćáuH-as-* beyond Indo-Iranian

- Yet whether **ćáuH-as-* can be reconstructed back further than Proto-Indo-Iranian is questionable.
- No exact cognates elsewhere in IE.
- Previously suspected that **ćáuH-as-* is a *Neubildung* in Indo-Iranian.¹
 - Older “State II” root shape preserved in Ved. *śvātrá-* ‘swollen (w/ power)’.
 - Innovative “State I” full-grade **ćáuH-as-* back-formed from derivatives with root zero-grade (e.g., Ved. *śūrá-*, YAv. *sūra-* ‘strong’).

(8) RV VIII.63.5 (tr. Jamison & Brereton 2014: 1150):

ád ū nú te ánu krátum
svāhā vārasya yájyavaḥ
śvātrám arká anūṣata
índra gotrásya dāváne

And therefore, following the intention of your will, those eager to sacrifice (have cried out) “hail!”; their chants have cried out to (you), who are swollen with strength, Indra, to give of the cowpen.

¹See Anttila 1969: 141, Stüber 2002: 66, Ozoliņš 2015: 142–3.



**ćáuH-as-* beyond Indo-Iranian

- PIE root is thus reconstructed as “State II” **kweh₁-* by *LIV*²: 339–40 n. 1.

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**ćáuH-as-* beyond Indo-Iranian

- PIE root is thus reconstructed as “State II” **k̑weh₁-* by *LIV*²: 339–40 n. 1.
- Alternatively, Vine (2022: 456) suggests it was a “zero-grade root,” i.e., **k̑uh_x-*.
 - Same implications for PIIr. **ćáuH-as-* (viz., a *Neubildung*).
 - ↓ But better accounts for formal properties of its other IE derivatives.

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 - Zero-grade roots in Indo-European
 - Gk. *κύος* and its prehistory
 - Implications of Gk. *κύος* for Ved. *śūṣá-* and PIE morphophonology
- ▶ The diachrony of vowel deletion in IE
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3 PIE $*k\hat{u}h_x-$: a zero-grade root and its derivatives

Zero-grade roots in IE

ZERO-GRADE ROOT:

- (9) A PIE root whose primary derivatives exhibit root zero-grade in morphological contexts associated with non-zero-grade.
- Reconstructible for PIE is a set of prosodically exceptional ZERO-GRADE ROOTS.



Zero-grade roots in IE

(10) Zero-grade forms of PIE root $*b^huh_x-$ in full- or $*o$ -grade contexts:

- a. $*b^húh_x-t$ > Ved. *á-bhūt* 'became', Gk. *ἔ-φῶ* 'became; grew', OCS *by* 'was'; Lat. *fūit* 'id.'
- b. $*b^he-b^húh_x-h_2e$ >(>) Ved. *babhūva* 'I have become'; Gk. *πέφῶκε* 'I am'
- c. $*b^húh_x-mṇ$ > Ved. *bhūma* 'earth', Gk. *φύμα* 'growth'

- Reconstructible for PIE is a set of prosodically exceptional ZERO-GRADE ROOTS.
- Best known example is PIE $*b^huh_x-$ 'become' (cf. Jasanoff 1997).
 - Zero-grade for full-grade in root Aorist in (10a), neuter $*-men$ -stem in (10c).
 - Zero-grade for $*o$ -grade in Perfect in (10b).



Zero-grade roots in IE

(11) Neuter $*-es-$ stems derived from PIE ZERO-GRADE ROOTS:

- a. $*srih_x(\hat{g})-$ ‘freeze, shiver’ $\Rightarrow *srih_x(\hat{g})-os$ > Gk. $\rho\acute{\iota}\gamma\omicron\varsigma$, Lat. *frīgus* ‘cold, frost’
- b. $*puh_x-$ ‘rot’ $\Rightarrow *p\acute{u}h_x-^o/es-$ > Gk. $\pi\acute{\upsilon}\omicron\varsigma$, Lat. *pūs* ‘pus’
- c. $*d^huh_2-$ ‘(produce) smoke’ $\Rightarrow *d^h\acute{u}h_2-os$ > Gk. $\theta\acute{\upsilon}\omicron\varsigma$ ‘burnt offering’
- d. $*duh_x-$ ‘revere’ $\Rightarrow *d\acute{u}h_x-^o/es-$ > Ved. *dúvas* ‘gift’

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 - Zero-grade for full-grade in root Aorist in (10a), neuter $*-men-$ stem in (10c).
 - Zero-grade for $*o$ -grade in Perfect in (10b).
- Vine (2022) adduces further examples, including the PIE roots in (11) which exhibit zero-grade in regularly full-graded neuter $*-es-$ stems (cf. Schindler 1975: 264–5).



Zero-grade roots in IE

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- Vine (2022) identifies a cluster of properties shared by $*b^huh_x-$ and roots in (11).
 - (i) Root zero-grade forms attested in full- and/or $*o$ -grade morphological contexts.
 - (ii) Similar phonological shape: “core sequence $CiH(C)$...or CuH ”
 - (iii) Lack of reconstructible non-zero-grade forms.
 - (iv) *Schwebeablaut* in *einzelnsprachlich* formations and/or categories associated with inserted full-/ $*o$ -grades (e.g., *vṛddhi*-derivatives)



Zero-grade roots in IE

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- (iv) *Schwebeablaut* in *einzelsprachlich* formations and/or categories associated with inserted full-/ $*o$ -grades (e.g., *vṛddhi*-derivatives) — e.g.:
 - $*b^heuh_x-$ > Ved. *bhaviṣyáti* ‘shall (be)come’ (Jasanoff 1997: 175–6)
 - $*b^hweh_x-$ > Alb. *bot* ‘someone, stranger’; *botë* ‘world, humanity’ (Kashima 2019; cf. LIV² 98–101)



3 PIE $*k\hat{u}h_x-$: a zero-grade root and its derivatives

PIE $*k\hat{u}h_x-$ as a zero-grade root

(12) Derivatives of PIE $*k\hat{u}h_x-$ ‘swell’:

- a. $*k\hat{u}h_x-men-$ > Gk. $\chi\hat{\upsilon}\mu\alpha$ ‘wave’ (cf. Eng. *swell*)
- b. $*k\hat{u}h_x-\acute{S}-$ > Gk. $\chi\upsilon\acute{\epsilon}\omega$, Lat. *in-ciēns* ‘(be) pregnant’; Oss. *ræ-syj/suj-*, Ved. *sváyati* ‘swell’
- c. $*k\hat{e}uh_x-is-to-$ > Ved. *śáviṣṭha-*, Av. *səuuista-* ‘strongest’
- d. $*k\hat{e}uh_x-ro-$ > Ved. *śávīra-* ‘strong’; W *cawr* ‘giant’
- e. $*k\hat{w}eh_x-tr-ó-$ > Ved. *śvātrá-* ‘swollen (with strength)’

• PIE root ‘swell’ shares these properties:

- (i) Root zero-grade in reflex of neuter $*-men-$ stem in (12a) (vs. regular full-grade).



3 PIE $*\hat{k}uh_x-$: a zero-grade root and its derivatives

PIE $*\hat{k}uh_x-$ as a zero-grade root

(12) Derivatives of PIE $*\hat{k}uh_x-$ ‘swell’:

- a. $*\hat{k}úh_x-men-$ > Gk. $\chi\acute{\upsilon}\mu\alpha$ ‘wave’ (cf. Eng. *swell*)
- b. $*\hat{k}uh_x-\acute{S}-$ > Gk. $\chi\upsilon\acute{\epsilon}\omega$, Lat. *in-ciēns* ‘(be) pregnant’; Oss. *ræ-syj/suj-*, Ved. *sváyati* ‘swell’
- c. $*\hat{k}éuh_x-is-to-$ > Ved. *śáviṣṭha-*, Av. *səuuista-* ‘strongest’
- d. $*\hat{k}éuh_x-ro-$ > Ved. *śávīra-* ‘strong’; W *cawr* ‘giant’
- e. $*\hat{k}weh_x-tr-ó-$ > Ved. *śvātrá-* ‘swollen (with strength)’

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- (iii) Inherited-looking verbal material with only zero-grade root, e.g., (12b) (cf. *LIV*²: 339–40).

¹Differently Jasanoff (2021) on Ved. *sváyati*, but if it continues a “Narten *i*-present” (cf. Ved. *sphāya-*) *vṛddhi* may be involved.



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• PIE root ‘swell’ shares these properties:

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- (ii) Phonologically contains a “core sequence... *CuH*”
- (iii) Inherited-looking verbal material with only zero-grade root, e.g., (12b) (cf. *LIV*²: 339–40).
- (iv) *Schwebeablaut* in *einzelsprachlich* formations and/or categories associated with inserted full-/ $*o$ -grade – e.g., (12c–e).

²See Kümmel 2000: 544 and *LIV*² on innovative “State I” full-grades in Indo-Iranian like (12c).

³A *Kind*-type substantivization of $*\hat{k}uh_x-ró-$ with *vṛddhi* per Ozoliņš 2015: 142 (cf. Schrijver 1995: 18 on the pre-form).

⁴Possibly a *vṛddhi*-derivative (from an erstwhile zero-graded $*-ter$ -agent noun?)



3 PIE $*k\hat{u}h_x-$: a zero-grade root and its derivatives

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- e. $*k\hat{w}eh_x-tr-ó-$ > Ved. *śvātrá-* ‘swollen (with strength)’
- f. $*k\hat{u}h_x-^o/es-$

- Thus likely that ‘swell’ was a ZERO-GRADE ROOT in PIE, i.e., $*k\hat{u}h_x-$.



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- Thus likely that ‘swell’ was a ZERO-GRADE ROOT in PIE, i.e., $*k_uh_x-$.
- **Root zero-grade** is expected in a synchronically derived neuter $*-es-$ stem, as in (12f).



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- Thus likely that ‘swell’ was a ZERO-GRADE ROOT in PIE, i.e., $*k_uh_x-$.
- **Root zero-grade** is expected in a synchronically derived neuter $*-es-$ stem, as in (12f).
 - **Just such a pre-form** is continued in Greek.



3 PIE **kuh_x-*: a zero-grade root and its derivatives

Gk. κύος — attestation & meaning

→ Single literary attestation of Gk. κύος occurs in a fragment of Aristophanes.

- *figura etymologica* with κύέω ‘be pregnant’
- Refers to the “baby bump”, i.e., the ‘swelling’ associated with a fetus in utero.

(13) Ar. *Fr.* 622 (tr. Henderson 2008: 421–2):

ἦτις κυοῦσ' ἐφάνη κύος τοσοῦτονί

‘a pregnant woman showing so much belly’



Gk. κύος — attestation & meaning

→ Attested in two late (≈ 3rd c. CE), fragmentary inscriptions found on Keos.

- Refers directly to the source of ‘swelling’, i.e., the fetus in utero (likewise IG XII 5, 646, probably).

(14) **SEG 25:957** (Keos, ca. 3rd c. CE; cf. Sokolowski 1969):

1 -----
 ος· ἂν δὲ μ [ἦ] βο[υλομένη ἔγκυος γίγνεσθαι ἢ κινή]
 καταμηνίην ἢ [ἀτοκείον ἐπιτελή ἢ διαφθείρη τὸ]
 κύος, καθαρὴ μ[ἦ ἔστω ἕως ἂν τεσσαρακοσταία]
 5 *vac.* καθαρμ[οὺς ποιῆ].
vac.

‘If a woman, because she does not want to become pregnant, should disrupt her menstrual cycle or make use of a contraceptive or abort a fetus, let her not be ritually pure until on the 40th day...she performs purificatory rites...’



3 PIE **kuh_x-*: a zero-grade root and its derivatives

Gk. κύος — attestation & meaning

(15) Hesych. κ 4633 (ed. Latte & Cunningham 2020: 695):

κύος· κύημα. τὸ ἐν γαστρὶ (Ar. fr. 622 K.-A.)

- Also known to later lexicographers.
 - Glossed by Hesychius with κύημα ‘fetus; sprout (of, e.g., cabbage)’
 - ‘That which is in the belly’ per Aristophanic scholia.



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- To account for its root zero-grade Stüber (2002: 66) takes κύος as an analogical formation based on κυέω ‘be pregnant’ — but:
 - Neuter **-es*-stems are “largely unproductive” in Greek (Meissner 2005: 120).
 - When (rarely) a novel transparent deverbal formation is deemed necessary, highly productive *-(η)μα* is employed



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 - When (rarely) a novel transparent deverbal formation is deemed necessary, highly productive *-(η)μα* is employed — and **this is attested for κυέω in (15)**.
- ⇒ More likely, κύος is an archaism preserved in Hesychius (and marginally elsewhere), a direct reflex of PIE **k^hu_x-o/es-* ‘swelling’.



3 PIE $*k\hat{u}h_x-$: a zero-grade root and its derivatives

PIE $*k\hat{u}h_x-$ and its derivatives

(16) Derivations of PIE $*k\hat{u}h_x-s-\acute{o}-$:

- a. $^x k\acute{e}u\hat{h}_x-/\acute{e}s-$ ‘swelling’ \nRightarrow $*k\hat{u}h_x-s-\acute{o}-$ ‘swollen’
 > Ved. *śávas-* ‘power’ Ved. *śūṣá-* ‘powerful’
 > OAv. *sauuah-* ‘benefit’
- b. $*k\acute{u}h_x-/\acute{e}s-$ ‘swelling’ \Rightarrow $*k\hat{u}h_x-s-\acute{o}-$ ‘swollen’
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- If the neuter $*-es-$ -stem derived from $*k\acute{u}h_x-$ ‘swell’ in PIE was $*k\acute{u}h_x-/\acute{e}s-$:
 - Traditional derivation of $*k\hat{u}h_x-s-\acute{o}-$ in (16a) cannot be maintained (= (2c) above).
 - On chronological grounds, $*k\hat{u}h_x-s-\acute{o}-$ was instead derived as in (16b).



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 - On chronological grounds, $*\hat{k}uh_x-s-ó-$ was instead derived as in (16b).

\Rightarrow PIE $*\hat{k}uh_x-s-ó-$ does not require ITERATIVE DELETION, only BOUNDED DELETION.



Roadmap

- ▶ Introduction
- ▶ Vedic *śavas-*, *śūṣá-*, and their historical relationship
- ▶ PIE **kuh_x-*: a zero-grade root and its derivatives
- ▶ The diachrony of vowel deletion in IE
 - Vowel deletion in IE non-primary derivation redux
 - Bounded deletion as a PIE process
 - The status of iterative deletion in PIE
- ▶ Conclusions & discussion



Vowel deletion in IE non-primary derivatives redux

(1) Vowel deletion patterns in Indo-European (schematic):

- a. **kléw-^o/es-* ‘fame’ \Rightarrow **klew-es-ó-* ‘famous’
- b. **kléw-^o/es-* ‘fame’ \Rightarrow **kleu-s-ó-* ‘famous’
- c. **kléw-^o/es-* ‘fame’ \Rightarrow **klu-s-ó-* ‘famous’

- Recall — reflexes of as many as three vowel deletion patterns are attested in IE languages:¹
 - a. NON-DELETION: no base vowels are deleted.
 - b. BOUNDED DELETION: only the vowel in the stem-final suffix of base is deleted.
 - c. ITERATIVE DELETION: suffixal vowel(s) in the base and root vowel are deleted.

¹cf. Höfler 2015, 2017, i.a.



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- Which was the regular **synchronic** pattern in PIE non-primary derivatives formed with stress-attracting suffixes?

¹cf. Höfler 2015, 2017, i.a.



Vowel deletion in IE non-primary derivatives redux

(1) Vowel deletion patterns in Indo-European (schematic):

- a. **kléw-^o/es-* ‘fame’ \Rightarrow **klew-es-ó-* ‘famous’ \leftarrow youngest
- b. **kléw-^o/es-* ‘fame’ \Rightarrow **kleu-s-ó-* ‘famous’
- c. **kléw-^o/es-* ‘fame’ \Rightarrow **klu-s-ó-* ‘famous’ \leftarrow oldest

- It is generally thought that the deletion patterns are **chronologically ordered**.¹

¹cf. Höfler 2015, 2017, i.a.



Vowel deletion in IE non-primary derivatives redux

(1) Vowel deletion patterns in Indo-European (schematic):

- a. **kléw-^o/es-* ‘fame’ \Rightarrow **klew-es-ó-* ‘famous’ \leftarrow youngest
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- c. **kléw-^o/es-* ‘fame’ \Rightarrow **klu-s-ó-* ‘famous’ \leftarrow oldest

- It is generally thought that the deletion patterns are **chronologically ordered**.¹
- Main contenders for PIE status are **(1b)** and **(1c)**, since **(1a)**:
 - Is easily innovated — derivatives can be analogically rebuilt from existing base at any time.
 - Tracks with the diachronic trajectory of ablaut in IE inflection.

¹cf. Höfler 2015, 2017, i.a.



Bounded deletion in IE non-primary derivation

(17) BOUNDED DELETION in IE non-primary derivatives of neuter *-es-stems:

- a. *wét-/es- ‘year’ \Rightarrow *wet-s-ó- ‘having a year’¹
 > Gk. ἔτος (Myc. *we-to*) ‘id.’ Ved. *vatsá-* ‘calf’
- b. *pék-/es- ‘wool’ \Rightarrow *pek-s-ó- ‘having wool’²
 > Lat. *pecūs* ‘id.’ Lat. *pexus* ‘woolly’
 > Gk. πέχος ‘id.’
- c. *twéy-/es- ‘trembling’ \Rightarrow *twei-s-ó- ‘associated with trembling’
 > - (\Rightarrow YAv. *θβaiianha-* ‘danger’) Ved. *tveśá-* ‘turbulent’
 (\Rightarrow YAv. *θβaiiahuant-* ‘dangerous’)

- Robust support across the IE languages for BOUNDED DELETION in non-primary derivation:
 - In possessive adjectives derived with */-é/ó-/ from neuter *-es-stems like (17).

¹See Stüber 2002: 31, 187–8, Schaffner 2004: 292–3, Meissner 2005: 153 n. 82, 165, i.a. (differently Vine 2009).

²See Ernout & Meillet 2001: 491, Höfler 2017: 307–8; but non-application of ITERATIVE deletion may be phonotactically motivated.



Bounded deletion in IE non-primary derivation

(18) BOUNDED DELETION in other IE non-primary derivatives:

- | | | | |
|----|--|---|--|
| a. | *(h_x)rot-eh ₂ - ‘wheel’ | ⇒ | *(h_x)rot-h ₂ -ó- ‘wheeled’ ¹ |
| | > Lat. <i>rota</i> ‘wheel’ | | Ved. <i>rátha</i> - ‘chariot’ |
| | > | | YAv. <i>raθa</i> - ‘chariot’ |
| b. | *sok ^w -h ₂ -ói- ‘comrade’ | ⇒ | *sok ^w -h ₂ -y-ó- ‘having comrades’ ² |
| | > Ved. <i>sákhā(y)</i> - ‘friend’ | | Lat. <i>socius</i> ‘ally’ |
| | > | | ON <i>seggr</i> ‘warrior’ |
| c. | *léuks-men- ‘light’ | ⇒ | *leuks- <i>m̃n</i> -ó- ‘having light’ ³ |
| | > Lat. <i>lūmen</i> | | YAv. <i>raoxšna</i> - ‘bright’ |

- Robust support across the IE languages for BOUNDED DELETION in non-primary derivation:
 - In possessive adjectives derived with */-é/ó-/ from neuter *-es-stems like (17).
 - In possessive adjectives derived with */-é/ó-/ from other nominal bases like (18).

¹See EWA II: 429–30, Vaan 2008: 527, NIL: 575–8, Weiss 2020, Meier-Brügger & Fritz 2021: 126, i.a.

²See Schindler (1969: 164), EWA II: 684–5, Beekes (2010: 112–3, 1089), Byrd (2015: 210–1), Ringe (2017: 131–2), Yates (2019), i.a.

³See Schmidt 1895: 101–2, Nussbaum (2010: 270) (differently Höfler 2017: 464–5).



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| a. | <i>*(h_x)rot-eh₂-</i> ‘wheel’ | ⇒ | <i>*(h_x)rot-h₂-ó-</i> ‘wheeled’ ¹ |
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| | > | | YAv. <i>raθa-</i> ‘chariot’ |
| b. | <i>*sok^w-h₂-ói-</i> ‘comrade’ | ⇒ | <i>*sok^w-h₂-y-ó-</i> ‘having comrades’ ² |
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| c. | <i>*léuks-men-</i> ‘light’ | ⇒ | <i>*leuks-mn-ó-</i> ‘having light’ ³ |
| | > Lat. <i>lūmen</i> | | YAv. <i>raoxšna-</i> ‘bright’ |

- Robust support across the IE languages for BOUNDED DELETION in non-primary derivation:
 - In possessive adjectives derived with **/-é/ó-/* from neuter **-es-* stems like (17).
 - In possessive adjectives derived with **/-é/ó-/* from other nominal bases like (18).
 - See further Yates 2019 on **-oi-* stems; Yates 2020, 2022 on internally derived **-mon-* stems; Yates to appear on *τομή-* type formations.



Iterative deletion in IE non-primary derivation?

(19) ITERATIVE DELETION in IE non-primary derivatives:

- | | | | |
|----|---|---|--|
| a. | <i>*h₁réud^h-o/es-</i> ‘redness’ | ⇒ | <i>*h₁rud^h-s-ó-</i> ‘red’ ¹ |
| | > Lat. <i>robur</i> ‘strength; oak’ | | Lat. <i>russus</i> ‘red(-haired)’ |
| | > Gk. ἔρευθος ‘redness’ | | (⇒ OIr. <i>ruis</i> ‘elder-tree’) |
| b. | <i>*wéd-o/es-</i> ‘water’ | ⇒ | <i>*ud-s-ó-</i> ‘having water’ ² |
| | > Gk. ὕδωρ ‘water’ | | Ved. <i>útsa-</i> ‘wellspring’ |
| | > Arm. <i>get</i> ‘river’ | | |
| c. | <i>*nek-(e)w-</i> ‘death’ | ⇒ | <i>*n^hk-w-ó-</i> ‘having death’ ³ |
| | > - (⇒ Gk. νέκυς, YAv. <i>nasau-</i> ‘corpse’) | | - (⇒ TA <i>onk</i> , B <i>enikwe</i> ‘man’) |

- Proposed reanalysis of Ved. *śūṣá-* weakens the empirical basis for ITERATIVE DELETION.
- Other oft-cited examples like (19) are amenable to alternative analyses, in some cases manifestly superior:
 - See Vine 2009: 220 for degenitival analysis of (19b) (building on Nussbaum 1986: 203 n. 16).
 - See Rau 2003: 109–11 for analysis of (19c) as **-wo-*adjective (cf. antonym **g^wih₃-wó-* ‘living’).

¹See Schmidt 1893: 387, Persson 1893: 270, Nussbaum 1999: 412 n. 76, *NIL*: 581, Weiss 2013: 345 n. 56, Höfler 2015: 222–3, 2017: 51–4; but **-to-*adjective per Hill 2003: 224.



Iterative deletion in IE non-primary derivation?

(19) ITERATIVE DELETION in IE non-primary derivatives:

- | | | | |
|----|---|---------------|--|
| a. | $*h_1réd^{h_1}o/es-$ ‘redness’ | \Rightarrow | $*h_1rud^{h_1}s-ó-$ ‘red’ ¹ |
| | > Lat. <i>robur</i> ‘strength; oak’ | | Lat. <i>russus</i> ‘red(-haired)’ |
| | > Gk. ἔρευθος ‘redness’ | | (\Rightarrow OIr. <i>ruis</i> ‘elder-tree’) |
| b. | $*wéd-o/es-$ ‘water’ | \Rightarrow | $*ud-s-ó-$ ‘having water’ ² |
| | > Gk. ὕδωρ ‘water’ | | Ved. <i>útsa-</i> ‘wellspring’ |
| | > Arm. <i>get</i> ‘river’ | | |
| c. | $*nek-(e)w-$ ‘death’ | \Rightarrow | $*n_kw-ó-$ ‘having death’ ³ |
| | > – (\Rightarrow Gk. νέκυς, YAv. <i>nasau-</i> ‘corpse’) | | – (\Rightarrow TA <i>onk</i> , B <i>enikwe</i> ‘man’) |

- Proposed reanalysis of Ved. *śūṣá-* weakens the empirical basis for ITERATIVE DELETION.
- Other oft-cited examples like (19) are amenable to alternative analyses, in some cases manifestly superior:
 - See Vine 2009: 220 for degenitival analysis of (19b) (building on Nussbaum 1986: 203 n. 16).
 - See Rau 2003: 109–11 for analysis of (19c) as $*-wo-$ adjective (cf. antonym $*g^wh_3w-ó-$ ‘living’).

²See Wackernagel & Debrunner 1954: 136, EWA I: 213, Höfler 2015: 221, 2017: 460.



Iterative deletion in IE non-primary derivation?

(19) ITERATIVE DELETION in IE non-primary derivatives:

- | | | | |
|----|---|---|--|
| a. | <i>*h₁réud^h-o/es-</i> ‘redness’ | ⇒ | <i>*h₁rud^h-s-ó-</i> ‘red’ ¹ |
| | > Lat. <i>robur</i> ‘strength; oak’ | | Lat. <i>russus</i> ‘red(-haired)’ |
| | > Gk. ἔρευθος ‘redness’ | | (⇒ OIr. <i>ruis</i> ‘elder-tree’) |
| b. | <i>*wéd-o/es-</i> ‘water’ | ⇒ | <i>*ud-s-ó-</i> ‘having water’ ² |
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| | > Arm. <i>get</i> ‘river’ | | |
| c. | <i>*nek-(e)w-</i> ‘death’ | ⇒ | <i>*n^hk-w-ó-</i> ‘having death’ ³ |
| | > - (⇒ Gk. νέκυς, YAv. <i>nasau-</i> ‘corpse’) | | - (⇒ TA <i>onk</i> , B <i>enikwe</i> ‘man’) |

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³See Widmer 2004: 72–3, Pinault 2008: 479, Adams 2013: 82–3, Höfler 2015: 221, 2017: 49.



Iterative deletion in IE non-primary derivation?

(19) ITERATIVE DELETION IN IE non-primary derivatives:

- d. $*h_2eug\text{-}o/es\text{-}$ ‘strength’ $\Rightarrow *h_2ug\text{-}s\text{-}o\text{-}$ ‘having strength’ $\Rightarrow *h_2ug\text{-}s\text{-}o\text{-}n\text{-}$ ‘the strong one’⁴
 > Ved. *ójas-*, OAv. *aojah-* ‘id.’ – Ved. *ukṣán-* ‘ox’
 (⇒ Lat. *augustus* ‘magnified’) OE *oxa* ‘ox’
- e. $*p\acute{o}/\acute{e}k\text{-}u\text{-}$ ‘livestock’ $\Rightarrow *p\acute{k}\text{-}w\text{-}o\text{-}$ ‘having livestock’ $\Rightarrow *p\acute{k}\text{-}w\text{-}o\text{-}n\text{-}$ ‘one with livestock’⁵
 > Ved. *pásu-* ‘id.’ – Ved. *śván/śún-* ‘dog’
 > Lith. *pėkus* ‘herd’ Lith. *šuo* ‘dog’
 > Goth. *faihu* ‘property’ Hitt. ^{LÚ}*kuwan-* ‘dog-man’

- If the etymologies in (19d–e) are correct, resulting derivatives would have become lexicalized already in PIE (viz., ‘ox’, ‘dog’).

⁴See Höfler 2015: 231–2, 2017: 37–40, 192.

⁵See Osthoff 1901: 219, Höfler 2015: 237 (cf. Höfler 2017: 186–7).



Iterative deletion in IE non-primary derivation?

(19) ITERATIVE DELETION in IE non-primary derivatives:

- d. $*h_2eug\text{-}o/es\text{-}$ ‘strength’ $\Rightarrow *h_2ug\text{-}s\text{-}ó\text{-}$ ‘having strength’ $\Rightarrow *h_2ug\text{-}s\text{-}o\text{-}n\text{-}$ ‘the strong one’
 > Ved. *ójas-*, OAv. *aojah-* ‘id.’ – Ved. *ukṣán-* ‘ox’
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 > Lith. *pėkus* ‘herd’ Lith. *šuo* ‘dog’
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⇒ Overall, the likeliest diachrony of vowel deletion in IE non-primary derivatives:

- ITERATIVE DELETION as a possible **pre-PIE** process, with (debatable) traces surviving as archaisms for PIE speakers (as perhaps **(19d–e)**).
- BOUNDED DELETION in synchronic PIE.
- NON-DELETION emerged *einzelsprachlich* (e.g., in Proto-Indo-Iranian).



Roadmap

- ▶ Introduction
- ▶ Vedic *śavas-*, *śūṣá-*, and their historical relationship
- ▶ PIE **kuh_x-*: a zero-grade root and its derivatives
- ▶ The diachrony of vowel deletion in IE
- ▶ Conclusions & discussion



Conclusions

(20)

PIE $*k_uh_x-$ 'swell' (= zero-grade root)



PIE $*kúh_x-o/es-$ 'swelling' > Gk. $\chiύος$ 'fetus'



PIE $*k_uh_x-s-ó-$ 'swollen' > Ved. $sūṣá-$ 'powerful'

- Two main claims:
 - (i) Ved. $sūṣá-$ was derived historically as in (20).
 - (ii) A PIE speaker would probably have called Achilles $*kleu-s-ó-$ (viz., with BOUNDED DELETION).



Austen Yates, '24

This is Achilles.

Achilles won imperishable $*kléw-os$.

Now Achilles is $*kleu-s-ó-$.

(← $*kléw-o/es-$ + $-é/ó-$)



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