

The unexceptional word-prosody of the “endingless locative” in Indo-European



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“Endingless locative” in Indo-European

- (1) RV X.104.3ab (trans. Jamison and Brereton 2014:248):

áva tmánā bharate kétévedā /áva
away self:INS.SG bring:PRS:3SG.MID will:knowing:F.NOM.SG away
tmánā bharate phénam udán
self:INS.SG bring:PRS:3SG.MID foam:M:ACC.SG water:LOC.SG

‘She who knows his will carries away by herself; (the other) by herself carries away the foam **in** her **water**.’

- ▶ In Proto-Indo-European (PIE) the locative singular of athematic nominals could be formed in two ways:
 - ▶ With an inflectional ending **-i*
 - ▶ Without any apparent ending, the “**endingless locative**” (EL)
- ▶ EL is best preserved in Indo-Iranian, e.g., (1) in Vedic.

“Endingless locative” in Indo-European

(2) KUB 33.62 iii 9 (CTH 330; OH/MS):

nu tagān šipanti

CONN earth:LOC.SG libate:3SG.NPST.ACT

‘Then he libates onto the earth.’

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 - ▶ With an inflectional ending **-i*
 - ▶ Without any apparent ending, the “endingless locative” (EL)
- ▶ Also traces of EL all over IE family, e.g., (2) in Hittite.

Exceptional prosody of EL

(3) Exceptional stem-final stress in PIE ELs:

	ACC.SG	OBL.SG
a. 'water'	*wód-r̥	*wéd-n-
b. 'earth'	*dʰéǵʰ-ōm	*dʰəǵʰ-m-

- ▶ Commonly held that EL could be exceptional within its inflectional paradigm, exhibiting prosodic properties that differ from a nominal's other oblique case-forms in PIE.
 - ▶ “[F]ormed by a special subrule” (Jasanoff 2017:6 n. 18).

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(3) Exceptional stem-final stress in PIE ELs:

	ACC.SG	OBL.SG	EL	
a.	'water' *wód-r̥	*wéd-n-	*ud-én	'in(to) the water'
b.	'earth' *dʰéǵʰ-ōm	*dʰəǵʰ-m-	*dʰǵʰ-ém	'on(to) the earth'

- ▶ Commonly held that EL could be exceptional within its inflectional paradigm, exhibiting prosodic properties that differ from a nominal's other oblique case-forms in PIE.
 - ▶ “[F]ormed by a special subrule” (Jasanoff 2017:6 n. 18).
- ▶ EL would thereby have uniform zero-grade root and stressed full-grade (or lengthened-grade) suffix in all nominals (cf. Neri 2017:117–21).

Exceptional prosody of EL

(3) Exceptional stem-final stress in PIE ELs:

	ACC.SG	OBL.SG	EL	EM CLASS
a. 'water'	*wód-r	*wéd-n-	*ud-én	<u>AS II</u>
b. 'earth'	*d ^h éĝ ^h -ōm	*d ^h əĝ ^h -m-	*d ^h ĝ ^h -ém	

- ▶ EL would exhibit exceptional stress in two inflectional classes reconstructed under the widely accepted Erlangen Model (EM) (Schindler 1975b:262–3, 1994:397; cf. Neri 2017:117–21, i.a.):
 - ▶ “acrostatic” (AS): stressed full-grade of root and zero-grade of suffix in oblique, but zero-grade root and stressed full-grade suffix in EL.

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 - ▶ “acrostatic” (AS): stressed full-grade of root and zero-grade of suffix in oblique, but zero-grade root and stressed full-grade suffix in EL.
 - ▶ “amphikinetic” (AK): zero-grade of root and suffix and **stressed endings** in oblique, but **stressed full-grade of suffix** in EL.

Exceptional prosody of EL

(4) IE reflexes of exceptional ELs:

	ACC.SG	OBL.SG	EL		IE
a.	'water' * <i>wód-r̥</i>	* <i>wéd-n-</i>	* <i>ud-én</i>	>	Ved. <i>udán</i>
b.	'earth' * <i>dʰéǵʰ-ōm</i>	* <i>dʰǵʰ-m-</i>	* <i>dʰǵʰ-ém</i>		

- ▶ Exceptional EL in (4a) would be directly reflected in Vedic.

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					>>	Hitt. <i>tagān</i> ([taká:n])
					>>	CLuw. <i>tiyammi</i>

- ▶ Exceptional EL in (4a) would be directly reflected in Vedic.
- ▶ Exceptional EL in (4b) would be indirectly continued in:
 - ▶ Vedic — recharacterized with LOC.SG *-i* (cf. Schindler 1967:201)
 - ▶ Hittite — with analogical suffixal *a*-vocalism (cf. NOM/ACC.SG *tēkan*)
 - ▶ Luwian — recharacterized with DAT/LOC.SG *-i* (+ basis for analogical paradigm, with *-mm-* via ČOP’S LAW; cf. Kimball 1983:427 n. 20)

► Two principal claims:

- (i) PIE nominals with root stress in direct and oblique (incl. AS) also had root stress in EL.

(5) **GENERALIZATION ON ENDINGLESS LOCATIVE STRESS (GELS):**

If a nominal is MOBILE, it has stem-final stress in EL. If IMMOBILE, it is stressed on same syllable of the stem as in other oblique cases.

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- (ii) Stress in EL was predictable in PIE, governed by the principled morphophonological generalization in (5).
 - MOBILE: stressed on stem in direct cases, on V-initial endings in oblique.
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★ Both (i) and (ii) obtain synchronically in Vedic.

§1 Introduction

§2 Word stress in Vedic ELs

- ▶ Vedic data
- ▶ Establishing the GELS in Vedic

§3 Reconstructing the GELS

§4 Conclusions and discussion

(6) Vedic ELs by (historical) stem type:

- a. *udán* 'in the water'
- b. *áhan* 'on the day', *úḍhan* 'in the udder';
ádhan 'on the path', *dhánvan* 'on the bow', *párvan* 'at the joint'¹
- c. *bráhman* 'in the formulation', *sádmán* 'at the seat'
- d. *āsán* 'in the mouth', *tmán* 'in person', *mūrdhán* 'at the head', *śīrṣán* 'id.'
- e. *ásman* 'in the rock', *párijman* 'in the circling'
- f. *camú* 'in the cup', *tanú* 'in the body'

- ELs are securely attested for 54 nominal stems in Vedic (48 in RV):

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 - ▶ **-uh₂*-stem nouns in (6f) with stem-final stress.

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Diagnosing EL+ in Vedic

(7) Underapplication of vowel deletion in EL+ in Vedic:

	EL+	EL	OBLIQUE	
a.	<i>ás<u>ma</u>n-i</i>	<i>ásman</i>	<i>áśn-as</i>	‘in / of the rock’
b.	<i>á<u>ha</u>n-i</i>	<i>áhan</i>	<i>áh^hn-as</i>	‘on / of the day’
c.	<i>mū<u>rdh</u>án-i</i>	<i>mūrdhán</i>	<i>mūrd^hn-ás</i>	‘at / from the head’
d.	<i>ud<u>á</u>n-i</i>	<i>udán</i>	<i>udⁿ-ás</i>	‘in / of the water’

- ▶ Vedic also attests “endingful ELs” (EL+) — i.e., historical ELs recharacterized with synchronic LOC.SG *-i*.
- ▶ Properties of EL+ in Vedic:
 - (i) Vowel in stem-final σ is preserved before LOC.SG *-i*.
 - (ii) Vowel in stem-final σ otherwise deletes before *V*-initial oblique endings.
- ▶ Nominal stems with EL+ often attest a parallel EL, e.g., (7a–d).

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	EL+	EL	OBLIQUE	
e.	<i>rājan-i</i>	–	<i>rājñ-as</i>	‘at / of the king’
f.	<i>pitár-i</i>	–	<i>pitr-é</i>	‘at / for the father’
g.	<i>kṣám-i</i>	–	<i>kṣm-ás</i>	‘on / from the earth’
h.	<i>uṣás-i</i>	–	<i>uṣ-ás</i>	‘of / at dawn’
i.	<i>dyáv-i</i>	–	<i>div-ás</i>	‘in / of the sky’

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- ▶ But some nominal stems attest only EL+, e.g., (7e–i).

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- ▶ ‘sky’ in (7i) also has LOC.SG *diví*, reflecting “endingful” PIE **diw-i*.

(8) Vedic EL+ by (historical) stem type:

- a. *duhitári* 'in the daughter', *pitári* 'at the father', *mātári* 'in the mother',
- b. *kartári* 'in the performer', *netári* 'onto the leader'
- c. *uṣási* 'at dawn', *kṣámi* 'on the earth', *dyávi* 'in the sky'
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- ▶ Several other inherited(-looking) nouns, with (8c) stem-final or (8d) non-final stress.

Not ELs(+) in Vedic

- (9) a. *agnā́* ‘in Agni/fire’, *yónā* ‘in the womb’
b. *aktáu* ‘at night’, *krátau* ‘under the will’, *sā́nau* ‘on the back’
c. *agnáu* ‘in Agni/fire’, *yónau* ‘in the womb’

► Vedic forms not analyzed as EL(+):

- **-i*-stems like (9a) with LOC.SG in *-ā́*, which are historically endingful ($\langle -\bar{a} \langle *-\bar{e}i \langle **-\bar{e}y-i \rangle \rangle$).
- **-u*-stems like (9b) with LOC.SG in *-au*, which are analogical to (9a) ($\langle *-\bar{e}u = X \text{ in } *-i- : *-\bar{e}i :: *-u- : X \rangle$).²
- **-i*-stems like (9c) with LOC.SG in *-au*, which are analogical to (9b).

²cf. Neri 2017:120–1

Not ELs(+) in Vedic

- (9) d. *sáno* (*ávyē*) ‘on the back (of the sheep)’ (cf. OAv. *pər²tō* ‘at a ford’)
e. *vásta* (*usrás*) ‘at the break (of dawn)’
f. *gaurí* ‘in the wave’, *nadí* ‘in the river’, *sanasí* ‘in the pond’
g. *rājáni* ‘under the direction’ (RV X.49.4)

► Vedic forms not analyzed as EL(+):

- Possible traces of endingless **-eu* in **-u*-stems in (9d–e).³
- *vrkí*-stems in (9f), possibly endingful (< **-ih_x(-i)*).
- Paradigm-less *rājáni* in (9g), which is not the LOC.SG of *rājan-* ‘king’.⁴

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- ★ LOC.SG forms in (9a–f) are in any case stressed just like the ELs of immobile stems (viz., conform to GELS).

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Overview of EL(+) in Vedic

(10)

	STEM	DIAGNOSTIC	MOB	SF	SNF
EL	47	29	0	5	26
EL+	13	9	8	–	–
EL(+)	7	7	4	0	2
TOTAL:	67	45	12	5	28

- ▶ In total, 67 nominal stems attest EL(+) in Vedic (data: .tsv).
- ▶ 45 attest case-forms diagnostic for stress mobility:
 - ▶ 12 MOBILE, all with stress alternating between stem-final σ and endings.
 - ▶ 5 IMMOBILE, with stressed fixed on stem-final σ (SF).
 - ▶ 28 IMMOBILE, with stressed fixed on a non-final σ of stem (SNF).

(5)

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- ▶ **Now** — all consistent with GELS in (5).

Establishing the GELS in Vedic — mobile

(11) Vedic mobile stems with stem-final stress in EL(+):

	DIRECT / <u>ó</u> -E	OBLIQUE / - <u>É</u>	EL(+)/ <u>ó</u> -(E)	
a.	<i>dyá<u>v</u>-as</i>	<i>div-<u>ás</u></i>	<i>dyá<u>v</u>-i</i>	‘sky’
b.	<i>k<u>ṣám</u>-as</i>	<i>k<u>ṣm</u>-<u>ás</u></i>	<i>k<u>ṣám</u>-i</i>	‘earth’
c.	<i>mūrd<u>hán</u>-as</i>	<i>mūrdhn-<u>ás</u></i>	<i>mūrd<u>hán</u></i>	‘head’
d.	<i>pitá<u>r</u>-as</i>	<i>pit<u>r</u>-<u>é</u></i>	<i>pitá<u>r</u>-i</i>	‘father’
e.	<i>u<u>śás</u>-as</i>	<i>u<u>ṣ</u>-<u>ás</u></i>	<i>u<u>śás</u>-i</i>	‘dawn’
f.	<i>u<u>dá</u></i>	<i>udn-<u>ás</u></i>	<i>u<u>dán</u></i>	‘water’

► GELS predicts all MOBILE stems have stem-final stress in EL(+):

- Monosyllabic in (11a–b). ✓
- Polysyllabic, e.g., (11c–f). ✓

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b.	<i>kṣá<u>́</u>m-as</i>	<i>kṣm-<u>ás</u></i>	<i>kṣá<u>m</u>-i</i>	‘earth’
c.	<i>mūrdh<u>án</u>-as</i>	<i>mūrdhn-<u>ás</u></i>	<i>mūrdh<u>án</u></i>	‘head’
d.	<i>pitá<u>́</u>r-as</i>	<i>pit<u>r</u>-<u>é</u></i>	<i>pitá<u>r</u>-i</i>	‘father’
e.	<i>u<u>ś</u>ás-as</i>	<i>u<u>ṣ</u>-<u>ás</u></i>	<i>u<u>ś</u>ás-i</i>	‘dawn’
f.	<i>u<u>d</u>á</i>	<i>udn-<u>ás</u></i>	<i>u<u>d</u>án</i>	‘water’

▶ GELS predicts all MOBILE stems have stem-final stress in EL(+):

- ▶ Monosyllabic in (11a–b). ✓
- ▶ Polysyllabic, e.g., (11c–f). ✓

★ Vedic paradigm of ‘water’ in (11f) is (ahistorically) mobile (cf. §3).

Establishing the GELS in Vedic — immobile

(12) Vedic immobile stems with stem-final stress (incl. EL(+)):

	DIRECT/ <u>ó</u> -E	OBLIQUE/ <u>ó</u> -E	EL(+)/ <u>ó</u> -(E)	
a.	<i>tmán-am</i>	<i>tmán-ā</i>	<i>tmán</i>	‘self, person’
b.	–	<i>rán-e</i>	<i>rán</i>	‘joy’
c.	<i>anarvāṅ-as</i>	<i>anarvan-ām</i>	<i>anarván</i>	‘unassailing/-able’
d.	<i>camúv-ā</i>	<i>camúv-os</i>	<i>camú</i>	‘dawn’
e.	<i>tanúv-as</i>	<i>tanúv-as</i>	<i>tanú</i>	‘body, self’

▶ GELS predicts all IMMOBILE stems with stem-final stress have the same stem-final stress in EL(+):

▶ Monosyllabic in (12a–b). ✓

▶ Polysyllabic in (12c–e). ✓

Establishing the GELS in Vedic — immobile

(13) Vedic immobile stems with stem-non-final stress (incl. EL(+)):

	DIRECT / <u>σ</u> -E	OBLIQUE / <u>σ</u> -E	EL(+)/ <u>σ</u> -(E)	
a.	<u>á</u> har	<u>á</u> hn-as	<u>á</u> han	‘day’
b.	<u>ú</u> dhar	<u>ú</u> dhn-as	<u>ú</u> dhan	‘udder’
c.	<u>dhán</u> va	<u>dhán</u> van-as	<u>dhán</u> van	‘bow’
d.	<u>sád</u> ma	<u>sád</u> man-as	<u>sád</u> man	‘seat’
e.	<u>rājā</u> n-am	<u>rājā</u> ñ-as	<u>rājā</u> ni	‘king’
f.	<u>áśmā</u> n-am	<u>áśmā</u> ñ-as	<u>áśmā</u> n	‘stone’

► GELS predicts all IMMOBILE stems with stem-non-final stress have same stem-non-final stress in EL(+):

- Neuter *-r/n-stems, simple in (13a–b) and complex, e.g., (13c) ✓
- Neuter *-men-stems, e.g., (13d) ✓
- Animate *-n-stems, e.g., (13e–f), and other polysyllabic stems (.tsv) ✓

(5) **GENERALIZATION ON ENDINGLESS LOCATIVE STRESS (GELS):**

If a nominal is MOBILE, it has stem-final stress in EL. If IMMOBILE, it is stressed on same syllable of the stem as in other oblique cases.

- ▶ GELS correctly predicts stress in all (45 diagnostic) Vedic EL(+):
 - (ii) MOBILE stems have stem-final stress (12).
 - (ii) IMMOBILE stems with stem-final stress have stem-final stress (5).
 - (iii) IMMOBILE stems with stem-non-final stress have same stem-non-final stress (28).

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 - (ii) IMMOBILE stems with stem-final stress have stem-final stress (5).
 - (iii) IMMOBILE stems with stem-non-final stress have same stem-non-final stress (28).
- ⇒ Vedic provides prima facie evidence for reconstructing GELS for PIE.

Roadmap #2

§1 Introduction

§2 Word stress in Vedic ELs

§3 Reconstructing the GELS

- ▶ Empirical advantages of the GELS
- ▶ Theoretical advantages of the GELS
- ▶ Counter-evidence to GELS?

§4 Conclusions and discussion

Advantages of the GELS — empirical

(14) Competing reconstructions of PIE ‘day’:

- a. ACC.SG $*h_x\acute{o}\hat{g}^h-r^?$ >> Ved. *áhar* ‘day’
- b. GEN.PL $*h_x\acute{e}\hat{g}^h-n-oh_{1/3}om$ > Ved. *áhnām* ‘of the days’ (cf. OAv. *asnām*)
- c. LOC.SG $*h_x(e)\hat{g}^h-én$ >(>) Ved. ^x*ahán*
- d. LOC.SG $*h_x\acute{e}\hat{g}^h-en$ > Ved. *áhan* ‘on the day’

- ▶ EM reconstructs AS inflection for simple primary neuter $*-r/n$ -stems like (14) (Schindler 1975a; cf. Weiss 2020:227, i.a.):
 - ▶ EM reconstructs exceptional stem-final stress in EL, as in (14c) .
 - ▶ Reconstructing GELS demands root stress in EL, as in (14d).

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- c. LOC.SG $*h_x(e)\hat{g}^h-én$ >(>) Ved. xahán ✗
- d. LOC.SG $*h_x\acute{e}\hat{g}^h-en$ > Ved. *áhan* ‘on the day’ ✓

- ▶ EM reconstructs AS inflection for simple primary neuter $*-r/n$ -stems like (14) (Schindler 1975a; cf. Weiss 2020:227, i.a.):
 - ▶ EM reconstructs exceptional stem-final stress in EL, as in (14c) .
 - ▶ Reconstructing GELS demands root stress in EL, as in (14d).
- ▶ Only GELS-based (14d) directly accounts for EL of ‘day’ in Vedic.

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- c. LOC.SG $*h_x(e)\acute{g}^h-én$ >(>) Ved. *^xahán* ❌
- d. LOC.SG $*h_x\acute{e}\acute{g}^h-en$ > Ved. *áhan* ‘on the day’ ✅

- ▶ EM reconstructs AS inflection for simple primary neuter $*-r/n$ -stems like (14) (Schindler 1975a; cf. Weiss 2020:227, i.a.):
 - ▶ EM reconstructs exceptional stem-final stress in EL, as in (14c) .
 - ▶ Reconstructing GELS demands root stress in EL, as in (14d).
- ▶ Only GELS-based (14d) directly accounts for EL of ‘day’ in Vedic.
- ▶ Likewise, for root stress in EL of ‘udder’: *údhār* : *údhn-as* : *údhan*⁵

⁵Zero-grade root (< $*h_1u(h_x)d^h-$) is unexpected, however (cf. Gk. *oúthar* < $*h_1óu(h_x)d^h-r$).

Advantages of the GELS — empirical

(15) Competing reconstructions of PIE neuter **-men-*stems:

- a. ACC.SG **séd-mn̥* > Ved. *sádma* ‘seat’
- b. ABL.SG **séd-men-e/os* > Ved. *sádman-as* ‘from the seat’
- c. LOC.SG **s(e)d-mén* >(>) Ved. ^x*sadmán*
- d. LOC.SG **séd-men* > Ved. *sádman* ‘in the seat’

- ▶ EM reconstructs “proterokinetic” inflection for neuter **-men-*stems, with leveling of stressed root full-grade to oblique already in PIE, as in (15a–b) (Schindler 1975b:263–4; cf. Lundquist and Yates 2018:2110):
 - ▶ EM would (?) allow for (retained) suffix stress (via “subrule”), as in (15c).
 - ▶ Reconstructing GELS demands root stress in EL, as in (15d).

Advantages of the GELS — empirical

(15) Competing reconstructions of PIE neuter **-men-*stems:

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- d. LOC.SG **séd-men* > Ved. *sádman* ‘in the seat’ ✓

- ▶ EM reconstructs “proterokinetic” inflection for neuter **-men-*stems, with leveling of stressed root full-grade to oblique already in PIE, as in (15a–b) (Schindler 1975b:263–4; cf. Lundquist and Yates 2018:2110):
 - ▶ EM would (?) allow for (retained) suffix stress (via “subrule”), as in (15c).
 - ▶ Reconstructing GELS demands root stress in EL, as in (15d).
- ▶ Only GELS-based (15d) directly accounts for consistent root stress in EL of this Vedic class.

(16)

BASIC ACCENTUATION PRINCIPLE (BAP; Kiparsky and Halle 1977):

If a word has more than one accented vowel, word stress is assigned to the leftmost. If a word has no accented vowel, word stress is assigned to the leftmost syllable.

- ▶ GELS is consistent with (16), which is securely reconstructible for PIE:
 - ▶ Governs stress in Vedic inflection (cf. Kiparsky 1984, 2010 et seq.)
 - ▶ Governs stress in Hittite inflection (Yates 2015, 2017 et seq.).

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- ▶ GELS is consistent with (16), which is securely reconstructible for PIE:
 - ▶ Governs stress in Vedic inflection (cf. Kiparsky 1984, 2010 et seq.)
 - ▶ Governs stress in Hittite inflection (Yates 2015, 2017 et seq.).
- ▶ Stress in EL is entirely predictable if exponent of EL was a segmentally null PREACCENTING ending (* /' -∅ /) (cf. Ringe 2017:50–1)
 - PREACCENTING: prefers stress on immediately preceding σ .

Advantages of the GELS — theoretical

(17) Deriving GELS in mobile AK-type nominals:

- a. ACC.SG */d^heġ^h-om-m/ → *[d^héġ^ho:m] > Hitt. *tēkan* ‘earth’
- b. GEN.SG */d^heġ^h-em-é/ós/ → *[d^həġ^h-m-é/ós] > Hitt. *taknāš* ‘of the earth’
- c. LOC.SG */d^heġ^h-em-∅/ → *[d^hġ^h-ém] >> Hitt. *takān* ‘on the earth’
>> Ved. *kṣám-i*

- ▶ EM reconstructs exceptional stem-final stress in EL of (17), necessarily via “subrule” vs. regular ending stress in oblique of AK nominals.
- ▶ Stem-final stress in EL of (17) is consistent with the BAP:
 - ▶ AK nominals have unaccented stems, thus receive default initial stress in direct case-forms like (17a).
 - ▶ Accented oblique endings attract stress in oblique case-forms like (17b).
 - ▶ In EL preaccenting ending attracts stress to stem-final syllable, thus stem-final stress in (17c).

Advantages of the GELS — theoretical

(18) Deriving GELS in immobile AS-type nominals:

- a. ACC.SG */h_xóġ^h-or/ → *[h_xóġ^h-r] >> Ved. áhar ‘day’
- b. GEN.PL */h_xéġ^h-en-óh_{1/3}om/ → *[h_xéġ^h-n-oh_{1/3}om] > Ved. áhnām ‘of the days’
- c. LOC.SG */h_xéġ^h-en-∅/ → *[h_xéġ^h-en] > Ved. áhan ‘on the day’

- ▶ EM reconstructs exceptional stem-final stress in EL of (18), necessarily via “subrule” vs. regular root stress in oblique of AS nominals.
- ▶ Stem-final stress in EL of (18) is consistent with the BAP:
 - ▶ AS nominals have accented roots, which receive stress in preference to accented oblique endings (leftmost wins via BAP), as in (18b).
 - ▶ In EL accented root receives stress in preference to preaccenting ending (leftmost wins via BAP), as in (18c).

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 - ▶ AS nominals have accented roots, which receive stress in preference to accented oblique endings (leftmost wins via BAP), as in (18b).
 - ▶ In EL accented root receives stress in preference to preaccenting ending (leftmost wins via BAP), as in (18c).
- ▶ See Appendix I for derivation of GELS in other stem types.

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(18) Deriving GELS in immobile AS-type nominals:

- a. ACC.SG */h_xóġ^h-or/ → *[h_xóġ^h-r] >> Ved. áhar ‘day’
- b. GEN.PL */h_xéġ^h-en-óh_{1/3}om/ → *[h_xéġ^h-n-oh_{1/3}om] > Ved. áhnām ‘of the days’
- c. LOC.SG */h_xéġ^h-en-’∅/ → *[h_xéġ^h-en] > Ved. áhan ‘on the day’

- ▶ EM reconstructs exceptional stem-final stress in EL of (18), necessarily via “subrule” vs. regular root stress in oblique of AS nominals.
 - ▶ Stem-final stress in EL of (18) is consistent with the BAP:
 - ▶ AS nominals have accented roots, which receive stress in preference to accented oblique endings (leftmost wins via BAP), as in (18b).
 - ▶ In EL accented root receives stress in preference to preaccenting ending (leftmost wins via BAP), as in (18c).
- ⇒ Stress in EL is **unexceptional**, emerging from general principles of the grammar.

Counter-evidence to the GELS?

(19) Alleged IE reflexes of exceptional ELs in AS:

	ACC.SG	OBL.SG	EL		IE
a. 'water'	*wód- _r	*wéd-n-	*ud-én	>	Ved. <i>udán</i>
b. 'basket'	*póth ₂ - _r	*péth ₂ -n-	*p(e)th ₂ -én	>>	Hitt. <i>paddāni</i> ([pat:á:n-i])
c. 'word'	*wóth ₂ - _r [?]	*wéth ₂ -n-	*uth ₂ -én	>>	Hitt. <i>uddāni</i> ([ut:á:n-i] ⁶)

- ▶ Per Schindler (1994:397) the Vedic LOC.SG of 'water' in (19a) continues the **exceptional** EL of AS II paradigm.
- ▶ Per Melchert (1994:126) the Hittite DAT/LOC.SG of 'basket' and 'word' in (19b–c) continue the **exceptional** ELs of AS II^(?) paradigms, recharacterized with DAT/LOC.SG *-i* (cf. Rieken 1999:290–1).

⁶With extra word-final plene due to influence of *paddāni* in (20b).

Counter-evidence to the GELS?

(20) Mobile *-r/n-stems in Vedic and Hittite:

	DIRECT	OBL.SG	EL		
a.	Ved.	<i>udá</i>	<i>ud-n-ás</i>	<i>udán</i>	‘water’
b.	Hitt.	<i>pattar</i> [pá:t:ar]	<i>paddanī</i> [pat:n-í:]	<i>paddāni</i> [pat:á:n-i]	‘basket’
c.	Hitt.	<i>uttar</i> [út:ar]	<i>uttanāš</i> [ut:n-á:s]	<i>uddāni</i> [ut:á:n-i]	‘word’

- ▶ But synchronically, Vedic paradigm of ‘water’ in (20a) is mobile, with stem-final stress in NOM/ACC.PL vs. ending stress in oblique.
- ▶ Likewise, Hittite ‘basket’ in (20b) and ‘word’ (20c) are mobile, with stem-initial stress in NOM/ACC.SG vs. ending stress in oblique.

Counter-evidence to the GELS?

(20) Mobile *-r/n-stems in Vedic and Hittite:

	DIRECT	OBL.SG	EL		
a.	Ved.	<i>udá</i>	<i>ud-n-ás</i>	<i>udán</i>	‘water’
b.	Hitt.	<i>pattar</i> [pá:t:ar]	<i>paddanī</i> [pat:n-í:]	<i>paddāni</i> [pat:á:n-i]	‘basket’
c.	Hitt.	<i>uttar</i> [út:ar]	<i>uttanāš</i> [ut:n-á:s]	<i>uddāni</i> [ut:á:n-i]	‘word’

- ▶ But synchronically, Vedic paradigm of ‘water’ in (20a) is mobile, with stem-final stress in NOM/ACC.PL vs. ending stress in oblique.
 - ▶ Likewise, Hittite ‘basket’ in (20b) and ‘word’ (20c) are mobile, with stem-initial stress in NOM/ACC.SG vs. ending stress in oblique.
- ⇒ **Stem-final stress in EL in (20) is synchronically consistent with GELS.**

(21)

EMERGENT MOBILITY:

Stress shifts from the root to “weak” (= lexically accented) inflectional endings, with the result that paradigms with fixed root stress become mobile.

- ▶ Per Yates (2022) ‘water’, ‘basket’, ‘word’ and other AS **-r/n-*stems underwent (21) in (post-)PIE, thereby developing innovative intraparadigmatic stress mobility.
 - ▶ (21) was first identified by Schindler (1972) in AS root nouns.
 - ▶ Extended to other AS formations by Jasanoff (2003:73–4) and by Melchert (2010, 2013).

Emergent mobility and its implications for EL

(21)

EMERGENT MOBILITY:

Stress shifts from the root to “weak” (= lexically accented) inflectional endings, with the result that paradigms with fixed root stress become mobile.

- ▶ Per Yates (2022) ‘water’, ‘basket’, ‘word’ and other AS $*-r/n$ -stems underwent (21) in (post-)PIE, thereby developing innovative intraparadigmatic stress mobility.
 - ▶ (21) was first identified by Schindler (1972) in AS root nouns.
 - ▶ Extended to other AS formations by Jasanoff (2003:73–4) and by Melchert (2010, 2013).
- ⇒ (21) should likewise yield stress shift onto σ preceding **preaccenting ending** (LOC.SG $*/-\acute{\emptyset}/$). (see Appendix II on mechanics)

Emergent mobility and its implications for EL

(22) Emergent mobility in IE $*-r/n$ -stems:

	a.	‘water’		b.	‘basket’	
		OBLIQUE	EL		OBLIQUE	EL
PIE		<u>*wéd</u> -n-s	<u>*wéd</u> -en		<u>*péth₂</u> -n-ei	<u>*péth₂</u> -en

- ▶ **Proposal:** ‘water’ and ‘basket’ (and ‘word’) developed as in (22).
 - ▶ In PIE characterized by stressed full-grade of root in oblique **and** EL.

Emergent mobility and its implications for EL

(22) Emergent mobility in IE $*-r/n$ -stems:

a. 'water'		b. 'basket'		
	OBLIQUE	EL	OBLIQUE	EL
PIE	<u>*wéd-n-s</u>	<u>*wéd-en</u>	<u>*péth₂-n-ei</u>	<u>*péth₂-en</u>
>>	<u>*ud-n-é/ós</u>		<u>*p(e)th₂-n-éi</u>	
Ved.	<u>ud-n-ás</u>		Hitt. <i>paddanī</i>	
			[pat:n-í:]	

- ▶ **Proposal:** 'water' and 'basket' (and 'word') developed as in (22).
 - ▶ In PIE characterized by stressed full-grade of root in oblique **and EL**.
 - ▶ Post-PIE stress shift to V-initial oblique endings (= emergent mobility).

Emergent mobility and its implications for EL

(22) Emergent mobility in IE **-r/n-*stems:

	a. 'water'			b. 'basket'	
	OBLIQUE	EL		OBLIQUE	EL
PIE	* <u>wéd</u> -n-s	* <u>wéd</u> -en		* <u>péth</u> ₂ -n-ei	* <u>péth</u> ₂ -en
>>	*ud-n- <u>é/ós</u>	*ud- <u>én</u>		*p(e)th ₂ -n- <u>éi</u>	*p(e)th ₂ - <u>én</u>
Ved.	ud-n- <u>ás</u>	ud- <u>án</u>	Hitt.	paddanī	paddāni
				[patː-n-íː]	[patː-áːn-i]

- ▶ **Proposal:** 'water' and 'basket' (and 'word') developed as in (22).
 - ▶ In PIE characterized by stressed full-grade of root in oblique **and** EL.
 - ▶ Post-PIE stress shift to V-initial oblique endings (= emergent mobility).
 - ▶ Concomitant shift of stress to stem-final σ in **EL**, consistent with GELS.

Roadmap #3

§1 Introduction

§2 Word stress in Vedic ELs

§3 Reconstructing the GELS

§4 Conclusions and discussion

(5)

GENERALIZATION ON ENDINGLESS LOCATIVE STRESS (GELS):

If a nominal is MOBILE, it has stem-final stress in EL. If IMMOBILE, it is stressed on same syllable of the stem as in other oblique cases.

- ▶ GELS in (5) should be reconstructed for PIE:
 - ▶ Economically explains why GELS obtains synchronically in Vedic, which best preserves the EL and inherited stress patterns generally.
 - ▶ Stress in EL is determined by general, independently necessary principles of PIE stress assignment (viz., BAP).

(5)

GENERALIZATION ON ENDINGLESS LOCATIVE STRESS (GELS):

If a nominal is MOBILE, it has stem-final stress in EL. If IMMOBILE, it is stressed on same syllable of the stem as in other oblique cases.

- ▶ GELS in (5) should be reconstructed for PIE.
- ▶ Reconstructing GELS entails that nominals with immobile root stress — incl. AS nominals, contra EM — also had root stress in EL in PIE:
 - ▶ Directly accounts for root stress in EL of some AS **-r/n-*stems in Vedic (e.g., Ved. *áhan* ‘on the day’).
 - ▶ Directly accounts for root stress in EL of all neuter **-men-*stems in Vedic (e.g., Ved. *sádman* ‘in the seat’).
 - ▶ Putative traces of PIE ELs with exceptional stem-final stress (Ved. *udán*, Hitt. *paddāni*) are innovative, arise via same prosodic change that yields ending stress in oblique (= emergent mobility).

(5)

GENERALIZATION ON ENDINGLESS LOCATIVE STRESS (GELS):

If a nominal is MOBILE, it has stem-final stress in EL. If IMMOBILE, it is stressed on same syllable of the stem as in other oblique cases.

- ▶ GELS in (5) should be reconstructed for PIE.
 - ▶ Reconstructing GELS entails that nominals with immobile root stress — incl. AS nominals, contra EM — also had root stress in EL in PIE:
- ⇒ With respect to **stress** the PIE EL was prosodically **unexceptional**.

(5)

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 - ▶ Reconstructing GELS entails that nominals with immobile root stress — incl. AS nominals, contra EM — also had root stress in EL in PIE:
- ⇒ With respect to **stress** the PIE EL was prosodically **unexceptional**.
- Was the PIE EL exceptional with respect to **ablaut**?

(5) **GENERALIZATION ON ENDINGLESS LOCATIVE STRESS (GELS):**

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 - ▶ Reconstructing GELS entails that nominals with immobile root stress — incl. AS nominals, contra EM — also had root stress in EL in PIE:
- ⇒ With respect to **stress** the PIE EL was prosodically **unexceptional**.
- Was the PIE EL exceptional with respect to **ablaut**?
 - ▶ Reexamination of the evidence is necessary.

Thank you!

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References I

- Clayton, John. 2021. The reconstructon of **-wr̥-/wén-*stems in Vedic. Paper presented at the 32nd Annual UCLA Indo-European Conference, Los Angeles, 5 November 2021.
- Gotō, Toshifumi. 2013. *Old Indo-Aryan Morphology and its Indo-Iranian Background*. Vienna: Österreichischen Akademie der Wissenschaften.
- Hoffmann, Karl, and Bernhard Forssmann. 2004. *Avestische Laut- und Formenlehre*. Innsbruck: Institut für Sprachen und Literaturen der Universität Innsbruck.
- Jamison, Stephanie W., and Joel P. Brereton. 2014. *The Rigveda: The Earliest Religious Poetry of India*. Oxford / New York: Oxford University Press.
- Jasanoff, Jay H. 2003. *Hittite and the Indo-European Verb*. Oxford / New York: Oxford University Press.
- . 2017. *The Prehistory of the Balto-Slavic Accent*. Leiden / New York: Brill.

References II

- Kimball, Sara. 1983. Hittite Plene Writing. Ph.D. diss., University of Pennsylvania.
- Kiparsky, Paul. 1984. Lexical Phonology of Sanskrit Word Accent. In Shivram D. Joshi (ed.), *Amrtādhāra: R.N. Dandekar Felicitation Volume*, 201–210. Delhi: Ajanta Publications.
- . 2010. Compositional vs. Paradigmatic Approaches to Accent and Ablaut. In Stephanie W. Jamison, H. Craig Melchert and Brent Vine (eds.), *Proceedings of the 21st Annual UCLA Indo-European Conference*, 137–181. Bremen: Hempen.
- Kiparsky, Paul, and Morris Halle. 1977. Towards a Reconstruction of the Indo-European Accent. In Larry Hyman (ed.), *Studies in Stress and Accent*, 209–238. Los Angeles: University of Southern California Press.
- Lundquist, Jesse. 2015. On the Accentuation of Vedic *-ti-* Abstracts: Evidence for Accentual Change. *Indo-European Linguistics* 3.42–72.

References III

- Lundquist, Jesse, and Anthony D. Yates. 2018. The Morphology of Proto-Indo-European. In Jared S. Klein, Brian D. Joseph and Matthias Fritz (eds.), *The Handbook of Comparative and Historical Indo-European Linguistics*, 2079–2195. Berlin / New York: de Gruyter.
- Melchert, H. Craig. 1994. *Anatolian Historical Phonology*. Amsterdam / Atlanta: Rodopi.
- . 2010. The word for ‘mouth’ in Hittite and Proto-Indo-European. *International Journal of Diachronic Linguistics and Linguistic Reconstruction* 7.55–63.
- . 2013. Ablaut Patterns in the Hittite *hi*-Conjugation. In Stephanie W. Jamison, H. Craig Melchert and Brent Vine (eds.), *Proceedings of the 24th Annual UCLA Indo-European Conference*, 137–150. Bremen: Hempen.
- Neri, Sergio. 2017. *Elementi di morfologia flessiva nominale indoeuropea*. Perugia. Università degli Studi di Perugia.

References IV

- Rieken, Elisabeth. 1999. *Untersuchungen zur nominalen Stammbildung des Hethitischen*. Wiesbaden: Harrassowitz.
- Ringe, Donald. 2017. *From Proto-Indo-European to Proto-Germanic*, 2 edn. Oxford / New York: Oxford University Press.
- Schindler, Jochem. 1967. Die idg. Wort für 'Erde' und die dentalen Spiranten. *Sprache* 13.191–205.
- . 1972. L'apophonie des noms-racines. *Bulletin de la Société de Linguistique de Paris* 67.31–38.
- . 1975a. L'apophonie des thèmes indo-européens en *-r/n-*. *Bulletin de la Société de Linguistique de Paris* 70.1–10.
- . 1975b. Zum Ablaut der neutralen *s*-Stämme des Indogermanischen. In Helmut Rix (ed.), *Flexion und Wortbildung. Akten der V. Fachtagung der Indogermanischen Gesellschaft, Regensburg, 9. bis 14. September 1975*, 259–267. Wiesbaden: Reichert.

References V

- . 1994. Alte und neue Fragen zum indogermanischen Nomen. In Jens E. Rasmussen (ed.), *In honorem Holger Pedersen. Kolloquium der indogermanischen Gesellschaft vom 25. bis 28. März 1993.*, 397–400. Wiesbaden: Reichert.
- Weiss, Michael. 2017. King: Some observations on an East-West archaism. In Bjarne S.S. Hansen, Adam Hyllested, Anders R. Jørgensen, Guus Kroonen, Jenny H. Larsson, Benedicte N. Whitehead, Thomas Olander and Tobias M. Söborg (eds.), *Usque ad Radices: Indo-European studies in honour of Birgit Anne Olsen*, 793–800. Copenhagen: Museum Tusulanum Press.
- . 2020. *Outline of the Historical and Comparative Grammar of Latin*, 2 edn. Ann Arbor / New York: Beech Stave Press.
- Yates, Anthony D. 2015. Anatolian Default Accentuation and its Diachronic Consequences. *Indo-European Linguistics* 3.145–187.

References VI

- . 2017. Lexical Accent in Cupeño, Hittite, and Indo-European. Ph.D. diss., University of California, Los Angeles.
- . 2020. Lexical accents are underlying foot edges: Evidence from Vedic Sanskrit. In Mariam Asatryan, Yixiao Song and Ayana Whitmal (eds.), *Proceedings of the 50th Annual Meeting of the North East Linguistic Society*, vol. 3, 255–268.
- . 2021. The origin of stress mobility in Indo-European **-r/n-*stems. Paper presented at the 32nd Annual UCLA Indo-European Conference, Los Angeles, 5 November 2021 (Slides available at: <http://www.adyates.com/research>).
- . 2022. Emergent Mobility in Indo-European **-r/n-*stems and its Implications for the Reconstruction of the Neuter Plural. In David M. Goldstein, Stephanie W. Jamison and Brent Vine (eds.), *Proceedings of the 32nd Annual UCLA Indo-European Conference*. Hamburg: Buske (pre-print available at: <http://www.adyates.com/research/>).

Deriving the GELS — HK

(A1) Deriving GELS in mobile HK-type nominals:

- a. ACC.SG */ph₂tér-m/ → *[pəh₂tér-m] > Ved. *pitáram* ‘father’
- b. DAT.SG */ph₂tér-éi/ → *[pəh₂tr-éi] > Ved. *pitré* ‘for the father’
- c. LOC.SG */ph₂tér-’∅/ → *[pəh₂tér] >> Ved. *pitári* ‘at the father’

- ▶ EM reconstructs stem-final stress in EL of (A1), either because it is “hysterokinetic” or via “subrule.”
- ▶ Stem-final stress in EL of (A1) is consistent with the BAP:
 - ▶ HK nominals have a stem-final accent, which attracts non-initial stress in direct cases like (A1a).
 - ▶ Stress shifts onto *V*-initial oblique endings like (A1b) when accented stem *V* is deleted (“secondary mobility;” see Kiparsky 2010; Yates 2020).
 - ▶ In EL both stem-final accent and preaccenting ending attract stress to stem-final syllable, thus stem-final stress in (A1c).

Deriving the GELS — immobile, stem-final

(A2) Deriving GELS in immobile nominals with stem-final stress:

- a. NOM.PL */ten-úh₂-es/ → *[ten-úh₂-as] > Ved. *tanúvas* ‘bodies’
- b. GEN.SG */ten-úh₂-é/ós/ → *[ten-úh₂-a/os] > Ved. *tanúvas* ‘of the body’
- c. LOC.SG */ten-úh₂-∅/ → *[ten-úh₂] > Ved. *tanú* ‘in the body’

- ▶ Stem-final stress in EL of (A2) is consistent with the BAP:
 - ▶ Such nominals have a stem-final accent, which attracts non-initial stress in direct cases like (A2a).
 - ▶ Stem-final accent receives stress in preference to accented oblique ending in (A2a) (leftmost wins via BAP).
 - ▶ In EL both stem-final accent and preaccenting ending attract stress to stem-final syllable, thus stem-final stress in (A2c).
- ▶ Same analysis would account for any “proterokinetic” **-i-* or **-u-*stems reconstructible with stem-final stress (e.g., **-ti-*stems; Lundquist 2015), if their LOC.SG forms in **-éi/ *-éu* are indeed ELs.

Deriving the GELS — immobile, stem-non-final

(A3) Deriving GELS in neuter **-men-*stems:

- a. ACC.SG */sed-´mon-∅/ → *[séd-mn̩] > Ved. *sádma* ‘seat’
- b. INS.SG */sed-´men-éh₁/ → *[séd-men-eh₁] > Ved. *sádmanā* ‘with the seat’
- c. LOC.SG */sed-´men-´∅/ → *[séd-men] > Ved. *sádman* ‘in the seat’

- ▶ Stem-final stress in EL of (A3) is consistent with the BAP:
 - ▶ Neuter **-men-*stems have pre-accenting suffix, which receives stress in preference to accented oblique ending in (A3b) (leftmost wins via BAP).
 - ▶ In EL stress is attracted to root by preaccenting suffix in preference to (stem-final σ by) preaccenting ending, thus root stress in (A3c) (leftmost wins via BAP).
- ▶ Same analysis for neuter **-es-*stems (cf. Lundquist and Yates 2018:2126–7)

Emergent mobility and its implications for EL

(A4) Emergent mobility as loss of stem accentedness:

- a. INS.SG */wéd-en-éh₁/ → *[wéd-n-eh₁]
a'. >> */wed-en-éh₁/ → *[ud-n-éh₁] > Ved. *udnā* 'with water'

- ▶ Simultaneous stress shift in oblique and EL is expected if emergent mobility is due to the loss of stem accentedness (Yates 2021).
 - ▶ Original root stress in oblique of AS nominals is due to leftmost wins (via BAP), accented root > accented ending as in (A4a).
 - ▶ Mobility emerges when root accent is lost, allowing accenting ending to attract stress as in (A4a').

Emergent mobility and its implications for EL

(A4) Emergent mobility as loss of stem accentedness:

- a. INS.SG */wéd-en-éh₁/ → *[wéd-n-eh₁]
a'. >> */wed-en-éh₁/ → *[ud-n-éh₁] > Ved. *udnā* 'with water'
b. LOC.SG */wéd-en-∅/ → *[wéd-en]
b'. >> */wed-en-∅/ → *[ud-én] > Ved. *udán* 'in the water'

- ▶ Simultaneous stress shift in oblique and EL is expected if emergent mobility is due to the loss of stem accentedness (Yates 2021).
 - ▶ Original root stress in EL of AS nominals is due to leftmost wins (via BAP), accented root > preaccenting ending as in (A4b).
 - ▶ Stem-final stress emerges when root accent is lost, allowing preaccenting ending to attract stress as in (A4b').

Motivating emergent mobility

- ▶ Two factors drive EMERGENT MOBILITY in AS categories (Yates 2021):
 - (i) Preference for uniform exponence of accented endings.
 - ▶ i.e., (non-proportional) interparadigmatic analogy.
 - ▶ Learners may extend stressed realization of oblique endings (in ‘foot’, “hystero-” and “amphikinetic” nominals, etc.) into new contexts.

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 - ▶ Learners may extend stressed realization of oblique endings (in ‘foot’, “hystero-” and “amphikinetic” nominals, etc.) into new contexts.
 - (ii) Ambiguous direct cases allow “under-learning” of root accentedness.
 - ▶ Learners may fail to correct on basis of informative oblique forms.

Learning PIE inflectional stress

(A5) PIE oblique case forms of mobile ‘foot’ and immobile ‘cow’:

a. */ped-óh_{1/3}om/ → *ped-óh_{1/3}om > Ved. *padám*, Gk. ποδῶν ‘of the feet’
> Hitt. *patān* ([pat-á:n]) ‘of the feet’

b. */g^wéw-óh_{1/3}om/ → *g^wéw-oh_{1/3}om > Ved. *gávam̄* ‘of the cows’

- ▶ PIE contrast between mobile and immobile root nouns can be derived from interaction of lexical contrast in root accentedness and BAP.
- ▶ Contrast in (A5) crucially informs learners that:
 - ▶ Oblique endings are accented, as they attract non-initial stress in (A5a).
 - ▶ ‘cow’ root is accented, since it wins over accented ending in (A5b).

Learning PIE inflectional stress

(A6) PIE direct case forms of mobile 'foot' and immobile 'cow':

- a. */pod-es/ → **pód-es* > Gk. πόδες 'feet' (cf. ACC.SG Ved. *pádam*)
- b. */g^wów-es/ → **g^wów-es* > Ved. *gávas* 'cows'

- ▶ Yet there is no stress contrast in direct case forms like (A6):
 - ▶ In (A6a) 'foot' root receives default leftmost stress.
 - ▶ In (A6b) 'cow' root attracts stress because it is accented.

Learning PIE inflectional stress

(A6) PIE direct case forms of mobile ‘foot’ and immobile ‘cow’:

- a. */pod-es/ → **pód-es* > Gk. πόδες ‘feet’ (cf. ACC.SG Ved. *pādām*)
- b. */g^wów-es/ → **g^wów-es* > Ved. *gāvas* ‘cows’

▶ Yet there is no stress contrast in direct case forms like (A6):

- ▶ In (A6a) ‘foot’ root receives default leftmost stress.
- ▶ In (A6b) ‘cow’ root attracts stress because it is accented.

▶ These surface forms are thus ambiguous, compatible with (A6) or the (synchronically) incorrect derivations in (A7):

(A7) Incorrect derivation of direct case forms of PIE ‘foot’ and ‘cow’:

- a. ^x*/pód-es/ → **pód-es* > Gk. πόδες ‘feet’ (cf. ACC.SG Ved. *pādām*)
- b. ^x*/g^wów-es/ → **g^wów-es* > Ved. *gāvas* ‘cows’