Indo-European word prosody and the impact of Anatolian

Anthony D. Yates
Ludwig-Maximilians-Universität München
anthony.yates@lrz.uni-muenchen.de

§1 Introduction

[1] Broad question addressed here:

- **How do the Anatolian languages contribute to the reconstruction of Proto-Indo-European (PIE) word prosody?**

[2] Philological and comparative-historical linguistic research over last four decades has demonstrated beyond a doubt that PIE word stress patterns are to some extent preserved in Anatolian.

· Hart (1980), Carruba (1981), Kimball (1983, 1999), Melchert (1984, 1992, 1994), Kloekhorst (2008, 2013, 2014a), *i.a.*

[3] In a few lexical items it has been argued that Anatolian preserves a prosodic archaism, maintaining ablaut and (sometimes by inference) stress patterns that were eliminated in the other IE languages.

(1) a. Jasanoff (2017:16): "Paradigmatic mobility is occasionally observable in consonant stems, most strikingly in the word for 'earth', *tēkan*, gen. *taknāš*, which perfectly preserves the PIE amphikinetic paradigm **d^{h}égĝ^{h}-ōm*, **d^{h}ĝ^{h}-m-és*... Equally archaic is the maintenance of immobility in the isolated acrostatic gen.sg. *nekuz* [nekʷts] 'night'" [viz., vs. Gk. νυκτός].

b. Kloekhorst (2018:194): "[T]he Hittite paradigm for 'hand' is extremely archaic, since it is the only word in which the original early PIE hysterodynamic paradigm has remained unaltered."

[4] Yet Anatolian has otherwise continued to play a relatively minor role in reconstruction of PIE word stress, recognized (if at all) as a "fifth witness" (Kloekhorst 2014a:3) on par with Balto-Slavic and Germanic beside the more important testimony of Greek and Indo-Iranian (above all, Vedic Sanskrit).

(2) a. Clackson (2007:75–7): "Only four of the IE branches present adequate information for the reconstruction of PIE accent. Little certain is known about the accent systems of Tocharian and Anatolian... Qualitatively our best evidence for PIE accent comes from two of the oldest and most conservative branches: Greek and Vedic Sanskrit. For both languages there is a large body of texts with word-accents marked and adequate metalinguistic descriptions of the nature of the accentual system... Comparison of Germanic, Baltic, Slavic, Greek and Sanskrit allows us to reconstruct the place of the PIE word accent with some confidence."

b. Olander (2009:7): "The non-Balto-Slavic evidence for the P[IE] prosodic system is limited to Indo-Iranian, Greek and Germanic, which have all indisputably preserved the Proto-Indo-European accent or traces of it... The P[IE] accent is probably preserved in Anatolian languages, but I consider the evidence too insecure to be included here."

c. Weiss (2020:116–7): "The characteristics of the P[IE] prosodic system are largely inferred from the agreements of Greek and Vedic Sanskrit…Additional evidence is also provided by Balto-Slavic, Hittite (plene spelling), Germanic (Verner's Law), and probably the East Iranian language Pashto."

[5] Central claim advanced in my recent work (e.g., Yates 2015, 2016, 2017, 2019a,d, 2020b, 2021b) is that Hittite and the other Anatolian languages provide crucial evidence for reconstructing:

- Stress patterns of specific PIE words and productive morphological categories.
- Morphophonological principles by which these PIE stress patterns were determined.

[6] Here — an examination of three problems in the reconstruction of PIE word prosody in which the Anatolian evidence for word stress has a decisive impact.

- Stress assignment in PIE inflection (§2).
- Word stress of PIE animate **–oi*-stems (§3).
- Word-prosody of PIE primary neuter **–r/n*-stems (§4).

§2 Stress assignment in PIE inflection

[7] Kiparsky and Halle (1977) propose that within inflectional paradigms PIE stress assignment was governed by the BASIC ACCENTUATION PRINCIPLE in (3) (cf. Kiparsky 1973, 1984, 2010, 2018; Halle 1997):

(3) BASIC ACCENTUATION PRINCIPLE (BAP):
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.

[8] Kiparsky and Halle (1977) argue that the BAP is:

- Synchronically operative in Vedic Sanskrit.
- Synchronically operative in Russian within the clitic group (or similar above word-level domain; cf. Melvold 1989; Halle 1997), but see, e.g., Alderete (2001), Lavitskaya and Kabak (2014), Lavitskaya (2015) for alternative analyses.
- Continued in modified form in Lithuanian (sensitive to "acuteness"/tone; cf. Halle and Vergnaud 1987; Blevins 1993).
- Continued in modified form in Greek (default leftmost > "recessive accentuation"), but see Steriade (1982:280–1) for an alternative analysis.

[9] Kiparsky and Halle's (1977) account of Vedic stress assignment has never been seriously challenged, but perhaps due to numerous Balto-Slavic prosodic innovations and the uncertain status of BAP in Greek, their proposed reconstruction of BAP for PIE remains controversial.

- Accepted by some (e.g., Keydana 2005, 2013a,b; Kim 2013; Lundquist 2015, 2016; Sandell 2015).
- Others remain skeptical of the BAP and other aspects of Kiparsky and Halle's "compositional" analysis at the PIE level — e.g., (4) (cf. Weiss 2020:280–1):

(4) Jasanoff (2017:28): "[T]he compositional model is unlikely to work as well for PIE as it works for the daughter languages. And indeed, Kiparsky's vision of PIE is **rather suspiciously Vedic-like**."

[10] But — it is also Hittite-like, since BAP is also synchronically operative in Hittite (Yates 2016, 2017).

[11] BAP accounts for systematic prosodic contrast in Hittite nominal and verbal inflection between two stem types:

- IMMOBILE: stress fixed on stem throughout inflectional paradigm.
- MOBILE: stress alternates between stem in "strong" forms and inflectional endings in "weak" forms.

[12] Compare Hittite mono- and disyllabic IMMOBILE noun stems in (5) with MOBILE in (6).

(5)

	STRONG		WEAK
a.	⟨MU-*za*⟩	:	⟨*ú-i-it-ti*⟩
	[wíːt͡s-]		[wíːtː-i]
	(year-ANIM.NOM.SG)		(year-ANIM.DAT/LOC.SG)
b.	⟨*ḫa-a-ra-na-an*⟩	:	⟨*ḫa-a-ra-na-aš*⟩
	[χáːran-an]		[χáːran-as]
	(eagle-ANIM.ACC.SG)		(year-ANIM.GEN.SG)

(6)

	STRONG		WEAK
a.	⟨*pa-a-tu-u*[*š*]⟩	:	⟨*pa-ta-a-an*⟩
	[páːt-os]		[pat-áːn]
	(foot-ANIM.ACC.PL)		(foot-ANIM.GEN.PL)
b.	⟨*te-e-kán*⟩	:	⟨*ták-na-a-aš*⟩
	[téːkan]		[takn-áːs]
	(earth:N.NOM/ACC.SG)		(earth-GEN.SG)

[13] Compare Hittite IMMOBILE radical *–mi-* and *ḫi*-verbs in (7) with MOBILE in (8).

(7)

	STRONG		WEAK
a.	⟨*ú-e-ek-mi*⟩	:	⟨*ú-e-kán-zi*⟩
	[wéːk-mi]		[wéːk-ant͡si]
	(demand-1SG.NPST.ACT)		(demand-3PL.NPST.ACT)
b.	⟨*a-an-ši*⟩	:	⟨*a-an-ša-an-zi*⟩
	[áːns-i]		[áːns-ant͡si]
	(wipe-3SG.NPST.ACT)		(wipe-3PL.NPST.ACT)

(8)

	STRONG		WEAK
a.	⟨*ku-e-er-zi*⟩	:	⟨*ku-ra-an-zi*⟩
	[kʷéːr-t͡si]		[kʷor-ánt͡si]
	(cut-3SG.NPST.ACT)		(cut-3PL.NPST.ACT)
b.	⟨*da-a-i*⟩	:	⟨*tu-me-e-ni*⟩
	[táː-i]		[to-méːni]
	(take-3SG.NPST.ACT)		(take-1PL.NPST.ACT)

[14] Prosodic contrast in nominal inflection can be derived from interaction of a lexical contrast between accented and unaccented morphemes and the BAP.

- MOBILE noun stems are lexically unaccented — e.g., (9–10).
- IMMOBILE nouns stems are lexically accented — e.g., (11–12).

(9) Unaccented stem + unaccented "strong" ending ⇒ default leftmost stress:
- a. Hitt. /pat-os/ → [páːt-os] *pātu*[*š*] 'feet' (foot-ANIM.ACC.PL)
- b. Hitt. /tekan-∅/ → [téːkan] *tēkan* 'earth' (earth:N.NOM/ACC.SG)

(10) Unaccented stem + accented "weak" ending ⇒ ending attracts stress:
- a. Hitt. /pat-án/ → [pat-áːn] *patān* 'of the feet' (foot-GEN.PL)
- b. Hitt. /tekan-ás/ → [takn-áːs] *taknāš* 'of the earth' (earth-GEN.SG)

(11) Accented stem + unaccented "strong" ending ⇒ stem attracts stress:
- a. Hitt. /wíːtː-s/ → [wíːt͡s-] MU-*za* 'year' (year-ANIM.NOM.SG)
- b. Hitt. /χáran-an/ → [χáːranan] *ḫāranan* 'eagle' (eagle-ANIM.ACC.SG)

(12) Accented stem + accented "weak" ending ⇒ leftmost accented (= stem) wins:
- a. Hitt. /wíːtː-í/ → [wíːtː-i] *wītti* 'in the year' (year-DAT/LOC.SG)
- b. Hitt. /χáran-ás/ → [χáːran-as] *ḫāranaš* 'of the eagle' (eagle-GEN.SG)

[15] Prosodic contrast in verbal inflection can be derived in the same way:

- MOBILE verb stems are lexically unaccented.
- IMMOBILE verb stems are lexically accented.

(13) Unaccented stem + unaccented "strong" ending ⇒ default leftmost stress:
  a. Hitt. /kʷer-t͡si/ → [kʷéːr-t͡si] *kuērzi* 'cuts' (cut-3SG.NPST.ACT)
  b. Hitt. /ta-i/ → [táː-i] *dāi* 'takes' (take-3SG.NPST.ACT)

(14) Unaccented stem + accented "weak" ending ⇒ ending attracts stress:
  a. Hitt. /kʷer-ánt͡si/ → [kʷor-ánt͡si] *kuranzi* 'they cut' (cut-3PL.NPST.ACT)
  b. Hitt. /ta-wéni/ → [tu-méːni] *tumēni* 'we take' (take-1SG.NPST.ACT)

(15) Accented stem + unaccented "strong" ending ⇒ stem attracts stress:
  a. Hitt. /wék-mi/ → [wéːk-mi] *wēkmi* 'I demand' (demand-1SG.NPST.ACT)
  b. Hitt. /áns-i/ → [áːns-i] *ānši* 'wipes' (wipe-3SG.NPST.ACT)

(16) Accented stem + accented "weak" ending ⇒ leftmost accented (= stem) wins:
  a. Hitt. /wék-ánt͡si/ → [wéːk-ant͡si] *wekanzi* 'they demand' (demand-3PL.NPST.ACT)
  b. Hitt. /áns-ánt͡si/ → [áːns-ant͡si] *ānšanzi* 'they wipe' (wipe-3PL.NPST.ACT)

[16] BAP accounts for prosodic contrasts not just in inherited material, but also in synchronically productive inflection-like categories, such as *–ške*-imperfectives.

- Unaccented verbal stems cede stress to accented IPFV suffix (/-skːé-/) — e.g., (17).
- Accented verbal stems retain stress in context of IPFV suffix — e.g., (18).

(17) a. Hitt. /kʷer-skːé-t͡si/ → [kʷor-skːéː-t͡si] *kuraškezzi* 'cuts' (cut-IPFV-3SG.NPST.ACT)
  b. Hitt. /ta-skːé-wéni/ → [ta-skːéː-weni] *daškēwen*[*i*] 'we take' (take-IPFV-1PL.NPST.ACT)

(18) a. Hitt. /wék-skːé-t͡si/ → [wéːki-skːe-t͡si] *wekiškezzi* 'demands' (cut-IPFV-3SG.NPST.ACT)
  b. Hitt. /áns-skːé-t͡si/ → [áːns-iskːe-t͡si] *ānšiškezzi* 'wipes' (take-IPFV-3SG.NPST.ACT)

[17] Both (17a) and (18b) are demonstrably inner-Hittite imperfective formations, replacing older *kuwarške–* and *ānšike–* with same stress pattern (cf. Kloekhorst 2007, Yates 2017:121 n. 30, 149–50, 2021a).

⇒ Stable prosodic contrast between (17a) and (18b) testifies to continued operation of BAP in Hittite.

[18] Reassessing the PIE status of the BAP in view of the Anatolian evidence:

- Vedic, Greek, and Balto-Slavic prosodic systems economically explained by reconstructing BAP, yet inexact agreement leaves open the possibility of alternative reconstructions.
- But synchronic operation of BAP in both Hittite and Vedic inflection is plausibly explained only by inheritance — i.e., if BAP governed inflectional stress already in PIE (cf. Yates 2016, 2017).

[19] Broad take-away — morphophonological principles of PIE stress assignment are crucially informed by Anatolian, which in specific respects (like the BAP) may preserve inherited system more faithfully than Greek, Balto-Slavic, or Germanic.

§3 Word-prosody of PIE animate **–oi*-stems

[20] An animate noun-forming suffix **–oi–* is standardly reconstructed for PIE.

[21] According to the Erlangen Model (EM) nouns formed with this suffix exhibited "amphikinetic" (AK) inflectional paradigms (Schindler 1969:154–5; cf. Rix 1992:146–7, Weiss 2020:259, *i.a.*) — i.e., (19).

(19)

	SG	PL
NOM	R(*é*)-*ōi*	R(*é*)-*oy-es*
ACC	R(*é*)*oy-m̥*	R(*é*)-*oy-m̥s*
GEN	R(∅)-*y-é/ós*	R(∅)-*y-óh*$_{1/3}$*om*

[22] Traditionally adduced as support for reconstruction in (19) is Ved. *sákhā(y)–* 'friend' (= Av. *haxā(ii)–*), which phonologically could reflect an AK paradigm like (20) with leveling of root stress from strong cases to weak (recently maintained by Lindner 2021:26; cf. Rix 1992:146 with different segmentation):

(20)

	PIE		VEDIC SANSKRIT	
NOM.SG	**sék^{w}h$_2$-ōi*	>	*sákhā*	'friend'
ACC.SG	**sék^{w}h$_2$-oy-m̥*	>	*sákhāyam*	"
DAT.SG	**sək^{w}h$_2$-y-éi*	>>	*sákhye*	'for a friend'

[23] Per Kloekhorst (2013:122) Hittite **–oi*-stems also reflect AK inflection; he explicitly derives Hitt. *lingai–* 'oath' from the AK paradigm in (21) with leveling of root vocalism from strong cases to weak:

(21)

	PIE		HITTITE	
NOM.SG	**h$_1$lén$\hat{g}^{h}$-ōi*	>	*linkaiš*	'oath'
ACC.SG	**h$_1$lén$\hat{g}^{h}$-oy-m̥*	>	*linkain*	"
GEN.SG	**h$_1$lṇ̥$\hat{g}^{h}$-y-és*	>>	*linkiyaš*	'of the oath'

[24] What is perhaps most striking about finding the specific derivations in (20–21) endorsed in recent literature is that they face problems clearly identified by (much) earlier scholarship.

- On morphological grounds (20) must be a non-primary derivative, and comparative evidence points to root **o*-grade (Schindler 1969:164 n. 65; see further **[39]** below).
- Hittite reflex of (21) — like other **–oi*-stems — in fact has suffixal stress in strong cases, supported by multiple attestations with plene spelling (Rößle 2002:33, 321; see further **[34]**, **[38]** below):

(22) Hitt. ⟨*li-in-ga-a-uš*⟩ (KUB 17.21 iv 16; KUB 23.78: 10, 12; KUB 17.26 i 11)
[liŋk-á꞉(y)-os] 'oaths' (oath-ANIM.ACC.PL)

[25] Looking beyond these specific cases, a very different picture of PIE **–oi*-stems emerges when the Greek and Anatolian evidence is considered together (Yates 2019d).

[26] Greek and Hittite, the two IE languages in which animate **–oi*-stems remain (semi-)productive, converge on two important points about the morphophonology of this class:

(i) **–oi*-stems have suffixal stress in the strong cases (like EM's "hysterokinetic" (HK) nominals).

(ii) Virtually all **–oi*-stems can or must be analyzed as non-primary derivatives.

[27] These two facts provide a foundation for a new morphophonological reconstruction of PIE animate **–oi*-stems, represented schematically in (23) (Yates 2019d):

(23)

	PRIMARY	NON-PRIMARY
NOM.SG	*R(∅)-*ṓi*	*STEM-*ṓi*
GEN.SG	*R(∅)-*y-é/ós*	*STEM-*y-é/ós*

- Key features of (23):
  - · All have suffixal stress in strong cases shifting to endings in weak (like HK nominals).
  - · Primary derivatives exhibit zero-grade of the root (like HK nominals).
  - · Non-primary derivatives preserve ("inherit") the stem shape of their base, except base-final suffix appears in zero-grade.

[28] Morphologically and phonologically, (23) better accounts for attested reflexes of PIE **–oi*-stems than AK reconstruction.

[29] Greek reflexes of PIE **–oi*-stems uniformly exhibit (historical) fixed suffixal stress — e.g., (24):

(24)

	STRONG	WEAK		
a.	φειδώ	φειδοῖ	'sparing'	(F.NOM/DAT.SG)
b.	πειθώ	πειθοῦς	'P/persuasion'	(F.NOM/GEN.SG)
c.	χρε(ι)ώ	χρειοῖ	'need'	(F.NOM/DAT.SG)
d.	καμῑνώ	καμῑνοῖ	'furnace-woman'	(F.NOM/DAT.SG)
e.	Ἐρατώ	Ἐρατοῖ	'Erato (nymph)'	(F.NOM/DAT.SG)
f.	Καλλιστώ	Καλλιστοῦς	'Callisto (nymph)'	(F.NOM/GEN.SG)

- Circumflex in weak cases points to immediate pre-forms (prior to **y*-loss) with suffixal stress: GEN.SG -οῦς < **–óy-os*, DAT.SG -οῖ < **–óy-i* (cf. Schwyzer 1939:382, 478–9).

[30] Deriving suffixal stress in (24) from (23) is trivial: other Greek classes with inherited suffix-ending stress alternations similarly show elimination of paradigmatic ablaut and concomitant emergence of fixed suffixal stress — e.g.:

- ANIM **–ter*-stems — e.g., δοτήρ, δοτῆρ-ος (<< **-tr-ós*) 'giver'
- ANIM **–men*-stems —e.g., πυθμήν, πυθμέν-ος (<< **–(m)n-ós*) 'bottom'

[31] Like the majority of Greek **–oi*-stems, (24c–f) are unambiguously non-primary:

(25)

	BASE			**–oi*-stem	
a.	χρή	'need to'	⇒	χρε(ι)ώ	'need'
b.	κάμῑνος	'furnace'	⇒	καμῑνώ	'furnace-woman'
e.	ἐρατός	'lovely'	⇒	Ἐρατώ	'Erato (nymph)'
f.	κάλλιστος	'prettiest'	⇒	Καλλιστώ	'Callisto (nymph)'

- Non-primary status of (25) is indicated by overt stem-morphology preceding the **–oi*-suffix — e.g., ADJ **–to–* in (25e), SUP **–is-to–*.
- Non-primary derivative preserves stem shape of the base, as expected under (23).

[32] Root full-grades of Gk. φειδώ in (25a) and πειθώ in (25b) are often taken as evidence for erstwhile AK inflection (Rix 1992:146–7, Weiss 2020:259, *i.a.*); but given productivity of **–oi–* in non-primary derivation, they are more easily explained as derivatives of cognate thematic verbs, as in (26):

(26)

	BASE			**–oi*-stem	
a.	φείδομαι	'spare'	⇒	φειδώ	'sparing'
b.	πείθω	'persuade'	⇒	πειθώ	'P/persuasion'
c.	λέχομαι	'lie down'	⇒	λεχώ	'woman after childbirth'

[33] Non-primary **–oi*-stems in (26) may have been created within Greek, but it is just as possible to assume P(N)IE-level derivations like (27) with transfer of root vocalism from base to derivative:

(27)

P(N)IE	**b^{h}eid^h–*	⇒	**b^{h}éid^h-e/o–*	⇒	**b^{h}eid^h-ói-*
>			Gk. πείθω 'persuade'		Gk. πειθώ 'persuasion'
>			Lat. *fīdō* 'believe'		

[34] Reconstructiom in (23) likewise accounts straightforwardly for Hittite, where all reflexes of animate **–oi*-stems appear to have suffixal stress in strong cases — e.g., (28) (see Rößle 2002:321):

(28)

	STRONG		
a.	*ḫurdāin*	[χ^{w}ort:-á:i-n]	'curse'
b.	*zaḫḫāiš*	[t͡saχ:-á:i-s]	'fight'
c.	*waštāiš*	[wast-á:i-s]	'sin'
d.	*linkāus*	[liŋk-á:(y)-os]	'oaths'
e.	[*man*]*iyaḫḫāiš*	[maniy-aχ:-á:i-s]	'administrative district'
f.	*ḫukmāuš*	[χ^{w}ok:m-á:(y)-os]	'incantation'

- All lexemes in (28) are (multiply) attested with plene spelling of suffix.

[35] Intraparadigmatic ablaut in (23) maintained in oldest layer of Hittite **–oi*-stems, where stress shifts from suffix in strong cases to endings in weak with resulting zero-grade of the suffix — e.g., (29):

(29)

	STRONG		WEAK	
a.	*ḫurdāin*	[χ^{w}ort:-á:i-n]	*ḫurtiyaš*	[χ^{w}ort:-y-á:s]
b.	*zaḫḫāiš*	[t͡saχ:-á:i-s]	*zaḫḫiyaš*	[t͡saχ:-y-á:s]
d.	*linkāus*	[liŋk-á:(y)-os]	*linkiyaš*	[liŋk-y-á:s]
e.	[*man*]*iyaḫḫāiš*	[maniy-aχ:-á:i-s]	*maniyaḫḫiyaš*	[maniy-aχ:-y-á:s]
f.	*ḫukmāuš*	[χ^{w}okm-á:(y)-os]	*ḫukmiyaš*	[χ^{w}okm-y-á:s]

- Comprehensive assessment of the class by Rößle (2002:324), who describes a "voralthethitisch virtuell hysterodynamisches Paradigma."

[36] Hitt. *ḫurdai–* in (29a) may continue a primary **–oi*-stem with zero-grade of root expected under (23):

(30)

	PIE		HITTITE		
NOM.SG	**h$_2$wr̥t-ói*	>	*ḫurdāiš*	[χ^{w}ort:-á:i-s]	'curse'
GEN.SG	**h$_2$wr̥t-y-é/ós*	>	*ḫurdiyaš*	[χ^{w}ort:-y-á:s]	'of the curse'

[37] Hitt. *maniyaḫḫai–* in (29f) and *ḫukmai—-* in (29g) are unambiguously non-primary; these and the other non-primary derivatives in (31) predictably exhibit same stem shape as their base:

(31)

	BASE			*–*oi*-stem	
a.	*ištarni(n)k–*	‘make ill’	⇒	*ištarningain* [istarniŋk-á:i-n]	‘illness’
b.	*maniyaḫḫ–*	‘administer’	⇒	[*man*]*iyaḫḫāiš* [maniy-aχ:-á:i-s]	‘administrative district’
c.	*ḫullant–*	‘defeated’	⇒	*ḫullanzāiš* [χol:ant͡s-á:i-s]	‘defeat’
d.	*ḫukma–**	‘magical’[?]	⇒	*ḫukmain* [χ^{w}okm-á:i-n]	‘incantation’

- Overt stem-forming morphology — e.g, nasal-infix *–*ne*– in (31a), factitive *–*eh*$_2$– in (31b) — within stem confirms non-primary status.

[38] Derivations in (31a–b) offer insight into morphologically ambiguous examples like *lingai–* in (29d).

- Kloekhorst (2013:122) takes its root vocalism (*i* < **e*) as evidence that *lingai–* continues an AK strong stem with full-grade (see (21) above).
- But since *–*oi*– is productive in Hittite in deverbative derivation — e.g., in non-primary (31a–b) — *lingai–* may instead be formed as in (32), acquiring its root vocalism from the synchronically non-ablauting cognate verb:

(32) Hitt. *link–* ‘swear’ ⇒ *lingāuš* [liŋk-á:(y)-os] ‘oaths’ (oath-ANIM.ACC.PL)

- Kloekhorst’s (2013) analysis explains root vocalism at cost of ignoring direct evidence for suffixal stress, whereas derivation in (32) — consistent with (23) above — accounts for both properties.

[39] Reconstruction in (23) also handles the lone Indo-Iranian reflex of PIE *–*oi*–, which on morphological grounds cannot continue a primary AK paradigm (of type in (20) above).

- Root must be PIE **sek*^{w}– ‘accompany’ (> Ved. *sácate*, Gk. ἕπομαι, Lat. *sequitur*, OIr. *sechithir*, etc.; cf. *LIV*^{2}: 525–6), but a primary deverbal formation from this root leaves the voiceless aspirate reflected in Ved. *sákh(ā)y–* and Av. *hax(ā)ii–* unexplained.
- Schindler (1969:154 n. 65) thus proposed that Ved. *sákh(ā)y*— is derived as in (33b) — i.e., a non-primary denominal derivative like Ved. *rátha–* in (33a):

(33)

a.	PIE	*ret–	⇒	*rot-eh$_2$	⇒	*rot-h$_2$-o–
		‘run’		‘wheels of a vehicle’		‘wheeled vehicle’
	>			Lat. *rota*		Ved. *rátha–*
				‘wheel’		‘chariot’
b.	PIE	*sek^{w}–	⇒	*sok^{w}-eh$_2$	⇒	*sok^{w}-h$_2$-oi–
		‘accompany’		‘retinue’		‘member of retinue’
	>			(Gk. ὀπά-ων)		Ved. *sákhā(y)–*
				‘comrade’		‘friend’

[40] Expected output of (33b) under (23) is PIE **sok^{w}-h$_2$-ói-/-y–́* with suffix-ending stress moblility, zero-grade of base-final suffix, and preserved root **o*-vocalism of base.

- Zero-grade of base-final suffix accounts for voiceless aspirate (Ved. *kh*, Av. *x* < PIE **k^{w}-h$_2$*)
- Root **o*-grade in pre-form is supported by further derivatives — e.g., Lat. *socius* 'comrade', Gk. ἀοσσέω 'help' (cf. Byrd 2015:210–11, Ringe 2017:131–2).
- Suffixal zero-grade in Vedic and Avestan weak cases is consistent with historical ending stress.
- Only discrepancy is word stress — (23) predicts Ved. ^{x}*sakh-á́y/-y–́* with stressed suffix/ending.

[41] Yet there is good reason to suspect word-initial stress in Ved. *sákh(ā)y–* is an innovation.

- Word-initial stress is "default" prosodic pattern in Vedic (= BAP) and as such tends to emerge diachronically — e.g., as an inner-Vedic development in PIE **–ti-*stems like (34a) (Lundquist 2015).
- Same diachronic tendency could account for stress shift in (34b).
- And historically expected suffixal stress may even be preserved in Vedic in the BV compound in (34c), an archaism vis-à-vis the simplex *sákh(ā)y–*.

(34) a. PIE **mn̥-tí–* > RV *matí–* 'thought' >> post-RV *máti–* 'id.'
b. PIE **sok^{w}-h$_2$-ói-* >> RV *sákhā(y)–* 'friend'
c. PIE */h$_1$su-sok^{w}h$_2$ói-es/ → *[h$_1$su-sok^{w}h$_2$óy-es] > Ved. *su-ṣakhā́yas* 'having good fellowship'

- BV compounds with first member **h$_1$su–* were in PIE regularly stressed on accented *σ* of second member, as remains the case in Vedic (see Lundquist 2016).

[42] Broad take-away — once the Anatolian evidence for **–oi-*stems is taken into account, it is clear that a prosodic reconstruction like (35) (= (23) above) is needed to explain combined facts of IE daughters.

(35)

	PRIMARY	NON-PRIMARY
NOM.SG	*R(∅)-*ő́i*	*STEM-*ő́i*
GEN.SG	*R(∅)-*y-é/ós*	*STEM-*y-é/ós*

- Primary and non-primary paradigms of type in (35) are directly continued in Hittite.
- Minimal innovations needed to account for non-primary paradigms in Vedic and Greek:
  - Elimination of intraparadigmatic stem ablaut in Greek.
  - Emergence of "default" initial stress in a single lexeme in Vedic.

[43] In contrast, traditional AK reconstruction of PIE animate **–oi-*stems does not account for stress pattern of even a single IE form — every attested form that could plausibly continue an inherited primary **–oi-*stem has suffixal stress (rather than root stress) in strong cases:

(36) a. Gk. πειθώ 'P/persuasion'
b. Gk. φειδώ 'sparing'
c. Gk. λεχώ 'woman after childbirth'

(37) a. Hitt. *ḫurdāiš* [χ^{w}ort-á꞉i-s] 'curse'
b. Hitt. *lingāuš* [liŋk-á꞉(y)-os] 'oaths'
c. Hitt. *zaḫḫāiš* [t͡saχ꞉-á꞉i-s] 'fight'
d. Hitt. *wagāiš* [wak-á꞉i-s] 'grain pest'
e. Hitt. *sagāiš* [sak-á꞉i-s] 'sign'

[44] Still more problematically, there is no obvious diachronic pathway from a PIE AK paradigm to suffixally stressed forms like (36–37).

- Intraparadigmatic leveling is not viable — AK nominals had suffixal stress in endingless locative per EM, but generalization to strong cases independently in Hittite and Greek is not at all credible.

[45] Reconciling the forms in (36–37) with EM thus requires additional assumptions:

- One approach (e.g., Neri 2017:129): PIE **–oi*-stems had AK inflection in pre-PIE, but already in PIE developed the "modified AK" paradigm in (39), with suffixal stress in NOM.PL and ACC.SG/PL due to "**k^{w}etwóres*-Regel" in (38):

(38) **k^{w}etwóres*-Regel:
*/CéC$_0$o/ → *CeC$_0$ó / ___ σ
(Rix 1985; cf. Klingenschmitt 1994: 389–90 n. 131)

(39) PIE "modified AK" **–oi*-stem paradigm:

	SG	PL
NOM	R(*é*)-*ōi*	R(*e*)-*óy-es*
ACC	R(*e*)-*óy-m̥*	R(*e*)-*óy-m̥s*
GEN	R(∅)-*y-é/ós*	R(∅)-*y-óh$_{1/3}$om*

- From (39) it is in principle possible that both Hittite and Greek generalized suffixal stress.

[46] Yet adopting this approach to **–oi*-stems amounts to conceding that EM's AK inflection simply did not exist in PIE itself — other erstwhile AK paradigms would also have been subject to the "**k^{w}etwóres*-Regel," yielding "modified AK" PIE paradigms of a structure like (39).

- Thus, e.g., traces of AK-type mobility actually attested in the IE languages would not be pristine archaisms, but instead reflect leveling of root stress through strong cases, as in (40a).
- And, e.g., fixed root stress in primary nominals reconstructed by EM as AK such as (40b) must be generalized from the NOM.SG at the expense of all other case forms.

(40)

		PRE-PIE		PIE		VEDIC	
a.	NOM.SG	**pént-oh$_2$-s*	>	**pént-oh$_2$-s*	>	*pánth-ās*	'path'
	GEN.SG	**pn̥t-h$_2$-ó/és*	>	**pn̥t-h$_2$-é/ós*	>	*path-ás*	'of the path'
	NOM.PL	**pént-oh$_2$-es*	>	**pent-óh$_2$-es*	>>	*pánth-ās*	'paths'
b.	NOM.SG	**swé-sōr*	>	**swé-sōr*	>	*svásā*	'sister'
	ACC.SG	**swé-sor-m̥*	>	**swe-sór-m̥*	>>	*svásār-am*	"
	DAT.SG	**su-sr-éi*	>	**su-sr-éi*	>>	*svásr-e*	'to/for sister'
	NOM.PL	**swé-sor-es*	>	**swe-sór-es*	>>	*svásār-as*	'sisters'

[47] These costs seem non-trivial, and when added to other issues surrounding the **k^{w}etwóres*-Regel" — its weak empirical basis (Rasmussen 2001) and dubious phonological motivation — it seems better to reject this approach.

[48] Another alternative — simply add an additional "amphi-hysterokinetic" (AHK) class to EM, which is:

- "Amphikinetic," insofar as it is characterized by **o*-vocalism of the suffix in the strong cases.
- "Hysterokinetic," insofar as it is characterized by stress mobility from suffix to endings.
- (If primary **–mon*-stems are reconstructible for PIE, they might also belong here; see Yates 2020b.)

[49] Depending on what root ablaut grade is assumed in this class, this approach would account for at least some of the primary(-looking) **–oi-*stems in (36–37).

[50] But both of these approaches miss a significant prosodic generalization — namely, that nominals formed with the suffix **–oi–* exhibit the same stress pattern regardless of whether they are primary or non-primary, as encoded in the reconstruction in (35) above:

- **–oi–* attracts stress in the strong cases.
- **–oi–* yields stress to inflectional endings when it is deleted in the weak cases.

[51] EM fundamentally cannot capture this type of generalization.

- It is not clear what it would even mean for a non-primary derivative to be (e.g.) AK, since class membership is defined by having an inflectional paradigm with a particular set of formal properties distributed over a sequence of R(oot) + S(uffix) + E(nding).
- Non-primary derivatives do not have this structure and so cannot satisfy this definition — e.g.:
  - Suppose an R+S_1+S_2+E nominal is AK — which S is "the suffix" and so assigned **o-*grade in strong cases? If it is S_2, does the root appear in full-grade or the immediately preceding S_1 (or both)?
- For attempts to fit non-primary derivatives into EM's primary inflectional classes see Nussbaum (1986:147 n. 17) and Rau (2009:34 n. 11), but there is no way to square the circle — at minimum, one must allow for multiple sub-types of each class in non-primary derivatives (cf. Neri 2017:109–13).

[52] However, this generalization can be captured straightforwardly within the framework outlined in §2 above: the PIE suffix **–oi–* is [+accent], [+dominant] (*/-ói-/).

- In (41a) [+accent] explains why **–oi–* attracts stress away from the left edge of word, where it is preferred by the BAP.
- in (41b) [+dominant] explains why **–oi–* "overrides" the pre-accent sponsored by the verb-forming primary suffix.

(41) a. PIE */$h_2$wert-ói-s/ → *[$h_2$wr̥t-ǿi] > Hitt. *ḫurdāiš* [χ^{w}ortːáːi-s] 'curse'
b. PIE */b^{h}eid^{h}-ˊe/o-ói-s/ → *[b^{h}eid^{h}-ǿi] > Gk. πειθώ 'persuasion'

- Root zero-grade and stress shift to weak inflectional endings fall out from same basic tools that account for HK paradigms (i.e., ZERO-GRADE/pretonic vowel deletion, SECONDARY MOBILITY; see Kiparsky 2010, 2018, Yates 2019a, 2020a).

[53] This analysis has good explanatory power for PIE animate **–oi-*stems, but raises empirical and theoretical questions about PIE morphophonology (esp. of non-primary derivatives) that subsequent research must address — e.g.:

- In what morphological (or morphosyntactic) contexts did accentual dominance occur in PIE? How should it be analyzed formally?
- To what extent do the formal properties of non-primary derivatives depend on their bases? How should the morphophonological similarities and differences between primary and non-primary derivatives be accounted for?

[54] For preliminary discussion of these questions see:

- Sandell (2015:170–92), Yates (2017:196–8) on accentual dominance.
- Yates (submitted) on morphophonology of non-primary derivatives (building on Schindler 1975b).

§4 Word-prosody of PIE primary neuter *–r/n-stems

[55] EM analyzes the inflection of PIE neuter *–r/n-stems as follows:

- *–r/n-stems exhibit either "acrostatic" (AS; Type I or II) or "proterokinetic" (PK) inflection in SG.
- Contrast between these two(/three) classes is neutralized in PL, which is supplied by a (historically) suppletive, internally derived AK "collective" paradigm.

[56] Schematic inflectional paradigms illustrating this reconstruction are provided in (42):

(42)

	a. AS I: 'blood'		b. AS II: 'water'		c. PK: 'fire'	
	SG	PL	SG	PL	SG	PL
NOM/ACC	*$h_1$ésh$_2$-r̥	*$h_1$ésh$_2$-ōr	*wód-r̥	*wéd-ōr	*péh$_2$-wr̥	*péh$_2$-wōr
GEN	*$h_1$ésh$_2$-n̥-s	*h_1(e)sh$_2$-n-é/ós	*wéd-n̥-s	*ud-n-é/ós	*ph$_2$-wén-s	*ph$_2$-un-é/ós

[57] On this analysis, the IE reflexes of NOM/ACC.PL of PIE *–r/n-stems should be prosodically uniform, all continuing stressed full-grade of the root and *o-grade of the suffix.

[58] But attested IE reflexes often diverge from this pattern — notably, there is robust evidence in Hittite and Nuclear-Indo-European (NIE) languages for suffixal stress and/or root zero-grade (Yates 2021b).

[59] Hittite *–r/n-stem paradigms with suffixal stress in NOM/ACC.PL are given in (43):

(43)

	N.NOM/ACC.SG	N.NOM/ACC.PL	OBLIQUE	
a.	*ḫaršar* [χársːar]	*ḫaršār* [χarsːáːr]	*ḫaršanī* [χarsːn-íː]	'head' (DAT/LOC.SG)
			ḫaraššanā [χarsːn-áː]	(ALL.SG)
b.	*uttar* [útːar]	*uttār* [utːáːr]	*uttanāš* [utːn-áːs]	'word' (GEN.SG)
			uddanī [utːn-íː]	(DAT/LOC.SG)
c.	*ḫuitar* [χ$^{\breve{w}}$íːt-ar]	*ḫuitār* [χ$^{\breve{w}}$it-áːr]	*ḫuitnaš* [χ$^{\breve{w}}$it-n-áːs]	'wild animal' (GEN.SG)
d.	*wātar* [wáːt-ar]	*witār* [wit-áːr]	*witēni* [wit-éːn-i]	'water' (DAT/LOC.SG)
			witēnit [wit-éːn-it]	(INS)

[60] NIE N.NOM/ACC.SG forms in (44) are standardly traced back to NOM/ACC.PL ("collective") of PIE *–r/n-stems, but reflect zero-grade of the root rather than full-grade expected on EM analysis (see, e.g., Schindler 1967:242–3; Ringe 1996:16–8, 2017:309; *NIL*: 220, 541, 626, 706; Simms 2009; Kim 2018:145):

(44)

	NIE	NOM/ACC.SG		IE NOM/ACC.PL		AK NOM/ACC.PL
a.	Goth.	*fon*	'fire' <	*ph$_2$-wṓr	cf.	*péh$_2$-wōr
	TB	*puwar*	"			
b.	Gk.	σκῶρ	'shit' <	*sk̂-ṓr	cf.	*sék̂-ōr
c.	TA	*ytār*	'path' <	*h_1i-tṓr	cf.	*$h_1$éi-tōr
d.	Gk.	ὕδωρ	'water' <	*ud-ṓr	cf.	*wéd-ōr
	Umb.	**utur**	"			

- Root zero-grade entails suffixal stress in (44a–b) and suggests the same in (44c–d).

[61] There is broad agreement that — however precisely they are to be explained — suffixal stress in such Hittite and NIE forms must be innovative.

- Hittite: Eichner 1973:98 n. 78, 1985:165 n. 169; Melchert 1988:227 n. 1, 1994:147; Zucha 1988:194–5; Yoshida 1990:113; Kimball 1999:135; Rieken 1999:293; Jasanoff 2017:15 n. 43; i.a.
- NIE: Bammesberger 1990:205; Ringe 1996:16–8, 2017:309; Casaretto 2004:579; Simms 2009; Pinault 2017:139–40; Kim 2018:145, i.a.

[62] Yet independent innovation is plausible only if the innovation is trivial — and the few proposals that could account for suffixal stress in both Hittite and NIE (±root zero-grade) are not compelling:

(45) Explaining NOM/ACC.PL PIE *R(*é*)-*ōr* >> *–*ṓr* as innovation:
   a. Stress shift by analogy to HK "collectives" (Jasanoff 2017:15 n. 43)
   b. Stress shift by analogy to NOM.PL of animate AKs with suffixal stress due to "**k*^{w}*etwóres*-Regel" (Neri apud Harðarson 2005:224, Neri 2005:30–1).
   c. Stress shift by analogy to thematic "collectives" (Eichner 1985:165 n. 169; Oettinger 2004:167)
   d. Leveling of word-final stress from oblique cases (Melchert 1988:227 n. 1)

[63] Stress shift by analogy to HK "collectives" (= (45a) above) is unlikely in view of virtual absence of evidence for this PIE category (see Yates submitted: §4.2.2 for fuller argumentation).

- Jasanoff (2017:168 n. 101) and Nussbaum (*apud* Jasanoff 1989:138 n. 10) suggest that neuter *–*men*-stems could form HK "collectives," whose NOM/ACC in *–*mḗn* is reflected in Indo-Iranian (as NOM/ACC.PL) and Slavic (as NOM/ACC.SG).
- The relevant forms can be explained without appeal to HK "collectives" — on Indo-Iranian see Harðarson (1987:94) and on Slavic see recently Kim (2019) with references to earlier scholarship.
- Even if the relevant forms did continue *–*mēn*, Slavic provides little support for suffixal stress, and Vedic directly contradicts it, showing only the root stress expected from AK NOM/ACC.PL *–*mōn* (e.g., *bráh-māṇi* 'formulations'), with the **o*-grade unambiguously seen in Hittite and Germanic.

[64] Stress shift by analogy to NOM.PL of animate AKs with suffixal stress due to "**k*^{w}*etwóres*-Regel" (= (45b above) is unlikely in view of:

- The doubtful existence of "**k*^{w}*etwóres*-Regel" (see **[47]** above).
- Alternatively, it was argued in §3 that PIE had animate nouns with NOM.PL *–S(*ó*)-*es* — but since these were not "amphikinetic," there is no clear connection between them and the N.NOM/ACC.PL.

[65] Stress shift by analogy to thematic "collectives" (= (45c above) is unlikely, since these do not provide a uniform basis for generalized suffixal stress.

- Per Eichner 1985:139–44 in (pre-)PIE thematic nominals with stressed full-grade of the root had their plural supplied by a (historically) suppletive "collective" with root zero-grade and final stress — e.g., (46) (cf. Schaffner 2001:106–13)
- On the other hand, Vine (2002) argues that (pre-)PIE thematic nominals with root zero-grade and final stress formed "collectives" with stressed root full-grade — e.g., (47) (cf. Rasmussen 1999).
- Given the existence of these conflicting patterns, it would be surprising if speakers generalized that all "collective" NOM/ACC.PL forms were stressed "unmittelbar vor dem Suffix –h_2" (Oettinger 2004:167 n. 12) and extended this pattern to *–*r*/*n*-stems.

(46)	(PRE-)PIE		IE
a.	**k^{w}é-k^{w}l(h$_x$)-o–*	>>	Ved. *cakrám* 'wheel'
		>	OE *hwēol* 'wheel'
⇒	**k^{w}ə-k^{w}l(h$_x$)-éh$_2$*	>>	Gk. κύκλα 'wheel-set'
b.	*wérd^{h}(h$_1$)-o–*	>	Lat. *verbum* 'word'
⇒	*wr̥d^{h}(h$_1$)-eh$_2$*	>	Goth. *waurda* 'words'

(47)	(PRE-)PIE		IE
a.	**h$_2$ĝ-ró–*	>(>)	Gk. ἀγρός 'field'
		>>	Ved. *ájras* 'field'
⇒	**h$_2$éĝ-reh$_2$*	>>	Gk. ἄγρα 'the hunt; prey'
b.	**duh$_2$-ró–*	>	Ved. *dūrá–* 'long'
⇒	**dwéh$_2$-reh$_2$*	>>	Gk. δῆρον '(a) long (time)'

[66] General critique applicable (45a–c) — all accounts invoke interparadigmatic analogy, without any cogent motivation for why such a change should occur.

[67] Final explanation in (45d) can be understood as intraparadigmatic leveling.

- Per Melchert (1988:227 n. 1) "[a] shift of the accent to the final syllable in the nom-acc. after the oblique cases seems possible (**–ṓr* after gen. **-n-és* etc.)," as in (48) (cf. Jasanoff 2017:15 n. 43):

(48)							
a.	NOM/ACC.PL	**péh$_2$-wōr*	>>	**p(e)h$_2$-wṓr*	>	Goth. *fon*, TB *puwar*
	GEN.PL	**ph$_2$-un-é/ós*	>	**ph$_2$-un-é/ós*	>>	Gk. πυρός
b.	NOM/ACC.PL	**wéd-ōr*	>>	**w(e)d-ṓr*	>	Hitt. *witār*, Gk. ὕδωρ
	GEN.PL	**ud-n-é/ós*	>	**ud-n-é/ós*	>	Ved. *udnás*

- Rightward stress shift in NOM/ACC.PL yields a paradigm that is in phonological (though not morphological) terms uniform: all forms have word-final stress.

[68] But there is no independent support for leveling of word-final stress from oblique cases as a general mechanism of IE prosodic change.

- In Hittite other neuters with stressed oblique endings do not develop analogical stem-final stress in strong cases (cf. Melchert 1988:227 n. 1):

(49)						
NOM/ACC.SG	**d^{h}éĝ^{h}-ōm*	>	**déĝ-om*	>	Hitt. *tēkan* [té:kan] 'earth'
		⁑	**deĝ-ṓm*	>	Hitt. ^{x}*tikān* [tiká:n]
GEN.SG	**d^{h}əĝ^{h}-m-é/ós*	>	**dəĝ-m-ós*	>	Hitt. *taknāš* [takn-á:s] 'of the earth'

- And there is no evidence in any of the IE languages for a similar spread of final stress from oblique case endings to ANIM.NOM.PL ending.
  - · No attested reflexes of mobile root nouns with NOM.PL **–és* like (50a).
  - · No attested reflexes of HK nominals with NOM.PL **–és* like (50b).
  - · No attested reflexes of AK nominals with NOM.PL **–és* like (50c).

(50)			PIE		post-PIE		IE
a.	NOM.PL	**CéRC-es*	⁑	**C(e)RC-és*	>	✗
	GEN.SG	**CR̥C-é/ós*	>	**CR̥C-é/ós*		
b.	NOM.PL	**CR̥C-éC-es*	⁑	**CR̥C-(e)C-és*	>	✗
	GEN.SG	**CR̥C-C-é/ós*	>	**CR̥C-C-é/ós*		
c.	NOM.PL	**CéRC-oC-es*	⁑	**CR̥C-(o)C-és*	>	✗
	GEN.SG	**CR̥C-C-é/ós*	>	**CR̥C-C-é/ós*		

[69] Interim take-away — no plausible scenario has (yet) been proposed on which emergence of suffixal stress in NOM/ACC.PL of **–r/n-*stems is a trivial change, hence repeatable in Anatolian and NIE.

[70] Alternatively, at least some **–r/n-*stems had suffixal stress in NOM/ACC.PL already in PIE (Yates 2021b).

- Such **–r/n-*stems would provide a basis for subsequent analogical spread of this pattern.

[71] Comparative evidence suggests that PIE 'fire' had suffixal stress and root zero-grade in NOM/ACC.PL.

- No trace of AK NOM/ACC.PL **péh₂-wōr* in any IE languages.
- NIE languages reflect only **ph₂-wṓr* (cf. **[60]** above), continued by NOM/ACC.SG Goth. *fon* and TB *puwar* (for a different analysis of the latter see Pinault 2011:163–4, 2017:140).
- Reconstructing **ph₂-wṓr* better accounts for the synchronic stress pattern of 'water' in Hittite.
  - · Proposed by Schindler (1975a:7) (and since widely accepted) that Hittite oblique case forms of 'water' with stressed full-grade of suffix — e.g., (51) — are result of lexical analogy with 'fire'.
  - · If 'fire' had suffixal stress, innovative suffixal stress of Hitt. *witār* can be due to the same analogical change, which involves 'water' adopting the stress pattern of 'fire' wholesale — i.e., (52).

(51)

DAT/LOC.SG	*witēni*	[wit-é꞉n-i]	'in(to) the water' (KUB 31.79 obv. 8; KBo 5.2 i 20, ii 12, 13, 17)
INS	*witēnit*	[wit-é꞉n-it]	'with the water(s)' (KBo 39.160 r.col. 7; KBo 39.166 ii 1; KBo 40.89 obv. 6)

(52)

			'water'	'fire'
PIE		NOM/ACC.SG	**wód-r̥*	**péh₂-wr̥*
		GEN.SG	**wéd-n̥-s*	**ph₂-wén-s*
		NOM/ACC.PL	**wéd-ōr*	**ph₂-wṓr*
>> pre-Hitt.		NOM/ACC.SG	**wód-r̥*	**páχʷ-r̥*
		GEN.SG	**wid-én-os*	**pəχʷ-én-os*
		NOM/ACC.PL	**wid-ṓr*	**pəχʷ-ṓr*
>	Hitt.	NOM/ACC.SG	*wātar*	*paḫḫur*
		GEN.SG	*witenaš*	*paḫḫwenaš*
		NOM/ACC.PL	*witār*	—

  - · Dating this stress shift within Anatolian after raising of **e* > **i* between **w* and coronal consonant (Melchert 1994:101) could account for root *i/e*-vocalism of Hitt. *witār* (< **wed–*) vs. zero-grade in NIE (e.g., Gk. ὕδωρ, Ved. *udā́* < **ud–*) via an independent parallel stress shift.
  - · Root *e/i*-vocalism of Hitt. 'water' can only be explained via PIE **wed–* (not **ud–* via *e/i*-epenthesis, contra Kloekhorst 2014b:155–6, Kloekhorst 2019): irregular weak allomorphy in Hittite is usually repaired by vowel reduction within the root (*[ə] > Hitt. *a*; see Yates 2021a); there is no independent evidence for *e/i*-epenthesis (cf. Melchert 2013 on *ḫi*-verbs).

[72] This reconstruction calls into question the EM analysis of PL formation in **–r/n-*stems and other neuter classes similarly held to have their PL forms supplied by an internally derived AK "collective."

- Traditional EM analysis undergenerates NOM/ACC.PL forms of the **ph₂-wṓr-*type — i.e., with zero-grade root and suffixal stress (= AHK; see **[48]** above).
- Allowing for a suppletive AHK "collective" could fix this issue, but would still leave unexplained why some neuters switch to AHK inflection in PL, others to proper AK inflection.

[73] In view of these issues, it is worth considering whether a (very) different analysis of these NOM/ACC.PL forms is possible.

[74] A preliminary analysis is outlined below — key ingredients:

(i) N.NOM/ACC.PL is formed by adding an inflectional ending (**–h_2*) to the same stem as NOM/ACC.SG (in accordance with the general pattern in IE inflectional paradigms).

(ii) N.NOM/ACC.PL ending **–h_2* is PRE-ACCENTING — i.e., */´-h_2/ (Yates 2021b).

(iii) Suffixal allomorphs have underlying **o*-grade — i.e., */-or-, -wor-, ´-mon-, ´-os-/ (Yates 2019b,e).

(iv) Synchronic PIE phonological processes: BAP (see §2 above); SZEMERÉNYI'S LAW, PRE-TONIC MID-VOWEL DELETION, POST-TONIC **o*-DELETION (see **[78]** below).

- These individual assumptions are explicitly defended in very recent work (mostly unpublished but available online), which should be consulted for details.

[75] This analysis will account straightforwardly for NOM/ACC.PL forms of neuter stem classes analyzed by EM as PK, offering a principled explanation for split between those with proper AK-type NOM/ACC.PL forms (**R(*e*)-*ōr*) vs. those with AHK-type NOM/ACC.PL forms (**R(∅)-*ő́r*; see **[83]**–**[84]** below).

[76] Proposed derivations for PIE 'fire' in (53):

(53)	a.	PIE */peh$_2$-wor-∅/	→	*[páh$_2$-wr̥]	>	Hitt. *paḫḫur*, TA *por*	'fire'
	b.	PIE */peh$_2$-wén-í/	→	*[ph$_2$-wén-i]	>	Hitt. *paḫḫweni*	'in(to) the fire'
	c.	PIE */peh$_2$-wor-´h$_2$/	→	*[ph$_2$-wóːr]	>(>)	Goth. *fon*, TB *puwar*	'fire'

[77] Observations on word stress in (53):

- NOM/ACC.SG in (53a) has only unaccented morphemes, thus default leftmost stress.
- In oblique cases like (53b), accented **n*-allomorph of suffix (segmentally and prosodically suppletive */-wén/) attracts stress in preference to accented inflectional endings via BAP.
- In NOM/ACC.PL in (53c) the stem is unaccented, thus pre-accenting ending */´-h_2/ places stress on preceding suffix.

[78] Observations on ablaut in (53):

- Suffixal stress in (53b–c) triggers deletion of root */e/-vowel via (54) (Yates 2019a; cf. Kiparsky's (2010) ZERO-GRADE RULE).
- Suffixal */o/-vowel in (53c) is lengthened by (55) (Szemerényi 1962, Nussbaum 1986:129–30; see Sandell and Byrd 2014, 2015 for analysis as synchronic PIE process).
- Root stress in (53a) triggers deletion of suffixal */o/-vowel via (56) (Yates 2019b,c,e; cf. Kiparsky's (2010) POST-ICTIC SYNCOPE).

(54) PRE-TONIC MID-VOWEL DELETION (PVD): */e, o/ → ∅ / ___ *σ́*
"*/e, o/ is deleted when it precedes a stressed *σ*." (iterative)

(55) SZEMERÉNYI'S LAW (SzL): */V{R, s}F#/ → *[Vː{R, s}#]
"In a word-final sequence of vowel + sonorant or /s/ + fricative, the fricative is deleted with compensatory lengthening of the preceding vowel."

(56) POST-TONIC */o/-DELETION (PoD): /ŏ/ → ∅ / V́C$_0$___RC$_0$]$_\sigma$
"Short athematic */o/ is deleted in a post-tonic *σ* before a tautosyllabic sonorant consonant."

[79] Two further PIE categories that per EM have PK inflection in SG and PL forms supplied by an internally derived AK "collective" are neuter **–men*-stems and **–es*-stems (Schindler 1975b:259, 262–4; Jasanoff 2002; Nussbaum 1986:129–30, 2014:300–1; i.a.):

- These categories differ crucially from 'fire', however, in that there is no direct evidence in IE languages for suffixal stress in oblique cases.
- Schindler (1975b) explicitly reconstructs neuter **–es*-stems with fixed root stress already in PIE; the same is assumed here for **–men*-stems (cf. Lundquist and Yates 2018:2110, Yates submitted:§4.2.1).

[80] Proposed derivations for PIE neuter **–men*-stems in (57) and neuter **–es*-stems in (58):

(57)	a.	PIE */$\mathrm{d^h eh_1}$-ˊmon-∅/	→	*[$\mathrm{d^h éh_1}$-m̥n]	>	Ved. *dhā́ma*,	'domain', 'tomb'
					>	Gk. θῆμα	'tomb'
	b.	PIE */$\mathrm{d^h eh_1}$-ˊmen-éi/	→	*[$\mathrm{d^h éh_1}$-men-ei]	>	Ved. *dhā́mane*	'for the domain'
	c.	PIE */$\mathrm{d^h eh_1}$-ˊmon-ˊ$\mathrm{h_2}$/	→	*[$\mathrm{d^h éh_1}$-moːn]	>>	Ved. *dhā́māni*	'domains'
					>>	OAv. *dāmąn*	'beings'
(58)	a.	PIE */men-ˊos-∅/	→	*[mén-os]	>	Ved. *mánas*	'thought'
					>	Gk. μένος	'might, spirit'
	b.	PIE */men-ˊes-é/ós/	→	*[mén-es-e/os]	>	Ved. *mánasas*	'of thought'
					>	Gk. μένεος	'of might/spirit'
	c.	PIE */men-ˊos-ˊ$\mathrm{h_2}$/	→	*[mén-oːs]	>>	Ved. *mánāṃsi*	'thoughts'
					>	OAv. *manā̊*	"

[81] Observations on word stress in (57–58):

- Neuter noun-forming suffixes **–men–* and **–es–* are PRE-ACCENTING (/ˊ-mo/en-, ˊ-o/es-/) — i.e., place a lexical accent on the immediately preceding σ (= root).
- In NOM/ACC.SG in (57–58a) stress attracted to root due to preaccenting suffix.
- In oblique cases like (57–58b) suffixal preaccent wins over accented inflectional endings via BAP.
- In NOM/ACC.PL in (57–58c) suffixal preaccent wins over ending preaccent via BAP.

[82] Observations on ablaut in (57–58):

- In NOM/ACC.SG in (57a) suffixal */o/ is deleted by PoD in (56) (before tautosyllabic */m/).
- But in NOM/ACC.SG in (58) environment for PoD is not met (no tautosyllabic sonorant), so underlying suffixal */o/ surfaces.
- In NOM/ACC.PL in (57–58c) suffixal */o/ is lengthened by SzL in (55), bleeding application of PoD.

[83] Contrast between AHK-type NOM/ACC.PL of 'fire' and proper AK-type NOM/ACC.PL of neuter **–men*-stems/**–es*-stems is consistent with a general prediction of this analysis:

- Nominals with stress mobility in NOM/ACC.SG vis-à-vis oblique cases have AHK-type NOM/ACC.PL.
- Conversely, nominals with fixed root stress in NOM/ACC.SG and oblique have AK-type NOM/ACC.PL.
- (Word stress in Hittite **–r/n*-stems bears out this prediction; see Yates 2021b.)

[84] This prediction emerges from BAP, which allows for stress mobility in NOM/ACC.SG vis-à-vis oblique iff root is unaccented.

- If root bears a lexical accent (e.g., in neuter **–men–/*–es*-stems due to preaccenting suffix), it is assigned stress in preference to lexical accents to its right via BAP, resulting in fixed intraparadigmatic root stress.
- If root is unaccented (e.g., */$\mathrm{peh_2}$/ 'fire'), accented suffixes/endings in oblique cases attract stress, resulting in intraparadigmatic stress mobility.
- Likewise, if the root is unaccented, preaccenting */´-$\mathrm{h_2}$/ places stress on suffix in NOM/ACC.PL.

[85] While this analysis neatly handles the AK "collectives" of EM's PK neuter nominals, it appears to encounter problems with those of AS nominals.

[86] Consider the partial paradigm of PIE 'blood' in (59), which is securely reconstructible with AS I inflection in SG and an AK-type NOM/ACC.PL:

(59)					
NOM/ACC.SG	**h₁ésh₂-r̥*	>	Gk. ἦαρ (Hesych.), Hitt. *ēšḫar*	'blood'
DAT.SG	**h₁ésh₂-n-ei*	>	—	'for blood'
NOM/ACC.PL	**h₁ésh₂-ōr*	>	TB/A *yasar*/*ysār*, Pal. *ēšḫa*	'blood'

- Inherited oblique SG stem does not survive as such, but is indirectly supported by stressed full-grade (via paradigm leveling) in NOM/ACC.SG forms like Gk. ἔαρ, Ved. *ásṛk*, KLuw. *āšḫar(=ša)*.
- Hittite oblique SG stem in *išḫan–* ([isχːn-´]) also likely continues **h₁ésh₂-n–* after inner-Anatolian introduction of stress mobility, which would account for:
  - Ending-stressed Hittite forms — e.g., DAT/LOC.SG *išḫanī* ([isχːn-íː]), GEN.SG *išḫanāš* ([isχːn-áːs]).
  - Retained root **e*-grade (cf. **[71]**) above), whence synchronic *i*-vocalism via pretonic raising (*i* < **e*; Melchert 1994:139).
- Parallel developments are seen in the Anatolian reflexes of PIE 'mouth' (see Melchert 2010).

[87] The principal problem for the analysis developed above is the root vocalism of NOM/ACC.PL:

- If NOM/ACC.PL is derived from the same stem as NOM/ACC.SG, why doesn't it also have lengthened grade of the root — i.e., NOM/ACC.PL ˣ*h₁ésh₂-ōr* like SG **h₁ésh₂-r̥*?

[88] Possible solution per Kiparsky (2018:138), who suggests that "Narten ablaut" be analyzed as a mora deletion process conditioned by accented morphemes — i.e., by a PIE process like (60).

(60) ROOT VOWEL SHORTENING (RVS): */eː/ → [−long] / ___ Ḿ
"Long root vowels (/eː/) are shortened before an accented morpheme."

[89] Proposed derivations for PIE 'blood' in (61):

(61)						
a.	PIE */$\mathrm{h_1}$ésh₂-or-∅/	→	*[$\mathrm{h_1}$ésh₂-r̥]	>	Gk. ἦαρ (Hesych.), Hitt. *ēšḫar*	'blood'
b.	PIE */$\mathrm{h_1}$ésh₂-en-éi/	→	*[$\mathrm{h_1}$ésh₂-n-ei]	>	—	'for blood'
c.	PIE */$\mathrm{h_1}$ésh₂-or-´$\mathrm{h_2}$/	→	*[$\mathrm{h_1}$ésh₂-oːr]	>(>)	TB/A *yasar*/*ysār*, Pal. *ēšḫa*	'blood'

- Accented root gets stress via BAP over accented oblique case ending in (61b) and preaccent of NOM/ACC.PL ending in (61c), but these accents induce shortening of root vowel via (60).
- Underlying root long vowel surfaces only in NOM/ACC.SG in (61a), when no accent follows.

[90] The last remaining hurdle (?) to this analysis is the AK "collective" of AS II neuters — in particular, of PIE 'water'.

[91] The problem is (again) the root vocalism of NOM/ACC.PL, standardly reconstructed as **wédōr*.

- If NOM/ACC.PL is derived from the same stem as NOM/ACC.SG, why doesn't it also have **o*-grade of the root — i.e., NOM/ACC.PL **wód-ōr* like SG **wód-r̥*?

[92] Yet while the AK-type NOM/ACC.PL "PIE **wédōr*" is among the most frequently cited forms in literature on IE morphophonology, it is just one of three possible pre-forms that find support in IE data:

(62) Possible reconstructions of NOM/ACC.PL of PIE 'water':
a. **wéd-ōr* b. **ud-ór* c. **wód-ōr*

[93] **wéd-ōr* in (62a) is supported above all by Hitt. *witār* ([wit-á:r]) with clear reflexes of root **e*-grade and suffixal **o*-grade, but attested suffixal stress ([-á:r]) is unexpected.

- Per **[71]** above innovative suffixal stress probably results from remodeling after 'fire', but this analogical change raises possibility that other changes have also occurred (see **[98]** below).

[94] **udór* in (62b) is reflected in NOM/ACC.PL Ved. *udā́*, SG Umb. **utur**, and SG Gk. ὕδωρ (with "recessive accent" like other 3rd declension polysyllabic neuters).

- Standard explanation of root zero-grade in **ud-ór* is that it is analogical to oblique PL (e.g., GEN.PL **ud-n-é/ós*), but per **[69]** an analogical account of final stress is lacking.
- Some scholars have suggested that **ud-ór* is reconstructible for PIE (Hart 1980:13 n. 29, Gertz 1982:296, Kloekhorst 2014a:308 n. 1157, i.a.), but no (currently) existing theory of IE morphophonology actually predicts root zero-grade or suffixal stress in this context.

[95] **wód-ōr* in (62c) is predicted by analysis developed above and also relatively well-supported by IE evidence, underlying attested NOM/ACC.SG forms in Germanic and Balto-Slavic.

(63) **wód-ōr* >(>) OE *wæter*, OS *watar*, OHG *waʒʒar*, Goth. *wato* 'water'

- See, e.g., Kroonen (2013:575–6) and Ringe (2017:308–9), both reconstructing NOM/ACC.SG PGmc. **watōr*, which is phonologically regular from **wód-ōr*.
- Goth. *wato* shows remodeling as an **n*-stem after oblique; on phonological development of final **–ōr* in these forms see Stiles (1988:132–4) (cf. Ringe and Taylor 2014:60).

(64) **wód-ōr* >> OLith. *vánduo* (modern *vanduõ*), OCS *voda* 'water'

- For the pre-form see in detail Petit (2004:71–100, 2010:116); the resulting PBS **wádō* was in Baltic rebuilt with **n*-stem inflection on basis of oblique, and reanalyzed in Slavic as a feminine **–eh₂*-stem after phonological merger of **ō* and **ā* (cf. Smoczyński 2018:1602).
- Kortlandt (1979:60–1, 1988:388–9) proposes a very different account of 'water' in Balto-Slavic, but for PBS reconstructs NOM/ACC.SG **wondōr*, which can easily reflect **wód-or* with spread of intrusive nasal from oblique.
- Standard explanation of **o*-grade in **wód-ōr* is that it is analogical to NOM/ACC.SG PIE **wód-r̥* (e.g., Petit 2004:81, 2010:116, Ringe 2017:309), but the existence of this form in two (admittedly adjacent) IE branches weakens this account somewhat.

[96] PROPOSAL: NOM/ACC.PL in PIE was **wód-ōr* in (62c), preserved in Germanic and Balto-Slavic.

- Alternative historical accounts of Hitt. *witār* — previously attributed to **wéd-ōr* in (62a) — and of **ud-ṓr* in (62b) are suggested in **[98]** and in **[99]**–**[100]** below.

[97] Proposed derivations for PIE 'water' in (65):

(65)	a.	PIE */wód-or-∅/	→	*[wód-r̥]	>	Hitt. *wātar*	'water'
	b.	PIE */wéd-en-éi/	→	*[wéd-n-ei]	>>	Hitt. *witēni*	'in(to) the water'
					>>	Goth *watin*	'for/in water'
	c.	PIE */wód-or-´h$_2$/	→	*[wód-oːr]	>	OE *wæter*	'water'
					>>	OLith. *vánduo*	"

- Derivations in (65) are identical to 'blood' in (61), except there is no phonological process that causes root shape to differ in NOM/ACC.SG vs. PL.

[98] Hitt. *witār* can be derived from PIE **wód-ōr* in essentially the same way as from "**wéd-ōr*" — consider the scenario in (66), identical to (52) above in all other respects.

(66)

			'water'	'fire'
	PIE	NOM/ACC.SG	**wód -r̥*	** péh$_2$ -wr̥*
		GEN.SG	**wéd-n̥-s*	**ph$_2$-wén-s*
		NOM/ACC.PL	**wód-ōr*	**ph$_2$-wṓr*
>>	pre-Hitt.	NOM/ACC.SG	** wód -r̥*	** páχ^w -r̥*
		GEN.SG	**wid-én-os*	**pəχ^w-én-os*
		NOM/ACC.PL	**wid-ṓr*	**pəχ^w-ṓr*
>	Hitt.	NOM/ACC.SG	*wāt ar*	*paḫḫ ur*
		GEN.SG	*witenaš*	*paḫ̆ḫ̆wenaš*
		NOM/ACC.PL	*witār*	—

- In prosodic terms, PIE paradigm of 'fire' contrasts one root allomorph in NOM/ACC.SG with a different allomorph in all other cells: stressed full-grade *[páh$_2$-] vs. pretonic zero-grade *[ph$_2$-´].
- It is this prosodic pattern that spreads analogically:
  - In pre-Hittite 'water' adopts stress alternation and suffixal allomorphy of 'fire' (as in (52) above).
  - But it also **introduces oblique **wid–*** (PIE < **wed–*) into NOM/ACC.PL, resulting in same type of opposition: NOM/ACC.SG *[wód-] vs. elsewhere *[wid-´] (> Hitt. [wáːt -] vs. [wit-´]).

[99] One observation provides the impetus for a new account of **ud-ṓr* — on the analysis developed above, it is the expected output of NOM/ACC.PL of 'water' if root were instead unaccented, as in (67).

(67)	post-PIE */wod-or-´h$_2$/	→	*[ud-óːr]	>	Gk. ὕδωρ, Umb. **utur**	'water'
				>	Ved. *udā́*	'waters'

- Since the root is unaccented, the preaccenting ending places stress on the suffix, triggering deletion of root vowel via PVD in (54).

[100] The loss of root lexical accentedness needed to make (67) work is in fact paralleled by development of other AS categories in IE languages.

- Schindler (1972) observed a diachronic tendency in AS root nouns for fixed root stress to be replaced by stress mobility, which in some lexemes may have occurred already in PIE — e.g. (68).

(68)

	pre-PIE		PIE		IE	
ACC.SG	***pód-m̥*	>	***pód-m̥*	>	Ved. *pā́dam*, Gk. πόδα	'foot'
				cf.	Hitt. *pātu*[*š*] ([pá꞉t-os])	'feet' (ACC.PL)
GEN.PL	***péd-oh$_{1/3}$om*	>>	***ped-óh$_{1/3}$om*	>	Ved. *padā́m*, Gk. ποδῶν	'of the feet'
				>>	Hitt. *patān* ([pat-á꞉n])	"

- Formally, emergence of stress mobility can be attributed to the root losing its lexical accent:

(69)

	pre-PIE	**/péd-óh$_{1/3}$om/	→ **[péd-oh$_{1/3}$om]	>	—
>>	PIE	*/ped-óh$_{1/3}$om/	→ *[ped-óh$_{1/3}$om]	>	Ved. *padā́m*, Gk. ποδῶν, Hitt. *patān*

- Schindler's observation can thus be understood as a tendency for accented roots to lose their accentedness over time — and 'water' in (67) would be just another case of the same phenomenon.

[101] Interim summary — a revised diachrony of PIE 'water':

- NOM/ACC.PL in PIE was **wód-ōr*, continued in Germanic and Balto-Slavic.
- PIE **wód-ōr* was replaced in NIE languages (perhaps more than once) by innovative **ud-ṓr* when lexical accent of the root was lost.
- PIE **wód-ōr* was replaced in Anatolian by a (virtual) **wed-ṓr* as part of analogical remodeling after 'fire'; the traditionally reconstructed form "**wéd-ōr*" never existed.

[102] If this account of 'water' is correct, there is no basis for reconstructing PIE neuters in which a proper AK-type NOM/ACC.PL with root **e*-grade is paired with AS II-type NOM/ACC.SG with root **o*-grade, as expected if both are derived from the same stem.

[103] Instead, three formal PIE sub-types should be distinguished among the N.NOM/ACC.PL forms analyzed by EM as AK (i.e., suffixal **–ōC#*):

(70) Three prosodic types of PIE athematic NOM/ACC.PL IN **–ōC#*:

a. *R(*é*)-*ōC*: proper AK-type with stressed full-grade of the root and *o*-vocalism of suffix.
   - at least 'blood', neuter **–men*-stems, neuter **–es*-stems

b. *R(∅)-*ṓC*: AHK-type with zero-grade of the root and stressed **ó*-vocalism of suffix.
   - at least 'fire'

c. *R(*ó*)-*ōC*: stressed **ó*-grade of the root and **o*-vocalism of suffix.
   - at least 'water'

[104] Analysis proposed here (i) accounts for all three patterns in (70) and (ii) derives these forms via purely inflectional processes — i.e., stem of NOM/ACC.SG + ending **–h_2* — just as in other IE stem classes.

[105] In contrast, traditional EM analysis (i) only accounts for pattern in (70a); and (ii) idiosyncratically requires stem suppletion between SG and PL (viz., internally derived from SG stem).

[106] Broad take-away — analysis proposed here improves on EM's AK analysis, providing a better fit for the (P)IE data with fewer costly morphological assumptions.

[107] A theoretical implication of this finding — the PIE status of the AK "collective" hypothesized by EM would depend exclusively on the (alleged) reflexes of its oblique forms (e.g., Ved. *udnás* 'of water', *yaknás* 'of the liver'; Goth. *funins* 'of fire').

- At least some of these forms admit alternative explanations (see Yates 2019a on 'fire').

[108] Analysis proposed here also raises new questions, which themselves are related to — and offer a different perspective on — some big questions about PIE morphophonology, e.g.:

- What is the historical source of suffixal */o/ in the neuter nominals in (70)? More generally, where does PIE suffixal **o*-vocalism come from diachronically?
- What motivates the diachronic spread of stress mobility in nominals with fixed root stress in the IE languages? Why did the roots of 'foot' and 'water' (and 'blood' in Hittite; see **[86]** above) lose their lexical accents, and how are lexical accents lost (or acquired) generally?

[109] Some of these questions are being addressed right here at this workshop — see, e.g.:

- Lundquist and Kim on suffixal **o*-grades
- Sandell and Hale on lexical accent change

§5 Discussion

[110] Case studies in §§2–4 illustrate the importance of testimony of Anatolian for reconstructing PIE word stress, both its systemic principles and the stress patterns of individual lexical items and categories:

- Hittite converges with Vedic w.r.t. BAP, securing its reconstruction for PIE (§2).
- Hittite reflexes of **–oi*-stems converge with Greek w.r.t. stress (= suffixal in strong) and with Vedic w.r.t. suffixal ablaut (= **–ói*/∅-´), securing reconstruction of these properties for this PIE class (§3).
- Hittite almost uniquely provides direct evidence for suffixal stress in NOM/ACC.PL of **–r/n*-stems; this converges with indirect evidence in NIE (= zero-grade root), suggesting that at least some PIE **–r/n*-stems had suffixal stress (§4).

[111] More generally, these studies show that the amount of Anatolian evidence that is relevant to the reconstruction of PIE word stress is far greater than often assumed.

- It is correct that Anatolian preserves archaic lexical items showing stress-conditioned segmental effects (via Proto-Anatolian lenition, Čop's Law, etc.) and/or ablaut that can be used as evidence for PIE stress patterns.
- But there are now reliable diagnostics of word stress in (at least) Hittite (see Yates 2017:72–102 for a synthesis) — and synchronically oriented study of Hittite stress, especially of productive inherited morphological categories, can also crucially inform PIE reconstruction.

[112] Anatolian stress patterns in turn force a reconsideration of certain widely held assumptions about the relationship between word stress and ablaut in PIE — e.g.:

- ⋆ Suffixal **o*-grade does not imply AK-type stress mobility (i.e., root in strong/ending in weak) in PIE.
  - · Nominals with stressed suffixal **ó*-grade in strong cases, both animate (**–oi*-stems) and neuter ('fire' in PL), are also reconstructible.
- ⋆ Root non-zero-grade does not imply root stress in PIE.
  - · There are reconstructible athematic non-primary derivatives with suffixal stress and root **e* or **o*-grade derived from bases with these root ablaut grades (e.g., $*b^heid^h$*-ói–*, $*sok^w$*-h$_2$-ói–*).

[113] The big take-away — only by fully incorporating the evidence of Hittite and the other Anatolian languages can we attain (anything like) an adequate understanding of PIE word-prosody, and so in turn of its development in the individual IE languages.

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