

The synchronic and diachronic prosody of Hittite *-r/n*-stems



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Inflection of PIE $*-r/n$ -stems

- ▶ Broad agreement that “heteroclite” inflection of Proto-Indo-European (PIE) neuter $*-r/n$ -stems is best preserved in Anatolian, where the class remains fairly productive — e.g., ‘fire’ in (1a).
- ▶ Elsewhere, synchronic “heteroclite” inflection found in traces in Indo-Iranian (esp. Avestan), but generally rebuilt from a single stem allomorph in $*-r-$ or $*-n-$ — cf. ‘fire’ in (1b-c).

(1)		NOM/ACC.SG	~	GEN.SG
a.	Hitt.	<i>paḥḥur</i>		<i>paḥḥwenaš</i>
b.	OE	<i>fȳr</i>		<i>fȳres</i>
	Gk.	πῦρ		πυρός
	Arm.	<i>howr</i>		<i>hroy</i>
c.	Goth.	<i>fon</i>		<i>funins</i>
	ON	<i>funi</i>		<i>funa</i>

Ablaut in Hittite and PIE $*-r/n$ -stems

- ▶ Ablaut patterns of Hittite $*-r/n$ -stems have factored prominently into reconstruction of the inflectional classes hypothesized by the widely accepted Erlangen Model (EM) of PIE nominal inflection.

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 - ▶ Hittite $*\acute{e}$ -root vocalism in (2a) taken as important evidence for “acrostatic I” (AS I) inflection.

(2)	(post-)PIE		HITTITE	
a. NOM/ACC.SG	$*m\acute{e}h_2-wr$	>	$m\bar{e}hur$	[mé:χ ^w or] ‘time’

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 - ▶ Hittite $*ó/é$ -root alternation in (2b) taken as important evidence for “acrostatic II” (AS II) inflection.

(2)	(post-)PIE		HITTITE	
a. NOM/ACC.SG	$*mēh_2-wr̥$	>	<i>mēhur</i>	[mé:χ ^w or] ‘time’
b. NOM/ACC.SG	$*wód-r̥$	>	<i>wātar</i>	[wá:tar] ‘water’
INS.SG	$*wéd-n-t$	>	<i>wedanda</i>	[wé:tan-t] ‘with water(s)’

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 - ▶ Hittite $*\emptyset/\acute{e}$ -suffix alternation in (2c) taken as important evidence for “proterokinetic” (PK) inflection.

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a. NOM/ACC.SG	$*m\acute{e}h_2-wr$	>	<i>mēḫur</i>	[mé:χ ^w or] ‘time’
b. NOM/ACC.SG	$*w\acute{o}d-r$	>	<i>wātar</i>	[wá:tar] ‘water’
INS.SG	$*w\acute{e}d-n-t$	>	<i>wedanda</i>	[wé:tan-t] ‘with water(s)’
c. NOM/ACC.SG	$*p\acute{e}h_2-wr$	>	<i>paḫhur</i>	[pá:χ ^w :or] ‘fire’
GEN.SG	$*ph_2-wén-os$	>	<i>paḫḫwenaš</i>	[paχ ^w :é:n-as] ‘of fire’

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 - ▶ Hittite $*\emptyset/\bar{o}$ -suffix alternation in (2d) taken as important evidence that athematic neuters switch to “amphikinetic” (AK) in “collective” (> N.PL).

(2)	(post-)PIE		HITTITE	
a. NOM/ACC.SG	$*m\acute{e}h_2-wr$	>	<i>mēḫur</i>	[mé:χ ^w or] ‘time’
b. NOM/ACC.SG	$*w\acute{o}d-r$	>	<i>wātar</i>	[wá:tar] ‘water’
INS.SG	$*wéd-n-t$	>	<i>wedanda</i>	[wé:tan-t] ‘with water(s)’
c. NOM/ACC.SG	$*péh_2-wr$	>	<i>paḫhur</i>	[pá:χ ^w :or] ‘fire’
GEN.SG	$*ph_2-wén-os$	>	<i>paḫhwenasš</i>	[paχ ^w :é:n-as] ‘of fire’
d. NOM/ACC.SG	$*w\acute{o}d-r$	>	<i>wātar</i>	[wá:tar] ‘water’
NOM/ACC.PL	$*wéd-ōr$	>>	<i>witār</i>	[witá:r] ‘waters’

Word stress in Hittite and PIE $*-r/n$ -stems

- ▶ Yet the actual stress patterns attested in Hittite $-r/n$ -stems pose a challenge for EM — in particular:
 - ▶ Robust evidence for **stressed oblique singular inflectional endings** — e.g., (3) — which is unexpected on AS or PK reconstruction.

- (3) a. Hitt. *uddanāš* [ut:-n-á:s] ‘of the word’ (word-N.NML-GEN.SG)
b. Hitt. *haršanī* [χars:-n-í:] ‘at the head’ (head-N.NML-DAT/LOC.SG)
c. Hitt. *išhanāš* [isχ:-n-á:s] ‘of blood’ (blood-N.NML-GEN.SG)

- ▶ Presuffixal $-a-$ in oblique forms like (3) is taken here as purely orthographic (*pace* Kloekhorst 2008, 2014, i.a.), but nothing depends on this assumption; see Appendix I for discussion of phonological interpretation of these forms.

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 - ▶ Robust evidence for **suffixal stress** in NOM/ACC.PL (Hitt. $-\bar{a}r < *-\acute{o}r$) — e.g., (4) — which is unexpected on AK reconstruction.

- (4) a. Hitt. *uddā̄r* [utʰ:-á:ɾ] ‘words’ (word-N.NML:NOM/ACC.PL)
b. Hitt. *haršā̄r* [χarsʰ:-á:ɾ] ‘heads’ (head-N.NML:NOM/ACC.PL)
c. Hitt. *witā̄r* [wit:-á:ɾ] ‘waters’ (water-N.NML:NOM/ACC.PL)

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c. Hitt. *witā̄r* [wit-á:ɾ] ‘waters’ (water-N.NML:NOM/ACC.PL)
- ▶ **Suffixal stress** also unexpected on any of the Leiden inflectional classes (“proterodynamic,” “hysterodynamic,” etc.).

Roadmap

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- (iii) Reexamine diachrony of word stress in N.NOM/ACC.PL of **-r/n*-stems.
 - ▶ Indirect Nuclear-Indo-European (NIE) evidence for suffixal stress in NOM/ACC.PL.
 - ▶ Propose a revised reconstruction of PIE 'fire' (cf. Yates 2019a).

Word stress in Hittite $-r/n$ -stems

- ▶ Three different synchronic stress patterns can be distinguished among the Hittite neuter $-r/n$ -stems — schematically:
 - ▶ TYPE 1: Fixed presuffixal stress (i.e., preceding $*-r/n$ -suffix) in NOM/ACC.SG, NOM/ACC.PL, and oblique.
 - ▶ TYPE 2: Presuffixal stress in NOM/ACC.SG vs. suffixal stress in NOM/ACC.PL and oblique.
 - ▶ TYPE 3: Presuffixal stress in NOM/ACC.SG vs. suffixal stress in NOM/ACC.PL vs. ending in oblique.

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Word stress in Hittite *-r/n-*stems

- ▶ TYPE 1 has fixed presuffixal stress in NOM/ACC.SG, NOM/ACC.PL, and oblique cases.
- ▶ TYPE 1 includes (historically) non-primary **-r/n-*stems formed with productive *-atar/n-*, *-eššar/n-*:

(5)	N.NOM/ACC.SG	N.NOM/ACC.PL	OBLIQUE	
a.	<i>paprātar</i> [paprá:t-ar]	<i>paprāta</i> [paprá:t-a]	<i>paprannaš</i> [paprá:n:-as]	‘impurity’ (GEN.SG)
b.	<i>ḫattātar</i> [χat:á:t-ar]	<i>ḫattāda</i> [χat:á:t-a]	<i>ḫattannaš</i> [χat:á:n:-as]	‘wisdom’ (GEN.SG)
c.	<i>kurēšš-ar</i> [k ^w oré:s:-ar]	<i>kureššar</i> [k ^w oré:s:-ar]	<i>kurešnaš</i> [k ^w oré:s:-n-as]	‘scarf’ (GEN.SG)
d.	<i>wageššar</i> [waké:s:-ar]	<i>wagešša</i> [waké:s:-a]	<i>wagešni</i> [waké:s:-n-i]	‘(type of bread)’ (DAT/LOC.SG)

Word stress in Hittite *-r/n-*stems

- ▶ TYPE 1 has fixed presuffixal stress in NOM/ACC.SG, NOM/ACC.PL, and oblique cases.
- ▶ TYPE 1 also includes (historically) non-primary **-r/n-*stems formed with *-awar/aun-*:

(6)	N.NOM/ACC.SG	N.NOM/ACC.PL	OBLIQUE	
a.	<i>partāwar</i> [part:á:-war]	[<i>part</i>]āwa [partá:w-a]	<i>pardāunaz</i> [part:á:-un-ats̄]	‘wing, feather’ (ABL)
			<i>partāunit</i> [part:á:-un-it]	(INS)
b.	<i>ašāwar</i> [asá:-war]	<i>ašawa</i> [asá:-wa]	<i>ašauni</i> [asá:-un-i]	‘fold, pen’ (DAT/LOC.SG)
c.	<i>ḫaršāwar</i> [χars:á:-war]	—	<i>ḫaršaun[i]</i> [χars:á:-un-i]	‘tilled land’ (DAT/LOC.SG)

Word stress in Hittite *-r/n-*stems

- ▶ TYPE 1 has fixed presuffixal stress in NOM/ACC.SG, NOM/ACC.PL, and oblique cases.
- ▶ TYPE 1 probably also includes *mēḫur/n-* and *šēḫur/n-*, although clear evidence for stress in N.NOM/ACC.PL is lacking.

(7)	N.NOM/ACC.SG	N.NOM/ACC.PL	OBLIQUE	
a.	<i>mēḫur</i> [mé:χ ^w -or]	<i>mēḫurri</i> [mé:χ ^w -or:-i]?	<i>mēḫunaš</i> [mé:χ ^w -on-as]	‘time’ (GEN.SG)
			<i>mēḫuni</i> [mé:χ ^w -on-i]	(DAT/LOC.SG)
b.	<i>šēḫur</i> [sé:χ ^w -or]	—	<i>šēḫunaš</i> [sé:χ ^w -on-as]	‘urine; latrine’ (GEN.SG)
			<i>šēḫuna</i> [sé:χ ^w -on-a]	(ALL.SG)

Word stress in Hittite *-r/n*-stems

- ▶ TYPE 2 has presuffixal stress in NOM/ACC.SG vs. suffixal stress in NOM/ACC.PL and oblique.

Word stress in Hittite *-r/n-*stems

- ▶ TYPE 2 has prefixal stress in NOM/ACC.SG vs. suffixal stress in NOM/ACC.PL and oblique.
- ▶ TYPE 2 includes *wātar/en-* and probably *paḥhur/wen-* (analogical source of synchronic stress mobility in ‘water’ per Schindler 1975:7):

(8)

	N.NOM/ACC.SG	N.NOM/ACC.PL	OBLIQUE
a.	<i>wātar</i> [wá:t-ar]	<i>witār</i> [wit-á:r]	<i>witēni</i> ‘water’ [wit-é:n-i] (DAT/LOC.SG) <i>witēnit</i> [wit-é:n-it] (INS)
b.	<i>paḥhur</i> [páχ ^w :-or]		<i>paḥhweni</i> ‘fire’ [paχ ^w :-é:n-i] (DAT/LOC.SG) <i>paḥhwenas</i> [paχ ^w :-é:n-as] (GEN.SG)

- ▶ cf. archaic INS *wedanda* (< **wéd-n-t*) in (2b) (Melchert apud Ringe 2017:58).

Word stress in Hittite *-r/n*-stems

- ▶ TYPE 3 has presuffixal stress in NOM/ACC.SG vs. suffixal stress in NOM/ACC.PL vs. ending in oblique.

Word stress in Hittite *-r/n-*stems

- ▶ TYPE 3 has presuffixal stress in NOM/ACC.SG vs. suffixal stress in NOM/ACC.PL vs. ending in oblique.
- ▶ TYPE 3 appears to include most primary **-r/n-*stems — clearest examples are *ḫaršar/n-* and *uttar/n-*:

(9)	N.NOM/ACC.SG	N.NOM/ACC.PL	OBLIQUE	
a.	<i>ḫaršar</i> [χárs:-ar]	<i>ḫaršār</i> [χars:-á:r]	<i>ḫaršanī</i> [χars:-n-í:]	‘head’ (DAT/LOC.SG)
			<i>ḫaraššanā</i> [χars:-n-á:]	(ALL.SG)
b.	<i>uttar</i> [út:-ar]	<i>uttār</i> [ut:-á:r]	<i>uttanāš</i> [ut:-n-á:s]	‘word’ (GEN.SG)
			<i>uddanī</i> [ut:-n-í:]	(DAT/LOC.SG)

Word stress in Hittite *-r/n-*stems

- ▶ TYPE 3 has presuffixal stress in NOM/ACC.SG vs. suffixal stress in NOM/ACC.PL vs. ending in oblique.
- ▶ TYPE 3 probably also includes (Luwo-Hitt.) *huitar/n-*, though direct evidence for ending stress in oblique cases is absent:

(9)	N.NOM/ACC.SG	N.NOM/ACC.PL	OBLIQUE	
c.	<i>huitar</i> [χ ^w ít-ar]	<i>huitār</i> [χ ^w it-á:r]	<i>huitnaš</i> [χ ^w it-n-á:s]	‘wild animal’ (GEN.SG)
			<i>huitnanza</i> [χ ^w it-n-á:nts]	(ERG.SG)

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- ▶ TYPE 3 has presuffixal stress in NOM/ACC.SG vs. suffixal stress in NOM/ACC.PL vs. ending in oblique.
- ▶ TYPE 3 may also include *ešhar/n-*, *lammar/n-*, and *pattar/n-*, although NOM/ACC.PL forms are unattested.

(9)	N.NOM/ACC.SG	N.NOM/ACC.PL	OBLIQUE	
d.	<i>ešhar</i> [é:sχ:-ar]	—	<i>išhanāš</i> [isχ:-n-á:s]	‘blood’ (GEN.SG)
			<i>išhanī</i> [isχ:-n-í:]	(DAT/LOC.SG)
e.	<i>lammar</i> [lá:m:-ar]	—	<i>lamnī</i> [lam-n-í:]	‘moment’ (DAT/LOC.SG)
f.	<i>pattar</i> [pá:t:-ar]	—	<i>paddanī</i> [pat:-n-í:]	‘basket’ (DAT/LOC.SG)

Word stress in Hittite *-r/n-*stems

- ▶ TYPE 3 has presuffixal stress in NOM/ACC.SG vs. suffixal stress in NOM/ACC.PL vs. ending in oblique.
- ▶ TYPE 3 could also include *šakkar/n-*, although direct evidence for word stress is lacking and NOM/ACC.PL forms are unattested.

(9)	N.NOM/ACC.SG	N.NOM/ACC.PL	OBLIQUE	
g.	<i>šakkar</i>	—	<i>šaknaš</i>	'shit'
	[sá:kɾ-ar]		[sakɾ-n-á:s]	(GEN.SG)

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- ▶ Clear evidence for suffixal stress in NOM/ACC.PL of some (but not all) Hittite $-r/n$ -stems ($-\bar{a}r < *-\acute{o}r$).

Summary: word stress in Hittite *-r/n*-stems

- ▶ Clear evidence for suffixal stress in NOM/ACC.PL of some (but not all) Hittite *-r/n*-stems ($-\bar{a}r < *-\acute{o}r$).
- ▶ Suffixal (S) stress in NOM/ACC.PL is predictable from other case forms:
 - ▶ NOM/ACC.SG stress \neq oblique $\Rightarrow \acute{S}$ in NOM/ACC.PL (TYPE 2, 3).
 - ▶ NOM/ACC.SG stress = oblique $\Rightarrow S$ in NOM/ACC.PL (TYPE 1).

(10)	N.NOM/ACC.SG	N.NOM/ACC.PL	OBLIQUE	
a.	<i>wātar</i> [wá:t-ar]	<i>witār</i> [wit-á:r]	<i>witēni</i> [wit-é:n-i]	‘water’ (DAT/LOC.SG)
b.	<i>ḫaršar</i> [ḫárs:-ar]	<i>ḫaršār</i> [ḫars:-á:r]	<i>ḫaršanī</i> [ḫars:-n-í:]	‘head’ (DAT/LOC.SG)
c.	<i>uttar</i> [út:-ar]	<i>uttār</i> [ut:-á:r]	<i>uddanī</i> [ut:-n-í:]	‘word’ (DAT/LOC.SG)

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(11)	N.NOM/ACC.SG	N.NOM/ACC.PL	OBLIQUE	
a.	<i>ḥattātar</i> [χat:á:t-ar]	<i>ḥattāta</i> [χat:á:t-a]	<i>ḥattannaš</i> [χat:á-n:-as]	‘wisdom’ (GEN.SG)
b.	<i>wageššar</i> [waké:s:-ar]	<i>wagešša</i> [waké:s-a]	<i>wagešni</i> [waké:s:-n-i]	‘(type of bread)’ (DAT/LOC.SG)

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- ★ This non-trivial generalization requires an explanation (§3; for a fuller analysis see Appendix II).

Analyzing word stress in Hittite **-r/n*-stems

- ▶ Hittite inflectional stress patterns can be derived from interaction of (Yates 2016, 2017):
 - ▶ A lexical contrast between ACCENTED (= stress-preferring) and UNACCENTED (= stress-neutral) morphemes.
 - ▶ A phonological preference for the single stress-bearing syllable to coincide with the word's left edge

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(12) **BASIC ACCENTUATION PRINCIPLE (BAP):**

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- ▶ One more ingredient for *-r/n*-stems — a **PREACCENTING ending**:
 - ▶ NOM/ACC.PL /' -∅/ (cf. NOM/ACC.SG /-∅/)

Analyzing word stress in Hittite *-r/n*-stems

- ▶ Hittite *-r/n*-stems show three-way prosodic contrast in oblique cases:
 - ▶ TYPE 3 nouns like (13a) built from unaccented root + unaccented *n*-suffix (/ -an/), thus **accented oblique endings** attract stress.

(13)

a. /utː-an-áːs/ → [utː-n-áːs] *uttanāš* ‘of the word’

Analyzing word stress in Hittite *-r/n*-stems

- ▶ Hittite *-r/n*-stems show three-way prosodic contrast in oblique cases:
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(13)

- | | | | |
|-------------------|--------------------------------|------------------|----------------|
| a. /utʰ:-an-ás/ | → [utʰ:-n-á:s] | <i>uttanāš</i> | ‘of the word’ |
| b. /wit-én-í/ | → [wit-é:n-i] | <i>witēni</i> | ‘in the water’ |
| c. /paχʰ:-wén-ás/ | → [paχʰ ^w :-é:n-as] | <i>pahḫwenaš</i> | ‘of the fire’ |

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 - ▶ TYPE 1 nouns like (13d–e) contrast with TYPES 2–3 in that **a root/stem accent precedes *n*-suffix** and thus attracts stress (leftmost wins via BAP).

(13)

- | | | | |
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| a. /ut:-an-ás/ | → [ut:-n-á:s] | <i>uttanāš</i> | ‘of the word’ |
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| c. /paχ:-wén-ás/ | → [paχ ^w :-é:n-as] | <i>pahhwenāš</i> | ‘of the fire’ |
| d. /méch-wén-ás/ | → [méch ^w -on-as] | <i>mēhunaš</i> | ‘of time’ |
| e. /part-á(-)wén-ít/ | → [part-á:(-)un-it] | <i>partāunit</i> | ‘with the feather(s)’ |

Analyzing word stress in Hittite *-r/n*-stems

- ▶ Prosodic contrasts mostly neutralized in NOM/ACC.SG, where ending is unaccented (/ -∅/) and likewise the *r*-suffix across types (/-(w)ar-/).
 - ▶ TYPE 3 nouns like (14a) and TYPE 2 like (14b–c) built from unaccented roots, thus receive default leftmost stress (via BAP).

(14)

- | | | | |
|------------------|-------------------------------------|---------------|--------|
| a. /utʰ:-ar-∅/ | → [ú <u>t</u> ʰ:-ar] | <i>uttar</i> | ‘word’ |
| b. /wat-ar-∅/ | → [w <u>á</u> :t-ar] | <i>wātar</i> | ‘word’ |
| c. /paχʰ:-war-∅/ | → [p <u>á</u> χʰ ^w :-or] | <i>pahhur</i> | ‘fire’ |

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 - ▶ TYPE 3 nouns like (14a) and TYPE 2 like (14b–c) built from unaccented roots, thus receive default leftmost stress (via BAP).
 - ▶ In TYPE 1 nouns like (14d–e) the root/stem accent preceding *r*-suffix attracts stress; the contrast with TYPES 2–3 is observable only in (14e) where accent is non-initial.

(14)

- | | | | | | |
|----|---------------------------|---|--------------------------|-----------------|-----------|
| a. | /ut:-ar-∅/ | → | [<u>ú</u> t:-ar] | <i>uttar</i> | ‘word’ |
| b. | /wat-ar-∅/ | → | [<u>wá</u> :t-ar] | <i>wātar</i> | ‘word’ |
| c. | /paχ:-war-∅/ | → | [páχ ^w :-or] | <i>paḫhur</i> | ‘fire’ |
| d. | / <u>mé</u> χ-war-∅/ | → | [mé:χ ^w -or] | <i>mēhur</i> | ‘time’ |
| e. | /part- <u>á</u> (-)war-∅/ | → | [part- <u>á</u> :(-)war] | <i>partāwar</i> | ‘feather’ |

Analyzing word stress in Hittite *-r/n*-stems

- ▶ Assumption of pre-accenting NOM/ACC.PL /´-∅/ correctly predicts distribution of (non-)suffixal stress:
 - ▶ TYPE 3 nouns like (15a) and TYPE 2 like (15b) built from unaccented stems, thus pre-accenting ending places stress on stem-final suffix.
 - ▶ TYPE 1 nouns like (15e) contrast with TYPES 2–3 because stem has presuffixal accent and thus retains stress (leftmost wins via BAP).

(15)

- a. /ut:-ar-´∅/ → [ut:-á:r] *uttār* ‘words’
- b. /wit-ar-´∅/ → [wit-á:r] *witār* ‘waters’
- e. /part-á(-)war-´∅/ → [part-á:(-)wa] [*part*]āwa ‘feathers’

Summary: analyzing stress in Hittite *-r/n*-stems

- ▶ Hittite *-r/n*-stems show three distinct types of intraparadigmatic stress (non-)alternations (§2).
- ▶ On the proposed analysis:
 - ✓ Three-way stress contrast in NOM/ACC.SG vs. oblique can be derived from interaction of BAP and lexical contrast between accented and unaccented morphemes.
 - ✓ Addition of preaccenting NOM/ACC.PL ending to this model correctly predicts contrast between suffixal stress (TYPES 2–3) and fixed presuffixal stress (TYPE 1) in this context.

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 - ✓ Addition of preaccenting NOM/ACC.PL ending to this model correctly predicts contrast between suffixal stress (TYPES 2–3) and fixed presuffixal stress (TYPE 1) in this context.
- Now — **how should these stress patterns be explained historically?**

Explaining word stress in Hittite *-r/n*-stems

- ▶ Stress alternations seen in Hittite *-r/n*-stems between root in NOM/ACC.SG and suffix in NOM/ACC.PL do not fit with traditional models of PIE nominal inflection (cf. §1 above).
 - ▶ No single inflectional class reconstructed by EM (or Leiden) has a stress contrast between NOM/ACC.SG and NOM/ACC.PL (both “strong”).
 - ▶ EM reconstructs AK inflection in PL (“collective”) of athematic neuters, hence root stress in all NOM/ACC.PL forms.

Explaining word stress in Hittite *-r/n*-stems

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- ▶ Thus broad agreement that suffixal stress in NOM/ACC.PL of Hittite *-r/n*-stems is innovative vis-à-vis PIE — e.g.:

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

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 - ▶ There is no widely accepted explanation of the stress shift (Kloekhorst 2014:308 n. 1157; cf. Hart 1980:13 n. 29, Gertz 1982:296).

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 - ▶ There is no widely accepted explanation of the stress shift (Kloekhorst 2014:308 n. 1157; cf. Hart 1980:13 n. 29, Gertz 1982:296).
 - ▶ There is indirect NIE evidence for suffixal stress in NOM/ACC.PL of **-r/n*-stems.

NIE reflexes of PIE N.NOM/ACC.PL

(16)	NIE	NOM/ACC.SG		PIE	NOM/ACC.PL (“collective”)	
a.	Goth.	<i>fon</i>	<	PIE	<i>*péh₂-wōr</i>	‘fire’
	TB	<i>puwar</i>				
b.	Gk.	σχω̃ρ	<	PIE	<i>*sék-ōr</i>	‘shit’
c.	TA	<i>ytār</i>	<	PIE	<i>*h₁éi-tōr</i>	‘path’
d.	Gk.	ὕδωρ	<	PIE	<i>*wéd-ōr</i>	‘water’
	Umb.	utur				
	Goth.	<i>wato</i>				
	OE	<i>wæter</i>				
f.	TB/A	<i>yasar/ysār</i>	<	PIE	<i>*h₁ésh₂-ōr</i>	‘blood’

- ▶ NIE languages attest N.NOM/ACC.SG forms that are standardly traced back to NOM/ACC.PL (“collective”) of PIE **-r/n*-stems, reconstructed by EM with stressed root full-grade (= AK).

NIE reflexes of PIE N.NOM/ACC.PL

(17)	NIE	NOM/ACC.SG		IE	NOM/ACC.PL (“collective”)	
a.	Goth.	<i>fon</i>	<	IE	* <i>ph₂-wór</i>	‘fire’
	TB	<i>puwar</i>				
b.	Gk.	σχῶρ	<	IE	* <i>sk-ór</i>	‘shit’
c.	TA	<i>ytār</i>	<	IE	* <i>h₁i-tór</i>	‘path’
d.	Gk.	ὕδωρ	<	IE	* <i>ud-ór</i>	‘water’
	Umb.	utur				

e.	Goth.	<i>wato</i>				
	OE	<i>wæter</i>				
f.	TB/A	<i>yasar/ysār</i>				

- Yet most of these NIE forms reflect a **root zero-grade**, which entails suffixal stress in (17a–b) and suggests the same in (17c–d) — see, e.g.:

Schindler 1967:242–3; Ringe 1996:16–8, 2017:309; *NIL*: 220, 541, 626, 706; Simms 2009; Kim 2018:145

Explaining word stress in IE $*-r/n$ -stems

- ▶ Convergent Hittite and NIE evidence for suffixal stress in NOM/ACC.PL of some $*-r/n$ -stems admits two plausible explanations:
 - (i) Suffixal stress arose as the result of (relatively) trivial analogical change(s) in each branch.
 - (ii) Some $*-r/n$ -stems had suffixal stress already in PIE.

Suffixal stress as analogical innovation?

- ▶ Only (?) viable analogical account (Melchert 1988:227 n. 1):
 - ▶ “A shift of the accent to the final syllable in the nom-acc. after the oblique cases seems possible (*-*ór* after gen. *-*n-és* etc.)”

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- ▶ Restricting stress shift to *-*r/n*-stems with stressed oblique cases would account for Hittite split between Type 3 in (18a) and Type 1 in (18b):

(18) a.	NOM/ACC.PL	<i>uttār</i>	[´-á:r]	<<	*[´-o:r]	‘word’
	GEN.SG	<i>uddanāš</i>	[-n-á:s]	<	*[-n-ós]	
b.	NOM/ACC.PL	<i>wagešša</i>	[´-a]	<	*[´-o:r]	‘(type of bread)’
	DAT/LOC.SG	<i>wagešni</i>	[´-n-i]	<	*[´-n-(e)i]	

⇒ Only Type 3 nouns with prehistorically stressed oblique cases would analogically extend final stress to NOM/ACC.PL.

Explaining word stress in Hittite *-r/n-stems

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

(19) a.	NOM/ACC.SG	<i>tēkan</i>	[´-an]	<	*[´-o:m]	‘earth’
		^x <i>tikān</i>	[-á:n]	z̈z̈		
	GEN.SG	<i>taknāš</i>	[-n-á:s]	<	*[-n-ó:s]	
b.	NOM/ACC.SG	<i>šākan</i>	[´-an]	<	*[´-n]	‘oil, fat’
		^x <i>šakān</i>	[-á:n]	z̈z̈		
	GEN.SG	<i>šaknāš</i>	[-n-á:s]	<	*[-n-ó:s]	

Explaining word stress in Hittite *-r/n-stems

- ▶ And more broadly across IE there is no evidence for 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 (20a).
 - ▶ No attested reflexes of “hysterokinetic” (HK) nominals with NOM.PL *-és like (20b).
 - ▶ No attested reflexes of AK nominals with NOM.PL *-és like (20c).

(20)		IE		post-PIE		PIE
a.	NOM.PL	✗	<	*C(e)RC-és	z̈z̈	*CéRC-es
	GEN.SG			*CṘC-élós	<	*CṘC-élós
b.	NOM.PL	✗	<	*CṘC-(e)C-és	z̈z̈	*CṘC-éC-es
	GEN.SG			*CṘC-C-élós	<	*CṘC-C-élós
c.	NOM.PL	✗	<	*CṘC-(o)C-és	z̈z̈	*CéRC-oC-es
	GEN.SG			*CṘC-C-élós	<	*CṘC-C-élós

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- ▶ **Proposal:** ‘fire’ had suffixal stress in NOM/ACC.PL already in PIE.

A revised reconstruction of PIE 'fire'

- ▶ Yates (2019a) argues that PIE 'fire' should be reconstructed as in (21):

(21)

PIE	SG	PL
NOM/ACC	* <i>péh₂-wr̥</i>	—
GEN	* <i>ph₂-wén-s</i>	* <i>ph₂-wén-oh_{1/3}om</i>
LOC	* <i>ph₂-wén(-i)</i>	

- ▶ PIE NOM/ACC.SG directly reflected in Hitt. *pahhur*, TA *por*.

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LOC	* <i>ph₂-wén(-i)</i>	

- ▶ PIE NOM/ACC.SG directly reflected in Hitt. *pahhur*, TA *por*.
- ▶ PIE oblique stem continued in Hittite oblique cases — e.g., GEN.SG *pahhwenas̥*, recharacterized with GEN.SG allomorph *-os.

A revised reconstruction of PIE 'fire'

- ▶ Yates (2019a) argues that weak stem of 'fire' was reshaped due to PNIE morphophonological change, yielding (22):

(22)

	PNIE	SG	PL
NOM/ACC		*péh ₂ -wr̥	—
GEN		*ph ₂ -ún-e/os	*ph ₂ -ún-oh _{1/3} om
LOC		*ph ₂ -wén /	
		*ph ₂ -ún-i	

- ▶ Numerous NIE paradigms incorporate or are remade based on renewed weak stem *ph₂-ún- (± analogical *r from NOM/ACC).

(23)

		NOM.SG	OBL			NOM.SG	OBL
a.	Goth.	<i>fon</i>	<i>funins</i>	d.	Arm.	<i>howr</i>	<i>hroy</i>
b.	OE	<i>fȳr</i>	<i>fȳres</i>	e.	Umb.	<i>pir</i>	<i>pure</i>
c.	ON	<i>funi</i>	<i>funa</i>	f.	Gk.	πῦρ	πυρ-ός

A revised reconstruction of PIE 'fire'

- **Proposal:** PIE 'fire' should be reconstructed as in (24), with zero-grade root and suffixal stress in NOM/ACC.PL:

(24)

PIE	SG	PL
NOM/ACC	*péh ₂ -wr̥	*ph ₂ -wó̃r
GEN	*ph ₂ -wén-s	*ph ₂ -wén-oh _{1/3} om
LOC	*ph ₂ -wén(-i)	

- PIE NOM/ACC.PL directly reflected in TB *puwar* and PGmc. *fōr (> Goth. *fon* with analogical *-n- from oblique; see, e.g., Ringe 2017:309).

A revised reconstruction of PIE 'fire'

- ▶ Revised reconstruction of PIE 'fire' also provides an exact analogical model for synchronic stress in Hittite 'water' (cf. Schindler 1975:7).

(25)

		'water'	'fire'
PIE	NOM/ACC.SG	* <i>wód-r</i>	* <i>péh₂-wr</i>
	GEN.SG	* <i>wéd-n-s</i>	* <i>ph₂-wén-s</i>
	NOM/ACC.PL	* <i>wéd-ōr</i>	* <i>ph₂-wōr</i>
>> pre-Hitt.	NOM/ACC.SG	* <i>wód-r</i>	* <i>péh₂-wr</i>
	GEN.SG	* <i>wed-én-os</i>	* <i>ph₂-wén-os</i>
	NOM/ACC.PL	* <i>wed-ōr</i>	* <i>ph₂-wōr</i>
> Hitt.	NOM/ACC.SG	<i>wātar</i>	<i>pahhur</i>
	GEN.SG	<i>witenaš</i>	<i>pahhwenasš</i>
	NOM/ACC.PL	<i>witār</i>	—

- ▶ Inherited AS nominals that develop mobility in pre-Hittite retain weak root **e*-grade (> *i* via pretonic raising); see Melchert (2010) on 'mouth'.

Analyzing PIE ‘fire’

- ▶ Revised reconstruction of PIE ‘fire’ is correctly predicted by same accentual analysis proposed for Hittite (cf. §3 above):

- ▶ Default leftmost stress when stem is unaccented in NOM/ACC.SG:

(26) $*/peh_2-wor-\emptyset/ \rightarrow *[páh_2-wr_0]$ ‘fire’ (fire-N:NOM/ACC.SG)

- ▶ Accented allomorph of suffix ($*/-wén/$) attracts stress in oblique:

(27) $*/peh_2-wén-s/ \rightarrow *[ph_2-wén-s]$ ‘of the fire’ (fire-N-GEN.SG)

- ▶ Pre-accenting ending ($*/\acute{-}h_2/$) places stress on suffix in NOM/ACC.PL:

(28) $*/peh_2-wor-\acute{h}_2/ \rightarrow *[ph_2-wó:r]$ ‘fires’ (fire-N:NOM/ACC.PL)

- ▶ For suffixal vowel deletion in (26) see Yates (2019b).

Summary: principal claims

- ▶ Empirical claims:
 - ▶ Convergent evidence in Hittite and NIE languages for **-r/n-*stems with suffixal stress in NOM/ACC.PL ([-ó:r]).
 - ▶ In Hittite suffixal stress in NOM/ACC.PL correlates directly with intraparadigmatic stress mobility in NOM/ACC.SG vs. OBLIQUE.

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 - ▶ Suffixal stress in NOM/ACC.PL of Hittite and NIE **-r/n-*stems plausibly explained only if **some** had this stress pattern already in PIE.
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 - ▶ At least ‘fire’ had this stress pattern (NOM/ACC.PL **ph₂-wór*).
- ▶ Theoretical claims:
 - ▶ Word stress patterns in Hittite **-r/n*-stems and PIE ‘fire’ can be derived from interaction of BAP and accentual properties of morphemes.
 - ▶ EM’s analysis of athematic neuter inflection — i.e, switch to AK inflection in PL(/ “collective”) — fails to account for these facts.

Looking forward

- ▶ General implication — the evidence for the prosodic reconstruction of PIE **-r/n-*stems merits a reassessment.
- ▶ Some questions for future work:
 - How did TYPE 3 mobility (e.g., (29)) develop diachronically in Hittite? Could it be reconstructible for PIE in some lexemes, and if so, which?

(29)	<i>haršar</i>	<i>haršār</i>	<i>haršanī</i>	‘head’
	[χársr:-ar]	[χarsr:-á:r]	[χarsr:-n-í:]	
	(NOM/ACC.SG)	(NOM/ACC.PL)	(DAT/LOC.SG)	

- Why do **-r/n-*stems reconstructed for PIE with fixed root stress (“acrostatic”; e.g., (30)) tend to **develop mobility** in the IE languages?

(30)	PIE <i>*h₁ésh₂-r</i>	>(>)	Hitt. <i>ēšhar</i> , Ved. <i>ásrk</i>	‘blood’
	<i>*h₁ésh₂-n-s</i>	>>	Hitt. <i>išhanāš</i> , Ved. <i>asnās</i>	‘of blood’

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Suffixal *-a-* in Hittite TYPE 3 *-r/n-*stems

- (A1) a. Hitt. *uddanāš* [ut:-n-á:s] or [ut:-an-á:s] ‘of the word’
b. Hitt. *haršanī* [χars:-n-í:] or [χars:-an-í:] ‘at the head’
c. Hitt. *išhanāš* [isχ:-n-á:s] or [isχ:-an-á:s] ‘of blood’

- The phonological reality of presuffixal *-a-* in Hittite **-r/n-*stems like (A1) is uncertain (and disputed).

Suffixal *-a-* in Hittite TYPE 3 *-r/n-*stems

- (A1) a. Hitt. *uddanāš* [ut:-n-á:s] or [ut:-an-á:s] ‘of the word’
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c. Hitt. *išhanāš* [isχ:-n-á:s] or [isχ:-an-á:s] ‘of blood’

- ▶ The phonological reality of presuffixal *-a-* in Hittite **-r/n-*stems like (A1) is uncertain (and disputed).
- ▶ In support of a purely orthographic analysis:
 - ▶ A suffixal vowel is phonologically unexpected in pretonic position.
 - ▶ (A1b) attests an alternate spelling ⟨*ha-ra-aš-nī*⟩ (KUB 8.2 rev. 13; OH/NS) without *a*-vowel.
 - ▶ Other likely TYPE 3 *-r/n-*stems (‘shit’, ‘wild animal’) are consistently spelled without *a*-vowel (e.g., ⟨*ša-ak-na-aš*⟩ ‘of shit’; KUB 7.5 i 9, MH/NS).

Suffixal *-a-* in Hittite TYPE 3 *-r/n-*stems

- (A1) a. Hitt. *uddanāš* [utʰ:-n-á:s] or [utʰ:-an-á:s] ‘of the word’
b. Hitt. *haršanī* [χarsʰ:-n-í:] or [χarsʰ:-an-í:] ‘at the head’
c. Hitt. *išhanāš* [isχʰ:-n-á:s] or [isχʰ:-an-á:s] ‘of blood’

- ▶ Kloekhorst (2008, 2014) argues that *a*-vowel is real ([a(:)]), a reflex of inherited “proterodynamic” mobility.
- ▶ In support of the vocalic analysis:
 - ▶ (A1a) and (A1c) each spelled once with apparent plene of suffixal *a*-vowel: ⟨*ud-da-a-na-az*⟩ (KUB 14.8 rev. 38; NH/NS); ⟨*iš-ḫa-a-na-aš*⟩ (KUB 17.18 ii 29; NS).
 - ▶ Hapaxes — perhaps just scribal errors.
 - ▶ But both ‘word’ in (A1a) and *pattar/n-* ‘basket’ attest multiple DAT/LOC.SG forms with apparent plene spelling of suffixal *a*-vowel.

Suffixal *-a-* in Hittite TYPE 3 *-r/n-*stems

- ▶ Per Melchert (1994:126) suffixal *ā*-spellings observed in DAT/LOC.SG of ‘word’ and ‘basket’ reflect inherited endingless locatives recharacterized with productive ending *-i* — i.e.:

(A4) PIE *R-*én* > pre-Hitt. *R-*án* + **-i* > Hitt. R-*āni* (e.g., *paddāni*)

- ▶ Aberrant double plene in *uddānī* likely reflects compromise between:
 - ▶ *uddāni** formed as in (A4).
 - ▶ Productively derived *uddanī* with final stress regular in TYPE 3 nouns.

Suffixal *-a-* in Hittite TYPE 3 *-r/n-*stems

- ▶ Pre-Hittite endingless locative with final stress is phonologically expected if segmentally null ending is pre-accenting (**/-ø/*).
 - ▶ Thus, e.g., the congenitor of *paddāni* is derived as in (A5a).
 - ▶ For the pre-accenting property of inflectional ending compare (A5b).

- (A5) a. **/pat:-an-´ø/* → **[pət:-án]* ‘in the basket’ (basket-N-LOC.SG)
>> Hitt. *paddāni*
- b. **/deĝom-´ø/* → **[dəĝ-ó:m]* ‘in the earth’ (basket-N-LOC.SG)
>> Hitt. *takān*

Reassessing suffixal *-a-* in Hittite TYPE 3 *-r/n-*stems

- ▶ Thus in Hittite ‘basket’, ‘word’, and perhaps other TYPE 3 **-r/n-*stems probably had two licit DAT/LOC.SG forms:

(A6) DAT/LOC.SG [-á:ni] ~ [-n-í]

- ▶ Possible that (some) Hittite speakers leveled suffixal [-an-] from DAT/LOC.SG through paradigm, whence, e.g.:

(A7) DAT/LOC.SG [-á:ni] ~ [-an-í]
GEN.SG [-an-á:s]
DAT/LOC.PL [-an-á:s]

- ▶ But with possible exception of ‘word’ the evidence is not very compelling:
 - ▶ Little positive evidence for real [a]-vowel outside DAT/LOC.SG, plausibly just scribal errors.
 - ▶ Clear cases in which it was not leveled, e.g., *harašni* ([-s-n-í:]).

Reassessing suffixal *-a-* in Hittite TYPE 3 *-r/n-*stems

- ▶ Thus traces of suffixal [a] do not support erstwhile “proterodynamic” mobility (contra Kloekhorst 2008, 2014), which fails to explain:
 - ▶ Positive evidence for suffixal [a]-vocalism virtually confined to DAT/LOC.SG.
 - ▶ Existence of [a]-less suffix allomorphs.
 - ▶ Robust evidence for ending stress in this class.
- ▶ These facts are naturally explained if [a]-ful DAT/LOC.SG allomorphs reflect recharacterized endingless locatives (cf. Melchert 1994:126).
- ▶ But — even if oblique suffixal *a*-vocalism were not just orthographic (outside DAT/LOC.SG), analysis developed in §3 will correctly account for regular ending stress in this class, e.g.:

(A8) Hitt. /iʃχʷ-an-á:s/ → [iʃχʷ-n-á:s] ‘of blood (blood-N-GEN.SG)
~ [iʃχʷ-an-á:s]
išhanāš

Analyzing word stress in Hittite primary **-r/n*-stems

(A9)	ROOT	SUFFIX	ENDING
/ut:/	‘word’	/-ar-/ ~ /-an-/	/-∅/ (NOM/ACC.SG)
/χars:/	‘head’	/-war-/ ~ /-wén-/	/-ás/ (GEN.SG)
/wat/	‘water’	(/-ar-/ ~ /-én-/)	/-í/ (DAT/LOC.SG)
/paχ:/	‘fire’		/-á/ (ALL.SG)
/méχ/	‘time’		...
/séχ/	‘urine’		/'-∅/ (NOM/ACC.PL)

► Hittite primary **-r/n*-stems are built from:

► Prosodically contrastive roots:

- TYPE 3 (e.g., ‘word’, ‘head’) and TYPE 2 (‘water’, ‘fire’) roots are unaccented.
- TYPE 1 (‘time’, ‘urine’) are accented.

Analyzing word stress in Hittite primary **-r/n-*stems

(A9)	ROOT	SUFFIX	ENDING
/ut:/	‘word’	/-ar-/~/-an-/	/-∅/ (NOM/ACC.SG)
/χars:/	‘head’	/-war-/~/-wén-/	/-ás/ (GEN.SG)
/wat/	‘water’	(/-ar-/~/-én-/)	/-í/ (DAT/LOC.SG)
/paχ:/	‘fire’		/-á/ (ALL.SG)
/méχ/	‘time’		...
/séχ/	‘urine’		/'-∅/ (NOM/ACC.PL)

- ▶ Hittite primary **-r/n-*stems are built from:
 - ▶ Prosodically contrastive roots
 - ▶ Segmentally (and prosodically) suppletive derivational suffixes:
 - ▶ TYPE 3 roots (e.g., ‘word’, ‘head’) combine with unaccented /-ar-/ in NOM/ACC vs. unaccented /-an-/ in oblique.

Analyzing word stress in Hittite primary **-r/n-*stems

(A9)	ROOT	SUFFIX	ENDING
/ut:/	‘word’	/-ar-/ ~ /-an-/	/-∅/ (NOM/ACC.SG)
/χars:/	‘head’	<u>/-war-/</u> ~ <u>/-wén-/</u>	/-ás/ (GEN.SG)
/wat/	‘water’	(/-ar-/ ~ /-én-/)	/-í/ (DAT/LOC.SG)
/paχ:/	‘ <u>fire</u> ’		/-á/ (ALL.SG)
/méχ/	‘ <u>time</u> ’		...
/séχ/	‘ <u>urine</u> ’		/'-∅/ (NOM/ACC.PL)

- ▶ Hittite primary **-r/n-*stems are built from:
 - ▶ Prosodically contrastive roots
 - ▶ Segmentally (and prosodically) suppletive derivational suffixes:
 - ▶ ‘fire’, ‘time’, and ‘urine’ combine with unaccented /-war-/ in NOM/ACC vs. accented /-wén-/ in oblique.

Analyzing word stress in Hittite primary **-r/n-*stems

(A9)	ROOT	SUFFIX	ENDING
/ut:/	‘word’	/-ar-/ ~ /-an-/	/-∅/ (NOM/ACC.SG)
/χars:/	‘head’	/-war-/ ~ /-wén-/	/-ás/ (GEN.SG)
/wat/	‘ <u>water</u> ’	(/-ar-/ ~ /-én-/) 	/-í/ (DAT/LOC.SG)
/paχ:/	‘fire’		/-á/ (ALL.SG)
/méχ/	‘time’		...
/séχ/	‘urine’		/’-∅/ (NOM/ACC.PL)

- ▶ Hittite primary **-r/n-*stems are built from:
 - ▶ Prosodically contrastive roots
 - ▶ Segmentally (and prosodically) suppletive derivational suffixes:
 - ▶ ‘water’ idiosyncratically combines with unaccented /-ar-/ in NOM/ACC vs. accented /-én-/ in oblique (via reanalysis from ‘fire’).

Analyzing word stress in Hittite primary **-r/n-*stems

(A9)	ROOT	SUFFIX	ENDING
/ut:/	‘word’	/-ar-/ ~ /-an-/	/-∅/ (NOM/ACC.SG)
/χars:/	‘head’	/-war-/ ~ /-wén-/	/-ás/ (GEN.SG)
/wat/	‘water’	(/-ar-/ ~ /-én-/)	/-í/ (DAT/LOC.SG)
/paχ:/	‘fire’		/-á/ (ALL.SG)
/méχ/	‘time’		...
/séχ/	‘urine’		/-∅/ (NOM/ACC.PL)

- ▶ Hittite primary **-r/n-*stems are built from:
 - ▶ Prosodically contrastive roots.
 - ▶ Segmentally (and prosodically) suppletive derivational suffixes.
 - ▶ Prosodically contrastive inflectional endings:
 - ▶ Unaccented NOM/ACC.SG ending vs. pre-accenting NOM/ACC.PL
 - ▶ Accented oblique endings

Analyzing word stress in Hittite primary **-r/n*-stems

- ▶ Stress mobility emerges in TYPE 3 primary **-r/n*-stems via BAP:

(A10) **NOM/ACC.SG:** R + S + E \Rightarrow default leftmost stress:

- a. /ut:-ar- \emptyset / \rightarrow [úʔ:-ar] ‘word’ (word-N:NOM/ACC.SG)
uttar
- b. / χ ars:-ar- \emptyset / \rightarrow [χ árs:-ar] ‘head’ (head-N:NOM/ACC.SG)
ħaršar

(A11) **Oblique:** R + S + É \Rightarrow ending accent attracts stress:

- a. /ut:-an-ás/ \rightarrow [ut:-n-ás:] ‘of the word’ (word-N-GEN.SG)
uttanāš
- b. / χ ars:-an-í/ \rightarrow [χ ars:-n-í] ‘at the head’ (head-N-DAT/LOC.SG)
ħaršanī

Analyzing word stress in Hittite primary **-r/n*-stems

- ▶ Stress mobility emerges in TYPE 3 primary **-r/n*-stems via BAP:

(A12) **NOM/ACC.PL:** R + S + ´E ⇒ pre-accent induces suffixal stress:

- a. /ut:-ar-´∅/ → [ut:-á:r] ‘word’ (word-N:NOM/ACC.PL)
uttār
- b. /χars:-ar-´∅/ → [χars:-á:r] ‘head’ (head-N:NOM/ACC.PL)
ħarsār

Analyzing word stress in Hittite primary **-r/n*-stems

- ▶ TYPE 2 patterns with TYPE 3 in NOM/ACC, since root and relevant suffix allomorph are unaccented.

(A13) **NOM/ACC.SG:** R + S + E \Rightarrow default leftmost stress:

a. /wat-ar- \emptyset / \rightarrow [wá:t-ar] 'water' (water-N:NOM/ACC.SG)
wātar

b. /paχ:-war- \emptyset / \rightarrow [páχ^w:-or] 'fire' (fire-N:NOM/ACC.SG)
paḫhur

(A14) **NOM/ACC.PL:** R + S + ´E \Rightarrow pre-accent induces suffixal stress:

/wit-ar-´ \emptyset / \rightarrow [wit-á:r] 'waters' (water-N:NOM/ACC.PL)
witār

Analyzing word stress in Hittite primary **-r/n*-stems

- ▶ But TYPE 2 contrasts with TYPE 3 in oblique, since relevant suffix allomorph (segmentally and prosodically suppletive) is accented:

(A15) **Oblique:** R + \acute{S} + \acute{E} \Rightarrow leftmost (= \acute{S}) accent wins:

- a. /wit-én-í/ \rightarrow [wit-é:n-i] 'in the water' (water-N-DAT/LOC.SG)
witēni
- b. /paχ:-wén-ás/ \rightarrow [paχ^w:-é:n-as] 'of the fire' (fire-N-DAT/LOC.SG)
paḫḫwenaš

Analyzing word stress in Hittite primary **-r/n*-stems

- ▶ TYPE 1 appears identical to TYPE 2 in NOM/ACC, but retains root stress in oblique because root is accented:

(A16) **NOM/ACC.SG:** $\acute{R} + S + E \Rightarrow$ leftmost (= \acute{R}) accent wins:

a. /méχ-war-∅/ → [mé:χ^w-or] ‘time’ (time-N:NOM/ACC.SG)
mēhur

b. /séχ-war-∅/ → [séχ^w-or] ‘urine’ (urine-N:NOM/ACC.SG)
šēhur

(A17) **Oblique:** $\acute{R} + \acute{S} + \acute{E} \Rightarrow$ leftmost (= \acute{R}) accent wins:

a. /méχ-wén-ás/ → [mé:χ^w-on-as] ‘of time’ (time-N-GEN.SG)
mēhunaš

b. /séχ-wén-á/ → [sé:χ^w-on-a] ‘into the urine’ (urine-N-ALL.SG)
sēhuna

Analyzing stress in Hittite non-primary *-r/n-stems

- ▶ (Historically) non-primary TYPE 1 nouns show fixed stem stress because first σ (/morpheme) of complex *-r/n-suffix is accented.

(A18) Leftmost accented (= $\acute{S}1$) wins:

- a. /wak-és:(-)ar-´∅/ → [wak-é:s:(-)a] ‘(type of) breads’
kurēššar (bread-NML-N:NOM/ACC.PL)
- b. /part-á(-)war-´∅/ → [part-á:(-)wa] ‘feathers’
[*part*] *āwa* (wing-NML-N:NOM/ACC.PL)
- c. /part-á(-)wén-ít/ → [part-á:(-)un-it] ‘with the feather(s)’
partāunit (wing-NML-N:NOM/ACC.PL)

Analyzing stress in Hittite non-primary *-r/n-stems

- ▶ (Historically) non-primary TYPE 1 nouns show fixed stem stress because first σ (/morpheme) of complex *-r/n-suffix is accented.

(A18) Leftmost accented (= $\acute{S}1$) wins:

- a. /wak-és:(-)ar-´∅/ → [wak-é:s:(-)a] ‘(type of) breads’
kurēššar (bread-NML-N:NOM/ACC.PL)
- b. /part-á(-)war-´∅/ → [part-á:(-)wa] ‘feathers’
[part] *āwa* (wing-NML-N:NOM/ACC.PL)
- c. /part-á(-)wén-ít/ → [part-á:(-)un-it] ‘with the feather(s)’
partāunit (wing-NML-N:NOM/ACC.PL)

- ▶ For similar reasons other Hittite athematic neuters with fixed stress in NOM/ACC.SG and oblique do not show stem-final stress in NOM/ACC.PL; see Appendix II.

Summary: analyzing stress in Hittite *-r/n*-stems

- ▶ Established in §2 that whether a Hittite *-r/n*-stem in NOM/ACC.PL has stress on stem-final suffix ([*-á:r*]) or not ([*-a(r)*]) is predictable from its other case forms.
 - ▶ [*-á:r*] in nouns with stress mobility in NOM/ACC.SG vs. oblique.
 - ▶ [*-a(r)*] in nouns with fixed stress in NOM/ACC.SG and oblique.

Summary: analyzing stress in Hittite $-r/n$ -stems

- ✓ Proposed analysis predicts this distribution via the BAP:
 - ▶ Nouns with stress mobility in NOM/ACC.SG vs. oblique are necessarily built from unaccented roots ($/R/$).
 - ▶ Nouns with fixed stress in NOM/ACC.SG and oblique are necessarily built from accented roots/stems ($/R/$, $/R-\acute{S}_1/$)
 - ▶ Pre-accenting NOM/ACC.PL ending places stress on stem-final suffix with unaccented roots, but loses to preceding root/stem accents — e.g., (A19a) vs. (A19b–c):

- (A19) a. $/R\text{-ar-}'\emptyset/ \rightarrow [R\text{-}\acute{a}:r] \quad (R\text{-N:NOM/ACC.PL})$
- b. $/\acute{R}\text{-ar-}'\emptyset/ \rightarrow [\acute{R}\text{-a}(r)] \quad (R\text{-N:NOM/ACC.PL})$
- c. $/R\text{-}\acute{S}_1\text{-ar-}'\emptyset/ \rightarrow [R\text{-}\acute{S}_1\text{-a}(r)] \quad (R\text{-}\acute{S}_1\text{-N:NOM/ACC.PL})$

Word stress in Hittite neuter nominals

- ▶ Principled distribution of word stress in Hittite *-r/n-*stems extends to other neuters — nouns with fixed stress in NOM/ACC.SG vs. OBLIQUE show same non-suffixal stress in NOM/ACC.PL, e.g.:

(A20)	N.NOM/ACC.SG	N.NOM/ACC.PL	OBLIQUE	
a.	<i>šarāman</i> [srá:-man]	<i>šarāma</i> [srá:-ma]	<i>šarāmaš</i> [srá:-m:-a:s]	'ration-bread' (dat/loc.pl)
b.	<i>idālu</i> [itá:l-u]	<i>idālu</i> [itá:l-u]	<i>idālawas</i> [itá:l-aw-as]	'evil' (gen.sg)

Analyzing word stress in Hittite neuter nominals

- ▶ This distribution is predicted by analysis developed in §3.
 - ▶ Derivations in (A21) show ‘ration-bread’ and ‘evil’ are lexically accented on stem.
 - ▶ Pre-accenting NOM/ACC.PL ending predictably fails to induce suffixal stress on accented stems in (A22).

(A21)	a.	/sra-´man-ás/	→	[srá:-m:-as]	‘for ration-breads’
				<i>šarāmaš</i>	(ration-N-DAT/LOC.PL)
	b.	/itál-u-∅/	→	[itá:l-u]	‘evil’
				<i>idālu</i>	(evil-ADJ:N.NOM/ACC.SG)
(A22)	a.	/sra-´man-´∅/	→	[srá:-ma]	‘ration-breads’
				<i>šarāma</i>	(ration-N:NOM/ACC.PL)
	b.	/itál-u-´∅/	→	[itá:l-u]	‘evil’
				<i>idālu</i>	(evil-ADJ:N.NOM/ACC.PL)

NOM/ACC.SG vs. PL stress shift in Luwian

- Stress alternation observed in Hittite *-r/n-*stems between NOM/ACC.SG and PL is paralleled in Luwian by at least one neuter non-**-r/n-*stem — viz., *inzagan-* in (A23) (cf. Melchert 2003:139):

(A23)	N.NOM/ACC.SG	N.NOM/ACC.PL	
	<i>īnzagan(=za)</i>	<i>inzagān</i>	‘inhumation?’
	[í:nt̪skan]	[int̪ská:n]	

- This alternation can be analyzed just as in Hittite *-r/n-*stems:

(A24)	a.	/int̪skan-∅/	→	[í:nt̪skan]	‘inhumation?’
				<i>īnzagan(=za)</i>	(inhumation:N.NOM/ACC.SG)
	b.	/int̪skan-´∅/	→	[int̪ská:n]	‘inhumations?’
				<i>inzagān</i>	(inhumation:N.NOM/ACC.PL)

⇒ Luwian provides further support for pre-accenting PIE **/-´h₂/*.