

# Unaccusative active verbs do not lack a Voice layer: The morphosyntax of Hittite “voice reversal”

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January 5, 2018  
93rd Annual Meeting of the Linguistic Society of America  
New York, NY

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- ▶ NACT voice morphology generally appears in the same set of syntactic contexts as in other bivalent voice systems (like Ancient/Modern Greek), including on most unaccusative verbs.
- ▶ Many of these canonical unaccusative verbs exhibit only NACT inflection (*media tantum*), e.g.:

<i>ki-tta(ri)</i>	(lie-3SG.NPST. <u>NACT</u> )	‘lies’
<i>ar-ta(ri)</i>	(stand-3SG.NPST. <u>NACT</u> )	‘is standing’
<i>kiš-ta(ri)</i>	(happen-3SG.NPST. <u>NACT</u> )	‘happens; becomes’

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- ▶ Hittite (Anatolian, Indo-European) is a fusional, primarily suffixing language in which all finite verbs are marked inflectionally for active (ACT) or non-active (NACT) voice.
- ▶ However, Hittite also has a robust class of unaccusative verbs that take only ACT morphology, e.g.:

<i>ak-i</i>	(die-3SG.NPST. <u>ACT</u> )	‘dies’
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- Why do these unaccusative verbs exceptionally take ACT morphology?

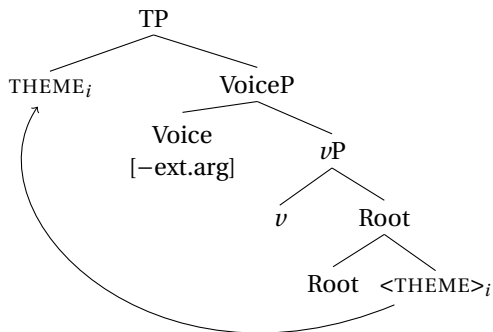
# Unaccusative *activa tantum* lack Voice?

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(a) regular unaccusative:

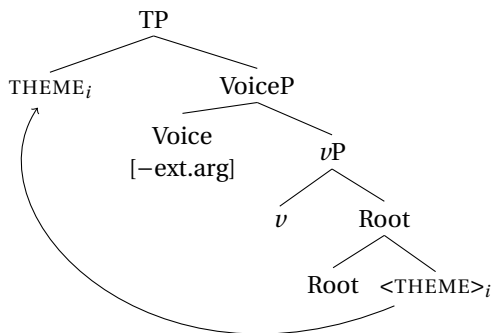




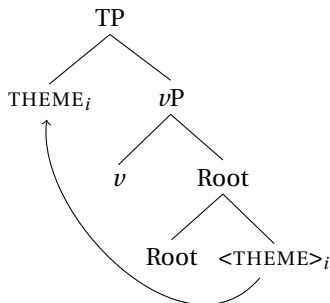
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(b) *activa tantum*:



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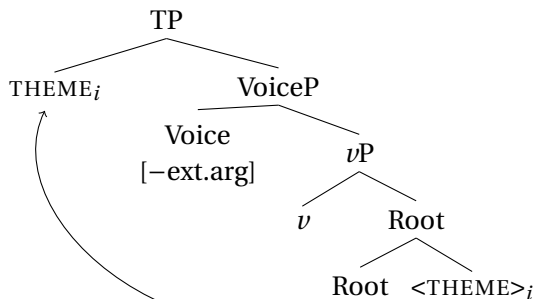
- ▶ This type of approach assumes that voice morphology is determined by post-syntactic spell-out rules like (i–ii) (cf. Embick 1998, 2000, 2004, *i.a.*):

(i) Voice  $\leftrightarrow$  Voice[NACT] / \_\_\_ No external DP argument

(ii) Voice  $\leftrightarrow$  Voice[ACT] / \_\_\_

- ▶ Ordinary unaccusative verbs are assigned NACT marking by (i) because VoiceP does not project an external argument as a specifier.

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    - ▶ Principal evidence — marked imperfectives of same verbs show “voice reversal,” surfacing with NACT morphology.

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      - ▶ Principal evidence — marked imperfectives of same verbs show “voice reversal,” surfacing with NACT morphology.
    - (ii) Develop an alternative analysis of Hittite “voice reversal.”
      - ▶ Core components — *activa tantum* roots bear diacritic marking, which triggers spell-out of ACT morphology when the root and Voice are local.
- a. *ak-i* (die-3SG.NPST.ACT) : *akki-ške-ttari* (die-IPFC-3SG.NPST.NACT)
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# Roadmap

1. Overview of distribution of Hittite voice morphology and unaccusativity.
2. Hittite imperfectives and their interaction with voice morphology.
3. Analyzing “voice reversal” in Hittite unaccusative *activa tantum*.
4. Extending the analysis — “voice reversal” in Hittite deponents.
5. Discussion & conclusion
6. (On the diachrony of Hittite voice allomorphy.)













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- ▶ In Hittite NACT voice morphology mostly appears in the same set of syntactic contexts as in other bivalent voice systems (like Ancient/Modern Greek).
- ▶ For verbs that alternate between ACT and NACT inflection, canonical functions associated with NACT-marked verbs include anticausatives, passives, reciprocals, and reflexives — compare, e.g.:



# Distribution of Hittite NACT morphology

- ▶ Hittite also has non-alternating formally NACT verbs (*media tantum*), most of which belong to semantic classes that cross-linguistically tend to appear with NACT morphology in bivalent voice systems (Kemmer 1993, Zombolou and Alexiadou 2014, *i.a.*).

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- ▶ Such canonical *media tantum* include:
  - (i) Stative verbs — e.g., *ki-* ‘lie’, *ar-* ‘stand’, *tarra-* ‘be able’.
  - (ii) Change-of-state verbs — e.g., *kiš-* ‘happen; become’, *huršakniye/a-* ‘burst’, *ze-* ‘get cooked’.
  - (iii) Experiencer/psych verbs — *kardim(m)iyē/a-* ‘be angry’.
  - (iv) (Certain) motion verbs — e.g., *iyē/a-* ‘walk’.

# Unaccusativity in Hittite

- ▶ In contrast to other ancient IE languages, Hittite has clear diagnostics for syntactic unaccusativity (cf. Hoffner and Melchert 2008:310 n. 7).
- ▶ Hittite is a partial pro-drop language with 3<sup>rd</sup> person subject-marking enclitic pronouns:

	SG	PL
ANIM.NOM	= <i>aš</i>	= <i>e</i> , = <i>at</i>
N.NOM	= <i>at</i>	= <i>at</i>

- ▶ Building on Watkins (1968–9:93), Garrett (1990a,b, 1996) has shown that these subject clitics occur only in unaccusative predicates.

# Unaccusativity in Hittite

- ▶ Canonical *media tantum* are unaccusative and thus co-occur with subject clitics in the absence of an overt DP subject.

- (a) **Unaccusative**/DP subject ⇒ no subject clitic:

*nu=wa*      *kē*                                      *urkiēš*                                      *kiš-andati*  
 CONN=QUOT this.ANIM.NOM.SG sign.ANIM.NOM.SG become-3PL.PST.NACT

““These signs **occurred.**”” (KuT 49: 4–5)

- (b) **Unaccusative**/no DP subject ⇒ **subject clitic**:

*man=war=aš=mu*                                      <sup>LÚ</sup> *MUTI=YA*      *kiš-ari*  
 IRR=QUOT=3SG.ANIM.NOM=1SG.DAT husband=1SG become-3SG.NPST.NACT

““[If you would give one of your sons to me], **he** would **become** my husband.””

(KBo 5.6 iii 12–13)



# Unaccusative *activa tantum* in Hittite

- ▶ While most unaccusative verbs in Hittite exhibit NACT inflection, there is also a substantial class of unaccusative *activa tantum*.
- ▶ These *activa tantum* broadly belong to the same semantic classes as unaccusative *media tantum*:
  - i. Stative verbs — e.g., *huiš-* ‘live’, *karuššiyē/a-* ‘be silent’, *išandāi-* ‘linger’.
  - ii. Change-of-state verbs — e.g., *ak(k)-* ‘die’, *m(a)i-* ‘grow’, *papr-e(šš)-* ‘become impure’.
  - iii. Experiencer/psych verbs — *nah(h)-* ‘fear’.
  - iv. (Certain) motion verbs — e.g., *pai-* ‘go’, *uwa-* ‘come’, *huw(a)i-* ‘run’.





# Local summary — canonical and non-canonical NACT inflection

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- ▶ But Hittite unaccusative *activa tantum* (and deponents; cf. §5 below) are exceptional, exhibiting an apparent mismatch between their voice morphology and their syntax/semantics.
  - ▶ In §3 — this exceptional class also interacts in an idiosyncratic way with imperfective suffixes.

# Hittite imperfectives — form and function

- ▶ Hittite has three functionally equivalent verbal suffixes traditionally termed “imperfective” (IPFC; cf. Hoffner and Melchert 2008:318):
  - ▶ Highly productive *-ške-* (mi-verb-forming)
  - ▶ Lexically-determined *-anna/i-*, *-šša-* (hi-verb-forming)

# Hittite imperfectives — form and function

- ▶ A range of meanings are commonly associated with such suffixed verbal stems, including progressive, habitual, pluractional, frequentative, and iterative, e.g.:

- (a) Hittite marked imperfective (*-ške-*) with iterative function:

<sup>LU</sup>SANGA=*ma=kan* *IŠTU* GÌR.GÁN KÙ.BABBAR GEŠTIN

priest=TOP=PTC from.a.bowl silver wine

*hani-ški-zzi=pat*

draw.liquid=IPFC-3SG.NPST.ACT

‘The priest **keeps dipping up** wine from a silver bowl [and pouring it out into other cups].’ (KBo 15.37 v 8–11 +)

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- (b) Hittite marked imperfectives (*-anna/i-*, *-šša-*) with iterative function:

*kētt=a*                      *kētt=a*                      GI-*an*  
 on.this.side=CONJ on.this.side=CONJ arrow.ANIM.ACC.SG  
*huitti-annā-i*                      *tarnā-i=ma=an*                      *natta*  
 draw-IPFC-3SG.NPST.ACT release-3SG.NPST.ACT=TOP=3SG.ANIM.ACC NEG  
*ēē*    *halzi-šša-i*  
 ee.ee cry.aloud-IPFC-3SG.NPST.ACT

‘**He keeps drawing** his arrow toward side and that, but he does not let it go, and **he keeps shouting** “ee ee!”.’ (KBo 17.43 i 10–11)

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- ▶ Grammatical equivalence of imperfective suffixes confirmed by “supine construction,” which requires a verbal noun (*-wan*) formed to a marked imperfective stem (Hoffner and Melchert 2008:338).



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- ▶ Grammatical equivalence of imperfective suffixes confirmed by “supine construction,” which requires a verbal noun (*-wan*) formed to a marked imperfective stem (Hoffner and Melchert 2008:338).
- ▶ This requirement is satisfied by any of the three imperfective suffixes:

(a) *nu=mu*                    ÉRIN.MEŠ *pe-ške-wan*    *dāir*  
 CONN=1 SG.DAT troops        give-IPFC-SUP place.3SG.PST.ACT  
 ‘They began **giving** me troops.’ (KBo 3.4 iii 24)

(b) <sup>LU</sup>.MEŠ MUḪALDIM *ḫug-anni-wan* [*t*]ianzi  
 cooks                            give-IPFC-SUP place.3SG.NPST.ACT  
 ‘The cooks began **slaughtering**.’ (KBo 17.74 + KBo 21.25+ i 44)

(c) *nu*    *ēšḫar=šummit*                    *e-šš-uwan*    *tiyēr*  
 CONN blood.ACC=3PL.ACC.SG do-IPFC-SUP step.3PL.PST.ACT  
 ‘They began **killing** them (lit. ‘making their blood’).’ (KBo 3.1 i 21–3)







# Hittite imperfectives — form and function

- ▶ Imperfective suffixes do not change the basic lexical meaning or the valency of their verbal stem.
  - ▶ ACT transitive verbs regularly have ACT transitive imperfective forms.
  - ▶ And these imperfectives can be passivized.

(f) *nu=za*      <sup>d</sup>UTU      <sup>URU</sup>Ari[*nna=y*]a *zikila*      ***muke-ške-ḫhut***  
 CONN=REFL Sun-goddess of.Arinna      yourself invoke-IPFC-2SG.IMPE.NACT

‘And you yourself, O Sun-goddess of Arinna, **be invoked!**’ (KUB 24.3 iii 12–13)

# “Voice reversal” in unaccusative *activa tantum*

- ▶ Melchert (2017b) has demonstrated that in Old Hittite all unaccusative *activa tantum* consistently switch to NACT inflection in their suffixed IPFC forms (cf. Watkins 1969:72; Neu 1968:86–9).

	BASIC STEM/ACT	:	IPFC/NACT
a.	<i>ak-i</i> (die-3SG.NPST.ACT)	:	<i>akki-ške-<u>ttari</u></i>
b.	<i>pā-un</i> (go-1SG.PST.ACT)	:	<i>pai-šga-<u>ḥat</u></i>
c.	<i>ašiwant-eš-zi</i> (poor-BECOME-3SG.NPST.ACT)	~	<i>ašiwant-e-šk-<u>antari</u></i>
d.	<i>park-iš-ta</i> (tall-BECOME-3SG.PST.ACT)	~	<i>parki-ška-<u>ttari</u></i>
e.	<i>tepaw-eš-zi</i> (small-BECOME-3SG.NPST.ACT)	~	<i>tepaw-e-ške-<u>ḥhari</u></i>

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*karū=ma* [ŠÀ<sup>?</sup>] É DUMU.MEŠ-*an* ***pai-šga-hat***  
 formerly=TOP inside house children.ANIM.GEN.PL go-IPFC-1 SG.PST.NACT  
*kinun=a natta kuwāpikki pā-un*  
 now=TOP NEG *anywhere* go-1 SG.PST.ACT  
 ‘In the past **I would** go to the children’s quarters, but now **I haven’t gone**  
 anywhere.’ (KBo 17.1 iv 11–13)

## “Voice reversal” in unaccusative *activa tantum*

- ▶ Significantly, such seemingly functionless “voice reversal” never occurs in agentive verbs such as unergative *palwai*– ‘shout’ (cf. Melchert 2017b:481–2), e.g.:

[HAZ] ZINNA *paltani=šši*                      *dāi*                      *piran=a*  
 axe                      shoulder.LOC=his.LOC place.3SG.NPST.ACT before=TOP

***palwi-ški-zzi***

shout-IPFC-3SG.NPST.ACT

‘He places the axe on his shoulder and **he cries out** in front.’ (KBo 25.109 iii 7)



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  - ▶ Thus (e.g.) transitive verbs with ACT inflection in their basic stem generally have ACT IPFC forms, but these can show NACT inflection when syntactically appropriate (when passivized, etc.).

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  - ▶ Thus (e.g.) transitive verbs with ACT inflection in their basic stem generally have ACT IPFC forms, but these can show NACT inflection when syntactically appropriate (when passivized, etc.).
- ▶ But marked IPFCs of *activa tantum* exceptionally show “voice reversal” w.r.t. their basic stem, switching from ACT to NACT inflection.

# Hittite unaccusative *activa tantum* do not lack Voice

- What are the analytic implications of “voice reversal” in Hittite *activa tantum*?
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- ▶ If it were generally the case that Voice is absent in unaccusative *activa tantum* (Alexiadou et al. 2015, *i.a.*), it would be necessary to attribute the presence of Voice — specifically, of Voice[NACT] — in these forms to some property of the IPFC suffix.

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  - c. *palwai-t* (shout-3SG.PST.ACT) : *palwi-ški-zzi* (shout-IPFC-3SG.NPST.ACT)
- ▶ NACT inflection in IPFC forms in (a–b) requires that Voice[NACT] is present.
- ▶ If it were generally the case that Voice is absent in unaccusative *activa tantum* (Alexiadou et al. 2015, *i.a.*), it would be necessary to attribute the presence of Voice — specifically, of Voice[NACT] — in these forms to some property of the IPFC suffix.
- ▶ But this assumption is unmotivated, esp. in view of the absence of parallel effects on Voice for transitive or (c) unergative verbs.



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- ▶ Two interim conclusions:
  - i. Voice must be present in Hittite unaccusative *activa tantum*.
  - ii. The exceptional ACT inflection of these Hittite verbs cannot be attributed to the absence of Voice and thus requires an alternative explanation.

# Proposal — analyzing Hittite “voice reversal”

- ▶ Hittite voice morphology is assigned by post-syntactic spell-out rules like (i–ii) (cf. Embick 1998, 2000, 2004, *i.a*), which account well for its distribution in the general case.
  - (i) Voice ↔ Voice[NACT] / \_\_\_ No external DP argument
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- ▶ *activa tantum* are syntactically identical to unaccusative *media tantum*, but exceptionally bear a diacritic on the root (cf. Embick 1998, 2000, 2004), which is targeted by the more specific spell-out rule in (iii).
  - (iii) Voice  $\leftrightarrow$  Voice[ACT] / \_\_\_ { $\sqrt{\text{GO}}$ ,  $\sqrt{\text{COME}}$ ,  $\sqrt{\text{DIE}}$ , ... }

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  - (ii) Voice  $\leftrightarrow$  Voice[ACT] / \_\_\_
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  - (iii) Voice  $\leftrightarrow$  Voice[ACT] / \_\_\_ { $\sqrt{\text{GO}}$ ,  $\sqrt{\text{COME}}$ ,  $\sqrt{\text{DIE}}$ , ... }
- ▶ Crucially, (iii) is subject to locality (Embick 2010, 2015, *i.a.*), applying only when  $\sqrt{\text{ROOT}}$  is linearly adjacent to Voice.

# Proposal — analyzing Hittite “voice reversal”

- ▶ Unaccusative *activa tantum* meet the conditions for both (i) and (iii), but (iii) applies first because it is more specific (Subset Principle; Halle 1997).

(i) Voice ↔ Voice[NACT] / \_\_\_ No external DP argument

(iii) Voice ↔ Voice[ACT] / \_\_\_ { $\sqrt{\text{GO}}$ ,  $\sqrt{\text{COME}}$ ,  $\sqrt{\text{DIE}}$ , ... }

- ▶ Application of (iii) results in spell-out of exceptional ACT inflection in basic stem forms of *activa tantum*, e.g.:

*pai-zzi*  
 $\sqrt{\text{GO}}$ -3SG.NPST.ACT

$\sqrt{\text{ROOT}}$  ] Voice ]

# Proposal — analyzing Hittite “voice reversal”

- ▶ But in marked IPFCs of unaccusative *activa tantum*, an overt IPFC **suffix** (merged in Asp) intervenes between  $\sqrt{\text{ROOT}}$  and Voice.
  - (i) Voice  $\leftrightarrow$  Voice[NACT] / \_\_\_ No external DP argument
  - (iii) Voice  $\leftrightarrow$  Voice[ACT] / \_\_\_ { $\sqrt{\text{GO}}$ ,  $\sqrt{\text{COME}}$ ,  $\sqrt{\text{DIE}}$ , ... }
- ▶ Because  $\sqrt{\text{ROOT}}$  and Voice are non-local, (iii) cannot apply and the more general rule (i) assigns NACT morphology.

*pai-ške-tta*  
 $\sqrt{\text{GO}}$ -IPFC-3SG.NPST.NACT

$\sqrt{\text{ROOT}}$  ] **Asp** ] Voice ]

# Deponent verbs in Hittite

- ▶ This type of analysis can be extended naturally to a similar pattern of “voice reversal” in Hittite DEPONENT verbs — i.e., formally NACT non-alternating transitive verbs (cf. Grestenberger 2014, 2018, *i.a.*).

# Deponent verbs in Hittite

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- ▶ Deponents are small closed class in Hittite — a complete list:

## HITTITE DEPONENT VERBS

<i>ark-</i>	‘climb; mount’	<i>pahš-</i>	‘protect’
<i>hanna-</i>	‘judge; contest-at-law’	<i>parš(i)-</i>	‘break (bread)’
<i>hatta-</i>	‘slit; pierce’	<i>šarra-</i>	‘transgress; break (oath)’
<i>huett(i)-</i>	‘pull; draw’	<i>tuhš-</i>	‘cut off’
<i>iškalla-</i>	‘tear; slit’	<i>wešš-</i>	‘wear’



# Deponent verbs in Hittite

- ▶ Syntactically, DEPONENT verbs behave just like ACT transitive verbs — they (a) take ACC objects and (b) do not co-occur with subject clitics.

- (a) *n=ašta* EN.SISKUR ANA NINDA.GUR<sub>4</sub>.RA *awan arḫa tepu*  
 CONN=PTC ritual.client from.the.thick loaf away small.N.ACC.SG  
*paršiy-a*  
 break-3SG.NPST.NACT  
 ‘The ritual client **breaks** off a little (piece) from the thick loaf.’ (KBo 13.164 iv 6)
- (b) 1 UDU LU-*naš* *kāššaš* *ḫūittiy-a[nta]*  
 1 sheep man.ANIM.GEN.SG in.place.of draw-3PL.NPST.NACT  
 ‘In place of the man **they shall drag in** one sheep.’ (KBo 6.26 iv 21)

# “Voice reversal” in Hittite deponents

- ▶ Thus DEPONENTS — like unaccusative *activa tantum* — show a mismatch between form (NACT) and function (agentive, transitive).

# “Voice reversal” in Hittite deponents

- ▶ Thus DEONENTS — like unaccusative *activa tantum* — show a mismatch between form (NACT) and function (agentive, transitive).
- ▶ And like unaccusative *activa tantum*, DEONENTS exhibit “voice reversal” in their IPFC forms, switching from NACT to ACT inflection w.r.t. to their basic stem.

BASIC STEM/NACT

:

IPFC/ACT

- 
- a. *paršiy-a* (break-3SG.NPST.NACT) : *paršiy-anna-i* (break-IPFC-3SG.NPST.ACT)
- b. *huettiy-a* (draw-3SG.NPST.NACT) : *huittiy-anna-i* (draw-IPFC-3SG.NPST.ACT)
- c. *tuhš-a(ri)* (cut.off-3SG.NPST.NACT) : *tuhš-anna-i* (cut.off-IPFC-3SG.NPST.ACT)

# “Voice reversal” in Hittite deponents

- ▶ An example of “voice reversal” in DEPONENT *parš(i)*- ‘break’ — compare (i) vs. (ii).

(i) *n=ašta* EN.SISKUR ANA NINDA.GUR<sub>4</sub>.RA *awan arḫa tepu*  
 CONN=PTC ritual.client from.the.thick loaf away small.N.ACC.SG

***paršiy-a***

break-3SG.NPST.NACT

‘The ritual client **breaks** off a little (piece) from the thick loaf.’ (KBo 13.164 iv 6)

(ii) *ištarna* UD.ḪIA-ti=ma NINDA.KUR<sub>4</sub>.RA *damauš*  
 in.middle day.LOC.SG=top loaf other.ANIM.ACC.PL

***paršiy-anna-ḫḫi***

break-IPFC-1SG.NPST.ACT

‘At mid-day **I break** other loaves (and in the evening I break still other loaves).’

(KUB 7.5 ii 26–30)

# Analyzing “voice reversal” in Hittite deponents

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  - ii. Voice  $\leftrightarrow$  Voice[ACT] / \_\_\_\_\_
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- ▶ When  $\sqrt{\text{ROOT}}$  and Voice are adjacent, (iv) applies and DEPONENT verbs receive syntactically exceptional NACT marking:

*parsiy-a*  
 $\sqrt{\text{BREAK}}$ -3SG.NPST.NACT

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  - iv. Voice  $\leftrightarrow$  Voice[ACT] /        { $\sqrt{\text{BREAK}}$ ,  $\sqrt{\text{PULL}}$ , ... }
- ▶ But in IPFC forms of DEPONENT verbs,  $\sqrt{\text{ROOT}}$  and Voice are rendered non-local by an IPFC **suffix** (*-anna/i-*), so (ii) applies.

*parsiy-anna-i*  
 $\sqrt{\text{BREAK}}$ -IPFC-3SG.NPST.ACT

$\sqrt{\text{ROOT}}$  ] **Asp** ] Voice ]



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# Conclusions & discussion

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  - ▶ Two verbal classes — unaccusative *activa tantum* and DEPONENTS — show an exceptional mismatch between voice morphology and syntax/semantics.
  - ▶ These two classes uniquely exhibit “voice reversal” in their marked IPFC forms:
    - ▶ Unaccusative *activa tantum* switch from ACT to NACT inflection.
    - ▶ DEPONENT verbs switch from NACT to ACT inflection.
- a. *ak-i* (die-3SG.NPST.ACT) : *akki-ške-ttari* (die-IPFC-3SG.NPST.NACT)
- b. *paršiy-a* (break-3SG.NPST.NACT) : *paršiy-anna-i* (go-IPFC-3SG.NPST.ACT)

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- ▶ “Voice reversal” in IPFCs of Hittite unaccusative *activa tantum* shows that all Hittite unaccusative *activa tantum* have a Voice layer.
  - ▶ NACT inflection in these forms requires Voice[NACT], the presence of which cannot be attributed to the IPFC suffix.

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- ⇒ It cannot be the case that cross-linguistically all unaccusative *activa tantum* in bivalent voice systems lack Voice.

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- ▶ Under the proposed analysis, unaccusative *activa tantum* and DEPONENT verbs do not differ syntactically from other unaccusative or transitive verbs respectively.

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- ⇒ “Voice reversal” is voice ALIGNMENT.
  - ▶ Such alignment may reflect an emergent dispreference for form/function mismatches, which tend to be “resolved” in productively derived forms (supported by comparative-historical IE data).



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# Thank you!

- Special thanks to the members of the Indo-European & Modern Linguistic Theory research group and of the UCLA IES Graduate and American Indian Linguistics Seminars, as well as to Craig Melchert, Pam Munro, Stephanie Jamison, and Brent Vine.

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# On the diachrony of Hittite “voice reversal”

- ▶ Two exceptional verbs may offer insight into the diachronic development of the Hittite “voice reversal.”

i. *iyanna/i-* ‘set out (for); march’

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  - ⇒ \**-ške-* did not induce NACT inflection in PIE unaccusative *activa tantum*.

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  - ▶ This bias emerges, especially, in productive derivation, as learners are disposed to produce novel forms in which (voice) morphology and syntax/semantics are aligned.
  - ▶ Hittite “voice reversal” is a grammaticalization of this emergent tendency.

# On the diachrony of Hittite “voice reversal”

- ▶ This proposal is supported by similar phenomena in other ancient IE languages — (semantically) unaccusative PIE *activa tantum* undergoing synchronic or diachronic switch to NACT inflection in suffixed forms.

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- ▶ Ancient Greek verbs with prototypical unaccusative semantics often show ACT present tense forms beside ACT sigmatic futures:

	PRS.ACT	FUT.NACT	
a.	ἀκούω	ἀκούσομαι	‘hear’
b.	βαίνω	βήσομαι	‘walk; go’
c.	γινώσκω	γνώσομαι	‘recognize; know’
d.	εἰμί	ἔσομαι	‘be’
e.	ἔχω	ἔξομαι	‘have; possess’
f.	ὁράω	[ὄψομαι]	‘see’
g.	πάσχω	πείσομαι	‘suffer’
h.	πίπτω	πεσέομαι	‘fall’
i.	φεύγω	φεύξομαι	‘flee’

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- ▶ Tocharian verbs with unaccusative semantics containing PIE  $*-s\hat{k}e-$  are often *media tantum* despite deriving historically from PIE verbal roots with primarily ACT forms (Melchert 2017b:482–4):

a.	TA/B	<i>māsk-</i>	‘be(come)’ (Prs III)	< $*m\grave{n}-s\hat{k}o-$
b.	TA/B	<i>musk-</i>	‘disappear’ (Prs III)	< $*m(y)uh_x-s\hat{k}o-$
c.	TA/B	<i>wāsk-</i>	‘move’ (Prs XII)	< $*ug^h-s\hat{k}o-$
d.	TA	<i>yutk-</i>	‘become agitated’ (Prs III)	< $*h_xyud^h-s\hat{k}o-$
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- ⇒ Comparative IE evidence consistent with proposal that “voice reversal” under suffixation is in fact voice alignment, which tends to emerge diachronically (in the individual IE languages).