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

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A morphosyntactic question

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Many of these canonical unaccusative verbs exhibit only NACT inflection (*media tantum*), e.g.:

- \textit{ki-tta(ri)} (lie-3SG.NPST.NACT) ‘lies’
- \textit{ar-ta(ri)} (stand-3SG.NPST.NACT) ‘is standing’
- \textit{kiš-ta(ri)} (happen-3SG.NPST.NACT) ‘happens; becomes’
A morphosyntactic question

- 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.:

  - ak-i (die-3SG.NPST.ACT) ‘dies’
  - pai-zzi (go-3SG.NPST.ACT) ‘goes’
  - ašiwant-eš-zi (poor-BECOME-3SG.NPST.ACT) ‘becomes poor’
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Why do these unaccusative verbs exceptionally take ACT morphology?
It has been variously argued (e.g., Alexiadou and Anagnostopoulou 2004; Schäfer 2008; Alexiadou et al. 2015) that such formally active non-alternating unaccusative verbs (activa tantum) differ from other unaccusative verbs in that they lack a Voice layer entirely.
It has been variously argued (e.g., Alexiadou and Anagnostopoulou 2004; Schäfer 2008; Alexiadou et al. 2015) that such formally active non-alternating unaccusative verbs (*activa tantum*) differ from other unaccusative verbs in that they lack a Voice layer entirely — i.e.:

(a) regular unaccusative:
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(a) regular unaccusative:

(b) *activa tantum*:
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.e*):

(i) Voice $\leftrightarrow$ Voice[\textit{NACT}] / ___ No external DP argument

(ii) Voice $\leftrightarrow$ Voice[\textit{ACT}] / ___

Ordinary unaccusative verbs are assigned \textit{NACT} marking by (i) because VoiceP does not project an external argument as a specifier.

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

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

But because *activa tantum* exceptionally lack Voice altogether, they instead receive “default” ACT marking by (ii).

(b) *activa tantum*:

$$
\text{TP} \\
\text{THEME}_i \\
\text{vP} \\
\text{v} \\
\text{Root} \\
\text{Root} <\text{THEME}>_i
$$
Unaccusative *activa tantum* do not lack Voice

- Two primary goals for this talk:
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  1. Show that Voice is present in Hittite unaccusative *activa tantum*.
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  - Principal evidence — marked imperfectives of same verbs show “voice reversal,” surfacing with NACT morphology.

- **Examples:**
  
  a. *ak-i* (die-3SG.NPST.ACT) : *akkı-ške-ttari* (die-IPFC-3SG.NPST.NACT)
  
  b. *pai-zzi* (go-3SG.NPST.ACT) : *pai-ške-tta* (go-IPFC-3SG.NPST.NACT)
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- Two primary goals for this talk:
  1. Show that Voice is present in Hittite unaccusative *activa tantum*.
     - Principal evidence — marked imperfectives of same verbs show “voice reversal,” surfacing with NACT morphology.
  2. Develop an alternative analysis of Hittite “voice reversal.”

a. *ak-i* (die-3SG.NPST.ACT) : *akki-ške-ttari* (die-IPFC-3SG.NPST.NACT)
b. *pai-zzi* (go-3SG.NPST.ACT) : *pai-ške-tta* (go-IPFC-3SG.NPST.NACT)
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  (i) Show that Voice is present in Hittite unaccusative *activa tantum*.
      - 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)

b. *pai-zzi* (go-3SG.NPST.ACT) : *pai-ške-tta* (go-IPFC-3SG.NPST.NACT)
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.)
Hittite is the major representative of the (extinct) Anatolian branch of Indo-European (IE) and the oldest attested IE language (16th c. BCE+; cf. Melchert 2017a).
Documentation of Hittite

- Written in a cuneiform mixed syllabic-logographic script.
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  - ~300,000 words
Distribution of Hittite NACT morphology

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- 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.:

(a) \( n=an \) šuppiyāḫ-ḫun

\( \text{CONN}=3\text{SG.ANIM.ACC} \ \text{purify}-1\text{SG.PST.ACT} \)

‘I purified it.’ (KUB 19.37 ii 17) (ACT transitive)

(b) \( [\text{Nar}]-d\text{SIN-naš} \) suppiyāḫḫ-ati

\( \text{Naram.Sin.ANIM.NOM.SG} \ \text{purify}-3\text{SG.PST.NACT} \)

‘Naram-Sin purified himself.’ (KBo 3.16 iii 11) (NACT reflexive)
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*).
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*).

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’, *ḥuršakniye/a*– ‘burst’, *ze*– ‘get cooked’.

(iii) Experiencer/psych verbs — *kardim(m)iye/a*– ‘be angry’.

(iv) (Certain) motion verbs — e.g., *iyel/a*– ‘walk’.
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 3rd person subject-marking enclitic pronouns:

<table>
<thead>
<tr>
<th>ANIM.NOM</th>
<th>SG</th>
<th>PL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>=aš</td>
<td>=e, =at</td>
</tr>
<tr>
<td>N.NOM</td>
<td>=at</td>
<td>=at</td>
</tr>
</tbody>
</table>

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:

\[
\begin{align*}
\text{nu}=\text{wa} & \quad \text{kē} & \quad \text{urkiēš} & \quad \text{kiš-andati} \\
\text{CONN}=\text{QUOT} & \quad \text{this.ANIM.NOM.SG} & \quad \text{sign.ANIM.NOM.SG} & \quad \text{become-3PL.PST.NACT}
\end{align*}
\]

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

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

\[
\begin{align*}
\text{man}=\text{war}=\text{aš}=\text{mu} & \quad \text{LŪ} & \quad \text{MUTI}=\text{YA} & \quad \text{kiš-ari} \\
\text{IRR}=\text{QUOT}=\text{3SG.ANIM.NOM}=\text{1SG.DAT} & \quad \text{husband}=\text{1SG} & \quad \text{become-3SG.NPST.NACT}
\end{align*}
\]

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

(KBo 5.6 iii 12–13)
Unaccusativity in Hittite

- But subject clitics never co-occur with agentive verbs, transitive or unergative.

(a) **Transitive**/no DP subject ⇒ no subject clitic:

\[
\begin{align*}
nu=kan & \quad mZidantan \quad addaš=šan & \quad kuen-ta \\
\text{CONN}=\text{PTC} & \quad \text{Zidanta.ACC} \quad \text{father.ACC} & \quad \text{3SG.ANIM.ACC.SG} \quad \text{kill-3SG.PST.ACT}
\end{align*}
\]

‘Then he killed Zidanta, his father.’ (KBo 3.1+ i 68)

(b) **Unergative**/no DP subject ⇒ no subject clitic:

\[
\begin{align*}
nu & \quad 3-ŠU \quad \text{palwai-t} \\
\text{CONN} & \quad \text{thrice} \quad \text{make.noise-3SG.PST.ACT}
\end{align*}
\]

‘He shouted out three times.’ (KBo 26.65 iv 15–17)
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*:


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’, ḫuw(a)i– ‘run’.
Unaccusative *activa tantum* in Hittite

- Like canonical *media tantum*, unaccusative *activa tantum* require subject clitics in the absence of an overt DP subject.

(a) \( n=\text{aš} \quad \text{lahha} \quad \text{pai-zzi} \)

\[
\text{CONN=3SG.ANIM.NOM campaign.ANIM.ALL.SG go-3SG.NPST.ACT} \\
\text{‘Then he goes on campaign.’ (KBo 6.3 ii 48)}
\]

(b) \( \text{takku ŠAΗ} \langle \text{-aš} \rangle \quad \text{UR.GI7-aš katta kuiški} \quad \text{wašta-i} \)

\[
\text{if pig.GEN dog.GEN with someone.NOM sin-3SG.NPST.ACT} \\
\text{ak-i=aš} \\
\text{die-3SG.NPST.ACT=3SG.ANIM.NOM} \\
\text{‘If someone sins with a pig (or) a dog, he shall die.’ (KBo 6.26 iv 16–17)}
\]
Local summary — canonical and non-canonical NACT inflection

- Hittite ACT and NACT inflection mostly occur in syntactic contexts in which they are cross-linguistically expected.
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- Hittite ACT and NACT inflection mostly occur in syntactic contexts in which they are cross-linguistically expected.
- But Hittite unaccusative *activa tantum* (and deponents; cf. §5 below) are exceptional, exhibiting an apparent mismatch between their voice morphology and their syntax/semantics.
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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–  
  - Lexically-determined –anna/i–, –šša–
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:

\[ \text{LU SANGA} = ma = \text{kan IŠTU GİM KÚ BABBAR GEŠTIN} \]

priest = TOP = PTC from a bowl silver wine

\[ \text{hani-ški-zzi} = \text{pat} \]

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

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

\[
\begin{align*}
\text{Huitt-t-an} & \quad \text{tarn-i}=\text{ma}=\text{an} \\
\text{draw-IPFC-3SG.NPST.ACT} & \quad \text{release-3SG.NPST.ACT}=\text{TOP}=3\text{SG.ANIM.ACC NEG}
\end{align*}
\]

\[
\begin{align*}
\text{हलजी-शशा-ि} & \\
\text{ee.ee cry.aloud-IPFC-3SG.NPST.ACT}
\]

‘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)
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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This requirement is satisfied by any of the three imperfective suffixes:

(a) *nu=mu ÉRIN.MEŠ pe-ške-wan dāir*
*CONN=1SG.DAT troops give-IPFC-SUP place.3SG.PST.ACT*

‘They began giving me troops.’ (KBo 3.4 iii 24)

(b) *LU.MEŠ MUḤALDIM hug-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 ēšḥar=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.

(a) $n=\text{uš}=\text{šan}$  $\text{ḥaḥḥalaš}$ $\text{parh-er}$

CONN=3 PL ANIM ACC=PTC in bushes chase-3 PL PST ACT

‘They chased them into the bushes.’ (KBo 3.67 ii 7)

(b) $nu=tt[(a)]$  $\text{NĪŠ DINGIR.MEŠ}$ $\text{parhe-šk-andu}$

CONN=2 SG ACC oath-gods chase-IPFC-3 PL IMP ACT

‘May the oath-gods pursue you continuously.’ (KBo 4.3 i 34 + KUB 6.41 ii 25)
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.

(c) \( n=aš \) KALAG.GA-za \( parhe-šk-antari \)
CONN=3SG.ANIM.NOM frightfully chase-IPFC-3SG.NPST.NACT

‘And it (viz., mankind, oxen, and sheep) is being pursued frightfully.’ (KUB 17.16 i 4–5; see CHD, P: 144)
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.

(d) \( n=an \) \( \text{INA UD.3.KAM} \) \( mūgā-mi \)
\( \text{CONN}=3 \text{SG.AIM.ACC} \) \( \text{for.3.days} \) \( \text{invoke-1 SG.NPST.ACT} \)

‘I invoke her for three days.’ (KUB 9.27 + KUB 7.8 i 5)

(e) \( nu=tta \) \( kāša \) \( muki-ške-mi \)
\( \text{CONN} \) \( \text{right.now invoke-IPFC-1 SG.NPST.ACT} \) \( \text{bread.INSTR libation.INSTR} \)

‘I am invoking you right now with bread (and) libations.’ (KUB 24.2 obv. 12)
Introduction
IPFCs & “voice reversal”
Analysis
Hittite deponents
Discussion
References

Hittite imperfectives — form and function

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  - ACT transitive verbs regularly have ACT transitive imperfective forms.
  - And these imperfectives can be passivized.

(f) $nu=za$ $^d$UTU $^U$RU $Ar[i][nna=y]a$ $zikila$ $muke-\text{ške-}h\text{ḥut}$
$\text{CONN=REFL Sun-goddess of Arinna yourself invoke-IPFC-2SG.IMPF.NACT}$

‘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).

<table>
<thead>
<tr>
<th>Basic Stem/Act</th>
<th>IPFC/NACT</th>
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<tbody>
<tr>
<td>a. ak-i (die-3SG.NPST.ACT)</td>
<td>akki-ške-ttari</td>
</tr>
<tr>
<td>b. pā-un (go-1SG.PST.ACT)</td>
<td>pai-šga-ḥat</td>
</tr>
<tr>
<td>c. ašiwant-eš-zı (poor-BECOME-3SG.NPST.ACT)</td>
<td>ašiwant-e-šk-antari</td>
</tr>
<tr>
<td>d. park-iš-ta (tall-BECOME-3SG.PST.ACT)</td>
<td>parki-ška-ttari</td>
</tr>
<tr>
<td>e. tepaw-eš-zı (small-BECOME-3SG.NPST.ACT)</td>
<td>tepaw-e-ške-ḥḥari</td>
</tr>
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```
karū=ma    [ŠÀ?]    É    DUMU.MEŠ-an    pai-šga-ḫat
formerly=TOP    inside    house    children.ANIM.GEN.PL    go-IPFC-1SG.PST.NACT
kinun=a    natta    kuwāpikki    pā-un
now=TOP    NEG    anywhere    go-1SG.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)
```
Significantly, such seemingly functionless “voice reversal” never occurs in agentive verbs such as unergative *palwai*– ‘shout’ (cf. Melchert 2017b:481–2), e.g.:

\[\text{HAZ} \text{ZINNA} \text{paltani}=\text{šši} \quad \text{dāi} \quad \text{piran}=\text{a} \]
\text{axe} \quad \text{shoulder.LOC=his.LOC} \quad \text{place.3SG.NPST.ACT before=TOP}

\text{*palwi*-ški-zzi}
\text{shout-IPFC-3SG.NPST.ACT}

‘He places the axe on his shoulder and he cries out in front.’ (KBo 25.109 iii 7)
Hittite verbs productively formed IPFC stems by suffixation of an IPFC suffix (–ške–, –anna/i–, –šša–) to their basic stem.
Local summary — Hittite IPFC & voice morphology

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- When suffixed to agentive verbs, IPFC suffixes have no observable effects on the realization of voice morphology.
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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*?

a. *ak-i* (die-3SG.NPST.ACT) : *akki-ške-ttari* (die-IPFC-3SG.NPST.NACT)

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- 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”


1. Voice ↔ Voice[NACT] / ___ No external DP argument
2. Voice ↔ Voice[ACT] / ___
Proposal — analyzing Hittite “voice reversal”


(i) Voice ← Voice[\textit{NACT}] / ___ No external DP argument
(ii) Voice ← Voice[\textit{ACT}] / ___

- \textit{activa tantum} are syntactically identical to unaccusative \textit{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 ← Voice[\textit{ACT}] / ___ \{\textit{\sqrt{GO}}, \textit{\sqrt{COME}}, \textit{\sqrt{DIE}}, \ldots \}
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- Crucially, (iii) is subject to locality (Embick 2010, 2015, *i.a.*), applying only when \sqrt{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 $\leftrightarrow$ Voice$\left[NACT\right]$ / ___ No external DP argument

  (iii) Voice $\leftrightarrow$ Voice$\left[ACT\right]$ / ___ $\{\sqrt{GO}, \sqrt{COME}, \sqrt{DIE}, \ldots\}$

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

  $\overline{\text{pai-zzi}}$

  $\sqrt{GO-3SG.NPST.ACT}$
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.

\[
\text{pai-ške-tta} \quad \sqrt{\text{GO-IPFC-3SG.NPST.NACT}}
\]
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

- 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.*).

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

**HITTITE DEPONENT VERBS**

| ark–  | ‘climb; mount’ | pahš– | ‘protect’ |
| hanna– | ‘judge; contest-at-law’ | parš(i)– | ‘break (bread)’ |
| hatta– | ‘slit; pierce’ | šarra– | ‘transgress; break (oath)’ |
| ħuett(i)– | ‘pull; draw’ | tuhš– | ‘cut off’ |
| iškalla– | ‘tear; slit’ | wešš– | ‘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) \[ n=ašta \quad \text{EN.SISKUR ANA NINDA.GUR}_4.RA \quad \text{awan arḥa tepu} \]
\[ \text{CONN}=\text{PTC} \quad \text{ritual.client from.the.thick.loaf} \quad \text{away} \quad \text{small.N.ACC.SG} \]
\[ \text{paršiy-a} \]
\[ \text{break-3SG.NPST.NACT} \]

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

(b) \[ 1 \text{ UDU LU-naš} \quad kāššaš \quad Ѱūittiya[nta] \]
\[ 1 \text{ sheep man.ANIM.GEN.SG in.place.of draw-3PL.NPST.NACT} \]

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

<table>
<thead>
<tr>
<th>Basic Stem/Nact</th>
<th>:</th>
<th>IPFC/Act</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>a. paršiy-a</strong> (break-3SG.NPST.NACT)</td>
<td>:</td>
<td><strong>paršiy-anna-i</strong> (break-IPFC-3SG.NPST.ACT)</td>
</tr>
<tr>
<td><strong>b. ḥuettiy-a</strong> (draw-3SG.NPST.NACT)</td>
<td>:</td>
<td><strong>ḫuittiy-anna-i</strong> (draw-IPFC-3SG.NPST.ACT)</td>
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<tr>
<td><strong>c. tuḥš-a(ri)</strong> (cut.off-3SG.NPST.NACT)</td>
<td>:</td>
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“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.GUR₄.RA *awan arḥa 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.ḪI.A-ṭi=ma NINDA.KUR₄.RA *damauš*
    in.middle day.LOC.SG=top loaf other.ANIM.ACC.PL

  *paršiy-anna-ḥḥi*
  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

- “Voice reversal” in Hittite DEPONENT verbs submits to the same analysis as in unaccusative *activa tantum*.
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- “Voice reversal” in Hittite DEPONENT verbs submits to the same analysis as in unaccusative *activa tantum*.
- Transitive verbs regularly receive ACT marking by (ii), but DEPONENT roots bear a diacritic on the root that is targeted by the more specific spell-out rule (iv), which requires locality:
  
  ii. Voice $\leftrightarrow$ Voice[ACT] / 

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  - ii. Voice $\leftrightarrow$ Voice[ACT] / ___ 
  - iv. Voice $\leftrightarrow$ Voice[ACT] / ___ \{\sqrt{\text{BREAK}}, \sqrt{\text{PULL}}, \ldots \}

- When $\sqrt{\text{ROOT}}$ and Voice are adjacent, (iv) applies and DEPONENT verbs receive syntactically exceptional NACT marking:

  \[
  \sqrt{\text{BREAK}-3\text{SG.NPST.NACT}} \quad \sqrt{\text{ROOT}} \quad \text{[Voice]} \quad \text{parsiy-} \quad \]

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  \end{align*}
  \]

- 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.

\[
\text{parsiy-anna-i} \quad \sqrt{\text{ROOT}} \mid \text{Asp} \mid \text{Voice} \\
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Hittite ACT and NACT inflection mostly occur in syntactic contexts in which they are expected cross-linguistically.
Conclusions & discussion

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Conclusions & discussion

- Hittite ACT and NACT inflection mostly occur in syntactic contexts in which they are expected cross-linguistically.
- 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.

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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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  - Syntactically regular voice morphology emerges in IPFC forms of these verbs when this diacritic ceases to be visible.
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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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- 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.
References I


References II


References III


References IV


References V


On the diachrony of Hittite “voice reversal”

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

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- Hittite “voice reversal” is an innovation, which is driven by a learning bias against mismatches between (voice) morphology and syntax/semantics.
- 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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- 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.
- Ancient Greek verbs with prototypical unaccusative semantics often show *ACT* present tense forms beside *ACT* sigmatic futures:

<table>
<thead>
<tr>
<th>PRS.ACT</th>
<th>FUT.NACT</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. ἀκούω</td>
<td>ἀκουσμαι</td>
<td>‘hear’</td>
</tr>
<tr>
<td>b. βαίνω</td>
<td>βησμαι</td>
<td>‘walk; go’</td>
</tr>
<tr>
<td>c. γιγνώσκω</td>
<td>γνώσμαι</td>
<td>‘recognize; know’</td>
</tr>
<tr>
<td>d. εἰμί</td>
<td>ἔσμαι</td>
<td>‘be’</td>
</tr>
<tr>
<td>e. ἔχω</td>
<td>ἔξειμαι</td>
<td>‘have; possess’</td>
</tr>
<tr>
<td>f. ὁράω</td>
<td>[ὁφομαι]</td>
<td>‘see’</td>
</tr>
<tr>
<td>g. πάσχω</td>
<td>πείσμαι</td>
<td>‘suffer’</td>
</tr>
<tr>
<td>h. πίπτω</td>
<td>πεσόμαι</td>
<td>‘fall’</td>
</tr>
<tr>
<td>i. φεύγω</td>
<td>φεύξόμαι</td>
<td>‘flee’</td>
</tr>
</tbody>
</table>
Tocharian verbs with unaccusative semantics containing PIE *–skē– are often *media tantum* despite deriving historically from PIE verbal roots with primarily ACT forms (Melchert 2017b:482–4):

- a. TA/B *māsk–* ‘be(come)’ (Prs III) < *m̥n-skō–
- b. TA/B *musk–* ‘disappear’ (Prs III) < *m(y)uh_x-skō–
- c. TA/B *wāsk–* ‘move’ (Prs XII) < *ug^h-skō–
- d. TA *yutk–* ‘become agitated’ (Prs III) < *h_x yud^h-skō–
- e. TA/B *sātk–* ‘spread (intr.)’ (Prs III) < *(h_2)sut-skō–
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b. TA/B musk– ‘disappear’ (Prs III) < *m(y)uhx-s̚ko–
c. TA/B wāsk– ‘move’ (Prs XII) < *ugh-s̚ko–
d. TA yutk– ‘become agitated’ (Prs III) < *hx yudh-s̚ko–
e. TA/B sätk– ‘spread (intr.)’ (Prs III) < *(h₂)sut-s̚ko–

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).