

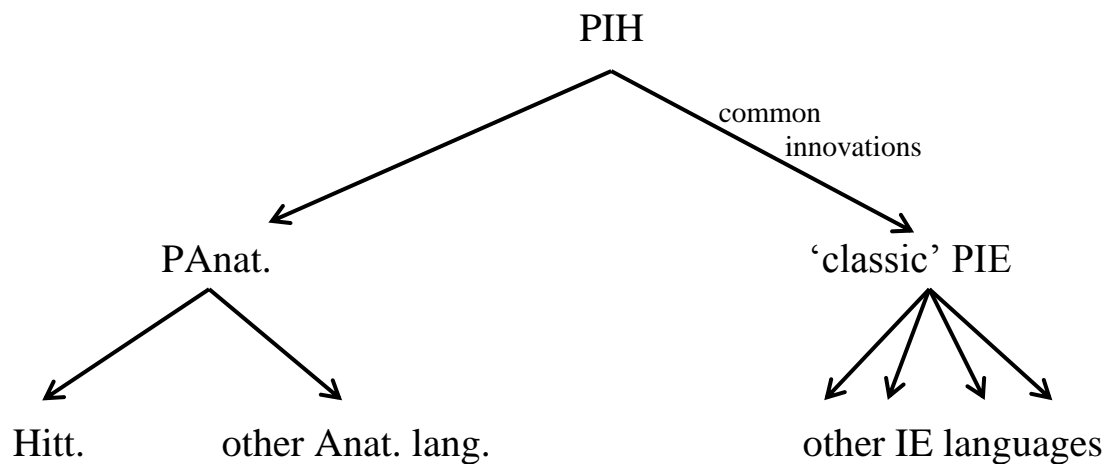
# The Hittite verbal system and the Indo-Hittite hypothesis

## Background

### 1. Indo-Hittite hypothesis:

Nowadays more and more accepted:

- Anatolian is the first to split off from the motherlanguage
  - the other IE languages have undergone common innovations
- (Kloekhorst 2008: 7-11; Oettinger 2013/2014; Melchert fthc.)



The number and nature of these innovations is debated

### 2. Some suggested innovations (varying degree of acceptance)

Semantic shifts:

1. Hitt. part. *-ant-* (both act. and pass.) vs. cl.PIE part. *\*-e/ont-* (only act.)  
(Oettinger 2013/14: 156-7)
2. Hitt. *ḫarra-<sup>i</sup>* ‘to grind, crush’ vs. cl.PIE *\*h<sub>2</sub>erh<sub>3</sub>-* ‘to plough’ (Kloekhorst 2008: 9)

3. Hitt. *lāḫu-* ‘to pour’ vs. cl.PIE *\*leuh<sub>3</sub>-* ‘to wash’ (Oettinger 2013/14: 169)
4. Hitt. *mer-* ‘disappear’ vs. cl.PIE *\*mer-* ‘to die’ (Kloekhorst 2008: 8)
5. Hitt. *nekutt-* ‘twilight’ vs. cl.PIE *\*neg<sup>wh</sup>t-* / *\*nog<sup>wh</sup>t-* ‘night’ (Melchert fthc.)
6. Hitt. *šāḫ-* ‘to fill up, to stuff’ vs. cl.PIE *\*seh<sub>2</sub>-* ‘to be satiated’ (Kloekhorst 2008: 9)
7. Hitt. *šai-<sup>i</sup>* ‘to impress, to prick’ < *\*sh<sub>1</sub>-oi-* vs. cl.PIE *\*seh<sub>1</sub>-* ‘to sow’ (Oettinger 2013/14: 168)

Morphological innovations:

8. Anat. comm./ntr. vs. cl.PIE m./f./ntr. (innovation of the feminine gender) (e.g. Melchert fthc.)
9. Anat. *\*ti(H)*, *\*tu-* vs. cl.PIE *\*tuH*, *\*tu-* ‘you (sg.)’ (spread of obl. stem *\*tu-* to the nom.) (Kloekhorst 2008: 8-9)
10. Anat. *\*h<sub>1</sub>ékū-* vs. cl.PIE *\*h<sub>1</sub>ekuo-* ‘horse’ (thematization) (Kloekhorst 2008: 10)
11. Anat. gen. *\*-om* (num.indiff.) vs. cl.PIE gen.pl. *\*-om* (Kloekhorst 2017a)

Phonological innovations:

12. Hitt. *lāḫu-* ‘to pour’ < *\*leh<sub>3</sub>u-* vs. cl.PIE *\*leuh<sub>3</sub>-* ‘to wash’ (laryngeal metathesis) (Oettinger 2013/14: 169)
13. Anat. *\*/t:/*, *\*/<sup>2</sup>t/*, *\*/t/* vs. cl.PIE *\*t*, *d*, *\*d<sup>h</sup>* (*\*t*, *\*<sup>2</sup>d*, *\*d*) (consonant shift, although perhaps only after Tocharian split off) (Kloekhorst 2016)
14. Anat. *\*/q:/* vs. cl.PIE *\*h<sub>2</sub> = \*[h]* or *\*[ʃ]* (Kloekhorst 2017b)

### Today’s topic: the verbal system

3. Hittite verbal system much smaller than in other ancient IE languages, compare with e.g. Sanskrit:

Hitt.	vs.	Skt.
2 moods (ind., imp.)	vs.	5 moods (ind., imp., subj., opt., inj.)
2 voices (act., mid.)	vs.	3 voices (act., mid., pass.)
2 tenses (pres., pret.)	vs.	5 tenses (pres., impf., perf., plperf., fut.)
2 numbers (sg., pl.)	vs.	3 numbers (sg., du., pl.)
rudimentary aspectual system	vs.	inflectional aspect system (pres. vs. aor.)

- loss of categories in Anatolian?
- innovation of categories in non-Anatolian languages? (= IH hypothesis)

→ Rather a mix of both.

#### 4. This talk:

Comparison between Hittite and ‘classic’ PIE verbal systems (not exhaustive!):

- what are the differences?
- where did Anatolian innovate?
- where did the non-Anatolian languages innovate?
- what could be arguments in favor of the Indo-Hittite hypothesis?

### Hittite *mi*-conjugation vs. cl.PIE present-aorist

5. Tense:	Hitt.	cl.PIE
	pres. * <i>CéC-ti</i>	pres. * <i>CéC-ti</i>
	pret. * <i>CéC-t</i>	impf. * <i>h<sub>1</sub>é-CeC-t</i>
		inj. * <i>CéC-t</i>

Formally, Hitt. pret. \**CéC-t* ~ cl.PIE inj. \**CéC-t*, but semantically different: e.g. Skt. inj. is a non-tensed category, which probably is original.

→ Hittite semantics probably an innovation: **no** argument for Indo-Hittite

**5a.** Also cl.PIE impf. \**h<sub>1</sub>é-CeC-t* is probably an innovation, but how old? If only ‘Central IE’, then **no** argument for Indo-Hittite

6. Aspect:	Hitt.	cl.PIE
	no aspect	pres. vs. aorist

Hittite basic verbs are ‘aspectless’; imperfectivity is marked by affixes (-*ške/a-*, -*anna/i-*, -*šš(a)-*, reduplication).

In cl.PIE, verbal roots are either presentic or aoristic: the other aspect can be derived from these roots by affixes (pres. \**-e/o-*, \**-ske/o-*, \**-neu-*, reduplication, etc.; aor. \**-s-*); presentic formations can occur in the present and the preterite tense, whereas aoristic formations in principle only occur in the preterite tense.

The Hittite system can be derived from the cl.PIE system by assuming a loss of aspectual distinction: new present tense forms were formed to aorist formations (the *tezzi*-principle): **no** argument for Indo-Hittite.

7. Verbal suffixes:	Hitt.	cl.PIE (pres. markers)
	- <i>nu-</i> (caus.)	*- <i>neu-/-nu-</i>
	- <i>ške/a-</i> (impf.)	*- <i>ske/o-</i>
	<i>n-</i> infix (caus.)	<i>n-</i> infix
	- <i>ie/a-</i>	*- <i>ie/o-</i>

Although some semantic discrepancies between these suffixes, **no** real arguments for Indo-Hittite

**7a. BUT:** no Anatolian cognate to cl.PIE thematic presents (Skt. *bhávati* / *tudáti*)

[HLuw. *tamari* 'he builds' is not [támmari] < \**démH-e-ti*, but rather [tmári] < \**dméH-ti*]

- Loss in Anatolian?

→ Strange: all other cl.PIE present formants are found in Anatolian.

- Innovation in non-Anatolian?

→ Strange, because it is such a core element

(cf. more complex \*-*ie/o-* and \*-*ske/o-* that are attested in Hittite).

Solution:

\*-*e/o-* is also subjunctive marker, therefore often thought that pres. \*-*e/o-* derives from subj. \*-*e/o-*.

Explains absence of \*-*e/o-* in Anat.: loss of the subjunctive as a category.

Implication: development of subj. \*-*e/o-* to pres. \*-*e/o-* is a common innovation of the non-Anatolian languages: argument **in favor** of Indo-Hittite!

8. Endings:	Hitt.	cl.PIE
	1pl. - <i>uen(i)</i>	1pl. *- <i>me(-)</i>
		1du. *- <i>ue(-)</i>

What is the connection between Hitt. 1pl. -*uen(i)* and Skt. 1du. \*-*ue(-)*?

- If cl.PIE system is original: difficult how 1du. \*-*ue(-)* > 1pl. -*uen(i)*.

- But Hittite system cannot be original either.

→ Rather original clusivity system (Watkins 1969: 47), in which *\*-me(-)* was exclusive ('I and others, but not you') and *\*-ue(-)* was inclusive ('you and me together').

The development of *\*-ue(-)* into a dual category is then a common innovation of the non-Anatolian languages: argument **in favor** of Indo-Hittite.

9. Moods:	Hitt. modal particle <i>man</i>	cl.PIE subj. <i>*-e/o-</i> opt. <i>*-ieh<sub>1</sub>- / *-ih<sub>1</sub>-</i>
-----------	------------------------------------	---

Loss of subjunctive in Hittite: see point 6a.

Optative clearly archaic: intricate ablaut:	<i>*CC-ieh<sub>1</sub>-m</i>	<i>*CC-ih<sub>1</sub>-mé</i>
	<i>*CC-ieh<sub>1</sub>-s</i>	<i>*CC-ih<sub>1</sub>-té</i>
	<i>*CC-ieh<sub>1</sub>-t</i>	<i>*CéC-ih<sub>1</sub>-nt</i>

→ It must have been created in pre-PIE times, and thus lost in Hittite: **no** argument for Indo-Hittite.

### Hittite *hi*-conjugation vs. cl.PIE perfect

10. Origin of *hi*-conjugation much debated, but clearly connected with the 'classic' perfect:

Hitt. *\*CóC-h<sub>2</sub>e(-i)* ~ cl.PIE *\*Ce-CóC-h<sub>2</sub>e*

Two main views:

1. 'perfect theory' (Eichner 1975)  
i.e. Hitt. *hi*-conj. < PIE perfect
2. '*h<sub>2</sub>e*-conjugation theory' (Jasanoff 2003)  
i.e. both *hi*-conj. and 'classic' perfect < original "*\*h<sub>2</sub>e*-conjugation"  
[although at the surface this looks like an Indo-Hittite-like theory, Jasanoff explicitly denies that]

The difference between the two theories is in explaining the mismatches between the Hittite *hi*-conjugation and the 'classic' perfect.

## 11. Mismatch 1: Ablaut

‘classic’ perfect: root-ablaut  $*o/\emptyset$ :  $*Ce-CóC-h_2e$  /  $*Ce-CC-mé$

Hittite *hi*-conj.: in most cases  $*o/\emptyset$  (*kānki* / *kankanzi* <  $*kónk-$  /  $*kñk-$ ),  
but occasionally  $*o/e$  (*šākki* / *šekkanzi* <  $*sókh_1-$  /  $*sékh_1-$ )

Eichner (‘perfect theory’):  $*o/\emptyset$  is original, and  $*e$ -grade derives from cases like  
 $*h_1é-h_1r-ēr$  > Hitt. *erer*.

Jasanoff (‘ $h_2e$ -conj. theory’):  $*o/e$  is original, and  $*o/\emptyset$  a later development.  
Thus: PIE  $*o/e$ -ablauting  $h_2e$ -conjugation  $*CóC-h_2e$  /  $*CéC-meH$

### 11a. However:

All Hitt.  $\bar{a}/e$ -verbs are of a secondary origin; the original root ablaut of *hi*-verbs was always  $*o/\emptyset$ . (Kloekhorst 2012, 2014; pace Melchert 2013)

→ There is thus no mismatch in ablaut anymore.

→ The formal basis for an  $*o/e$ -ablauting ‘ $h_2e$ -conjugation’ is gone

## 12. Mismatch 2: Reduplication

‘classic’ perfect: always reduplication:  $*Ce-CóC-h_2e$  /  $*Ce-CC-mé$

Hittite *hi*-conj.: in principle no reduplication:  $*CóC-h_2e(i)$ ,  $*CC-uén(i)$ ,  
but reduplication in imperfectives (e.g. *halihla/i<sup>-i</sup>*, *lilakk<sup>-i</sup>*,  
*lilhuua/i<sup>-i</sup>*, *ueuakk<sup>-i</sup>*)

Eichner (‘perfect theory’): reduplication was lost in Hittite. Heavily criticized by Jasanoff (2003: 15-6).

Jasanoff (‘ $h_2e$ -conj. theory’): non-reduplication original (in the  $h_2e$ -conjugation); reduplication in ‘classical’ perfect is in fact a present-marker (‘classic’ perfect as a present to  $h_2e$ -conjugated aorists) [later (2015): a reduplicated ‘intensive aorist’].

### 12a. However:

Not all ‘classic’ perfects are reduplicated:  $*uóid-h_2e$  /  $*uid-mé$  ‘to know’ < ‘to be in a state of having seen’: clearly archaic formation

Moreover: 3pl.  $*-\bar{e}r$  (<  $*-ers?$ ) as well as  $*-r(s)$   
[Lat.  $-\bar{e}re$ , Hitt.  $-er$ ] [Skt.  $-ur$ , Av.  $-arə$ ]

- reminiscent of root pres.  $*CC-\acute{e}nti$  vs. redup. pres.  $*C\acute{e}-CC-nti$
- So unreduplicated  $*CC-\acute{e}r$  vs. reduplicated  $*C\acute{e}-CC-r(s)$

→ ‘classic’ perfect could be reduplicated as well as unreduplicated.

→ this matches the situation in Hittite:  $hi$ -verbs are unreduplicated as well as reduplicated (when imperfectives).

→ with this adaption, the ‘perfect theory’ can still be upheld.

Implication: Hitt. situation is original, and spread of reduplication in the perfect (except in  $*u\acute{o}id-h_2e$ ) is a common innovation of the non-Anatolian languages: argument **in favor** of Indo-Hittite

### 13. Mismatch 3: Semantics

‘classic’ perfect: state that is the result of the completion of an action, sometimes with focus on the state (e.g. Gr.  $\lambda\acute{\epsilon}\lambda\omicron\iota\pi\epsilon\nu$  ‘is away’ <  $*le-l\acute{o}ik^w-e$ ), sometimes resultative (Skt.  $rireca$  ‘has left’ <  $*le-l\acute{o}ik^w-e$ ).

Hittite  $hi$ -conj.: no specific semantics:

transitives (e.g.  $h\bar{a}n-i$  ‘to draw (liquids)’) vs. intransitives (e.g.  $h\bar{a}t-i$  ‘to dry up’); activities (e.g.  $i\check{s}k\bar{a}r-i$  ‘to stab’) vs. processes (e.g.  $\bar{a}k(k)-i$  ‘to die’) vs. states (e.g.  $i\check{s}pai-i$  ‘to be satiated’).

Jasanoff: - the  $h_2e$ -conjugation had no specific semantics (i.e. projecting the Hittite situation back to PIE).  
- the ‘classic’ perfect derives from a reduplicated present to  $h_2e$ -conjugated aorists which “by late PIE had evolved into a separate non-eventive category” [but no explanation of how!] (2003: 168-9).  
- or it derives from “a kind of reduplicated aorist” that had an intensive meaning, which developed into a resultative-stative formation (2015: Va).

Eichner: - First step:  $hi$ -conjugation consists of a core of stative ( $\check{s}\bar{a}k\check{h}i$  ‘I know’) and resultative perfects ( $\bar{a}r\check{h}i$  ‘I arrive’), in which a new tense-distinction was made (pres. in  $-h_2e-i$  vs. pret. in  $-h_2e$ ).

- Second step: *mi*-verbs with *o*-vocalism in the stem are transferred to the *hi*-conj. (*dā*<sup>-i</sup> ‘to take’ < \**dō*- < \**deh*<sub>3</sub>-; *lāk*<sup>-i</sup> ‘to knock down’ < \**log*<sup>h</sup>-*eie*-; *šunna*<sup>-i</sup> ‘to fill’ < \**sunō*- < \**su-ne-h*<sub>3</sub>-).
- The result is a semantically heterogeneous group of *hi*-verbs.

### 13a. Jasanoff is critical on both steps of Eichner’s account:

- Against step 1, Jasanoff states that perfects were in present tense, since the pluperfect is its preterite counterpart (e.g. Skt. *abibhet* ‘feared’).

However: the pluperfect is probably a late innovation (note that Hitt. *ueuakta* is *not* a pluperfect, but an imperfective *hi*-verb). So Eichner’s assumption of an original non-tensed perfect is cogent.

- Against step 2, Jasanoff states that the transfer of verbal stems from one conjugation to another on the basis of stem vocalism is unparalleled.

However, examples like \**CC-néh*<sub>3</sub>- >> Gr. -*vū*-verbs show that such developments do occur. Moreover, there are many good word-equations to support Eichner’s scenario.

Therefore: Eichner’s theory clearly better in explaining the semantic mismatch than Jasanoff’s theory.

### 14. Conclusion regarding origin of *hi*-conjugation

→ Eichner’s ‘perfect theory’ is better in explaining the Hitt. *hi*-conj. than Jasanoff’s ‘*h*<sub>2</sub>*e*-conjugation theory’

→ one adaption: - originally there were both reduplicated and unreduplicated perfects (as is the situation in Hittite)

- and in the non-Anatolian languages reduplication spread.

→ an argument **in favor** of the Indo-Hittite hypothesis!



## Overall conclusions

15. The Hittite verbal system can largely be derived from the ‘classic’ PIE verbal system
16. In many cases, we can assume innovation in Anatolian
17. Some cases remain, where common innovations of the non-Anatolian languages can/must be assumed: arguments in favor of Indo-Hittite hypothesis:
  - development of subj. marker *\*-e/o-* into a present marker
  - development of a clusivity system to a plural/dual system
  - generalization of reduplication in the perfect

## Consequences for the position of Anatolian

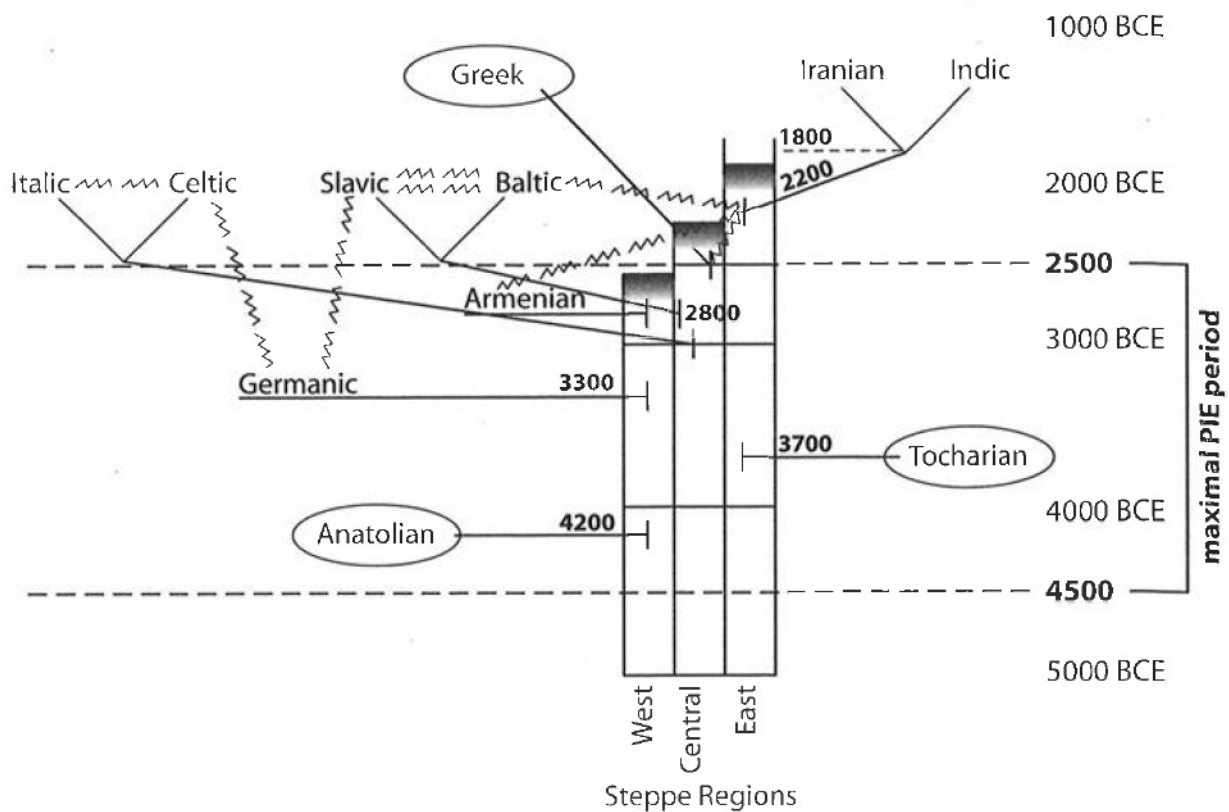
18. The three Indo-Hittite arguments from the verbal system can be added to the 14 arguments as mentioned under point 2.
19. Includes some large innovations:
  - creation of the feminine gender (including all inflection for it!)
  - development of subj. *\*-e/o-* into present marker and subsequent productivity
  - generalization of the reduplication in the perfect
20. Absolute dating difficult. But Oettinger (2013/14: 171):

“Eine angemessene Schätzung wäre wohl, dass die Anatolier den indogermanischen Verband ganz ungefähr 800 bis 1000 Jahre früher verlassen haben als die übrigen indogermanischen Gruppen.”

→ perhaps even longer period: 1000-1200 years?

→ fits the idea that Anatolians migrated from the steppes into the Danube valley around 4200 BC (Suvorovo-Novodanilovka complex), with other major migrations taking place after 3000 BC (Anthony 2007: 100, 249-62)

Anthony 2007: 100:



**21.** However: all three large innovations are also found in Tocharian.

But gap between Anatolian (4200 BC) and Tocharian (3700 BC) is according to Anthony a mere 500 years.

- is this enough time?

but also: - are the archaeological datings correct?

- e.g., can't Anat. be a bit older and/or Toch. a bit younger?

→ we need more concrete ideas about datings, the status of "Indo-Tocharian", innovations in Graeco-Aryan, etc.!

## References

- Eichner, H., 1975. "Die Vorgeschichte des hethitischen Verbalsystems." In: Helmut Rix (ed.), *Flexion und Wortbildung: Akten der V. Fachtagung der Indogermanischen Gesellschaft, Regensburg, 9.-14. September 1973*, 71-103. Wiesbaden: Reichert.
- Jasanoff, J.H., 2003, *Hittite and the Indo-European Verb*. Oxford: Oxford University Press.
- Jasanoff, J.H., 2015, Hittite and the IE verb 100 years after Hrozný; or, What happened to the perfect in Hittite?; Handout of the lecture held at the *Arbeitstagung der Indogermanischen Gesellschaft 2015: 100 Jahre Entzifferung des Hethitischen: Morphosyntaktische Kategorien in Sprachgeschichte und Forschung*, 22 September 2015, Marburg.
- Kloekhorst, A., 2008. *Etymological Dictionary of the Hittite Inherited Lexicon* (= *Leiden Indo-European Etymological Dictionary Series 5*). Leiden - Boston: Brill.
- Kloekhorst, A., 2016, The Anatolian stop system and the Indo-Hittite hypothesis, *Indogermanische Forschungen* 121, 213-247.
- Kloekhorst, A., 2017a, The Hittite genitive ending *-ān*, *Usque Ad Radices: Indo-European studies in honour of Birgit Anette Olsen* (edd. B.S.S. Hansen, A. Hyllested, et al.), Copenhagen: Museum Tusulanum Press, 2017, 385-400.
- Kloekhorst, A., 2017b, The position of Anatolian: The phonetics of the Proto-Anatolian 'laryngeals', lecture held at the workshop *The Indo-European family tree*, University of Copenhagen, 15-17 February 2017.
- Melchert, H.C., fthc., The position of Anatolian; to appear in Michael Weiss & Andrew Garrett (edd.), *Handbook of Indo-European Studies*.
- Oettinger, N., 2013/2014, Die Indo-Hittite-Hypothese aus heutiger Sicht. *Münchener Studien zur Sprachwissenschaft* 67:149-176.
- Watkins, C., 1969, *Geschichte der indogermanischen Verbalflexion. Indogermanische Grammatik* (ed. J. Kuryłowicz), *Band III: Formenlehre. Erster Teil*. Heidelberg: Winter.