"Western Affinities" of Anatolian

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That some shared features of various IE dialects may reflect contact after the respective dialects had already undergone divergent developments is widely acknowledged, and there has been much discussion of the position of subgroups such as Germanic and Albanian and of the true relationship of Italic and Celtic or of Baltic and Slavic. However, the growing popularity of the view that Anatolian was the first subgroup to become isolated from the rest of the PIE speech community (by whatever label one expresses this) has somehow led to a widespread neglect of this possibility for Anatolian. Only a strict and quite unrealistic version of the Stammbaum model precludes that Anatolian, after sufficient isolation not to have shared in a few common innovations of the rest of the IE languages, subsequently came into contact with other subgroups. I will reexamine for Anatolian the issue of putative shared, non-trivial innovations with and borrowings from Italic, Celtic, and Germanic, following upon the excellent but almost totally ignored study of Jaan Puhvel 1994.

1 Premises

Most conceptions of the Stammbaum model allow for the effects of language contact after initial divergence. See e.g. Ringe, Warnow and Taylor (2002: 111) on the position of Germanic within Indo-European: "...the hypothesis that Germanic was originally a near sister of Balto-Slavic and Indo-Iranian...we are led to posit an episode of intensive language contact between Germanic and the western languages well before the known peri-

ods of intensive contact with Celtic that have been established by earlier researchers."

Those who do not accept Balto-Slavic or Italo-Celtic as unitary protolanguages explain the many shared (especially innovative) features as due to prehistoric contact after the formation of the respective distinct protolanguages (Baltic and Slavic, Italic and Celtic). See e.g. Watkins (1966: 39) on the shared thematic gen. sg. $-\bar{\imath}$: "we must conclude that the community of $-\bar{\imath}$ in Italic and Celtic is attributable to early contact, rather than to an original unity."

Such a possibility is almost universally ignored or excluded for Anatolian. Post-divergence contact is mostly limited to shallow effects of Anatolian on only dialectal Greek (NB: not on Proto-Greek): e.g. Puhvel (1991a: 13–20) on East Ionic -0KE- iteratives from Hittite, Watkins (2000: 3) on the "Pindaric schema" from Anatolian, and Oettinger (2002: esp. 99–100) on Greek psilosis as due to Lydian influence.

There has been one marked exception. Puhvel (1994) argued for Anatolian as a western dialect sharing features with Italic, Celtic, and Germanic (plus or minus Greek and Baltic). However, his paper was both initially and subsequently universally (but wrongly) ignored. The apparent cause is the supposed position of Anatolian as the first subgroup to become isolated from PIE. But such early isolation in no way precludes shared post-divergence contact effects any more than it does for any other subgroup. One should note in particular that "core IE" innovations not shared by Anatolian are now widely regarded as relatively modest in scope: see e.g. Oettinger 1986: 24–25 and Rieken 2009. An "Indo-Hittite" model in the sense of Sturtevant or of Lehrman 1998 is now a distinctly minority viewpoint. Therefore it seems appropriate for a conference on the *European lexicon*, to revisit the question and to review the evidence. Please note one divergence from Puhvel (1994: 317 et passim): I will leave aside the further question of Tocharian as also being a possible "western" dialect.

2 Putative Shared Features of Anatolian and Italic, Celtic, and Germanic (± Greek & Baltic)

I begin with a critical review of proposed lexical isoglosses shared uniquely by Anatolian with various western dialects of Indo-European. The list

does not purport to be exhaustive and is necessarily subjective—other scholars would add further examples and omit some given here and also differ in their ranking of the probability of the respective etymologies.¹

2.1 Lexical root equations (the first five including Greek)

- 1 *(h₁)el- 'eel': Hitt. illuy-anka- 'eel-snake', Grk. ἔγχ-ελυς '(snake-) eel', Lat. angu-īl(l)a '(snake-) eel', PGmc. *æla- 'eel' (Katz 1998).
- 2 * h_2ed 'dry': Hitt. hat- 'dry up', Grk. ἄζω 'idem', Lat. ador 'spelt' (a word equation with Hitt. ZÍZ-tar 'spelt' is possible but unprovable for the last item; for the first two see Puhvel 1991b: 248 and Kloekhorst 2008: 329; for the last Watkins 1973).
- 3 * h_2 we $h_2(s)$ -'lack, fail': Hitt. wašt-'miss the mark, fail; sin' (loss of initial * h_2 by "Saussure-Hirt" in a hi-verb * h_2 wó h_2 st-), waštai-'absence, void (in šalliš waštaiš); sin', Grk. ἄτη 'blindness; sin' < 'empty-headedness', ἀάσθην 'I was blinded', Lat. uāstus 'desolate', OIr. fás 'empty, void', OHG wuosti 'empty' (revising Puhvel 1992: 6–8).
- 4 *(s)kerp- 'pluck, remove': Hitt. karp- 'pluck, remove; lift', Grk. καρπός 'fruit', Lat. carpō 'pick, pluck', Eng. 'harvest', Lith. kir□pti 'cut off' (with Puhvel 1997: 98 and Kloekhorst 2008: 453–4, contra LIV²: 201).
- *spend- 'libate': Hitt. šipand-/išpant- 'libate; consecrate', Grk. σπένδω 'libate', Lat. spondeō 'pledge'.
- 6 *al-'sweat': Hitt. allaniya-'to sweat', OIr. allas 'sweat' (Puhvel 1984: 29 with refs.).
- 7 *dhabh- (or *dhebh-) 'befall': Hitt. tapešni 'in the act', Goth. gadaban 'befall, happen to' (Puhvel 2008: 64).
- 8 *dheng™- 'dark': Hitt. dankui- 'dark', ON døkkr and do□kkr 'dark', etc. (Kloekhorst 2008: 829 with refs.).
- 9 *dheuh₂- 'come to an end, come full circle': Hitt. tuḥš- (tuḥḥušta 'it is finished'), Lat. fūnus 'funeral', OIr. dún 'ring-fort' (Watkins 1991).

I am indebted to Benjamin Fortson for calling my attention to several examples I failed to cite in the oral version of this paper. I have not, however, adopted all of his suggestions, and I naturally am solely responsible for the selection offered here.

- 10 *ghreh₁- 'grow': Hitt. kariyant- 'grass', Lat. grāmen 'grass', ON grōa 'grow' (Puhvel 1997: 80; Kloekhorst 2008: 449).
- 11 * h_2ebh 'river': Hitt. hap(a)-, Pal. $h\bar{a}pna$ -, CLuv. $h\bar{a}pi$ -, Lat. amnis, OIr. a(u)b, MW afon (Puhvel 1991b: 115 and Kloekhorst 2008: 294).
- 12 * $h_{2/3}$ ey- 'trust': Hitt. $h\bar{a}$ 'trust, believe' < * h_2 oyéye/o-, OIr. óeth and Goth. aips 'oath' (Melchert 1994: 177, modifying Puhvel 1991b: 10, contra Kloekhorst 2008: 267).
- 13 * h_2 end(h)- 'heat': Hitt. handais- 'heat', OIr. and- 'kindle' (Puhvel 1991b: 107; Kloekhorst 2008: 292).
- 14 **les-* 'gather': Hitt. *lešš-* & *lišā(i)-* 'idem', Goth. *lisan* 'pick, gather', Lith. *lèsti* 'pick up' (Puhvel 2001: 97, Kloekhorst 2008: 525 [first Hittite stem only]).
- 15 *merg*- 'dark': Hitt. markuwaya- = CLuv. marwaya- = Lyd. mariwda- 'dark' (of deities), ON myrkr, OE mierce 'dark' (Puhvel 2004: 78; Kloekhorst 2008: 560 and 563).
- 16 *(s)mer- 'melt, stew': Hitt. marra- and marriye- 'stew, steep, melt, dissolve', OE smorian 'smother', Germ. schmoren 'stew, braise' (Puhvel 2004: 62).
- 17 *serk- 'repair, make restitution': Hitt. šarni(n)k- 'make restitution', Lat. sarciō 'to mend; make restitution (Puhvel 1994: 322; Kloekhorst 2008: 737).
- 18 *skeu-(bh)- 'push': Luvo-Hittite paškuw(āi)- (*pe/o-sku-) 'abandon, reject', Goth. af-skiuban 'idem', Germ. schieben etc. (Puhvel 2011: 191–2).²

2.2 Word equations and cognates derived from word equations

19 *ĝhelh2-ro- 'harmful, distressing' > Hitt. kallar- 'baneful, unfavorable' (pace Kloekhorst 2008: 429 et al., there is no evidence that the word is Luvian!), OIr. galar 'illness, disease' (neut.), MW galar

² In the oral version of this paper I also included in this list*yeg- 'cold, ice', represented by Hitt. ega- 'ice', OIr. aig 'ice', ON jaki 'ice-floe' (Puhvel 1984: 258, Kloekhorst 2008: 235). I am grateful to Martin Kümmel for apprising me that this root is also attested in Eastern Iranian and Nuristani: Wakhi yaz = Sarikoli yoz 'glacier' and Kati yūċ 'cold' (see Morgenstierne 1949: 280 and 1974: 106b, Turner 1966: 601 [10396], and Mallory & Adams 1997: 287a).

- 'grief, sorrow' (masc.). Thus with Driessen (2003:301–2), citing further cognates in Germanic, Baltic, and Slavic.
- 20 * $h_2ed(h)$ 'hawthorn': Hitt. hat-alkiš- (compound 'hawthorn bush') and OIr. ad 'whitethorn' (Watkins 1993: 246–7).
- 21 * \hat{k} ónkei 'hangs' (tr.) > Hitt. $k\bar{a}nki$, Goth. hahan etc. (with Jasanoff 2003: 72–4).
- 22 *katu- 'fight' > Hitt. kattu- 'talon' (sic!), OIr. cath 'battle, fight', OHG hadu- 'idem'. Contra Melchert 1979: 270, Puhvel 1997: 140, Kloekhorst 2008: 466, et al., this word must be separated from the family of kattawatar 'enmity' cognate with Grk. κότος 'spite'. For 'weapon' < 'fight' compare Germ. (obsol.) Fochtel 'broad sword' < fechten 'fight' (Grimm 1862[1999]: 3.1864).
- 23 *neh₂(-)s-ro- 'fearful, respectful' > Hitt. *naḥšar- (an adjective contra Puhvel 2007: 13, and base of the noun naḥšaratt- 'fear, awe') and OIr. nár 'modest; shameful'. For the phonology see Melchert 1993: 106.
- 24 * h_2 im- eh_2 'copy, replica' is the base of Lat. $im\bar{a}$ - $g\bar{o}$ 'copy' and Hitt. himma- 'replica, substitute' < * h_2 im- h_2 -o- (type of $r\acute{a}tha$ 'chariot' < * $r\acute{o}t$ - h_2 -o- < * $r\acute{o}t$ - eh_2 'wheel'). Compare Puhvel 1991b: 315 and Kloekhorst 2008: 344.
- 25 * $k\acute{e}rh_{1/3}$ -s 'wheat' > Hitt. kar- $a\check{s}$ /kars/ (archaic neuter s-stem), base of hysterokinetic * $kerh_{1/3}$ - $\bar{e}s$ > Lat. $Cer\bar{e}s$ (Schindler, class instruction ca. 1976; cf. KZ 89 [1975] 63; contra all others not from * \hat{g} herzdh-).
- 26 ?*dhón-u-, *dhn-ów- 'fir tree' > Hitt. tanāu (nom.-acc. generalized from weak stem) and Gmc. *danwō (virtual *dhon-w-eh²) > OHG tanna (after Neumann 1961: 77–8).
- 27 ?*peth₂lo-'thin, slender' > Lat. petilus > (virtual) *peth₂lo-wo- > Hitt. pattalwa-'plain, simple' (with Puhvel 1979: 210–11, pace Kloekhorst 2008: 680). Phonology as in *naḥšar- (see 20 above).³

Since the false idea seems unwilling to die, I must explicitly insist contra Puhvel 1994: 320 et al. that Hittite *tuzzi-* is *not* related to **teuteh*₂- 'people' reflected in Italic-Celtic-Germanic-Baltic. Hitt. *tuzzi-* means primarily 'camp' (as proven by the denominative verb *tuzziya-* 'to encamp'), only secondarily 'army' and reflects a virtual **dhh*₁-*u*-*ti-* 'thing placed, pitched' (Carruba 1966: 23, Neu 1971: 66, Melchert 1984: 166, Oettinger 1986: 29, Kloekhorst 2008: 908).

I will not dwell on arguments for or against any of the equations listed above (or others), because unfortunately they simply are not probative in trying to demonstrate post-divergence contact between Anatolian and the western dialects. All of them, even those involving word equations, can be interpreted as common retentions that just happen to be preserved in Anatolian and the western dialects. Their restricted distribution is also always open to falsification in the light of new discoveries or identifications in other branches (see footnote 2).

2.3 Putative common innovations

I focus in what follows rather on four cases of word equations or near word equations that for various reasons may arguably represent common innovations in Anatolian and a western dialect rather than shared retentions of a PIE formation. I concede in advance (as implied by the word "arguably") that they are all less than absolutely compelling. There is not yet a proverbial "smoking gun" to prove post-PIE Anatolian contacts with the west. I cite these cases here in some detail for two reasons: first, because their possible status as innovations has not been previously brought into the discussion; second, because they illustrate in my view the only *kind* of evidence that can in principle settle the question.

2.3.1 Hitt. *imma* = CLuv. *imma* = HLuv. *i-ma* / imma/ = Lat. *immō*

Götze & Pedersen (1934:77–9) already compared Hitt. imma and Lat. $imm\bar{o}$, and in Melchert 1985 I presented further arguments that the Hittite and Luvian word means 'indeed, really' or 'rather', with an overall usage matching precisely that given by Rosén (2003: 171, contra ibid. 179!) for early Latin $imm\bar{o}$: "...a connector meaning "correction!"... expressing either contradiction and rebuttal or assent and intensification." I weakened my case by two errors: a false definition of Hittite and Luvian imma as a "focus particle" instead of an asseverative adverb (see the correction in Melchert 2002: 229) and an erroneous reconstruction * $id-m\bar{o}$. As argued by Kimball (1999: 299), citing Eichner (Die Sprache 28 [1981] 64), Luvian -mm- is impossible from *-dm-, and imma thus reflects rather acc. sg. * $im+m\bar{o}$ (compare for *im as a particle Skt. im). The element * $-m\bar{o}$ is the

Hittite focus conjunction -ma and Lycian me, perhaps < *-'moh₂ beside Grk. $\mu \dot{\alpha}$ < *mh₂.⁴

In the oral version of this paper I argued against a shared inheritance from PIE on phonological grounds: PIE had a constraint against surface geminate consonants (see e.g. Mayrhofer 1986: 120). This prohibition included *[-mm-]. As seen by Rasmussen (1999/II: 647), OIr. neim 'poison' reflects directly *[némn] < */ném-mn/, a neuter men-stem *'gift' to *nem-'allot' (compare for the sense Germ. Gift). A PIE */immō/ would thus have appeared as a surface form *[imō], and I claimed that restoration of the geminate was made unlikely by the unanalyzability of the adverb in the prehistory of both Anatolian and Latin: *-mō was productive in Anatolian, but evidence for stem *ei- is limited only to (possibly!) *im in Hittite neuter nom.-acc. sg. ini (Melchert 2008: 368), while an *im is likely in Latin beside is and id, but there is no other trace of *-mō. The same factors make extremely unlikely parallel but independent creations.

However, as Michael Weiss has brought to my attention, the status of the geminate in Latin *immō* is not so straightforward. The word is attested at least once in an inscription (CIL 2.4485.2) as *imo*, and the word scans as two shorts several times in Plautus (*Amphitryo* 726, *Cistellaria* 565) and Terence (*Hecyra* 437): see Lindsay 1968: 256–7. This means that the word must have undergone "iambic shortening" and that the first syllable was short. The oldest Latin form thus appears to be *imō*, congruent with the putative PIE surface form, and *immō* would be a secondary development, whether or not it shows "expressive gemination" (as suggested e.g. by Ernout & Meillet 1959: 310). This explanation is unlikely for Hittite and Luvian, where geminate -*mm*- is commonplace, but as I conceded (Melchert 2008: 368, note 5), we do not actually know how full a paradigm the pronominal stem *(e)i- had in Proto-Anatolian, so a renewal of **imō* as **immō* cannot be excluded. In any case, the Latin facts seriously weaken my claim that this case must involve a common innovation.

2.3.2 HLuv. REL-ipa/kwip(p)a/ = Lat. quippe

HLuvian REL-ipa /k^wip(p)a/ means 'indeed, certainly' (Goedegebuure 1998, Melchert 2002, with minor revision by Goedegebuure 2010: 81¹³) and

⁴ This further analysis of *- $m\bar{o}$ is tangential to the status of *im- $m\bar{o}$.

directly matches in form and function Lat. quippe 'in as much as; indeed, why (asseverative)' <* k*id-pe*'why then?' (the interrogative sense is preserved in $quippin\bar{\imath}$ 'why not?'). Also likely cognate is Greek $\tau(\bar{\imath}\pi\tau\epsilon)$ 'why then?' (thus with Schwyzer 1939: II.572 contra others). The interrogative base is also seen in Lycian tibe 'or' (Morpurgo Davies 1975: 164). Greek shows that the geminate is post-PIE, so there is no phonological argument against inheritance, but the unique three-way isogloss remains striking, especially since usage as 'why then' represents a grammaticalization of just the neuter nom.-acc. singular plus the particle *-pe (i.e., there is no evidence for a full interrogative paradigm with *-pe). Grammaticalization of a neuter nom.-acc. singular as 'why' is indeed fairly trivial (compare Hitt. kuit 'why?' etc.), but while the use of *-pe is productive in Luvian, it is very limited in Latin (besides quippe only in quispiam and nem-pe), and it appears nowhere else in Greek.

2.3.3 Lydian $n\tilde{a}v = \text{Lat. } nam$

The Lydian conjunction $n\tilde{a}v$ formally matches Lat. $nam < *neh_2m$ [na:m]. For derivation from an ablative-instrumental instead of a feminine accusative singular see Dunkel 1997: 74-5. The sense of the Lydian is predictably indeterminate. Latin nam has several uses: affirmative 'certainly', explanatory and causal 'for', but in later Latin also continuative 'then; moreover, further'. The last meaning makes possible a comparison with Hitt. namma 'further, next, then; again' $< *n\bar{a}m+m\bar{o}$ (Melchert 1992: 37; pace Puhvel 2007: 58; cf. Rosén 2003: 179 on the comparison with $imma = imm\bar{o}$). More striking is the use of $n\tilde{a}v$ in Lydian to form a generalizing relative: $n\tilde{a}-qi=$ 'who-, whatever' (Gusmani 1964: 171). One may also note with Gusmani the evidence that $n\tilde{a}-$ is originally separable in this usage: clause-initial $n\tilde{a}m$ qid is $n\tilde{a}=m$ qid 'whatever' with enclitic element -m. It is hard to avoid comparison with Latin -nam attached to interrogatives to express surprise or disbelief: $qu\bar{i}nam$ 'who, pray?' or 'who on earth?'. In early Latin nam in this usage is also still separable from the interrogative. Ernout &

The shared innovation is the creation of the marked interrogative $^*k^wid-pe$ 'why then?'. Since it is not even shared by Lycian, the further development in HLuvian and Latin to an asseverative adverb is surely independent (Melchert 2002: 230).

Meillet (1959: 428) even claim a generalizing meaning: "-nam enclitique s'ajoute à des pronoms ou à des particules de caractère interrogative ou indéfini pour en renforcer l'indetermination". Unfortunately, I have thus far found no corroboration for such a use. In the absence of such evidence the question becomes: is the generalizing sense of the Lycian derivable from the actually attested Latin usage?

2.3.4 Hitt. *kappūwe/a-* and Lat. *computāre*

Hitt. kappūwe/a- 'count, rally, reckon (with)' uncannily resembles Lat. computare 'count'. As per Puhvel (1997: 71), following Pisani, Lat. putare primarily meant 'to cut': on the one hand notches onto a tally stick, whence 'count', and on the other hand plants, whence 'prune'. Contra Ernout-Meillet (1959: 548) et al., there is *no* connection with *pūrus* 'pure' etc. For the primary sense 'cut', whence 'divide', see also Toch. putk- (Melchert 1978: 123 w/refs.). Puhvel, loc. cit., assumes for the Hittite a prefix *komplus denominative verb to a noun *puwó- 'notch, incision', but more likely is a result noun *pów-o- (note the spellings kap-pu-u° pointing to a prehistoric diphthong), 6 whence a virtual denominative *kom-powe-ye/o-. The isolated use of *kom- as a prefix in Hittite plus the matching semantic development to 'count, reckon' (by cutting marks) suggests a common origin, despite the difference in the formation of the verbal stem. Whether the root *peu- 'cut, separate, divide' should be combined with the *ph2u-'strike', said to be the source of Luvo-Hittite pūwa- 'crush', Lat. pauīre 'beat', and Grk. πάιω 'strike, smite' (e.g. Kloekhorst 2008: 684 w/refs.) may be left open (compare LIV2: 481 for a very different account of the Latin and Greek verbs).

3. Conclusions

As already intimated above, none of these examples can be rated as more than suggestive of a shared innovation. In fact, the case for *im- $m\bar{o}$ as having to be an innovation rather than a shared inheritance is so weak I will

⁶ On Hittite spellings with *Cu-u* as pointing to *ou see Kloekhorst 2008: 35–60, especially 58–59.

not consider it further. I do find two points noteworthy regarding the remaining three. First and most interestingly, all involve Anatolian and specifically Latin (arguably but not assuredly including Greek in the case of $^*k^wid\text{-}pe$). While we can only speculate about the possible geographic configuration of early Indo-European dialects after initial divergence, we may wonder whether it is coincidence that the western dialect that putatively shares innovations with Anatolian is the one that in attested times is spatially closer to Anatolian than Celtic, Germanic, or Baltic. Second, two of the examples involve grammaticalization. Whether these particular cases are truly innovations rather than retentions remains an open question, but I believe that this is the direction which offers the most promise of finding compelling evidence.

References

- Carruba, Onofrio. 1966. *Das Beschwörungsritual für die Göttin Wišurijanza* (Studien zu den Boğazköy-Texten 2). Wiesbaden: Harrassowitz.
- Driessen, C. Michiel. 2003. Evidence for **ĝhelh*₂-, a new Indo-European root. *Journal of Indo-European Studies* 31.279–305.
- Dunkel, George. 1997. B. Delbrück and the instrumental-ablative in *-m. In Emilio Crespo & José Luis García Ramón (eds.), *Berthold Delbrück y la sintaxis indoeuropea hoy*, 63–83. Madrid& Wiesbaden: Ediciones de la UAM & Reichert.
- Ernout, Alfred, and Antoine Meillet 1959. *Dictionnaire étymologique de la langue latine*. 4^e edition. Paris: Klincksieck.
- Goedegebuure, Petra. 1998. The Hieroglyphic Luwian particle REL-*i*=*pa*. In Sedat Alp & Aygül Süel (eds.), *Acts of the III*rd *International Congress of Hittitology, Çorum, September 16-20, 1996*, 233–45. Ankara: Uyum Ajans.
- Goedegebuure, Petra. 2010. The Luwian demonstratives of place and manner. In Itamar Singer (ed.), *ipamati kistamati pari tumatimis. Luwian and Hittite studies presented to J. David Hawkins on the occasion of his 70th birthday*, 76–94. Tel Aviv: Tel Aviv University Institute of Archaeology.
- Götze, Albrecht, and Holger Pedersen. 1934. Mursilis Sprachlähmung; ein hethitischer Text. Mit philologischen und linguistischen Erörterungen

- (K. Danske videnskabernes seiskab. Historisk-filologiske meddeleiser, 21,1). Copenhagen: Levin & Munksgaard.
- Grimm, Jacob and Wilhelm. 1862[1999]. *Deutsches Wörterbuch*. München: Deutscher Taschenbuch Verlag.
- Gusmani, Roberto. 1964. Lydisches Wörterbuch. Heidelberg: Winter.
- Jasanoff, Jay. 2003. *Hittite and the Indo-European verb*. Oxford & New York: Oxford University Press.
- Katz, Joshua. 1998. How to be a dragon in Indo-European: Hittite *illuyankaš* and its linguistic and cultural congeners in Latin, Greek and Germanic. In Jay Jasanoff, H. Craig Melchert & Lisi Oliver (eds.), *Mír curad: Studies in honor of Calvert Watkins* (Innsbrucker Beiträge zur Sprachwissenschaft 92), 317–34. Innsbruck: Institut für Sprachwissenschaft der Universität Innsbruck.
- Kimball, Sara. 1999. *Hittite historical phonology* (Innsbrucker Beiträge zur Sprachwissenschaft 95). Innsbruck: Institut für Sprachwissenschaft der Universität Innsbruck.
- Kloekhorst, Alwin. 2008. *Etymological dictionary of the Hittite inherited lexicon*. Leiden & Boston: Brill.
- Lehrman, Alexander. 1998. *Indo-Hittite redux: Studies in Anatolian and Indo-European verb morphology*. Moscow: Paleograph.
- Lindsay, Wallace M. 1968. *Early Latin verse*. London & New York: Oxford University Press.
- LIV^2 = Helmut Rix et al. (eds.). 2001. *Lexikon der indogermanischen Verben*. Zweite, erweiterte und verbesserte Auflage. Wiesbaden: Reichert.
- Mallory, James, and Douglas W. Adams. 1997. *Encyclopedia of Indo-European culture*. London & Chicago: Fitzroy Dearborn.
- Mayrhofer, Manfred. 1986. *Indogermanische Grammatik. I.2. Segmentale Phonologie des Indogermanischen*. Heidelberg: Winter.
- Melchert, H. Craig. 1978. Tocharian verb stems in -tk-. Zeitschrift für Vergleichende Sprachforschung 91.93-130.
- Melchert, H. Craig. 1979. Three Hittite etymologies. *Zeitschrift für Vergleichende Sprachforschung* 93.262-71.
- Melchert, H. Craig. 1984. *Studies in Hittite historical phonology*. Göttingen: Vandenhoeck & Ruprecht.
- Melchert, H. Craig. 1985. Hittite *imma* and Latin *immō*. Zeitschrift für Vergleichende Sprachforschung 98.184–205.

- Melchert, H. Craig. 1992. The third person present in Lydian. *Indogermanische Forschungen* 97.31–54.
- Melchert, H. Craig. 1993. A new Anatolian 'law of finals'. *Journal of Ancient Civilizations* 8.105–13.
- Melchert, H. Craig. 1994. *Anatolian historical phonology*. Amsterdam & Atlanta: Rodopi.
- Melchert, H. Craig. 2002. Hieroglyphic Luvian REL-*ipa* 'indeed, certainly'. In Mark Southern (ed.), *Indo-European perspectives*, 223–32. Washington (DC): Institute for the Study of Man.
- Melchert, H. Craig. 2008. Problems in Hittite pronominal inflection. In Alexander Lubotsky, Jos Schaeken, and Jeroen Wiedenhof (eds.), *Evidence and counter-Evidence: Essays in honour of Frederik Kortlandt, volume 1: Balto-Slavic and Indo-European linguistics*, 367–75. Amsterdam &New York: Rodopi.
- Morgenstierne, Georg. 1949. The language of the Prasun Kafiris. *Norsk Tidsskrift for Sprogvidenskap* 15.188–334.
- Morgenstierne, Georg. 1974. Etymological Vocabulary of the Shughni Group. Wiesbaden: Reichert.
- Morpurgo Davies, Anna. 1975. Negation and disjunction in Anatolian and elsewhere. *Anatolian Studies* 25.157–68.
- Neu, Erich. 1971. Noch einmal heth. *tuzzi-. Indogermanische Forschungen* 76.66–71.
- Neumann, Günter. 1961. Hethitische Etymologien III. Zeitschrift für Vergleichende Sprachforschung 77.76–81.
- Oettinger, Norbert. 1986. "Indo-Hittite"-Hypothese und Wortbildung (Innsbrucker Beiträge zur Sprachwissenschaft, Vorträge und kleinere Schriften 37). Innsbruck: Institut für Sprachwissenschaft der Universität Innsbruck.
- Oettinger, Norbert. 2002. Die griechische Psilose als Kontaktphänomen. *Münchener Studien zur Sprachwissenschaft* 2.95–101.
- Puhvel, Jaan. 1979. Hittite words with initial *pít/pát* sign. In Erich Neu and Wolfgang Meid (eds.), *Hethitisch und Indogermanisch* (Innsbrucker Beiträge zur Sprachwissenschaft 25), 237–56. Innsbruck: Institut für Sprachwissenschaft der Universität Innsbruck.
- Puhvel, Jaan. 1984. *Hittite etymological dictionary. Vol. 1. Words beginning with A. Vol. 2. Words beginning with E and I.* Berlin, New York & Amsterdam: Mouton.

- Puhvel, Jaan. 1991a. *Homer and Hittite* (Innsbrucker Beiträge zur Sprachwissenschaft, Vorträge und kleinere Schriften 47). Innsbruck: Institut für Sprachwissenschaft der Universität Innsbruck.
- Puhvel, Jaan. 1991b. *Hittite etymological dictionary. Vol. 3. Words beginning with H.* Berlin & New York: Mouton de Gruyter.
- Puhvel, Jaan. 1992. Shaft-shedding Artemis and mind-voiding Ate: Hittite determinants of Greek etyma. *Historische Sprachforschung* 105.4–8.
- Puhvel, Jaan. 1994. West-Indo-European affinities of Anatolian. In George Dunkel et al. (eds.), *Früh-, Mittel-, Spätindogermanisch*, 315–24. Wiesbaden: Reichert.
- Puhvel, Jaan. 1997. *Hittite etymological dictionary. Vol. 4. Words beginning with K.* Berlin & New York: Mouton de Gruyter.
- Puhvel, Jaan. 2001. *Hittite etymological dictionary. Vol. 5. Words beginning with L.* Berlin & New York: Mouton de Gruyter.
- Puhvel, Jaan. 2004. *Hittite etymological dictionary. Vol. 6. Words beginning with M.* Berlin & New York: Mouton de Gruyter.
- Puhvel, Jaan. 2007. *Hittite etymological dictionary. Vol. 7. Words beginning with N.* Berlin & New York: Mouton de Gruyter.
- Puhvel, Jaan. 2008. "Flagrante delicto" in Hittite. *Historische Sprachforschung* 120.63–65.
- Puhvel, Jaan. 2011. *Hittite etymological dictionary. Vol. 8. Words beginning with PA*. Berlin & New York: Mouton de Gruyter.
- Rasmussen, Jens. 1999. *Selected papers on Indo-European languages: With a section on comparative Eskimo linguistics* I-II. Copenhagen: Museum Tusculanum.
- Rieken, Elisabeth. 2009. Der Archaismus des Hethitischen eine Bestandsaufnahme. *Incontri Linguistici* 32.37–52.
- Ringe, Donald, Tandy Warnow, and Ann Taylor. 2002. Indo-European and computational cladistics. *Transactions of the Philological Society* 100.59–129.
- Rosén, Hannah. 2003. *Immo* its atypical use in Petronius. In József Herman and Hannah Rosén (eds.), *Petroniana. Gedenkschrift für Hubert Petersmann*, 169–81. Heidelberg: Winter.
- Schwyzer, Eduard. 1939. Griechische Grammatik. München: Beck.
- Turner, Ralph L. 1966. *A comparative dictionary of the Indo-Aryan languages*. London & New York: Oxford University Press.

- Watkins, Calvert. 1966. Italo-Celtic revisited. In Henrik Birnbaum and Jaan Puhvel (eds.), *Ancient Indo-European dialects*, 29–50. Los Angeles: University of California Press.
- Watkins, Calvert. 1973. An Indo-European agricultural term: Lat. *ador*, Hitt. *hat-*. *Harvard Studies in Classical Philology* 77.187–93.
- Watkins, Calvert. 1991. A Celtic-Italic-Hittite etymology. In Tzvi Abusch, John Huehnergard & Piotr Steinkeller (eds.), *Lingering over words: Studies in ancient near eastern literature in honor of William L. Moran* (Harvard Semitic Studies 37), 451–3. Atlanta: Scholars Press.
- Watkins, Calvert. 1993. Another thorny problem. In *Bojan Čop septuage-nario in honorem oblata*, 243–48 (= *Linguistica* 33). Ljubljana.
- Watkins, Calvert. 2000. A distant Anatolian echo in Pindar: the origin of the aegis again. *Harvard Studies in Classical Philology* 100.1–14.