

# Abstracts

# THE SPLIT

Reconstructing Early Indo-European  
Language and Culture

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Abstracts

# Location

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Location



# Can ancient DNA studies contribute to the understanding of the early spread and split of Indo-European languages?

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Early contributions of DNA studies had made some fantastic claims about the origin of Indo-European languages. From the viewpoint of archaeology, the interdisciplinary dialogue between archaeologists and geneticists had not yet been fully satisfactory either (Hofmann 2015). The inherent uncertainty about the “urheimat” of Indo-European is due to the likely scenario that the long-distance trade networks that may have become more intense during the Copper Age were the main trigger for a geographically wide spread use of early Indo-European dialects. The Anatolian hypothesis does not sit easily with this scenario. And it cannot be “proven” by sequencing ancient DNA from some Anatolian regions and finding it too different from that in the Balkans. Ancient DNA analysis has however suggested a dynamic period of genetic exchange at the beginning of the Bronze Age, after a climatic crisis (Bond event no. 3). This might have led to the formation of major IE subfamilies in the circumponic. But again, genetics cannot set on it a seal of proof.

# From nouns to numerals

## Anatolian ‘four’ and the dawn of PIE decimal counting

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The present paper argues that the transition from simple hunter-gatherer bands to a culturally complex society is reflected in the numeral category of PIE. While the sequence 1–10 hardly can be doubted as shared heritage, tell-tale signs betray their recent numeralization, i.e. grammaticalization as numerals as opposed to more general quantifiers.

Several elements support the nascent state of numeral affairs, and perhaps most familiar is the Semitic ‘seven’, to which may reasonably be added ‘six’. Numeral borrowings are common from technologically more advanced societies, and this is exactly what can be observed from the quasi-Afro-Asiatic complex (Semitic–Egyptian–Berber) into PIE, accounting for both 6 and 7. Further problems now arise if those numbers are foreign and no candidate, however marginalized, seems to claim original status; there is a functional numeral gap unpromising for an ancient decimal system.

In this context, the Anatolian numeral ‘four’, *\*miye-*, obviously incompatible with the standard PIE numeral ‘four’ *\*k<sup>w</sup>et<sup>u</sup>or*, takes on an extra dimension, since it questions whether the numerals a grammatical category was completely established by the split of Anatolian. A case has been raised to find vestigial use of the common numerals in the legal term *kutruuan* ‘witness’, cf. Kloekhorst (2008: 499). Across the remaining IE branches numerical substitution is rare, being continued faithfully only with sequential assimilation. The conundrum of ‘four’ is further enlivened by the ostensibly dual ‘eight’ that eerily resembles proto-Kartvelian *otxo* ‘four’.

A third element in favor of a shallow decimal system is the comparison with the Uralic proto-language that evidently lacks common numerals above ‘two’ (although the beginnings of ‘five’ and ‘ten’ have been argued to be visible).

It seems that these numerical slots were up for grabs at the very latest stages of PIE, and there is ample reason to explore whether the Anatolian branch split off before numeralization was finally in place as can safely be posited for Core-IE. If established, such a departure should constitute a salient piece of evidence in the evolution of PIE. It is argued that the system was part of the new societal requirements for Neolithic living and was introduced through the Caucasus and Balkan.

I have spent some eight pages of my 2017 MA thesis on numerals and potential borrowings, the discussion of which invites tantalizing insights to the crucial formative stages of PIE. These tendencies have been pointed out before, but, to my knowledge, never fully explored.

# Reconstructing Indo-European phraseology: Continuity and renewal

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The comparison of words, constructions and collocations of the different IE languages allows to reconstruct phraseological and conceptual patterns which may be inherited. The comparanda may rely on perfect lexical matches, what is surely the ideal case, but also on synonyms and quasi-synonyms and on the taking into account of the substitutory continuants (“Ersatzkon-  
tinuanten”) of the inherited lexical items.

If a phraseme is shared by Anatolian and by, at least, some significant Core Indo-European languages of, it may be traced back to Proto-Indo-European. If this is not the case, both a specific Core Indo-European development and a Proto-Indo-European development which is lost (or simply not attested) in Anatolian remain *a priori* open possibilities: a choice in favor of one of them can only be taken case by case.

A reconstructed phraseological pattern may be assumed to reflect a metaphor, inasmuch as it stands in contrast to another, non-marked pattern for the same state of affairs, e.g. [AWAKE – EVIL] as against [RAISE – EVIL] or [POUR / DRINK WORDS] as against [SAY/ HEAR WORDS]. The present contribution will focus on the collocations [BIND, HARNESS - HORSE] vs. [UNBIND, UNTIE - HORSE] and [HOLD FAST/SUPPORT – HEAVEN & EARTH] and their variants in the light of the metaphorical uses of [HORSE] [CHARIOT] [MIND] and of [GOOD] [JUSTICE] [PILLAR] respectively in the oldest IE languages.

# Myths of non-functioning fertility deities in Hittite and Core Indo-European

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The Hittite “Myths of Disappearing Fertility Deities” (such as the god Telipinu) show comparanda in mythical narratives from other Indo-European traditions about [NON-FUNCTIONING (FERTILITY) DEITIES], such as the Greek myth of Kore’s rape and Demeter’s rage in the *Homeric Hymn to Demeter* et al. (Burkert 1979: 123–142) and the Norse myth of Baldr’s death in *Gylfaginning* 49 et al. (Schröder 1962: 354–356); moreover, Demeter’s and Baldr’s myths have been found to share specific features as well (Bugge 1889: 244–248), while the Vedic and Sanskrit myth of Cyav(ā)na’s ageing, wounding and rage in *Śatapatha Brāhmaṇa* 4.1.5, *Mahābhārata* 3.121–5 et al. may be added to the dossier.

Given that generic similarities between mythological texts may be the result of either universal motives or due to areal diffusion (especially in the case of Anatolian and Greek, cf. Watkins 1995: 448ff), any attempt to explain them as inherited presupposes the analysis of the traditional devices by which these texts are composed, i.e. so-called “ready-made surface structures” such as formulas (Kiparsky 1976) and thematic structures (Watkins 2004: 77) in the languages where they occur, in order to determine whether they may be the reflex of Indo-European poetics and themes.

The aim of this paper is to discuss two case studies, namely (1) the phraseological correspondences between the descriptions of the unhappy condition of the [NON-FUNCTIONING (FERTILITY) DEITIES], as it occurs at the beginning of the Hittite, Greek, Norse and Indo-Aryan myths, and (2) the matches between some scenes involving horse-riding characters attested only in the Greek, Norse and Indo-Aryan myths.

(1) includes, among others, three collocations: (a) [NON-FUNCTIONING (FERTILITY) DEITY] – [NOT STAND = LIE/SIT], attested in Hittite (KUB 33.5 ii 7), Greek (*HHDem.* 343) and Old Norse (*Gylf.* 49); (b) [NON-FUNCTIONING (FERTILITY) DEITY] – [NOT SEE (–LIGHT)], attested in Greek (*HDem.* 33–7)



and Indo-Aryan (*Devibhāgavatapurāṇa* 7.3.33–45); (c) [NON-FUNCTIONING (FERTILITY) DEITY] – [NOT EAT/DRINK], attested in Hittite (KUB 33.11 ii 11–2), Greek (*HDDem.* 49–50; 200) et al. These may turn out to match Indo-European poetic phraseology describing the condition of the figures [DEAD], [ILL] and [NON-FUNCTIONALLY LIVING]: cf. the collocations (a) [DEAD/ILL] – [NOT STAND = LIE/SIT], attested in Greek, Vedic and Germanic variations of Watkins' basic formula (1995: 500ff), (b) [DEAD/ILL] – [NOT SEE (–LIGHT)], attested in Hittite, Greek and Vedic (Durante 1976: 116ff; Dunkel 1993: 106ff; West 2007: 86f) and (c) [DEAD/ILL] – [NOT EAT/DRINK], attested in Hittite (KBo 22.178 iii 2–7) and Greek (Hes. *Th.* 796).

(2) includes some scenes involving horse-riding characters attested in the Greek (*HDDem.* 375ff), Norse (*Gylf* 49) and Indo-Aryan (*ŚB* 4.1.5–6) myths, which share several features and have no comparanda in the Anatolian myths. It will be further discussed whether this is the result of innovation or simply the preservation of an archaism which lives on in the Greek, Norse and Indo-Aryan traditions, but not in Anatolia.

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# Evidence for preverbs as ditropic clitics in dialectal Indo-European

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In several Indo-European dialects adverbs capable of forming a semantic unit with nouns and verbs turned into prepositions and verbal prefixes. In the latter case, the preverb forms a prosodic unit with its syntactic attractor, the verb. The talk will introduce evidence suggesting that in several branches of Indo-European preverbs, being on their way towards univerbation with the verb, must have passed through an intermediate stage of so-called ditropic clitics (in the sense of Cysouw 2005, Himmelmann 2014). This means that in the prehistory of the relevant languages the preverbs obligatorily preceded the verb, being at the same time prosodically hosted not by the verb itself but by whatever word happened to precede them in the clause. In assuming this we follow a suggestion already made by Schmidt (1962: 272ff.) concerning Proto-Germanic *\*ga-*.

The clearest instance of the proposed development outside of Germanic is displayed by East Baltic. Here said adverbs are preserved in three different functions:

- as first members of nominal compounds,
- as prepositions used with case forms of nouns,
- as preverbs.

In Lithuanian these different functions may require a different phonetic realisation of the inherited adverb, cf. *prie* 'to' and *nuo* 'from':

<i>prie-</i> ( <i>prie-duris</i> etc.)	<i>núo-</i> ( <i>núo-kalnė</i> etc.)
<i>priẽ</i> ( <i>priẽ jūros</i> etc.)	<i>nuõ</i> ( <i>nuõ kraĩto</i> etc.)
<i>pri-</i> ( <i>pri-lĩpti</i> etc.)	<i>nu-</i> ( <i>nu-kristi</i> etc.)

This can be explained by the recent interpretation of Leskien's Law according to which acute diphthongs were shortened at the end of polysyllabic words but preserved in monosyllabic words, changing their intonation from acute

to circumflex (cf. Petit 2002, differently Yamazaki 2014). This hypothesis immediately explains the prepositions *priē* and *nuō* and implies that, prior to the univibration with the verb, the preverbs *pri-* and *nu-* must have behaved as enclitics constituting the last syllable of polysyllabic prosodic structures (cf. differently Petit 2011).

Another language that may show a similar behaviour is Classical Armenian. The prepositions *ast*, *and* and *z-* are best explained as ditropic clitics, since the former two, if they were proclitics going back to *\*post(i)* and *\*anti* respectively, should yield Arm. *\*\*ost* and *\*\*and*. Furthermore, the preposition *z-*, traditionally compared with OCS *za* and hence reconstructed as *\*ġ<sup>h</sup>ō*, shows a deviant treatment of the stop, which is usually reflected in Armenian as *j-* [dz] in word-initial position, cf. *jeɾn* 'hand' < *\*ġ<sup>h</sup>ersm* (acc.), but as *z* [z] word-internally, cf. *dizanem*, aor. *edēz* 'to heap up' < *\*(e-)d<sup>h</sup>eiġ<sup>h</sup>-e/o-*. If *z-* cannot have arisen in word-initial position, it seems reasonable to assume that it behaved as an enclitic to a host with which it formed a single phonological word.

Finally, we also intend to discuss the consequences these findings on Germanic, East Baltic and Armenian might bear for reconstructing the earliest stages of the IE dialect differentiation.

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# Hittite *hišša*- c. ‘thill, shaft (of a cart)’ and the feminine gender in Proto-Indo-European

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As is well known, Hittite *hišša*- c. ‘thill, shaft (of a cart)’ forms an almost perfect equation with Vedic *īṣā́*- f. ‘id.’ (RV+). Both lexemes can be traced back to a pre-form  $*h_2ih_{1/3}séh_2$ , which – at least at first appearance – looks like a “themmatization” of the *s*-stem  $*h_2éih_{1/3}$ -os that is continued in Modern Slovene as *ojê* n., gen. sg. *ojêsa* and denotes the exact same thing, viz. the ‘thill (of a cart)’.

After identifying the underlying root as  $*\sqrt{h_2e}ih_{1/3}$  ‘to convey (tr.); to move (intr.)’ (with a specialization to vehicle-related contexts) that I recognize as the basis of Ved. *īyate* ‘moves, speeds (of or on a chariot)’ <  $*h_2ih_{1/3}-\dot{i}e/o-$ , I will argue that the *s*-stem  $*h_2éih_{1/3}$ -os did not originally denote the ‘shaft, thill’ itself, but rather the ‘dragging movement’ (as a *nomen actionis*) by which the draft animals, hitched up to the shaft or thill, carried the cart. The fact that *nomina actionis* of this sort could come to be used as (sensu lato) *nomina instrumenti* (Slov. *ojê* n.) is paralleled by cases such as  $*séd$ -os n. as a *nomen actionis* ‘the act of sitting (down)’ (as in Ved. *sádas* +  $\sqrt{kar}$  ‘to sit down’) and as a (sensu lato) *nomen instrumenti* ‘the thing on which one sits’ (as in Gk. *ἔδος* n. ‘seat, stool’ *Il.*+), etc.

In a next step, I will offer a formal analysis of Hitt. *hišša*- and Vedic *īṣā́*- based on a possessive adjective  $*h_2ih_{1/3}$ -s-ó- ‘having, transmitting the dragging movement (of the oxen to the cart)’ that can formally be compared to many formations within all IE languages. This  $*h_2ih_{1/3}sé(h_2)$ , then, can be explained as a substantivization via the individualizing suffix  $*eh_2$ , or, as would seem more plausible from a morphosemantic point of view, as the result of an elipsis where the adjective  $*h_2ih_{1/3}$ -s-ó- ‘transmitting the dragging movement’ was used attributively in combination with a substantive ‘rod, pole (vel sim.)’. Within the latter scenario, it is, of course, mandatory to assume that this word for ‘rod, pole’ either displayed the same suffix  $*e(-)h_2$  (and that the adjective  $*h_2ih_{1/3}só$ - showed a corresponding  $*e(-)h_2$ -agreement) or (partly in line with the just-mentioned option) that it was grammatically feminine and that the

adjective showed feminine agreement. Needless to say that this hypothesis would have strong implications for the status of the feminine gender in PIE.

As an aside, it will be stressed that reconstructing a wagon-related term as sophisticated as the ‘thill’ for Hittite *and* the other IE languages, it seems compulsory to assume a “split” not prior to the earliest archaeological evidence for wheeled vehicles (roughly in the second half of the 4th millenium BCE).

# Did the Indo-Europeans have a word for ‘wheat’?

## Hittite *šēppit(t)*- revisited and the rise of Post-PIE cereal terminology

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Since Watkins (1978), Hittite *šēppit(t)*- has been widely regarded as the lone survivor of an original Indo-European term for ‘(a type of) wheat’, *\*sép-it*, which was lost in all other branches than Anatolian. Watkins considered this word to be inherited because it belongs to the same excessively rare and unproductive stem class of neuter nouns as *\*mél-it* ‘honey’ (Hitt. *militt-*). He further analyzed the third known word of that type, Greek *ἄλφι* (gen. *ἄλφίτος*) ‘barley’, as having arisen from a PIE phrase *\*h<sub>2</sub>élb<sup>h</sup>om sépit* ‘white grain’ (surviving as a structure in Homeric *ἄλφιτα λευκά*) where the noun was ultimately lost but the adjective acquired its inflection.

In a recent paper (Hyllested 2016), I ventured to identify *ἄλφι* (and Albanian *elb*) as a Central Asiatic culture-word, unrelated to PIE *\*h<sub>2</sub>elb<sup>h</sup>os* ‘white’. This paper further argues that Hittite *šēppit(t)*- is not Indo-European either, but a loan from Semitic, cf. Akkadian *samīdu* and Aramaic *semid* ‘high-quality wheat flour’ – a word already known to have entered Greek as *σείμιδαλις* from where Latin, in turn, borrowed it as *simila* (whose modern Italian reflex *semola* ‘bran’, dim. *semolina* ‘coarse meal’, is the source of words for ‘semnel’ in modern European languages). A similar Hittite substitution *-p(p)-* for Akkadian *-m-* occurs in at least two other loans: Hitt. *kappani-* ‘cumin’ from Akk. *kamūnu(m)*, *kamannu(m)* and Hitt. *sapsama* ‘sesame’ from Akk. *sammasammu-*. Both variants may surface in Latin if *sibitillus* ~ *simitillus* ‘a kind of bread’ is an independent Mediterranean loan (not via Greek).

As for Greek *ἄλφι*, I suggest that it acquired the morphology of *\*melit-* ‘honey’ simply due to popular (and, in the latter case, perhaps etymologically correct) perception of these two terms as linked to the adjectives ‘white’ (*\*ἄλφός*) and ‘dark’ (*μελαινός*), respectively. Barley water, as used in the



Eleusinian mysteries, was a white drink to which honey could be added, and a dichotomic relationship between a white and a dark liquid in this context would constitute a parallel to Classical Persian *kašk-e sefid* ‘white barley water’ ~ *kašk-e siāh* ‘dark barley water’.

This leaves *\*mélit* as the only member of its stem-class. The reconstruction of a suffix *\*-it-* for ‘foodstuffs’ is thus highly dubitable. Instead, *\*-t-* should be analyzed as a separate morphological element which could be added to different kinds of stems, in this case an original i-stem *\*mel-i-*. Two other terms for liquids containing that element, *\*ġlak-t* ‘milk’ and *\*al-u-t* ‘beer’, are likewise confined to the Indo-European West.

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# And now for something completely different?

## Interrogating culture and social change in Proto/Indo-European studies

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The concept of culture is a topic of shared interest for archaeologists and historical linguists alike. Despite its still prevalent usage in both disciplines, the concept of culture is an area of study that is highly problematic, and over the last three decades, increasingly contentious in the social sciences and humanities. There are two primary problems with culture and its application in Proto/Indo-European studies as I (and others) see it. First, is the intellectual packaging and subsequent presentation of culture as a social totality. Participation in such totalities is defined and subsequently identified by: the use of one or more peculiar items, including but not limited to decorative styles and vessel forms of pottery, the use of certain types of tools and/or weapons, and certain styles of burial rite. One of the results is the perpetuation of “cultural boundaries” that reify culture as bounded, closed social, economic, and political totalities that undergo change as single, homogenous entities. The second primary problem with the use of archaeological conceptualizations of culture in the study of Proto/Indo-European language groups is how social change continues to be approached in totalizing ways. By this I mean that those within a specific ‘cultural’ entity experience change and time homogeneously, if not uniformly. Such approaches fail to acknowledge and, more importantly, investigate the juxtaposition of change and continuity experienced by different communities within these supposedly bounded entities.

This paper more thoroughly addresses these two problems and the subsequent issues that arise when trying to integrate the multiple methodologies employed by archaeologists, historical linguists, and geneticists to develop better understandings of the disintegration of larger language groups such as the Proto-Indo-European or the Indo-Iranian speakers. First, this paper addresses some of the problems that continue to plague Indo-European schol-

ars from the above disciplines in terms of maps and projected 'cultural' flows/migrations. Second, using data collected and analyzed during the author's research into Middle through Final Bronze Age social change/continuities, culture as a distinct social totality is interrogated. Finally, an approach that incorporates a methodology derived from the three disciplines is presented and briefly explored.

# The Old Hittite “ninth case” in areal and genetic perspective

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Old Hittite nominal declension is notable for a case in *-a*, first pointed out by Forrer 1928 and thereafter variously designated as “allative”, “directive”, “terminative”, or simply “locative” (to stand beside the syncretistic “dative-locative” in *-i*). It primarily signified “movement towards”, although there may be instances of illatival usage as well (advocated by Kammenhuber 1979, but rejected by Hoffner & Melchert 2008: 76). The origins of this case are highly relevant to the reconstruction of Indo-European nominal inflection, especially given the general archaism of Hittite. Dunkel 1994, expanding on Laroché 1970, notably argues for an Indo-European directive case in *\*-o*, largely on the evidence of Old Hittite and of various “frozen” case-forms in Greek and Latin adverbials.

Absent from most discussions of the problem are considerations of language contact and typology. As a matter of fact, the situation of Akkadian with respect to the rest of Semitic (Speiser 1954) strikingly parallels that of Old Hittite with respect to the rest of Indo-European. In both instances, an early stage of the most archaic branch of the family shows a case that may be etymologically linked to adverbial formations in other branches. The question of archaism versus retention arises in each case, but compounded by the similarly neglected issue of areal typology: The fact that Old Hittite (see above), Sumerian (Jagersma 2010: 166ff.), Akkadian (von Soden 1995: 109ff.), Eblaite (Krebernik 1996: 238), and arguably Hurrian and Urartian (Melikišvili 1971: 6) all have specialized cases (or suffixal case-like formations) with directive or terminative semantics. This suggests that Old Hittite may have been influenced by genetically unrelated languages in this regard.

In my contribution, I will evaluate the different proposals for the Indo-European precursor of the Old Hittite “ninth case” in light of the comparison with geographically and temporally adjacent languages, especially Akkadian. This approach will also lend itself to discussing the typologically unusual

status of the Indo-European accusative as the unmarked case of direction, besides its purely grammatical function as the case of the direct object. I will argue that the Old Hittite situation is the result of contact-induced grammaticalization of a Proto-Indo-European particle into the relatively short-lived case marker observed in Old Hittite, which (temporarily and incompletely) eclipsed the overlapping function of the accusative.

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# The Hittite verbal system and the Indo-Hittite hypothesis

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In the last few years, the Indo-Hittite hypothesis seems to have been more and more accepted in the sense that most indo-europeanists would nowadays agree that Anatolian was the first branch to split off from the mother language and that the non-Anatolian Indo-European languages have undergone a number of innovations that sets them apart. There is, however, much debate on the exact details about how large the gap is between Anatolian and the rest, and exactly which innovations of the non-Anatolian languages can be recognized.

In this talk I will treat the origin of the Hittite verbal system and discuss to what extent it contains arguments in favor of or against the Indo-Hittite hypothesis. Especially the origin of the Hittite *hi*-conjugation will be taken into account, but also other parts of the verbal system will be discussed.

# After migration: how culture, genetics and language were re-shaped by local processes of social integration

The case of Yamnaya and Corded Ware

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Recent genetic, isotopic and linguistic research has dramatically changed our understanding of how the Corded Ware Culture in Europe was formed. Here the authors explain it in terms of local adaptations and interactions between migrant Yamnaya people from the Pontic-Caspian steppe and indigenous North European Neolithic cultures. The original herding economy of the Yamnaya migrants gradually gave way to new practices of crop cultivation, which led to the adoption of new words for those crops. The result of this hybridisation process was the formation of a new material culture, the Corded Ware Culture, and of a new dialect, Proto-Germanic. Despite a degree of hostility between expanding Corded Ware groups and indigenous Neolithic groups, stable isotope data suggest that exogamy provided a mechanism facilitating their integration.

# Hittite *ḫandā(i)*- ‘to align, arrange, etc.’ and PIE metaphors for ‘(morally) right’

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Sabine Ziegler (2014) has derived Hittite *ḫandā(i)*- from *\*h<sub>2</sub>ento*- ‘weaving, fabric’ *vel sim.*, and Janda (2016) has added further support in Greek *ἀντίον* ‘(upper) loom beam’. The etymology is highly illuminating for the Hittite verb, but the semantic treatment based on the handbook entries fails to take into account the evidence that the original meaning was ‘to align, make straight’.

The sense ‘to warp, begin to weave’, like that in Latin *ordior* which Ziegler properly compares, is derived from ‘to align the threads of the warp’. Both cases provide further examples taken from weaving for a widespread IE metaphor ‘(morally) right’ < *\*‘made straight’* (seen also in derivatives of *\*h<sub>3</sub>reg*- ‘to make straight’), which competed with another based on *\*‘fitting’* from verbs meaning to fit together, *\*h<sub>1</sub>ar*- ‘to fit’ (intr.), *\*tek*- ‘to fit together, join’ (tr.) (Melchert, forthcoming), and *\*(h<sub>x</sub>)reith<sub>2</sub>*- ‘to join, mix’ (tr.) (Weiss, 2015). Which if any of these extended uses dates from the proto-language is a topic deserving further study.

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# The split of Indo-Iranian in the light of linguistic and archaeological evidence

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In this paper I present some insights provoked by a new etymology that provide further support to the archaeological correlations of early Indo-Iranian and early Finno-Ugrian published previously (Parpola 2012 and 2015). They make it possible to suggest tentative answers to these questions: Why, when and how did the Indo-Iranian unity split?

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# The athematic *-e* stem ending in Linear B: Dative or instrumental?

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Mycenaean Greek is supposed to have two endings for the dative singular of the athematic stem, namely *-Xe* and *-Xi*. It is also assumed that *-Xe* and *-Xi* are equivalent terminations, used indifferently. These conclusions arise from alternations like *po-se-da-o-ne* and *po-se-da-o-ni*, which show diverse writings of the same word (theonym *Ποσειδών* in this case) within the same contexts.

In this paper, the relationship between *-Xe* and *-Xi* will be reviewed. Results emerging from such an examination highlight, among other things, that *-Xi* is the minority termination. Indeed, it could be either a diachronic matter (*-Xi* is an archaism or an innovation) or a synchronic issue (the two endings existed in parallel and independent from each other). By exploring the various consequences this fact can lead to, one can point out that uses and functions of *-Xe* and *-Xi* are not equivalent, but rather linked to evolutionary linguistic steps. Finally, further hypotheses, based on all these observed elements and concerning the diachronic evolution of *-Xe*, points to arguing that some *-Xe* represent the instrumental case (and not the dative) ending.

The conclusions here presented can be drawn on the grounds of a complete dossier (currently lacking) of athematic terms in *-Xe* and *-Xi*, especially taking into account both archaeological and palaeographic evidence related to tablets recording the examined words. Such an interdisciplinary approach calls attention to the very strong link connecting the interpretation of each term to its own context.

This investigation is both interesting within the frame of reconstructing PIE and helpful to focus on the early stages of the splitting process of PIE into individual language branches. In fact, whereas alphabetic Greek shows that dative had already absorbed both locative and instrumental, Linear B documents seem to show that the instrumental singular was still alive and a consistently used case during the Bronze Age. Thus, data from the most archaic Greek dialect that we know, namely Mycenaean Greek, turns out to be crucial

to reconstruct several stages of the long process that led to three different IE cases (dative, instrumental and locative) being reduced to just one throughout the history of the Greek language.

# Splitting hairs over the lexicon

## Current issues in utilising lexical data for Indo-European cladistic research

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Cladistic hypotheses are ideally based on arguments that use cumulative evidence from a wide range of shared innovations inherited from a more recent ancestor (cf. Leskien 1876: vii, Hock 1991: 556–566, cf. Ringe & Eska 2013: 256–263). Most historical linguists would agree that the best evidence for subgrouping would be shared phonological and morphological innovations, while evidence from the lexicon is the least reliable for linguistic subgrouping. A notable exception to this is a hypothesis that the Tocharian languages were second to split from Proto-Indo-European which is principally supported by lexical isoglosses (cf. Ringe et al. 2002: 99–100, Malzahn 2016). Recent high-profile studies have appeared, however, that have been based exclusively on comparative lexical material (Bouckaert et al. 2012, Chang et al. 2015; cf. IELex). The results of these methods have been sharply criticised, because the phylogenetic models published in these studies can in many cases be shown to be empirically disproven (cf. Pereltsvaig & Lewis 2015). In spite of the criticisms to lexicostatistical approaches, there remains some potential that the lexicon may provide some useful data to supplement cladistic hypotheses as part of an overall assessment of the complete bundle of available isoglosses.

If elements of the lexicon can be treated as evidence for cladistic hypotheses, how can it be implemented in a methodologically rigorous way? To this address this, this paper will focus on case studies from methodological issues that have arisen in encoding Indo-European lexical cognacy data on the *Cognacy in Basic Lexicon: Indo-European* (CoBL-IE) database project. This will be illustrated through a small number of case studies from issues that have arisen in encoding lexical data, dealing with morphological problems in indexing root cognacy, semantic problems dealing with languages of fragmen-

tary attestation and where issues of language contact affect the results and reliability of cladistic methods applied to lexical data.

Ultimately this paper will contribute to the conference a discussion of how recent computational lexicostatistical methods may potentially be employed as a supplement to traditional analyses of linguistic subgrouping for the Indo-European languages. It will also provide a critique of the methods, outlining problems that remain and restrict their viability.

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# Complementary roots

## The case of IE *\*ten-* and its variants

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It is well known that IE *\*temp-* “spannen, dehnen” (*LIV*<sup>2</sup>: 626) and *\*tend-* “ermatten (← sich (zu sehr) anspannen?, *LIV*<sup>2</sup>: 627, n. 1)” show some both *formal* and *semantic* perfect parallels with IE *\*(s)ten-* “sich spannen, sich dehnen” and its corresponding *set* variant *\*tenh<sub>2</sub>-* ‘id.’ (see *NIL* 695 n. 1 with lit.; as for *\*sten-* see de Lamberterie 1990: 262). Therefore, these roots are currently analyzed as a group of ‘(quasi-)synonymous’ roots where *\*(s)tenh<sub>2</sub>-*, *\*temp-*, and *\*tend-* are *\*(s)ten-* enlarged variants.

In the present talk I aim to show that *\*ten-* and its variants represent a prime example for the following methodological considerations:

1. A group of roots sharing a base form of a root, morphological derivational patterns, and marked semantic shifts may be identified as a ‘root-family’. That implies that roots belonging to a ‘root family’ may be (to different extents) *complementary* each other.

This allows to reconstruct formal and semantic inherited aspects not only by finding parallels in more than one root within the root-family but also by combining isolated forms belonging to different root variants and attested in different branches.

2. The formal and semantic analysis of single roots within a root-family may bring to light the relationship between the single elements of the root family as well as the steps of the split process in which the corresponding roots are involved. In this latter case, it is crucial to define the semantic differentiation between the root variants undergone in the several IE branches neither as common independent development between two or more languages nor as common development due to areal influence. Otherwise, both cases would exclude the inherited connection between the branches.

In particular, in this talk the following results will be presented:



- 1 The semantically isolated Toch. B *cämp-* ‘be able to’, which can be traced back to IE *\*temp-* (< *\*ten-p-*), may be explained as *complementary* to Greek and Latin forms belonging to IE *\*ten-* and *\*tend-*.
- 2 IE *\*ten-*, *\*tenh<sub>2</sub>-*, and *\*temp-* share some morphological derivational patterns which seem to point to the so-called Caland System.
- 3 On the base of semantic shifts and morphological derivational patterns shared by the *\*ten-* root variants and attested in two or more IE languages it seems possible to define a chronological profile of the *\*ten-* root-family.

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# The Anatolian stop system and the Indo-Hittite hypothesis – revisited

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Kloekhorst 2016 argues that the distinction between Hittite and Proto-Anatolian fortis and lenis stops was not one of voice, but one of length. The distinction in voice would be a common innovation of the non-Anatolian Indo-European languages. If correct, this hypothesis would deliver an important defining feature of the non-Anatolian node in the Indo-European tree.

Nevertheless, this theory crucially depends upon the synchronic interpretation of the phonology of the Anatolian languages preserved in Cuneiform, of which there is no *communis opinio*. The purpose of this paper is twofold: First, the systematic investigation of the evidence neglected by Kloekhorst, i.e. the synchronic transcription of Hittite and Luwian material as well as Hittite and Luwian loanwords in languages that were able to express gemination and/or voice (e.g. Akkadian, Greek, Ugaritic). Second, a critical overview of Kloekhorst's arguments.

The synchronic transcriptions and loanwords show that the contrast in Luwian was based on voice and not on length (e.g. Greek *δέπας*, cf. CLuw. *tappaš*-; Gr. *τολύπη* 'a clew of wool or yarn' ← CLuw. *taluppa/i*- 'lump, clod'; Ugaritic *ubdy* 'land, plot, farming' ← CLuw. *upatit*- 'landgrant'; Ass. *Lubarna*, cf. Hitt. *Labarna*). Since Cuneiform Luwian was spelled with the same Cuneiform orthography and syllabary as was Hittite, this observation applies to Hittite as well. None of Kloekhorst's arguments are compelling either:

- a Hittite scribes did differentiate frequently between voiced and voiceless signs, as Kloekhorst himself demonstrated (2010 in initial position, for internal position see Pascual Coello 2014);
- b the lack of voice assimilation in *e-ku-ut-ta* is non-probative, since there are languages without regressive voice assimilation;
- c in case of the isolated *ki*- 'to lie' instead of the expected *\*kī*- it cannot be excluded that *ki*- was created analogically to *kiš*-/*kīš*- 'to occur' from the

same inflection and the version with the short vowel ousted the regular reflex with long /ī/,

- d regarding the Neo-Hittite *a*-shortening Kloekhorst himself admits that this may be orthographical only (2008: 98 n. 219),
- e for the contrast among fricatives and resonants see the laryngeals in Luwian, where the contrast is not that of the length (Simon 2014).

Accordingly, the Hittite, the Luwian and the Proto-Anatolian stop systems cannot be described with distinction in length and thus the contrast in voice is not a defining feature of the non-Anatolian node of the Indo-European tree.

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# The inner revolution

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In 1918 Joseph Vendryes pointed out a number of striking agreements between Indo-Iranian and Italo-Celtic in the sphere of legal and religious lexicon. Vendryes argued that these peripheral agreements could only be understood as archaism since geographically widely dispersed languages can hardly share innovations not seen in the intermediate languages. But 99 years later the situation has changed: soon after Vendryes wrote, two new branches were added to the PIE family tree, and these branches (Proto-Anatolian and Proto-Tocharian) are widely regarded today as the first branches to split off the PIE tree. In some cases the evidence of these new branch has confirmed that certain morphological features found in Italic, Celtic, or Indo-Iranian are indeed archaisms, but in the lexical sphere it is striking that the Vendryes archaisms are nowhere to be seen in the first offshoots. Of course, in itself, this absence is inconclusive because, as we can judge from the parallel of the Romance family, lexical items that we know to be inherited from the highest node may often be replaced in one of the early offshoots. This development can lead to a situation where a word present in the highest node proto-language, because of its absence in the first offshoot, cannot be reconstructed by strict application of the Comparative Method. This paper will examine a subset of the Vendryes lexicon to show that, although they may be archaic from the point of view of Inner Indo-European, various factors, in addition to their absence in Proto-Tocharian and Proto-Anatolian, point to their relatively recent creation.

