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Indo-European origins of Anatolian morphology and semantics: innovations and archaisms in Hittite, Luwian and Lycian

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Summary and conclusions

The aim of the present work has been to further our understanding of Anatolian historical morphology and semantics, and, by extension, the reconstruction of Proto-Indo-European. The most important conclusions of the studies presented here are the following.

Chapter 1. A scrutinization of the Luwic '*i*-mutation' paradigm, here renamed (appellative) *i*-stem paradigm, showed its origin to be in the PIE PD *i*-stems (*-*i/ei*-). These lost their oblique suffix by sound law (loss of intervocalic *$\underset{\wedge}{i}$ and vowel contraction), and thus effectively became consonant stems with alternative direct case endings. This led to a paradigmatic merger with the original common gender consonant stems through a spread of the *i*-stem direct case endings, which were less aberrant than the original common gender consonant stem endings. Now a large category, the common gender *i*-stems further merged with the common gender *o*-stems, which were also identical except for the *-*o*- of the direct cases, which was replaced with *-*i*-. The lack of formal overlap with the *ā*-stems (< eh_2-stems) and *u*-stems prevented the *i*-stems from replacing these types as well (except that forms in *-(*ă̄*)$\underset{\wedge}{u}$- were treated as consonant stems). The *ā*-stems became the Luwian *a*-stems ("without *i*-mutation"), as is apparent from the distribution of *a*-stems (abundant) and *e*-stems < *o*-stems (virtually non-existent) in Lycian, as well as from the dat.-loc. -*a*, which is identical to the Lyc. *a*-stem dat.-loc. -*a*, and from lexical correspondences. The Luwian *a*-stems (< eh_2-stems) should therefore not be equated with the Hittite *a*-stems (< *o*-stems).

Chapter 2. Proper names did not go through any of these developments, but instead went through a few changes of their own. Unlike in appellatives, in names the *ā*-stems were the most frequent type. This led to a restructuring of the genitive, dative-locative and ablative of the other stems after the *ā*-stem pattern (*-*V-osso* >> *-*V-sso*; *-(*V*-)*i* >> *-*V*; *-*V-odi* >> *-*V-di*). In addition, after the PD *i*-stems had annihilated all other types of *i*-stem in the appellatives, the non-ablauting *i*-stems were restricted to proper names, especially personal names, and their unique

dative ending *-*i̯o* was embraced as a characteristic of personal names, leading to the analogical creation of *-*āi̯o*, *-*oi̯o* and *-*ui̯o* in the other vocalic stem types. The *i*-stem dative *-*i̯o* was inherited as such from Proto-Anatolian. This was originally the allative ending, whose semantics were extended to include the domain of the dative-locative in *i*-stems, *oi/i*-stems and *io*-stems to avoid the unfortunate combination of the *-*i*- of the stem and the *-*i* of the dative-locative ending. This situation was preserved as such in Old Hittite, in which -*i̯a* is the regular dat.-loc. ending of these stem types. It is likely that the Luwian dat.-loc. of the genitival adjective, -*assan*, also has its roots in this practice (*-*osio*), and the same goes for the Luwian *i̯a/i*-stem dat.-loc. ending -*i̯a*, if this ending is real. The identification of PLuw. *-*i̯o* (with *-*o* on account of Lyc. -*e*) and Hitt. -*i̯a* shows that the PAnat. allative was *-*o*, as was already likely on the basis of Hitt. *parā* ~ Gr. πρό ~ Skt. *prá* < **pr-ó* 'forward'. The survival of the allative as a vigorous case in Anatolian vs. the mere petrified remnants in non-Anatolian IE constitutes evidence in favor of the Indo-Anatolian hypothesis.

Chapter 3. The Proto-Luwic genitive *-*V-sso* (HLuw. -*Vsa*, Lyc. -*Vhe*) was probably restricted to proper names; appellatives rather used an inflected pendant, the genitival adjective *-*V-sso/i*-. In chapter 3, the vowel of the genitival adjective was shown to correlate with the stem type in Lycian. Most importantly, A -*ahe/i*-, B -*ase/i*- is used with *a*-stems and A -*ehe/i*-, B -*ese/i*- with *i*-stems, *e*-stems and *e/i*-stems (there is no distinction between *i*-stems continuing consonant stems and *i*-stems continuing *o*-stems). Various phonological processes interfere with this morphological distribution. The effects of *a*-umlaut (*-*esa* > A -*aha*, B -*asa*) are always visible, whereas *i*-umlaut (**atlahi* > *etlehi*) was almost always restored (suggesting that *i*-umlaut is older). In addition, Lycian B appears to have had a progressive vowel harmony rule that turned *°*aC-es*° into °*aC-as*°. The *a*-stem variant A -*ahe/i*-, B -*ase/i*- < *-*ā-sso/i*- came into being as an *ā*-stem pendant to *-*osso/i*-, found in all other stem types. This situation is parallel to that of other elements of the paradigm, e.g. Lyc. abl. -*adi* (*a*-stems), -*edi* (elsewhere), dat.pl. -*a* (*a*-stems), -*e* (elsewhere). The PLuw. gen.adj. *-*osso/i*- is usually traced back to PAnat. *-*osio*-, which is confirmed by the Luwian gen.adj.dat.-loc.sg. -*assan* (see above). Its

uninflected pendant *-*osso* therefore most likely goes back to *-*osio*. Since this ending was given up in Hittite, whereas Luwic extended it to all stem types, it is unclear what the original locus in PAnat. was. One candidate are the *o*-stems, which is where we find *-*osio* in non-Anatolian IE. The findings constitute a caveat for the idea that *-*osio* was an innovation of non-Anatolian IE to remedy the internally reconstructable homonymy of the nom. and gen. in the *o*-stems (*-*os*), which is usually equated with the homonymy in Hitt. (nom., gen. -*aš*). This is still a possibility if the ending *-*osio* was restricted to the *o*-stems of a certain grammatical category, e.g. in the pronominal system.

Chapter 4. Moving from nominal to verbal morphology and semantics, we first deal with the "*vexatissima quaestio*" of Anatolian historical morphology: the origin of the *ḫi*-conjugation. The origin is here argued to be the PIE perfect. The first root of the division between the *mi*- and *ḫi*-conjugations is found in the fact that not all PIE verbs could form a perfect. This is for example the case for most *mi*-verbs with good word equations in other IE languages, such as *h_1*es*- 'to sit, to be', *d^h*eh_1*- 'to put', *g^{wh}*en*- 'to kill', *ueḱ- 'to want'. The perfect required a specific type of verbal meaning: in verbs that expressed a change-of-state event leading up to a state of the subject, the perfect expressed the latter state (e.g. pres.-aor. 'to die', perf. 'to be dead'). Apart from purely stative meanings ('to be dead'), the perfect could also have resultative value ('to have died'), and this was the seed for the development to a simple past ('has died' > 'died') found in virtually all IE languages. That Anatolian also went through this development is suggested by the emergence of the perfect endings as *preterite* endings, the eventive semantics (cf. 'is dead' > 'died'), and the syncretisms with the *s*-aorist (3sg. -*š*, 2pl. -*š*-*ten*, which remedied the inconveniences of the original endings 3sg. *-*e*, 2pl. *-*é*). After this development, the perfect did not express a present state resulting from a change of state in the past anymore, but rather the change of state in the past itself: it had become a change-of-state preterite. This new preterite now expressed the essence of verbs denoting punctual events ('achievements'), such as 'to die', 'to arrive', 'to see' (in the ingressive sense of 'to catch sight of'), which lacked an eventive part stretched out in time. Accordingly, the preterite form also became the morphological

center of the verb: the original *mi*-verb was ousted, and a present tense was created on the basis of the preterite through the addition of *-*i*, which functioned as a present tense marker in the *mi*-conjugation (e.g. *(*He*-)*Hoḱ-e* 'is dead, has died' > 'died', whence **Hoḱ-e-i* 'dies'). The perfect reduplication was removed when it had become a typological anomaly after the perfect had become the main vehicle of expression for the relevant verbs. The new conjugation based on a nucleus of original perfects went on to absorb all other formations that contained morphological *o*-grade, as well as verbs whose *e*-grade was colored by $*h_2$ or $*h_3$. Thus, *o*-grade iteratives (e.g. **molH*- 'to grind, mill', **ue-uoḱ*- 'to wish'), *CoC-eie/o*-causatives and -iteratives (e.g. $*log^h$*-eie/o*- 'to lay down', $*srob^h$*-eie/o*- 'to slurp'), as well as verbs and suffixes with laryngeal-coloring (e.g. $*deh_3$- 'to take', the factitive suffix $*$-eh_2-, *n*-infixed verbs of the type *CC-ne-*$h_{2/3}$- such as $*sn$-ne-h_2- 'to hide'), were all transferred to the *ḫi*-conjugation.

Chapter 5. Hittite verbs exhibit a striking ablaut imbalance between present and preterite. In the *mi*-conjugation, the present faithfully continues the PIE *e/*∅-ablaut, but the preterite shows full grade throughout the paradigm (e.g. *kun-anzi* 'they kill', *šaš-anzi* 'they sleep', but *kuen-er* 'they killed', *šēš-er* 'they slept'). This is clearly an innovation. There must be more to it than mere ablaut leveling; in Greek and Sanskrit, for example, as well as in the Hittite present, analogical extension of the full grade stem, if it happened at all, is usually restricted to the 'weaker' 1-2pl., and the 3pl. is left intact. In the *mi*-conjugation, however, all forms of the preterite have consistent full grade, and there are no exceptions. *A priori*, the most likely source for the analogy that must be at the basis of this innovation are the most frequent verbs of the category in question. These are $*h_1es$- 'to sit, to be', $*h_1ep$- 'to take', $*h_1ed$- 'to eat' and $*h_1eg^{wh}$- 'to drink'. It cannot be a coincidence that all of these start with a $*h_1$. Moreover, the corresponding preterites of such verbs in Greek and Sanskrit also consistently lack zero grade (e.g. Skt. pres. *as*- / *s*-, pret. *ās*- 'to be', pres. *e*- / *i*-, pret. *āi*- 'to go'). In these languages, however, it is absolutely clear what the source of the lack of an ablaut alternation in the preterite is: the forms exhibit a long vowel that resulted from a fusion of the root and the augment, i.e. the preterite-marking prefix $*h_1e$- (e.g. $*h_1e$-h_1es- / $*h_1e$-h_1s- > $*\bar{e}s$-). The

identification of these states of affairs provides an explanation for the peculiar ablaut imbalance found in Hittite. This suggests that the last common ancestor of Anatolian, Greek, and Indo-Iranian, i.e. PIE, already featured the augment. In Anatolian, too, the vowel resulting from the merger of the augment and the relevant part of the root must originally have been long. The difference can no longer be directly observed in attested Hittite. Most spellings are ambiguous, and in non-final syllables of polysyllabic words without analogical support, **ē* and **e* merged in Hittite, possibly already before attested Hittite, and in any case by late OH, leaving too few attestations to point in any direction. The long **ē* did however probably leave a trace in the verb *uekk*- 'to want' (< **ueḱ*-), in the shape of lenition of the 3pl. preterite stem *uek*- 'to want', which points to **uēḱ*-. This stem was extended to the present to replace the undesired weak stem variant **ukk*-, thereby ensuring its survival and further spread through the verb. The preterite of *epp*- 'to take', the only other relevant verb with a lenitable consonant, lacked such support from the present and underwent an unsurprising analogical restoration. The vowel also spread to the preterite of structurally comparable members of the *ḫi*-conjugation. Although some resulting stems, e.g. *ḫēš*- 'opened', *ēk*- 'died', exhibit long vowels with lenited consonants, this does not necessarily mean that the vowel was still long in the donor category, the *mi*-conjugation, as well: it is also possible that the structure of such forms was kept from the earlier shapes of these stems (*ḫāš*-, *āk*-). Although the augment must now be considered of PIE date, its exact status in the proto-language remains to be determined. The oldest Greek and Sanskrit show that unaugmented preterites also still existed in PIE. These were mainly used in consecutive narrative, i.e. when the narrative had already been situated in the past, and this situation continued to be clear from the coherence of the narrated events. There is one systematic exception to this practice: **$h_1$es*- 'to be' was always augmented (cf. e.g. Skt. *ās*-, never ***as*-). The only reconstructable preterite of **$h_1$es*- is **h_1e-$h_1$es*-. If the oldest Greek and Sanskrit are representative of PIE, there are two possible scenarios that may explain the eventual restriction of the augment to roots beginning with **h_1* in Anatolian. The first is that unaugmented preterites ousted their unaugmented counterparts, leaving **h_1e-$h_1$es*-, which had no unaugmented

counterpart, as a relic (and perhaps other verbs beginning with *h_1 as well, if these had already taken over the same pattern). The second is that augmented preterites ousted their unaugmented counterparts (as for example in later Greek), after which the augment – functionally superfluous and therefore disposable – was generally removed from preterites, but remained as a relic in verbs starting with *h_1 because in these verbs it had merged with the root due to sound law. There is a third option. It is not unreasonable to hypothesize that the preterite of *h_1*es*- always featured the augment because it was in fact the *source* of the augment. Compare the Greek νῦ ἐφελκυστικόν, which only appears consistently in in the form from which it probably spread, ἦν 'was'. As this example illustrates as well, the verb 'to be' is by itself powerful enough to be the source of a large verbal innovation. Possibly, *h_1*e*-h_1*es*- was originally a reduplicated stem, with the element *h_1*e*- being reanalyzed as a preterite marker and spreading as such to other verbs. While the other two scenarios are still possible if this hypothesis is correct, it also allows for the possibility that Anatolian descends from the stage at which the augment was still restricted to *h_1*es*-, with its pattern later spreading to other verbs beginning with *h_1. In any case, since the preterite of *h_1*es*- was certainly *h_1*e*-h_1*es*-, one has to assume either that this form was the source of the augment, or that other verbs also already featured the augment in PIE.

Chapter 6. An argument in favor of the Indo-Anatolian hypothesis is provided by the semantics of the verb *h_1*es*-. This means 'to be' in all non-Anatolian IE languages, but the Anatolian cognate (e.g. Hitt. *eš*-^{zi}) means both 'to be' and 'to sit'. Since it is typologically common for body posture verbs to grammaticalize into a copula (e.g. Lat. *stāre* 'to stand' > Sp. *estar* 'to be (in some condition)'), and the opposite is not true, it is most likely that 'to sit' changed into 'to be'. An original meaning 'to sit' for *h_1*es*- can also explain its restriction to more situation-bounded and temporal contexts in many old IE languages, whereas statements of a more general and unchangeable nature did not feature an overt copula (cf. Sp. *estar* vs. *ser*). This suggests that Anatolian preserves an older meaning that was lost in the ancestor of the other IE languages. Undoubtedly driven by homonymophobia, the meaning 'to sit' was in non-Anatolian IE assigned to the derivation *h_1*e*-h_1*s*-^{to}, which had originally meant 'to sit down', as

evidenced by Anatolian (OH *eš-*^{a} 'to sit down'). The meaning 'to sit down', in turn, came to be expressed with a different lexeme, **sed-*, which may originally have been a verb of movement. These developments are paralleled in later Hittite, in which the meaning 'to sit' moved from *eš-*^{zi} to *eš-*^{a}. The meaning 'to sit down' was also still expressed with *eš-*^{a}, but came to be distinguished through additional use of the particle *=za*.

Chapter 7. The verb **deh*$_3$- also has a deviant meaning in Anatolian: it means 'to take' rather than 'to give' as in the rest of the family. The usually assumed scenario by which 'to take' developed from 'to give to oneself' through a lost middle voice is improbable. More attractive is the comparison with English *to take to*, which is one of many parallels exemplifying a change from 'to take' to 'to bring, hand', which may further develop to 'to give', through the addition of an element expressing a direction, a goal or a beneficiary. Another example is ON *fá*, which normally means 'to take', but 'to deliver, give' with a dative or directional constituent (e.g. *fá mér* X 'give me X'). If such a development is the key to the semantic discrepancy between Anatolian and non-Anatolian IE, it would mean that Anatolian preserved the original meaning, whereas the ancestor of the other languages not only developed the meaning 'to give', but also lost the meaning 'to take'. It is therefore an argument in favor of the Indo-Anatolian hypothesis.

Finally, we may reflect on the findings from a broader Indo-European perspective. On the whole, Anatolian has come to look more similar to non-Anatolian IE rather than more different. In many cases a deviant Anatolian state of affairs can be traced back to the situation as reconstructable for the other IE languages, against claims to the contrary: if my analyses are correct, the '*i*-mutation' phenomenon is a formally motivated spread of the well-known PIE PD *i*-stem type; the deviant inflection of Luwic names is wholly secondary; the genitive in **-osio* is also continued in Anatolian; the augment has to be reconstructed for pre-Anatolian; the *ḫi*-conjugation has its roots in the PIE perfect as best known from Greek; Anatolian inherited *CoC-eie/o*-causatives and -iteratives as well as **molH*-type iteratives, all as reconstructable on the basis of the other IE languages; there are traces of the *s*-aorist.

Nevertheless, some elements we have encountered do offer further support for the idea that Anatolian was the first branch to split off. The Anatolian allative case in *-*o* corresponds exactly to what we expect for a pre-stage of the reconstructable ancestor of the other IE languages on the basis of internal reconstruction. This suggests the loss of the allative case *-*o* between PIE and the ancestor of non-Anatolian IE. The fact that the Anatolian semantics of the nominal suffix *-*eh*$_2$- correspond to the more peripheral ones of non-Anatolian is in recent times often taken to suggest that its most characteristic non-Anatolian use in nouns with female referents, and consequently feminine agreement in adjectives and pronouns by means of this suffix, were post-Anatolian innovations (Anatolian does, however, show that PIE used at least the suffixes *-*sr*- and *-*ih*$_2$- to create nouns with female referents). Ablauting athematic *mi*-verbs are clearly the oldest morphological means for expressing basic verbal meanings; in Anatolian this is still the default type, in non-Anatolian IE it has become a receding category. Similarly, the athematic verbal suffix *-*ei*/*i*-, most probably continued in Hitt. -*ai*/*i*-, was quite prolific in Anatolian, while the non-Anatolian languages only show remnants. Most other indications that have come up here are lexical. Two lexemes discussed at some length here point to probable semantic innovations on the part of non-Anatolian IE: **deh*$_3$- 'to take' > 'to give' and the loss of the meaning 'to sit' for the root formation **h*$_1$*es*- 'to sit; to be', with concomitant extension of the semantics of **h*$_1$*e*-*h*$_1$*s*- and introduction of **sed*- into the complex. In addition, the Anatolian meaning 'to live, be alive' for **h*$_2$*ues*- may also be more original than 'to live, dwell, stay' as found in non-Anatolian, which rather expressed 'to live, be alive' with **g*^{w}*ieh*$_3$-. It is further quite likely that **h*$_2$*eu*- 'to perceive' (>> **h*$_2$*euis*-*ie/o*-), **Heḱ*- 'to die' (>> **mer*-) and **ues*- 'to buy' (>> **k*^{w}*rih*$_2$-) were lexically replaced.

Overall, then, the more drastic innovations that have come up (e.g. the emergence of the *ḫi*-conjugation, *i*-mutation, the restructuring of the onomastic inflection, the sweeping spread of the *-*osio*(-) genitive and genitival adjective, the spread of lengthened/full grade originating in the augment) are found within the Anatolian branch, both between PIE and Proto-Anatolian and between Proto-Anatolian and its descendants. This is

not too surprising given that the total existence of Anatolian as a separate branch, up to Proto-Luwic and attested Hittite, far exceeds the time between PIE and the ancestor of the non-Anatolian languages. It has to be stressed that no exhaustion has been strived for here, and that one particularly drastic innovation of non-Anatolian IE, which has not been thematized here, may well have been the development of an inflectional present-aorist opposition. And even some of the developments that have been touched upon here, especially the decline of athematic verbs, the semantic change of *deh_3- and the loss of the allative case, probably already require several centuries of development. In general, however, I would caution against too enthusiastic an application of the Indo-Anatolian principle that the Anatolian data weigh as much as the rest combined: the difference between PIE and the last common ancestor of the non-Anatolian languages is not extreme, and during the numerous centuries of its existence, most of them prehistoric, Anatolian never stopped innovating.