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Reflexes of *h₃ in Anatolian*

I. Introduction.

It has now been sixty years since Kurylowicz, Symb. Rozwadowski I (1927) 95ff., first identified some examples of Hittite b(h) with the ‘coefficients sonantiques’ reconstructed for PIE by Saussure a half-century before. This ‘glänzende Bestätigung’ has weathered a number of assaults, and nearly all Indo-Europeanists now accept the ‘laryngeal theory’ in some form or other. However, controversy continues over the number and nature of these PIE phonemes and their reflexes in the daughter languages. This debate includes Anatolian, the one family where it is claimed that the laryngeals appear directly as consonants.

Eichner, MLL 31 (1973) 54ff., has given us a thorough summary of the treatment of *h₁ in Hittite which remains valid in all essentials.² His chief result may be succinctly repeated here: PIE *h₁ is nowhere directly continued as Hittite b. To my knowledge there is no current evidence to suggest that the treatment of *h₁ in other Indo-European languages of Anatolia differs from that in Hittite. We may thus provisionally assume the developments summarized by Eichner to be Common Anatolian.

Oettinger, Stammbildung (1979) 546ff., has furnished a summary of the developments of *h₂ in Hittite which is correct in all but detail.³ PIE *h₂

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¹ What follows represents a revised and reduced version of a paper presented at the Fifth East Coast Indo-European Conference, Princeton University, June 13–15, 1986. I am grateful to various participants at the conference for helpful suggestions and corrections.

² It would be neither possible nor profitable for me to take issue here with the many competing versions of the laryngeal theory which currently exist. I will state simply that I assume for PIE that system of laryngeal consonants which is sketched by Mayrhofer, Fe Neumann (1982) 183, note 19, for reasons which are well presented there.

³ A few points do remain uncertain: (1) does *h₁ “vocalize” to a initially before an obstructant (Hitt. ʔañanzi ‘they are’ < *ʔh₁ʔem²) or disappear as it does before sonant consonant? In the latter case the initial a- of ʔañanzi for expected ʔszanzi would be analogical after Tɛt'/TukT roots (ʔětš : ʔañanzi : ʔětš : x). (2) Does a postvocalic *h₂ assimilate to a following *s to give double -šš-, as I have claimed on several occasions (see 3.3 below with refs.)? (3) Does the sequence *Vrh₂V assimilate to *VbrV like *Vrh₂V? See Oettinger, Stammbildung 152 & 270 for likely, but not assured cases.

⁴ His derivation of the consonant stem collective plural ending -a from a dual (-) *áh₂e is mystifying. That of Kämmerhuber, HBoR (1969) 303, from *-h₂ remains dubious, since this ending may easily reflect *-ch₂ spread analogically from the o-stems as elsewhere. The hapax ainit-šet (KUB XXXVI 100 Vs 13; OH ms.)
regularly appears as Hittite ḫḫ, but under certain conditions it may be 'lenited' to ḥ or be lost entirely. This statement appears to be valid for Palaic and Luvian as well. Lycian ḡ regularly corresponds to cuneiform ḫḫ and Lycian ḡ to cuneiform ḥ (notably in the unlenited and lenited forms of the pret. 1st sg. ending: Lyc. ḡa-ya = CLuv. ḫa-ya). ²

So far as I know, no general discussion of the fate of *ḫ₃ in Anatolian has yet appeared. This gap is not accidental. There are relatively few PIE roots with assured *ḫ₃, and some of the best established either do not occur in Anatolian or are found in unexpected and morphologically ambiguous formations. There is therefore no current agreement on the outcome of *ḫ₃ initially before vowel or intervocalically, two basic positions where a priori one would expect the result to be determinable. I believe that recent scholarship has now provided evidence to settle several key issues regarding *ḫ₃ in Anatolian. A systematic overview thus seems called for.

2. Initial *ḫ₃.

2.1. Initial *ḫ₃ before vowel.

There are at present two opposing views on the outcome of *ḫ₃ in this position. Some believe that *ḫ₃ is lost in Hittite (explicitly Oettinger, *Stammbildung 546n), citing the following examples: ⁶

a. Hitt. arita 'stands' < *ḫ₃erītō (= Grk. ὑποτροφία);
b. Hitt. arkili 'testicle' < *ḫ₃erikī (= Grk. ἄργες);
c. Hitt. aniyi- 'carry out, execute' < *ḫ₃en- (= Lat. onus).

for usual aniyyat-(ṣēt) 'his regalia' (coll. pl. to anim. aniyyat-) may well be an archaism showing the regular reflex of final *TH₂, i.e. zero. Solid evidence for vocalization of laryngeals in Anatolian is still lacking. Internal cases like HLV. tweati-, Lyc. kbastras 'daughter' < *dhuh₂str- may show anapyxis rather than vocalization.

Oettinger's exceptional rule by which *ḫ₃g assimilates to Hitt. ḡg is an ad hoc device invented to save a single etymology: šakk 'know' < *šeh₂g-. The etymology is false, as shown by the real reflexes of *s(e)ḫg- in Hittite: šakai- 'omen', šakiyaḥh- 'give a sign', etc. These show expected single -k- and refer specifically to knowledge given by omens. Hitt. šakk- 'know' continues *sek- 'cut' with regular phonology and the same semantics as Lat. scissor. PIE *ḫ₂ is lost regularly with compensatory lengthening between a vowel and any following stop.

For lenition of consonants following an accent long vowel (in Common Anatolian) see Eichner, MSS 31.79f. For confirmation of this rule and an additional case of lenition in the Luvian languages see Morpurgo-Davies, KZ 96 (1983) 245ff.

The appearance of *ḫ₃ as Lyc. q and k is problematic (e.g. Lyc. qla = Hitt. ḫla- 'courtyard', Lyc. ḡe = CLuv. ḡa < *anha 'when'). However, since all examples occur in clusters of some sort, a conditioned split seems likely (thus also Oettinger, *Stammbildung 424, n61).

⁴ For derivations 2a-b see Rix, MSS 27.92ff., followed by Oettinger, *Stammbildung 523f. and 415. For 2c see Oettinger, *Stammbildung 345.

₂² The attribution of *ḫ₃ to examples 2d-i is due to various scholars. I refer the reader to the respective articles in Tischler, *HEG*, for details. The example offered in 2j is my own. I have included in both lists all examples known to me, but others may have been suggested. As I will show below, the addition of further examples to either list would not affect the issue.

²³ See for this assumption especially Beekes, *Sprache* 18 (1972) 117ff.
the hand or foot) from PIE *h₃erg-. This crucial etymology is semantically, morphologically and phonologically impeccable. As already noted, Grk. ἰδεύω is used preeminently of the hand or foot. While most reflexes of *h₃erg- refer to linear extension, Toch. AB rük- ‘cover’ obviously implies extension over a surface. Weitenberg, u-Stämme 221ff., has shown that a *-nu- suffix has limited productivity in Anatolian. He finds the attested inflection (instead of an ordinary u-stem) problematic, but given the underlying meaning ‘surface, extent’, an amphikinfonic collective *h₃erg-nōs, *h₃erg-n(u)wēs is in fact expected (type of Hitt. ḫaštāt- ‘bone(s), Ge-beine’ < *h₃erg-st(h)₂(j)ō). Hitt. harg- is either the regular reflex of *h₃erg- or the generalized zero-grade *h₃erg-. The main point is that Hitt. har- = Grk. or- in this example cannot possibly continue *h₃er-, since we are dealing with a TRET root. We must conclude that *h₃er is preserved as Hitt. ḥ before a sonant consonant. If it is preserved initially before a sonant, it is hardly credible that it was lost initially before a vowel. I therefore conclude that 2a-c above must continue *h₁er V-; while at least some of 2d-j show the genuine reflex of *h₃er V-, namely ḥo.\[8\]

\[8\] For an additional example of a nu-suffix in Anatolian (in Palaic) see Melchert, KZ 97 (1984) 42ff.

9 Strictly speaking, of course, one could claim that *h₃er was lost before consonantal *v in the strong stem and that har- reflects only *h₃er-, but the argument remains the same. If *h₃erg- yields har-; then *h₃er V- surely gives ḥo V-.  

10 Possible additional support for *h₃er V- > Hittite/Palaic/Luvian ḥ V- may be found in the contrastive treatment of initial *h₃er and *h₃er in Lycian, as argued by S. Kimball, Fs Hoenigswald (1987) 185ff.: cf. Lyc. ḫišōwai- = CLuv. ḫišōwai- ‘ruler’ < *h₃er-en- versus Lyc. ṣepēri- = Hitt. ḫepēriya- ‘deliver, hand over’ < *h₃ep-. Since ‘sheep’ is attested as Lyc. gawai-, if the above claim is correct, this word would have to be *h₃erwai, not ḫawai.

The analysis of examples 2a and 2c as containing *h₃er V- renews the problem of accounting for the unexpected o-vocalism of these forms. I have no new solution to offer for Grk. ῥεῖν = Hitt. arta, but I would point out that the assumption of initial *h₃er- in this case is problematic even when one ignores the Anatolian reflexes. Rix, MSS 27,100, concludes that ‘die “große Bewegungawurzel” idg. *er- enthält also aus der Sicht der Laryngaltheorie zwei Wurzeln’. This solution is ingenious, but unacceptable. If there are two roots *h₃er- and *h₃er-, they must differ in meaning, and one ought to be able to assign the reflexes of *er- to one meaning and those of *[or-] which occur in e-grade environments to another. For example, one root might mean ‘move vertically’ whence ‘(a)rise’ and the other ‘move horizontally’ whence ‘go, come’. It is clear, however, that one cannot distribute the attested forms in this manner. Hitt. arummi, Grk. ἰδεύω and Skt. ṛgām must be equated morphologically, but the first means ‘rise, raise’ and the third both ‘rise, stir’ and ‘reach, attain’. Current evidence suggests that the attested meanings are secondary specializations of a single root meaning ‘stir, move’ (intr.). The existence of *[or-] forms forces a reconstruction *h₃er-, however one is to account for the distribution of some of the *[or-] reflexes.

As for Lat. anus, Skt. ānas- and Hitt. aniy-, the first two could be derived from a preform *h₃en₃h₃-: see most recently Mayrhofer, Etymologisches Wörterbuch

2.3. Initial *h₃ before obstruent.

Further support for the preservation of initial *h₃- as ḥ- in Hittite/Palaic/Luvian is found in an example before obstruent. Watkins, Fs Neumann 455ff., has related Hitt. ḫapās- ‘shaft; penis’ to Grk. ὀξύω ‘marry’ but also ‘mount sexually’ (< *h₃ap-sye(o)-). This semantically attractive derivation faces a phonological problem of which Watkins is aware: Hitt. single *p- equates to Grk. p in apparent contradiction of Sturtevant’s Law. As he points out, however, Hittite orthography regularly fails to mark the geminate stop behind the second member of a cluster: cf. standard ṣipand- ‘libate’ for ṣipand- (< Lat. sponimator). If we assume a cluster *h₃p-, then the spelling ḫapās- is perfectly regular. This means, however, that once again Hitt. ḥ(a)- = Grk. o- cannot continue *h₃p-. The zero-grade of the root required by the Hittite combined with the o-vocalism of the Greek leave only one possible preform: *h₃p-.  

PIE *h₃ then, like *h₃er, is generally preserved as ḥ- in initial position in Hittite/Palaic/Luvian. As suggested by other evidence, however, (see below) it was undoubtedly weaker in articulation than the reflex of *h₃er and was probably lost in Lycian (see note 10).

3. Medial *h₃.

3.1. Intervocalic *h₃.

As in initial position, two developments have been proposed for intervocalic *h₃ in Hittite, but the lines of controversy are much less clearly drawn, in part no doubt because there are even fewer relevant examples. Watkins, Flexion und Wortbildung (1975) 378, derives Hitt. ḫu- (< *h₃u-) ‘ful’ from *seu₃h₃- with loss of *h₃, but he gives no argument for why the laryngeal must be *h₃ rather than *h₁. Sturtevant, CGL 1 (1933) 243 & 249, among others, assumes that dā- ‘take’ continues an unreduced perfect stem. This implies a third singular *doh₃i(>) = dāi with loss of

\[\text{des Altturkischen Bd. 1, Lfg. 1 (1986) 71.}\]  

The second laryngeal is in fact required independently by the alternation in Hittite between aniy- < *(h₃)en₃h₃-ye(o)- with loss of laryngeal before *y and the iterative aniišš- < *(h₃)en₃hišš-ke-, where the syncope of ye/o to i produced the environment for the assimilation rule VRV > VRRV cited in Sections 3.1 and 3.6 below. However, as Scheller, KZ 89 (1975) 191ff., has indicated, Lat. anus as well as Skt. ānas- could just as well continue *en₃s- (and also *en₃s-). Our current knowledge of the Hittite development of *er (especially *iRH) would also permit the derivation of Hitt. aniy- and aniišš- from *(h₃)en₃h₃-ye(o)-. This example is therefore not a compelling argument for *h₃ > θ in Anatolian.

\[\text{11 If we could demonstrate that *VRRV does not lead to VRRV (cf. note 2 end), then of course the geminate in šuuna- ‘fill’ would prove *h₃, since *h₂ is excluded by the loss intervocically in šu-}.\]
intervocalic *h₃. However, a direct equation of the Hittite hi-conjugation and the PIE perfect is problematic, and other explanations for dāi ‘take’ have been offered. Risch, *Flexion und Wortbildung* 253, suggests that dāi- continues a remodeled active root aorist. This account implies *deh₂(i)* > dāi, again with loss of intervocalic *h₃*, but Risch stresses that the attested paradigm may not be entirely derivable by regular sound change. Eichner, *Flexion and Wortbildung* 93f., derives dāi- from a middle root aorist *dh₂-, while Watkins, *Idg. Gram.* III/1.199, starts from *dh₂-o-. The case of dāi- ‘take’ for loss of intervocalic *h₃* is thus far from compelling.

On the other hand, the alternate view that intervocalic *h₃* is preserved in Hittite as single -h- (versus regular -hh- < *h₃*) also has very tenuous support: namely, the comparison of Hitt. lab(u)- ‘pour’ with Grk. λαύω ‘wash’, etc. See Cowgill, *Evidence for Laryngeals* (1965) 109, Beekes, *Development of the Proto-Indo-European Laryngeals in Greek* (1969) 231f., and Lindeman, *Einführung* (1970) 61, with refs., for attempts to uphold derivation of these words from *leh₂(u)-*. Winter, *Evidence* 108, and Oettinger, *Stammbildung* 424, argue rather for *leh₂(u)-*, and lab(u)- must be viewed as a very uncertain example of intervocalic -h- from *h₃*.

I believe that evidence showing the Hittite result of intervocalic *h₃* does exist, but it has been misread (by me among others)12. We begin with the adjective šū- ‘full’, which shows super plene writing (nt. nom.-acc. sg. šu-u-ā) and an ablauting paradigm (anim. acc. pl. šuwnas regularly dissimilated from *šuwa₃-u-). Neither of these facts is explainable if we start from a root formation as suggested by Oettinger, *Stammbildung* 298n. We must rather assume with Watkins, *Flexion and Wortbildung* 378 (and Oettinger, *StBoT* 22.39) a proterokinetic u-stem adjective *sēu₃-u-*, *suh₂-ēu-, which with loss of the intervocalic laryngeal leads regularly to strong stem šū- (‘/su_u_/’) and oblique stem *šuwa₃-. Since intervocalic *h₃* is preserved as -hh- (or -h-), the lost laryngeal must be either *h₁* or *h₃*.

The laryngeal’s presence is confirmed by the gennative -nu- of the Hitt. šunna- ‘fill’, which has generalized the weak stem of šunanszi ‘they fill’ < *su₃-n₃-žent-, with the same assimilation of VRHV to VRRV seen in tarra- ‘be strong, able’ < *terh₂-o-, etc. (see Oettinger, *Stammbildung* 549, and Melchert, *SHHP* 44, n. 91). The Palaeo secondary noun šunnuttil- ‘outpouring, serving’ shows that Palaeo shares the assimilation rule VRRV > VRRV. As usual, šunnuttil- is derived from the weak stem *sun₃h₂-*. When we then find the Palaeo verb šūnna- ‘pour out’ (pret. 3rd sg. šūnati, inv. 2nd sg. šūnna) with single -n-, it can only represent the original strong stem of the nasal-infix verb: *su₃-n₃-h₂- (versus Hitt. šunna- < weak stem *su₃-n₃-h₂- V-).* In view of Pal. wēt/i- ‘build’ with e/i-vocalism from *we₃-dēh₁- (see Melchert, *KZ* 97.39f., and Oettinger, *Stammbildung* 130), šūnna- can hardly continue *su₃-n₃-h₂-*. We are therefore necessarily led to *su₃-n₃-h₂-*. Hence the lost intervocalic laryngeal in *şeuh₂-u- is *h₃*, as Watkins had surmised.

This result, which I believe is unavoidable, obviously permits derivation of dāi ‘takes’ from either *deh₂-ei- or *deh₂-ei-. Whether one adopts either of these preforms depends on one’s views about the overall status of the hi-conjugation. If one accepts the arguments of Hamp, *MSS* 30 (1972) 36f., for assuming *h₃* in the “Hoffmann suffix” *-h₂-on-*, then we have an additional example of lost intervocalic *h₃* in Hittite. The Hittite noun aliy(a)n- has previously been unexplained, but it is clear that it refers to a proverbially gentle animal: see Madd. Rs 91 aliyas-va UL-wa HI-ma-wa waki UL-ma-wa ʾiṣparrizi ‘The aliy(a)n- does not cry out, does not bite, does not kick’. I believe that aliy(a)n- must be taken as ‘lamb’ (a quasi-universal symbol of gentleness), i.e. *ali₃-h₂-on- *(the one) having soft, fine wool* (dbl. ʿali-).15

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12 Sturtevant has a similar analysis of dāi- in *CGn* 2 (1951) 133, but he assumes a fourth laryngeal (see ibid. 51ff.).

13 I now withdraw the contents of footnote 61, *Studies in Hittite Historical Phonology* (1984) 29 (henceforth *SHHP*). The stem šunna- ‘immers, sowe’ is undoubtedly what it appears to be: a deverbal formation in -ya- to the weak nasal-infix stem *su₃-n₃-h₂-. Since laryngeals are lost before *y* in Hittite, the stem *su₃-n₃-yejjo- would lead regularly to šunna- with single -n-.

14 The Palaeo suffix -til equals Hitt. -zil (tayazzil- ‘theft’ etc.). For the connective -u-, as favored in Anatolian, compare Hittite animate nouns in -uzzi- < *u-ti- and Hittite “instrumental” nouns in -uṭri- < *u-ti/dhri- (e.g. waššutri- ‘clothing’ ← wašša₃- ‘clothe’).

15 A. Lehrmann, in a paper presented at the same conference cited in note * above, has argued that Anat. *wezideja- ‘build’ represents a causative stem *wezi-deja/- to the PIE root *weid- ‘twine, weave’ (cf. Lat. *vexilar*- ‘twine’, etc.). The attested inflection (Hitt. weṭa-< weza-) would be perfectly regular by this derivation: cf. lu₂ke/ja- ‘kindle’ and wašša₂ja- ‘clothe’ from causatives (see Melchert, *SHHP* 31ff., with refs.). By this explanation the e/i- of Pal. wēt/i- would continue not *sh₁-, but *eye-/ with the same loss of intervocalic ʿy and contraction to ʿ as in Hittite. Nevertheless, in a language where ʿz < *ye- appears as e/i and original short ʿz < e/i (see Melchert, *KZ* 97.39), it is hardly credible that *sh₁- would give a. The vocalism of šūnna thus would still point to *su₃-n₃-h₂-.

16 The animate n-stem aliy(a)n- with single -l- (!) must be kept separate from the a-stem alliγa- (with gennative -l-), which is a bird of some kind. It is very likely that we have a second example of the suffix *-h₂-on- in Hittite muriγa(n)- ‘grape cluster’ (anim. n-stem) ← mūri₃- ‘grape’ (anim. i-stem). For obvious reasons, it is difficult to prove the semantic distinction between mūri₃- and muriγa(n) from the few instances in the texts, but the suggested separation into two paradigms does account for what is otherwise a very peculiar inflection (unparalleled in Hittite to my knowledge).
3.2. *h₃ between vowel and stop.

Palaic ṣānat ‘poured out’ < *sunu-nē-h₃-t indicates that *h₃ was lost in this position, like *h₁ and even *h₂ (see note 3, end). We would expect this loss to have entailed compensatory lengthening. Attested ṣānat for expected *sunuāt may reflect retraction of the accent to the first syllable. This explanation necessarily remains ad hoc, but S. Kimball has called my attention to the similar-looking case of Hitt. ḥūni(n)k- ‘wound’, where the scriptio plena of the first syllable is likewise unexpected from *h₃sunē-g-. If one derives dā- ‘take’ from a perfect stem or active root aorist, then second singular dattī ‘you take’ may continue directly *dōh₃-th₂-ēti or *dēh₃-th₂-ēti.

3.3. *h₃ between vowel and *s.

Unlike *h₂, which is preserved before *s (pašš- ‘protect’ < *peshš-, etc.), the weaker *h₃ assimilates to a following *s, producing a geminate -šš-. The one sure example is pašš- ‘swallow’ < *peshš-, seen in Hitt. pa-pašš-ala- ‘esophagus’ (*the swallowing one’) and CLuv. infinitive paššuna. The single š- of the attested Hittite third singular pāšši is secondary, remodeled after the type of aki, akkanzi ‘die’, ışāšpi, ışakpanzi ‘shut, stop up’ etc., which shows an alternation of single versus double stem-final consonant in the third singular and plural. 17

I have suggested elsewhere (SHHP 92, n31, and 100) that a sequence *h₁-s also assimilates to -šš-, citing Hittite inchoative verbs in -šš- (< *eh₁-s- (following Watkins, TPS 1971 (1973) 51 ff.) and īšš(ā)- ‘do, make’ < *i-ih₁-s- or *i-ih₁-s-). However, we now have solid though limited evidence that *h₃ geminates in Hittite in any consonant cluster, not just next to a sonant: note not only πašš(a)wa- ‘cause to sleep’ and the like but also waššapa- for wašša- ‘garment’, tiššake- for tišša- (iter. to tiya- ‘step’) and Hitt. ḥaššib- ‘be satisfied’ < *hashš- with gemination and then anaptyxis versus Pal. ḥašš- with single š-. Since both inchoatives in -šš- and (originally) īšš(ā)- are invariant athematic stems, they would have regularly ended in a geminate -šš- before -mi, -ši, -zi, -ten(i), and -ta, and could easily have generalized the -šš- to the other persons. These verbs are thus not compelling evidence for an assimilation *h₁-s- > -šš-.

I stress that I also know of no good evidence against the rule 18. At this point one may either continue to assume that both *h₁-s and *h₃-s yield šš, or alternatively (on the basis of *pēshš- > pašš-) assign all indeterminate cases to *h₃-s 19. The situation here is similar to that of the rule VRHV > VRRV, which may or not include *h₁ (see note 2, end).

3.4. *h₃ between vowel and sonant consonant.

In this position *h₃ probably is lost with compensatory lengthening. The only example known to me, however, is Hitt. ḥūmān ‘name’ < *h₁peh₃-ma (note the frequent scriptio plena of the first syllable). Despite Toch. AB ȓem/ȗnom, this remains the likeliest PIE preform (likewise Eichner, MSS 31.55). Another less controversial example would be welcome.

3.5. *h₃ between obstruct and vowel.

Here *h₃ is apparently lost without a trace. The best example is the plural of dā- ‘take’, which by any analysis surely continues zero-grade of the root: *dōh₃-enti > danzi. The compound verbs ṣada- ‘bring’ and peda-carry (off) probably reflect accented preverb and zero-grade of the root as well. It is also possible to suppose with Watkins, Idg. Gram. III/1.199, that the singular stem of dā- ‘take’ continues *dōh₃-o-.

3.6. *h₃ between sonant and vowel.

If one accepts the arguments presented above in 3.1, then Hitt. ṣunna- ‘fill’ and Pal. sunuditil- ‘outpouring’ reflect *su-n-h₃-V-, with the same assimilation of VRHV to VRRV attested for *h₃ 20. If the first o of Grk. ἀγροτόν ‘plow’ is original and not due to assimilation, then Hittite ḥarras- ‘crush, smash’ likewise continues *h₃erēh₃-ēo- (cf. tarra- ‘be strong’ < *terh₃-ō- etc.). For a different view see Oettinger, Stammbildung 500.

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17 The origin of this type is too complex an issue to treat here: for one account see Oettinger, Stammbildung 447. Note that this pattern also affects athematic hi-verbs in final -h₂: zaḫi- ‘strike’ to zaḫš-, nūṭi ‘frightens’ (impersonal use) to naḫš-. There is also a clear tendency to generalize the single -h₂- from the pres. 3rd sg. to the rest of the paradigm in these verbs. The single -h₂- of the athematic stem lēh₂- ‘pour’ (and hence lēḫ₂-), probably due to the same phenomenon. The Hittite verb therefore is from *hlēh₂- with secondary single -h₂- (so also Oettinger, Stammbildung 424). Whether one should still attempt to relate the family of Lat. laudō and Grk. λῶο- is another question. The Hittite verb šēh₂- ‘staff full, clog up’ (sic!), which is an athematic hi-verb with consistent single -h₂-, probably reflects *ṣeḥ₂- with single -h₂- generalized from the pres. 3rd sg. šēh₂-. The root is that of Lat. satis ‘enough’, etc. Cf. Oettinger, Stammbildung 812.

18 The derivation of ‘sit’ (Hitt. eki- etc.) from a root *eh₁- (e.g. Eichner, MSS 31.54) is quite dubious. It is far more likely that medial *ēki- ‘sit (down)’ is a derived lengthened-grade present to *h₁eś- ‘be’. Note OH ǣkā ‘sits down’ beside ǣkši ‘sits’ and ‘is’.

19 I have in mind here examples like Hitt. ḥēšō- ‘th’ili’ (= Skt. śi-ḍ-) and ḥēšō- ‘hearth’ (= Lat. ātrā), where the Hittite geminate -šš- and the long vowel elsewhere together require either *h₁š- or *h₃š-.

20 It is also possible that HLuv. ma-na-wašši su-na-tā (SULTANHAN 4), a blessing which is to come down from heaven, means ‘gentle outpourings’ or the like (for the adjective nom.-acc. pl. mansawā of CLuv. mansu-, dat.-loc. pl. mansawasa). HLuvian orthography cannot display the geminate, but a sunata- ‘outpouring’, a secondary derivative from the nasal-infix verb stem, would surely be based on the weak stem *su-n-h₂-.
3.7. *h₃ between consonants.

What evidence we have suggests loss in this position, but more examples would be helpful. Once again, if Grk. ἀρδόνον 'plow' does show *h₂erh₃-, then Hitt. hars- 'to harrow' necessarily must be *h₂erh₃-, with the -s- 'enlargement' found elsewhere in Hittite (cf. Oettinger, *Stammbildung* 193). If one accepts *h₁neh₃- as the root shape of 'name', then HLuv. *al(a)man- 'name' shows the result of *h₁py₃-mn-, with generalized zero-grade of the root like Grk. δνομα/δνομε. I assume regular loss of initial *h₁, development of *γ to an, loss of *h₃ between consonants, then dissimilation: *anhman- > *anman- > atman-. The derivation of atman- (sic!) from *h₁neh₃-mn by Oettinger, *Stammbildung* 457, is phonologically implausible. Furthermore, HLuv. (LOQUI) lammija- 'call' (attested in the iter. 3rd pl. (LOQUI) la-ma-ni-sa-ti) shows that HLuv. treated the full-grade stem in the same manner as Hittite (I see no independent basis for viewing the verb as a borrowing from Hittite).

4. Final *h₃.

Since *h₃ does not occur as the final element of any PIE inflectional ending, examples of word-final *h₃ are hard to find. We would expect loss (with compensatory lengthening after vowel), and this may be shown in the 2nd sg. inv. dā 'take!', which can be the bare root *deh₃.

5. Conclusion.

We have seen that *h₃ in Anatolian occupies an intermediate position between *h₂ and *h₁. It appears as h initially in Hittite/Palaic/Luvian but is apparently lost in Lycian (in contrast to the more strongly articulated *h₃). Elsewhere it disappears, not only in the environments where *h₂ is lost, but also intervocally and before a sonant (like *h₁). *h₃ is indirectly reflected in the assimilation of *h₃-s to šš and *VRh₃V to VRRV, developments which may or may not be shared with *h₁.

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