Initial Laryngeals in Anatolian

The fate of the PIE laryngeals in Anatolian has been much debated. Especially the outcomes of $*h_3$ are controversial. In this article I will look at the outcomes of the PIE laryngeals in Anatolian in initial position only. I will treat the Hittite, Luwian and Lycian evidence, while leaving the other Anatolian languages aside.

$*h_1$- in Hittite

The common view is that $*h_1$ in initial prevocalic position is lost without a trace in Hittite.[1] Although at first sight this statement seems to be true, I will return to this matter later on.

The fate of $*h_1$ in initial preconsonantal position is less clear. Most scholars assume that $*h_1$ is always lost in this position.[2] Nevertheless, there are well-known cases where initial preconsonantal $*h_1$ seems to have left a trace in the form of *aC-*. The examples cited most often are the weak stems of *e/a*-ablauting *mi*-verbs, e.g. 3sg.pres. *ēszi* : 3pl.pres. *asanzi* 'to be' < $*h_1es$- : $*h_1s$-. As these weak stems in *aC-* are regarded by some scholars as having developed secondarily, we should first look for words in which a secondary origin of *aC-* is unlikely, and that therefore would show genuine traces of preconsonantal $*h_1$ in Hittite.

One word that possibly shows such a trace is the oblique stem *amm-* 'me'.[3] Kimball (1999: 390)[4] regards this word as a reflex of the PIE oblique form for 'me', $*h_1m$-, and assumes that the initial *a-* reflects a vocalized $*h_1$- before *m*. She explains the geminate *-mm-* as due to the following accentuated vowel.

---

[1] E.g. Melchert 1994a: 65, Kimball 1999: 389.

[2] E.g. Melchert 1994a: 66-7, but compare Kimball 1999: 390-2, who assumes vocalization of initial $*h_1$ to *a-* before $*m$ and hesitatingly suggests that this happened before stops as well.

[3] With acc. *ammuk*, gen. *ammēl*, dat. *ammuk*, abl. *ammēdaz*.

[4] Following Beekes (1987: 11-2), pace Melchert (1994b: 297-300) who reconstructs $*ému$ and uses the "limited Čop's Law" to explain the outcome *ammu-* in Hittite. Čop's Law probably did not operate in Hittite as none of Melchert's examples (1994b) is convincing.

Although I believe that *amm-* indeed must be traced back to the PIE oblique stem for 'me', I have a slightly different interpretation of this form. In my view, the geminate *-mm-* cannot be explained otherwise than as reflecting **-mn-*, so *amm-* goes back to **h₁mn-*.[5] This **h₁mn-* must be the zero grade of the stem **h₁men-* as seen in the gen. **h₁méne* (GAv. *mana*, OCS *mene*), just as the oblique stem **tu-*'you (sg.)' is the zero grade of the stem **teu-* as seen in gen. **téue* (Skt. *táva*).[6] In **h₁mn-*, the sequence **m̥nV* regularly yielded Hitt. *ammV*, regardless of whether or not the **m* was preceded by a consonant. Therefore, the *a-* of *amm-* does not necessarily reflect the initial laryngeal. It might as well reflect **m̥nV- < *h₁mnV-*. The word therefore cannot be used anymore as an argument in the question whether initial preconsonantal **h₁* left a trace in Hittite or not.

The same is valid for Hitt. *anda(n)* 'in(to)'. Although this word is generally reconstructed as **h₁endo(n)*[7] (~ Gk. ἔνδον 'inside', OLat. *endo* 'into'), Lyc. *ñte* shows that we have to reconstruct **h₁ndo(n)*[8]. This preform, however, is not decisive in the question whether initial **h₁* left a trace in Hittite, since **h₁ndo(n)* as well as **ndo(n)* would vocalize its *n-* to Hitt. *anda(n)*.

Other words in which initial **h₁* seems to vocalize to *a-* all begin with **h₁r-* (e.g. *aranzi* 'they come' < **h₁r-enti* (~ Gk. ἔρχομαι)). Of these words it is hard to state whether the **h₁* has left a trace or whether initial *r-* automatically receives a prothetic *a-*. The total absence of words beginning with *r-* in Hittite indicates that initial *r-* was not tolerated.[9]

Summing up, there are no convincing examples of words where **h₁* left a trace in initial preconsonantal position in Hittite other than in the weak stems of *e/a*-ablauting *mi*-verbs. Moreover, there are a few words where **h₁C-* unambiguously yields *C-*. These are summed up by Kimball (1999: 389f.):

---

[5] I owe this insight to Peter Schrijver (p.c.). The other Anatolian languages unfortunately do not give much information on 'I, me'. In CLuw. the word is not attested, whereas the script of HLuw. is not able to express geminates (*á-mu* 'I'). In Lyc. (*ẽmu* 'I') and Lyd. (*amu*, *ẽmu* 'I, me') the PAnat. geminate resonants merged with the single resonants.

[6] In my view, the oblique stem **h₁mn-* is also the source of Toch. *ñ-* 'I, me' < **h₁mne-*. In the other IE languages, the cluster **-mn-* was simplified to *-m-*, yielding the 'classical' oblique stem **h₁m-* (Gk. ἐμ-, Arm. *im*, Skt. *m-*, etc.).

[7] E.g. Melchert 1994a: 134-5.

[8] This reconstruction is obligatory for OIr. *and* 'in it' as well (cf. McCone 1992: 26), whereas both Gk. ἔνδον and OLat. *endo* could reflect **h₁ndo(n)* just as well as **h₁endo(n)*, cf. Schrijver (1991: 58-9). See Kloekhorst 2004: 42-43 for a more elaborate treatment of this word in Anatolian.

[9] Initial **r-* was not tolerated in PIE itself either.

Hitt. ***li(n)k-***^{zi} 'to swear an oath' has since Sturtevant (1930: 218) been connected with Gk. ἐλέγχω 'to disgrace, to question', which must go back to PIE *$h_1leng^{(}{}^{)h}$-.

Hitt. ***nakki-*** 'heavy, difficult' has since Sturtevant (1930: 215) been connected with Hitt. ***ninink-*** 'to lift, to move' and Gk. ἐνεγκεῖν 'to carry', which points to a reconstruction *h_1nok-*i*-. Kimball (1999: 381) treats this word as an example of loss of initial laryngeal before *o-grade, but this does not explain the absence of *h_1- in *ninink-*. Hence I take both words as evidence for unconditioned loss of initial pre-consonantal *h_1-.

Hitt. ***siie-/siia-*** 'to shoot, to spurt' has been convincingly connected by Kimball (1987) with Hitt. *pēssiie-/pēssiia-* 'to throw', *ūssiie-/ūssiia-* 'to draw curtains' and Skt. *ásyati* 'to shoot', which all indicate that Hitt. *siie-/siia-* must reflect *h_1s-*ie/o*-.

Hitt. ***suhmili-*** 'well fixed' has since Catsanicos (1986) commonly been regarded as reflecting *h_1su- 'good' + *h_2mei- 'to fix' (cf. Ved. *sūmáya-* 'well connected').

A new argument could be the verb ***pai-/pi-*** 'to give', of which I have tried to show elsewhere[10] that it reflects *h_1p-*(o)i*-, an athematic *i*-present of the root *h_1ep- 'to take, to seize'.

On the basis of these examples we have to conclude that initial preconsonantal *h_1 is regularly lost in Hittite. The seeming retention of *h_1 as *aC*- in the weak cases of the *e/a*-ablauting *mi*-verbs (*ed-/ad-* 'to eat', *eku-/aku-* 'to drink', *epp-/app-* 'to seize', *ēs-/as-* 'to be' and *ēs-/as-* 'to sit') therefore must be explained as a secondary development.

A common view is that these verbs introduced the *a*- in the weak stem in analogy to the only other *e/a*-ablauting *mi*-verb, *ses-/sas-* 'to sleep'.[11] This, however, is highly improbable. In other IE languages, important verbs as 'to be' and 'to eat' are seldomly secondarily reshaped in analogy to other verbs. I do not believe that in Hittite a wide-scale leveling within the paradigm of these verbs took place in analogy to one less frequent verb only.

In my view, the only way to explain the secondary retention of the initial *h_1 in these forms is to assume that this retention is due to their own paradigmatic force. At the moment that initial preconsonantal *h_1 was dropped, the strong stems of these verbs must have been *h_1eC-, in which *h_1 still functioned as a real consonant /ʔ/. The ablaut of these

---

[10] Kloekhorst fthc.b.

[11] E.g. Melchert 1994a: 66-7, Kimball 1999: 390.

verbs, /ʔeC- / ʔC-/, at that point still corresponded to the other ablauting *mi*-verbs, that (almost)[12] all showed an ablaut **Ce(R)C- / *C(R)C-*. When the verbs of the structure /ʔeC- / ʔC-/ were to become /ʔeC- / C-/, their ablaut became intransparent and aberrant. In these cases /ʔ-/ was reintroduced analogically into the weak stems, giving /ʔC-/ again.

This scenario indicates that up to the time[13] of the loss of initial preconsonantal **h$_1$*, prevocalic **h$_1$* still functioned as a genuine consonant /ʔ/. I would like to argue here that this was still the case in attested Hittite.

In the cuneiform script that the Hittite scribes adopted from the Akkadians, no separate signs are used that denote the glottal stop (*alef*). In Akkadian, however, the glottal stops could be written with the plain vowel-signs when necessary.[14] This means that in principle these signs are ambiguous, and could be interpreted as denoting *'V* as well as *V*. In the case of Hittite, however, a transliteration with glottal stops has not been proposed before because it never seemed to be necessary. Still, we sometimes encounter peculiar spelling conventions in Hittite texts that could be better understood when we assume that *V*-signs are used to denote glottal stops as well.

One of these cases is the fact that the spelling of *a-a-tar* 'water' is always different from the spelling of *ú-a-a-tar* 'inspection'. The first word (always written with *a-*) is etymologically **h$_2$ódr*, whereas the latter word (constantly written with *ú-a-*) reflects **h$_1$u-éh$_2$-tr* (verbal substantive of the verb *au(s)-/u-* < **h$_1$ou-/h$_1$u-* 'to see'). I therefore interpret *a-a-tar* phonologically as /ʔăd̥r̥/, and *ú-a-a-tar* as /ʔăd̥r̥/. The only difference between the two is the initial glottal stop that reflects **h$_1$*, written with the sign *ú*.

Another instructive case can be found in the class of *mi*-verbs that show *a/a*-ablaut out of original *e/Ø*. In these *mi*-verbs, which had the structure **CeRC-*, the old *e/Ø*-ablaut yielded synchronic *a/a* because the **e* of the strong stem **CeRC* changed to *a* due to several sound laws (e.g. **h$_{2/3}$e- > ha-*, **eRCC > aRCC*, **eRH > aRH*), whereas in the weak stem the zero-grade **CRC-* yielded *CR̥C-*, which is written *CaRC-*.

---

[12] Perhaps only the verbs with initial **h$_2$* or **h$_3$* had already become **ha(R)C- / *h(R)C-*.

[13] As we will see below, **h$_1$R-* was retained as **ʔR-* in PAnat. The Hitt. loss of preconsonantal initial **h$_1$* therefore has to be dated after the break-up of PAnat., which implies that prevocalic **h$_1$*, too, was still phonemic in PAnat. (**ʔV-*).

[14] Cf. Durham 1976: 105, 109, 117 for the observation that in the Akkadian texts written in Boğazköy the sign *I* could be used as *'i$_x$*, *Ú* as *'u$_x$* and *A* as *'a$_x$*.

Some examples are: *harkzi* : *harkanzi* 'to perish' < **h₃érg-ti* : **h₃rg-énti*; *karpzi* : *karpanzi* 'to pick, to pluck' < **kérp-ti* : **krp-énti*; *karszi* : *karsanzi* 'to cut off' < **kérs-ti* : **krs-énti*, etc.

There is, however, only one verb in this class that shows an ablaut *ā/a-*, viz. *ārszi* : *arsanzi* 'to flow' < **h₁érs-ti* : **h₁rs-énti* (~ Skt. *árṣati* 'to flow'). The plene written *ā* of the singular is clearly aberrant when compared to the other verbs of this class, that all have short *a* in this position. This aberrancy is noted by e.g. Melchert (1994a: 125), who unconvincingly assumes that *ārszi* shows a generalized zero-grade **r̥sti* which should have given **órsti* > *ārszi*. Kimball (1999: 162), however, just states that **h₁érsti* > *ārszi*, without explaining the absence of long reflexes in the other verbs of this class (e.g. ***kārszi*).

Besides being the only verb of its class to show an *ā/a*-ablaut, *ārs-/ars-* is also the only verb of its class that is derived from a root starting in **h₁-*. In my view, the combination of these two facts cannot be coincidental. The spelling *a-ar-as-zi* would make perfect sense if we interpret it as *'a-ar-as-zi* = /ʔarstˢi/. The plene spelling does not indicate length, but is used to spell /ʔa-/. The word *a-ar-as-zi* now can be interpreted as having a short vowel *-a-*, and then matches all other verbs in its class.

These two examples indicate that **h₁* was retained in initial prevocalic position as /ʔ/ in attested Hittite. I intend to present more evidence in favor of this view elsewhere.

As **h₁V-* is retained as /ʔV-/ in Hittite, I am inclined to believe that in the words where **h₁C-* was restored, this cluster has been retained as /ʔC-/ in attested Hittite as well. I therefore think that e.g. the spelling *a-sa-an-zi* 'they are' is to be read as *'a-sa-an-zi* = /ʔₔsantˢi/, just as e.g. *sa-sa-an-zi* 'they sleep' is generally interpreted as /sₔsantˢi/ (e.g. Melchert 1994a: 66).

Conclusions regarding **h₁-*

Summing up, I conclude that **h₁* was retained as /ʔ/ in initial prevocalic position in Hittite. In initial preconsonantal position **h₁* was regularly lost. In some ablauting verbs, however, the laryngeal was reintroduced due to paradigmatic force, and in these cases **h₁C-* was retained as /ʔₔC-/ in Hittite.

*h_2- in Hittite

There is much consensus on the fate of initial *h_2 in Hittite. It is generally accepted that it was retained in all initial positions.[15] Kortlandt (2003-04), however, argues that *h_2 (just as *h_3) was neutralized before *o (i.e. became *h_1). He nevertheless gives no examples for this development. Finding sure examples of *h_2o- is difficult, especially as o-grade is not always easy to prove. In the class of the *hi*-inflected verbs, however, we know for sure that the strong stem had o-grade. It therefore seems to speak against Kortlandt's theory that we find three *hi*-verbs beginning with *ha-* < *h_2o-. However, as he indicates himself, we have to take into account that paradigmatic leveling took place on a large scale in Hittite, and that in these cases *h_2 may have been retained in analogy to the weak stems (where we find *h_2C-). These verbs are:

Hitt. ***hān-^{i} / han-*** 'to draw (water)' is perhaps to be connected with Gk. ἄντλος 'bilge-water' (Puhvel 1991: 77) and then shows *$h_2$ón- / *h_2n-. If we want to save Kortlandt's theory, we have to assume that in the strong stem *$h_2$on-, which regularly became *$h_1$on-, the initial *h_2 is reintroduced on the basis of the weak stem *h_2n- that regularly became *hn-* (e.g. 3pl. *h(a)nanzi* < *$h_2$nenti*).

Hitt. ***hās-^{i} / hass-*** 'to give birth' is a special case. If it is cognate to Luw. *hamsa-* 'descendant' and Hitt. *hassu-* 'king' (for the latter see below) it must reflect a root *$h_2$ems-*. This means that the original paradigm must have been *$h_2$oms-ei* : *$h_2$ms-enti*. This should regularly (including Kortlandt's rule) have given **āsi* : ***hanzanzi*[16]. It is clear that different forms of leveling must have taken place to explain the outcome *hāsi* : *hassanzi*.

Hitt. ***hāt-^{i} / hat-*** 'to dry up' could perhaps be cognate with Gk. ἄζω 'to dry up' (Puhvel 1991: 248), and would then reflect *$h_2$od- / h_2d-*.[17] It is, however, not totally clear whether this verb is really *hi*-conjugated, as the only specific *hi*-form, 3sg.pres. *hāti*, is disputed regarding its reading (cf. Oettinger 1979: 408).

Although these three verbs could be regarded as contradicting Kortlandt's theory, I have found one *hi*-verb that could agree with his theory.

---

[15] E.g. Melchert 1994a: 68; Kimball 1999: 392-3.

[16] Cf. Rieken (1999: 232), where *hanzasa-* 'descendant' is reconstructed as *h_2ŋso-so-*.

[17] Cf. Puhvel 1991: 246-8, with references.

Hitt. *ānš-*^{i} 'to wipe' has been connected by Melchert (1988: 212[3]) with Gk. ἀμάω 'to crop', OHG *māen* 'to mow', which verbs are generally regarded as reflecting **h₂meh₁-*. On the basis of this connection, I have argued elsewhere[18] that *ānš-*^{i} must reflect **h₂ómh₁-s-ei*.[19] The assumption that the root indeed was **h₂omh₁-s-* (with initial **h₂* as indicated by Gk ἀ-) in my view is proven by the fact that the weak stem **h₂mh₁-s-* regularly yielded Hitt. *hanešš-*[20], which formed its own paradigm *hanešš-*^{zi} 'to wipe'.[21] So, in my view, the original paradigm **h₂ómh₁-s-ei*, **h₂mh₁-s-énti* (an *s*-extension of **h₂meh₁-*) yielded *ānši*, *hanessanzi* through regular sound changes. Both ablaut-stems generalized their own paradigm: *ānš-* formed the *hi*-inflected verb *ānš-*^{i}, *hanešš-* the *mi*-inflected verb *hanešš-*^{zi}. Semantically, both verbs stayed identical, both meaning 'to wipe'. A detailed treatment of the equation of *ānš-*^{i} and *hanešš-*^{zi} can be found in Kloekhorst fthc.a.

Besides this verb in which *o*-grade is expected because of its *hi*-conjugation, I have found two additional words that perhaps could show a development **h₂o- > *h₁o-* as well:

Hitt. *āra-* 'right, proper' is connected by Puhvel (1984: 120-1) with Skt. *arámati-* 'devotion', *ṛtá-* 'right, proper' and Gk. ἀραρίσκω 'to join', which are derived from a root **h₂er-*. The fact that we are dealing with an *o*-stem adjective could indicate that the root had *o*-grade, so **h₂ór-o- > *h₁óro- > āra-*.[22]

Hitt. *aruu̯ae-*^{zi} 'to make obeisance' is connected by Oettinger (1979: 345[171]) with Gk. ἀρή < **ἀρϝᾱ* 'prayer' and ἀράομαι 'to pray'[23] and reconstructed as **h₂r-u̯-eh₂-i̯e-*. This cannot be correct, as a verb in

---

[18] Kloekhorst fthc. b.

[19] The Schwebe-ablaut assumed here (**h₂meh₁-* besides **h₂omh₁-s-*) is paralleled by Hitt. *tamāszi* that reflects **dmeh₂-s-* from **demh₂-*. We find similar instances of Schwebe-ablaut in *s*-extended forms throughout Indo-European: **mi̯eḱs-* from **mei̯ḱ-*; **h₂leks-* from **h₂elk-*; *h₂u̯eks-* from **h₂eu̯g-*; cf. LIV[2] 278, 289, 445.

[20] For the development of **CRHs- > CaRəss-* cf. Kloekhorst fthc.a., where the examples *kanessanzi* 'they know' < **ĝnh₃sénti*, *tamessanzi* 'they (op)press' < **dmh₂sénti* and *kalissanzi* 'they call' < **klh₁sénti* can be found.

[21] As *hanešš-*^{zi} 'to wipe' occurs in exactly the same contexts as *ānš-*^{i} 'to wipe', an equation of these verbs is unproblematic semantically.

[22] The Lyc. cognates show **o*-grade as well: *ara-* 'rite', *arawa-* 'freedom' and *arawazije-* 'monument' are umlauted from original *era°*, as can be seen in the one unumlauted form *erawazije-*. This *era°* reflects **Hor-*, as we will see below as well.

[23] The connection with Gk. ἀρή 'prayer' is semantically satisfactory as well, cf. IBoT 1.30, 1 LUGAL-*us* ... DINGIR^{MEŠ}-*as aruu̯āizzi* 'the king makes obeisance to the gods', KBo 22.2 rev. 30 DINGIR^{DIDLI}-*as aruu̯anzi u̯et* 'he came to make obeisance to the gods'.

-eh₂-i̯e/o- would end up in the Hitt. *tāiie*-class. Since *aruuae-*^{zi} belongs to the *hatrae*-class[24], it must reflect a denominative verb in *-o-i̯e/o-*. The verb therefore cannot be derived from a noun **h₂(e)r-u̯-eh₂-*, but must be derived from an *o*-stem noun, which probably had *o*-grade in the stem: **h₂or-u̯-o-*. So **h₂oru̯ó-i̯e/o-* > **h₁oru̯ói̯e/o-* > Hitt. *aruuae-*^{zi}.

In all other positions (before **e*, **i*, **u* and consonants) **h₂* seems to have been retained initially as Hitt. *h-*.[25]

**h₂e-*:

Hitt. ***hanna-*** 'grandmother' < **h₂eno-* (~ Lat. *anus* 'old woman', OHG *ano* 'grandmother')

Hitt. ***hant-*** 'forehead' < **h₂ent-* (~ Gk. ἀντί 'opposed, facing', etc.)

Hitt. ***happ-***^{zi} 'to join, to attach' < **h₂ep-* (~ Lat. *aptus* 'connected, fitting')

Hitt. ***hapa-*** 'river' < **h₂eb^h-* (~ OIr. *aub*, *abae* 'river', Lat. *amnis* 'stream')

Hitt. ***hark-***^{zi} 'to hold, to keep' < **h₂erk-* (~ Lat. *arcēre* 'to ward off', Gk. ἀρκέω 'to ward off, to protect')

Hitt. ***hāss-*** 'ashes' < **h₂eh₁s-* (~ Skt. *ā́sa-* 'ash', OLat. *āsa* 'altar')

Hitt. ***hāssā-*** 'hearth' < **h₂eh₁s-eh₂-* (~ OLat. *āsa* 'altar', and see *hāss-* above)

Hitt. ***hassu-*** 'king' < **h₂ems-u-* (~ ON *āss* 'god')

Hitt. ***hē(i̯)u-*** 'rain' < **h₂eih₃-u-* ? (~ Gk. αἰονάω 'to moisten'?)

**h₂i-*:

Hitt. ***himma-*** 'imitation' < **h₂im-* (~ Lat. *imitor* 'to imitate', Lat. *aemu-lus* 'rival')

**h₂u-*:[26]

Hitt. ***huu̯ai-***^{i} 'to run, to hurry' < **h₂uh₁-oi-* (~ Skt. *vā́ti*, Gk. ἄησι 'to blow (of wind)')

Hitt. ***huu̯ant-*** 'wind' < **h₂uh₁-ent-* (~ Skt. *vā́nt-*, Gk. ἀεντ- 'blowing', Lat. *ventus* 'wind')

Hitt. ***huek-***^{zi} **/ *huk-*** 'to conjure' < **h₂ueg^h-* (~ Gk. αὐχέω 'to boast')

Hitt. ***hues-***^{zi} 'to live' < **h₂ues-* (~ Gk. ἅεσα 'to spend the night')

Hitt. ***huhha-*** 'grandfather' < **h₂uh₂o-* (~ Lat. *avus* 'grandfather')

---

[24] Cf. Oettinger 1979: 32.

[25] I only use here those examples known to me in which Hitt. *h-* undoubtedly reflects **h₂*, i.e. assured by outer-Anatolian *a-* (cf. note 26).

[26] Ofitsch 1995: 19 only gives Hitt. *huek-* 'to slaughter' as evidence that **h₂* is retained as Hitt. *h* before *u̯*. This is non-probative as the only known cognate of Hitt. *huek-* 'to slaughter' is OP *vaj-* 'to stab' which proves nothing with regard to which laryngeal is reflected by Hitt. *h-*.

*h_2R-:

Hitt. ***halai-***^{i} 'to set in motion' < h_2l-*oi*- (~ Gk. ἰάλλω 'to send off')

Hitt. ***halīna-*** 'clay?' < h_2liH-*no*- (~ Gk. ἀλῖνειν 'to anoint', Lat. *linō* 'to smear')

Hitt. ***halkuessar*** 'produce, supplies' < *h_2lg^{wh}-*esr* (~ Gk. ἀλφάνειν 'to bring in as profit')

Hitt. ***hamank-***^{i} 'to tie, to betroth' < *h_2m-*on*-$\hat{g}^h$- (~ Gk. ἄγχω 'to tie up', Lat. *angō* 'to throttle')

Hitt. ***hamesha-*** 'spring' < *h_2meh_1-*sh*$_2o$- (~ Gk. ἀμάω 'to cut, to crop', OHG *māen* 'to mow')

Hitt. ***harki-*** 'white' < *$h_2r\hat{g}$-*i*- (~ Gk. ἀργι-όδων 'having white teeth', TochA *ārki* 'white')

Hitt. ***hartakka-*** 'bear' < *$h_2rt\hat{k}o$- (~ Skt. *ṛkṣa*-, Gk. ἄρκτος 'bear')

Hitt. ***haruanai-*** 'to get light' < *$h_2r\breve{u}$-*o*- (~ Arm. *arew* 'sun', Skt. *ravi*- 'sun')

*h_2C-:

Hitt. ***hasterza*** 'star' < *h_2ster- (~ Gk. ἀστήρ, Skt. *stár*- 'star')

Hitt. ***hatug-***^{zi} 'to be terrible' < *h_2tug- (~ Gk. ἀτύζομαι 'to be bewildered', Skt. *tuj*- 'to thrust')

Conclusions regarding *h_2-

In the foregoing we have seen that initial *h_2 is retained as *h*- before **e*, **i*, **u* and consonants, but is possibly lost before **o*.

*h_3- in Hittite

The fate of *h_3 is one of the most controversial subjects in Hittite historical phonology. In recent years a number of articles on the subject have appeared. There are basically three theories:

1. *h_3 was lost in all initial positions (e.g. Eichner 1988: 128 and implicitly Zeilfelder 1997)

2. *h_3 was retained as *h*- in all initial positions (e.g. Melchert 1987, Kimball 1987, Oettinger 2004)

3. *h_3 was sometimes lost, and sometimes retained as *h*- (Rasmussen 1992)

When looking superficially at the material, both loss and retention appear to be defendable, as both Hitt. *a*- as well as *ha*- seem to correspond to outer-Anatolian *o*-, e.g. Hitt. *arki*- 'testicle' (~ Gk. ὄρχις 'testicle'), Hitt. *aniia*- 'to carry out' (~ Lat. *onus* 'burden'), Hitt. *arta* 'stands' (~ Gk. ὦρτο) vs. Hitt. *hāran*- 'eagle' (~ Gk. ὄρνις 'bird'), Hitt. *hastāi* 'bone' (~ Gk. ὀστέον 'bone') etc.

Melchert (1987) takes the examples with initial *h-* as decisive and assumes that initial $*h_3$ > Hitt. *h-*. The examples with *a-* corresponding to outer-Anatolian *o-*, he explains as reflecting $*h_1o$- (e.g. *arki-* < $*h_1org^hi$-, *anija-* < h_1on-).

Kimball (1987) arrives at a similar conclusion and also explains Hitt. *a-* that corresponds to outer-Anatolian *o-* as reflecting $*h_1o$-. She, however, divides the group of words in which Hitt. *ha-* corresponds to outer-Anatolian *o-* into two. According to her, the words that match Lyc. Ø- reflect $*h_3e/o$-, whereas the words that match Lyc. χ- must reflect PIE $*h_2o$-.[27]

Rasmussen (1992) argues that the instances where $*h_3$ seems to give Hitt. *h-* are as compelling as some instances where $*h_3$ seems to have disappeared. He concludes that 'Anatolian manifestly reflects initial $*h_3$- as *both* /h-/ *and* zero' (59). His 'vote for chaos' is methodologically unsatisfactory, of course, but his observations that some etymologies in favor of loss are as convincing as some etymologies in favor of retention of $*h_3$, are undeniable.

Zeilfelder (1997) states that the examples in which Hitt. *a-* correspond to non-Anatolian *o-* are compelling and that the examples in which Hitt. *ha-* seems to correspond to non-Anatolian *o-* could reflect $*h_2o$- as well. After rejecting the etymological connection of Hitt. *hapus-* with Gk. ὀπυίω, she implicitly concludes that there are no convincing examples anymore in which $*h_3$ has been retained as *h-* in Hittite.

Kortlandt (2003-04) argues, just as Rasmussen, that initial $*h_3$ is sometimes lost and sometimes retained, but tries to describe a phonetic distribution between these two outcomes. He argues that initial $*h_3$ (just as $*h_2$) is neutralized before **o* (i.e. becomes $*h_1o$), whereas it is retained before **e*, and subsequently yields Hitt. *h-*. So he assumes that words with *ha-* reflect $*h_3e$- whereas words with *a-* reflect $*h_3o$- (*arki-* < $*h_3org^hi$- and *ar-^{tta}* < $*h_3or$-).

Oettinger (2004) states that initial $*h_3$ in principal is retained, but he treats one exception: *arāi* 'raises' reflects $*h_3roi$-*ei*, in which $*h_3$ is lost due to the following *o*-grade. All other instances of *a-* he takes as reflecting $*h_1o$-.

As we see, there is little consensus on this matter. I agree with Rasmussen that both loss and retention seem to be defendable, but do not understand why he does not search for a meaningful distribution in

[27] This practice is followed by e.g. Melchert 1994a: 235. For a detailed treatment of the assumption that $*h_3$ yielded Ø in Lycian, see below.

phonetic surroundings between these two outcomes. Kortlandt makes a first attempt in describing such a distribution (a different outcome before **e* and **o*), but I think that other factors play a role as well in whether or not initial **h₃* was retained in Hittite.

First, I want to reject a few etymologies of words that are traditionally seen as possibly reflecting initial **h₃*.

Hitt. ***hāliia-*** 'to kneel' is often connected with Gk. ὠλένη, Lat. *ulna*, Skt. *aratní-* 'elbow'. The reconstruction of these latter words is difficult, but the root probably contained **h₃*. The formation of the Hitt. verb is obscure as well. Although at first sight *hāliia-* seems to reflect merely a *-i̯e/o-*derivation of a root *hāl-*, its derivatives *halinu-* 'to make kneel' and *halihla(i)-* 'to genuflect' show that the stem of these verbs is *hāli-*. To my mind, this makes a connection with the 'elbow'-words less convincing.

Hitt. ***hāpūsa(ss)-*** is usually cited as *hapus-* 'shaft, penis' and was connected with Gk. ὀπυίω 'to marry' by Watkins 1982. This connection, which implies a reconstruction **h₃pus-*, has been taken over by many scholars. Nevertheless, there are many problems regarding this etymology. As I have shown in Kloekhorst 2005, the formal as well as the se-mantic interpretation of the word has to be adapted: the stem of the word was not *hapus-* but *hāpūsa(ss)-* and it probably did not mean 'shaft, penis', but rather '(hollow) shaft, shin-bone'. All in all, the etymological connection with Gk. ὀπυίω and the reconstruction **h₃pus-* must be abandoned.

Hitt. ***hasduer-*** is usually translated 'twigs' and in that sense connected with Gk. ὄζος, Arm. *ost* 'twigs', Goth. *asts* 'branch' and reconstructed as **h₂o-sd-* (e.g. Melchert 1994a: 134) or **h₃e-sd-* (e.g. Kortlandt 2003-04: 10, referring to Beekes 1969: 131). In the newest fascicle of HW², however (H̲: 438f.), *hasduer-* is translated as '(pflanzlicher) Abfall; Häcksel; Unkraut; Gestrüpp; Span (von Tierhorn)' and it is stated that 'vielmehr scheint [..] für $^{(GIŠ)}$*ḫašduer-* eine Grundbedeutung des Zerkleinerten, Abgerissenen vorzuherrschen. Daher wäre eine Verbindung zu *ḫašḫaš-* "abschaben; schleifen; hobeln; polieren" wahrscheinlicher'. Whether or not this last connection is justified, it is clear that the connection with ὄζος etc. cannot be upheld.

Having narrowed down the number of **h₃*-words in Hittite, we now should first look at the words that seem to indicate that initial **h₃* has been lost:

Hitt. ***aniia-*** 'to carry out' has often been connected with Lat. *onus* 'work', Skt. *ánas-* 'load'. These two *s*-stems are best explained by a reconstruction *$*h_3$en-es-* (*e*-grade in the stem because of neuter *s*-stem and absence of Brugmann's Law in Skt.[28]). I therefore reconstruct *aniia-* as *$*h_3$n-ie/o-* (zero-grade root before the *-*ie/o*-suffix). Melchert's attempt (1994a: 85) to plead for a root *$*h_1$enH-* is unconvincing. Firstly, a reconstruction *$*h_1$onH-es-* for Lat. *onus* and Skt. *ánas-* implies an irregular *o*-grade in a neuter *s*-stem-word. Secondly, his reconstruction *$*énH-ie/o-$*[29] for *aniia-* is unattractive, as it implies coloring of *$*e$-* to *a-* because of the laryngeal (*$*eRH > aRH$*), after which the laryngeal drops before *-*i*- to explain the single writing of *-n-*.

Hitt. ***ar-^{tta}*** 'to stand' is cognate with Skt. *ārta* 'he has risen', Gk. ὦρτο 'he rose', Lat. *orior* 'to arise, to come into existence'. The non-apophonic *o-* in all languages points to a root *$*h_3$er-*. In Hittite, middles either reflect Ø-grade (PIE middle) or *e*-grade (PIE stative)[30]. The oldest (OS) attestations in the paradigm of *ar-^{tta}* show short *a-* in the present (1sg.pres. *arhari*, 3sg.pres. *arta*), so this verb probably reflects Ø-grade: *$*h_3$r-tó$.[31] The verb *ar-^{tta}* (that is often reconstructed as *$*h_1$or-*) clearly has to be separated from Hitt. *ār-^{i}* 'to come, to arrive'.[32]

Hitt. ***arai-^{i} / ari-*** 'to (a)rise, to raise' clearly belongs with Hitt. *ar-^{tta}* 'to stand' semantically as well as formally. As I argue in Kloekhorst fthc.b, the *hi*-verbs in *-ai-/-i-* go back to *$*CC-(o)i$-*, having a

---

[28] Cf. Lubotsky 1990.

[29] Through this reconstruction Melchert (l.c) tries to explain the *-nn-* of the iterative *anniski-* as well. He assumes that *$*enH-ie/o-sḱe$-* would yield Hitt. *anniski-* through syncope of the vowel of the *-*ie/o*-suffix. I do not understand why Melchert assumes that *-*ie/o*-verbs retained that suffix before the *-*sḱe/o*-suffix. To my mind all Hitt. *-iia-* verbs (other than denominatives) show an iterative in which the *-*sḱe/o-* is attached to the unsuffixed zero-grade stem. In my view, *$*Hn-sḱe/o-$* would yield *$*anski-$*. As *-n-* regularly disappears before *-s-*, a remodelling had to be made. I know only one real parallel, namely the iter. of *kuen-* 'to kill'. The oldest form is *kuuaski-* < *$*g^{wh}$n-sḱe-$*, which is replaced by younger *kuenneski-*. The geminate *-nn-* perhaps is comparable with the gemination of root-final stops before *-*sḱe/o-*, e.g. *akkuski-* from *eku-/aku-* 'to drink', *lakkiski-* from *lāgi* 'to recline'. The presence of a geminate *-nn-* in the CLuw. cognate *ānnī-* 'to carry out, to treat' is non-probative as the distribution between single and geminate resonants in CLuw. is still unclear.

[30] Cf. Oettinger 1976.

[31] Skt. 3sg.inj. *arta* secondarily received a full-grade *$*h_3$e/or-to$*.

[32] The verb *ār-^{i}* 'to come, to arrive' is cognate with Gk. ἔρχομαι 'to come to' and Skt. *ṛcchá́ti* 'to go to', which point to a root *$*h_1$er-$*. As Hitt. *ār-^{i}* is a *hi*-verb, it shows original *o*-grade: *$*h_1$ór-ei$*.

zero-grade in the root, followed by an ablauting *-*oi*-/-*i*-suffix. As *ar-*^{tta} reflects a root *$h_3$er-, *arai-/ari-* must reflect *h_3r-(o)i-*.[33]

Hitt. ***ārk-*^{i} / *ark-*** 'to mount sexually' and ***arki-*** 'testicle' belong with Gk. ὄρχις 'testicle', Av. *ərəzi-* 'testicle', Arm. *orjik*^{c} 'testicles', Alb. *herdhë* 'testicle'. On the basis of Lith. *eržilas* 'stallion', the root is often reconstructed as *$h_1$erĝ^{h}-. This word, however, stands beside Lith.dial. *aržilas* 'id.' and therefore is subject to Rozwadowski's Change, which describes the observation that in Balto-Slavic we often find initial *e-*, where *a-* was to be expected.[34] It therefore cannot be used as an argument for *h_1- anymore. The fact that, besides Lith. *eržilas*, all other outer-Anatolian languages show non-apophonic *o*, strongly speaks in favor of reconstructing a root *$h_3$erĝ^{h}-. This is especially supported by the equation of Gk. ὄρχις with Av. *ərəzi-*. As the Av. form shows zero-grade, Gk. ὄρχις is likely to reflect zero-grade as well and then must reflect *h_3rĝ^{h}i-*. This reconstruction is also likely for Hitt. *arki-*, which is corroborated by its consistent short *a-* (from zero-grade). When active, the verb *ārk-*^{i} / *ark-* is *hi*-conjugated, and therefore must have had *o*-grade in the strong stem and zero-grade in the weak stem. So *ārk-* reflects *$h_3$orĝ^{h}-*[35] and *ark-* < *h_3rĝ^{h}-*.[36] When middle (e.g. 3sg.pres.midd. *arga*), the verb shows zero-grade (consistent short *a-*), and reflects *h_3rĝ^{h}-o*.

Hitt. ***arnu-*^{zi}** 'to make go, to raise, to move along' can either be seen as a causative of *ar-*^{tta} 'to stand' (*$h_3$er-*) or of *ār-*^{i} 'to come, to arrive' (*$h_1$er-*). Although the seeming connection with Gk. ὄρνυμι 'to make move' and Skt. *ṛṇóti* 'to set into motion' seems to point to a reconstruction *h_3r-n(e)u-* (with regular zero-grade root in *-*neu*-derivations), it cannot be excluded that *arnu-* reflects *h_1r-neu-* as well. Perhaps we are dealing with a conflation of the two roots *$h_1$er-* and *$h_3$er-* in this verb.

---

[33] Oettinger 2004 also reconstructs *$h_3$roi-/*$h_3$ri-* for *arāi, arijanzi* (assuming that it shows a root *$h_3$rei-*), but argues that the loss of *h_3* is caused here by Saussure's Law: laryngeal loss in an *o*-grade form. So, *$h_3$roi-ei* gave *arāi*, whereas *$h_3$ri-enti*, which regularly should have become **harijanzi*, was analogically changed to attested *arijanzi*.

[34] Cf. Derksen 2002.

[35] *$h_3$órĝ^{h}-ei* > Hitt. *ārki* is Kortlandt's main evidence for his assumption that *h_3o-* > Hitt. *a-* (cf. Kortlandt 2003-04: 9).

[36] In this *hi*-verb the initial laryngeal was not restored (unlike in *hān-*^{i} / *han-* < *h_2(o)n-*, *hās-*^{i} / *hass-* < *h_2(o)ms-* and possibly *hāt-/hat-* < *h_2(o)d-* as treated above) because in the weak stem *h_3rĝ^{h}-* the laryngeal was lost regularly (namely before resonant) as well. Subsequently, there was no model to restore the laryngeal in the strong stem anymore.

Hitt. ***aru-*** 'high' perhaps belongs to the root *h_3er- 'to rise'.[37] It could either reflect *h_3r-*u*- or *h_3or-*u*-.

Hitt. ***lāman-*** 'name' ~ Gk. ὄνομα, Lat. *nōmen*, Skt. *nā́man-* 'name'. There are basically two major opinions regarding the reconstruction of 'name': *h_1neh_3men- and *h_3neh_3men-. Proponents for *h_1- point to the absence of *ha*- in Anatolian (Hitt. *lāman*, HLuw. *á-ta$_{4/5}$-ma-za*, Lyc. nom.-acc.pl. *alãma* 'name') and to some evidence in other IE languages (e.g. Gk. (Laconian) inscriptions showing a word ἔνυμα- as the first part of names). Beekes 1987, however, sums up the evidence for the non-Anatolian languages and concludes that Gk. ὄνομα 'name', νώνυμος 'anonymous' and Phryg. *onoman* 'name' are decisive and that the PIE form must have been *h_3neh_3-*men*-.[38] We have to conclude that in Hitt. *lāman* the initial *h_3 has disappeared without a trace.

Hitt. ***utnē-*** 'land' is connected by Frisk and Chantraine with Gk. οὖδας 'ground, floor' and Arm. *getin* 'ground'. This connection is followed by e.g. Rasmussen (1992: 54-5), who reconstructs *h_3ud-*n*-. As he states himself (l.c.): 'the root must be *$h_3u̯ed$- [...] as *getin* shows, so that Gk. οὖδ- must reflect [...] *h_3ud-'. Since a development of *HuC > Gk. *VuC* has not been proven (cf. Beekes 1988: 71), this reconstruction is not absolutely doubtless. Nevertheless, the semantic side of the etymology is convincing. If the root was indeed *h_3ud-, Hitt. *utnē* would show loss of *h_3 in this word.

The words that show loss of initial *h_3 can be divided into two groups: First, *h_3 seems to have been lost before resonants (*aniia-* < *h_3n-*i̯e/o*-, *arta* < *h_3r-*to*, *arai-* < *h_3r-*oi*-, *arki-* < *$h_3rĝ^hi$-, *arnu-^{zi}* < *h_3r-*neu*-, *lāman-* < *h_3neh_3mn- and possibly *aru-* < *h_3r-*u*-?, *utnē-* < *h_3ud-*n*-?) and secondly, *h_3 seems to have been lost before *o (*ārki* < *$h_3orĝ^hei$ and possibly *aru-* < *h_3or-*u*-?).

Now let us look at the words in which initial *h_3 has been retained.

Hitt. ***hā-^{zi}*** [39] 'to believe, to trust' is perhaps cognate with Lat. *ōmen* 'omen'. It could then go back to a root *h_3eh_1-[40]. As the verb is *mi*-conjugated, *hā*- must reflect the *e*-grade stem * h_3eh_1-.

---

[37] Cf. Weitenberg 1984: 90.

[38] This reconstruction is now supported by my claim to have found the verbal root *h_3neh_3- 'to call by name' in Hitt. *hanna-^{i}* and Gk. ὄνομαι (see below).

[39] This verb often is cited as *hai-* (Puhvel 1991: 9) or *hae-* (Oettinger 1979: 360), whereas the attested forms (e.g. 1sg.pres. *hāmi*, 2sg.pres. *hāsi*, 1sg.pret. *hānun*) point to *hā-*. Only 2sg.pret. *hāis* (KUB 26.89, 14' (NH)) could be interpreted as showing a stem *hāi-*, but this easily could be a secondary form.

Hitt. ***hanna-*** 'to litigate, to sue' is connected by Puhvel (1991: 83-4) with Gk. ὄνομαι 'to blame, to treat scornfully'. On the basis of the Greek stem-variant ὀνα-, Puhvel reconstructs *h_3nh_2- for this root. Van de Laar (2000: 232), however, states that Gk. ὀνα- is secondary and concludes that ὀνο- reflects *h_3nh_3-.[41]

In Hittite, *hanna-* shows middle as well as active forms. It is hard to decide which inflection is original. Although middle forms are abundantly attested in older texts (from OH/MS), we also find active forms from MH/MS onwards already (2pl.imp.act. *hannatten* (HKM 57 rev. 23 (MH/MS))).

When we take the middle paradigm (*hanna-*$^{a(ri)}$)[42] as original, we have to follow Melchert (1994a: 51) and reconstruct *h_3enh_3-*o*-.[43]

If, however, we take the active paradigm as original (*hanna-*^{i}), then *hanna-* shows the so-called half-consonantal flection (i.e. 3sg.pres. *hannāi* : 3pl.pres. *hannanzi*). This flection-type was explained by Oettinger (1979: 496) as reflecting reduplicated roots ending in laryngeal: **Ce-CóH-ei* : **Ce-CH-énti*. When applying this structure to the root *h_3nh_3-, we see that we would have to reconstruct *hannāi* : *hannanzi* as *h_3e-$h_3nóh_3$-*ei* : *h_3e-h_3nh_3-*énti*. These reconstructions would fit the structure of this class perfectly and yield the attested forms by completely regular sound changes.

This analysis would support the reconstruction of the second laryngeal of this root as *h_3 instead of *h_2 since the latter would not have disappeared intervocalically in the singular.

In both reconstructed forms (*h_3enh_3-*o* and *h_3e-$h_3n(o)h_3$-) the initial *h_3 is followed by an *-e-* so the verb does not contradict Kortlandt's view that *h_3o- > *h_1o-.

If the middle paradigm of *hanna-* was original, we are dealing with a root *h_3enh_3-: if the active paradigm was original, the root was *h_3neh_3- (Gk. ὄνομαι could go back to either root). The latter root form, however, would formally match the root of PIE *h_3neh_3-*men*- 'name' perfectly. Also semantically a connection with 'name' would

---

[40] Although in principle *h_2eh_3- is possible as well.

[41] Van de Laar (2000: 232) gives the root as *h_3enh_3-, but to my mind *h_3neh_3- is equally possible. No Greek form surely reflects a full-grade form (the original middle form probably had zero-grade, ὄνοται < *h_3nh_3-*tó*).

[42] Thus e.g. Oettinger 1979: 514, although he cites *hann-*^{a}. That the root was *hanna-* can be seen in e.g. 2sg.pres.midd. *hannattari*.

[43] Although Melchert follows Puhvel regarding the second laryngeal, and gives a reconstruction *h_3enh_2-*o*-.

fit.[44] If the verbal root *h_3neh_3- originally meant 'to call by name' a semantic development to Hitt. 'to call to court' and to Gr. 'to call names' is quite understandable. If this connection is justified, it would be an extra argument in favor of reconstructing the word for 'name' with initial *h_3 (see also above). Assuming that the root of the verb was *h_3neh_3-, implies that the active paradigm of *hanna-* was original, in spite of the many old attestations of middle forms of *hanna-*^{a}.

Hitt. ***hāppar-*** 'trade business', ***happir*** 'price', ***happinant-*** 'rich' are cognate with Lat. *opus* 'work', *opulentus* 'rich', Skt. *ápas-* 'work' *apnas-* 'possessions'. The non-apophonic *o* and absence of Brugmann's Law in Skt.[45] indicate that the root was *h_3ep-. Kimball (1987) shows that *hāppar* reflects *h_3ep-r. The word *happir*, then, seems to reflect *h_3p-$\bar{e}r$, and seems to prove that *h_3 was retained before stops. Kimball (1987: 187-8), however, argues that *hāppiriya-* 'city' shows that the vowel *-a-* in *happir* must be real, and concludes that an original *$h_3p\bar{e}r$ has been replaced by *h_3ep-$\bar{e}r$. The adjective *happinant-* is comparable with Lat. *opulentus* and reflects *h_3ep-en-ont-.

Hitt. ***hāran-*** 'eagle' ~ Gk. ὄρνις 'bird', Goth. *ara* 'eagle', OIc. *ǫrn* 'eagle'. As all languages point to non-apophonic *o,[46] we should reconstruct *$h_3$ér-$\bar{o}n$.

Hitt. ***hark-***^{zi} 'to perish' ~ OIr. *orgaid* 'to slay' < *h_3erg-. As a *mi*-verb it has *e*-grade in the strong stem, *h_3erg-ti.

Hitt. ***harp-***^{zi} 'to separate oneself' has been treated extensively by Melchert (fthc.), who persuasively connects it with Lat. *orbus*, Gk. ὀρφανός 'orphan' from PIE *h_3erb^h-. As a *mi*-verb, the strong stem shows *e*-grade: *h_3erb^h-ti.

Hitt. ***hastai-*** 'bone' ~ Skt. *ásthi*, Gk. ὀστέον, Lat. *os* 'bone'. These words are a clear example of non-apophonic *o*-, and therefore must reflect *h_3e-. I reconstruct *$h_3est(H)$-oi-.

Hitt./CLuw. ***hāu̯i-***[47] 'sheep' ~ Gk. ὄϊς (Arg. ὄϝις), Lat. *ovis*, Skt. *ávi-* 'sheep', Lyc. *χawa-* 'sheep'. Again this word seems to be a clear

---

[44] For a connection between Gk. ὄνομαι and ὄνομα cf. already Kuiper 1953: 98. The connection is not mentioned by Frisk nor Chantraine.

[45] Cf. Lubotsky 1990: 131.

[46] In Balto-Slavic we encounter a few words that seem to point to *er-, e.g. Lith. *erẽlis* 'eagle' besides dial. *arẽlis* 'id.'. These words again show Rozwadowski's Change (initial *e*- instead of expected *a*- (from *h_2e- or *h_3e-), cf. Derksen 2002: 6) and cannot, therefore, be used as an argument against reconstructiong *h_3er-.

[47] The Hittite status of this word is not totally assured. Usually, 'sheep' is written with the sumerogram UDU. The one attestation nom.pl.(?) *hāu̯ēs* (KBo 24.26 iii 3) is not un-

example of non-apophonic *o*, and therefore a reconstruction **h₃eu̯i-* is very probable. The argument that Lyc. *χawa-* 'sheep' points to **h₂ou̯i-* because of its *χ-* is not valid anymore as Rasmussen (1992: 56-9) has eliminated the alleged evidence for **h₃-* > Lyc. *Ø-* (see below at the treatment of the Lycian outcome of **h₃*).
All these examples show retention of initial **h₃* before **e*.

The following three words that show retention of **h₃* are in principle ambiguous as to whether they start with **h₃eR-* or with **h₃R-*. Because of the overwhelming evidence that **h₃* is lost before resonants and retained before **e*, I reconstruct **h₃eR-* here:

Hitt. ***hallann(a)i-*** 'to lay waste' is probably a *hi*-inflected iterative-durative in *-ann(a)i-* from an otherwise unattested verb **hall-*.[48] The root is connected with Gk. ὄλλυμι 'to devastate'. Because of the fact that the origin of the suffix *-ann(a)i-* is not yet clear, we cannot say much on the form of the stem (zero or *e/o*-grade). Nevertheless, the connection with Gk. ὄλλυμι indicates that we have to reconstruct a root **h₃elh₁-*.

Hitt. ***harnau-*** 'birthing seat' has plausibly been connected with Hitt. *hartu-* 'descendant' by Weitenberg (1984: 266), which word he connects with Lat. *ortus* 'origin, birth' (ibid. 235). This etymology has been taken over and elaborated by Ofitsch (1995). She reconstructs **h₃r-neu-*, but **h₃ér-nōu-s* > *harnāus* is more likely.[49]

Hitt. ***hartu-*** 'descendant' has been connected by Weitenberg (1984: 235) with Lat. *ortus* 'birth'. Although in principle a reconstruction **h₃r-tu-* is possible, I reconstruct **h₃er-tu-*.

The forms treated above all seem to indicate that in **h₃o-* and **h₃R-* the **h₃* is lost, whereas in **h₃e-* it is retained. This means that two words that are traditionally regarded as reflecting initial **h₃* must be interpreted differently:

Hitt. ***harganau-*** 'palm, sole'. This word was seen by Weitenberg (1984: 223) as a cognate of Gk. ὀρέγω 'to stretch', and reconstructed as

---

ambiguous regarding its interpretation. The word *hāu̯i-* is, however, securely attested in CLuw., so it is very likely that the Hittite word must have been *hāu̯i-* as well.

[48] Although the attested forms of this verb do not exclude a *mi*-inflected *-iia*-verb derived from a (rather intransparent) stem *hallann-* as well.

[49] Reflecting a hysterodynamically inflected **CéC-ōR*, cf. *harganāus* < **h₂érĝ-nōu-s* below. If Hitt. *harnāus* can indeed be etymologically connected with Gk. ὄρνυμι and Skt. *ṛṇóti*, as Ofitsch (1995: 25) states, we see a nice distribution between **h₃ér-nōu-s* > Hitt. *harnāus* and **h₃r-néu-ti* > Hitt. *arnuzzi*.

**h₃rĝ-neu-*. This etymology has been generally accepted and is often regarded as the most convincing evidence for the assumption that **h₃-* is preserved word-initially. Although Weitenberg's etymology seems impeccable, the evidence that initial **h₃rC-* gives Hitt. *arC-* (see above) is in my view so overwhelming, that we cannot accept the connection of *harganau-* with Gk. ὀρέγω anymore. As an alternative I would like to propose a connection with *harki-* 'white'.[50] The palm and sole of dark-skinned people are distinctly lighter colored than the rest of the body. I therefore reconstruct **h₂érĝ-nōu-s*.[51]

Hitt. ***ais-*** 'mouth' ~ CLuw. *āas-*, Skt. *ā́s-*, Lat. *ōs* 'mouth'. As *s*-stems always have *e*-grade in the stem, there are two possible reconstructions, **h₃eh₁-es-* or **h₁eh₃-es-*. The former reconstruction would explain the *-i-* of the suffix (uncolored because of **h₁*), but we would then expect to find Hitt. *ha-*. The latter reconstruction could explain the absence of *h-* in *ais-*, but demands that the suffix-vowel, which originally must have been colored by **-h₃-*, is secondarily replaced by *-i-* again in analogy to other *s*-stems (e.g. *nepis-* 'heaven'). This analogy does not seem improbable to me, so I reconstruct **h₁éh₃-es-*.[52]

Conclusions regarding **h₃-*

On the basis of a treatment of all words that begin with **h₃* I conclude the following:

Initial **h₃* is preserved before **e* (*hā-* < **h₃eh₁-*, *hallanniia-* < **h₃elh₁-*?, *hann(a)-* < **h₃e-h₃n(o)h₃-*, *hāppar-* < **h₃ep-r-*, *hāran-* < **h₃er-on-*, *hark-* < **h₃erg-*, *harnau-* < **h₃er-neu-*, *harp-* < **h₃erbʰ-*, *hartu-* < **h₃er-tu-*, *hastai-* < **h₃est(H)-oi-*, *hāu̯i-* < **h₃eu̯i-*).

Initial **h₃* is lost before **o*: *ārki* 'to mount sexually' < **h₃orĝʰei* and perhaps *aru-* < **h₃or-u-*.

---

[50] I am glad to see that Eichner apud Tremblay (1999/2000: 217) has a similar opinion on *harganau-*.

[51] In this way, Hitt. *harganāus* shows the regular nominative of hysterodynamic nouns, **CéC-ōR-s*. A connection with Gk. ὀρέγω implies a structure **CC-ōR-s*, cf. Melchert 1987: 22, who reconstructs an original paradigm **h₃rég̑-nōu*, **h₃g̑r̥-nu-es* and has to assume that the zero-grade stem of the oblique cases was generalised. A full-grade **h₂erĝ-* is assured by Skt. *árjuna-* 'light, white' (contra Skt. *rajatá-* 'silver-coloured', which word shows an irregular *vr̥ddhi* from **r̥jatá-* 'silver', cf. Av. *ərəzata-* 'silver' < **h₂rĝ-n̥t-ó-*). Together with Gk. ἄργυρος 'silver' and ἄργυφος 'silver-shining', Skt. *árjuna-* also proves the existence of a PIE *u*-stem **h₂erĝ-u-*, on the basis of which **h₂érĝ-nōu-s* > Hitt. *harganāus* can be formed.

[52] Thus already Kortlandt 2003-04: 10.

Initial *h_3 is lost before resonants: *aniia-* < **h₃n-ie/o-*, *arta* < **h₃r-to*, *arai-* < **h₃r-oi-*, *arki-* < **h₃rĝʰi-*, *arnu-*^{zi} < **h₃r-neu-*, *aru-* < **h₃r-u-*(?), *lāman-* < **h₃neh₃men-*, possibly *utnē-* < **h₃ud-n-*.

The fate of initial *h_3 before stop cannot be proven. The alleged example *hapus-* 'penis' is false (the word is to be read as *hāpūsa(ss)-* 'shaft, shin-bone'), and the alleged example *happir* 'price' probably had a real vowel between *h-* and *-pp-*.

Hittite developments

The developments of the initial laryngeals in Hittite can be summed up thus:[53]

*h_1e- > *ʔe-*	*h_1o- > *ʔa-*	*h_1R- > *R-*[54]	*h_1T- > *T-*
*h_2e- > *ha-*	*h_2o- > *ʔa-*	*h_2R- > *hR-*	*h_2T- > *hT-*
*h_3e- > *ha-*	*h_3o- > *ʔa-*	*h_3R- > *R-*[54]	*h_3T- > ?

Luwian developments

I will not treat the Luwian evidence extensively here. The communis opinio is that the developments of the laryngeals in Luwian are the same as in Hittite. This is true for the following positions: **h₂e-* > Luw. *ha-* (**h₂ent-* > Luw. *hant-* 'face, front'), **h₂o-* > *a-* (**h₂omh₁s-* > *amss-* 'to wipe'), **h₃e-* > *ha-* (**h₃eu̯i-* > *hāu̯i-* 'sheep'). For **h₃o-* and **h₂C-* I know of no examples. In some positions, however, Luwian may show different developments. I would like to refer to Kloekhorst 2004, in which I treated the outcome of **h₁* in HLuw. There I concluded that **h₁* was retained as a synchronic phoneme /ʔ/ in all initial positions (i.e. before vowel as well as before consonant). One slight adjustment to this conclusion must be made: the new etymology of CLuw. *piia-/pai-* and HLuw. *piia-* 'to give' < **h₁p-(o)i-*[55] implies that initial **h₁* before stops was lost without a trace in Luwian.[56] The retention of initial **h₁* before resonants as /ʔ/ in my view is still proven by e.g. HLuw. *á-ma/i-* 'mine' < **h₁me/o-*. In the same article, I showed that the HLuw. word for 'name', *á-ta₄/₅-ma-za* has to be interpreted phonologically as /ʔlamanza/, which implies that initial preconsonantal **h₃* appears as /ʔ/ in HLuw.

---

[53] *T* = any stop, *R* = *r, l, m, n, i, u*.

[54] Unless *R* = *r*, than we find *ar-*.

[55] Cf. Kloekhorst fthc.b.

[56] If HLuw. *á-tara/i-* 'self' indeed is connected with Skt. *ātmán-*, it might reflect **h₁h̥₁t-ro-*.

The Luwian outcomes are the following:

$*h_1e- > ?a-$	$*h_1o- > ?a-$	$*h_1R- > ?R-$	$*h_1T- > T-$
$*h_2e- > ha-$	$*h_2o- > ?a-$	$*h_2R- > hR-$	$*h_2T- > ?$
$*h_3e- > ha-$	$*h_3o- > ?$	$*h_3R- > ?R-$	$*h_3T- > ?$

Lycian

The outcome of the PIE laryngeals in Lycian has most recently been discussed by Michaela Zinko (2002). Her conclusions are the following: 1. $*h_1$ disappears in all positions; 2. $*h_2$ turns up as Lyc. χ and q (without a clear distribution between the two), and as g (when lenited); 3. $*h_3$ is lost in all positions. I cannot agree with Zinko's views. Firstly, her assumption that $*h_3$ is lost in Lycian is based on Kimball 1987, whose reasoning has been proven false by Rasmussen (1992: 56-9, see below). Secondly, her view that $*h_2$ has been split into two phonemes (χ and q) without a clear conditioning is against the principles of historical linguistics.

Zinko's views seem for a large part to be based on the views put forward by Melchert in 1994a. Melchert, too, assumes that $*h_1$ and $*h_3$ are lost without a trace in Lycian, but assumes a three-fold split of $*h_2$ in Lyc. of which he gives the following condition: "χ is the regular outcome [of $*h_2$], with fronting to q before front vowels and further to k between(!) front vowels" (1994a: 304-5). He further assumes that Lyc. g is the outcome of $*h_2$ in leniting position. Although Melchert gives a conditioning for the split of $*h_2$, his formulation is not satisfactory. The problem concentrates around the words containing q. Most of these words are difficult to interpret, but whenever an interpretation seems clear, the word does not follow the conditions Melchert gives. The clearest example is the name of the Stormgod, *Trqqñt-*. According to Melchert (1994a: 307), it reflects **trh₂ént-* in which $*h_2$ yielded q before a front vowel that is not extant anymore in the Lycian paradigm, but might be visible in Mil. nom.sg. *Trqqiz*. This ending *-iz*, however, is clearly secondary, and to my mind cannot be used as a starting point for the generalisation of q throughout the paradigm instead of expected χ (*-h₂e-* should give *-χa-*).

It is clear that the fate of the PIE laryngeals in Lycian is in need of a re-evaluation.

Lyc. *q*

First I will concentrate on the issue of the phonetic interpretation of the sign *q*. In the older literature, the consonant was regarded as labialized (hence the transliteration *q*). Nowadays, however, scholars like Starke (e.g. 1990: 140f.) and Melchert (1994a: 306) regard *q* as the reflex of $*h_2$ and therefore believe that it cannot have had a labial feature. The reasons for interpreting *q* as a labialized consonant are, however, convincing. Already Arkwright (1899: 66), who observes that *q* is never followed by the vowel *u* (unlike e.g. *k* and *χ*), states that 'possibly the sound of -u was already inherent in the letter'. The absence of a cluster *-qb-* (whereas the cluster *-χb-* and *-kb-* are both attested several times) supports this. Also Pedersen (1898: 98) interprets Lyc. *q* phonetically as labialized (as [x^w]), but does so on the basis of etymologies that nowadays are generally rejected. This is recognized by Rasmussen (1974) but he states that other phenomena indicate that Pedersen's assumption regarding the phonetic interpretation of *q* is basically right. He shows that the nasalized vowels *ñ* and *m̃* are assimilated to a following consonant: in the Lycian texts we often find *-ñt-* (284x), but *-m̃t-* only once; we find *-ñk-* three times but never **-m̃k-*. This is in agreement with the fact that we often find *-m̃p-* (20x) but never **-ñp-*.[57] So, according to Rasmussen, it is indicative that the sequence *-m̃q-* occurs 12 times whereas the sequence **-ñq-* is never attested. Rasmussen concludes that *q* must phonetically have been labialized and assumes that *q* denotes [x^w].[58]

Melchert (1994a: 306) strongly speaks against a labialized interpretation of Lyc. *q*. He states that 'none of the alleged evidence for a labiovelar articulation can withstand scrutiny'. He does not, however, explain the phonetic behavior of Lyc. *q* (never attested before *u* and *b*, and *m̃q* instead of *ñq*). Although each piece of evidence on its own could indeed be ascribed to chance (and therefore would be non-probative), the force is in the combination of them, which in my view, strongly indicates that *q* indeed was labialized. As we will see, this interpretation fits etymologically as well.

---

[57] We only find *-ñp-* in compound words where the *-ñ* belongs to the prefix and *p-* is the first consonant of the stem.

[58] Although I do accept Rasmussen's conclusion that *q* was a labialized sound, I cannot accept his reconstruction of a fourth PIE laryngeal $*h^w$, which he does on the basis of etymologies that connect Lyc. *q* with Hitt. *h*.

The Lycian words that contain *q* are almost all difficult to etymologize. Most of the etymologies that have been proposed presuppose a correspondence between Lyc. *q* and Hitt./Luw. *h*.

Lyc. ***qa(n)-*** 'to destroy' is often connected with Hitt. *hanna-*^{i} 'to summon to court' (already Pedersen 1945: 26-7). This connection is, however, semantically not quite satisfactory.

Lyc. ***qebelija-*** '?' is regarded by Neumann (1974: 109[2]) as a divine name and connected with the Hittite divine name ^{d}*Hapaliya-*, which is connected with Hitt. *hapa-* 'river'. This interpretation is based on formal similarity only. The clear connection between Lyc. *χba(i)-* 'to irrigate' and Hitt. *hapāi-* 'to bewater', however, is not favorable to the etymology.

Lyc. ***qele/i-***, a divine name, is hesitatingly connected by Neumann (1979: 270) with Hitt. ^{d}*Halki-* 'Grain-god'. He admits that this is done on the basis of a slight formal similarity only.

Lyc. ***qla-*** 'courtyard, precinct' is generally connected with Hitt. *hīla-* 'courtyard'. This equation is stronger than the other ones, but still just a possibility.

Lyc. ***Trqqñt-*** 'Storm-god' is clearly connected with Luw. *Tarhunt-* 'Storm-god'. This etymology is evident.

We see that of all Lycian words containing a *q* only *Trqqñt-* has an evident etymology. It seems worth while to look more closely at the name of the Storm-God in the other Anatolian languages.

The Hittite rendering of the logograms ^{d}U and ^{d}IŠKUR 'Stormgod' is not fully known. The dat.-loc.sg. ^{d}IŠKUR-*unni* shows that it probably was **Tarhunna-*.

The Luwian words are better known. In CLuw., we find the phonetic spelling voc.sg. *Tarhunza* and gen.adj. *tarhuntassa/i-*. The phonetic complements to the logographic writings are instructive as well: nom.sg. ^{d}U-*anza*, voc.sg. ^{d}U-*an*, dat.-loc.sg. ^{d}U-*unti*. All in all, we have to conclude that CLuw. had an ablauting paradigm nom.sg. *Tarhuanza*, obl. *Tarhunt-*. The HLuw. forms are mostly written logographically as well. The phonetic complements point to a thematized stem *Tarhunza-*, as we see in e.g. nom.sg. ^{DEUS}TONITRUS-*hu-u-za-sa*.

It is clear that the CLuw. forms are the most archaic. They reflect an original participle of the verb *tarhu-* 'to overpower', and go back to **trh$_2$-u-ént-s*, **trh$_2$-u-nt-*´.

The proponents of the idea that Lyc. *q* is not a labialized consonant regard *Trqqñt-* as reflecting **trh$_2$-ent-* (e.g. Starke 1990: 140f.; Melchert 1994a: 306), i.e. a participle of the verb **terh$_2$-*. They point to the fact

that in Hittite besides the verb *tarhu-* 'to overpower' a verb *tarh-* is found as well, with precisely the same meaning (e.g. Melchert 1994a: 306: 'that PA possessed both **terh₂-* and **terh₂w-* is made likely by Hitt. *tarh-* beside *tarhu-/taruh-*').

It is instructive to look more closely at the Hittite verb *tarh-*, *tarhu-/taruh-*. For an overview of the attestations of *tarh-*, *tarhu-/taruh-*, see Oettinger 1979: 220f. Of the verb *tarh-*, the following forms are cited: 1sg.pres.act. *tar-ah-mi* (OH+), *tar-ah-si* (OH+), 3sg.pres.act. *tar-ah-zi* (OS), 1pl.pres.act. *tar-ah-hu-u-e-ni* (NH), 2pl.pres.act. *tar-ah-te-ni* (NH), 3pl.pres.act. *tar-ah-ha-an-zi* (NH), 1sg.pret.act. *tar-hu-un* (OH+), 3sg. pret.act. *tar-ah-ta* (OH+), 1pl.pret.act. *tar-hu-u-en* (OH+), 3pl.pret.act. *tar-ah-hi-e-ir* (NH), *tar-ah-hir* (NH), 1sg.imp.act. *tar-ah-ha-al-lu*, 3sg. imp.act. *tar-ah-du* (MH+), 3pl.imp.act. *tar-ah-ha-an-du* (NH), part. *tar-ah-ha-an-t°* (NH), verb.noun *tar-ah-hu-u̯a-ar* (gen. *tar-ah-hu-u̯a-as*), supine *tar-ah-hu-u̯a-an*, iter. *tar-ah-hi-is-ki-*, *tar-ah-hi-es-ki-*.

The attestations of the verb *tarhu-*, *taruh-* are: 3sg.pres.act. *ta-ru-uh-zi* (OS), *tar-hu-uz-zi* (OH/MS), *tar-ru-uh-zi* (OH/NS), 3pl.pres.act. *tar-ru-uh-ha-an-zi* (NH), 1sg.pret.act. *ta-ru-uh-hu-un* (MH/MS), 3sg.imp.act. *tar-hu-id-du* (MH/NS), *tar-hu-du* (NH), part. *tar-hu-an-t°* (MH/MS), iter. *tar-ah-hu-i-is-ki-*.

In the paradigm of *tarh-*, the sequence *tar-ah-* is traditionally interpreted as denoting *tarh-*. The *AH*-sign, however, can in principle be read *UH* as well. There is nothing against transliterating *tar-Vh-* as *taruh-*. Moreover, there are contexts in which such a transliteration seems obligatory. In e.g. KBo 4.2 i 52 we find *tar-Vh-zi*, whereas two lines below, in ibid. 54 *tar-hu-du* is written. The latter form (of the verb *tarhu-*) indicates that the first form is to be read as belonging to the verb *tarhu-/taruh-* as well: *tar-uh-zi*.[59]

When we look at the attestations of *tarh-*, it is surprising that there is not a single form that must unambiguously be read as *tarh-*. Spellings with *ta-ra-ah-* are completely lacking, whereas *ta-ru-uh-* is found in OS already. The only forms that seem to show an unambiguous root *tarh-* are 1sg.pret.act. *tar-hu-un* and 1pl.pret.act. *tar-hu-en*. If we compare these forms, however, to the paradigm of *eku-/aku-* 'to drink', we find there: *e-ku-un* and *e-ku-e-en* (instead of expected ***ekunun* and ***eku-men*). So *tar-hu-un* and *tar-hu-en* could easily be from the stem *tarhu-* as well. Moreover, it is remarkable that forms like 3pl.pres.act., which we would expect to be /tarhanzi/, are never written ***tar-ha-an-zi*, but

[59] See e.g. Tischler 1991: 157, who has the same considerations, but still concludes 'es is jedoch traditionell üblich, *tar-AḪ/-UḪzi* als *tar-aḫ-zi* zu transliterieren'.

always *tar-Vh-ha-an-zi*. The same goes for the participle: we never find ***tar-ha-an-*, but always *tar-Vh-ha-an-*.

So formally, it is possible to conclude that all forms that are traditionally transliterated as *tarah°* in fact have to be read as *taruh°* and that we are therefore dealing with a Hittite verb *tarhu-/taruh-* only.[60]

Semantically, such a conclusion also makes sense. All forms (alleged *tarh-* as well as *tarhu-/taruh-*) mean 'to overcome, to overpower'. The PIE root *$*terh_2$-*, however, means 'to cross' only (Lat. *trāns* 'past, over', Skt. *tar^{i}-* 'to cross'). A meaning 'to overpower' is only found in *u*-derivatives, Skt. *tū́rvati* (*$*trh_2$-u-*) 'to overpower'.

Formally, the alternation *tarhu-/taruh-* is comparable with the alternation *tarkuzzi / tarukzi* 'he dances' and *ekuzzi / eukzi* 'he drinks'. In the latter two verbs, the *-ku-/-uk-*alternation is interpreted as different ways of writing the phoneme /k^{w}/, the labialization of which spreads over the consonant: /k^{w}/ ~ /^{w}k/. In my view, we therefore have to assume that the alternation *-hu-/-uh-* has to be interpreted, too, as different ways of writing a phoneme /h^{w}/ ~ /^{w}h/. This indicates that *tarhu-/taruh-* has to be interpreted phonologically as /tarh^{w}-/.

All in all, I conclude that there was only one verb in Anat., *tarhu-/taruh-* 'to overpower'. It thus becomes very unlikely that Lyc. *Trqqñt-* is derived from *$*trh_2ent$- as a root *tarh-* is further unknown in Anatolian. In my view, Lyc. *Trqqñt-* cannot be but equated with CLuw. *Tarhuanza* < *$*trh_2uent$-*.[61] This implies that in this word Lyc. *q* reflects *$*h_2u̯$*, which strongly points to a labialized pronunciation.

On the basis of this etymology (the only one of the *q*-words that could be regarded as evident) and on the phonetic behaviour of *q*, I conclude that *q* was a labialized consonant that reflects PAnat. *$*h^{w}$* < PIE *$*h_2u$*.[62]

---

[60] A similar case is the Hittite verb *lāhu-*, *lāh-* 'to pour'. The stem *lāh-* is often regarded as showing an *u*-less present besides *lāh-u-*. Of the verb *lāh-*, however, CHD cites only 1pl.pres. *lāhueni*, 1sg.pret.act. *lāhun*, *lahhun* and 2sg.imp.act. *lāh*. Of these forms, *lāhueni*, *lāhun* and *lahhun* could belong to the verb *lāhu-* as well (cf. 1pl.pres. *akueni* and 1sg.pret. *ekun* from *eku-/aku-* 'to drink'). This leaves only 2sg.imp. *lāh* as undoubted evidence of a verb *lāh-*. In my view, this is too small a basis for postulating an *u*-less verb *lāh-* besides *lāhu-*. We rather interpret all forms as belonging to *lāhu-*. If indeed (as I will argue below) in PAnat. already a phoneme /h^{w}/ existed, it is perhaps possible that it lost its labialization in final position: */lāh^{w}/ > *lāh*.

[61] Cf. Eichner 1974: 28-8 for the observation that CLuw. *Tarhu̯ant-* forms an exact word equation with Skt. *tū́rvant-* 'overpowering', used as an epithet of Indra, Agni and Mitra.

[62] The assumption that *$*h_2u̯$* > Lyc. *q* implies that none of the instances of Lyc. *χb-* reflect *$*h_2u̯$-* (with *$*Cu̯$* > Lyc. *Cb*). The only etymologically clear word, *χbai-* 'to irrigate', is cognate with Hitt. *hapāi-* 'to bewater' < *$*h_2(e)b^{h}$-*, whereas the stem *Xba-*, frequently found in names, derives from *Hepat*.

This means that the traditional etymologies of the other *q*-words that equate *q* with Hitt. *h* must all be false. My view that Lyc. *q* reflects **h₂u̯* may, however, support one of the etymologies proposed by Rasmussen (1974). Although Rasmussen implausibly assumes a PIE phoneme **h*^{w} that yielded Hitt. *h* and Lyc. *q*, his proposal to connect Lyc. *qa-* 'to destroy' with Gk. ἀᾶται 'to deceive, to damage' may be correct, although Hitt. *hanna-*^{i} 'to summon to court' clearly has to be separated from these words (for an etymology of the latter word see above). Gk. ἀᾶται reflects a root **h₂u̯eh₂-*, which would yield PAnat. **h*^{w}*ā-* > Lyc. *qa-*.

Moreover, I would like to propose a new etymology for *qla* 'courtyard, precinct'. On the basis of the new interpretation of *q*, we have to assume that *qla* reflects **h₂u(V)leh₂-*, which would formally and semantically fit in perfectly with Gk. αὐλή 'courtyard, precinct', which reflects **h₂eu-leh₂-*. I therefore reconstruct *qla-* as **h₂u-leh₂-*.

**h₂-* in Lycian

With the interpretation of Lyc. *q* as a labialized consonant reflecting PIE **h₂u*, the awkward split of **h₂* into *χ* and *q* as proposed by Melchert and Zinko can be abandoned. On Melchert's claim that **h₂* yields Lyc. *k* between front vowels I have no opinion. As this conditioning by definition only works in word-internal position, it falls outside the scope of this paper.

The view that **h₂* regularly yields Lyc. *χ* in unleniting and *g* in leniting position is generally accepted and evidently true. Well-known examples like Lyc. 1sg.pret.act. *-χa* ~ CLuw. *-hha*, Hitt. *-hhun* < **-h₂e*, Lyc. *χñna-* 'grandmother' ~ Hitt. *hanna-* 'grandmother' < **h₂eno-* and, for the lenited position, Lyc. 1sg.pret.midd. *-χagã* ~ Hitt. *-hhaha* < **-h₂eh₂e*, Lyc. *χuga-* 'grandfather' ~ CLuw. *hūha-* 'grandfather' < **h₂éuh₂o-* prove this.

The development of **h₂* > Lyc. *χ* is probably not valid for all positions, however. Just as in Hittite, **h₂* was probably neutralized to **h₁* before **o*.[63] This development can possibly be seen in the Lycian words *ara-* 'rite', *arawa-* 'freedom' and *arawazije-* 'monument'. These words are connected with Hitt. *āra-* 'proper', which in turn is connected with Skt. *arámati-* 'devotion', *ṛtá-* 'right, proper' and Gk. ἀραρίσκω 'to join' and must reflect **h₂ór-o-* (see above). In Lycian, the original **o*-grade

[63] As Kortlandt assumes neutralization of the PIE laryngeals before **o* in Armenian and Albanian as well (cf. Kortlandt 1984 and 1986: 43f.), this development was at least pre-PAnat. and probably PIE.

can be seen in the one attestation *erawazije-*[64] 'monument', which proves that the other Lycian words with *ara°* show *a*-umlaut from original *era°* < **h₂or-*.[65]

**h₃-* in Lycian

Another controversy regarding the fate of the PIE laryngeals in Lycian is the outcome of PIE **h₃*. Kimball 1987 argued that **h₃* was lost in Lycian, on the basis of the etymology *epirijeti* 'sells' ~ Hitt. *happiriyazzi* 'trades' < **h₃ep-*. She further concludes that all forms where Hitt. *h-* corresponds to Lyc. *χ-* must be traced back to **h₂-*. In the case of words where Hitt. *ha-* matches both non-Anatolian *o-* and Lyc. *χa-*, Kimball therefore reconstructs **h₂o-* (e.g. Hitt. *hāu̯i-* ~ Lyc. *χawa-* 'sheep' < **h₂ou̯i-*). This conclusion has been widely followed by Anatolists.[66] The connection between Lyc. *epirijeti* and Hitt. *happiriya-*, however, is not justified. It was given for the first time by Laroche (1958: 171-2), who translates *epirijeti* as 'sells' ("vendra"), but does not give a contextual reason for such a translation: he only refers to the formal similarity with Hitt. *happiriya-* 'to sell'. Rasmussen (1992: 56-9) therefore treats the context of *epirijeti* and shows that a translation 'sells' is not quite likely and that any conclusions based on this form alone therefore are unreliable. The main argument for the view that **h₃* was lost in Lycian thus vanishes and therefore the need to reconstruct **h₂* whenever Lyc. *χ-* matches Hitt. *h-*, disappears as well.

Nevertheless, there are still many scholars that retain this view and some alleged new examples of **h₃* > Lyc. *Ø-* have been given. E.g., Melchert (1989: 43) connects Lyc. *epenẽtijatte* with Hitt. **happinantiyahh-* (< **h₃ep-*) and therefore translates 'acts as a salesman'. This interpretation seems to be especially prompted by the etymological connection. Oettinger (2001, 84-6) connects Lyc. *ẽtre/i-* 'lower' with Hitt. *hantiyara-*, which he translates as 'niedrig', and reconstructs **h₃nd^{h}ero-*, with **h₃* because of the correspondence between Hitt. *h-* and Lyc. *Ø-*. He further connects this **h₃nd^{h}ero-* with Skt. *ádhara-* 'lower' and Lat. *īnferus* 'low'. Not only the translation of the Hitt. word is questionable ('niedrig' is just a possibility), the reconstruction is as well: Lat. *īnferus*

---

[64] Contra Melchert 1992: 50, *erawazije-* cannot be the result of *e/i*-umlaut from older *arawazije-*, as the *e/i*-umlaut skipping two syllables is unparalleled in Lycian. It therefore must be an archaic form showing that the original stem was *era-*. The only way to connect this stem with Hitt. *āra-* is to reconstruct **Hor-*.

[65] On the umlaut in Lycian see Melchert 1992.

[66] E.g. Melchert 1994a: 72.

can only reflect **nd^{h}ero-* or **h$_1$nd^{h}ero-*. A pre-form **h$_3$nd^{h}ero-* would have given Lat. ***unferus*.

Despite these new efforts to prove that **h$_3$* was lost in Lycian, I am still unconvinced of it. On the contrary, I believe that we can find some real reflexes of **h$_3$* in Lycian.

To my knowledge, there are three words in Lycian that show a reflex of **h$_3$*:

Lyc. ***χawa-*** 'sheep' is generally connected with Hitt./Luw. *hāu̯i-* < **h$_3$eu̯i-* (for an etymological treatment see above).

Lyc. ***Xerẽi***, name of a dynasty, has very plausibly been identified by Starke (1987: 265[80]) as the Lycian word for 'eagle'.[67] This means that it is connected with Hitt. *hāran-* 'eagle', and reflects **h$_3$er-ōn-* (for an etymological treatment see above).

Lyc. ***alãma*** 'name' (nom.-acc.pl.) is cognate with HLuw. *á-ta$_{4/5}$-ma-za* = /ʔlaman-za/ and Hitt. *lāman* 'name'. I reconstruct **h$_3$neh$_3$mn-* (for an etymological treatment see above).[68]

From these words, we can conclude first of all that **h$_3$* is preserved as Lyc. *χ* before **e*. The question is, however, whether *χawa-* is *a*-umlauted from original **χewa-*, or whether *Xerẽi* is *e*-umlauted from original **Xarẽi*. Although the evidence is scanty, I assume that the original outcome of **h$_3$e-* is Lyc. *χe-* because *e/i*-umlaut is far less regular than *a/u*-umlaut. This implies that **h$_3$e-* first gave PAnat. *ho-*, which became Lyc. *χe-*, as opposed to PIE **h$_2$e-*, which gave PAnat. *ha-* > Lyc. *χa-*.

My view that Lyc. *alãma* reflects **h$_3$neh$_3$mn-* implies that initial **h$_3$* yields Lyc. *a-* before resonants. As we will see below, (restored) initial preconsonantal **h$_1$*, too, yields Lyc. *a-*, which implies that **h$_3$* merged with **h$_1$* in initial preconsonantal position. As the outcomes of **h$_3$C-* merged with the outcome of **h$_1$C-* in the other Anatolian languages as well (Hitt. *ØC-*, Luw. *ʔR-/T-*), I assume that this merger was PAnat. already (via PAnat. **ʔR-/T-*).

---

[67] The interpretation of *Xerẽi* as 'eagle' is not based on formal similarity only: 'bezeichnenderweise bildet dieser Dynast auf seinen Münzen die Göttin Athene mit Adler statt mit Eule ab' (Starke 1987: 265[80]).

[68] For an extensive treatment of HLuw. *á-ta$_{4/5}$-ma-za* and Lyc. *alãma*, and their connection with Hitt. *lāman*, cf. Kloekhorst 2004: 39-40. Lyc. *alãma* is probably *a/u*-umlauted from older **alẽma*, with *-e-* < **-ō-* < **-eh$_3$-*.

*h_1- in Lycian

The general opinion is that *h_1 is lost in Lycian without a trace. This indeed seems to be the case in initial prevocalic position: Lyc. *esi* 'he is' < *h_1esti, Lyc. *esbe-* 'horse' < *$h_1e\hat{k}u̯o$-. For the initial position before consonants, the evidence seems to be contradictory.[69]

Lyc. ***pije-*** 'to give' in my view reflects *h_1p-*i*-.[70] So here initial *h_1 was lost without a trace.

Nevertheless, there are some other words where *h_1C- seems to have become *aC*-:

Lyc. ***ahñta-*** 'possession' is according to Melchert (1993: 3) a calque on Gk. τὰ ὄντα, ἡ οὐσία and must reflect the old participle of the verb 'to be', i.e. *h_1s-*ent*-.

Lyc. ***app-*** 'to seize' is cognate with Hitt. *epp-/app-* 'to seize'. According to Melchert (1994a: 313) *app-* must be a generalized weak stem, which implies a reconstruction *h_1p-.

For these forms we must assume that, just as in Hittite, the *h_1 was restored on the basis of strong forms that at that time still had a full grade *h_1eC-. This restored *h_1- yielded *a*- before consonants.

Lyc. ***atla-/atra-*** 'person, self' must be cognate with HLuw. *átra/i-* 'person, soul'. Hajnal (1995: 244-5) connects Lyc. *atra-/atla-* with Skt. *ātmán-* 'self'. As HLuw. *átra/i-* must reflect *h_1h_1t-*ro*-[71], this reconstruction is likely for Lyc. as well. Because in this case restoration of the initial *h_1 on the basis of a full grade is less likely (there are no full grade forms of this word attested in any Anatolian language), we might have to assume that *atra-* reflects *$h_1\underset{\circ}{h}_1t$-*reh*$_2$-.

On the basis of these examples I conclude that initial preconsonantal *h_1 regularly was lost before stops. Whenever a restoration of this *h_1 took place because of paradigmatic pressure, it yielded Lyc. *a*-. Unfortunately, there are no good examples of *h_1 before resonants. Because of the fact that in Hittite as well as in Luwian the sequences *h_1R- and *h_3R- have merged, it is likely that this happened in Lycian as well. We therefore would expect that *h_1R- would have given Lyc. *aR*-.

---

[69] Lyc. *ẽmu, emu, amu* 'I' is sometimes regarded as showing *a*- from *h_1C- (e.g. implicitly Beekes 1987: 9). The form *amu*, however, must be *a/u*-umlauted from original *emu*. In my view, Lyc. *ẽmu, emu* is on a par with Hitt. *ammuk* 'me' and reflects *$h_1\underset{\circ}{m}n$-. In this form, the *-m-* vocalizes to Lyc. *ẽm*-.

[70] Cf. Kloekhorst fthc.b.

[71] Zero-grade *h_1h_1t- as in Skt. obl. *tmán*-. A full-grade *h_1eh_1t- (Skt. nom.sg. *ātmā́*) would have yielded HLuw. **īt*-.

Lycian developments

The Lycian outcomes of initial laryngeals are the following:

$*h_1e- > e-$	$*h_1o- > e-$	$*h_1R- > ?$	$*h_1T- > T-$
$*h_2e- > \chi a-$	$*h_2o- > e-$	$*h_2R- > ?$	$*h_2T- > ?$
$*h_3e- > \chi e-$	$*h_3o- > e- ?$	$*h_3R- > aR-$	$*h_3T- > ?$

Anatolian developments

Having looked at the outcomes of the PIE laryngeals in initial position in Hittite, Luwian and Lycian, I arrive at the following scheme (note that the order of the laryngeals is not numerical in order to make the mergers more transparent):

PIE	PAnat.		Hitt.	Luw.	Lyc.
$*h_2e- >$	$*ha-$	$>$	$ha-$	$ha-$	$\chi a-$
$*h_3e- >$	$*ho-$	$>$			$\chi e-$
$*h_1e- >$	$*?e-$	$>$	$?e-$	$?a-$	$e-$
$*h_2o-$, $*h_3o-$, $*h_1o-$	$*?o-$	$>$	$?a-$	$?a-$	$e-$
$*h_2R-$	$> *hR->$		$hR-$	$hR-$	$\chi R-?$
$*h_3R-$, $*h_1R-$	$*?R-$	$>$	$R-$	$?R-$	$aR-$
$*h_2T- >$	$*hT-$	$>$	$hT-$	$hT-$	$\chi T-?$
$*h_3T-$, $*h_1T-$	$*T-$	$>$	$T-$	$T-$	$T-$

Furthermore, on the basis of the fact that the Hittite sequence *-hu-* can alternate with *-uh-* (*tarhuzi* besides *taruhzi* 'overpowers') in the same way as *-ku-* sometimes does with *-uk-* (*tarkuzi* besides *tarukzi* 'dances') I assume that in Hittite we are dealing with a synchronic phoneme /h^w/ (parallel to /k^w/). As Lycian also possesses a synchronic labialized phoneme *q* (phonetically [k^w]?) from the same source, I assume that the PIE sequence $*h_2u$ already became a PAnat. phoneme /h^w/ which had an unlenited variant (Hitt. *-hhu-*) and a lenited variant (Hitt. *-hu-* as in *lāhui* 'pours').

References

HW^2: Friedrich, J. - A. Kammenhuber, 1975ff. *Hethitisches Wörterbuch. Zweite, völlig neubearbeitete Auflage auf der Grund der edierten hethitischen Texte*, Heidelberg.

LIV^2 = *Lexikon der indogermanischen Verben. Zweite, erweiterte und verbesserte Auflage* (ed. H. Rix e.a.), Wiesbaden, 2001.

Arkwright, W., 1899: Über das lykische Alphabet, *Jahreshefte des österreichischen archäologischen Institutes in Wien* 2, 52-76.

Beekes, R.S.P., 1969: *The Development of the Proto-Indo-European Laryngeals in Greek*, The Hague - Paris.

Beekes, R.S.P., 1987: The PIE Words for 'Name' and 'Me', *Die Sprache* 33, 1-12.

Beekes, R.S.P., 1988: Laryngeal Developments: A Survey, *Die Laryngaltheorie und die Rekonstruktion des indogermanischen Laut- und Formensystems* (ed. A. Bammesberger), Heidelberg, 59-105.

Catsanicos, J., 1986: À propos des adjectifs hitt. *šu-ḫmili-* et véd. *sū-máya-*: quelques remarques sur le traitement du groupe °V-H_2C°, à la jointure des composés, *Bulletin de la Société de linguistique de Paris* 81, 121-180.

Chantraine, P., 1968-80: *Dictionaire étymologique de la langue grecque*, Paris.

Derksen, R., 2002: "Rozwadowski's Change" in Baltic, *Baltu Filologija* 11, 5-12.

Durham, J.W., 1976: *Studies in Boğazköy Akkadian* (Harvard dissertation).

Eichner, H., 1974: Untersuchungen zur hethitischen Deklination (Dissertation, Teildruck), Erlangen - Nürnberg.

Eichner, H., 1988: Anatolisch und Trilaryngalismus, *Die Laryngaltheorie und die Rekonstruktion des indogermanischen Laut- und Formensystems* (ed. A. Bammesberger), Heidelberg, 123-151.

Frisk, H., 1960-73: *Griechisches etymologisches Wörterbuch*, Heidelberg.

Hajnal, I., 1995: *Der lykische Vokalismus*, Graz.

Kimball, S.E., 1987: *H_3 in Anatolian, *Festschrift for Henry Hoenigswald, On the Occasion of his Seventieth Birthday* (edd. G. Cardona, N.H. Zide), Tübingen, 185-192.

Kimball, S.E., 1999: *Hittite Historical Phonology*, Innsbruck.

Kloekhorst, A., 2004: The preservation of $*h_1$ in Hieroglyphic Luwian: Two Separate *a*-Signs, *Historische Sprachforschung* 117, 26-49.

Kloekhorst, A., fthc.a: The verb *kane/iss-*^{zi} and other Hittite *s*-presents, to appear in the Proceedings of the 12. Fachtagung der Indogermanischen Gesellschaft in Kraków.

Kloekhorst, A., fthc.b: Hittite *pai-/pi-* 'to give', to appear in *Indogermanische Forschungen* 111, 110-119.

Kloekhorst, A., 2005: Hittite *ḫāpūša(šš)-* (formerly known as *ḫapuš-* 'penis'), *The Journal of Indo-European Studies* 33, 27-39.
Kortlandt, F., 1984: PIE. **H-* in Armenian, *Annual of Armenian Linguistics* 5, 41-43.
Kortlandt, F., 1986: Armenian and Albanian, *La place de l'arménien dans les langues indo-européennes*, Leuven, 38-47.
Kortlandt, F., 2003-04: Initial Laryngeals in Anatolian, *Orpheus* 13-14 [Gs. Rikov], 9-12.
Kuiper, F.B.J., 1953: The Three Sanskrit Roots *añc-/añj-*, *Vāk* 2, 36-98.
Laar, H.M.F.M. van de, 2000: *Description of the Greek Individual Verbal Systems*, Amsterdam-Atlanta.
Laroche, E., 1958: Comparaison du louvite et du lycien I, *Bulletin de la Société de linguistique de Paris* 53, 155-185.
Lubotsky, A.M., 1990: La loi de Brugmann et **H$_3$e-*, *La Reconstruction des Laryngales* (= *Bibliothèque de la Faculté de Philisophie et Lettres de l'Université de Liège* 253), Paris, 129-136.
McCone, K.R., 1992: Relative Chronologie: Keltisch, *Rekonstruktion und relative Chronologie, Akten der VIII. Fachtagung der Indogermanischen Gesellschaft Leiden, 31. August - 4. September 1987* (edd. R.S.P. Beekes, A.M. Lubotsky, J.J.S. Weitenberg), Innsbruck, 11-39.
Melchert, H.C., 1987: Reflexes of **h$_3$* in Anatolian, *Die Sprache* 33, 19-28.
Melchert, H.C., 1988: Luvian Lexical Notes, *Historische Sprachforschung* 101, 211-43.
Melchert, H.C., 1989: New Luvo-Lycian Isoglosses, *Historische Sprachforschung* 102, 23-45.
Melchert , H.C., 1992: Relative Chronology and Anatolian: The Vowel System, *Rekonstruktion und relative Chronologie, Akten der VIII. Fachtagung der Indogermanischen Gesellschaft Leiden, 31. August - 4. September 1987* (ed. R.S.P Beekes, A.M. Lubotsky, J.J.S. Weitenberg), Innsbruck, 41-53.
Melchert, H.C., 1993: *Lycian Lexicon* (= *Lexica Anatolica* 1), Chapel Hill.
Melchert, H.C., 1994a: *Anatolian Historical Phonology*, Amsterdam - Atlanta.
Melchert, H.C., 1994b: 'Čop's law' in Common Anatolian, *In Honorem Holger Pedersen, Kolloquium der Indogermanischen Gesellschaft vom 25. bis 28. März 1993 in Kopenhagen* (ed. J.E. Rasmussen), Wiesbaden, 297-306.
Melchert, H.C., fthc.: Hittite *ḫarp(p)-* and Derivatives, to appear in the *Gedenkschrift für Erich Neu* (ed. J. Catsanicos).
Neumann, G., 1974: Beiträge zum Lykischen V, *Die Sprache* 20, 109-114.
Neumann, G., 1979: Namen und Epiklesen lykischer Götter, *Florilegium Anatolicum, Mélanges offerts à Emmanuel Laroche*, Paris, 259-271.
Oettinger, N., 1976: Der indogermanische Stativ, *Münchener Studien zur Sprachwissenschaft* 34, 109-49.
Oettinger, N., 1979: *Die Stammbildung des hethitischen Verbums*, Nürnberg.
Oettinger, N., 2001: Varia Hethitica, *Historische Sprachforschung* 114, 80-89.
Oettinger, N., 2004: Die Entwicklung von h_3 im Anatolischen und hethitisch *arāi* "erhebt sich", *Per Aspera Ad Asteriscos, Studia Indogermanica in honorem Jens Elmegård Rasmussen sexagenarii Idibus Martiis anno MMIV* (edd. A. Hyllested e.a.), 397-405.
Ofitsch, M., 1995: Zu den anlautenden Laryngalen im Hethitischen, *Historische Sprachforschung* 108, 16-29.
Pedersen, H., 1898: Lykisk, *Nordisk Tidsskrift for Filologi og Pædagogik* VII, Copenhagen, 68-103.
Pedersen, H., 1945: *Lykisch und Hittitisch*, Copenhagen.
Puhvel, J., 1984: *Hittite Etymological Dictionary. Vol. 1 Words beginning with A, Vol. 2 Words beginning with E and I*, Berlin - New York - Amsterdam.

Puhvel, J., 1991: *Hittite Etymological Dictionary. Volume 3: Words beginning with H*, Berlin - New York.

Rasmussen, J.E., 1974: *Haeretica Indogermanica, A Selection of Indo-European and Pre-Indo-European Studies*, Copenhagen.

Rasmussen, J.E., 1992: Initial h_3 in Anatolian: A Vote for Chaos, *Copenhagen Working Papers in Linguistics, vol.* 2, Copenhagen, 53-61.

Rieken, E., 1999: *Untersuchungen zur nominalen Stammbildung des Hethitischen* (= *Studien zu den Boğazköy-Texten* 44), Wiesbaden.

Schrijver, P., 1991: *The Reflexes of the Proto-Indo-European Laryngeals in Latin*, Amsterdam - Atlanta.

Starke, F., 1987: Die Vertretungen von uridg. *$*d^{h}ugh_2tér$- "Tochter" in den luwischen Sprachen und ihre Stammbildung, *Zeitschrift für vergleichende Sprachforschung* 100, 243-69.

Starke F., 1990: *Untersuchungen zur Stammbildung des keilschrift-luwischen Nomens* (= *Studien zu den Boğazköy-Texten* 31), Wiesbaden.

Sturtevant, E.H., 1930: The Gutturals in Hittite and Indo-European, *Language* 6, 213-228.

Tischler, J., 1991: *Hethitisches Etymologisches Glossar. Teil III, Lieferung 8: T, D/l. Mit Beiträgen von Günter Neumann und Erich Neu*, Innsbruck.

Tremblay, X., 1999/2000: Phonology and Philology in a Cuneiform-written Language, *Archiv für Orientforschung* 46 & 47, 216-226.

Watkins, C., 1982: A Greco-Hittite Etymology, *Serta Indogermanica. Festschrift für Günter Neumann* (ed. J. Tischler), Innsbruck, 455-7.

Weitenberg, J.J.S., 1984: *Die hethitischen* u-*Stämme*, Amsterdam.

Zinko, M., 2002: Laryngalvertretungen im Lykischen, *Historische Sprachforschung* 115, 218-238.

Alwin Kloekhorst

Leiden University
Comparative Indo-European Linguistics
P.O.Box 9515
NL – 2300 RA Leiden
The Netherlands
e-mail: a.kloekhorst@let.leidenuniv.nl