
STUDIA MEDITERRANEA 7

**PER UNA GRAMMATICA ITTITA
TOWARDS A HITTITE GRAMMAR**

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**HITTITE
VOCALISM**

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1. Introductory

The conventional transliteration of the Hittite cuneiform syllabary rests largely on the corresponding Akkadian values, which are themselves reconstructed (see Friedrich, 1960: 24f, who also cites the few well-known exceptions). In attempting to deduce Hittite phonology purely from the written records, we must therefore use all the means at our disposal: internal relationship, both synchronic and diachronic¹, renderings of Hittite names in foreign sources and vice-versa, borrowings into and from Hittite, and comparison of Hittite with related languages, both within Anatolia (Luvian, Lycian, etc.) and Indo-European at large². The danger of near-circularity in all these procedures is evident, and we should judge the results of their application according to the internal consistency and overall plausibility of the system arrived at. Our basis for judgment will, of course, be the evidence of living natural languages.

It is well-known that writing systems at best reflect phonemic distinctions, rarely if ever indicating subphonemic variation. I will therefore focus in what follows on establishing the phonological contrasts of the Hittite vowel system. Descriptions of phonetic values are meant to be suggestive. I will also adhere to the principle of "Occam's razor": I will assume the simplest system consistent with the facts. The burden of proof falls on those who wish to assume more distinctions. I stress that phonological equivalence does not necessarily imply phonetic identity (particularly for sounds with different historical sources). I merely contend that in most such cases the precise phonetic situation is unknowable.

2. Hittite Short Vowels

Hittite has four distinct short vowels: /u/, /a/, /i/ and /e/ (for the possibility of a marginal fifth vowel /ɛ/ see 3.2.2 below). The status of the first three has never been in doubt. Hittite has large numbers of nominal stems in *-u-*, *-a-*, and *-i-*, whence anim. nom. sg. *-uš*, *-aš*, *-iš* and anim. acc. sg. *-un*, *-an*, *-in*. Minimal or near-minimal sets are not hard to find: **harkun* (/hargun/) "I perished" vs. *hargan* "destruction" (acc. sg.) vs. *harkin* (/hargin/) "white, bright" (anim. acc. sg.).³

The Akkadian syllabary adopted by the Hittites is deficient in *e*-value signs (see von Soden, 1969: 10). Many CV and VC signs may be read with either *i* or *e* vocalism. This and other factors have led to unjustified doubts about a contrast between /i/ and /e/ in Hittite.

Despite the fact that a number of individual cases remain indeterminate, there can no longer be any doubt that /i/ and /e/ are distinct vowels at all periods of Hittite: see Oettinger, 1979: 533-545, Eichner, 1980: 141-143, and Melchert, 1984: 78-156. However, due to a combination of historical changes, minimal contrasts between *short* /i/ and /e/ are infrequent. First of all, original accented short **ě* is regularly lengthened in Hittite when preserved as *e*: see 3.2.1 below. Second, original unaccented short **ě* becomes *i* in Hittite: see Melchert, 1984: 104-108, and compare Kimball, 1983: 386-407, and Eichner, 1973: 72 & 80.⁴ It is plausible to suppose with Oettinger, 1979: 535 (contra Melchert, 1984: 118) that original unaccented long **ē* is shortened to *ě*, but there are not many such cases.⁵ One may assume at some point the existence of an instrumental **wēttit* (/wētid/) "year" and even **wedit* (/wēdid/) "with water" vs. *wetet* (/wēded/) "he built".⁶ For accented short /e/ and /i/ compare *pennit* "he drove" vs. *zinnit* "he finished".⁷

A system with only four contrasting vowels obviously leaves a great deal of room for allophonic variation, free or conditioned. We cannot control for such variation, but there is little reason to doubt that the basic values of the Hittite vowels are approximately those implied by the phonetic symbols used to represent them.

Hittite /i/ is certainly a higher front unrounded vowel. It regularly equates to the /i/ of Lycian and Lydian, which are written alphabetically: cf. Hitt. *kwi* = Lyc *ti* = Lyd. *qi*- "who" or Hitt. *piya*- = Lyc. *pije*- = Lyd. *bi(d)*- "give". The approximate value of the /i/ in the latter two systems is confirmed by the renderings of Lycian and Lydian names in the Greek alphabet.⁸

Hittite /a/ is low, non-front and unrounded.

Hittite /a/ equates to Lycian and Lydian /a/ in the nt. nom. -acc. plural ending *-a* and in the name of the moon-god: Hitt. *Arma*-, Lyc. *arṃma*-, and probably also Lyd. *arm(τα)*- "of the Moon-god" (Gusmani, 1964: 61f; 1980: 32). The value of Lycian and Lydian /a/ is once again assured by equations such as Lyc. *Dapara* = Λαπαρας (Zgusta, 1964: 143) or Lyd. *Bartaras* = Παρταρας (Gusmani, 1964: 75; 1980: 40).⁹

Hittite /u/ is non-low, back and rounded. Compare Hitt. *ammug* = Lyc. *amu/ēmu* = Lyd. *amu* "I, me". Lycian and Lydian /u/ are represented in the Greek alphabet by both *υ* and *ο*: Lyc. *χῆtanube* = Κυνδαυβας, but *χuwata* = Κοατα, etc. (Zgusta, 1964); Lyd. *qalmlu* = παλμυς (gloss), but *kulumsi* = Κολοηνος (Gusmani, 1964: 157). It is not clear whether this variation indicates that Lycian and Lydian /u/ have (at least in part) the value of [ɔ] or even [o], or merely that Greek upsilon no longer represents a high back rounded vowel in the relevant dialects (on this problem see Allen, 1968: 62 ff, and

Schwyzler, 1939: 1.181 ff).¹⁰ In any case, it would require a further step to infer a relatively open pronunciation for Hittite /u/ on this basis.¹¹

Predictably, evidence for the phonetic value of Hittite /e/ is particularly sparse. Hittite /e/ does not correspond etymologically to Lydian /e/, and only rarely to Lycian /e/.¹² Since Hittite /e/ contrast with /i/ and /a/, it seems safe to assume that it is a non-high, front, unrounded vowel. Whether it is relatively close ([e]) or more open ([ɛ]) or ([æ]), or ranges among these positions, is impossible to determine. However, if Hittite has a distinct close long \bar{e} / (and even a marginal short variant), as suggested below in 3.2.2, then it is likely that regular \bar{e} / is relatively open.

3. Hittite Long Vowels

3.1 Orthography

3.1.1 "Scriptio Plena"

Hittite employs in a number of instances so-called "scriptio plena". That is, the inherent vocalism of a VC or CV sign is copied by an accompanying V sign: e.g. *a-ap-pa* "back(ward)", *la-a-ki* "bends".¹³ Some words have scriptio plena virtually without exception, some never show it, and others occur with and without it. In some (but not all) cases the appearance of scriptio plena becomes less frequent from Old to Neo-Hittite.¹⁴

The interpretation of plene spellings has been extremely controversial. Kronasser, 1956: 35, and 1966: 27ff, denies that they consistently reflect any linguistic distinction. Others have argued for multiple functions: e.g. Pedersen, 1938: 13ff, Otten-Souček, 1969: 44ff, Melchert, 1984: 83-84, and (more cautiously) Kammenhuber, 1969: 175ff. Compare also Sturtevant, 1951: 23f. Hart (1980) and Carruba (1981) argue independently that plene spellings reflect the accent, although Hart leaves open the possibility that the connection may be indirect. On the other hand, Oettinger, 1979: 233, and Eichner, 1980: 154, n. 77, assume that plene spellings regularly indicate vowel length, and Kimball (1983) argues at length that this is the *only* function of scriptio plena, although synchronic vowel length often reflects prehistoric changes due to accent. For plene spellings as marking vowel length see already Hrozný, 1922: XII! The fact that enclitics are never written plene strongly suggests a connection between scriptio plena and accent: on the importance of the evidence of enclitics see especially Eichner, 1980: 164. However, many languages show a strong correlation between accent and vowel length, so that it has proven difficult to establish whether scriptio plena *directly* marks length, accent or both.

New evidence may finally settle the issue. Lycian facts now confirm the previous suspicion that PIE **a* and **o* remain distinct in Common Anatolian: see Melchert (1988). A reexamination of Hittite evidence further shows that in *closed* syllables the reflex of accented short **ō* is regularly written as plene *ā*, but that of accented short **ǎ* is not. I will soon present the full evidence elsewhere, but compare among others: *a-ar-(h)il/ti* "arrive" **h₁ór-(h₂eil-th₂ei)*, *ma-(a)-al-d/ti* "solemnly declares" **móldhei*, *ši-pa-(a)-an-ti* "libates" **spón-dei* (plus the Singular stems of other *hi*-verbs), *ka-(a)-aš-za* "hunger" **Gósts* versus *al-pa-* "cloud" **álbho-*, *al-pu-* "blunt" **álpu-*, *ḫa-at-ta-* "cut" **h₂éto-** [háto-]. There is absolutely no basis for assuming a *synchronic* qualitative distinction between the *a* of *al-pa-* and that of *a-ar-hil/ti*.¹⁵ There is also no reason to suppose a shift in accent just in those words with original **ǎ*.¹⁶

The above distribution can only be accounted for by assuming a *prehistoric* lengthening of accented short **ō* in closed syllables followed by the merger of **ō* with **ǎ*. When the Hittites write some accented *a*'s plene and not others, the only reasonable conclusion is that the vowels differ in length.¹⁷ I therefore follow Hrozný(!), Eichner, Oettinger, and especially Kimball in assuming that scriptio plena marks synchronic vowel length.¹⁸ On the relationship of vowel length and accent see further 3.2.1 below.

3.1.2 *u* vs. *ú*

Weidner, 1917: 2ff, long ago proposed that the Hittites used the sign *u* to indicate /o/ and *ú* to mark /u/. This system was accepted and used by Forrer, 1922: 6f (and elsewhere). However, Weidner's argumentation was at the time less than compelling (see Hrozný, 1922: 195ff), and further evidence has robbed it of all validity. Since furthermore the only clear reflex of PIE **ō* is Hittite *ā*,¹⁹ this suggestion has generally been rejected (Sturtevant, 1942: 186ff, and 1951, 20) or simply ignored (note, however, the cautious stance of Friedrich, 1960: 24). Several scholars have recently revived the idea in a rather different form. Held and Schmalstieg, 1969: 105ff, Hart, 1983: 124ff, and Eichner, 1980: 156, all suggest that the sign *u* is used to spell reflexes of PIE **Vu* diphthongs, while *ú* is used for continuants of PIE **ū*.²⁰

The chief evidence cited (virtually the only evidence)²¹ is the paradigm of *au* (š)- "see": *u-uh-ḫi* "I see" vs. *ú-me-(e)-ni* "we see". It is plausible to suppose that this verb had an ablauting present (Oettinger, 1979: 83 & 407): **áu-h₂ei* vs. **u-wéni*. Thus *u-(uh)-* would continue the diphthong **au*, while *ú-* would reflect zero-grade **u*.²²

While this single example appears attractive, there are insurmountable difficulties with the assumption that *u* and *ú* spell distinct vowels. First of all, while many words are spelled consistently with one or the other, examples of alternation are by no means as rare as implied by Hart or Held and Schmalstieg:

lu- u/ú-ri- "loss; disgrace", *iš-nu-u/ú-ri* "kneading pan" (dat.-loc. sg.), *pu-u/ú-ti-* "?", *tu-u/ú-li-ya-* "assembly". *mu-u/ú-ga-i-* "induce", *u-/ú-up-* "rise" (of the sun), *u/ú-re-e-na-an-t(-)* "burning", ^{LÜ}*u/ú-ri-an-ni-* "?", regular *ú-da-* but also *lx u-da-* "bring", regular *a-pu-u-uš* but also several times *a-pu-ú-uš* "those" (anim. acc. pl.). Note in particular in the same manuscript *ḫu-u-ni-ik-zi* and *ḫu-ú-ni-ik-zi* (KBo VI 2 I 13.16, OH ms.) and *a-ar-ru-u-[ša]* vs. *a-ar-ru-ú-sa* in KUB XIX 23 Rs 10.13.

More seriously, the prediction that *u* spells the reflexes of **Vu* and *ú* the results of **ū* simply is not borne out. The strong stem of *nu*-verbs should continue *-*néu-*, but we find *wa-aḫ-nu-ú-mi* (KBo XVII 1 II 18, OH ms.) and *ḫu-e-nu-ú-ut* (KBo III 28 II 19) beside possible *wa-aḫ-nu-u-u [t]* (?) in KUB XXIII 8,7. One can, of course, assume analogical leveling from the plural stem *-*nu-*, but this egregiously ad hoc.

Likewise, the Hittite preverb *u-* is spelled with *ú* in *ú-da-* and *ú-us-si-ya-*, but with *u* in *u-un-na-*. This preverb certainly continues **au* (= Slavic *u-*).

Ablaut in a particle is *in principle* always possible, but there is not a shred of independent evidence for the assumption by Hart and Eichner of a zero-grade variant **u* in this case. All three cases cited are intirely parallel, with accent on the preverb **au* and zero grade of the verbal root. The OH collective plural *a-aš-šu-u* "goods" continues *-*uh₂*: see Watkins (1982). It is hardly credible that the compensatorily lengthened *ū* of this ending is distinct from the long *ū* of *ú-ug* "I" (ultimately from the inherited long **ū* of PIE **tū* "you"), while merging with the result of **Vu*. Finally, the nom. sg. *ku-ú-uz-za* "wall" should continue a full-grade **eu* or **ou*, but it is written with *ú*.

The only reasonable conclusion is that the Hittites use both *u* and *ú* to spell /u/, just as they use both in intervocalic position for /w/ (see the examples of Sturtevant, 1951: 20). As already seen by Kronasser, 1966: 19, the only place where the Hittites use *u* and *ú* distinctively is in initial position before vowel signs. The statement of Melchert, 1984: 13, n22, and 16, n31, requires only slight amplification: initially before a V or VC sign (*other than uC*), the Hittites use *u* to indicate vocalic /u/ and *ú* to spell /w/. Thus *u-i-ya* "send" is /uya-/, but *ú-i-ya-(i)-* "cry out" is /wiya(i)-/ (correct already in Friedrich, 1952: 232 & 254).²³ This also accounts for the spelling of "see": *u-uḫ-ḫi* (/uhhi/) *must* be spelled with *u* because *ú-Vh-hi* would imply /wVhhi/. On the other hand, *ú-me-(e)-ni* may be spelled with *ú*, since the next sign is CV. While the choice of *u* or *ú* may in some cases be arbitrary, in others one can plausibly suppose an orthographic motivation. The general preference for *ú* in initial position before CV is probably due to the fact that *u*, a mere Winkelhaken, can easily be mistaken as part of the following sign or read as a Glossenkeil.²⁴

In sum, we cannot exclude the possibility that the reflex of **Vu* remains phonetically distinct from old **ū* in Hittite, but there is no good evidence for a phonemic distinction indicated by consistent spellings with the respective signs *u* and *ú*.

3.2.1 Long Vowels

Hittite has at least four distinct long vowels, /*ū*/, /*ā*/, /*ī*/, and /*ē*/, which clearly contrast in accented syllables. Compare *ú-ug* (/ūg/) "I" vs. *a-ag* (/āg/) "die!", *ku-ú-ša-an* (/kūsan/) "bride" (acc. sg.) vs. *ki-ša-an* (/kisan/) "become" (ptc. nt. nom.-acc. sg.), *tu-ú-ri-in* (/tūrin/) "lance" (acc. sg.) vs. *te-e-ri-in* (/tērin/) "three" (anim. acc. sg.), *ka-a* (/kā/) "here" vs. *ki-i* (/kī/) "this" (nom.-acc. sg.), *a-aš-zi* (/āšzi/) "remains" vs. *e-eš-zi* (/ēšzi/) "is", and *i-it* (/īd/) "go!" vs. *e-et* (/ēd/) "eat!".

There is no positive reason to take these long vowels as anything other than the lengthened equivalents of the corresponding short vowels described in section 2 above. In particular, I am not aware of any good evidence for distinctions among the long *e*'s which come from a variety of sources: (1) inherited long **ē* (*ú-(e)-ek-* "demand" **wēk-*; Oettinger, 1979: 100, after Eichner, 1973: 81); (2) secondarily lengthened **é* (*pé-(e)-da-* "place" **pédo-*); (3) PIE **eh₁* (*te-(e)-* "say" **dheh₁-*); (4) contractions (*wa-aš-še-* "clothe" **woséye-*; Melchert, 1984: 31ff, with refs.). As indicated above in 3.1.2, there is no sound basis for assuming a synchronic distinction in Hittite long /*ū*/ from various sources: see the examples there.

There is a strong correlation between accent and vowel length in Hittite, due to several prehistoric changes: (1) original long vowels in unaccented position are shortened (Eichner, 1986: 13, with refs.); (2) short vowels are lengthened in accented open syllables (Eichner, *ibid.*, and Kimball, 1983, *passim*).²⁵

Based on the facts cited in 3.1.1 above, the stronger claim of Kimball (1983) that short vowels are regularly lengthened in *all* accented syllables is false. Accented short **ā* certainly does not lengthen in closed syllables (see above), and short **i* and **ū* probably remain unchanged in the same environment: cf. *mi-im-ma-* "refuse" **mī-mn-* (Melchert, 1984: 100) and *tu-ug* "you" (dat.-acc.) **<tū+g*.²⁶ The fate of **ē* in accented closed syllables is complicated. It appears to be lengthened when preserved as *e*: e.g. *ú-(e)-eš-ta* (/wēsta/) "wears" **wēstor*. However, it does not seem to lengthen when it becomes *a*: *wa-al-aḫ-zi* (/wālḫsi/) "strikes" **h₂wélh₂-ti* (see Oettinger, 1979: 264, and Melchert, 1984: 16). The entire situation regarding lengthening in accented

closed syllables requires further study (cf. the remark of Eichner, 1986: 13, n13).

Since original long vowels in unaccented syllables are shortened in Common Anatolian, long unaccented vowels are quite rare in Hittite, resulting from subsequent contractions. The best example of unaccented /ē/ is the anim. nom. plural ending /-ēs/, which is often written plene. This ending, common to all noun classes in Hittite, surely is derived from the ending *-eyes of the *i*-stems via loss of *y and contraction: see Melchert, 1984: 121f, with refs.

While the precise conditioning for syncope of (*u*)*wa* and (*i*)*ya* in Hittite remains undetermined, it is likely that at least in some cases such syncope leads to unaccented long /ū/ and /ī/: note *le-el-ḫu-u-un-da-i-* (verb and noun) from *lihuwant-* "poured".²⁷

I can cite no sure cases of unaccented long /ā/: see Melchert, 1984: 52f & 58f, for a discussion of examples such as dat.-loc. plural *šallaš* and *palhaš*.

3.2.2 Hittite /ē/ (?)

There is some evidence that the vowel resulting from contraction of **Vi* is distinct from regular Hittite long /ē/. There is no distinction orthographically: cf. *ú-(e)-ez-zi* "comes" < **au-h₁éiti* just like *ú-(e)-ek-zi* "demands" < **wékti*. However, in late Neo-Hittite (Tuthaliya IV and Suppiluliuma II) long *e*'s resulting from old **Vi* diphthongs begin to be written sporadically as /ī/: *nī-(i)-ya-* "lead" **néih_x-o-* (vs. older *ne-(e)-(y)a-*), *ki-i-da-* "this" (oblique) **kói-* (vs. older *ke-e-da-*). This change does not appear to take place in the case of regular long /ē/: we still find *mēhur*, *wēh-*, *wēk-*, etc.. I have therefore suggested (Melchert, 1984: 143) that original **Vi* results in a close vowel /ē̄/, distinct from regular /ē/, which finally begins to merge with /ī/ in late Neo-Hittite. This assumption also helps to account for the special development of **ei* to /ī/ in Hittite after a palatal stop: see Melchert, 1984: 102f.

The regular plene spelling of this vowel confirms the already plausible inference that the result of the contraction of **Vi* is long /ē̄/ in accented syllables (thus with Eichner, 1973: 76, contra Melchert, 1984: 67, n123). In Old Hittite there are a few cases of *e* from **Vi* in unaccented position which may have been shortened to /ē/: pret. 1st. sg. *-hhe* < **-h₂ei*, pres. 3rd. sg. *-e* < **-ei*, dat. sg. *-šše* "to him" < **-soi*. These endings are all analogically replaced by forms in *-i* within the history of Hittite: see Melchert, 1984: 68, after Eichner, 1973: 78-79.

I should stress that the current evidence for the claimed incipient merger of /ē̄/ with /ī/ in late Neo-Hittite is very limited. Thus the very assumption of a long close /ē̄/ **Vi* distinct from regular long /ē/ must be regarded as provisional.

4. Diphthongs

Since diphthongs are traditionally included in discussion of Indo-European vocalism, I append here a few very brief remarks on Hittite diphthongs. For details I refer the reader to Melchert, 1984: 61ff & 71ff.²⁸

Hittite noun stems in *-āi-* and *-āu-* have been persuasively derived from PIE stems in **-ōi-* and **-ōu-*: see Weitenberg (1979) with references. There is thus no reason to doubt that in these and some other secondary cases Hittite has diphthongs /āy/ and /āw/ with a long first element (which is often written plene).

It is unlikely on typological grounds that the spellings *Ca-(u)-uC* and *Ca-(i)-iC* represent sequences with hiatus. However, it is very difficult in some cases to decide whether such spellings indicate diphthongs or sequences with inserted glides (/Cawu/ and /Cayi/).²⁹

For reasons cited above in 3.2.1, spellings such as *pa-a-ú/u-un* "I went" or *mi-(i)-ú-uš/un* "gentle" probably do not represent examples of long /ū/. The most plausible alternate interpretation is that they indicate /pāwun/ and /mīwu/, where *w* has been inserted into a hiatus created by loss of another consonant (preforms **pāyun* and **mih_xu-*). This interpretation would also nicely explain the otherwise unexpected hyper-plene in *š_xu-u-ú* "full" (nt. nom.-acc. sg.), which would equal /suwu/ from **séuh₃u*. I know of no sure instances of /ayi/, but we should consider the possibility that *a-(i)-iš* "mouth" is /ayis/ (thus e.g. Puhvel, 1984: 15).

In general, we must make the choice between a diphthong and sequence with glide on a case by case basis.

Notes

- 1) I now take it for granted that the study of any aspect of Hittite grammar must take into account the relative chronology of Hittite texts and manuscripts. For examples of what this method can achieve see Oettinger (1979) and Kimball (1983) among many others. Obviously, chronologization of the Hittite corpus is an ongoing process, and further refinements may require revision of some of our linguistic analyses.
- 2) In the particular case of vocalism not all of these methods are applicable. Most of our information about borrowings and Hittite names in foreign sources involves either the same basic cuneiform system as used by the Hittites or systems which do not unambiguously indicate vocalism (such as Egyptian hieroglyphs).
- 3) The pret. 1st singular of *hark-* 'perish' is by chance not yet attested, but it is an absolutely safe reconstruction. Compare attested *harkun* 'I held' (/harkun/).
- 4) This may not be the only treatment of unaccented short * \check{e} . The distribution of the plural endings *-wani* and *-tani* strongly suggests that they are unaccented forms of *-weni* and *-teni*. It is striking that we find no corresponding variants **-wan* and **-tan* for the preterite endings. This asymmetry is not explained by any of the current accounts: borrowing from Luvian (Carruba, 1966), derivation from zero-grade **-w \check{e}* , *-t \check{e}* plus *-i* (Kimball, 1983: 441), derivation from **-th \check{e} zen(e)* plus *-i* (Eichner, 1973: 78). Since most good examples of unaccented * \check{e} > *i* are in closed syllables (or in paradigms with alternating closed and open syllables), it is possible that unaccented * \check{e} becomes *a* in open syllables. The problem calls for further study.
- 5) The only examples which come to mind are compounds of **dheh $\check{1}$* - (Oettinger, 1979: 36) and pret. 3rd plurals with /- \check{e} r/ < **- \check{e} r* (cf. Oettinger, 1979: 113, n53). The suggestion of Eichner, 1973: 72 & 80, that unaccented long * \bar{e} becomes *i* is unsupported. For *hist \bar{a} -* and *hippara-* see Melchert, 1984: 111, and for *ipulli-* Puhvel, 1984: 379f.
- 6) All three of these words probably also existed in variants with initial /wi-/ , due to the change discussed in Melchert, 1984: 112f.
- 7) The failure of * \check{e} to lengthen under the accent here is in my view tied to the special gemination of the following *n*, conditioned by the univertation of an accented preverb and enclitic verb (< **p \check{e} +nih \check{e}*). Likewise *pessiye-* 'throw (away)' < **p \check{e} +sh \check{e} ye-*. For the gemination of **n* and **s* in this environment compare the sequences *nu-nnaš* '(and) us' < **-n \bar{o} s* and *nu-šše/ta=šše* '(and) to him' < **-s \bar{o} i*. For a different account of *penna-* and *peššiye-* see Kimball, 1987: 178.
- 8) For Lycian cf. *Kuprlli* = Κοπριλις, *Iχtta* = Ἰκτας, *Sbikaza* = Σπιγασα, etc. The only exception known to me is *Zisqqa* = Σεσκως. For Lydian note *Alikre-* = Ἀλικρης, *Titi-* = Τίτιν. See for all of these Zgusta (1964). We do also find Lydian *ibšimsi-* = ἑφεσιος and *aliksāntru-* = Αλεξανδρος, but it is hardly assured that these names are Lydian.
- 9) Lycian /a/ can sometimes represent a rounded vowel in the immediate environment of a labial: e.g. *χpparama* = Κπρορωμω (Zgusta, 1964: 257). There is no good reason to suppose anything similar for Hittite /a/.
- 10) It is worth noting that the Lydian signs for /i/ and /u/ are clearly related to Greek iota and upsilon, while Lycian /i/ and /u/ are written E and O.

- 11) Hittite alternation between /a/ and /u/, which might be taken to indicate a relatively open value for /u/, is extremely rare and counterbalanced by a similar number of sporadic instances of /i/: /u/ alternation.
- 12) Lyc. *esi* 'is' and *esu* 'shall be' correspond etymologically to Hitt. *ešzi* and *ešdu*, but in Hittite accented short *ē has been lengthened, while in Lycian it remains short (contrast *esi/esu* with Lyc. *i* < *ē in *epirije-* 'buy' < *h₃(V)pēr(i)ye-). One can thus conclude little from the Lycian about the quality of the Hittite vowel. Lycian *e*, which was probably a very open variety, for the most part does not correspond to Hittite /e/: see Melchert (1988).
- 13) By definition the V sign must copy the vowel of the VC or CV sign. In open syllables beginning with a vowel scriptio plena is thus impossible. When we find *e-šu-un* 'I was' beside *e-eš-mi* 'I am', we should in the absence of any contrary evidence assume that the first vowel of the former is long like that of the latter: /ēsun/ and /ēsmi/. Hittite spellings with two consecutive identical V signs (*a-a-ra* 'proper (conduct)') are very rare and of uncertain interpretation. Likewise, open syllables beginning with *Cu* or *Ci* signs representing /Cw/ and /Cy/ cannot have plene: *ku-e-mi* 'I slay' = /g^wēmi/ beside *ku-(e)-en-zi* 'he slays' = /g^wēntsi/. One never finds spellings of the sort **ku-e-e-mi*. The 'lack' of plene in such instances therefore does not require explanation (pace Kimball, 1983: 640ff).
- 14) On certain plene spellings as characteristic of OH texts see among others Otten and Souček, 1969: 45, Kammenhuber, 1969: 175f, and Carruba, 1981: 236f.
- 15) Even if one tried to make the implausible assumption that the plene spelling itself marked *o*-quality, this would not work. The abstract suffix-*atar* with regular plene spelling continues *-eh₂ with *a*-vocalism.
- 16) The lack of plene in the other syllables of these words in fact argues against such an accent shift.
- 17) Carruba, 1981: 237, seems to find the inconsistency of many plene spellings incompatible with its marking length. However, the indication of phonemic vowel length in those writing systems which have it at all is typically inconsistent: see for Latin Allen, 1965: 64f, for Old Irish Thurneysen, 1946: 20, and especially for Akkadian von Soden, 1969: 10.
- 18) The only exceptions are certain cases where *u/ú* and *i* are used to mark the glides /w/ and /y/. On some such cases see Melchert, 1984: 48ff. See also Section 4 below.
- 19) See Sturtevant, 1951: 31ff, and Kronasser, 1956: 41 & 43. The suggestion of Pedersen, 1938: 165, and others that **o* becomes Hittite *u* under special circumstances remains quite uncertain. All alleged examples have received alternate explanations.
- 20) All these scholars assume that the reflex of **Vu* is a form of *o*. Since the **Vi* diphthongs apparently result in Hittite /ē/ (see 3.2.2), a close round mid back vowel would be a plausible immediate result of **Vu*. The crucial point, of course, is whether *u* and *ú* are used to spell phonemically distinct vowels, whatever the synchronic phonetic difference (if any).
- 21) None of the other putative examples cited by Hart carries any weight.
- 22) It is worth recalling the alternate account of Rosenkranz, 1959: 68, who equates *ūhhi* with RV *uvé*.
- 23) Worthy of consideration is the suggestion of Weitenberg, 1984: 305f, that final *-i-ú* is used to spell stems in /-iw/.

- 24) The possibility of such an orthographic motivation is conceded by Eichner, 1980: 156. For a real example I may cite *ša-ru-un-ti-in* in KUB XXXI 77 I 10. Only the example ^{TUL}*ša-ru-un-ta-az* at KUB XXIX 4 III 46 assures us that the stem is *šaruntali-*, not **ušaruntali-*.
- 25) For both these changes see also already Hrozný, 1922: 186, n.1.
- 26) The consistent lack of plene writing in *tu-ug* (and *am-mu-ug*) vs. *ú-ug* requires that the former be derived from an oblique stem **iū*, contrary to my claim in Melchert, 1983:161ff.
- 27) As noted in 3.1.2, the collective *āššū* 'goods' has unaccented long /ū/ from **-uh₂*, as per Watkins (1982). It is possible, but uncertain, that *mekki* (KBo VI 2 II 46) reflects **-ih₂*: see Melchert apud Watkins, 1982: 259.
- 28) I have not yet had access to Zinko (1981).
- 29) I was wrong in totally rejecting this possibility in Melchert (1984).

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