Inventory of vowels

1.48. Hittite seems to have distinguished four vowels (*a*, *e*, *i*, *u*), each of which could be long or short. Despite the claim of Eichner (1980: 156) and Hart (1983: 124–30), there is no basis for assuming a Hittite vowel /o/, spelled with the sign *u* (reflecting prehistoric diphthong **Vu*), distinct from /u/, spelled with the sign *ú* (reflecting prehistoric **u*). Both *u* and *ú* are used to spell reflexes of **u* and **Vu*-diphthong (Melchert 1992: 186–87; Kimball 1999: 79–80).[38] See now Rieken 2005b for the possibility of a *secondary* split of pre-Hittite */u/ (from all sources) into phonetic [o] and [u], probably with marginal phonemicization of /o/.

Vowel Alternations

e and *i*

1.49. Despite the ambiguity of certain *e*- or *i*-containing cuneiform signs, the two vowels were certainly distinct phonemes in Hittite (Otten and Souček 1969: 56; Melchert 1984b; 1992).

1.50. Many words containing the vowels *e* or *i* show no fluctuation over time:

*Words with Stable **e***

1.51. Word-initial: *e-eš-zi* 'he is' (never **i-iš-zi*), *e-ep-zi* 'he seizes' (never **i-ip-zi*), *e-ed-mi* 'I eat', *e-ḫu* 'come!' (never **i-ḫu*), *e-ku-zi* 'he drinks' (never **i-ku-zi*), *e-eš(-ša)-ri* 'form, shape, image' (never **iš-ša-ri*), *ega-* 'ice' (never **i-ga-*), *enant-* 'tame (animal)', *ētri-* 'food'.

1.52. Word-internal: *še(-e)-er* 'above, over', *te-ez-zi* 'he speaks' and *te-et* 'he spoke', *ú-e-te-et* 'he built', *ku-(e-)en-zi* 'he kills' or *ku-(e-)en-ta* 'he killed' never alternate with forms in *i* (e.g., **ši-ir*, **ti-iz-zi*, **ú-i-te-et*, **ku-(i-)in-zi*, etc.).[39]

1.53. Word-final: *ku(-i)-e* 'which' (pl. neut.), *a-pé-e* 'those' (pl. neut.), *ut-ne-e* and *ut-né-e* 'land' (nom.-acc. neut.) — versus *ut-ni-i* (d.-l.) — *pé-e* in *pé-e ḫar(k)-* 'to present', and *le-e* 'let not'. The contrast of the plural *ke-e* 'these' with (neuter) singular *ki-i* 'this' is stable through OH, MH, and early NH, breaking down only in late NH.

38. While many words are spelled consistently with either *u* or *ú*, there are also many cases of alternate spellings, even in the same manuscript. Examples include: *ḫu-u/ú-ni-ik-zi* KBo 6.2 i 13 and 16 (OS), *iš-nu-u-ri* KBo 6.34 i 32 vs. *iš-nu-ú-ri* KUB 41.26 i 26, *lu-u-ri-iš* KUB 13.5 iii 5; vs. *lu-ú-ri-iš* KUB 13.18 iii 6, *mu-u-ga-an-zi* KBo 10.20 iii 43 vs. *mu-ú-ga-it* KBo 3.7 i 13, *pu-u-ul* KBo 3.7 iv 10 etc. vs. *pu-ú-ul* KBo 26.20 iii 24, *pu-u-nu-uš-ta* KUB 36.35 i 8 vs. *pu-ú-nu-uš-ša-an-zi* KBo 20.5 iii! 7, *pu-u/ú-ti-iš* KUB 32.123 ii 18 and 40, *tu-u-li-ya* KUB 6.46 iii 51 vs. *tu-ú-li-ya* KUB 21.1 iv 39, *u-re-e-na-an-da* KBo 11.10 iii 26 vs. *ú-re-e-na-an-ta* KBo 11.72 iii 13.

39. There are extremely rare mixed spellings such as *ku-i-en-zi*, *ú-i-e-eš* 'we' KUB 30.36 ii 8. On *ti-e-et* with dupl. *ti-i-et* (allegedly 'he said') see §1.33, p. 21. On *ku-i-en-zi* see Melchert 1984b: 78.

tive *-wanzi*), a *u* is inserted before the *-w-*, and the new sequence *-uw-* is then dissimilated to *-um-* (§1.126, p. 44). E.g., **dweni* > **duweni* > *tumēni* 'we take' (OH) to *dā-*, **tarnwanzi* > **tarnuwanzi* > *tarnu*(*m*)*manzi* 'to release' to *tarna-*. This insertion may be viewed as anaptyxis, but see AHP 57 (with references to Eichner 1988 and Bernabé 1983) for other interpretations.

1.83. Insertion of *a.* There are two probable cases of syncope followed by anaptyxis to resolve an internal sequence of three consonants of which the middle one is *r*. In the first example *kutruweneš* 'witnesses' by syncope became **kutrweneš*, which then resolved by anaptyxis to *kutarweneš* (*ku-tar-ú-e-ni-eš* KUB 23.78b 9′) (Oettinger 1982b: 164). In the second example *etriyant-* '(well-)fed, fattened, robust' by syncope became **etryant-*, which then resolved to *etaryant-* (*e-tar-ya-an-t*[*a-an*] KUB 12.63 obv. 16) (Melchert 1997b).[61]

Consonants

Contrasts in Stops

1.84. Sturtevant (1933: 66–67), following a suggestion by Mudge, first argued that there is a phonemic contrast in Hittite between single and double ("geminate") stops in intervocalic position.[62] Further research has fully confirmed this analysis. While there are a few examples of inconsistent spellings (e.g., occasional *i-ya-ta-ri* for regular *i-ya-at-ta-ri*), most morphemes are written consistently with either single or double stops. Patterned exceptions actually confirm the contrast (see AHP 14), while many others may be explained as "simplified spellings" (see §1.9, p. 12, and §1.12, p. 13). One can even cite a small number of semantically contrasting minimal or near-minimal pairs: *apā-* 'that' (with rare sg. acc. com. *apān*) vs. *app-* 'to seize (part. sg. nom.-acc. neut. *appān*), *padān* 'of the feet' vs. *paddan* 'dug' (sg. nom.-acc. neut.), *šekan* 'cubit' vs. *šekkan* 'known' (part. sg. nom.-acc. neut.).

1.85. In general Hittite intervocalic single stops reflect PIE voiced and voiced aspirate stops, while geminate stops continue PIE voiceless stops (Sturtevant 1933: 66–67), and explanations have been found for most apparent exceptions (AHP 16 and Kimball 1999: 261–64, with references to Čop, Eichner, and others). There is no consensus as to whether the phonetic contrast in attested Hittite is one of voicing or of some other feature such as "fortis" vs. "lenis" or "aspirated" vs. "unaspirated" (see AHP 16–18 with references to a variety of opinions). For the sake of simplicity we here describe the contrast in stops as one of voicing, but we do not mean thereby to take a definitive stance on this issue.[63]

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61. That the attested spelling variants both represent a sequence [trw] with non-syllabic [r] is highly unlikely but cannot in principle be excluded.

62. Compare the similar conventions for writing Hurrian stops in syllabic cuneiform (Wegner 2000: 39–40).

63. Whether or not the stops spelled as geminate in Hittite were voiceless, they seem to have been so heard by Ugaritic scribes: see alphabetic writings of Hittite names such as *Šu-up-pí-lu-li-u-ma* (*tpllm*).

1.86. It is likely that the phonemic contrast in Hittite stops existed only word internally. It was neutralized in word-initial and word-final position (see AHP 18–21 and Luraghi 1997a: §1.1). Since the device of marking the contrast by single vs. geminate spellings was only used consistently intervocalically, it is difficult to prove the contrast for internal sequences of stop plus another consonant, but a handful of examples suggest that it probably applied there: see /-dr-/ in *appatriye-* 'to commandeer' < *appā̆tar* 'seizing' spelled *ap-pa-ta-ri-ez-zi* and *ap-pa-at-ri-ez-zi* Law §76 (OS and NS, respectively) vs. /-tr-/ in *ḫatrešš*(*n*)- 'crossroads, intersection' < *ḫatta-* 'to cut' spelled *ḫa-at-*(*ta*)*-re-eš-n*°.

Inventory of Consonants

1.87. It is believed that Hittite possessed voiced and voiceless consonants of the following types: stops (*b*, *p*, *d*, *t*, *g*, *k*, g^w, k^w), affricate (*ts*), fricatives (*š*, *ḫ*), and sonorants (*m*, *n*, *l*, *r*, *y*, *w*).

Stops

1.88. There are four series of stops in Hittite—bilabial, dental, velar, and labiovelar—all of which can be voiceless or voiced when intervocalic. The following table of Hittite stops is adapted from Luraghi 1997a: §1.2.1. As in Luraghi's table, capitalized voiceless stops represent cases where the voicing opposition is neutralized, and forms that end in a hyphen represent stem forms. The # sign represents the word boundary.

/p/: *a-ap-pa* 'back, again', *šu-up-pí-* 'pure'
/b/: *a-pa-a-aš* 'that one'
#/P/: *pé-e-ri-ya-aš* 'of the house', *pa-ra-a* 'forth, forwards'
/P/#: *e-ep* 'seize' (sg. imp.).
/t/: *kat-ta* or *ka-at-ta*[64] 'down(ward)', *at-ta-aš* or *ad-da-aš* 'father', *e-eš-tu* 'let him be'
/d/: *i-di* or *e-di* 'on this side', *wa-a-tar* 'water'
#/T/: *ta-a-ru* 'wood, tree', *tu-uk* 'you' (sg. acc. or dat.)
/T/#: *ke-eš-ša-ri-it* 'by the hand' (instrumental case), *e-et* 'eat' (sg. imp.), *i-it* 'go' (sg. imp.)
/k/: *tu-e-eg-ga-* 'body', *lu-uk-ke-et* 'he set fire to', *ša-ag-ga-aḫ-ḫi* 'I know'
/g/*:* *la-a-ki* 'he bends', *la-ga-*(*a-*)*an* 'bent, inclined'
#/K/: *kat-ta* 'down(ward)', *ke-eš-šar-* 'hand', *ki-iš-ša-an* 'thus', *ku-ú-ša-ta* 'bride-price'
/K/#: *la-a-ak* 'bend' (sg. imp.), *ša-a-ak* 'know', *zi-*(*i-*)*ik* 'you' (sg. nom.), *am-mu-uk* 'me' (acc. or dat.), *ḫu-u-da-a-ak* 'promptly'

64. The usual spelling is *kat-ta*, but occurrences of *ka-at-ta* (KUB 20.4 vi 4′, KUB 20.43:9′, KUB 58.50 iii 7) and one of *ka-at-ta-an* (KUB 56.46 vi 21) show that the double writing of the dental is secure. HED K 128 ("rarely *ka-at-*") cites no example.

ḫameškanza for *ḫamešḫanza* 'spring', but also ^{UZU}*išḫiša-* for ^{UZU}*iškiša-* 'back' KUB 33.112 iv 14 (HE §28a), $^{MUNUS.MEŠ}$*ḫazḫara-* for $^{MUNUS.MEŠ}$*ḫazkara-*[86] and *išḫaruḫ-* for *iškaruḫ-* (Kronasser 1966: 98; Kümmel 1967: 109). More doubtful is the equivalence of *ta-aḫ-ša-at-ta-ri* and **takšattari* (Kümmel 1967: 109).

1.139. The sequence *nunu* can appear haplologically as *nu* in: *kištanun* KUB 27.67 iii 11 for **kištanunun* 'I extinguished', *mernun* KUB 13.35 i 28 for **mernunun* 'I caused to disappear'. Such haplology is not, however, limited to *nunu*: *kap-pu-u-wa-ar* 'counting' HKM 21:6 (MH/MS) < **kappuwawar, arkuwar* 'plea' < **arkuwawar.* On haplology at Maşat see Hoffner forthcoming.

1.140. Metathesis of *š* and *p* is possible in the passage of Akkadian loan ^{LÚ}*A-ŠI-PU* into Hittite ^{LÚ}*a-pí-ši-* (§4.16, p. 86) (Kümmel 1967: 95–96), as well as Akkadian/Hurrian and Hittite *guršip-/gurzip-/gurpiši-* (Kümmel 1967: 105–6). Metathesis of *š* and *r* is attested in the alternation *ašara/i-* and *araša/i-* (HED A 128–29). Forms like OH *e-uk-ši* 'you drink' alternating with post-OH *e-ku-uš-ši* (/ek^{w}si/) reflect not metathesis but the uncertainty of the scribes as to how to write a unitary labio-velar consonant [k^{w}]. See also *tar-uk-zi* for /tark^{w}zi/, elsewhere written *tar-ku*(*-uz*)*-zi.*

Phonotactics

1.141. Consonants. All voiceless obstruents, both glides (*w* and *y*), and all sonorants except *r* occur word-initially (on the neutralization of voicing in word-initial and word-final stops see §1.86, p. 36). The affricate /ts/ and the fricative /s/ appear freely in word-final position; /h/ occurs principally in the imperative second singular of verbs with stems ending in *ḫ.* Word-final /n/, /l/, and /r/ are common; there is no final /m/. The glides /y/ and /w/ occur word-finally if one interprets diphthongs as consisting of vowel plus glide. The nature of the cuneiform writing system makes it difficult to determine the status of consonantal sequences. For a mere attempt to sketch some of the possibilities see AHP 110–14.

1.142. Vowels. Most Hittite vowels occur freely in word-initial and word-final position. For possible restrictions see AHP 114. *Hiatus*—i.e., a sequence of two vowels not forming a diphthong—is relatively rare in Hittite. The most certain common example is the sequence [-e.a-] in cases such as *ne-*(*e-*)*a*(*-ri*) 'turns' and KUR-*e-aš* 'of the lands'. But there is a tendency for this hiatus to be filled with *-y-,* and one also frequently finds forms such as *ne-ya-ri* and *ut-ne-ya-aš* (see Melchert 1984b: 46–47, with references). Still another likely case consists of the sequences *-a-*(*e-*)*eš* and *-a-uš* in the pl. nom. and acc. com. of *i*-stem adjectives with ablaut (§3.37, p. 78), such as *šal-la-*(*e-*)*eš* and *šal-la-uš* 'great'. They are *probably* pronounced as [sal.la.e:s] and [sal.la.us], but absolute proof is not possible. For other, more dubious cases see AHP 115. For the adjective *šu-u*(*-ú-uš*) 'full' see §1.8, p. 12.

86. For this and some other examples as reflecting a change *kr* > *hr* see now Oettinger 2000a.