Ablaut Patterns in the Hittite *ḫi*-Conjugation

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1. Introduction

Elaborating a proposal first presented in Jasanoff 1979, Jasanoff (2003:71 and 89) posits a PIE "h_2e-conjugation" with an acrostatic paradigm:

	Present			Imperfect/Injunctive	
1Sg	$*mólh_2\text{-}h_2ei$	1Pl	$*mélh_2\text{-}meH^?$	$*mólh_2\text{-}h_2e$	$*mélh_2\text{-}meH^?$
2Sg	$*mólh_2\text{-}th_2ei$	2Pl	$*mélh_2\text{-}(H)e^?$	$*mólh_2\text{-}th_2e$	$*mélh_2\text{-}(H)e^?$
3Sg	$*mólh_2\text{-}e$	3Pl	$*mélh_2\text{-}n̥ti^?$	$*mólh_2\text{-}e(t)^{??}$	$*mélh2\text{-}r̥(s)$

Such a paradigm is reflected in the verb for 'crushes, grinds': Hitt. *malli, mallanzi* (the first for earlier *mālli**), Lat. *molō*, OIr. *melid*, OCS *meljǫ*, Goth. *malan*, Arm. *malem*. Further Hittite examples are *išpānti, išpantanzi* 'libates' and *šākki, šekkanzi* 'knows'. See Jasanoff 2003:7–29 for arguments against attempts to derive the Hittite "*ḫi*-conjugation" from the PIE perfect or a preform thereof: e.g., Eichner 1975, Risch 1975, Cowgill 1979, and Kuryłowicz 1979.

As properly emphasized by Jasanoff (2003:64–5 and 74–7), evidence for such a type of PIE root present with descriptively $*o : *e$: zero ablaut is not limited to Hittite, and Meillet (1916) had already proposed such a class for PIE. Nevertheless, only Hittite offers direct evidence for a paradigm with singular endings reflecting $*\text{-}h_2e(i)$, $*\text{-}th_2e(i)$, $*\text{-}e(i)$ and ablaut continuing $*o$ in the singular versus $*e$ or zero in the plural. Other languages show thematic active inflection and generalization of one of the putatively original ablaut grades.

The Hittite evidence for $*ó/é$ ablaut is thus particularly salient for reconstruction of an acrostatic present as given above. The issue is further complicated by the fact that various developments within the history of Hittite to be discussed below have made transparent evidence for original *e*-vocalism less than robust. Under these circumstances, it is of considerable importance that Kloekhorst (2012) has made a new attempt to show that all attested *e*-vocalism in the weak stem of Hittite *ḫi*-verbs is secondary. I will argue below that his account is not credible and that a small core of Hittite *ḫi*-verbs can only reflect original PIE $*é$ in their weak stems and thus an acrostatic paradigm as reconstructed by Jasanoff. I will at the same time argue that we must revise the ablaut pattern reconstructed for the "h_2e-aorist" by Jasanoff (2003:151) and in turn seek a different motivation

for the undeniable predominance of descriptive *o/zero ablaut in the ḫi-conjugation as a whole.

2. Alleged weak ḫi-conjugation stems with anaptyctic /i/

Kloekhorst (2012:157–9) argues that the weak stems of the ḫi-verbs ašāš-/ašeš- 'to seat', ḫamank-/ḫamink- 'to bind', k(a)rāp-/k(a)rēp- 'to devour', and š(a)rap-/ š(a)rep- 'to sip' reflect an anaptyctic vowel /i/ allegedly spelled alternately with e and i not only in these words but also in dozens of others in Hittite (see also Kloekhorst 2008:60–1). A complete treatment of anaptyxis in Hittite and exhaustive case-by-case refutation of Kloekhorst's anaptyctic /i/ obviously is impossible here: for a brief summary of my current views on anaptyxis see now Melchert 2013:178–80, building on insights of Oettinger, revising the quite inadequate treatment in Melchert 1994:174–5. I will confine myself here to two general methodological issues, with illustrations, and then focus on the relevant examples for the ḫi-conjugation.

As is well known, the cuneiform syllabary employed by the Hittites did not have contrastive Ce and Ci or eC and iC signs for all consonants (see Hoffner and Melchert 2008:19–20). As a matter of principle, one *cannot* claim a separate vowel /i/ "spelled both with the vowel -e- and with -i-" (Kloekhorst 2012:157) when that vowel is spelled only with ambiguous Ce/i or e/iC signs or sequences of them. Obviously, such a vowel *could* be represented by such spellings, but Occam's Razor demands that we not add such a complication to Hittite phonology without positive evidence. Such positive evidence can only consist of alternate spellings with contrastive Ce and Ci or eC and iC signs or from those with ambiguous Ce/i or e/iC signs combined with -e- or -i-: Ce/i-e- alternating with Ce/i-i- or -e-e/iC alternating with -i-e/iC. One cannot, for example, claim that the prothetic vowel before *sT- in Hittite was /i/ (Kloekhorst 2012:157), since it is spelled without exception as iš- (never †eš-).[1]

In judging those cases where we do find genuine alternations of e and i spellings, we must also take full account of their chronological distribution, which Kloekhorst totally ignores in his treatment of anaptyxis.[2] Kloekhorst (2009:246)

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1   The argument of Kloekhorst (2008:61) that the prothetic vowel cannot be /i/ because it does not participate in the NH "lowering" to /e/ falsely assumes that the latter process is a regular sound change. For arguments against this premise see Yakubovich 2010a:309–15.

2   I follow here the usual convention of indicating the date of composition of a text with the sigla OH, MH, and NH (Old, Middle, and New Hittite), but the date of the manuscript with OS, MS, and NS (Old, Middle, and New Script).

plausibly argues that attested Hittite *d(a)māšzi, d(a)me/iššanzi* 'oppresses' continues a paradigm *$*dméh_2sti$, $*dmh_2s$-énti*, where the weak stem is regular by anaptyxis and the singular *$*d(a)maḫšzi$* was unsurprisingly leveled to *d(a)māšzi*. This account is fundamentally correct, but not the claim of an anaptyctic /ɨ/, because the weak stem of this verb is always spelled with *e*-vocalism in OS (*ta-me-eš-šer* KBo 22.2 Vo 12, t/*da-me-eš-kat-te-ni* KBo 22.1 Ro 3 and 19, *da-me-eš-ke-wa-an* ibid. Ro 4). The anaptyctic vowel, as in other cases where it is inserted to the left of the original accent, draws the accent and appears consistently in Old Hittite as /e/ (see further below). Likewise, if *g(a)nešš-* 'recognize' reflects a generalized weak stem *$*ĝnh_3s$-énti* with the same anaptyxis (Kloekhorst 2009: 250), it too shows in OH/OS consistent *e*-vocalism: *ga-ne-eš-zi* (KBo 6.2 i 38'), *ga-ne-[eš-zi]* (KBo 6.2+19.1 iii 38), *ga-né-eš-zi* (KBo 22.2 Ro 17 and KBo 6.2 i 43' and 46'), *ga-né-eš-šer* (KBo 22.2 Ro 18).[3] There are no OS examples of *g/ka-ni-iš-*. As I already showed (Melchert 1984:147–50 and passim), confusion of /e/ and /i/ before /s/ was a secondary development beginning only in Middle Hittite and spreading in New Hittite. One cannot use alternating spellings in *Ce/i-eš* and *Ce/i-iš* that occur only in MS and NS as evidence for an original anaptyctic vowel /ɨ/.

It should also be self-evident that one can only posit anaptyxis in contexts where it is motivated by unsyllabifiable consonant sequences where alternative "repairs" such as syllabification of sonorants are unavailable. Let us now turn to the specific examples on which Kloekhorst (2012:157–9) bases his claim of an anaptyctic /ɨ/ in the weak stem of *ḫi*-verbs. He cites as a supposed parallel for this the *mi*-verb *teripp-* 'to plow' < *$*trep$-* 'turn', which is spelled without exception *te-re/i-e/ip-*. As indicated, the second and third signs are ambiguous as to the vocalism, permitting readings /terep-/, /terip-/, or /terɨp-/. Contra Kloekhorst 2012:158, the fixed initial spelling *te-* does not allow /trep-/ or /trɨp-/ (compare alternating *ša/še/ši-pé/í-e/ik-ku-uš-ta-* for /spe/ikusta-/ 'pin' or *ša/še-me-en-* for /smen-/ 'to withdraw'). Which of the three possible readings /terep-/, /terip-/, or /terɨp-/ is most likely, given the prehistory of this word and those of similar shape?

In the root present *$*trép$-ti, ṭrp-énti* *'turns (the soil)' > 'plows' the plural led regularly to *$*tarpanzi$—there was no motivation for anaptyxis. As shown by the parallel case of Hitt. *teri-* = CLuv. *tarri-* 'three' (< *$*téri$- < *$*trí$-), the Hittite strong stem reflects fixed underlying /téripp-/ with an anaptyctic vowel that drew

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3   For an alternative analysis of *g(a)nešš-* see Jasanoff 1988.

the accent.[4] The now post-tonic short *e of the root underwent regular raising to /i/ in a closed syllable (see Melchert 1994:139). Unsurprisingly, the very irregular allomorphy /tèripp-/, */tarp-/ was eliminated by generalizing the strong stem. There was never any motivation for Hittite speakers to create a weak stem /trip-/.

Likewise, if for š(a)rap-/š(a)rep- 'to sip' we start from a paradigm with *ó/zero ablaut *sróbh-ei, *sr̥bh-énti, the result would be š(a)rāpi, *šarpanzi. Given the predominant and productive pattern of descriptive *o/zero ablaut (synchronically ā/a) in the ḫi-conjugation, the obvious "repair" for this irregular ablaut could only have been third plural *s(a)rapanzi (or conceivably third singular *šārpi). Once again there is no motivation whatsoever for creating a weak stem with an anaptyctic vowel, whether /sreb-/, /srib-/, or /sri̯b-/. The same reasoning applies to k(a)rāp-, k(a/i)rep- 'devour' < *ghrebh- 'seize'. Since there is no way to motivate weak stems /srib-/ and /grib-/ as replacements for */sarb-/ and */garb-/, given the one spelling ka-re-e-pé-er for the preterite third plural (KUB 14.1 Ro 11; MH/MS), we must interpret the weak stems in these two verbs as /sreb-/ and /greb-/.

Kloekhorst (2012:157) claims that the weak stem of ašāš- 'to seat' is spelled alternately a-še-š° and a-ši-š° and thus represents /asis-/. However, the only example known to me that is earlier than NS is a-še-ša-an (HKM 10:6; MH/MS), and even in NS the spelling is overwhelmingly with -še- (more than fifty times vs. only four with -ši-). For reasons cited above the four spellings a-ši-š° in NS do not remotely establish a vowel /i/ in this word.[5] Whether the attested /e/ vowel in ašeš- reflects anaptyxis or not is another question. It is by no means clear just what the original ablaut pattern was of this reduplicated present, but Kloekhorst's posited zero-grade *h₁s-h₁s-énti is possible. However, since *h₁ is otherwise lost between obstruents (see Melchert 1994:65) and geminate -šš- between vowels is commonplace in Hittite, it is not likely that *h₁s-h₁s- would have led to anaptyxis, whence ašeš- like d(a)mešš-. We would expect rather loss of the medial *h₁ and

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4   That the anaptyctic vowel received the accent in these cases where it was inserted to the left of the original accent is assured by the geminate -rr- of CLuvian tarri-, whose geminate -rr- shows "Čop's Law" and must reflect *tèri-: see Čop 1970.

5   The same applies to all of the examples cited for alleged anaptyctic /i/ in clusters involving /s/ cited by Kloekhorst (2008:74), since every one of them is spelled consistently in OH/OS with i-vocalism. See Melchert 1984:95 and 106–8.

aššanzi. The very irregular allomorphy *ašāši*, **aššanzi* was then remade to the attested pattern after the other weak stems with /e/ such as /sreb-/ and /greb-/.[6]

Likewise, the weak stem of *ḫamank*- 'bind' is spelled *ḫa-(am)-mi-in-k°* in KBo 17.15 Vo 12 (OH/OS), KBo 23.74 ii 13 (OH/MS), and HKM 116:38 (MH/MS). As established in Melchert 1984:104, this is true for all Hittite verbs in /-inK-/. The fact that in New Hittite we finally find some spellings *ḫa-me-en-k°* does not alter the fact that the earliest attested Hittite weak stem is only /haminK-/. That OS and MS spellings with the unambiguous sign IN might represent /i̯/ and thus an anaptyctic vowel (Kloekhorst 2012:158) is an entirely ad hoc and gratuitous assumption. On the allomorphy of nasal infix verbs in *-nik-/-nink-* (which is not distributed according to the strong versus the weak stem) see the convincing account of Shatskov 2006. These provide no support for an alleged anaptyxis in a sequence °-*nnC*-. An original **o*/zero ablaut **h₂móng̑h-ei, h₂mn̥g̑h-énti* (syllabification of the second nasal, not the first, based on the strong stem) would have led to *ḫ(a)mānki*, **ḫ(a)mankanzi*, and given the productivity of the *ā/a* pattern in the *ḫi*-conjugation, there would have been no motivation for the weak stem to have been altered analogically. Therefore, attested *ḫ(a)mink-* must reflect original **h₂méng̑h-* with the regular raising of short **e* to *i* before non-coronal nasal (Melchert 1994:139).

3. Weak *ḫi*-conjugation stems in /e/ allegedly analogical to the *mi*-conjugation

Per Kloekhorst (2012:153–7), other *e*-vocalism in weak stems of *ḫi*-conjugation verbs began in the preterite third plural in analogy to the *mi*-conjugation and then spread subsequently to other parts of the paradigm. On the basis of Pres3Pl *adanzi* : Pret3Pl *eter* 'eat', *ašanzi* : *ešer* 'be', etc. :: Pres3Pl *akkanzi* : Pret3Pl *x* (→ *eker* 'die' replacing *aker*). The analogy will not work: such a proportion could

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6   I would also not exclude that the original pattern in this descriptively vowel-initial reduplicated verb (surely a creation of pre-Hittite) was fixed **as-as-*, with copying of the root vowel in the allomorph *aš-* that is the basis for all derivatives of the root **h₁es-* in Hittite (for this reduplication pattern in a *ḫi*-verb compare the hapax participle *wa-waršanza* to *warš-* 'wipe'). This was then adjusted to the attested *ā/e* pattern after the other verbs of this type. Contra Kloekhorst 2008:218 and Puhvel 1984:211 the hapax *e-še-šer* in KUB 41.1 iv 9, which clearly means 'were', not 'seated', is a mere compromise spelling for *e-še-er* and *e-šer* and has no probative value. Whatever the original reduplication of 'to seat' was, the attested weak stem is surely secondary, and it cannot decide the question of the ultimate source of *e*-vocalism in weak stems of the *ḫi*-conjugation.

only lead to *ekker. Likewise for ḫašš- 'open' this analogy would predict only ḫeššer (based on the Pres3Pl), not the far more frequent ḫēšer. This difficulty does not arise for some examples: adanzi : eter :: aranzi : erer 'arrive' and ḫananzi : ḫēner 'draw (water)'. It works for the verb šakk-/šekk- 'know' if one assumes an unattested Pres3Pl *šakkanzi: adanzi : eter :: *šakkanzi : šekker. Be that as it may, an analogy by which the preterite third plural is reshaped on the basis of the present third plural must predict that the former will match the latter in terms of consonantism, and in verbs of the aki, akkanzi type (two of the five examples) this prediction is falsified. There is the further problem (see below) that the actual attested distribution of secondary e-vocalism in the ḫi-conjugation weak stem does not support the idea that the preterite third plural was a privileged form when it comes to e-vocalism.

What the innovative preterite third plural forms eker and ḫēšer do call attention to is the previously unnoticed fact (recognized implicitly but without any comment by Kloekhorst 2012:155 in the table) that, as in the mi-conjugation, the preterite third plural of the ḫi-conjugation originally had the strong stem in Hittite: aker 'died' (OS), ašašer 'seated' (MH/MS), ḫāner 'drew (liquid)' (NS), ḫāšer 'opened' (MS) (see Kloekhorst 2012:154 n.14), ḫāšer 'gave birth' (NS). The case of a-re-er 'arrived' is ambiguous, but a long vowel is assured by Imv2Pl ārten. This pattern is also shown by ḫi-verbs in -i-: dai- 'put' with older Pret3Pl dāer, dāier, later tiyēr; see also naier, nāer to nai- 'turn'. This finding requires a reexamination of the entire question of the ablaut of non-suffixal verbs of the ḫi-conjugation.

4. A new account of the ḫi-conjugation ablaut pattern

I reconstruct with Jasanoff (2003:151) also a *h_2e-conjugation aorist (to telic roots, versus presents to atelic roots, entirely parallel to the mi-conjugation). Jasanoff assumes original *é-grade throughout the plural, just as in the corresponding present:

<div align="center">

Aorist

1Sg	*lógh-h_2e	1Pl	*légh-me-
2Sg	*lógh-th_2e	2Pl	*légh-(t)e-
3Sg	*lógh-e	3Pl	*légh-ṛ(s)

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However, in the mi-conjugation the aorist plural had the strong stem in the first and second persons (Jasanoff 2003:82, citing Hoffmann 1968:7–8): Skt. (á)kar-ma, (á)kar-ta, (á)kr-an, etc. This full grade was generalized in Hittite without exception to the third person plural (Jasanoff 2003:83; thus already Hart 1980

and Barton 1985): hence *ešer* 'they were', *ēpper* 'they took', etc. Based on the evidence cited above (Pret3Pl *aker*, *ašašer*, etc.), we must assume the same for the *h_2e*-conjugation: it originally had the strong stem (i.e., *$ó$*-grade!) not only in the singular, but also in the first and second aorist plural, generalized in Hittite to the third person.[7] This modification has serious consequences also for the ablaut of the *h_2e*-presents.

Per Jasanoff (2003:85), the zero grade in newly created Hittite presents of *h_2e*-aorists is analogical to the *mi*-conjugation: **éswen*, **ésten*, **éser* : **aswéni*, **asténi*, **asánti* :: **sékwen*, **sékten*, **séker* : *x* (→ **sakwéni*, *šaktēni*, **sakkanti*). But as we have just seen, the assumed *e*-grade plural of *h_2e*-aorists is patently false. And there is no model in the *mi*-conjugation for spread of the weak stem to the preterite third plural (i.e., *eker* for *aker* or *tiyēr* for *dā(i)er*). Jasanoff's explanation of widespread *ā/a* ablaut in the *ḫi*-conjugation based on an analogy to the *mi*-conjugation works no better than Kloekhorst's similar explanation for attested *ā/e* ablaut.

Some other source must be sought for the widespread zero grade found in the weak stem of so many *ḫi*-conjugation verbs. We need not search very far. As already established by Schindler (1972), in the corresponding **ó/é* acrostatic type of nominal inflection there was a strong tendency (surely beginning already in PIE itself) to introduce zero grade into the weak stem of the acrostatic paradigm in *TER(T)* roots: *TR̥(T)-´* for *TéR(T)*. In *TeT* roots the *e*-grade tended to be preserved to avoid dispreferred obstruent sequences, but the accent shift still took place: *T(e)T-´* for *TéT*. E.g., beside archaic GSg **dém-s* 'house' preserved in Av. *dəng* (*paiti-*) we find **dm-és* in Av. *nəmō*, **dm̥-és* in Arm. *tan*. For a *TeT* root note **ped-é/ós* 'foot' > Skt. *padás*.[8]

We would therefore fully expect and predict the same substitution in both paradigms of original *h_2e*-presents to *TER(T)* roots (i.e., the present and imperfect). Based on these, new presents formed from *h_2e*-aorists would also have altered the generalized pre-Hittite **ó*-grade to an *ó*/zero pattern (or less anachronistically probably rather non-ablauting *$ā́$* to *$ā́$/a-´*). This prediction is fully borne out by a significant number of attested *ḫi*-verbs from *TER(T)-* roots: *ār-/ar-* 'ar-

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7   I am pleased to note that Jasanoff (2013:108 and passim) now also reconstructs *o*-grade for the PIE *h_2e*-aorist first and second plural.

8   It is worth recalling that even in nominal inflection the direct evidence for original **é* in the weak stem of the acrostatic type is hardly plentiful. Were it not for a few relics like Av. *dəng* (*paiti-*) and Hitt. *nekuz* (*meḫur*) 'twilight time', one might equally seriously doubt that the **e*-grade weak stem ever existed there.

rive', *ārk-*/*ark-* 'divide', *iškār-*/*iškar-* 'pierce, stick', *išpār-*/*išpar-* 'spread, strew', *kānk-*/*kank-* 'hang', *mārk-*/*mark-* 'dissect'.[9] Determining which of these reflect presents and which aorists based on their attested meanings is not always straightforward. For example, Hitt. *kānk-*/*kank-* 'hang' is clearly telic, but its cognates often are not (see Jasanoff 2003:72–3), and the direction of innovation is at least for me by no means clear. Since we would predict the same *$\acute{o}$/zero ($\acute{a}$/a) pattern for the resulting *ḫi*-presents in either case, I will not pursue this point. There are surely more examples belonging here (e.g., *wars-* 'wipe; pluck'), but the rarity of "plene" spellings in closed syllables (*CV-V-VC*) precludes direct proof. In the case of *lāg-* 'knock over, incline', which was surely a *h_2e-aorist with generalized *lāg-* < *$l\acute{o}gh$-, the weak present stem *lag-* was formed directly on the productive *$\bar{a}$/a *h_2e-present model.[10]

We thus find the same productive replacement in *TER(T)* roots of original acrostatic *$\acute{o}/\acute{e}$ ablaut by *$\acute{o}$/zero ablaut in the *h_2e-conjugation that we find in comparable nominal formations.[11] What about *TeT* roots? Based on the pattern in nouns (recall *$p\acute{o}d$-s/**$p\acute{e}d$-s 'foot' → *ped-$\acute{e}$/$\acute{o}s$ > Skt. *padás*), we would predict that original acrostatic presents of this type became *TóT*/*Tet-*´. Since pretonic short *e is regularly raised to *i* in Hittite (see Melchert 1994:139), the result would have been an aberrant ablaut *$C\bar{a}C$/*CiC-´. There would have been two plausible "repairs": (1) restore *e* after /sreb-/, /greb-/ (and if early enough */Hmeng-/); (2) replace *CiC- with a "morphological" zero-grade *CaC* after the robustly attested *TER(T)* type. Note, however, that a *TeT* root with an original *h_2e-aorist and generalized *$\acute{o}$-grade ($\acute{a}$ in pre-Hittite) would have been subject to the same two reshapings.

The stative meaning of *dākk-*/*dakk-* 'resemble, match' might suggest a prehistoric root present paradigm *dākki*, *dikkanzi* < *$d\acute{o}\hat{k}$-/*$de\hat{k}$-´, but if it belongs to the root *$de\hat{k}$- 'perceive' (see *LIV*²:109–11 and especially Arm. root aorist *etes* 'saw'), a root aorist is more likely (for the development of the meaning one may

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9   Hitt. *māld-*/*mald-* 'make a vow, speak solemnly' probably also belongs here, although in our present state of knowledge of the outcome of *$CeRT$- in Hittite we cannot totally exclude that weak *mald-* is phonologically regular from *$m\acute{e}ldh$-.

10   Contrary to what I said in the oral presentation of this paper there is no reason to assume that a form *alg- from an anachronistic *lgh- ever existed.

11   In the oral version of this paper I implied that *ḫ(u)wapp-*/*ḫupp-* 'throw' and *ḫ(u)wart-*/*ḫurt-* 'curse' show the same pattern. The attested distribution of the allomorphy suggests that these do not reflect directly *$\acute{o}$/zero ablaut, but rather the productive Hittite pattern of *$\acute{a}$/a followed by frequent but not uniform syncope of the unaccented *a* of the weak stem.

compare among other examples English 'look' in the sense 'have the appearance of' from older transitive 'look (at)'). In that case the Hittite verb would continue a *h_2e-aorist *$dók̑$- (*$dắkk$-), and the attested present would be secondary after the predominant $ā/a$ type.[12]

Jasanoff (2003:10 n.20, and 80) presents strong semantic arguments for deriving Hitt. *šakk*- 'know' from a *h_2e-present, but underscores the complete lack of evidence for an *$ó/é$ h_2e-present elsewhere and eventually opts for a *h_2e-aorist (2003:150). Despite my protestations in the oral version of this paper, it is hard to avoid the conclusion of LIV^2:524 that the PIE root was telic *sekH*- 'cut (off)'.[13] My motivation for preferring an original *h_2e-present *$sókH$-, *$sekH$-´ (> pre-Hittite *$sắkk$-, *$sikk$-) was the fact that secondary *e*-vocalism is more pervasive in the weak stem of this verb than in any of the others: Pres1Pl *šekkweni*, Pres2Pl *šekteni*, Pres3Pl *šekkanzi*, Pret1Pl *šekkwen*, Imv1Sg *šeggallu*, Imv2Pl *šekten*, Imv3Pl *šekkandu*, Ptc. *šekkant*- (plus the usual spread of the weak stem to Pret3Pl *šekker*). One even finds intrusions into positions where we expect the strong stem: Pres2Sg *šekti*, Pret3Sg *šekta*. However, none of these is earlier than MH/MS. Furthermore, secondary *e*-vocalism is nearly as widespread in the paradigm of *ḫašš*- 'open': Pres1Pl *ḫēšweni*, Pres3Pl *ḫēšanzi/ḫeššanzi*, Pret1Pl *ḫēšwen*, Imv2Pl *ḫēšten*, Imv3Pl *ḫēšandu*, VblN *ḫēšuwar* beside innovative Pret3Pl *ḫēšer/ḫeššer* (vs. archaic *ḫāšer*) and likewise intrusions into the sphere of the strong stem (Pres3Sg *ḫēšzi*, Pret3SgM-P *ḫeštat*, Imv2Sg *ḫēš*, Imv3Sg *ḫēšdu*). The Pret3Pl *ḫēšer* is already attested in OH/OS (KUB 29.3 i 5). This means that even if we discovered new examples of the weak stem *šekk*- in OH/OS, we could still not accord them any special status.

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12 It is worth bearing in mind that, while the Pres3Pl *ták-kán-zi* appears in OH/OS, the total number of attestations for the weak stem of this verb is less than half a dozen. One cannot therefore put too much weight on the absence of a weak stem *dekk*-.

13 Willi (2011) rejects this etymology of *šakk*-/*šekk*- on semantic grounds and revives an etymology of Ribezzo deriving it from *seĝh*- 'grasp, be master of' hence 'know (how to)', comparing certain uses of Grk. ἔχω. While a stative present would make it somewhat easier to account for the widespread *e*-vocalism in *šakk*-/*šekk*-, I cannot adopt Willi's solution. First of all, the fundamental sense of the Hittite verb is clearly 'come to know', and the occasional use to mean 'be expert in' is secondary from 'be familiar with'. Second, the presumed semantic development from 'cut' to 'analyze' and thus 'know' is not isolated. Tocharian AB *kärs*- 'to know' certainly is from *kers*- 'to cut' (> Hitt. *karš*- 'cut'). The fact that the Hittite word for 'wise' is *ḫattant*-, a lexicalized participle 'piercing, penetrating' of *ḫatta*- 'pierce' (cf. Kloekhorst 2008:333 with refs.), further supports that *šakk*-/*šekk*- reflects the related metaphor 'cut' > 'analyze' > 'know'.

That we find fewer forms with secondary *e*-vocalism in the case of *ak(k)*-'die' (which, based on its meaning, surely originated in a *h_2e-aorist) may reflect merely that its weak stem is significantly less well attested.[14] We also find just once in OH/OS Pres2Pl *šaktēni*, once in OH/NS Pres3Pl *šakanzi*, and three times a participle *šakkant*-. The former could indicate that the verb 'know' first was reshaped according to the *á̄/a* pattern and only later came under the influence of the type of *k(a)rāpi, k(a)repanzi*. It is equally possible that some Hittite speakers followed one model, and some the other.

Ultimately, it does not matter whether *dākki, takkanzi* and *šākki, šekkanzi/šak⟨k⟩anzi* reflect *h_2e-aorists or *h_2e-presents. The weak-stem *e*-vocalism of the latter must be secondary, and it must be modeled after that of /greb-/ 'devour' and /sreb-/ 'sip'. We have already seen that preterite third plurals like *eker* and *ḫēšer* cannot be modeled upon the present third plurals *akkanzi* and *ḫaššanzi*. On the contrary, since /gra:b-/, /greb-/ and /sra:b-/, /sreb-/, the real models for the secondary *e*-vocalism, have no strong/weak alternation $-C_1-/-C_1C_1-$, predictably we find regularly single root-final consonant in the analogical *e*-forms: *k(a)rāpi* : *k(a/i)repanzi* :: *ḫāši* : *ḫēšanzi*, etc. Only rarely do we find the new *e*-vocalism allomorph adjusted to *ḫešš-*. We have also seen that the overall distribution of *e*-vocalism in *šakk-, šekk-* and *ḫašš-, ḫēš-/ḫešš-* gives no support whatsoever for the idea that the preterite third plural served as a "pivot" form in the spread of secondary *e*-vocalism. The combined evidence of the remaining examples supports this conclusion. The verb *ār-, ar-* 'arrives' shows Pres1Pl *ērweni*, Pres2Pl *ērteni*, Pret1Pl *ērwen*, VblN *erwar* beside Pret3Pl *erer*. In the case of *išpār-, išpar-* 'spreads, strews' (thus with Kloekhorst 2008:406–8 contra Melchert 1994:80 et al.) we find Imv2Pl *išperten*. That this happens to be the only example of this verb (to date) obviously is accidental, and likewise accidental is that *āk-, akk-* 'dies' and *ḫān-, ḫan-* 'draws (water)' happen to attest thus far only Pret3Pl *eker* and *ḫēner*. What may not be entirely a matter of chance is the fact that the two roots that show the earliest and most pervasive secondary *e*-vocalism, *šakk-* 'know' and *ḫašš-* 'open', end in an obstruent like their models *k(a)rap-* 'devour' and *š(a)rap-* 'sip'.

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14   I exclude here the frequently attested *akkant-*, which in virtually all of its occurrences is *not* the participle of the verb, but nominalized 'the dead, a dead person', where one might well expect preservation of the more archaic form. Note ᴸᵁ*šakkantan* (UN-*an*) 'acquaintance', one of only three examples for *a*-vocalism in the participle of *šakk-*.

What remains to be addressed is why the weak stem spread to the preterite third plural (whether by renewing the pre-Hittite strong stem in *á* by altering the vocalism to *ē*, as in *ḫāšer > ḫēšer* 'they opened', or by replacing the strong with the weak stem, as in **ištāper > ištapper* 'they blocked up' and in *dā(i)er > tiyēr* 'they placed'). As already emphasized above, nothing of the kind happened in the *mi*-conjugation, where in ablauting paradigms the strong stem in the preterite third plural remained. Why the difference? I offer the following tentative explanation. Aside from a handful of verbs beginning with a labiovelar (*kuen-, kun-* 'strikes', *kuer-, kur-* 'cuts', *ḫuek-, ḫuk-* 'exorcises', and *ḫuek-, ḫuk-* 'slaughters'),[15] the difference between the strong and weak stems in *mi*-verbs consisted not of alternation between a root vowel and zero, but of alternation between *e* and *a* vocalism: *ēd-, ad-* 'eats', *šeš-, šaš-* 'sleeps', etc.[16] On the other hand, from a synchronic viewpoint the stem alternation in *ḫi*-verbs in *-i-* does consist of a root vowel versus zero: e.g., *dāi, tianzi* 'places' (stem in [Caj] vs. [Cj]).[17] The Pret3Pl *dā(i)er* is an archaism, and for several *ḫi*-verbs in *-i-* we find only the weak stem: Pret3Pl *ḫalziēr* 'they called', *išpiēr* 'they were sated', *piēr* 'they gave' like Pres3Pl *ḫalzianzi, išpianzi, pianzi*. I therefore suggest that the spread of the weak stem from the present third plural to the preterite third plural began in the class of *ḫi*-verbs in *-i-* (for which there was no corresponding type in the *mi*-conjugation) and then spread to the rest of the *ḫi*-conjugation.

5. Conclusion

As argued above in §2, there is no evidence for genuine alternation of *e* and *i* in the weak stem of *k(a)rāp-, k(a)rēp-* 'devour' or *š(a)rap-, š(a)rep-* 'sip' and thus no basis for an anaptyctic /ɨ/. There is furthermore no motivation for any kind of

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15 See Kloekhorst 2006:97–101 for compelling arguments that prehistoric **h₂w* developed to a unitary labiovelar /xʷ/ already in Proto-Anatolian.

16 Various developments also led to a descriptively similar *e* vs. *a* alternation in stems ending in a vowel. See Hoffner and Melchert 2008:199–202. Whatever their prehistoric origin, verbs of the type *uwate-, uwata-* 'leads hither' should not have been treated as a separate class (Hoffner and Melchert 2008:198–9). *Synchronically*, there is a single class with alternating stems in *-e-/-a-*. See the just criticism of Yakubovich 2010b:150.

17 It is for present purposes immaterial whether we regard the final *-i-* as an original suffix (thus in different ways Jasanoff 2003:91–117 and Kloekhorst 2008:807–8 and passim) or not (Rasmussen 1989:47–63). For (pre-)Hittite speakers the *-i-* was not segmentable as a suffix.

anaptyxis in the relevant environment.[18] The *e*-vocalism of these two verbs can only continue inherited **e*-grade (likewise weak stem *ḫ(a)mink-* 'bind' with regular raising of **e* to *i*). As discussed in §3, the secondary *e*-vocalism in verbs like *ḫašš-* 'open' and *šakk-* 'know' cannot be analogical to the *mi*-conjugation and must be based on the model of *k(a)rēp-* and *š(a)rep-*. The fact that we find only unambiguous *e*-vocalism in secondary *ḫēš-* and *šekk-* confirms that *k(a)rēp-* and *š(a)rep-* likewise had consistent *e*-vocalism, even if most spellings of the latter are ambiguous.[19]

It is not coincidental that the only direct survival of the original weak **é*-grade stem of the acrostatic **h₂e*-present paradigm is in two roots of the shape *TRET* (R ≠ **y*, **w*): **ghrébh-* 'seize' > 'devour' and **srébh-* 'sip'. As in the corresponding acrostatic nominal type, beginning already in PIE weak **é*-grade was replaced by zero grade in roots of the shape *TER(T)*.[20] The productive pattern *TóR(T)*, *TR̥T-´* led to Hittite *(C)ǻR(C)*, *(C)aR(C)-´*. As argued in §4, original aorists of the **h₂e*-conjugation (regardless of root shape) had already generalized **ó*-grade in pre-Hittite. New *ḫi*-presents backformed to these aorists naturally also adopted the predominant and productive *ǻ/a* pattern. Because of their unique *TRe(R)T* shape only weak **ghrébh-*, **srébh-*, and **h₂ménĝh-* escaped the effects of the spread of *ǻ/a*. On the model of surviving /greb-/ and /sreb-/ there was a secondary spread of weak-stem *e*-vocalism to the two *TeT* roots *ḫašš-* 'open' and

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18   As per Melchert (1994:30), one must distinguish between prehistoric anaptyxis that led to a synchronically fixed and underlying vowel in Hittite (except under special circumstances an /e/ or an /i/) and sporadic synchronic anaptyxis that is spelled with *-a-* (which could represent either a true [a] or merely [ə]). The latter seems unavoidable when we find in NS spellings like *ga-a-ra-pí* 'devours' and *ša-a-ra-pí* 'sips'. But this development has nothing to do with the root vocalism.

19   Since all available evidence suggests that the generalization of the strong **ó*-stem in the *ḫi*-conjugation preterite was exceptionless in pre-Hittite, like that of strong **é*-grade in the *mi*-conjugation preterite, I have assumed that the three examples of surviving **e*-grade *ḫ(a)mank-*, *ḫ(a)mink-* 'bind', *k(a)rāp-*, *k(a)rep-* 'devour', and *š(a)rāp-*, *šarep-* 'sip' all continue **h₂e*-presents. For 'bind' and 'sip', which are processual, I regard this as non-problematic. For 'devour' taken from a root **ghrebh(H)-* 'seize' (thus with Jasanoff 2003:150), it is less straightforward, and I do not exclude the possibility that the attested pattern for *k(a)rāp-*, *k(a)rep-* is analogical to the similarly shaped *š(a)rāp-*, *šarep-*.

20   Due to a regular sound change (Melchert 1994:79), the weak stem **mélh₂-* of the **h₂e*-present **mólh₂-ei*, **mélh₂-n̥ti* 'grinds' had already become *mall-* in Proto-Anatolian. Whether the weak stem of *išpānd-*, *išpand-* 'libates' reflects original **spénd-* (cf. Melchert 1994:134) or renewed **spn̥d-* is unknowable.

šakk- 'know' and far more sporadically to a handful of other *ḫi*-verbs. As in the case of the corresponding acrostatic **ó/é* nominal type, direct evidence for **é-* grade in the weak stem is thus very limited, but it is equally undeniable.

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