The Indo-European Verb

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Proceedings of the Conference of the Society
for Indo-European Studies, Los Angeles 13–15 September 2010

Edited by
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Hittite "$\bar{a}/e$"-ablauting Verbs

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It is nowadays generally agreed upon that the Hittite *mi*-conjugation endings (-*mi*, -*ši*, -*zi*, etc.) correspond to the PIE root present endings (*-*mi*, *-*si*, *-*ti*, etc.), whereas the *ḫi*-conjugation endings (-*ḫḫi*, -*tti*-, -*i*, etc.) correspond to the PIE perfect endings (*-*h₂e*, *-*th₂e*, *-*e*, etc.).[1] The historical connection between the Hittite *mi*-conjugation and the PIE root present on the one hand, and between the Hittite *ḫi*-conjugation and the PIE perfect, on the other, is also reflected in the root ablaut that these categories display. For the PIE root present, all handbooks reconstruct a root ablaut *$\acute{e}/\varnothing$, *$C\acute{e}C$-*ti* / *CC-*énti*, and this is exactly the root ablaut that we find in Hittite *mi*-conjugated verbs as well (e.g. *eš*-*zi* / *aš*- 'to be' < *h_1es*- / *h_1s*-, *kuen*-*zi* / *kun*- 'to kill' < *$g^{wh}en$*- / *$g^{wh}n$*-, etc.). For the PIE perfect, all handbooks reconstruct a root ablaut *$\acute{o}/\varnothing$, *$C\acute{o}C$-*e* / *CC-*ḗr*,[2] and this is the root ablaut that we find in most Hittite *ḫi*-conjugated verbs as well. In some *ḫi*-verbs, this *$\acute{o}/\varnothing$*-ablaut is reflected as $\bar{a}/\varnothing$ (e.g. *au*-*i* / *u*- 'to see' < *Hou*- / *Hu*-, *ḫuu̯art*-*i* / *ḫurt*- 'to curse' < *h_2uort*- / *h_2urt*-, *išpai*-*i* / *išpi*- 'to be satiated' < *sph_1oi*-[3] / *sph_1i*-),[4] whereas in others it is reflected as $\bar{a}/a$-ablaut, the short *a* of which usually is a dead vowel (e.g. *išpānt*-*i* / *išpant*- 'to libate' < *$spond$*- / *$spnd$*-, *kānk*-*i* / *kank*- 'to hang' < *$\acute{k}onk$*- / *$\acute{k}nk$*-, *iškār*-*i* / *iškar*- 'to stab' < *$skor$*- / *skr*-).[5] There is also a third group of verbs, however, which show, besides strong stem forms with the vowel -$\bar{a}$-, (some) weak stem forms with the vowel -*e*-.

As far as I am aware, it was Sturtevant (1933: 239-40) who was the first to notice that Hittite possessed some *ḫi*-verbs that "show *e* instead of *a* in the plural". Although Sturtevant only mentions three such verbs (namely *šākk*-, *ār*- and *karāp*-), in the years to follow a total of nine verbs were classified as $\bar{a}/e$-ablauting:

āk(k)-*i* / *ek*- 'to die'	*ḫāš(š)*-*i* / *ḫeš(š)*- 'to open'
ār-*i* / *er*- 'to arrive'	*karāp*-*i* / *karep*- 'to devour'
ašāš-*i* / *ašeš*- 'to settle'	*šākk*-*i* / *šekk*- 'to know'
ḫamank-*i* / *ḫamenk*- 'to tie'	*šarāp*-*i* / *šarep*- 'to sip'
ḫān-*i* / *ḫen*- 'to draw (water)'	

According to Sturtevant (1933: 240), the -*e*- in the weak stem of these verbs must reflect either PIE *e or *$\bar{e}$, but he admits that postulating "a full or lengthened grade vowel in the plural beside *o*-grade in the singular is strange", if not "almost incredible". Yet, on the strength of a comparison with Germanic preterites of the type Goth. *saḫ* 'I saw', *sēḫum* 'we saw', which seemingly reflect an ablaut *$\acute{o}/\acute{\bar{e}}$, he

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2 The reduplication will be left out of consideration here.

3 Cf. Kloekhorst 2006 for this reconstruction. Note that for the sake of this argument, it does not matter whether one favors my reconstruction or the one given by Oettinger (1979: 461), viz. *$spoh_1i$*- / *sph_1i*-; in both cases the underlying ablaut is *$\acute{o}/\varnothing$.

4 In principle, PIE accented *$\acute{o}$ yielded OHitt. long /$\acute{\bar{a}}$/, except when part of diphthongs: *$\acute{o}i$ > Hitt. /ái/, *$\acute{o}u$ > Hitt. /áu/. This is the reason why in *au*- and *išpai*- we do not find plene spelling of the vowel -*a*- in their strong stem forms (the long $\bar{a}$ in 3sg.pres.act. *išpāi* 'he is satiated' is due to contraction of original *$išp\acute{a}i̯$-*i*). In *ḫuu̯art*-, the expected long vowel (*$ḫuu̯\bar{a}rt$*-) is unattested since strong stem forms of this verb are only found in MS and NS texts, by which time the shortening of OH /$\bar{a}$/ in closed syllables had already taken place: cf. footnote 5.

5 It should be noted that since OH long /$\bar{a}$/ is shortened in closed syllables in MH times (cf. Kloekhorst 2008: 98), the NH outcomes of most of these verbs (at least graphically) do not show ablaut anymore: *išpanti* / *išpandanzi*, *kanki* / *kankanzi*, etc.

assumes that these Hittite verbs reflect a verbal ablaut *ó/$\acute{e}$ as well (cf. also Sturtevant 1935: 182-3). Although followed by Pedersen (1938: 111), Sturtevant's view never received broad acceptance.[6] Nowadays, it is generally assumed that the Germanic preterites that show an ablaut *ó/$\acute{e}$ must be the result of an inner-Germanic innovation,[7] and that this ablaut cannot be projected back to PIE.

Kammenhuber (1969: 234) rather assumed that the $\bar{a}$/e-ablaut reflects an ablaut *ó/é, which in her view replaced the original perfect ablaut *ó/Ø. Yet, she does not give any account why this "Umbildung des Ablauts" would have taken place.[8]

Jasanoff also believes that the Hittite $\bar{a}$/e-ablauting verbs reflect a PIE ablaut *ó/é, but his account of the origin of this ablaut is more elaborate. In his 1979 article "The Position of the $\underline{h}$i-Conjugation", Jasanoff claims that the semantics of the Hittite $\underline{h}$i-conjugation cannot be reconciled with those of the PIE perfect, and that therefore the $\underline{h}$i-conjugation cannot directly derive from it, which at that time was the standard theory. Instead, he assumes that the $\underline{h}$i-conjugation reflects a separate PIE category, which he calls the "*h_2e-conjugation". This new category is then linked to a number of verbal roots that show *o-grade as well as *e-grade presents in different IE languages, the most well-known of which is the root *melH- 'to grind', which shows *o-grade presents in e.g. Goth. *malan*, Lith. *málti*, but an *e-grade formation in e.g. OIr. *melid*.[9] In 1916, Meillet suggested that this alternation might point to a present with a verbal ablaut *ó/é, i.e. *mólH-/*mélH-, although in the daughter languages themselves the *o-grade and the *e-grade stem are never found within one paradigm. Jasanoff is aware of this and even explicitly states that it cannot be excluded that the *o-grade and the *e-grade presents of these roots "derive from two distinct formations in the parent language" (1979: 84[12]), a view that had indeed been advocated by earlier scholars. For instance, Stang (1942: 41f.) very plausibly explained the *o-grade presents as deredeplicated intensives of the type Skt. *ja$\dot{n}$ghanti* 'strikes' < *g^{wh}en-g^{wh}on-ti, whereas the *e-grade presents reflect normal root presents of the type Skt. *hánti* < *g^{wh}én-ti. Nevertheless, Jasanoff embraces the idea of a verbal *ó/é-ablaut, which he assumes to have been the original ablaut of his newly postulated *h_2e-conjugation. It is Hittite, then, that according to Jasanoff (1979: 85) "supplies the decisive evidence" for this reconstruction, namely in the form of its $\bar{a}$/e-ablauting $\underline{h}$i-verbs, which would be the direct descendants of the PIE *ó/é-ablauting *h_2e-conjugation verbs. In the course of the years, Jasanoff elaborated this theory, which culminated in his 2003 monograph *Hittite and the Indo-European Verb*, in which he describes in detail the discovery of this new category, which is supposed to have formed the predecessor of both the classic PIE perfect and the classic PIE middle.

Since in none of the other IE languages is a verbal ablaut *ó/é synchronically attested, the Hittite $\bar{a}$/e-ablaut would be the only witness of it. The $\bar{a}$/e-ablauting verbs thereby form one of the pillars ("decisive evidence") on which Jasanoff's theoretical framework is built. Before one can make a careful analysis of Jasanoff's new theory, it is of paramount importance to be absolutely sure whether or not these Hittite verbs can really carry the weight that has been put upon them. In the following, these $\bar{a}$/e-ablauting $\underline{h}$i-verbs and their implications for the reconstruction of PIE will therefore be treated in detail.

In the same year in which Jasanoff first published his *h_2e-conjugation theory, Oettinger's magnificent *Die Stammbildung des hethitischen Verbums* (1979) appeared, which for the first time systematically incorporated the new insights on the dating of Hittite texts into the treatment of the Hittite verbal system, which yielded many new insights into the inner-Hittite diachronic developments of individual verbs and verbal categories. One of the outcomes of this approach was, for instance, that in a number of $\bar{a}$/e-ablauting $\underline{h}$i-verbs, the *e*-grade cannot yet be found in OH texts, but only appears

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6 Cf. the criticism by Kronasser (1956: 188) and Kammenhuber (1969: 234).

7 Cf. e.g. Kortlandt 1992.

8 Kammenhuber seems to assume that the replacement of the PIE ablaut *ó/Ø by *ó/é has affected the entire Hittite $\underline{h}$i-conjugation. As pointed out by Oettinger (1979: 112[51]), this cannot be correct in view of the $\underline{h}$i-verbs that evidently reflect *ó/Ø-ablaut (like *au-^{i} / u-*).

9 Also e.g. OCS *bodǫ* 'to stab', Lat. *fodiō* 'to dig' < *$b^hod^hh_2$- vs. Lith. *bedù* 'to dig' < *$b^hed^hh_2$-; OHG *graban* < *g^hrob^h- vs. OCS *pa-grebǫ* < *g^hreb^h-; etc.

later on, in NH texts. Consider, for instance, the chronological overview of attestations of the verb *āk(k)-* 'to die'.

		OH	NH
pres.	1sg.	--	*a-ak-mi*
	2sg.	*a-ak-ti*	*ak-ti*
	3sg.	*a-ki*	*a-ki*
	1pl.	--	*ak-ku-e-ni*
	2pl.	--	*a-ak-te-ni*
	3pl.	*ak-kán-zi*	*ak-kán-zi*
pret.	1sg.	--	--
	2sg.	--	--
	3sg.	*a-ak-ki-iš*	*ak-ta*
	1pl.	--	--
	2pl.	--	*a-ak-te-en*
	3pl.	*a-ker*	***e-ker***

In OH times, no *e*-grade forms can be found. Instead, the OH attestations show a strong stem *āk(k)-* (*ākti, aki*) besides a weak stem *akk-* (*akkanzi*). This means that this verb originally displayed *ā/a*-ablaut, which must go back to PIE *$ó/Ø$-ablaut. Only in NH times do we find a form with *e*-grade, namely 3pl.pret. *eker*, which apparently has replaced OH *aker*. It is clear that this *eker* must be of a secondary origin.[10] According to Oettinger (1979: 113), the source of the *e*-grade in *eker* must have been *mi*-conjugated forms like *eder* 'they ate', *ešer* 'they were', *ekuer* 'they drank' and *epper* 'they took', although he does not give a detailed account of the analogy involved. In my view, this analogy must have worked as follows: on the basis of pairs of *mi*-conjugating *e/a*-ablauting verbs like 3pl.pres. *adanzi* : 3pl.pret. *eder* 'they eat / ate', *ašanzi* : *ešer* 'they are / were' and *šašanzi* : *šešer* 'they sleep / slept' the original pair 3pl.pres. *akkanzi* : 3pl.pret. *aker* 'they die / died' has been replaced by *akkanzi* : *eker* after the OH period. This means that the *e*-grade of *eker* indeed reflects PIE *$é$, albeit that this *$é$ was secondarily taken over from the *mi*-conjugation, where it was etymologically at home.[11] Also other *ā/e*-ablauting verbs show a similar pattern. Consider the chronological overviews of *ār-* 'to arrive' and *ḫān-* 'to draw water':

		ār 'to arrive'			*ḫān-* 'to draw (water)'	
		OH	MH	NH	older	younger
pres.	1sg.	*a-ar-ḫi*	*a-ar-ḫi*	*a-ar-ḫi*	--	--
	2sg.	--	*a-ar-ti*	*a-ar-ti*	--	--
	3sg.	*a-a-ri*	*a-ri*	*a-ri*	*ḫa-a-ni*	*ḫa-a-ni*
	1pl.	--	--	***e-ru-e-ni***	--	--
	2pl.	--	*ar-te-ni*	***e-er-te-ni***	--	--
	3pl.	*a-ra-an-zi*	*a-ra-an-zi*	*a-ra-an-zi*	*ḫa-na-an-zi*	*ḫa-(a-)na-an-zi*

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10 Note that Jasanoff (1979: 85) had also noticed that "*ak(k)-* 'die' shows ablaut only in the late pret. 3 pl. *ekir* and probably did not originally belong here [scil. to the class of *ā/e*-ablauting *ḫi*-verbs]."

11 Oettinger's interpretation of forms like *eder* and *ešer* as reflecting reduplicated formations "*h_1e-h_1d-$éh_1$-re" and *h_1e-h_1s-$éh_1$-re" can no longer be upheld. On the basis of forms like *šešer* 'they slept' and *merer* 'they disappeared', which must reflect *$sés$-$ēr$ and *$mér$-$ēr$, respectively, it is clear that also *eder* and *ešer* must go back to formations with full grade in the root: *$h_1éd$-$ēr$ and *$h_1és$-$ēr$.

pret.						
	1sg.	--	*a-ar-ḫu-un*	*a-ar-ḫu-un*	--	--
	2sg.	--	--	--	--	--
	3sg.	*a-ar-aš*	*a-ar-aš*	*a-ar-aš*	--	--
	1pl.	--	*ar-ú-en*	**e-ru-en**	--	--
	2pl.	--	--	--	--	--
	3pl.	*a-re-er*	**e-re-er**	**e-re-er**	*ḫa-a-ner*	**ḫe-(e-)né-er**

Especially the case of *ār-* is telling. In OH times, this verb shows a strong stem *ār-* (*ārḫi*, *āri*) besides a weak stem *ar-* (*aranzi*), indicating that it reflects a PIE *ó/Ø-ablaut. In MH times, the old 3pl.pret. form *arer* has been secondarily replaced by the *e*-grade form *erer*, which must be analogical after *mi*-verb forms like *eder*, *ešer*, *šešer*, etc. In NH times, this *e*-grade spread over the paradigm. It is likely that from the 3pl.pret. form *erer* it first spread to 1pl.pret. and 2pl.pret., replacing original *aru̯en* and **arten* by *eru̯en* and **erten*, and that from there also the 1pl.pres. and 2pl.pres. forms were affected, replacing original **aru̯eni* and *arteni* by *eru̯eni* and *erteni*, respectively. Also in the case of *ḫān-* it is clear that the stem *ḫen-* cannot have been an original **e*-grade form. The initial *ḫ-* must reflect **h₂-*,[12] which would have coloured an adjacent **e* to *a*. This means that the synchronic *e*-grade form *ḫener* must have come about at a recent stage only. We therefore can conclude that this verb originally had a strong stem *ḫān-* (*ḫāner*) besides a weak stem *ḫan-* (*ḫananzi*), reflecting **ó/Ø*-ablaut. Although the diachronic distribution of forms is less clear than in the other verbs, we can still see that a secondary 3pl.pret. form with *e*-grade, *ḫener*, was created somewhere in the course of Hittite, replacing original *ḫāner*.

A similar scenario can explain the verb *ḫāš-ⁱ* 'to open'. Consider a diachronic overview of its attestations (forms in brackets are attested in younger copies of older compositions):

		OH	MH	NS
pres.	1sg.	--	--	--
	2sg.	--	--	--
	3sg.	(*ḫāši*)	(*ḫašzi*)	**ḫēšzi** (1x)
	1pl.	*ḫaššueni*	--	**ḫēšueni**
	2pl.	--	--	--
	3pl.	*ḫaššanzi*	*ḫaššanzi*	**ḫēšanzi**, **ḫeššanzi** (rare)
pret.	1sg.	--	--	--
	2sg.	--	--	--
	3sg.	--	*ḫāšta*	*ḫašta*
	1pl.	--	--	**ḫēšuen**
	2pl.	--	--	--
	3pl.	**ḫēšer**	(*ḫāšer* 1x)	**ḫēšer**, **ḫeššer** (rare)

The OH attestations show three different stems, namely *ḫāš-*, *ḫašš-* and *ḫeš-*. Although the etymology of this verb is unclear, its initial *ḫ-* must reflect either **h₂-* or **h₃-*. This means that the stem *ḫeš-*, which synchronically seems to reflect *e*-grade, cannot be original: the initial **h₂-* or **h₃-* would have coloured an adjacent **e* to Hitt. *a* or *ā*. We therefore must assume that the stem *ḫeš-* is of a recent, secondary origin, and that originally this verb showed a strong stem *ḫāš-* (*ḫāši*) besides a weak stem *ḫašš-* (*ḫaššanzi*), reflecting **ó/Ø*-ablaut.[13] Apparently already in OH times, a secondary 3pl.pret. form with *e*-grade was created, *ḫešer*, which replaced original *ḫāšer*.[14] It is interesting to see that in NH times, the *e*-grade had not only spread to the other pl.pret. forms and the 1pl. and 2pl.pres. forms, but to the

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12 Cf. Puhvel 1991: 77 for a connection with Gr. ἄντλος 'bilge-water' and Arm. *hanem* 'to draw out', which points to a root **h₂en-*.

13 Thereby it must originally have been homophonous to *ḫāš-ⁱ / ḫašš-* 'to give birth'.

14 A form *ḫāšer* is attested once, in the MH/NS text *KUB* 35.148 iii 2, which must now be regarded as an archaic form.

3pl.pres. form (*ḫēšanzi*) as well, and even to a sg. form (*ḫēšzi*). Unfortunately, the number of attestations from the MH period is limited, so that we cannot clearly see how the analogical spread of the *e*-grade took place. Yet, we can surmise that in this period the 1pl. and 2pl.pret. forms had undoubtedly already been affected.

On the basis of the verbs that we have discussed thus far, we can set up a blueprint of the analogical spread of *e*-grade in originally *ā/a*-ablauting verbs:

		(0)	(1)	(2)	(3)	(4)	(5)
pres.	1sg.	*CāC-ḫi*	*CāC-ḫi*	*CāC-ḫi*	*CāC-ḫi*	*CāC-ḫi*	*CāC-ḫi*
	2sg.	*CāC-ti*	*CāC-ti*	*CāC-ti*	*CāC-ti*	*CāC-ti*	*CāC-ti*
	3sg.	*CāC-i*	*CāC-i*	*CāC-i*	*CāC-i*	*CāC-i*	***CeC-(z)i*** [15]
	1pl.	*CaC-u̯eni*	*CaC-u̯eni*	*CaC-u̯eni*	***CeC-u̯eni***	***CeC-u̯eni***	***CeC-u̯eni***
	2pl.	*CaC-teni*	*CaC-teni*	*CaC-teni*	***CeC-teni***	***CeC-teni***	***CeC-teni***
	3pl.	*CaC-anzi*	*CaC-anzi*	*CaC-anzi*	*CaC-anzi*	***CeC-anzi***	***CeC-anzi***
pret.	1sg.	*CāC-ḫun*	*CāC-ḫun*	*CāC-ḫun*	*CāC-ḫun*	*CāC-ḫun*	*CāC-ḫun*
	2sg.	*CāC-ta*	*CāC-ta*	*CāC-ta*	*CāC-ta*	*CāC-ta*	*CāC-ta*
	3sg.	*CāC-š*	*CāC-š*	*CāC-š*	*CāC-š*	*CāC-š*	*CāC-š*
	1pl.	*CāC-u̯en*	*CāC-u̯en*	***CeC-u̯en***	***CeC-u̯en***	***CeC-u̯en***	***CeC-u̯en***
	2pl.	*CāC-ten*	*CāC-ten*	***CeC-ten***	***CeC-ten***	***CeC-ten***	***CeC-ten***
	3pl.	*CāC-er*	***CeC-er***	***CeC-er***	***CeC-er***	***CeC-er***	***CeC-er***

Stage (0) represents the original stage, in which the ablaut *ā/a* was present in all forms of the paradigm. In stage (1), the 3pl.pret. form has secondarily taken over the *e*-grade from *mi*-inflected 3pl.pret. forms. From the 3pl.pret. form, this *e*-grade spreads to 1pl. and 2pl.pret. (stage (2)). From these forms, it further spreads to the 1pl. and 2pl.pres. forms (stage (3)). Later on, also the 3pl.pres. form is affected (stage (4)), and eventually also singular forms start showing *e*-grade (stage (5)). For each verb, the exact starting moment of these developments apparently differs. In the case of *āk(k)-/akk-* 'to die', stage (1) has been reached in the NH period only; in the case of *ār-/ar-* 'to arrive', stage (1) has been reached in the MH period already, after which both stage (2) and (3) are reached in the NH period; whereas in the case of *ḫāš-/ḫašš-*, stage (1) had been reached in the OH period already, after which stage (2) probably was reached in the MH period, with stages (3), (4), and (5) having been effectuated in the NH period. The exact reason for this difference in commencement of the analogical spread is difficult to give. It probably depends on formal and semantic as well as sociolinguistic factors, and especially these latter are almost impossible to retrieve. A historical linguist usually must content himself with only being able to describe the differences in start and speed of analogical spread, not always being able to clarify them.

Let us now treat the verb *šākk-* 'to know', which is usually mentioned as the prime example for *ā/e*-ablauting verbs. Consider its diachronic overview of attested forms:

		OH	MH	NH
pres.	1sg.	*ša-a-ak-ḫi*	*ša-a-ak-ḫi*	*ša-ak-ka₄-aḫ-ḫi*
	2sg.	*ša-a-ak-ti*	*ša-ak-ti*	***še-ek-ti***
	3sg.	--	*ša-a-ak-ki*	*ša-ak-ki*
	1pl.	--	***še-ek-ku-e-ni***	***še-ek-ku-e-ni***
	2pl.	*ša-ak-te-e-ni*	***še-ek-te-ni***	***še-ek-te-ni***
	3pl.	(*ša-kán-zi*)	***še-ek-ka-an-zi***	***še-ek-ka-an-zi***

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15 In NH times the 3sg.pres. ending -*i* is being replaced by -*zi*: cf. Kloekhorst 2008: 378.

pret.	1sg.	--	--	*ša-ag-ga-aḫ-ḫu-un*
	2sg.	--	*ša-a-ak-ta*	*ša-ak-ta*
	3sg.	--	--	*ša-ak-ta*, **še-ek-ta**
	1pl.	--	--	**še-ek-ku-e-en**
	2pl.	--	--	--
	3pl.	--	--	**še-ek-ke-er** (ENH)

Although the number of OH attestations is not overwhelming, it is clear that besides the strong stem *šākk-* as found in 1sg.pres. *šākḫi* and 2sg.pres. *šākti*, the weak stem is *šakk-*, which is attested in 2pl.pres. *šaktēni* and supported by MH attestations of the participle that read *šakkant-* and the OH/NS 3pl.pres. form *šakanzi*. These forms irrefutably show that this verb originally was *ā/a*-ablauting,[16] which means that *šākk-/šakk-* in fact reflects a PIE *ó/Ø*-ablaut.[17] Only in MH times do we find forms with *e*-grade. The distribution of these *e*-grade forms is remarkable, however: they are found in all pl.pres. forms, including the 3pl.pres., which corresponds to stage (4) of the blueprint given above. Does this mean that the different stages of spread of the *e*-grade, namely (1), (2), (3) and (4) have all been reached within a very short period only, namely at the end of the OH and the beginning of the MH period? This is not very credible. Moreover, such an assumption is in fact unnecessary. Since in OH texts all diagnostic forms for stage (1) and (2) are unattested, it cannot be excluded that already in the OH period this verb had reached stage (2) of the spread of the *e*-grade, and that its pl.pret. forms were in fact *šekkuen*, *šekten* and *šekker*, respectively. We would then have to assume that the initial stage of spread of the *e*-grade, namely the replacement of original 3pl.pret. *šākker* by the secondary form *šekker*, had been reached in recent pre-Hittite times already.

For the verbs that we have treated thus far, we can conclude the following. Their oldest attestations clearly show that they originally were *ā/a*-ablauting (*āk-/akk-* 'to die', *ār-/ar-* 'to arrive', *ḫān-/ḫan-* 'to draw (water)', *ḫāš-/ḫašš-* 'to open' and *šākk-/šakk-* 'to know'), which means that they all reflect a PIE ablaut *ó/Ø*. For all these verbs we were able to show that at a certain point a secondary *e*-grade enters the paradigm, which subsequently spreads over a part of it. In all cases the point of entry seems to have been the 3pl.pret. form, which probably was due to an analogy with the *mi*-conjugation: on the basis of pairs from *mi*-conjugating *e/a*-ablauting verbs like *adanzi* : *eder*, *ašanzi* : *ešer*, *šašanzi* : *šešer*, the original pair *(C)aCanzi* : *(C)āCer* of the *ḫi*-conjugating *ā/a*-ablauting verbs was analogically altered to *(C)aCanzi* : *(C)eCer*. The exact moment of this analogy differs per verb. In the case of *šākk-/šakk-* it seems to have happened in recent pre-Hittite times, in the case of *ḫāš-/ḫašš-* it took place in OH times, in the case of *ār-/ar-* it occurred in MH times, whereas in the case of *āk-/ak-* and possibly also *ḫān-/ḫan-* it has taken effect in NH times only. Cf. the following scheme:

	pre-Hitt	OH	MH	NH
stage 5				░░
stage 4			░░	▓▓
stage 3			░░	▓▓
stage 2		▒▒	▓▓	▓▓
stage 1	░░	▒▒	▓▓	██

░░	= *šākk-/šakk-*
▒▒	= *ḫāš-/ḫašš-*

▓▓	= *ār-/ar-*
██	*āk-/akk-*

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16 *Pace* Jasanoff (2003: 85), who assumes that the verb *šākk-* originally was a preterite only, to which only in pre-Hittite an analogical present was created according to the "proportion: (pret.) *éswen*, *ésten*, *éser* : (pres.) *aswéni*, *asténi*, *asánti* :: (pret.) *sék(k)wen*, *sékten*, *sék(k)er* : (pres.) *X*, where *X* was solved as *sak(k)wéni*, *sakténi*, *sak(k)ánti*."

17 Thus already *LIV²*: 524.

The exact reason for this difference is difficult to give, but that should not concern us too much.[18] The subsequent spread of the *e*-grade to other forms in the paradigm seems to take place in each verb at more or less the same pace.[19]

The remaining *ā/e*-ablauting verbs have different prehistories. Before we go into these, we must embark on a little digression. In Kloekhorst 2008: 60-1, I have argued that, besides a phoneme /e/, which is always spelled with the vowel -*e*-, and a phoneme /i/, which is always spelled with the vowel -*i*-, Hittite also possesses a phoneme /ɨ/, which is spelled both with the vowel -*e*- and with -*i*-. Moreover, I have argued that this /ɨ/ regularly developed in certain pre-Hittite consonant clusters containing an -*s*- (e.g. **demh₂sh₂o-* > /taMɨsHa-/ 'damaging', spelled *damme/išḫa-*; **dmh₂sénti* > /tmɨSántⁱi/ 'they oppress', spelled *tame/iššanzi*; **ǵnh₃sénti* > /knɨSántⁱi/ 'they recognize', spelled *kane/iššanzi*; **dʰh₁skéti* > /tsɨkétⁱi/ 'he puts (imperf.)', spelled *zikkezzi*; **skór-* > /ɨskār-/ 'to stab', spelled *iškār-*; etc.), and is used as an epenthetic vowel in secondary zero-grade formations (e.g. **ud-én-* was secondarily changed to **ud-én-* in analogy to nom.-acc.sg. **uódr*, which then yielded Hitt. /uɨdén-/ 'water (obl. stem)', spelled *ue/iden-*).[20] As we will see, in the remaining *ā/e*-ablauting verbs, their alleged *e*-grade will turn out to be the vowel /ɨ/.

The verb *ašāš-ⁱ* 'to settle' has a weak stem that is spelled *a-še-š°* as well as *a-ši-š°*. This fluctuation in spelling between -*e*- and -*i*- is prototypical of the phoneme /ɨ/. The prehistory of the verb *ašāš-* is not fully clear: it must originally be some sort of full reduplication of the verb *eš-/aš-* 'to sit' < **h₁es-* / **h₁s-*. We may therefore have to reconstruct *ašāš-* as **h₁s-h₁ós-*. If this verb, like most other *ḫi*-verbs, would originally have had **ó/Ø*-ablaut, its weak stem would have been **h₁s-h₁s-*. In my view, the development of the vowel /ɨ/ in such a consonant cluster would be phonetically regular: e.g. 3pl.pres. **h₁sh₁sénti* > /ʔsɨsántⁱi/, spelled *aše/išanzi*.[21] Since the weak stem *aše/iš-* in this scenario reflects the zero-grade root, we would expect it to be in principle unstressed, which coincides with the almost consistent lack of plene spelling of its vowel.[22] We can conclude that *ašāš-/aše/iš-* does not show an *ā/e*-ablaut, but rather an ablaut *ā/ɨ*, which goes back to PIE **ó/Ø*.

The verb *ḫamank-*[23] 'to tie' shows a weak stem that in the oldest texts is spelled *ḫa-mi-in-k°*. Only in younger texts do we find spellings of the type *ḫa-me-en-k°* as well, but this is probably due to an inner-Hittite lowering of /i/ to /e/ in some specific environments.[24] Since it is well known that a pre-Hitt.

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18 A similar case is formed by the pl.pret. forms of the *dāi/tiǰanzi*-class verbs. Originally, these forms must have contained the weak stem: °*Ci-ụen*, °*Ci-šten*, °*Ci-er*. In the course of time, these weak stem forms were replaced by strong stem forms: °*Cai-ụen*, °*Cai-šten*, °*Cā-er*. In the verb *dai-/ti-*, this replacement had taken place in pre-Hittite times already, and we therefore find *daiụen*, *daišten* and *dāer* in OH texts already. In the verb *ḫuụai-/ḫui-*, the replacement took place in MH times only, where we can see original *ḫuier* being replaced by *ḫuụāer*. In verbs lik *pai-/pi-* 'to give' and *išpai-/išpi-* 'to be satiated' the replacement was never effectuated, as can be seen from NH forms like *piụen*, *pišten*, *piǰer* and *išpiǰer*. Also in this case it is difficult to explain exactly why the analogical replacement started in one verb much earlier than in the other. We can only acknowledge the fact that it did.

19 In a paper presented at the Eighth International Congress of Hittitology (5-9 September 2011, Warsaw), Prof. Melchert convincingly argued that the forms 2pl.imp.act. *iš-pé-er-te-en* (*KBo* 21.14 obv. 8 (MS?)) and 3pl.pret.act. *iš-pé-re-er* (*KBo* 21.22 obv. 6 (OH/MS)), which belong to the paradigm of *išpār-ⁱ* / *išpar-* 'to spread out', are to be regarded as secondary *e*-grade forms as well.

20 Comparable to epenthetic -ɪ- in Gr. πίτνημι 'to spread' < **ptneh₂mi*.

21 Cf. Kloekhorst 2008: 74.

22 We find plene spelling only twice, namely in the 3pl.pret. form *a-še-e-še-er* (*KBo* 3.63 i 11) and the part. form *a-še-e-ša-an* (*KUB* 32.121 ii 26). It can hardly be coincidental that one of these is a 3pl.pret. form, and I therefore assume that this form represents /ʔséser/, with a secondary *e*-grade as in the forms *eker*, *erer*, *ḫener*, *ḫešer* and *šekker*. From here it apparently spread to the participle. Consider also the remarkable 3pl.pret. form *e-še-šer* (*KUB* 41.i iv 9), which shows a secondary *e*-grade as well, albeit in the wrong slot.

23 The strong stem of this verb is consistently spelled non-plene, *ḫa-ma-an-k°*, implying the presence of a short /a/: /Hmáng-/. Yet, since strong stem forms of this verb are unattested in OS texts, we can safely assume that in Old Hittite their stem would have been **/Hmā̆ng-/, spelled **ḫa-ma-a-an-k°*, the long /ā/ of which was shortened in the post-OH period because it stood in a closed syllable (cf. footnote 5).

24 Although the exact conditions have not yet been clarified: cf. Kloekhorst 2008: 92-3.

e was raised to *i* before **nk*,[25] the OH stem *ḫamink-* could in principle go back to pre-Hitt. */Hmenk-/, with the vowel /e/. Yet, it cannot be excluded either that it rather represents a stem /Hmɨnk-/, with the vowel /ɨ/. Within the *ḫi*-conjugation, the verb *ḫamank-* occupies a special position: it is the only verb displaying the root structure °*NVNC-*. We should therefore investigate whether there might be a link between this root structure and the remarkable weak stem with *-i-*. We can do so by examining how verbs of the structure °*NVNC-* behave in the other verbal category that Hittite knows, namely the *mi*-conjugation. Within the *mi*-conjugation, a considerable number of verbs of the structure °*NVNC-* can be found, namely *nink-*[zi] 'to quench one's thirst' and the group of nasal-infix verbs ending in *-nink-* (*ḫarnink-*[zi] 'to ruin', *ḫunink-*[zi] 'to bash', *šarnink-*[zi] 'to compensate', etc.). It is remarkable that all these verbs show the spelling *-ni-in-k*° in their weak stem forms: e.g. 3pl.pres. *ni-in-kán-zi*, part. *ḫar-ni-in-kán-t*°, *ḫu-u-ni-in-kán-t*°, 3pl.pres. *šar-ni-in-kán-zi*, etc. Of course, we could assume that these forms reflect **e*-grade, which would indeed phonetically regularly yield the attested forms. Yet, since all *mi*-verbs in principle always show zero-grade in their weak stems, reconstructing an **e*-grade in only this category of verbs is *ad hoc*. I therefore want to propose that these forms reflect a zero-grade **°nnC-* and that in this sequence the development of the vowel /ɨ/ was phonetically regular.[26] In this way, e.g. *ni-in-kán-zi* can be interpreted as /nɨnkánˢi/ < **nnK-énti*, etc. This sound law may then also have operated in *ḫamink-*, which we can now interpret as /Hmɨng-/ < **h₂mngʰ-*. For instance, the 3pl.pres. form *ḫa-mi-in-kán-zi* would then represent /Hmɨngánˢi/ < **h₂mngʰ-énti*. If this interpretation is correct, the alleged *ā/e*-ablauting "*ḫamank-/ḫamenk-*" could in fact be regarded as *ā/ɨ*-ablauting, reflecting PIE **ó/Ø*-ablaut.

The verb *karāp-* 'to devour' shows a weak stem that is usually spelled *ka*-RE/I-*p*°, although a spelling *ka-re-e-p*° occurs once as well. Since the sign RE/I is ambiguous in its reading – it can represent *re* as well as *ri* – this weak stem could in principle phonologically be interpreted both as /kreb-/ and as /krɨb-/. The verb *šarāp-* 'to sip' shows a weak stem that is spelled *ša*-RE/I-*p*°, which can be interpreted both as /sreb-/ and as /srɨb-/.[27] Also the verbs *karāp-* and *šarāp-* occupy a special position within the *ḫi*-conjugation: they are the only verbs that show a root structure *CRVC-*. Since both show a synchronically aberrant vocalism in their weak stem, we should investigate whether there possibly is a link between this type of weak stem and the unique root structure of these verbs. In order to do so, we must again first look at the behaviour of verbs with a root structure *CRVC-* in the *mi*-conjugation. There we find only one *CRVC*-verb, namely *terepp-*[zi] 'to plough', which represents /trep-/, and is commonly reconstructed as **trep-*.[28] Interestingly, the weak stem of this verb is spelled *te*-RE/I-E/IP-*p*°, e.g. in 3pl.pres. *te*-RE/I-E/IP-*pa-an-zi*, which can be interpreted as either /trep-/ or /trɨp-/. Since virtually all *mi*-conjugated root verbs show an ablaut **é/Ø*, it is extremely unlikely that the weak stem of this verb would contain an **e*-grade. I therefore assume that the correct interpretation is /trɨp-/, with the vowel /ɨ/. The presence of this vowel can in my view be explained by the following scenario. Just like all other *mi*-verbs, **trep-* must originally have shown an ablaut **e/Ø*, i.e. **trép-ti / *trp-énti*. The regular outcome of these forms would in Hittite have been *trepzi / **tarpanzi*. As we see, the strong stem *trep-* would in comparison to the expected weak stem ***tarp-* show Schwebeablaut: *trVp-* vs. *tVrp-*. Since Hittite is a language that hardly tolerates any consonantal alternations within paradigms, it is easy to understand that the Schwebeablaut in *trep-* vs. *tarp-* was eliminated. This was done by replacing *tarp-* by a secondary zero-grade form, namely a form in which the epenthetic vowel /ɨ/ was inserted in the slot of the full grade vowel *-e-* in the strong stem. The resulting stem, /trɨp-/, was spelled *te*-RE/I-E/IP-*p*°.

A similar scenario can now also be envisaged for *karāp-* and *šarāp-*. If we assume that, just like virtually all *ḫi*-conjugated root verbs, also these verbs originally showed an ablaut **ó/Ø*, their original

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25 Cf. Melchert 1994: 139; Kloekhorst 2008: 96.

26 There are no counter-examples to this proposed development. All synchronic sequences of *-Nank-* that I could find in Hittite reflect *o*-grade, e.g. *zamankur* 'beard' < **smónḱ-ur*.

27 An interpretation /srib-/ would be possible as well, but is excluded for morphological reasons.

28 Cf. Kloekhorst 2008: 871-2. Since in Hittite an initial sequence **trV^front* automatically yields *terV-*, with an anaptyctic *-e-*, we can ignore this *-e-* in the phonological interpretation. Hence /trep-/.

paradigms must have been *ǵʰróbʰ-ei / *ǵʰrbʰ-énti and *sróbʰ-ei / *srbʰ-énti, respectively. These paradigms should regularly have yielded krāpi / **karpanzi and šrāpi / **šarpanzi. The Schwebeablaut between the strong stems krāp- and šrāp- on the one hand, and the weak stems **karp- and **šarp-, on the other, was too aberrant according to Hittite standards. It therefore was eliminated by inserting the epenthetic vowel /ɨ/ in the weak stem in the slot of the full grade vowel -ā- in the strong stem. The resulting stems, /krɨb-/ and /srɨb-/, were spelled ka-RE/I-p° and ša-RE/I-p°, respectively. Since the stems /krɨb-/ and /srɨb-/ replace the zero-grade stem *ǵʰrbʰ- and *srbʰ-, we would expect them to be in principle unstressed, which coincides with the consistent lack of plene spelling of their vowel.[29]

We can conclude that also the alleged ā/e-ablauting verbs "karāp-/karep-" and "šarāp-/šarep-" in fact reflect an ablaut ā/ɨ, ultimately going back to PIE *ó/Ø.

Conclusions

We have seen that the verbs "āk-/ek-" 'to die', "ār-/er-" 'to arrive', "ḫān-/ḫen-" 'to draw (water)', "ḫāš(š)-/ḫeš(š)-" 'to open' and "šākk-/šekk-" 'to know' originally were not ā/e-ablauting at all, but rather ā/a-ablauting, namely āk-/akk-, ār-/ar-, ḫān-/ḫan-, ḫāš-/ḫašš- and šākk-/šakk-, which means that all these verbs reflect a PIE ablaut *ó/Ø. The e-grade forms that are attested for these verbs are of a secondary origin: for each of these verbs we were able to show that at a certain point a secondary e-grade had entered the paradigm and subsequently spread over a part of it. In all these verbs the point of entry was the 3pl.pret. form, which must have been altered according to the following analogy: under the influence of mi-conjugating pairs of the structure 3pl.pres. (C)aCanzi : 3pl.pret. (C)eCer, the original ḫi-conjugation pair (C)aCanzi : (C)āCer was altered to (C)aCanzi : (C)eCer.

The remaining verbs, "ašāš-/ašeš-" 'to settle', "ḫamank-/ḫamenk-" 'to tie', "karāp-/karep-" 'to devour' and "šarāp-/šarep-" 'to sip', all show unique, aberrant root structures. It therefore is a priori more probable that the aberrant vocalism that these verbs display in their weak stems has in one way or another been caused by their root structure, than that it should be projected all the way back to PIE. And indeed, as we have seen, the alleged "e"-grade in the weak stems of these verbs in fact is the vowel /ɨ/, which has come about in pre-Hittite times only. In ašāš-/aše/iš- and ḫamank-/ḫamink-, the /ɨ/ in the weak stems /ʔsɨs-/ and /Hmɨng-/ had regularly emerged in the zero-grade stems *h₁sh₁s- and *h₂mnǵʰ-, and in karāp-/kare/ip- and šarāp-/šare/ip- the vowel /ɨ/ as found in the weak stems /krɨb-/ and /srɨb-/ was secondarily introduced in the regular zero-grade stems **karp- and **šarp- in order to avoid Schwebeablaut vis-à-vis the strong stems /krāb-/ and /srāb-/. Thereby also these last four remaining verbs originally must have had *ó/Ø-ablaut, and we can conclude that **none** of the Hittite alleged ā/e-ablauting verbs reflects a PIE ablaut *ó/é.

Since all Hittite evidence in favor of a PIE verbal ablaut *ó/é has now vanished, and since in the other IE languages there never was any evidence in favor of verbal *ó/é-ablaut to begin with, we must conclude that, as far as we can tell, PIE did not possess any *ó/é-ablaut in its verbal paradigms.

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29 Only once do we find plene spelling in one of these verbs, however, namely in the 3pl.pret. form ka-re-e-pé-er (*KUB* 14.1 obv. 11), which implies accentuation of the root. It can hardly be coincidental that we are dealing with a 3pl.pret. form here, and I therefore assume that this form represents /kréber/, with a secondary *e-grade as in the forms eker, erer, ḫener, ḫešer and šekker.

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