Hrozný and Hittite
The First Hundred Years

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Hittite Historical Phonology after 100 Years (and after 20 Years)

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Abstract

On the centennial of Hrozný's identification of Hittite as an Indo-European language I review the major issues in Hittite historical phonology, in comparison not only with his sketch of 1917 but also with my own treatment of 1994. After some methodological preliminaries and an overview of major revisions required by the last two decades of scholarship, I focus on the PIE syllabic sonorants. Hrozný (1917: 187) already tentatively concluded that their regular outcome in Hittite was *aR*, and this has become the standard view, but he also entertained that syllabic nasals before stops could appear as simply *a*. The demonstration by Goedegebuure (2010) that CLuvian *zanta* is the cognate of Hittite *katta* 'down' has renewed the question of the development of the syllabic nasals before stops. Confirmation that <u> in Hittite spells /o/, including in the result of $*w\mathring{R}$, also casts doubt on the alleged direct change of $*w\mathring{R} > uR$ by resyllabification (Melchert 1994a: 126–127). I reexamine the entire question of the development of syllabic sonorants in Hittite in the light of these new findings.

1 Introduction: Methodological Issues

A *Hrozný's Methodology*

That Hrozný's identification of Hittite as an Indo-European language was a great accomplishment has never been seriously questioned. However, there has been a longstanding and widespread narrative in Indo-European studies that Hrozný relied too heavily on the etymological method, and that his analysis of Hittite was only widely accepted when confirmed through combinatory

analysis by others, notably by Ferdinand Sommer (see e.g. the excellent historical summary of Eichner 1980: 123–124 with notes and references).

It is high time after one hundred years to put this canard to rest. A cursory survey of his *Glossar* (Hrozný 1917 [2002]: 212–246) shows that Hrozný correctly identified approximately eighty percent of the lexical morphemes; less than fifteen percent are wholly incorrect. Of the latter, only his interpretation of *dā-* 'take' and *dai-* 'put' as 'give', of *ḫar(k)-* 'have, hold' as 'take' (also confused with *ḫark-* 'perish' and *ḫarnink-* 'destroy'), and of *uwa-* 'come' also as 'go' are truly due to etymological assumptions. Others are simply predictable errors of a first decipherment (Hrozný did have a particular problem in analyzing spatial relations, for a review of which see Frantíková 2015). It is true that Hrozný's success rate was obviously due in part to alternations of syllabically spelled Hittite words with known Sumerian and Akkadian equivalents, but this fact merely confirms that his method was mostly combinatory. Likewise, his successful tentative interpretation of many words that were in 1917 hapax or near-hapax necessarily resulted from an analysis of the context, not from presumed etymological connections.

In sum, Hrozný employed a *blend* of the combinatory and etymological methods, following what is a widespread and standard practice in the analysis of newly discovered and only partially understood corpus languages. As was to be expected, further study by Hrozný himself and by others corrected his most serious initial errors within the next decade, but he had successfully established the basic facts of Hittite grammar already by 1917 (for historical phonology see further below).

B   *Interpretation of Orthography*

Much recent study of Hittite phonology, synchronic and diachronic, has unfortunately been based on the widespread pernicious false premise that *all* nonrandom orthographic patterns *must* at all costs reflect linguistically real contrasts: see e.g. Adiego (2007: 235–237), Eichner (1980: 143–144, note 63, and 149, note 73, and 1992: 57), Kloekhorst (2010: 204 and passim; 2012: 247, 2013: passim, et alibi), Rieken (2010a: 305–307 and 2010b: 653 and passim), and Simon (2012: 494 and 2013: 16, with note 37).

The preceding premise reflects a profound misunderstanding of how orthographies developed by and for native speakers—*especially* by and for scribal elites—actually function. Nonrandom patterns (including those established as statistically significant) may be due to a wide variety of factors: established norms, aesthetic considerations (e.g. "initial-*a* final" and the spelling of word-initial /a-/ in Hieroglyphic Luvian Anatolian hieroglyphs, as discussed by Melchert 2010c and Rieken 2015: 226–227), and pure convention.

These features can be due to the actions of a single influential individual: without knowledge of the existence of Noah Webster and no evidence for English before the eighteenth century, one might assume that certain sound changes took place between British and American English (*-ise* > *-ize*, *-our* >*-or*, etc.).[1] Given the severe limitations on our knowledge of the Hittite scribal hierarchy, we cannot preclude that certain Hittite orthographic practices (and changes therein over time) are likewise the result of decisions made by a handful of powerful chief scribes.

Some orthographic systems with a long history such as Modern English or French naturally do reveal phonological changes through 'historical spellings', almost always imperfectly due to earlier changes being overlaid by later ones and resulting misunderstandings.[2] However, suggestive but less than exceptionless orthographic patterns in Hittite and Luvian written in cuneiform cannot be attributed to 'historical' spellings reflecting an earlier prehistoric stage of the languages, because there is no basis for supposing that they were written before the late sixteenth century BCE (at the earliest; see now van den Hout 2009 for the claim of written Hittite only in the fifteenth century).

Therefore, while it is always proper and beneficial to periodically review the status of particular patterns in the light of new evidence and arguments (see Section II.B.1 below for some examples), the validity of claims of linguistically real contrasts depends *solely* on the degree of crosslinguistic plausibility, synchronic and diachronic, of the pattern of contrasts claimed. In the absence of such plausibility, there is no basis for the claimed distinctions, no matter how striking the nonrandom spelling pattern may be. An orthographic pattern is merely a necessary, not a *sufficient* basis for assuming a linguistic contrast.

II Historical Phonology

A *Hrozný's Presentation of 1917*

Reflecting the true facts about his methodology presented in I.A above, Hrozný's initial sketch of Hittite historical phonology (1917: 186–190) is predictably correct in many respects:

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1 Webster's predominant role in establishing the norms of American English spelling is succinctly described in the Wikipedia entry https://en.wikipedia.org/wiki/Noah_Webster (accessed February 12, 2016) under the section 'Blue-backed Speller'.

2 For example, not every final 'silent *e*' in English reflects a true original final vowel lost by apocope, though most do. Modern English *horse* is a prominent exception.

1   Consonantism
a.   He identifies Hittite as a 'centum' language with merger of *$\hat{K}$ and *K and preservation of *K^w.
b.   He concludes that *$\mathring{R} > aR$ (but also entertains some cases of *$\mathring{N} > a$, based on *katta* 'down' matching Gr. κατά—see further Section II.C.1 below).
c.   He recognizes that *$s > z$ after nasal in *anz-* 'us' < *$\mathring{n}s$-.
d.   He notes that Hittite *t* continues *th as well as *t (i.e., in the Pret2Sg ending *-tta* < *-th_2e, as in *ḫarta* 'you had, held').
e.   He assumes unrounding of *$K^w > K$ before *u* (in *kuššan* 'when?' [*recte* 'when']).
f.   He takes note of the change *$m > n$ in word-final position.

2   Vocalism
a.   He assumes a general merger of short and long *$\breve{\bar{o}}$ with *$\breve{\bar{a}}$.
b.   But he notices the special change of *$o > u$ before nasal in monosyllables (*$tons > tuš$ [sic!]).
c.   Much of what is said about *$\breve{\bar{e}}$ and *$\breve{\bar{\imath}}$ is also correct.
d.   He correctly derives *zīk* 'thou' < *$t\bar{u}$ (contra Simon 2018 *et al.*).

3   Weaknesses
These are mostly predictable, given the difficulties of cuneiform orthography, Hrozný's limited command of Indo-European linguistics, and no recognition of 'laryngeals' in PIE:
a.   There is no recognition of 'Sturtevant's Law' or the general distribution of voiceless and voiced stops.
b.   There is no realization of the correct conditioning for *$t > t^s$ /__*i* or of the PIE 'double dental' rule.
c.   He derives Hittite *ḫ(ḫ)* *beside* *k*, *g* from dorsal stops with not even an attempt to condition the alternate reflexes.
d.   There is much confusion in the vocalism due to the problem of *e-* and *i*-spellings in cuneiform.
e.   His rudimentary account of diphthongs is far from clear.
One should, however, in all fairness acknowledge that points 1b, 2d, 3a, 3d and 3e remain subjects of controversy to this day (see below!), and point 3c was still debated into the 1960s.

B   *Anatolian Historical Phonology Two Decades after Melchert 1994*
1   Significant Revisions
New facts as well as new arguments made by a number of scholars have predictably falsified many claims that I made in my historical phonology of more

than twenty years ago, compelling either complete retraction or varying degrees of revision of analyses given there. The following selection aims to acknowledge those of greatest import for understanding the (pre)history of Hittite and for the reconstruction of Proto-Indo-European. The list is by no means exhaustive. I note explicitly that some newer analyses based on observance of nonrandom spelling patterns *have* met the high standard of linguistic plausibility demanded above in Section I.B. The convincing new arguments that <u> versus <ú> spellings reflect a real synchronic contrast in vocalism deserve special notice. The far-reaching implications of this demonstration have undoubtedly not yet been fully recognized.

a   *Consonantism:*
i.   'Laryngeals'
   (1)   *$*h_2w$ > Proto-Anatolian unitary *$*[x^w]$ (Kloekhorst 2006a: 97–101 and 2008: 836–839): Hitt. *tarḫu-/taruḫ-* [sic!] 'overcome' = /tarx^w-/ (no variant †*tarḫ-* exists!); PA *$*[x^w]$ > Lyc. <q> [k^w], as in *trqqñt-* 'Storm-god' < *$*tṛh_2wṇt-´$, cognate with Luvo-Hitt. *Tarḫunt-*.
   (2)   *$*h_3$ is preserved in Hittite and Luvian medially as *ḫ*, at least after sonorant: Hitt. *walḫ-* 'strike' < *$*welh_3-$ (with LIV²: 679 and Kloekhorst 2008: 946, contra Melchert 1994a: 50 *et alibi*); CLuv. *tarḫ-* 'break, crush' (sic!) < *$*t(é)rh_3-$ ~ Gr. τρώω 'wound', etc. (Kloekhorst 2008: 838–839).
   (3)   As a corollary to (1) above, *$*h_3w$ > PA unitary [ɣ^w] (spelled <ḫw> in cuneiform) medially (Melchert 2011): Hitt. *lāḫw-* 'pour' < *$*lóh_3w-$ (source of the Core IE 'root' *$*leuh_3-$ backformed from the metathesized preconsonantal zero-grade *$*luh_3-C-$ < *$*lh_3u-C-$, whence Gr. λοέω 'wash' etc.).
ii.   'Lenition' rules of Proto-Anatolian
   (1)   Per Adiego (2001), we may and should assume a *single* rule of *$*T > D$ (including *$*h_2$ [x] > [ɣ]) between unaccented *morae*, with *$*V̄$ equivalent to *VV*; thus *$*dʰéh_2ti$ > PA *$*dǽæti$ > *$*dǽædi$ > Lyc. *tadi* just like abl.-inst. *$*´-oti$ > *$*´-odi$ > CLuv. *-ati*, HLuv. /-adi/ ~ /-ari/, Lyc. *-edi*.
   (2)   Contra Melchert (1994a: 69) this rule *includes* voiceless stops following *$*-ā̃́-$ < *$*-éh_2-$: *$*-éh_2T-$ > *$*-áaT-$ > *$*-áaD-$, as in *$*mnéh_2ti$ > *$*mnáati$ > *mnáadi* > CLuv. *m(a)náti* 'sees' (with Starke 1980: 47 and LIV²: 447 contra Melchert 1994a: 236); thus also most economically *$*-éh_2-tṛ$ > *$*-áatṛ$ > *$*-áadṛ$ > Hitt. abstract *-ātar* (contra Melchert 1994a: 86).
iii.   Alleged examples for a 'limited Čop's Law' in Proto-Anatolian (i.e., *$*#é.C_i- > *#áC_iC_i-$) are now extremely sparse and arguable (on Hitt. *ammug*

'me' see below). Existence of such a sound change is thus unlikely (contra Melchert 1994a: 74–75 and 1994b).

iv.   The three-way contrast of dorsal stops in Luvo-Lycian is due to a *conditioned* split of palato-velars before their merger with velars, *not* an unconditioned three-way contrast preserved from Proto-Indo-European. Anatolian is thus, per already Hrozný, 'centum' (Melchert 2012a).

b   *Vocalism*

i.   Contra Melchert (1994a: 26), Kimball (1999: 79–80), Hoffner and Melchert (2008: 26), et al., cuneiform <u> and <ú> *are* contrastive, with <u> standing for /o(:)/ (or similar) versus <ú> for /u(:)/, with Held and Schmalstieg (1969: 105–109), Eichner (1980: 156), Hart (1983: 124–132), Rieken (2005) and above all Kloekhorst (2008: 35–60), who presents the best formulation thus far of the respective prehistoric sources. I insist that the contrast is also valid for Palaic and Luvian with differences only in detail (cf. Melchert 2010a: appendix). Thus:

(1)   /o:/ < *ow, in *mu-u-ga-a-i-* 'incite' [sic!] < virtual *mowkoye/o- (Melchert 2010b, revising Kloekhorst 2008: 586), CLuv. *zu-u-wa-* 'food' < virtual *gyówh₃-o-* (Melchert 2012a: 212–213); also *u-* < *aw* 'away' in *u-i-ya-*, originally 'send/drive away' [sic!] (Melchert forthcoming).

(2)   /o(:)/ < *u* adjacent to *h₂/₃*: Hitt. coll. pl. *āššū* (*a-aš-šu-u*) 'goods' < *-uh₂*; cf. also Hitt. N-ASgNt *šu-u-ú* 'full' /so:(w)u/ < *séwh₃-u* vs. Pal. *šu-ú-na-at* 'filled' < *su-néh₃-t* (for accent 'retraction' in the latter see Yates 2015: 148–155).

(3)   /o:/ also from *-óm(s)#* > *-Cu-u-un* in ASg/Pl *ku-u-un/ku-u-uš* and *a-pu-u-un/a-pu-u-uš* < *ḱóm(s)*, *obʰóm(s)* (Kloekhorst 2008: 54 and 57, revising Melchert 1994a: 186–187).

(4)   But /u:/ < *ew* with Kloekhorst (2008: 53–57), as in *-nu-ú-* < *-néu-* (*wa-aḫ-nu-ú-mi* 'I turn' and *ḫu-e-nu-ú-ut* 'caused to flee'), *ku-ú-ša-* 'daughter/son-in-law; bride' < *ǵéuso-* *'chosen one' (after Rieken 1999: 257), *i-ú-uk* 'brace, pair' < *yéug* (Kloekhorst 2008: 423 after Rieken 1999: 61–62).

(5)   /u:/ also < accented *ú* in an original open syllable: Hittite nouns in *-ú-ul* < *-úlom* with syncope (Rieken 2008).

(6)   Hitt. *ú-ug* 'I' < *ūg(h₂)* with *ū* ← 2Sg subject form *tū*, vs. *ammug* ← 2Sg non-subject *tŭ* (revising Melchert 1983: 161–163), contra Simon 2018 *et al.*

ii.   There is no basis for an alleged PA phoneme */ē̦/ < *ey* distinct from */ē/ < *ē* (contra Melchert 1994a: 56, after 1984: 102–103, 112–113, and 143). Late

Hittite *ī* for *ē* is analogical, per Yakubovich (2010: 315–318): *nīya-* for *nēya-* 'turn' after other *ḫi*-verbs in *-i-*; Dat-LocSg *kīdani* etc. after N-ASgNt *kī* (note the absence of †*apīd-* < *apēd-*). In any case, oblique pronominal *-ed-* is from **-éd-*, not **-é/óyd-*; see the concession by Melchert 2008: 369–370 with references.

2   Significant Retentions

I continue to reject some new claims for alleged linguistic contrasts based on orthographic patterns, because I find the contrasts linguistically implausible as formulated thus far. I therefore note here explicitly that I retain some analyses of 1994:

i.   Consonantism

a.   By the time of attested Hittite, Luvian, and the other Anatolian languages, word-initial voiced stops (including the reflexes of PIE voiced aspirated stops) had all devoiced. However, the different treatment of **#G(h)-* in Luvian from that of **#K-* shows that this change is a post-Proto-Anatolian areal feature, per Melchert (1994a: 18–20). I reject the implausible claim of a *partially* preserved contrast in Hittite by Kloekhorst (2010).

b.   I retain the formulation of 'Čop's Law' in Luvian as given by Čop (1970): **é.C₁ > áC₁.C₁*. Contra Kloekhorst (2006b), **ó.T* does *not* regularly lead to Hittite *ā.D*: see *dākki* 'matches' < **dóḱei* (the root has no final laryngeal, per LIV²: 109) and *ḫ(u)wappi* 'throws' < **h₂wópei* (also with no final laryngeal; NB Vedic past participle *uptá-*).[3]

c.   Word-initial **h₃-* is preserved as /x-/ in Hittite and Luvian (with initial devoicing of obstruents per a.), except /__r. For Hitt. *arai-* 'rise' < **h₃róy-ei* see Oettinger 2004: 402; see also Hitt. *ar-* 'stand (up)' < **h₃ér-tor, *h₃r-óntor* (after LIV²: 299); phonologically regular but synchronically aberrant **ḫārta, *aranta* was leveled to attested *ārta, aranta*. The loss in both cases may be attributed either to the 'Saussure-Hirt effect' (so Oettinger) or a more general Hittite loss of word-initial **h₃-* before **r*.

d.   There is no evidence for word-initial **h₁* preserved as [ʔ] in Hittite and Luvian, contra Kloekhorst (2004, 2006a: 77–81 and 2008: 205

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3 Kloekhorst (2014: 571–574) has made cogent arguments that the match in the stem between Hieroglyphic Luvian Dat-LocPl *á-pa-ta-za* and Lycian *ebette* means that 'Čop's Law' is not exclusively Luvian, in which case we must actually define the change as Luvo-Lycian **°éC₁V > *éC₁C₁V*.

and passim) and Simon (2010 and 2013). On cuneiform #V-VC- spellings see Weeden (2011: 61–68), and on initial *a-* vs. *á-* in Hieroglyphic Luvian Melchert (2010c). The contrast of CLuvian *a-an-na-an* 'below' as a freestanding adverb vs. *an-na-a-an ti-iš-ša-a-an* 'prepared/ ready below' (preverb) and *an-na-a-an pa-a-ta-an-za* 'under the feet' (preposition) argues decisively for synchronic lengthening under the accent: /ánnan/ > [á:nnan] vs. /annán/ > [anná:n].

ii.　　　　Vocalism

   a.　　Proto-Anatolian did have a long vowel distinct from */e:/ and */a:/, conventionally /æ:/, that leads to /e:/ in Palaic and Hittite, but /a:/ in Luvian, Lycian, and Lydian (Melchert 1994a: 56).

   b.　　Accented short **ó* lengthened in closed syllables in Hittite, but not **á*, different from the development in Palaic and Luvian (Melchert 1994a: 146).

C　　*Case Study: The PIE Syllabic Sonorants in Anatolian and Hittite*

There are (at least) four issues to be dealt with concerning the reflexes of the PIE syllabic sonorants in Anatolian and Hittite. First, how late was **R̥* preserved? Second, what vowel was inserted in the change of **R̥* > **VR*? Third, what was the result of **wR̥* (and **Kʷ̥R̥*) between consonants (with word boundary counting as C)? Fourth, does **N̥* always yield Hittite *aN*? I will address these questions in reverse order, since the answers to the last two questions constrain those to the first two.

1. The last question may now be definitively answered as: no. Already Hrozný (1917: 187) gave the unmarked result as *an* (*anz-* 'us' < **n̥s-*), but he also entertained *a* as the outcome before voiceless stop in *katta* 'down' < **ḱm̥ta* (1917: 32 and 187) and *akk-* 'die' < **n̥ḱ-´* (1917: 174 with reservations). The demonstration by Goedegebuure (2010: 301–312) that CLuvian *zanta* means 'down' confirms that Hittite *katta* reflects **ḱm̥ta*. For support for the derivation of *akk-* 'die' < **n̥ḱ-´* based on the weak stem see Melchert 2012b: 180–182, with note 15. The conditioning given there for prehistoric syllabic nasals homorganic with following stops is that they yield simple *aN* when accented and *a* when unaccented. This is compatible with what little relevant evidence is available, but examples are so few that this formulation must be regarded as merely provisional.

However, the accompanying account for prehistoric sequences of syllabic nasal followed by *non*homorganic stop is problematic in two respects. First, **n̥-mh₂yent-* > *amiyant-* 'immature' (see Kloekhorst 2008: 172 for this shape as the regular outcome) cannot be cited as an example, since it surely passed through a stage **Vn-myant-*, and the loss of the **n* is part of a broader deletion

of the dental nasal before *$*m$ and *$*w$ in Hittite: NB especially Hitt. *kuemi* 'I kill' < *$*g^{wh}énmi$, where no syllabic nasal is involved (see Melchert 1994a: 168 for further examples). Second, despite my blithe statement in the footnote cited, it is hardly satisfying to suppose that syllabic nasals heterorganic with following stops lead to *precisely the opposite* results posited for their homorganic counterparts, namely *a* when accented, *aN* when not. With the irrelevant example of *$*ṇ̆-mh_2yent-$ > *amiyant* removed, we are left only with cases involving putative *$*ṃ̆$ before nonlabial stop: *katta* 'down' < *$*ḱṃ̆ta/ō$ (~ Gr. κατά or κάτω), *katta* 'beside' < *$*kṃ̆tV_{[+back]}$ (with allomorph *$*kṃ̆ti$ in *katti-* ~ Gr. κασι- and Middle Welsh *gennyf* 'with me'),[4] and *antarā-* 'blue' < *$*ṃ̆d^hró-$ (thus with Kloekhorst 2008: 186 contra Melchert 1994a: 1215).

The preforms of *katta* 'down' and *katta* 'beside' must have been accented as given, since an accent on the final syllable could only lead to †*kattā*. To derive the adverbs from unaccented variants (Kloekhorst 2008: 604) is egregiously *ad hoc*, since other local adverbs clearly reflect accented forms, e.g. Hitt. *š(a)rā* from accented *$*sr-ó$ (thus also Kloekhorst 2008: 730). In any case, this would not account for the difference between the adverbs and *antarā-*, where the syllabic *$*ṃ̆$ would also have been unaccented. What does condition the different outcome in the two adverbs versus the adjective is an open question, but it is far from assured that it is to be attributed to the accent. The inherited syllabic *$*ṃ̆$ in the adverbs is assured by the Greek and Celtic cognates, but that in *andarā-* is merely inferred. Dare we suppose that Hittite reflects rather *$*mod^hró-$ like its Slavic cognates and that a prehistoric syncope led only secondarily to an *$*ṃ̆d-$ sequence? The *ad hoc* nature of this suggestion is manifest, and I cite the alternative merely to show that we do not by any means control the details of the development of *$*ṃ̆$ plus heterorganic stop. Nevertheless, the different result in Hitt. *katta* and CLuvian *zanta* does assure that syllabic nasals were preserved into the prehistory of the individual languages at least in nonfinal syllables and that the Hittite result of *$*ṆN$ is in some instances merely *a*.

2. Per Melchert (1994a: 126–127) following Schindler, *$*wṚ̆$ resyllabified between consonants or consonant and word boundary as *uR*. Such a change is possible, but unmotivated. Further, it is now clear that *u-ur-ki-* 'track, trail' < *$*wṛ́gi-$ is /óːrgi-/, so that we are not dealing with a simple resyllabification *$*wṛ̆$ > *ur*. There is other evidence for the lowering of *$*u$ > /o/ before *r* in Hittite:

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4 Contra Dunkel 2014: 2.424 and 426, the clear association with *katta* would have surely blocked assibilation in *$*kṃ̆ti$. There is no justification for doubting that the Greek, Welsh, and Hittite forms are cognate.

contrast Hitt. *iš-nu-u-ra-* 'kneading tray' < **isn-úro-* with Pal. *ta-šu-ú-ra-* 'sacrificial table' < **dʰh₁s-úro-*. Note also *ku-u-ur-ka-* 'foal' /ko:rka-/ < **kúrko- ~* Gr. κύρνος (Forssman 1980) and see Rieken 2005: 540–542 and Kloekhorst 2008: 55–56. However, we also find *pít-tu-u-la-* 'snare, loop' /pit:o:la-/ hypostasized from **peth₂-wl̥* 'thing spread' (after Rieken 1999: 471–472 and Puhvel 1979: 211 and 2011: 71). Thus instead of resyllabification, we should assume rather **CwR̥ > *CwoR > CoR* (under the accent *Co:R*). That is, **R̥ > *oR*, and in the presence of a preceding labial glide the **o* is continued as the new vowel /o(:)/. The conditioning **w* is then lost by dissimilation. Likewise in Hittite **Kʷ R̥ > Kʷ oR > KoR*: hence the weak stem **kʷ ̥s- >* 'incise' > Hitt. *gulš-* /ko:ls-/ (etymology after Eichner 1974: 67–68).[5]

There is, however, a conditioned exception to the rule just given before *two* consonants, where the result is *CwaR* and *KʷaR* with regular lowering of **o* to *a*, as shown by Kloekhorst (2007): *duwarni/a-* 'break' < **dʰwr̥-né-h₁-, dʰwr̥-n-h₁-´* (with leveling of the phonologically regular result **dornizzi, *dwarnanzi* to *d(u)warnizzi, d(u)warnanzi*), *k(u)war(a)ške-* 'cut' < **kʷ ̥r-sḱe-, k(u)waške-* 'slay' < **gʷʰn̥-sḱe-*.

Support for the assumption that it was **o* that was inserted comes from occasional <uR> for simple **R̥* instead of *aR* in Luvian and Palaic: note Luvo-Hittite *gurta-* /kort/da-/ 'citadel' < **ĝʰr̥-to-* or **ĝʰr̥dʰ-o-* and HLuv. /tˢornid-/ 'horn' < **ḱr̥ng-id-* cognate with Hittite **karkid-* in *karkidant-* 'horned', both to the base **ḱr̥ngo-* of Skt. *śŕ̥ṅga-*. Also likely is Palaic *ēšḫur* 'blood' < **h₁ésh₂r* (see already Melchert 1994a: 260 and 214, but with no independent support).

Lycian umlaut and syncope make it hard to determine whether **R̥ > oR* in nonfinal syllables is Proto-Anatolian or a Hittite-Palaic-Luvian isogloss. But if we posit PIE **h₁mé* for the non-subject first person singular pronoun (see now Simon 2012: 488–491 for further arguments in favor of the initial laryngeal), then we would predict existence of a Lindeman variant **h₁m̥mé*, whence with secondary *u*-vocalism from second singular **tŭ* PA **h₁m̥mú*. If we assume that this became **h₁ommú* with **m̥ > om*, this PA preform would lead regularly to Lyd. *amu* (unaccented *ẽ > a*, per Eichner 1986: 211–212), Hitt. *ammug*, and Lyc. *e/ẽmu* (also with umlaut *amu*). One should note that in absolute final position, Hittite athematic preterite first singular *-un* < **-m̥* vs. nom.-acc. sg. neuter *n*-stem ending *-an* < **-n̥* clearly contrasts with Lycian *-ã* from both **-m̥* (consonant stem acc. sg. *-ã* as in *lãtã* 'dead') and **-n̥* (*hrm̃mã* 'temenos, land section' < virtual **s(e)r-mn̥* **division'; Melchert 1994a: 309 and passim, after Innocente). The Lycian reflexes show that the change **R̥ > *oR*, if it truly was

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5   The absence of spellings with *scriptio plena* directly showing the long vowel is due to the exclusive spelling of the verb stem with the CVC sign <gul>. The word is unattested in OS.

Proto-Anatolian, was limited to nonfinal syllables, while the differing results in Hittite and Lycian require that syllabic nasals remained in at least word-final position into the prehistory of the individual languages.

3. The precise Hittite result of word-final *-m̥# and the entire question of the animate accusative plural ending -uš present intractable problems. As the very thorough treatment by Kloekhorst (2008: 42–43, 56, and 609) makes abundantly clear, the evidence is limited and frustratingly contradictory. A fully satisfying solution is at present beyond reach, but at least a new attempt seems called for.[6]

We may begin with the result of final *-m̥#. As outlined in Melchert (1994a: 181 with refs.), the preterite first singular ending -un in root verbs of the mi-conjugation can hardly represent anything but *-m̥# (thus also most recently Kloekhorst 2008: 609). The athematic nominal animate accusative singular ending -an must then be analogical to the thematic ending -an < *´-om. Per above, following Kloekhorst (2008: 586), the regular outcome of final accented *-óm was /-oːn/, preserved in the demonstratives ku-u-un /kóːn/ 'this' and a-pu-u-un /abóːn/ 'that'. Given the very sparse number of reflexes of oxytone o-stems attested in Hittite, it is unsurprising that the result -an of the unaccented ending was generalized to all o-stems, from which it was further spread to athematic stems.

Harder to determine is whether graphic final <Cu-un> represents /-on/ or /-un/. Kloekhorst (2008: 609) cites occasional New Hittite (NS) spellings of 'I took' as e-ep-pu-u-un in favor of reading /-on/ as the regular reflex of *-m̥#. However, elsewhere (2008: 42–43), he acknowledges that the situation is more complicated: 'I went' is spelled a few times pa-a-ú-un in Middle Hittite manuscripts (MS), but pa-a-u-un in NS. There he interprets this as showing a change from OH /páːun/ to NH /páːon/, implying that the OH result of *-m̥# was /-un/. However, we should ask ourselves in the first place why an *unaccented* vowel that was surely short was written with a 'plene' spelling at all. The dominant spelling of 'I went' is pa-a-un at all times: even in New Hittite compositions it occurs more than 100 times vs. only 9 instances of pa-a-u-un, all of which to my knowledge are in texts of Muršili II and Hattušili III. Likewise, the normal spelling of 'I took' is the expected e-ep-pu-un, including 19x in the New Hittite corpus vs. only 5x for e-ep-pu-u-un, all in texts of Hattušili III.

By any derivation, Hittite pāun represents a preform in which there was loss of an intervocalic *y and a resulting hiatus (see for one account of 'go'

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6   The following remarks reflect further research undertaken since the oral presentation of this paper. They are presented as, and should be received as, merely tentative suggestions towards an ultimate solution!

Kloekhorst 2008: 617–618).[7] Kloekhorst (2012: 248–250) has argued persuasive-ly that in sequences of *Ca-e-eC* (as well as *Ci-e-eC* and *Cu-e-eC*) the *-e-* is not a 'plene' spelling indicating length of the /e/ vowel, but rather a mark of a pre-ceding /j/ glide. Thus a nominative plural *t/da-lu-ga-e-eš* 'long' spells [ta-lugajes] with a new hiatus-filling [j] (see also Kloekhorst 2014: 136–144 with full evidence). When we also find in OS an accusative plural *ta-lu-ga-ú-uš* (KBo 17.22 iii 6) where a long unaccented vowel is unmotivated, I suggest that at least some Hittite speakers likewise filled the hiatus resulting from loss of **y* in a sequence [a.u/o] with a glide [w] ([talugawu/os]), which OH scribes wrote with <ú>. Similarly, MS *pa-a-ú-un* spells [pá:wu/on].[8] I underscore that in both cases there is no basis for supposing that the unaccented vowel of the final syl-lable is long.

As noted, Kloekhorst (2008: 42–43) interprets the spelling change of *pa-a-ú-un* to *pa-a-u-un* as a real change of /-un/ to /-on/, but offers no motivation for such a change. One possibility for the orthographic change is that the spelling of intervocalic [w] here was adjusted to that in medial sequences of [awa]. At all periods of Hittite there were next to the normal spellings with <(C)a-wa-a(C)> also some with <(C)a-u-a(C)>, whereas to my knowledge spellings with <(C)a-ú-a(C)> are vanishingly rare. However, the spelling *e-ep-pu-u-un* sug-gests another possibility. The 'plene' spelling here, which again cannot repre-sent a true long vowel, is surely modeled on *pa-a-u-un* (with which it cooccurs in the same manuscripts), where the <u> has replaced earlier <ú> in marking the hiatus-filling [w]. However, it is hard to see what would have led a scribe to imitate the <u> spelling in /é:p:Vn/, which had no [w], unless he also associat-ed the <u> in *pa-a-u-un* with the *vocalism* of the ending. I therefore conclude with some reservation that the <u> of both *pa-a-u-un* and *e-ep-pu-u-un* does indirectly tell us that the ending was /-on/, the regular result of **-m̥#*.

I believe that the overall facts suggest a similar account for the animate ac-cusative plural ending, but one must openly acknowledge that no reasonable scenario can explain all of the attested examples, so one must inevitably

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7   I hereby explicitly withdraw my own derivation (1994a: 177) via a nonexistent preverb **pe*. I would differ from Kloekhorst only in supposing that with an accented preverb the root was in the zero grade, thus leading to the consistently short secondary diphthong in the OH strong stem before consonant: virtual **póy-h₁i-mi* *[pój.ʔi.mi] > *[pó.ji.mi] > *[pó.i.mi] > *pa-i-mi* 'I go' [pój.mi]. However, in the Pret1Sg the result was a long vowel from accented **ó* in an open syllable: **póy-h₁y-* [pój.ʔjVm] > *[pój.jVm] > *[pó.jVm] > *[pó:.jVm] > *pa-a-un*.

8   Kloekhorst (2014: 138–139) shows that the spelling *Ca-e-eš* is the dominant one, whereas spellings *Ca-ú/u-uš* are relatively rare (see further below). This difference may well reflect that the hiatus filling in [aje] was far more prevalent/regular than that in [awu/o], but this does not prove that the latter is not real.

dismiss some spellings as erroneous. The degree of arbitrariness in the latter procedure leaves any analysis less than fully satisfying.

We must take into account no less than four possible preforms: accented *-óms, unaccented *´-oms, athematic *-m̥s, and u-stem *-ums. We have seen that the first yields Hittite /-o:s/, as in the demonstratives ku-u-uš 'these' and a-pu-u-uš 'those', but the scarcity of oxytone o-stem nouns in Hittite makes this an unlikely source for the general ending spelled <uš>. We find a few spellings in both <u-uš> and <ú-uš>, but not all have the same status:[9] those that reflect athematic *-m̥s can hardly show genuine 'plene' spellings indicating a long vowel.

The distribution of <u-uš> and <ú-uš> in athematic stems is highly suggestive. First of all, we find only <ú-uš> in i-stems: an-na-al-li-ú-u[š] (KUB 51.47 Vo 4; ?/NS); a-ú-li-ú-uš (KBo 25.178 i 2; OH/NS & KUB 24.3 ii 11; MH/NS), a-ú-li-ú-š(a) (KUB 17.21 ii 18 MS/MS); NINDAḫar-ša-ú-uš (KBo 17.4 ii 17; OH/OS); kap-pí-ú-uš (KBo 34.47 ii 8; MH/MS); ku-i-ú-uš (HKM 23:9; MH/MS; KBo 18.57a+57 Ro 2.Vo 42; MH/MS); ma-ši-ú-u[š]? (KBo 9.109 Vo 4; OH/NS); pu-u-ri-ú-uš (KBo 19.163 i 23.iv 4; OH/NS); šu-up-pí-ú-uš (KUB 33.41 ii 10; OH/NS); ta-lu-ga-ú-uš (KBo 17.22 iii 6; OH/OS). One may note that all of these examples are either in OS, MS, or NS copies of OH compositions. As argued above, I regard all of these as spelling a hiatus-filling [w]: [kʷiwVs], [xarsawVs], etc. They therefore can tell us nothing about the quality of the vowel of the ending. The idea that the <ú> is spelling [w] is supported by the complete absence of any spellings <Cu-ú-uš> for the accusative plural of athematic stems ending in a consonant (non-glide).

For the diphthongal stem lingāi- 'oath' one may cite the spelling li-in-ga-uꜟ-uš at KBo 4.4 i 45 (see CHD L-N: 64 for the reading) in the Annals of Muršili II, a New Hittite text. I tentatively regard this as showing the same replacement as in NH pa-a-u-un for earlier pa-a-ú-un. That is, it is fundamentally spelling the same hiatus-filling [w] as in the OS examples with -Ca-ú-uš, but also has been adjusted to the vocalism of the ending, thus implying [lingá:wos].

Second, for u-stems we find mostly <u-uš>. Most importantly, we find it in a-ku-u-uš-(ša) '(also) seashells' to aku- (KBo 19.156 ii 17; OH/OS), where it may reflect a genuine plene spelling for an accented long vowel: [agó:s]. Less straightforward are the spellings [i-da]-a-la-mu-u-uš (KUB 8.67:14; MH/NS) and [i-da-(a)]-la-mu-u-š(a) (KBo 15.10 iii 54; OH/MS), and the faulty pár-ga-u-uš (KBo 3.8 iii 22; OH/NS). The last example is likely to be modeled on an

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9　Forms cited are taken from Kloekhorst (2008: 56), supplemented by further examples from my own files.

i-stem plural of the type of *li-in-ga-u-uš*. Likewise the aberrant plurals *ḫal-lu-wa-u-uš* (KBo 26.135:2; OH/NS) and [*ḫal*]-*lu-ú-wa-u-uš* (KBo 3.8 iii 4; OH/NS) to *ḫalluwa-* 'deep'.[10] It is less clear to me whether the instances with *-Ca-mu-u-uš* are analogical to *a-ku-u-uš* or to the *i*-stem plurals.

What evidence we have suggests then that **-ums* led to Hittite /-os/. I take the solitary example of *ḫe-e-mu-ú-uš* to *ḫēu-* 'rain' (KBo 43.137:7; ?/NS) as erroneous.

The most confusing picture is that presented by the oxytone *a*-stems: *al-pu-ú-uš* (KUB 28.5 Vo 7; OH/NS); *ir-ḫu-ú-š(a)* (KUB 31.128 i 3; pre-NH/NS); MUNUS.MEŠ*kat-ru-ú-uš* (KUB 54.66 Vo? 13; OH/NS); and *iš-ḫu-u-uš* (KBo 15.31 i 14; OH/NS). The last is nonprobative because after *ḫ* Hittite regularly has only /o/, even from prehistoric **u* (see Rieken 2005: 539 and Kloekhorst 2008: 51). This also means, however, that *ir-ḫu-ú-š(a)* must be an erroneous spelling (compare the hapax *ḫu-ú-ni-ik-zi* at KBo 6.2 i 16 OH/OS cited by Kloekhorst). Since we also find rare exceptions even for the accusative plural of the demonstratives (*a-pu-ú-uš* at KUB 14.14 Ro 21; NH), we can hardly put much weight on the hapax legomena *al-pu-ú-uš* and *kat-ru-ú-uš*.

We seem thus to find /-os/ as the result of **-ums* and probably also of **-m̥s*. The first is compatible with other evidence for lowering of prehistoric **u* to /o/ before tautosyllabic nasal (see Rieken 2005: 540 and compare Kloekhorst 2008: 54), while the latter is at least consistent with the outcome of absolute word-final **-m̥* discussed above. Despite some spellings of oxytone *a*-stem accusative plurals with *-Cu-ú-uš*, the evidence of the demonstratives argues that **-óms* also led to /-o:s/. We are left only with the question of the outcome of unaccented final **́-oms*. The regular ending in Hittite is of course <uš>, as for all other stems. Is this the phonologically regular result, and does it also represent /-os/ or could it be /-us/? The latter seems unlikely: it would suppose that while **-ums* was lowered to **-oms* and accented **-óms* was maintained, just unaccented **́-oms* was raised to **-ums*.

Whether /-os/ was also the regular result of **́-oms* is harder to answer, but I would like to suggest that there may be relevant evidence. For the word derived from *wag-* 'bite' that probably refers to a bite-sized kind of bread (thus 'roll' or similar), there is clear evidence for an animate *a*-stem NINDA*wagāta-* (NSg *wagātaš* OH/OS, ASg *wagatan* OH/NS, CollPl *wagāta* OH/NS), as correctly identified by Hoffner (1974: 188). However, Neu (1983: 208), Rieken (1999: 196–197), and Kloekhorst (2008: 940) all assume a primary *s*-stem *wagātaš-* from which a New Hittite *a*-stem was somehow abstracted.

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10   We would have expected **ḫallumuš* for **ḫalluw-uš*; compare *nemuš* for **new-us* to *newa-* 'new'.

An *s*-stem is highly improbable. First of all, the formation of collective plurals to animate nouns is found only in Old Hittite texts (see Melchert 2000: 62–65 with note 36). The plural *wagāta* cannot therefore be a New Hittite creation. Second, while Rieken (1999: 197) concedes that there is no other support for a supposed formation in *-*eh₂*-*tos*, Hittite and Luvian provide ample evidence for secondary stems in *-*o*-*to*- (Melchert 1999: 368–372). Since the singular may be used in Hittite with numbers higher than one, examples such as KUB 25.9 iii 21–22 (OH/NS) are completely ambiguous between an *a*-stem and an *s*-stem (*pace* Neu loc. cit.): 4 *wagataš=ššan kitta* 'four *w.*-breads are lying on it'. The entire basis for an *s*-stem consists of examples such as KBo 20.33 Ro 12 (OH/OS): [LÚKA]Š₄.E *taruḫzi kuiš* 1 MA.NA KÙ.BABBAR *U* 2 NINDA*wagadaš pianzi* 'To the runner who wins they give one mina of silver and two *w.*-breads'. While Hittite may use the nominative case as the 'default' case in lists (Hoffner and Melchert 2008: 243), that usage cannot apply here, where both nouns are clearly the direct object of the verb.

However, such examples do not justify the ad hoc assumption of an *s*-stem that is morphologically unparalleled in Hittite instead of the well supported *a*-stem. We need only suppose an animate accusative plural with an archaic ending -*aš* < *´-*oms*: the plene spelling in *wagāta*- suggests that the accent was on the penultimate syllable.[11] In the absence of other examples for an OH accusative plural ending -*aš* I certainly do not insist on this analysis, but it eliminates the unmotivated *s*-stem and is not contradicted by any facts.[12]

In conclusion, we may admire the impressive first step in delineating Hittite historical phonology achieved by Hrozný in 1917, based on a very limited and still imperfectly understood Hittite text corpus. We must also humbly concede that by no means have all of the issues yet been resolved after a full century, and much work remains to be done.

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11   However, since a preceding accented short *-*ó*- would not have 'lenited' a following *-*t*- (see above), one should likely follow Rieken (1999: 197) in supposing that the immediate base of the *-*to*- stem was a collective **we/og-eh₂*-.

12   This putative archaic thematic APlC ending -*aš* < *-*oms* may be compared with the equally rare thematic NPlC ending -*aš* < *-*ōs* attested once in [*ḫante*]*zziyaš* (KBo 22.2 Ro 18; OH/OS) and likely also in *gaenaš=šeš* 'his inlaws' (Telipinu Edict passim; OH/NS), on which see Otten (1973: 34–35), following for the latter Kammenhuber.

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