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Allomorphy in the Hittite common gender accusative plural

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Abstract

It has recently become generally accepted that Hittite possessed two non-low back vowel phonemes denoted by means of plene spelling with ⟨u⟩ and ⟨ú⟩, representing /o/ and /u/, respectively. Upon reviewing all available evidence of plene spelling in the Hittite common gender accusative plural ending it is observed that the choice of vowel sign alternates. This forces us to reckon with at least two allomorphs of the ACC.PL.C. ending, -/us/ and -/os/, which in turn demand explanations. The choice of ending appears to be largely contingent on the stem type of the nominal to which it is attached, forming a complementary distribution. For example, ablauting *u*-stems take -/os/ and *i*-stems take -/us/. Building on this observation, a diachronic scenario is formulated to account for all observable ending allomorphy. It is argued that the endings of the non-ablauting *i*-stems and the barytone *a*-stems were analogically introduced. In the *i*-stems, the inherited ending -/us/ of the ablauting *i*-stems was generalised to all *i*-stems, whereas the source of the ending in the *a*-stems remains unknown. The sound laws resulting from this analysis indicate that the vocalic outcomes of final *-(*V*)*m#* are symmetrical to those of *-(*V*)*ms#*, leading to an improved economy in Hittite historical phonology.

Keywords

Hittite – Anatolian linguistics – Indo-European linguistics – nominal morphology – allomorphy

1 Introduction

Throughout the history of Hittitology, it has been commonly assumed that Hittite possessed only one non-low back vowel phoneme: /u/.[1] In recent years, however, it has become apparent that Hittite knew an additional phoneme /o/, separate from /u/, denoted by means of plene spelling with ⟨u⟩ rather than ⟨ú⟩ (Rieken 2005a; Kloekhorst 2008: 35–60). This is now commonly accepted in the field at large.[2] The fact that ⟨u⟩ and ⟨ú⟩ denoted different phonemes demands a reassessment of cases in which the signs alternate. One such case is the common gender accusative plural ending, traditionally given as *-us*.[3] This ending is most commonly spelled with a single VC-sign, i.e., -⟨uš⟩. In these cases, it is in principle not possible to know whether the ending is to be interpreted as Hitt. -/us/ or -/os/, since the sign ⟨uš⟩ is underspecified with regard to vocalism in either /o/ or /u/. However, in a number of instances, the ending is spelled with a V-sign—either plene as -⟨V-uš⟩ or when preceding a vocalic enclitic as -⟨V-š=a⟩. In these cases, the choice of sign alternates between ⟨u⟩ and ⟨ú⟩, which justifies further inquiry into the phonological properties of the ending. This was undertaken by Melchert (2020: 269–272), who concluded that -/os/ is the only extant ending. In the following, the results of a further study into this matter are presented and discussed, leading to the separate conclusion that both -/os/ and -/us/ must be assumed for the ACC.PL.C. Subsequently, a diachronic scenario is formulated to account for the distribution of these allomorphs.

2 Data

All possible ACC.PL.C. forms from Hittite texts written with either ⟨u⟩ or ⟨ú⟩ that I have been able to locate are found in Table 1.[4] In the "Stem type" col-

1 In this paper, notation with /…/ indicates a sequence of phonologically contrastive segments, i.e., phonemes.

2 The first postulation of a phonological opposition was offered already by Weidner (1917: 4–5). Before its definite establishment, it was more or less assumed also by Marstrander (1919: 104), Held & Schmalstieg (1969: 95), Eichner (1980: 156), and Hart (1983: 131–132). Note that a similar convention has been observed for Hurrian (Wegner 2007: 44) and possibly also for at least some varieties of Akkadian (Westenholz 1991). For a recent converse view with no Hitt. /o/, see Patri (2019: 120–128), but cf. the critique by Yates (2020: 328).

3 The original ACC.PL.C. forms in *-us*, which form the object of research in the present study, may also function as a NOM.PL.C., beginning in MH times and becoming the norm in NH (Hoffner & Melchert 2008: 70–71).

4 The attestations have been located in previous publications on the matter of ACC.PL.C.

TABLE 1 Hittite ACC.PL.C. forms with ⟨u⟩ or ⟨ú⟩

Form	Place	Dating	Meaning	Stem type
⟨a-ku-u-uš⟩	KBo 19.156 obv. 17	OS	sea shell	?
⟨a-pu-u-uš⟩	numerous	OS>	those	*a*-stem pron.
⟨a-pu-ú-uš⟩	KUB 14.14 obv. 21	NH/NS		
⟨a-aš-ša-u-uš⟩	KUB 60.99 ii 4	NS	good	abl. *u*-stem
⟨a-ú-li-ú-š=a=kán⟩	KUB 17.21 ii 18	MH/MS	throat (vel sim.)	non-abl. *i*-stem
⟨a-ú-li-ú-uš⟩	KBo 25.178 i 2	OH/NS		
	KUB 24.3 ii 11	MH/NS		
? ⟨al-pu-ú-uš⟩	KUB 28.5 iii 7	MH?/LNS	cloud	oxytone *a*-stem
⟨an-na-li-ú-u[š]⟩	KUB 51.47 rev. 4	NS	former, old	non-abl. *i*-stem
⟨ˈerˈ-ḫu-ú-š=a=kán⟩	KUB 31.128 i 3	pre-NH/NS	boundary	*a*-stem
⟨ḫa-a-ri-ú-š=a=w[a=kán]⟩	KBo 9.109 i 12	OH/NS	valley	non-abl. *i*-stem
⟨ḫa-an-te-ez-zi-ú-š=a⟩	KUB 33.62 iii 4	OH/MS	first, foremost	*a*-stem
⟨ḫa-tu-ga-ú-š=a⟩	KBo 4.2 i 18	OH/NS	fearsome	abl. *i*-stem
⟨ḫal-lu-wa-u-uš⟩	KBo 26.135, 2	OH/NS	deep	? abl. *u*-stem
⟨[ḫal]-ˈluˈ-ú-wa-u-uš⟩	KBo 3.8 iii 4	OH/NS		
⟨NINDAḫar-ša-ú-š=a⟩	KBo 17.30 iii 6	OS	thick-bread	abl. *i*-stem
⟨[ḫar-š]a-ú-uš⟩	KBo 17.4 ii 17	OS		
⟨NINDAḫar-ša-ú-uš⟩	KUB 7.8 ii 11	MH/NS		
⟨ḫe-e-mu-ú-uš⟩	KBo 43.137, 7	NS	rain	abl. *u*-stem
⟨ḫé-e-u-uš⟩	KBo 13.245 rev. 7	NH/NS		
	? KUB 19.50 iv 27	NH/NS		
	? KUB 7.5 i 17	MH/NS		
⟨ḫé-e-ú-uš⟩	KUB 16.37 iv 6	NH/NS		
	KUB 28.4 ii 19	MH?/NS		
⟨ḫé-e-ú-<uš>⟩	KUB 28.5 ii 13	MH?/LNS		
⟨ḫu-wa-al-li-ši-ú-uš⟩	KBo 17.105 i 17	MH/MS	juniper (?)	non-abl. *i*-stem
⟨ˈišˈ-ḫu-u-uš⟩	KBo 15.31 i 14	OH/MS	lord	oxytone *a*-stem
⟨[i-da-]la-mu-u-šˈ⟩	KUB 8.67, 14	MH/NS	bad, evil	abl. *u*-stem
? ⟨[i-da-a]-ˈlaˈ-mu-u?-š=a⟩	KBo 15.10 iii 54	MH/MS		
⟨kap-pí-ú-uš⟩	KBo 17.105 ii 8	MH/MS	small, little	abl. *i*-stem
? ⟨MUNUS.MEŠkat-ru-ú?-uš⟩	KUB 54.66 rev. 13	OH/NS	(functionary)	oxytone *a*-stem
⟨ku-i-ú-uš⟩	HKM 23, 9	MH/MS	who	*i*-stem pron.
	KBo 18.57a obv. 2	MH/MS		
⟨ku-u-uš⟩	numerous	OS>	these	*a*-stem pron.
⟨ku-ut-ru-u-uš⟩	KUB 13.4 ii 36	OH/NS	witness	*n*-stem
⟨la-a-aḫ-ḫu-u-uš⟩	KBo 16.86 i 10	OH/NS	campaign	*a*-stem
? ⟨l[i-in]-ga-uˈ-uš⟩	KBo 4.4 i 45	NH/NS	oath	*ai*-stem

spellings (Kloekhorst 2008; Melchert 2020), as well as in an electronic corpus containing ca. 286,000 words from ca. 3,365 texts, originally compiled by Johann Tischler and expanded by H. Craig Melchert and Alwin Kloekhorst. All cited forms have been checked against the photographs in the *Konkordanz der hethitischen Keilschrifttafeln* (Košak 2002–2022). I thank an anonymous reviewer for refinements concerning the dating of certain attestations.

TABLE 1 Hittite ACC.PL.C. forms with ⟨u⟩ or ⟨ú⟩ (*cont.*)

Form	Place	Dating	Meaning	Stem type
⟨ma-ši-ú-u[š]⟩	KBo 9.109 rev. 4	OH/NS	how many/much	non-abl. *i*-stem
⟨mi-e-ú-uš⟩	KUB 31.127 i 52	OH?/NS	four	? *a*- or *u*-stem
⟨mi-ni-u-uš⟩	KUB 52.51 rev. 7	NS	hunter (?) or face	? *a*- or *i*-stem
⟨pár-ga-u-uš⟩	KBo 3.8 iii 22	OH/NS	high, tall	abl. *u*-stem
⟨pu-u-ri-ú-uš⟩	KBo 19.163 i 23	OH/NS	(offering term)	non-abl. *i*-stem
	KBo 19.163 iv 4	OH/NS		
⟨šu-up-pí-ú-uš⟩	KUB 33.41 ii 10	OH/NS	pure	abl. *i*-stem
⟨ta-lu-ga-ú-uš⟩	KBo 17.22 iii 6	OS	long	abl. *i*-stem

umn the earliest known stem type of the corresponding lemma has been given. For example, ⟨šu-up-pí-ú-uš⟩ is accordingly given as an ablauting *i*-stem, even though the cited attestation is inflected as a non-ablauting stem, since the earliest attested stem had an ablauting paradigm (thus ACC.PL.C. ⟨šu-up-pa-uš⟩).[5] Enclitics are included when the border between ending and enclitic falls within the same sign. Items preceded by question marks are less certain and discussed in the individual sections when relevant.

2.1 *Non-probative data*

The hapax ⟨a-pu-ú-uš⟩ must be regarded as a misspelling.[6] The standard form is ⟨a-pu-u-uš⟩, which is frequently attested from OS times onwards (over 200 occurrences). Furthermore, the forms ⟨˹is¹-ḫu-u-uš⟩, ⟨la-a-aḫ-ḫu-u-uš⟩, and ⟨˹er¹-ḫu-ú-š=a=kán⟩ cannot be used as primary evidence, since we in principle only expect /o/ to occur adjacent to /χ/ (Rieken 2005a: 539; Kloekhorst 2008: 51).

2.2 *Phonological interpretation*

The phonological interpretation of plene spelling with ⟨u⟩ or ⟨ú⟩ between consonants is unproblematic, e.g., ⟨ku-u-uš⟩ represents /kó:s/.[7] Cases where

5 See the CHD (van den Hout et al. 2019: 618) for attestations.

6 Cf. also the aberrant spelling ⟨ḫu-ú-ni-ik-zi⟩ 'destroys' on the same tablet (i 16) and see Rieken 2005a: 546[53].

7 In the pronouns, long [o:] is likely, but it is not always possible to know whether the ending is long in other items. At least some spellings (e.g., ⟨[i-da-]la-mu-u-uš¹⟩) must rather be disambiguating. The long vowel of the ending -[o:s] in the demonstrative pronouns could be seen as a separate phoneme (see Kloekhorst 2014: 525–528 for the possible phonological status of /o:/, with reservations also assumed in this paper). If this is correct, the -/ó:s/ would need to be analysed as an additional allomorph of the ACC.PL.C. ending. In either case, the focus

⟨u⟩ or ⟨ú⟩ stand after a vowel are more complicated, however. Melchert (2020: 270) regards ACC.PL.C. spellings for *i*-stems such as in the non-ablauting ⟨a-ú-li-ú-uš⟩ and the ablauting ⟨ta-lu-ga-ú-uš⟩ as representing a phonetic (i.e., non-phonemic) glide, these examples thus reflecting [auliwVs] and [talukawVs] respectively. This would effectively mean that these items cannot provide any information on the vocalic quality of the ending. However, there are compelling arguments for analysing spellings in -⟨(C)V-u/ú-uš⟩ as phonologically relevant with regard to ending vocalism, with the aforementioned examples reflecting /ʔaulius/ and /talukaus/, respectively.

In the case of ⟨a-ú-li-ú-uš⟩, which is always spelled with ⟨ú⟩, we find direct evidence that the vowel of the ending is /u/. On KUB 17.21 ii 18, the form is followed by enclitics and spelled ⟨a-ú-li-ú-š=a=kán⟩, which cannot represent anything but /ʔaulius=a=kan/. Note that the quality of the vowel in the spelling -⟨li-ú-š=a-⟩ is consistent with the one in the spelling -⟨li-ú-uš⟩. Thus, we may infer that spellings of the type -⟨Ci-ú-uš⟩ denote a phonological sequence -/ius/. Additional comparable cases with unambiguous ACC.PL.C. endings in -/us/ include ⟨ḫa-an-te-ez-zi-ú-š=a⟩ and ⟨ḫa-a-ri-ú-š=a=w[a=kán]⟩, both non-ablauting *i*-stems. Irrespective of whether the ⟨ú⟩ in a spelling like ⟨a-ú-li-ú-uš⟩ denotes a glide [w] or some sort of hiatus, it is evident that the choice of plene spelling V-sign in this case corresponds to the vocalic quality of the ending.[8]

The argument put forward above for interpreting spellings of the type ⟨Ci-ú-uš⟩ as representing -/ius/ is likewise valid for interpreting spellings like -⟨Ca-ú-uš⟩ as -/aus/, i.e., the ACC.PL.C. of the ablauting *i*-stems. Note the pair ⟨(NINDA)ḫar-ša-ú-uš⟩ and ⟨NINDAḫar-ša-ú-š=a⟩ with a following enclitic, completely analogous to the case of ⟨a-ú-li-ú-uš⟩ vs. ⟨a-ú-li-ú-š=a=kán⟩ provided in the previous paragraph. To this example the form ⟨ḫa-tu-ga-ú-š=a⟩ may be added, which likewise belongs to an ablauting *i*-stem. It is thus clear that spellings like -⟨Ca-ú-uš⟩ represent a phonological sequence -/Caus/ in the

of the present paper is the vocalic *quality* of the ending. See also Section 4.3 for the possible marginal and archaic allomorph -/as/.

8 An anonymous reviewer remarks that the pair ⟨a-ú-li-ú-š=a=kán⟩ and ⟨a-ú-li-ú-uš⟩ cannot reveal the vocalism of the ending, attributing the choice of V-sign to "graphic shortening". As a parallel in the NOM.PL.C., the pair ⟨ḫa-a-pí-e-eš⟩ and ⟨ḫa-a-pí-e-š=a⟩ is adduced, where the signs preceding ⟨eš⟩/⟨ša⟩ are identical in both forms. To my mind, this is not a coherent argument against interpreting ⟨a-ú-li-ú-š=a=kán⟩ as a phonologically motivated spelling. In the spelling ⟨ḫa-a-pí-e-š=a⟩, there is to my knowledge no controversy as to whether or not the ending vowel is /e/. The same should hold for ⟨a-ú-li-ú-š=a=kán⟩, where quality of the vowel is determinable as /u/ by the same logic.

ACC.PL.C., with ⟨ta-lu-ga-ú-uš⟩ representing /talukaus/. It is by extension expected that a spelling like ⟨pár-ga-u-uš⟩ represents /parkaos/, etc.

It should be noted that plene spelling in the ACC.PL.C. ending is much more common in vocalic than in consonantal stems.[9] Many of the attestations in Table 1 belong to non-ablauting *i*-stems and ablauting *i*- and *u*-stems. A comparable situation is found for the NOM.PL.C., where the normal spelling is non-plene -⟨Ce-eš⟩ in consonantal stems but plene -⟨(C)V-e-eš⟩ in vocalic stems. According to Kloekhorst (2012: 247–251 & 2014: 158–159), these plene spellings do not denote a long vowel /e:/, but rather the transition from a stem-final vowel to the following /e/ of the ending, substituting for the lack of signs like ⟨ie⟩ and ⟨we⟩ in Hittite cuneiform.[10] Signs like ⟨iu⟩ are also unavailable. The plene spelling of ACC.PL.C. endings in vocalic stems is therefore most likely motivated on the same basis as in NOM.PL.C. forms, i.e., to substitute for the lack of glide-spelling signs, cf., e.g., the pairs ⟨pu-u-ri-e-eš⟩ (e.g., KBo 34.19, 3; MS) vs. ⟨pu-u-ri-ú-uš⟩ and ⟨ta-lu-ga-e-eš⟩ vs. ⟨ta-lu-ga-ú-uš⟩ (both on the same OS tablet, KBo 17.22 iii 6 and 7).[11] The choice of plene spelling vowel ⟨e⟩ in these NOM.PL.C. forms is crucially determined by the vocalic /e/-quality of the ending—we never find NOM.PL.C forms of ablauting *i*-stems spelled -⟨(C)a-i-eš⟩ nor NOM.PL.C. forms of non-ablauting *i*-stems spelled -⟨(C)i-i-eš⟩.[12] By the assumption that the back mid and high vowels behave similarly to the front ones, it is expected that spellings like -⟨(C)V-ú-uš⟩ and -⟨(C)V-u-uš⟩ reflect -/Vus/ and -/Vos/, respectively, parallel to how -⟨(C)V-e-eš⟩ reflects -/Ves/ and not -/Vis/.[13] The obscuring factor in the ACC.PL.C. is that the sign ⟨uš⟩

9 This is excluding the demonstrative pronouns, for which plene spelling is standard, probably representing vocalic length; cf. n. 7.

10 According to Kloekhorst, a similar mechanism is at play for the nominal suffix *-ēssar*/*-ēsn-*, the fientive verbal suffix *-ēss-*, and the 3SG.PRES.ACT. of **ie/o*-verbs.

11 It should be noted that this type of spelling is much more cemented in the NOM.PL.C. than in the ACC.PL.C. For instance, we never find a form ⟨ta-lu-ga-eš⟩, whereas ⟨ta-lu-ga-uš⟩ is attested (e.g., KUB 12.63 obv. 24; OH/MS); cf. Melchert (2020: 269[8]).

12 For a comprehensive collection of material for the NOM.PL.C. forms of the *i*-stems, see Kloekhorst (2014: 138–144). Spellings of the type -⟨(C)i-i-eš⟩ are to my knowledge never found in NOM.PL.C. forms of non-ablauting *i*-stems. The form ⟨[šar-d]i-i-eš⟩ belongs to an *a*-stem (van den Hout et al. 2019: 292–293). Spellings of the type -⟨(C)i-i-e-eš⟩ do occur, albeit more seldom than -⟨(C)i-e-eš⟩ (24 vs. >490 times in my files), and in either case do not contradict plene spelling of ⟨e⟩ being motivated by the /e/-quality of the ending -/es/. The form ⟨ḫu-u-ri-i-eš⟩ cited by Kloekhorst (2014: 139[496]) does not exist; the attested form is ⟨ḫu-u-ri-i-e-eš⟩ (KBo 4.2 i 62; OH/NS).

13 Kloekhorst (2014: 389–391 & 397–398) argues that the stem final /a/ in the NOM.PL.C. and ACC.PL.C. of the ablauting *i*-stems is long on the basis of occasional plene spellings. While

is ambiguous with regard to vowel quality, unlike the ⟨eš⟩ in the NOM.PL.C. Plene spellings observed for unaccented endings where it follows a consonant (e.g., ⟨[i-da-]la-mu-u-uš[!]⟩) can probably be attributed to the disambiguating function of plene spelling with ⟨u/ú⟩, a far less common practice.[14]

A somewhat weaker argument for interpreting sequences of the type -⟨(C)V-u/ú-uš⟩ as phonologically relevant with regard to ending vocalism is one of consistency. If ⟨u⟩ and ⟨ú⟩ only spelled non-phonological glides after vowels and before ⟨uš⟩, we would expect more inner-lexical variation in the choice of sign. While the number of examples is admittedly low, note the consistent spelling in, e.g., ⟨(NINDA)ḫar-sa-ú-uš/ša⟩ (3×), ⟨a-ú-li-ú-uš/ša⟩ (3×), ⟨ḫal-lu(-ú)-wa-u-uš⟩ (2×), etc. The only example of variation is in the word for 'rain', for which all plene spelled forms are late and evidently secondary (see Section 5).

We may conclude that plene spellings for the ACC.PL.C. ending indicate the phonemic vowel quality of the ending, barring obvious cases of misspelling. We may thus proceed with analysing the distribution of the endings.

3 Distribution

Given that the ACC.PL.C. endings are spelled with both ⟨u⟩ and ⟨ú⟩ in the Hittite corpus, we must contend with the fact that the ending has (at least) two allomorphs: -/us/ and -/os/.[15] It follows that an attempt at establishing a distribution is possible.

Kloekhorst (2008: 56–57) also recognises two ACC.PL.C. allomorphs, -/us/ and -/os/, in Hittite (in his view rather -/ų̈s/ and -/o̧s/), postulating a *chronological* distribution. Under his analysis, PIE *-*m̥s#* and *-*oms#* yielded OH -/ų̈s/, which in NH regularly became -/o̧s/. This scenario is not compatible with the data, however.[16] First, the form ⟨a-ku-u-uš⟩ has /o/-quality despite being

no explicit stance is taken on the validity of this proposal, the /a/ is rendered short in this article in order to avoid potential confusion.

14 Cf. ⟨e-ep-pu-u-un⟩ 'I seized' (e.g., KUB 1.2 ii 15; NH/NS), where the ending can hardly be accented and/or long (Kloekhorst 2014: 520–522).

15 Cf. n. 7 for the possible additional allomorph -/o:s/ and Section 4.3 for the marginal -/as/.

16 Kloekhorst concedes that the form ⟨[i-da-a]-ˈla¹-mu-u²-š=a⟩ is problematic on account of its early attestation (KBo 15.10 iii 54; OH/MS). This counterexample may not be conclusive by itself, however. Upon reviewing the 3D model of the tablet available at the *Konkordanz* (Košak 2002–2022), it is not clear whether the *Winkelhaken* constituting a supposed ⟨u⟩ is a separate sign or an exaggerated imprint of one of the four *Winkelhaken* in the sign ⟨mu⟩. Hence, the form is given with a question mark in Tables 1 and 2.

attested in an OS text.[17] Moreover, disregarding palaeographical tiers, both endings occur in compositions from all Hittite chronological layers. To illustrate, in OH/NS texts we find both ⟨pár-ga-u-uš⟩ and ⟨ḫa-tu-ga-ú-š=a⟩, etc. A chronological distribution of the endings -/us/ and -/os/ is thus difficult to maintain.

Upon reviewing the forms in Table 1, one particular pattern emerges. The choice of vowel sign, and consequently ending allomorph, seems mainly contingent on the earliest attested stem type of the nominal to which the ending is attached. The endings -/us/ and -/os/ thus occur in a largely morphologically conditioned complementary distribution. All *i*-stems, irrespective of whether ablauting or non-ablauting, take -/us/ as their ACC.PL.C. ending (see Section 4.1 for ⟨l[i-in]-ga-u!-uš⟩). Conversely, the demonstrative pronouns show /o/-vocalism, as do original *u*-stems (the word for 'four' is dubious, see Section 4.2). The *a*-stems and the original *n*-stem ⟨ku-ut-ru-u-uš⟩ take /u/ and /o/-endings respectively, although the following sections will cast doubt on their probative value. The only real exception to the distribution is the word for 'rain', treated separately in Section 5.

With a complementary distribution established, we can move on to determining the etymological sources of the endings.

4 The development of -/us/ and -/os/

Since we have established that the choice of ending is contingent on original stem type, we may now use this to determine the etymologies of -/us/ and -/o(:)s/. The first question is whether the realisation that Hittite had several allomorphs for the ACC.PL.C. ending gives us reason to modify the ACC.PL. ending *-(*o*)*ms* as traditionally reconstructed and well-established in Indo-European linguistics.[18] Since projecting the allomorphy back in time would entail multiplying entities (in this case morphemes) in the proto-language, it should only be considered if forced, i.e., if we can find no other plausible explanatory scenario specific to Hittite. In the following, it will be argued that such a scenario is possible. There is consequently no need to modify the tradi-

17 The pronouns ⟨a-pu-u-uš⟩ and ⟨ku-u-uš⟩ are unproblematic for Kloekhorst even though these are abundantly attested from OS onwards, since they are special cases reflecting *-*óms#* (see Section 4.1). Moreover, Kloekhorst (2008: 168) doubts the validity of the form ⟨a-ku-u-uš⟩ as it occurs in a rather fragmentary context. Here, it is taken as real, following Puhvel (1984: 24).

18 As is commonplace, I reconstruct the ending with **m* rather than **n* on the basis of internal reconstruction (see Meier-Brügger 2003: 196; Kim 2012: 146 with further references).

tional reconstructions. Accordingly, we may in principle postulate either *-*ms* (for athematic stems) or *-*oms* (for thematic stems, accented or unaccented) as input sequences for the attested forms.[19]

4.1 *The origin of -/os/*

The Hittite ACC.PL.C. forms spelled with ⟨u⟩ and thus displaying an ending -/os/ are found below in Table 2, excluding 'rain' (see Section 5), ⟨la-a-aḫ-ḫu-u-uš⟩, and ⟨ˈisˈ-ḫu-u-uš⟩ (see Section 2.1).[20]

Some initial remarks on ⟨ḫal-lu(-ú)-wa-u-uš⟩ are necessary, as determining the stem type of the form is complicated. The oldest attested non-plene spelled ACC.PL.C. form ⟨ḫal-lu-wa-mu-uš⟩ (e.g., KUB 17.10 i 26; OH/MS) has the appearance of belonging to an ablauting *u*-stem *halluw*(*a*)*u*- (treated as such with reservations in Hoffner & Melchert 2008: 104). Conversely, the GEN.SG./DAT/LOC.PL. form *halluwas*, the ABL. *halluwaz*, and the derived verb *halluwanu*- 'to lower' indicate an *a*-stem *halluwa*- (accordingly Friedrich & Kammenhuber 1991: 84–85; Puhvel 1991: 47–49). For the present purpose, however, ⟨ḫal-lu-wa-mu-uš⟩ and ⟨ḫal-lu(-ú)-wa-u-uš⟩ may tentatively be treated as *u*-stem forms with the caveat that both are irregular in relation to their *a*-stem paradigm.

The first uncontroversial input yielding an ACC.PL.C. ending with /o/ is found in the demonstrative pronouns ⟨ku-u-uš⟩ and ⟨a-pu-u-uš⟩. These two spellings represent /kóːs/ and /ʔapóːs/, reflecting **ḱóms* and **(*H*)o*bʰ*óms*, respectively (Hrozný 1917: 188[2]; Kloekhorst 2008: 57; Melchert 2020: 263). Thus, we can securely determine that one input for an ending with /o/ (in this case probably -/óːs/) is PIE *-*óms#*. Note that this development is symmetrical to that of *-*óm#*, evidenced by the ACC.SG.C. of the demonstrative pronouns ⟨ku-u-un⟩ /kóːn/ < **ḱóm* and ⟨a-pu-u-un⟩ /ʔapóːn/ < **(*H*)o*bʰ*óm*.[21]

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19 Note that the ending *-*ōms* as reconstructed by Kim (2012) has no consequence for our possible input forms—an unaccented primary PIE long vowel is regularly shortened in PA (Melchert 1994: 76) and a PIE accented *o*-grade vowel is regularly lengthened (Vertegaal 2020: 224 with further references).

20 For the status of the form ⟨[i-da-a]-ˈlaˈ-mu-uʔ-š=a⟩, preceded by a question mark in Tables 1 and 2, see n. 16. A possible second attestation of ⟨a-ku-u-uš⟩ on the fragment KBo 35.24 iii 4 (MS?) belongs to a Hurrian omen and is probably itself likewise Hurrian (I thank an anonymous reviewer for this observation), hence its exclusion in Tables 1 and 2.

21 Note that this means that the ACC.SG.C. of primary oxytone *-*o*-stems originally ended in *-/oːn/, but given the infrequency of the class it seems unproblematic to attribute their attested *a*-vocalism in the ending to analogy from barytone *-*o*-stems (thus also in Melchert 2020: 268). The change **Cóm#* > /Con/ is limited to monosyllables by Kloekhorst (2008: 99 & 2014: 523), but this does not seem necessary to me. Kloekhorst (pers. comm.) notes that a relevant piece of evidence is the GEN.PL. form /ptáːn/ 'of (the) feet' (e.g., ⟨pa-ta-a-n=a⟩, KBo 20.8 obv. 19; OS), presumably going back to PIE **pd-óm*, contradict-

TABLE 2 Hittite ACC.PL.C. forms spelled with ⟨u⟩

Form	Place	Dating	Meaning	Stem type
⟨a-ku-u-uš⟩	KBo 19.156 obv. 17	OS	sea shell	?
⟨a-pu-u-uš⟩	numerous	OS>	those	*a*-stem pron.
⟨a-aš-ša-u-uš⟩	KUB 60.99 ii 4	NS	good	abl. *u*-stem
⟨ḫal-lu-wa-u-uš⟩	KBo 26.135, 2	OH/NS	deep	? abl. *u*-stem
⟨[ḫal]-˹lu˺-ú-wa-u-uš⟩	KBo 3.8 iii 4	OH/NS		
⟨[i-da-]la-mu-u-uš!⟩	KUB 8.67, 14	MH/NS	bad, evil	abl. *u*-stem
? ⟨[i-da-a]-˹la˺-mu-u?-š=a⟩	KBo 15.10 iii 54	MH/MS		
⟨ku-u-uš⟩	numerous	OS>	these	*a*-stem pron.
⟨ku-ut-ru-u-uš⟩	KUB 13.4 ii 36	OH/NS	witness	*n*-stem
? ⟨l[i-in]-ga-u!-uš⟩	KBo 4.4 i 45	NH/NS	oath	*ai*-stem
⟨mi-ni-u-uš⟩	KUB 52.51 rev. 7	NS	hunter (?) or face	? *a*- or *i*-stem
⟨pár-ga-u-uš⟩	KBo 3.8 iii 22	OH/NS	high, tall	abl. *u*-stem

The form ⟨ku-ut-ru-u-uš⟩ 'witness' indirectly points to **-óms#* > -/ó:s/. The etymon is the PIE word for 'four', i.e., **kʷetuor-*, with zero grade in the first and second syllables and a metathesised base **kʷtru-*, determined already by Carruthers (1933: 151–152). As demonstrated by Oettinger (1982: 163–165), ⟨ku-ut-ru-u-uš⟩ belongs to an original *n*-stem paradigm; cf. NOM.PL. ⟨ku-ut-ru-e-né-eš⟩ /kʷtruénes/ (e.g., KUB 23.77a obv. 10; MH/MS) < **kʷtru-én-ēs*. In NH, the stem was reshaped to an *a*-stem on the basis of the NOM.SG. form ⟨ku-ut-ru-wa-aš⟩ /kʷtruá:s/ (e.g., KBo 15.25 obv. 35; MH/MS) < **kʷtru-én-s*. On account of the input form, the stem was likely oxytone. The remodelled ⟨ku-ut-ru-u-uš⟩, phonologically probably /kʷtruó:s/, is thus best understood as displaying the inherited form of the ACC.PL.C. ending of oxytone *a*-stems, adhering to the expected outcome -/ó:s/ < **-óms#* for these stems. Accordingly, the form indirectly indicates that the original ACC.PL.C. ending of the oxytone *a*-stems coming from oxytone **o*-stems had /o/-vocalism.

ing PIE **-óm#* > Hitt. -/ó:n/. Conversely, Kümmel (2013: 200–201) reconstructs the ending as either PIE **-ŏ́m* or **-o(H)ŏ́m*, postulating a different input sequence and thus defending a general development PIE **-Cóm#* > Hitt. -/ó:n/. As Kümmel states, it is also possible that an earlier */ptó:n/ had the quality of its ending changed to /a:/ by contamination from the standard unaccented GEN.PL. ending -/an/. Note that the /á:/ in Hittite ⟨ta-ga-a-an⟩ /tká:n/ 'earth' LOC.SG. (and /ptá:n/ if the ending is PIE **-ŏ́m*) can be attributed to a separate change of PIE **ŏ́* to Pre-Hitt. (PA?) **ā́* (see Kloekhorst 2008: 860), thus reflecting **dʰǵʰ-ŏ́m* (cf. Gk. χθών, Skt. *kṣā́s*).

Another input for an ACC.PL.C. ending with /o/ seems to be found in the sequence *-*ṃs#*, yielding -/os/. The evidence for this is less secure, but there are indications. The development *-*ṃs#* > -/os/ is best corroborated by the ablauting *u*-stems. However, the only primary formation is ⟨[i-da-]la-mu-uš!⟩, phonologically /ʔitá:lamos/, as the dissimilatory -/m/- is certainly directly inherited from a sequence *-*au̯-os*. Note that I am assuming that the nasal vocalises in a Pre-Hitt. sequence *-*aR-ms#*—PA likely had a zero-grade suffix in the ACC.PL.C. of *i*- and *u*-stems, hence the specification Pre-Hittite rather than PA or PIE (Norbruis 2018: 25–26).[22] For a parallel development, cf., e.g., verbal nouns in -*V-war*, where the rightmost resonant **r* vocalises in the secondary Pre-Hitt. sequence *-*V-u̯r#* (Schindler 1975: 8; Kloekhorst 2008: 959). The aforementioned development also implies that the sound law *-*u̯u-* > -*mu*- must be extended to include the Pre-Hittite sequence *-*u̯o*-. It seems most parsimonious to assume that the forms ⟨a-aš-ša-u-uš⟩, ⟨ḫal-lu(-ú)-wa-u-uš⟩, and ⟨pár-ga-u-uš⟩ had their original -/m/- removed by analogy (no other forms in the paradigm have -/m/- before the ending); cf. the original forms without plene spelling of the ending: ⟨a-aš-ša-mu-uš⟩ (KUB 33.9 iii 10; OH/NS), ⟨ḫal-lu-wa-mu-uš⟩ (e.g., KUB 17.10 i 26; OH/MS), and ⟨pár-ga-mu-uš⟩ (e.g., KUB 17.10 i 24; OH/MS).[23] These forms apparently kept the original *u*-stem vowel quality

22 The full-grade suffix in the ACC.PL.C. of the ablauting stems is unlikely to go far back in Hittite prehistory; cf. the CLuw. *i*-mutated ACC.PL.C. ending -*inz*, descending directly from proper proterodynamic *i*-stems (Norbruis 2018: 25–26). Consequently, the syllabification must be post-PA, incidentally following the syllabification rules of Schindler (1977: 58; Norbruis 2018: 26[25]; without the less sonorous **m* assumed for PIE by Cooper 2014). This is supported by the suffix -*war* in vocalic stems cited in the main text, which goes back to a Pre-Hitt. suffix *-*ur* reintroduced from consonantal stems with secondary syllabification of the rightmost resonant **r* (Kloekhorst 2008: 959). Even if we project the full-grade suffix back to PA and assume that the nasal was not vocalised in a (Pre-)PA sequence *-*ˊeu-ms#*, this would then yield Pre-Hitt. *-*ums*, to which the suffix could easily have been reintroduced, again resulting in secondary syllabification of the nasal. The same goes for the ablauting *i*-stems, where in case of non-vocalisation *-*ei-ms#* would likely give *-*ems* (cf. Melchert 1994: 145), likewise eligible for reintroduction of the suffix. The relevance of Stang's law (PIE *-*VRms#* > *-*V̄(m)s#*; cf. Collinge 1995: 37–38) for these sequences is dubious, given the absence of evidence for this law affecting resonants in Anatolian (Rieken 1999: 35–36[153]; Kloekhorst 2014: 487; cf. also Lyd. *ciwv* 'god' ACC.SG. < **diéum* and see n. 37 for the treatment of laryngeals) and the likely subsequent reintroduction of the suffix as above should the law be valid in Hittite.

23 One potential model for proportional analogy is the NH secondarily non-ablauting *u*-stem ACC.PL.C. form ⟨ḫé-e-u-uš⟩ /χé:os/ vs. NOM.PL.C. ⟨ḫé-e-u-e-eš⟩ /χé:ues/ (KUB 8.1 iii 8; OH/NS) 'rains', i.e., -/Vues/ : -/Vos/ vs. -/aues/ : X, where X = -/aos/ (but this word is not without complications, see Section 5). Conversely, Melchert (2020: 270–271; cf. also Weitenberg 1984: 328) rather sees these forms as modelled on the *ai*-stem form ⟨l[i-in]-

of the ending, however.[24] Note that the *u*-stem forms in -⟨a-u-uš⟩ occur on a total of three tablets (both ⟨[ḫal]-ˈluˀ-ú-wa-u-uš⟩ and ⟨pár-ga-u-uš⟩ are found on KBo 3.8), all written in NS.

According to Melchert (2020: 270), ACC.PL.C. ⟨a-ku-u-uš⟩ 'sea shell' (OS) indicates that *-*Cums*# yielded Hitt. -/os/. This is argued on the premise that the word is an original non-ablauting *u*-stem, as indicated by the NOM.SG. and ACC.SG. forms ⟨a-ku-uš⟩ (KUB 21.19+ iii 14; NH/NS) and ⟨a-ku-un⟩ (KUB 36.12 ii 6; OH/NS), respectively. However, while possible, this is not necessarily the case. The traditional connection to the PIE root *$h_2e\acute{k}$- (cf. Skt. *áśman-*, Gk. ἄκμων, Lith. *akmuõ* 'stone') with *u*-stem formation (cf. Lat. *acus*) made by Laroche (1957: 25–26) based on the outdated translation as 'stone' should be abandoned on semantic grounds (*aku-* rather meant 'sea shell'; see Hoffner 1978: 245). Consequently, we cannot exclude the possibility of an original root noun ending in a labiovelar. In that case, -/os/ would go back to a sequence *-*Cm̥s*#. We must conclude that ⟨a-ku-u-uš⟩ is not absolute in determining the outcome of *-*Cums*#, although -/Cos/ is not unlikely per se. A PA input sequence *-*g*^{w}*m̥s*# could also have given rise to this item.[25]

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ga-uˈ-uš⟩ 'oaths'. However, this form is not assigned any probative value in this paper (see main text, this section). This modelling of ablauting *u*-stems on an *ai*-stem is in either case hardly likely, especially given the consistent use of -/us/ in the *i*-stems (see Section 4.2).

24 The labial glide present in the weak stem forms of these words is also often spelled with ⟨u⟩. In intervocalic position, however, the choice of sign is not phonologically contrastive (Hart 1983: 124–128; Kloekhorst 2008: 40–42). Moreover, ⟨ú⟩ does in fact also occur spelling this glide, e.g., ⟨i-ta-a-laˈ-úˀ-i⟩ (KBo 25.103 rev. 3; OS), ⟨a-aš-ša-ú-e-et⟩ (KBo 8.69, 10; OH/NS). Note also that ⟨u⟩ requires fewer wedges than ⟨ú⟩, which may partly motivate its more frequent use in this position (while also incidentally increasing the probative value of the consistent use of ⟨ú⟩ in the *i*-stem ACC.PL.C.).

25 If the word ⟨^{NA4}a-ku-wa-an-du-uš⟩ 'covered with sea shells' (KUB 35.84 ii 4; NS, used to describe roads) is a possessive derivative in *-want-* (thus in Kronasser 1966: 266), a *u*-stem would be impossible, since we would then expect a form **akumant-* by sound law. A *u*-stem would consequently necessitate a derivative in *-ant-* (thus in Hoffner & Melchert 2008: 56). However, the formation *naduwant-* 'having reeds' (used for ponds and meadows; see Puhvel 2007: 66) from $^{(G1)}$*nāta*(/*i*)- 'reed' has an at least superficially similar function of describing a certain terrain "possessing" the object denoted by the derivational base (see Steer 2012 for a comprehensive discussion on the word both synchronically and diachronically). This might point to a *akuwant* being a stem in *-want-*, and thus to *aku-* ending in a labiovelar, phonologically /ʔak^{w}-/, being the more likely situation, in which case ⟨a-ku-u-uš⟩ /ʔak^{w}os/ would be tentative evidence of the development *-*Cm̥s*# > -/Cos/. The parallel with *naduwant-* may be somewhat weakened by *perunant-* 'rocky', which could conceivably be argued to have a similar function. This word unambiguously displays the suffix *-ant-*, although it is less clear for *perunant-* whether the adjective describes the "possession" of a certain object by the landscape, in this case mountains, or the shape of the landscape itself (see Puhvel 2013: 25 for context).

In light of the evidence above, it would appear most likely that *-*m̥s#* developed into Hitt. -/os/.[26] Note once again that the development *-*Cm̥s#* > -/Cos/ is symmetrical to that of *-*Cm̥#*; cf. the 1SG.PRET.ACT. ending -/on/ in ⟨e-ep-pu-u-un⟩ /ʔép:on/ < PIE **h₁ép-m̥* (Kloekhorst 2014: 521; Melchert 1994: 181 with further references; see also Section 4.2).[27]

The probative weight of ⟨mi-ni-u-uš⟩ is uncertain. It is either a form of the *i*-stem *meni-* 'face' (thus tentatively in Güterbock & Hoffner 1989: 289) or the *a*-stem *miniya-* 'hunter (?)'. In favour of 'face', the form seems to not be preceded by the determinative ⟨LÚ⟩, which is the case for 'hunter' elsewhere. Conversely, the other ACC.PL.C. form of 'face' inflects as an *a*-stem, i.e., ⟨me-nu-uš⟩ (KUB 27.49 iii 17; NS), and all other *i*-stems unequivocally take -/us/. The fragmentary attestation does not allow for contextual analysis to decide between the two options.

The form ⟨l[i-in]-ga-u⸣-uš⟩ (emendation per Güterbock & Hoffner 1989: 64), functioning as ACC.PL. of the *ai*-stem *lingai-* 'oath', should not be assigned any probative value (pace Melchert 2020: 270). The text itself clearly reads ⟨l[i-in]-ga-nu-uš⟩ and the attestation thus constitutes a scribal error. Moreover, the *i*-stems evidently take -/us/ (see Section 4.2), and we would as such not expect -/os/ in an *ai*-stem.

4.2 *The origin of -/us/*

The Hittite ACC.PL.C. forms spelled with ⟨ú⟩ and thus displaying an ending -/us/ are found below in Table 3, excluding 'rain' (see Section 5), ⟨a-pu-ú-uš⟩, and ⟨⸢er⸣-ḫu-ú-š=a=kán⟩ (see Section 2.1).

The *a*-stems for which we have plene spelled ACC.PL.C. endings are ⟨al-pu-ú-uš⟩ 'cloud', ⟨MUNUS.MEŠkat-ru-ú-uš⟩ '(female) functionary', and ⟨mi-e-ú-uš⟩ 'four', displaying ending vocalism in /u/.[28] There are indications that the first two of these are oxytone, whence the plene spelling of their endings is unsurprising. For 'cloud', we have the NOM.SG. form ⟨al-pa-a-aš⟩ (KUB 59.54 obv. 7; LNS) and for '(female) functionary' we have the NOM.PL. ⟨[M]UNUS.MEŠkat-re-

26 Already Sturtevant (1951: 90) derived the ACC.PL.C. ending *-us* from a sequence *-*Cm̥s#*, but before the difference between /u/ and /o/ was discovered.

27 Note that this means that the ACC.SG.C. of C-stems must have had a primary ending *-/on/ replaced by the ending of barytone *a*-stems, i.e., -/an/. This is hardly a problematic notion—see Melchert 1994: 181 with further references and see n. 21 for a possible similar substitution.

28 The form ⟨ḫa-an-te-ez-zi-ú=ša⟩ should probably be included as evidence of the ending -/us/ being standard in the non-ablauting *i*-stems, even though it is an original *a*-stem, since it inflects as an *i*-stem at the time of its attestation (Melchert apud Kloekhorst 2008: 264).

TABLE 3 Hittite ACC.PL.C. forms spelled with ⟨ú⟩

Form	Place	Dating	Meaning	Stem type
⟨a-ú-li-ú-š=a=kán⟩	KUB 17.21 ii 18	MH/MS	throat (vel sim.)	non-abl. *i*-stem
⟨a-ú-li-ú-uš⟩	KBo 25.178 i 2	OH/NS		
	KUB 24.3 ii 11	MH/NS		
? ⟨al-pu-ú-uš⟩	KUB 28.5 iii 7	MH?/LNS	cloud	oxytone *a*-stem
⟨an-na-li-ú-u[š]⟩	KUB 51.47 rev. 4	NS	former, old	non-abl. *i*-stem
⟨ḫa-a-ri-ú-š=a=w[a=kán]⟩	KBo 9.109 i 12	OH/NS	valley	non-abl. *i*-stem
⟨ḫa-an-te-ez-zi-ú-š=a⟩	KUB 33.62 iii 4	OH/MS	first, foremost	*a*-stem
⟨ḫa-tu-ga-ú-š=a⟩	KBo 4.2 i 18	OH/NS	fearsome	abl. *i*-stem
⟨NINDAḫar-ša-ú-š=a⟩	KBo 17.30 iii 6	OS	thick-bread	abl. *i*-stem
⟨[ḫar-š]a-ú-uš⟩	KBo 17.4 ii 17	OS		
⟨NINDAḫar-ša-ú-uš⟩	KUB 7.8 ii 11	MH/NS		
⟨ḫu-wa-al-li-ši-ú-uš⟩	KBo 17.105 i 17	MH/MS	juniper (?)	non-abl. *i*-stem
⟨kap-pí-ú-uš⟩	KBo 17.105 ii 8	MH/MS	small, little	abl. *i*-stem
? ⟨MUNUS.MEŠkat-ru-ú?-uš⟩	KUB 54.66 rev. 13	OH/NS	(functionary)	oxytone *a*-stem
⟨ku-i-ú-uš⟩	HKM 23, 9	MH/MS	who	*i*-stem pron.
	KBo 18.57a obv. 2	MH/MS		
⟨ma-ši-ú-u[š]⟩	KBo 9.109 rev. 4	OH/NS	how many/much	non-abl. *i*-stem
⟨mi-e-ú-uš⟩	KUB 31.127 i 52	OH?/NS	four	? *a*- or *u*-stem
⟨pu-u-ri-ú-uš⟩	KBo 19.163 i 23	OH/NS	(offering term)	non-abl. *i*-stem
	KBo 19.163 iv 4	OH/NS		
⟨šu-up-pí-ú-uš⟩	KUB 33.41 ii 10	OH/NS	pure	abl. *i*-stem
⟨ta-lu-ga-ú-uš⟩	KBo 17.22 iii 6	OS	long	abl. *i*-stem

e-eš⟩ (KUB 58.51 ii 4; NS). However, for primary oxytone **o*-stems, we would rather expect an ending -/óːs/ from desinential **-óms#* (cf. 'witness' and the demonstrative pronouns in Section 4.1). Assuming that the pronouns constitute the most secure etymological evidence, a different explanation must be found for the endings of these words.

For *alpā-*, the sometimes postulated connection to, e.g., Lat. *albus* 'white' is not unproblematic—the Hittite word does not denote white clouds, but rather rain-clouds (Puhvel 1984: 38), and the initial vocalism is difficult to reconcile with an initial *#a-* in Latin.[29] The insecurity concerning reconstruction ren-

29 PIE **h*$_2$*elb*^{h}*o-* would have given Hitt. ***halpa-*. The word is sometimes reconstructed with

ders the word unsuitable for postulating sound laws. Additional doubt is cast on the probative value of ⟨al-pu-ú-uš⟩ by an anonymous reviewer, who suggests analysing the form as the NOM.SG.C. of *alpu-* 'pointed', with the resulting noun phrase ⟨al-pu-ú-uš ḫé-e-uš⟩ meaning 'lashing rain' rather than 'storm-clouds (and) rains' (contra the reading in García Trabazo 2002: 264–265). In ⟨MUNUS.MEŠkat-ru-ú?-uš⟩, the sign ⟨ú⟩ is impressed on the edge of the tablet and is difficult to read in the picture uploaded to the *Konkordanz* (Košak 2002–2022). An alternative reading with ⟨ru⟩ instead of ⟨ú⟩ is perhaps preferable, especially in comparison to the shape of the immediately preceding ⟨ru⟩ (cf. also the ⟨ú⟩ on line 4 with longer horizontals).[30] If this is the case, the form is misspelled and thus of low probative value. Moreover, even if the form is spelled correctly, nothing precludes an original stem in **-eh$_2$-*, for which the expected outcome of the ACC.PL.C. in **-eh$_2$-ms#* would hardly be -/us/ (see Section 4.3). Since *katrā-* refers to an animate individual, the **eh$_2$*-inflection could be attributed to the individualising function of this suffix observed elsewhere in Anatolian (Hajnal 1994: 152; Melchert 2014; Sasseville 2018: 313–314).[31] In summary, ⟨al-pu-ú-uš⟩ and ⟨MUNUS.MEŠkat-ru-ú?-uš⟩ and their apparent /u/-vocalism hold little probative value.

The type of stem underlying ⟨mi-e-ú-uš⟩ is not evident. It is often assumed to be a *u*-stem (Weitenberg 1984: 43) with some pronominally inflected forms (DAT/LOC.PL. ⟨4-ta-aš⟩). However, an *a*-stem is also possible (favoured by the Luwic evidence per Sasseville in eDiAna-ID 1440 and suggested already in Weitenberg 1972: 41–42). If it is a *u*-stem, the apparent ending -/us/ is deviant (cf. Section 4.1) and the form could potentially be understood in the same way as the formally similar ⟨ḫé-e-ú-uš⟩ (see Section 5). In either case, the dubious stem assignment renders the probative value of the form unclear pending further evidence.

For the non-ablauting *i*-stems, it is unlikely that the ending -/us/ is primary. In a position **-Cims#* the nasal would hardly vocalise and yield a back vowel; cf. the CLuw. ACC.PL.C. ending of the *i*-mutating class *-inz* (Lyc. A *-is*) going back to an *i*-stem paradigm with zero-grade in the suffix (i.e., **-Cms#*).[32] With the Luwic comparanda in mind, the expected outcome of a sequence **-Cims#* is

PIE radical vocalism in **a* (see, e.g., Weiss 2020: 45)—a contentious issue that cannot be elaborated upon here (but see Pronk 2019 for the most recent critical account). A reconstruction with initial *o*-grade is theoretically conceivable if one assumes loss of initial laryngeals before **o* (thus in Beekes 2010: 77–78).

30 I thank an anonymous reviewer for this suggestion.

31 Puhvel (1997: 137) expresses doubt that *katrā-* is an inherited word in the first place.

32 Following the historical explanation of the *i*-mutating class by Norbruis (2018) pace Rieken (2005b).

rather Hitt. -/Cis/. Accordingly, the ending -/us/ must have been analogically introduced to the non-ablauting *i*-stems from some other class. Since an ending -/is/ would render the ACC.PL.C. homonymic to the NOM.SG.C., analogical introduction of -/us/ finds a clear motivation in distinguishing the ACC.PL.C. from the NOM.SG.C.

In the ablauting *i*-stems, we consistently find -/us/. According to what we know of Hittite historical morphology, these forms supposedly continue a desinential Pre-Hittite sequence **-ai̯-m̥s#*. However, informed chiefly by the development of the ablauting *u*-stems (Section 4.1), we would rather expect -/os/ as the reflex of **-m̥s#*. Accordingly, the ending -/us/ in these forms must either have been analogically introduced, or we must modify the sound law to yield a different outcome when **-m̥s#* is preceded by **-i̯-*. In the following, it will be argued that circumstantial evidence favours the latter solution.

It has been observed in the previous section that the vocalic outcomes of word final sequences in **-ms#* are identical to those for words ending in **-m#*. By extension, we could hypothesise that this holds in the present case as well. Notably, the 1SG.PRET.ACT. of the verb *pai̯i-*^{mi} 'to go' is attested as ⟨pa-a-ú-un⟩ in MS (KBo 16.59 rev. 5) representing /páːun/. In later texts, this word is changed to ⟨pa-a-u-un⟩ (e.g., KUB 1.1 ii 23; NH/NS), indicating /páːon/. Kloekhorst (2008: 42–44) argues for a regular shift MH /aun/ > NH /aon/ to account for this development. However, the evidence for this sound law is not compelling (cf. Weeden 2011a: 68–69). Moreover, the evidence for word final MH /aun/# > NH /aon/# consists only of the item under discussion and is complicated by the ACC.SG.C. form ⟨ḫar-na-ú-un⟩ 'birth-chair' (ABoT 1.17 ii 9; MH/NS). The disambiguating plene spelling in the 1SG.PRET.ACT. form ⟨e-ep-pu-u-un⟩ /ʔépːon/ 'I seized' (e.g., KUB 1.2 ii 15; NH/NS) suggests that the regular outcome of **-Cm̥#* was Hitt. -/Con/.[33] It is therefore more attractive to assume analogy of /páːun/ >> /páːon/ to the regular 1SG.PRET.ACT. ending -/on/.[34] In either case, it is clear

33 The spelling ⟨e-ep-pu-u-un⟩ only occurs in NH. Kloekhorst (2008: 54) argues for a sound change OH /un/ > NH /on/, but the evidence here is likewise hardly conclusive and I know of no other example of this development in word final position.

34 Note that both ⟨pa-a-u-un⟩ and ⟨e-ep-pu-u-un⟩ occur in the same manuscript of CTH 81 ("The Apology of Hattusili"). Melchert (2020: 268–269) argues that the spelling ⟨e-ep-pu-u-un⟩ is modelled on ⟨pa-a-u-un⟩, both showing a regular reflex -/on/ < **-m̥#* (Melchert does not regard MH ⟨pa-a-ú-un⟩ as probative; see the beginning of Section 2.2). The first claim is reasonable and provides a plausible motivation beyond disambiguation for the plene spelling in ⟨e-ep-pu-u-un⟩. Conversely, the second claim that ⟨pa-a-u-un⟩ has a directly inherited ending in -/on/ stands in contradiction to the argument put forward here. Note, however, that the spelling ⟨e-ep-pu-u-un⟩ being modelled on that of ⟨pa-a-

that Pre-Hitt. **pā́i̯m̥* (< virtual *$h_1$pói-h_1(e)i-m*) gave MH /pá:un/. The evidence thus suggests the same vocalic outcome in /u/ from *-*i̯m̥s#* and *-*i̯m̥#*, separate from the outcomes in /o/ for *-*Cm̥s#* and *-*Cm̥#* determined in the previous section. Differential treatment is phonetically justifiable—raising of a vowel following the palatal *-*i̯*- with its associated raising of the tongue is unsurprising; cf. the Luwic sound law **i̯e* > **i̯i* (Melchert 1994: 262 & 311).[35]

4.3 *The* ACC.PL.C. *ending of the barytone* a*-stems*

We are now left with one important stem class unaccounted for: the barytone *a*-stems. It is unfortunate that we have no securely probative plene spellings of ACC.PL.C. endings for this type—they are virtually always spelled with a single ambiguous sign -⟨uš⟩.[36] This is hardly surprising, however, since the ending was never accented nor long and a Hittite speaker would have had no problem knowing which allomorph was grammatical.

The input stems for the barytone *a*-stem class are the **o*-stems and the *eh_2-stems. For the original *eh_2-stems, the ending -*us* (either -/us/ or -/os/) cannot be primary—an input sequence *-eh_2-ms#* would hardly yield either -/us/ or -/os/.[37] Regarding the original **o*-stems, one could attempt to trace the ending -*us* directly to *-*oms#*. However, there are reasons to doubt that this is correct.[38] A strong parallelism has been observed between the outcome of sequences with a word-final **m* to those with a final **m* + **s*. Following this parallelism, we

u-un⟩ does not imply that the ending -/on/ is primary in ⟨pa-a-u-un⟩, only that the form was /pá:on/ at the time of writing, i.e., post-analogy in the scenario argued for here.

35 I thank an anonymous reviewer for this suggestion.

36 The possible *a*-stems ⟨mi-e-ú-uš⟩ and ⟨mi-ni-u-uš⟩ are argued to have low probative value in the preceding sections. It is most unlikely that both are *a*-stems, given that they suggest separate ending vocalisms. It is also possible that neither is an *a*-stem, in which case ⟨mi-e-ú-uš⟩ reflects a late shift of a *u*-stem to using -⟨ú-uš⟩ (cf. Section 5 on *hēu*-), while ⟨mi-ni-u-uš⟩ could be understood as a spelling error. The arguably more likely situation is that ⟨mi-ni-u-uš⟩ reflects a genuine *a*-stem, indicating -/os/, since this would avoid spelling error as an explanation and since ⟨ú⟩-spelling in ⟨mi-e-ú-uš⟩ as a *u*-stem is comparable to ⟨ḫé-e-ú-uš⟩. In either case, however, neither example is probative enough to determine the regular ending of the barytone *a*-stems with any certainty. For ⟨ḫa-an-te-ez-zi-ú=ša⟩, cf. n. 28.

37 The expected output of *-eh_2-ms#* would probably be -/as/, displaying "extended" (i.e., laryngeal-affecting) Stang's law-like treatment of the laryngeal (Stang 1970: 43); cf. *du̯éh$_2$m* > /twān/ 'hither, thither' (Melchert 1984: 30). The attested ending -*us* is thus in all likelihood secondary. On the issue of Stang's law, the laryngeals cannot be trivially equated with the resonants (cf. Byrd 2015: 141–142; Pronk 2016) and the law as it pertains to resonants still remains dubious in Anatolian (cf. n. 22 and Lyd. *ciwv* 'god' ACC.SG. < **diéum*).

38 Melchert (2020: 271) likewise strongly doubts the validity of the ad hoc sound law *-*oms#* > Hitt. -/us/.

may entertain the notion that *-*oms*# would give Hitt. -/as/.[39] Note that the outcome of unaccented PIE *-*ōn-s*# is -/as/ (through PA *-*ons*# with a short vowel; see Melchert 1994: 76), e.g., Hitt. ⟨ha-a-ra-aš⟩ 'eagle' < PIE **h*$_3$*ér-ōn-s*.

Following Melchert (2020: 271–272), there is potentially positive evidence that the regular outcome of *-*oms*# is Hitt. -/as/. The word $^{\text{NINDA}}$*wagātas*- 'piece of bread (vel sim.)' is often analysed as a primary *s*-stem (Neu 1983: 208; Rieken 1999: 196–197; Kloekhorst 2008: 940), which in later Hittite becomes a common gender *a*-stem *wagāta*-; cf. ACC.SG. ⟨$^{\text{NINDA}}$wa-ga-ta-an⟩ (KUB 10.28 i 12; OH/NS).[40] It is also generally connected to the verb *wāk-^{hi}*/wakk*- 'to bite'. The reason for postulating an original *s*-stem comes from a number of OS attestations where a form ⟨wa-ga(-a)-t/da-aš⟩ is the direct object of the clause, always preceded by numbers higher than one.[41] However, an original *s*-stem is deeply problematic. First of all, as pointed out by Melchert, a collective formation *wagāta* (see Rieken 1999: 197 for attestations) is highly unlikely to be a recent creation to a new stem *wagāta*-, as this process has only been observed in OH (Melchert 2000: 65). Secondly, as conceded by Kloekhorst and Rieken, a noun with a suffixal complex *-*ó*/*éh$_2$-tos*- is difficult to make sense of etymologically—there are no known morphological parallels among the Anatolian languages. These problems are resolved if we rather assume an original common gender **o*-stem with an archaic ACC.PL. in -/as/.[42] Such an interpretation is coherent with all aforementioned OS attestations. Accordingly, see examples (1) and (2).[43]

39 This has been suggested already by Oettinger (1976: 25–26), who saw the *u*-vocalism as intrusive in the ACC.PL.C. enclitic pronoun =*us*, coming from athematic nouns with an ending originating in *-*ṃs*. The original form would as such be =/as/ < *-*oms*#. Note that the difference between /o/ and /u/ was not yet discovered at the publication of Oettinger's book, however.

40 For the post-OS attestations with ⟨$^{\text{NINDA}}$wa-ga-t/da-aš⟩ on KUB 2.6 v 38 (OH/NS) and KBo 16.68 i 7 (OH/MS), a partitive genitive use is likely underlying with the new GEN.PL. ending -/as/. This is clear on KUB 2.6 v 37–40, where the word is referred back to by means of the common gender enclitic pronoun =/an/: *nu=kan IŠTU* $^{\text{GIŠ}}$BANŠUR DINGIR^{LIM} 1 $^{\text{NINDA}}$*wagatas* [ ] *dāi nan ANA* $^{\text{LÚ.MEŠ}}$E.DÉ.A $^{\text{URU}}$*Arinna pāi* 'he takes one of the pieces of bread and gives it to the blacksmiths of Arinna'. For the rare partitive genitive, see Hoffner & Melchert (2008: 252).

41 This goes for all attestations where the preceding sign is visible. On others, such as KBo 20.5 rev. 5, the preceding sign is broken off.

42 This analysis was made already by Hoffner (1974: 188).

43 The other examples occur in contexts too fragmentary to allow grammatical analysis. Note that also on KBo 25.79 obv. 8 the form ⟨$^{\text{NINDA}}$wa-ga-a-ta-aš⟩ is preceded by the numeral ⟨2⟩, but since this text is a list the nominative may be the underlying case (see Hoffner & Melchert 2008: 243).

(1) **KBo 20.33 obv. 12 (OS)**
⟨[LÚKA]Š$_4$.E tar-aḫ-zi ku-iš 1 MA.NA KÙ.BABBAR *Ù* 2 NINDAwa-ga-da-aš pí-an-zi⟩
LÚKAŠ$_4$.E *tarahzi* *kuis*
runner:NOM.SG.C. win:3SG.PRES.ACT. who:NOM.SG.C.
1 MA.NA KÙ.BABBAR *U* **2 NINDA*wagad-as***
1 mina of silver and **2 pieces of bread-ACC.PL.C.**
pianzi
give:3PL.PRES.ACT.
'The runner who wins, (to him) they give one mina of silver and two pieces of bread'

(2) **KBo 20.4 obv. 6 (OS)**
⟨LÚSANGA pár-ši-ia-an-na-i 16 NINDAwa-ga-ta-⌜aš⌝⟩
LÚSANGA *parsiyannai*
priest:NOM.SG.C. break(IMPF.):3SG.PRES.ACT.
16* NINDA*wagat-as
16 pieces of bread-ACC.PL.C.
'The priest is breaking 16 pieces of bread'

This analysis solves the issue of word formation—derived formations in **-o-to-* are well attested in Anatolian (see Melchert 1999: 368–372). Moreover, the word is rendered semantically coherent: it is an *āta*-derivation of the verb 'to bite', fitting its meaning as a type of bread.[44] There can be no doubt that the penultimate syllable is accented on account of the frequent plene spelling and the lenition of the original suffix **-to-* by Eichner's first lenition law, consequently proving that the ending syllable was unaccented.[45]

David Sasseville (pers. comm.) notes that the possibility of NINDA*wagāta-* going back to an original common gender stem formed with the suffix **-teh$_2$-* should be considered as well.[46] If the ACC.PL. *wagātas* goes back to a form in **-teh$_2$-ms#*, it cannot reveal anything about the outcome of **-oms#*. However, the **teh$_2$*-class is poorly represented in Hittite with only three possible continuants, all of which have been reanalysed as neuter stems (see Rieken 1999: 250–258 for a comprehensive treatment). Moreover, according to Rieken, the

44 On account of the root meaning perhaps '(bite-sized) piece of bread' or, with Badalí & Zinko (1989: 81), 'Imbißbrot'.

45 It is potentially controversial to posit an accented *o*-grade as the leniting factor. One could also follow Rieken (1999: 197) and Melchert (2020: 272) and posit the base for the *to*-derivation to be a formation with **-éh$_2$-*, i.e., **uVh$_2$g-éh$_2$-to-* instead of **uVh$_2$g-ó-to-*.

46 See Sasseville 2015: 291–292 for evidence of this class in Luwic.

semantics of the suffix in Hittite concern possession, which is hardly compelling for NINDA*wagāta-*. For these reasons, Melchert's analysis is given credence here, although an original stem with desinential *-*eh*$_2$- cannot be excluded formally.

Provided that the analysis of NINDA*wagāta-* in the preceding paragraphs is correct, it stands to reason that all the common gender barytone *a*-stems, a large nominal class, received their ACC.PL. ending from another stem type. This would be unsurprising on account of the resulting case ambiguity—the ACC.PL., GEN.SG., NOM.SG., and DAT/LOC.PL. would all have the same ending -/as/ in earlier stages of Hittite, motivating the introduction of new ending. The situation is thus comparable to that of the non-ablauting *i*-stems (see Section 4.2).

4.4 *Analogical spread of ACC.PL.C. endings*

In some stem types, prominently the non-ablauting *i*-stems and the barytone *a*-stems, we find an ACC.PL.C. ending allomorph different from what we may plausibly derive by sound law. Thus, the endings for these classes ought to be secondary. The motivation for analogy has been made clear in the preceding sections: the stems in question ended up with indistinguishable ACC.PL.C. endings by sound law (*-/is/ and -/as/, respectively), creating pressure to adopt new endings.

For the non-ablauting *i*-stems, it is evident that their secondary ending is -/us/. The most likely model is found in the ablauting *i*-stems, which received the ending -/us/ by sound law. This spread thus implies that the ending -/us/ became associated with *i*-stems in general. As for the barytone *a*-stems, it is not possible to determine whether they received -/us/ or -/os/ with any certainty. The source of their ending is therefore better left unstated.

4.5 *Proposed sound laws and the behaviour of final* ***-ms#**

All etymological inputs required for the proposed scenario to be valid have been established in Sections 4.1 through 4.3. It is notable that the outcomes of sequences ending in *-*ms#* are symmetrical to those already commonly assumed for sequences ending in *-*m#* with regard to vocalism. For clarity, all these sound laws are presented in Table 4 along with examples for each development.

If the sound laws in Table 4 are correct, an improved economy in Hittite historical phonology is possible by postulating uniform behaviour of **m* word finally and before word final **s*. Firstly, we can subsume the conditioned vocalisations of *-*m̥#* and *-*m̥s#* to Hitt. /u/ and /o/ under the same sound law, yielding Pre-Hitt. *-/um(s)/ and *-/om(s)/, respectively. The outcomes of the

TABLE 4 Proposed sound laws

Sound law	Example
PIE *-*om#* > Hitt. -/an/	**péd-om* > /pé:tan/ 'place'
PIE *-*oms#* > Hitt. -/as/	**uVh$_2$g-ó/éh$_2$-to-ms* > /uaká:tas/ 'pieces of bread'
Pre-Hitt. *-*V̆i̯n̥#* > Hitt. -/Vun/	Pre-Hitt. **pă̆i̯n̥* > MH /pá:un/ 'I went'
Pre-Hitt. *-*V̆i̯n̥s#* > Hitt. -/Vus/	virtual **?d^{h}olug^h-ei-ms* > /talukaus/ 'long'
PIE *-*Cm#* > Hitt. -/Con/	**h$_1$ép-m* > /ʔép:on/ 'I seized'
PIE *-*Cms#* > Hitt. -/Cos/	virtual **h$_1$eduól-eu-ms* > /ʔitá:lamos/ 'bad, evil'
PIE *-*óm#* > Hitt. -/ó:n/	**ḱóm* > /kó:n/ 'this'
PIE *-*óms#* > Hitt. -/ó:s/	**ḱóms* > /kó:s/ 'these'

thematic vowel before *-*m*(*s*)# (i.e., /a/ and /ó:/) are likewise coherent under such a model. Moreover, **m* has been argued to assimilate to a following **s* in a sequence *-*VmsV*-, yielding a fortis sibilant -/Vs:V/-; cf. Hitt. *hassu-* 'king' < **h$_2$éms-u-* (Kloekhorst 2008: 327–328).[47] I see no barrier to extending this conditioning to also include *-*Vms#*. Lastly, the fortis/lenis distinction for /s/ is lost word finally in Hittite. We can consequently subsume the loss of the nasal under two independently established sound laws, i.e., Pre-Hitt. *-*ms* > */s:/ and Pre-Hitt. */s:/# > /s/. This scenario is more economical in that the assumption of uniform behaviour of **m* word finally and before final **s* can explain several developments, while removing the necessity for special pleading for the sequence *-*ms#* (e.g., *-*oms#* > -/us/ or -/os/, *-(*o*)*ms#* > OH *-/ụs/ > NH -/ǫs/, etc.). The only necessary additional assumption is the separate vocalisation of *-*m̥*(*s*)# to /u/ instead of /o/ after a consonantal *-*i̯*-, which has an articulatory justification and can explain both the ACC.PL.C. ending -/us/ and the -/u/- in ⟨pa-a-ú-un⟩ /pá:un/ 'I went'.

5 The ACC.PL.C. of *hēu-* 'rain'

The word for which we have the highest amount of plene attestations in the ACC.PL.C. ending, Hitt. *hēu-* 'rain', has not been included in the preceding dis-

47 But note also the diverging opinions summarised in Kimball (1999: 331–332). If completely uniform behaviour of **m* word finally (> /n/) and before final **s* is assumed, it would also be conceivable that the assimilation occurs at a point at which the **m* has yielded an intermediate **n*, a less controversial development (see Kimball 1999: 326–327).

TABLE 5 Plene spelled Hittite ACC.PL.C. forms of *hēu-* 'rain'

Form	Place	Dating	Plene vowel
⟨ḫe-e-mu-ú-uš⟩	KBo 43.137, 7	NS	⟨ú⟩
⟨ḫé-e-ú-<uš>⟩	KUB 28.5 ii 13	MH?/LNS	
⟨ḫé-e-ú-uš⟩	KUB 16.37 iv 6	NH/NS	
	KUB 28.4 ii 19	MH?/NS	
⟨ḫé-e-u-uš⟩	KBo 13.245 rev. 7	NH/NS	⟨u⟩
	? KUB 19.50 iv 27	NH/NS	
	? KUB 7.5 i 17	MH/NS	

cussions. This is due to the complicated vacillation between ⟨u⟩ and ⟨ú⟩ and the fact that there is no plene spelled attestation of the *directly inherited* ACC.PL. form of this noun.

In Table 5, all plene spelled ACC.PL.C. forms of Hitt. *hēu-* 'rain' are listed.[48]

It is not assured that the attestations of ⟨ḫé-e-u-uš⟩ on KUB 19.50 and KUB 7.5 are plural and not NOM.SG. forms. On KUB 19.50, ⟨ḫé-e-u-uš⟩ is preceded and followed by plural forms (⟨IM-te-eš$_{17}$⟩ 'winds' and ⟨al-pu-uš⟩ 'clouds', respectively, all witnesses of a treaty), so a plural interpretation seems reasonable, but is not forced.[49] On KUB 7.5, the form appears in subject position along with ⟨ḫu-u-wa-an-te-eš⟩ 'winds' (NOM.PL.C.), taking a 3PL.PRES.ACT. verb ⟨wa-al-ḫa-an-ni-ia-an-zi⟩ 'beat', and is as such completely ambiguous as to whether it is singular or plural.[50] These two forms are thus less probative than the rest, although the remaining attestation of ⟨ḫé-e-u-uš⟩ on KBo 13.245 at least proves that the spelling -⟨u-uš⟩ existed.

The original ACC.PL. form for rain is represented by ⟨ḫe-e-a-mu-uš⟩ (KUB 33.9 iii 10; OH/NS) and ⟨ḫé-ia-mu-uš⟩ (KBo 34.110 obv. 9; OH/NS), reflecting an underlying sequence /χé:amos/. This is the expected form for an ablauting *u*-stem; cf. the older NOM.PL. form ⟨ḫé-e-a-u-e-eš⟩ /χé:aues/ (KUB 29.3,

48 The emendation of ⟨ḫé-e-ú-<uš>⟩ on KUB 28.5 follows Kloekhorst (pers. comm.) in comparison to the form ⟨ḫé-e-ú-uš⟩ on the duplicate tablet KUB 28.4.

49 Singular per Puhvel (1991: 301) and Friedrich et al. (2010: 577), plural per Beckman (1996: 81) and Kloekhorst (2008: 340).

50 Singular per Hoffner (1987: 277), Puhvel (1991: 301), and Mouton (2007: 137), plural per García Trabazo (2002: 455) and Kloekhorst (2008: 340). Friedrich et al. (2010: 577) remain agnostic.

8; OS). Although the final sign sequence -⟨mu-uš⟩ leaves the ending vocalism unspecified, we can surmise that the inherited ending must have been -/os/ on the basis of /ʔitá:lamos/, which belongs to the same original stem type (see Section 4.1). The originally ablauting stem *hē(a)u-* is changed into a non-ablauting *u*-stem *hēu-* from MH times onwards (Weitenberg 1984: 379–380; Kloekhorst 2008: 341). As such, it is clear that the forms ⟨ḫé-e-u-uš⟩, ⟨ḫé-e-ú-uš⟩, and ⟨ḫe-e-mu-ú-uš⟩ are all later secondary formations, exclusively appearing in NS texts, some in NH compositions. Among these forms, those spelled with ⟨ú⟩ run counter to what we would expect for a *u*-stem.

There seem to be two main possibilities available to explain the unexpected forms with ⟨ú⟩. One option is to assume some productivity of -/us/ at a very late stage of the language, ⟨ḫé-e-u-uš⟩ representing an older form /χé:os/.[51] In support of this, there are a few indications that the tablets displaying -⟨ú-uš⟩ were written later. The tablet KUB 28.5 containing -⟨ú-uš⟩ is classified as LNS in the *Konkordanz* (Košak 2002–2022). Moreover, the younger version of the sign ⟨ḫa⟩, indicative of the latest NS layer IIIc (Weeden 2016: 163 with further references), occurs in all tablets except KBo 13.245, which displays -⟨u-uš⟩, itself dated to Muwatalli II at the earliest (cf. Galmarini 2013: 338[4]). Note, however, that the IIIc ⟨ḫa⟩ also occurs in KUB 16.37 obv. 7 containing -⟨ú-uš⟩. We may also adduce the use of the logogram ⟨UGU⟩ 'up' on KUB 16.37 with -⟨ú-uš⟩ (ii 7), which in historical texts is almost exclusively attested from the time of Hattusili III and onwards (Weeden 2011b: 553 & 627), i.e., post-Muwatalli II.[52] Complicating the picture, KUB 19.50 with a less probative form in -/os/ contains the IIIc version of ⟨ki⟩ with an additional vertical and the fragment KBo 43.137 with the puzzling form ⟨ḫe-e-mu-ú-uš⟩ contains the older version of the sign ⟨ik⟩.[53]

51 The form ⟨ˈerˈ-ḫu-ú-š=a=kán⟩ was determined as non-probative in Section 2.1. However, if there was some late productivity of -/us/, it is possible that this form was formed at a stage in the language at which the sequence /χu/ was permitted (note the NS attestation).

52 The logographic writing ⟨DÙ-zi⟩ 'does' on the same tablet (iv 6) may also be relevant, since it is common in historical texts from Hattusili III onwards, but less so since it is also frequent in texts of Mursili II (Weeden 2011b: 360–361). The fact that KUB 16.37 is an omen text, a genre where "late" scribal practices may have been more widespread at an earlier time, should also be kept in mind (cf. Weeden 2011b: 362–363).

53 Melchert (2020: 271) also concedes that the form is puzzling and attributes it to a spelling error. This would certainly align with the argument put forward in the present article, as an erroneous spelling for ⟨u⟩ (i.e., reflecting /χé:mos/) is expected on account of the *u*-stem declension.

The second option is to allow for spellings in -⟨u/ú-uš⟩ to represent a phonetic sequence -[wVs] in these forms (an exception to the principle postulated in Section 2.2), in which case the ending vowel is indeterminable. In favour of this we may adduce the variable spelling of the NOM.SG. form with ⟨ḫé-e-ú-uš⟩ (KUB 19.14, 9; NH/NS) vs. ⟨ḫé-u-uš⟩ (KBo 3.7 ii 22; OH/NS, NOM.SG. with Hart 1976) and of the ACC.SG. with ⟨ḫé-i-ú-un⟩ (KBo 3.7 ii 25; OH/NS, a text containing ACC.PL.C. ⟨ḫé-u-uš⟩) vs. ⟨ḫé-e-u-un⟩ (KBo 3.21 ii 25; MH?/MS).[54] The form ⟨ḫe-e-mu-ú-uš⟩ remains unexplained under this scenario and must probably be attributed to a spelling error (cf. Melchert 2020: 271). If this second solution is valid and if the formally reminiscent form ⟨mi-e-ú-uš⟩ 'four' (ending following /e/) belongs to a *u*-stem, it is possible that it should be understood in the same way. Which of the two solutions presented in this section is most parsimonious will be left unstated here, as the evidence is insufficient to make any confident statements in either direction.

6 Summary

Below is a summary of the main points constituting the thesis put forward in this paper:

1. There are two main ACC.PL.C. allomorphs in Hittite, i.e., -/us/ and -/os/ (four if -/óːs/ is counted separately and the marginal -/as/ is included).
2. The distribution of the endings is largely contingent on the original stem class of the nominal stem. All endings are listed with evidence for each stem in Table 6.
3. The regular PIE input sequences for the allomorphs are determinable by this distribution (summarised in Table 4, Section 4.5). The sound laws postulated for **-*ms*#* are symmetrical to those with **-*m*#* with regard to vocalism.
4. The ending -/us/ spread from the ablauting *i*-stems to the non-ablauting *i*-stems. The ACC.PL.C. ending of the barytone *a*-stems was also analogically introduced, although it remains unclear which ending spread and from where.

54 There are many attestations of ACC.SG. forms with plene-spelled endings, showing no obvious chronological distribution; cf. ⟨ḫé-e-u-un⟩ (KBo 21.12, 9; NS), ⟨ḫé-e-ú-u[n]⟩ (KUB 25.23 iv 57; NH/NS), and ⟨ḫé-e-ú-un⟩ (KBo 10.25 ii 3; OH/NS, KBo 25.176 obv. 12, 14, rev. 20; OH/NS).

TABLE 6 Distribution of ACC.PL.C. allomorphs

Allomorph	Stem	Evidence
-/us/	ablauting *i*-stems	E.g., ⟨$^{\text{NINDA}}$ḫar-ša-ú-uš⟩
	non-ablauting *i*-stems	E.g., ⟨a-ú-li-ú-uš⟩
-/os/	ablauting *u*-stems	E.g., ⟨[i-da-]la-mu-u-uš$^{!}$⟩
	(?) non-ablauting *u*-stems	⟨a-ku-u-uš⟩ (if it is an original *u*-stem)
-/óːs/	demonstrative pronouns	⟨ku-u-uš⟩, ⟨a-pu-u-uš⟩
	oxytone *a*-stems	⟨ku-ut-ru-u-uš⟩ (remodelled original *n*-stem)
-/as/	barytone *a*-stems (marginal and early)	⟨wa-ga-ta-aš⟩ in OS

This is to my mind the optimal scenario to account for the forms in Table 1 (Section 2). As an alternative, one could also envision a scenario in which a source of -/us/ was the primary barytone **o*-stems, either in addition to or instead of the ablauting *i*-stems.[55] Under this analysis, an unaccented PIE sequence **-oms#* would give Hitt. -/us/. I hold this to be less probable for the following reasons:

1. There is to my knowledge no solid positive proof of -/us/ (nor of -/os/) as the ending of the barytone *a*-stems.
2. Hitt. $^{\text{NINDA}}$*wagāta-* discussed in Section 4.3 would remain problematic.
3. The parallel developments in Table 4 (Section 4.5) would be rendered invalid, leading to a less economical scenario in terms of historical phonology. The input sequence **-oms#* would require special pleading in relation to the outcome of **-om#*.

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55 Postulated already by Hrozný (1917: 47–48). This would be a way out if the development **-i̯ms#* > Hitt. -/ius/ or the Pre-Hittite syllabification discussed in n. 22 were perceived as implausible.

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