Voices in stone: Studies in Luwian historical phonology

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CHAPTER 2

Signs of Length
Towards an interpretation of non-filling plene spellings in Hieroglyphic Luwian

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Abstract: In Chapter 1, it was argued that *plene spellings* (CV-V sign sequences) in Hieroglyphic Luwian can be divided into two types: space-fillers on the one hand, and non-fillers on the other. This chapter focuses on plene spellings of the latter kind, as attested in texts from the Iron Age. It is demonstrated that these non-filler plene writings are non-randomly distributed across morphemes and lexemes, indicating that this mode of spelling marks a phonetic feature. Using secure etymologies and analyses, it is proposed that non-filler ("linguistically real") plene spellings mark the presence of long vowels or disyllabic sequences. The validity of this hypothesis is subsequently tested against less secure and doubtful etymologies as well as counterexamples. Finally, it is concluded that the hypothesis holds, thereby providing, for the first time, direct evidence for the writing of vowel length in Hieroglyphic Luwian.

2.1 Introduction

Hieroglyphic Luwian texts contain one or multiple horizontal lines, whose reading direction changes boustrophedonically with every line: after each line which is read left-to-right, the next one is to be read right-to-left and vice versa. The lines themselves are made up of vertical 'sign columns', each containing around two to four signs which are read from top-to-bottom. The signs themselves fall broadly into one of two categories. On the one hand, there are logograms, which are transliterated with capitals and represent an underlying concept or word, e.g. DARE for *piya-* 'to give'. Syllabograms, on the other hand, are used to spell out words phonetically and are transliterated using italics e.g. *pi-ia-ha* 'I gave'. They mainly consist of combinations of a consonant and a vowel. In addition, there is also a special sign which indicates the word boundary ( ; incised variant:), transliterated as |. With

very few exceptions, this sign is placed at the top of a sign column, indicating that the beginning of a new word regularly coincides with the beginning of a new sign column, cf. Figure 2.1.

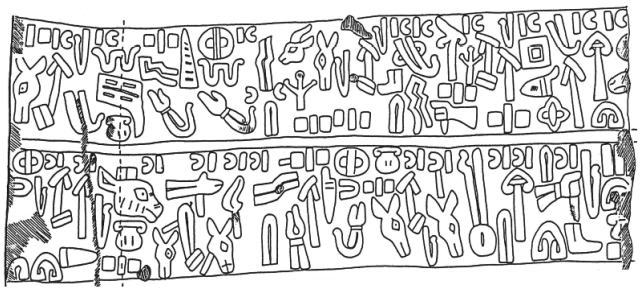

Figure 2.1: TELL AHMAR 5, lines 2–3; Hawkins 2000 (plate 96).

This example shows another marked tendency found in Hieroglyphic Luwian texts, namely the use of all available space. There are hardly any substantial gaps in the texts, which is a feature common to all texts datable to the Iron Age.

On numerous occasions, we encounter a conspicuous phenomenon in the HLuw. texts transmitted to us, whereby the vowel of a CV-sign is graphically doubled by a separate vowel sign, such as *-ta-a-*, *-mi-i-* and *-nu-u-*. This feature has been called *plene writing* in analogy to structurally similar graphic practices in the cuneiform languages. The presence of plene writing in Hieroglyphic Luwian has not attracted much scholarly attention over the years, although it is a common feature in nearly all texts of the Iron Age corpus. In addition, plene-spelled vowel signs often stand out for their appearance in places where they do not seem to have any linguistic significance. This is exemplified well by ASSUR letter *e* § 23 |*sa-na-wa*/*i-zi-na-a* 'good' (acc.sg.c.), cf. Figure 2.2.[1]

As this word is an acc.sg.c., we expect it to end in /-n/, and simply the sign <na> 𔓱 would express this ending sufficiently. Following <na>, however, the stonemason added <a> 𔓳, which cannot represent a real phonetic or phonological vowel (in which case we would have to read /-na/). For this

[1] In this as well as every subsequent figure, the black arrow indicates the direction of reading.

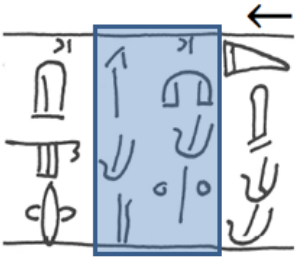

Figure 2.2: ASSUR letter *e* § 23 |*sa-na-wa*/*i-zi-na-a*; Hawkins 2000 (plate 311).

reason, word-final <a> is generally interpreted as a space-filler, which serves no linguistic purpose but is merely employed to fill the remaining space below <na>, ensuring that the scribe could start a new word at the beginning of a new sign column without leaving a gap. To mark its linguistic irrelevance, this <a> is commonly transliterated as <'>, yielding the transliteration |*sa-na-wa*/*i-zi-na-*' we find in Hawkins 2000: 536.

As I have argued in Section 1.2, this use of plene vowel signs as space-fillers is not limited to the sign <a> and the MARAŞ and ASSUR subcorpora. In fact, it may account for hundreds of plene writings of not only <a>, but also <i> and <u> in the entire Iron Age corpus. Good examples of <i> and <u> in their use as space-fillers are not difficult to find. Two examples are KARKAMIŠ A2+3 § 24 |(DEUS)TONITRUS-*tá-ti-i* (DN; abl.-ins.) and ANCOZ 7 § 14 |*á-sa-tu-u* 'be' (3pl.imp.act.), cf. Figure 2.3.

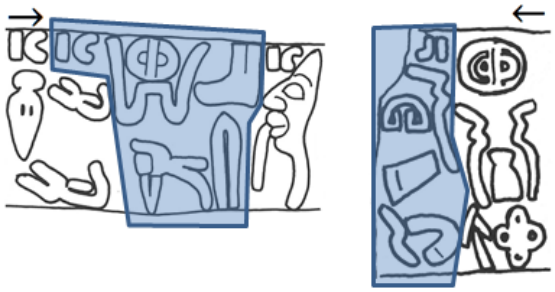

Figure 2.3: KARKAMIŠ A2+3 § 24 |(DEUS)TONITRUS-*tá-ti-i* and ANCOZ 7 § 14 |*á-sa-tu-u*; Hawkins 2000 (plates 21 and 186, respectively).

The ablative-instrumental ending /-aθi/ of the first example and the 3rd person (sg./pl.) imperative ending /-(n)tu/ of the second example both have cognates in other Anatolian languages, from which we can safely infer that they must have ended in short unaccented vowels. The signs <ti> and <tu> would be perfectly capable of expressing these vocalic values by themselves, leaving the plene <i> and <u> unexplainable in linguistic terms. However, since <i> and <u> seem to fill a gap at the bottom of their respective sign columns, these are also best interpreted as space-fillers. In order to mark all three space-filling vowel signs in a uniform way, I have suggested transliterating them using superscript: $^{-a}$, $^{-i}$ and $^{-u}$. For the three words treated thus far, this yields: |*sa-na-wa*/*i-zi-na*$^{-a}$, |(DEUS)TONITRUS-*tá-ti*$^{-i}$ and |*á-sa-tu*$^{-u}$.

In the same chapter (Section 1.3), however, it was argued that not all cases of plene writing can be explained through space-filling. Many plene spellings did not help the scribe to fill a space which he would otherwise have to leave unwritten. Good examples are the <a> in KARKAMIŠ A11*c* § 33 *za-a-ti-ia-za* 'this' (dat.-loc.pl.); the <i> in BABYLON 1 § 9 (DEUS)TONITRUS-*ti-i* (DN; dat.-loc.sg.); the <u> in SULTANHAN § 26 *wa*/*i-tu-u* 'he' (enclitic 3sg.dat.-loc.), cf. Figure 2.4.

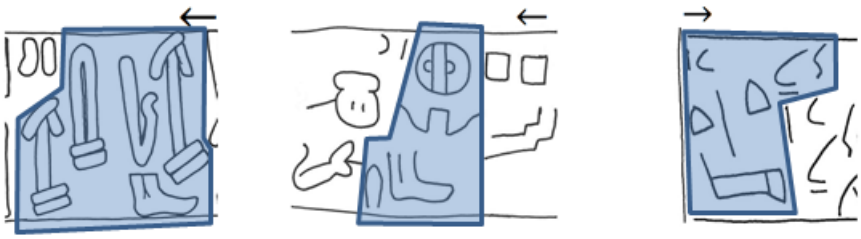

Figure 2.4: KARKAMIŠ A11*c* § 33 *za-a-ti-ia-za*, BABYLON 1 § 9 (DEUS)TONITRUS-*ti-i* and SULTANHAN § 26 *wa*/*i-tu-u*; Hawkins 2000 (plates 17, 210 and 259, respectively).

In *za-a-ti-ia-za*, the <a> does not fill a specific gap at the end of a word. In fact, the scribe could have omitted <a> and written <ti> and <ia> on top of each other in a separate column, which would have been more space-efficient. In the second example, the signs <DEUS>, <TONITRUS> and <ti> form a separate sign column which neatly reaches the bottom of

the line. The placement of <i> does not contribute to a more efficient use of available space and does not fill any impending gaps. Therefore, it must have been placed there for another reason than mere aesthetics. Lastly, the sign <u>  in *wa*/*i-tu-u* is also clearly not written in order to close off a sign column. Rather, it opens up a new one and even causes the next word to start halfway down the second sign column, which clearly deviates from common Iron Age practice. This indicates that the <u> was not used as a space-filler here and that the scribe of SULTANHAN must have added it for another reason.

These three examples are far from unique: in Hawkins' 2000 corpus of Iron Age Hieroglyphic Luwian inscriptions, I have found a total of 517 plene spellings that are not easily explainable as space-fillers. These 'non-filling' plene spellings form the main focus of this study, which aims to provide a plausible account for their presence.[2]

2.2 Systematic contrast

Assuming that the 517 plene spellings mentioned above were not written out of a need for space-filling, the question that then arises is: why *were* they added? Two plausible hypotheses spring to mind. First, these plene spellings might serve some aesthetic function, perhaps as another mode of space-filling. Second, they could mark a linguistic feature: word accent, vocalic length, vowel nasality, vel sim.

We can evaluate these two hypotheses by looking at the lexical items in

[2] Note that under the current definition, plene writings in the middle of the word, like the *i* in SULTANHAN § 21 DEUS-*ni-i-zi* 'god' (nom./acc.pl.) will be counted as non-filler plene writings, under the assumption that the scribe also could have written DEUS-*ni-zi-i*, with a sure space-filler, as attested in, e.g., KULULU 1 § 13. Naturally, one may disagree with this and analyse both (i.e. word-internal and word-final) plene spellings as potential space-fillers. Extending the definition of space-fillers in this way allows for an easier explanation for the difficult data presented in Section 2.7. On the other hand, it also requires one to account for the coexistence of two space-filling techniques (i.e. word-final and word-internal space-filling). For this research, only data from Hawkins 2000 has been taken into account. Plene spellings in Empire period texts and texts published after 2000 await their own treatment.

which these plene spellings are found. In the case of the first hypothesis, we would expect to find plene vowel signs embedded in or attached to a wide variety of morphemes or lexemes without any meaningful pattern; in that case, the presence of a non-filling plene spelling would then be independent of the phonetic or phonological shape of its host. In the other scenario, we would rather expect the opposite: the non-filling plene spellings would then be limited to a select group of morphemes or lexemes. Some elements would show consistent or at least frequent use of plene writing, while others would not show any at all. This would indicate that their non-filling plene writing marks a specific phonetic peculiarity of certain morphemes or lexemes that the scribe wanted to express. A short investigation into the spelling of certain HLuw. lexical items, chosen for their relatively frequent occurrence, yields the following results, cf. Table 2.1.[3]

	Non-filling plene spellings	**Non-plene spelling**	**Space-filling plene**
á-mi- 'my' (nom.+acc.c.)	22	46	0
á-pa- 'that'	0	131	1
CUM-*ni* 'with'	0	116	0
(DEUS)*ku*-AVIS-*pa-pa-* (DN)	0	29	0
i-zi- 'to do'	53	5	2
kwa/i- 'who, which'	54	88	0
ni- 'not'	9	8	11
tá-ti-(*ia-*) 'father(ly)'	0	50	0
wa/i-ni-t° 'stele'	0	19	0
za- 'this' (nom.+acc.c.)	30	74	1

Table 2.1: Distribution of non-filling plene spellings and non-plene spellings

[3] Omitted from this count are damaged and emended words as well as those whose phonological structure is obscured by logographic writing.

The distribution is clear: some vowels, such as the second *i* in *i-zi-*, the vowel in *kwa/i-* and the *a* in *za-* show non-filling plene writing quite often, while other vowels such as the *a* in *tá-ti-* and the *i* in CUM-*ni* never show non-filling plene writing. This indicates that non-filling plene writing was apparently reserved for words of a particular phonetic structure. In other words: some vowels (second *-i-* in *i-zi-i-*, *-a-* in *za-a-*) carry a certain linguistic property which the scribes could express by using non-filling—henceforth: 'linguistically real'—plene spellings. Other vowels (*-i-* in CUM-*ni*, second *-a-* in *á-pa-*) lacking this feature were never written as such.[4] This indicates that linguistically real plene writing is not a random phenomenon. Rather, it contrasts with non-plene writing and marks a linguistic, presumably phonetic, property which is present in some, but certainly not in all words.[5]

At the same time, it should be noted that linguistically real plene writing in Hieroglyphic Luwian is not absolutely consistent: the lemmata *i-zi-i-* 'to do', *za-a-* 'this' and *kwa/i-a-/kwa/i-i-* 'who, which' all have non-plene variants

[4] A different approach to demonstrate this distribution has been taken by Kloekhorst 2016b. Rather than starting with morphemes and looking whether they are spelled with plene writing or not, one can also collect all plene spellings and look at which morphemes they are used in. Thus, Kloekhorst found that the sign <zi> is found 679 times in Hawkins 2000. In 110 cases, the <zi> is spelled plene: <zi-i>. Now, 41 of these plene spellings occur word-finally as part of the nom./acc.pl.c. endings *-Ca-zi-i/-Ci-zi-i*: in each of these cases, however, we can interpret the plene <i> as a space-filler: *-Ca-zi^{-i}/-Ci-zi^{-i}*. The remaining 69 linguistically real plene spellings are used exclusively in only three different stems: *i-zi-i-* 'to do' and its derivative *i-zi-i-sa-ta-* 'to honour' (61x); *zi-i-na* 'this' (abl.-ins.; 7x) and ("OCCIDENS")*á-pa-zi-i-ti* (1x) '?'. The same is true for the sign <za>, which is found 1219 times in Hawkins 2000. If we discard non-plene spellings and potential space-fillers, we are left with 54 secure instances of linguistically real plene <za-a> (Kloekhorst l.c.). It appears that these linguistically real plene spellings are found in only two lemmata: INFANS.*NI.za-a-sa* 'child', attested once (KARKAMIŠ A4*a* § 1) in a quite damaged line, and *za-a-* 'this', accounting for the remaining 53 linguistically real plene spellings. These restrictions indicate that linguistically real plene writing was reserved for specific morphemes which, as a result, must have had a special linguistic property.

[5] Note that this observation lowers the probability of the hypothesis that linguistically real plene writing was used to mark the word accent. Barring clitic elements, most Luwian words must have been accented, given that we find commonly accent-based effects in Cuneiform Luwian (plene writing and Čop's Law) in nouns, pronouns and verbs. Only a select number of words and morphemes show linguistically real plene writing, however.

i-zi- (5x), *za-* (74x) and *kwa*/*i-* (88x) next to them.[6] While this does not invalidate the non-random contrast found above, it does mean that the absence of linguistically real plene writing in rarely attested words may well be due to chance. We cannot use it when considering rare words to prove that they did not possess the linguistic feature(s) denoted by linguistically real plene writing. Only the presence of linguistically real plene writing is immediately relevant for our interpretation of a morpheme's phonetic value.[7]

Having established that non-filler plene writing must represent a linguistic feature, we may now ask ourselves what this feature is. To uncover this feature, we need to analyse and compare all words in which linguistically real plene spellings are found, in order to see whether they have anything in common. In what follows, I will consider all morphemes in which linguistically real plene spellings are found, classified into three groups of descending relevance and followed by a treatment of problematic cases.

First, I will discuss those morphemes and lexemes whose phonological interpretation is (relatively) secure, either because of the presence of good cognates and strong etymologies or because of language-internal considerations. These examples allow us to pinpoint the function of linguistically real plene writing as precisely as possible and to formulate a working hypothesis.

The second group contains morphemes and lexemes whose phonolo-

[6] The 53 linguistically real plene spellings of *i-zi-*(*i-*) 'to do' make up 88% of its 60 attestations (not counting attestations of the weak stem *i-zi-ia-* or spellings with the sign <zi/a>). This percentage is much higher than those of linguistically plene spellings found in, for instance, *za-*(*a-*)*sa* (35%) and *za-*(*a-*)*na* (11%). It remains to be seen whether these differences carry any importance for the interpretation of these words' phonetic and phonological structure.

[7] In a certain way, this situation is reminiscent of HLuw. rhotacism, which is a phonetic change by which intervocalic lenis dental stops appear as *r* in Hieroglyphic Luwian, cf. KULULU 5 § 11 *a+ra*/*i-tu* 'eat' (3pl.imp.act.) /arantu/ for */aθantu/ < PIE **h*₁*d-éntu* (Morpurgo Davies 1982/1983: 250[16]). However, not every lenis dental is spelled with rhotacism, and sometimes we find rhotacised forms next to non-rhotacised forms in the same text. For example, BULGARMADEN § 13 contains the verbal form *ha+ra*/*i-ri+i* 'smash' (3sg.pres.act.; /-ri/), which is the rhotacised variant of **ha+ra*/*i-ti* (/-θi/). Two lines later, we come across BULGARMADEN § 15 *ha+ra*/*i-tu* 'id.' (3sg.imp.act.). This form is built on the same stem and must therefore also have had a lenis dental in its ending: /-θu/. This /-θu/, however, has not been rhotacised to /-ru/ (***ha+ra*/*i-ru*). For this reason, we cannot use one attestation without rhotacism to argue that the lemma itself was never rhotacised.

gical interpretations and etymologies are less secure. Strictly speaking, we cannot use these examples as further evidence or counterevidence to the hypothesis stated in the previous section. At best, they can be used to make the hypothesis more or less plausible.

Thirdly, there are morphemes and lexemes whose interpretations and etymologies are doubtful or downright unknown. They are too unreliable to play any significant role in determining the function of linguistically real plene writing, which renders them only tangentially relevant for the present discussion.

2.3 Group I: etymologically clear words

2.3.1 *za-a-sa* and *za-a-na* 'this'

I will start my investigation of the linguistically real plene material with one of the lexemes that most often show plene writing in Hawkins' Iron Age corpus: the proximal deictic pronoun *za*-(*a*-) 'this': (51x). Etymologically, we can compare this word to CLuw. *za*-(*a*-), Hitt. *ka-a*- and perhaps also Pal. *ka-a*- 'id.', all of which continue PIE **ḱó*- 'this'. The singular direct cases of their paradigms are given in Table 2.2.[8]

By virtue of their plene spellings, Hittite *ka-a-aš* and CLuw. *za*-(*a*-)*aš* are synchronically analysed as /kás/ and /tsá́s/ respectively, with a long accented vowel (Melchert 1994a: 264, Kloekhorst 2008: s.v. '*kā-/kū-/kī-*'). It is generally assumed that the vowel of their preform, PIE **ḱó*-, was regularly lengthened in Proto-Anatolian (Kloekhorst 2014: 583f., Melchert 2015a: 3f. "in closed syllables"). The long vowel in resulting PAnat. **ḱṓ*- accounts for the plene writing we find in the nominatives Hitt. *ka-a-aš* /ḱá́s/ and CLuw. *za-a-aš*, and can explain the plene writings in HLuw. *za-a-sa* and *za-a-na* as well. Accordingly, these can be interpreted as /tsá́s/ and /tsá́n/, respectively. The Luwian and Palaic neuter singular forms must also go back to PIE **ḱó*-, and it is assumed that these represent /tsá́/ (Melchert 1994a: 278) and

[8] The remarkable dative singular *za*-(*a*-)*ti* and the ablative-instrumental form *zi*-(*i*-)*na* are treated in Sections 2.6.6 and 2.6.3, respectively. The adverb *za-a-ti* 'thus, here', as well as the other (plural/oblique) case-forms of *za*-(*a*-), are treated in Section 2.6.2.

	OHitt.	Pal.	HLuw.	CLuw.	PLuw.[1]
nom.sg.c.	*ka-a-aš*	–	*za-a-sa* (8x),[2] *za-sa* (15x)	*za-a-aš* (7x), *za-aš* (9x)	**tsə́s*
acc.sg.c.	*ku-u-un*	–	*za-a-na* (6x), *za-na* (38x)	*za-am*(=*pa*) (2x)	**tsə́n*
nom.-acc. sg.n.	(*ki-i*)	*ka-a-at*(-)	*za-a* (7x),[3] *za* (63x)	*za-a* (1x)	**tsə́*
nom.-acc. pl.n.	(*ke-e*)	–	*za-a-ia* (1x), *za-ia* (32x)	*za-a* (9x)	**tsə́*

[1] I take PLuw. **ə* (> Lyc. *e*, Luw. *a*) and **ə̄* (> Lyc. *e*, Luw. *ā*) as the results of the general pre-Proto-Luwic mergers of PAnat. **e* and **o* (< PIE **h_3e*), and PAnat. **ē* and **ō*, respectively, following Yakubovich (2017a: 3), who draws upon Melchert 1992: 49.

[2] It is noteworthy that nine out of 15 attestations of non-plene *za-sa* (nom.sg.c.) stem from one and the same text: KARKAMIŠ A7.

[3] This number does not include 12 attestations of *za-a* whose final <a> is ambiguous. This means that we cannot decide on the basis of its placement in the inscription whether we should take it as a space-filler or a linguistically real plene vowel. I would transliterate such cases as space-fillers (i.e. *za*$^{-a}$) as per Section 1.2.

Table 2.2: Direct case forms of the proximal deictic pronoun in Hittite, Palaic and Luwian

/ká-/ (Melchert 1994a: 210), respectively. In these forms, plene <(z)a-a> in the Hieroglyphic Luwian forms therefore represents an underlying long accented vowel /á́/.

2.3.2 *ni-i* 'not'

Next, we have the prohibitive negation *ni-i* (also spelled *ní-i*) 'not!'. It is attested nine times with linguistically real plene writing in Hawkins 2000. Apart from this, we find 11 instances of ambiguous <ni-i> and <ní-i> (cf. Table 2.2). Lastly, there are eight non-plene spellings: *ni*, *ní*. We also find HLuw. *ni-i-sá* with linguistically real plene spelling (against once non-plene *ni-sa*). Both variants can be compared with CLuw. *ni-iš* (18x), *ni-i-š*$^{\circ}$ (3x),

ni-i-iš (5x), *ne-iš* (1x) and Palaic *ni-i* (1x).

All these cognate forms are commonly interpreted as having a long accented vowel /í/ (Melchert 2003: 206; Kloekhorst 2008: s.v. '*natta*'), and again we see that, in Hieroglyphic Luwian, linguistically real plene writing corresponds to an underlying long accented vowel.

2.3.3 *pa*+*ra*/*i*-*i* 'before'

Third on our list is the adverb *pa*+*ra*/*i*-*i* 'before', written securely with linguistically real plene <i> once: KARKAMIŠ A1*a* § 16 *pa*+*ra*/*i*-*i*^{a}.[9] Notably, we never find non-plene ***pa*+*ra*/*i* in Hawkins' (2000) corpus.[10] In addition, there are 14 attestations of PRAE-*i*, whose interpretation and utility are unclear: the word-final <i> in these cases might well have been intended as linguistically real plene, but we cannot exclude their use as space-fillers at the end of a sign column. Its CLuw. counterpart *pa-ri-i* and direct cognate Lyc. *pri* 'forth' are obviously connected, but so so are Hitt. *pa-ra-a* /prắ/ 'forth' and Hitt. *pé*-(*e*-)*ra-an* 'before, in front of' ~ HLuw. *pa*+*ra*/*i-na* 'id.' ~ CLuw. *pár-ra*-(*a*-)*an* 'id.' (prev., postpos.). These forms can be understood as lexicalised case forms of an ablauting paradigm **pér*-/*pr*-, from which HLuw. *pa*+*ra*/*i-i*, CLuw. *pa-ri-i* and Lyc. *pri* continue the dative **pr-éi*. We may therefore interpret HLuw. *pa*+*ra*/*i-i* as /prī́/ (Melchert 1994a: 248). Its spelling with linguistically real plene <i> reflects a long accented /í/.

2.3.4 LITUUS+*na-a*- 'to see'

In TELL AHMAR 1 § 11, we find a 3sg.pret.act. form of LITUUS+*na*-(*a*-) 'to see' (attested 16 times as non-plene). This form is read as LITUUS+*na-tà-a*

[9] The <i> in this word represents a linguistically real plene vowel (which cannot be interpreted as a space-filler) and therefore I transliterate it using a full-size letter. The <a>, on the other hand, can be taken as a space-filling vowel sign and is therefore transliterated using superscript.

[10] The context of TELL AHMAR 1 § 5 *pa*+*ra*/*i* is severely damaged. The ligature *pa*+*ra*/*i* is found underneath the sign SUPER+*ra*/*i* which means that the scribe would have started writing this new word in the middle of the sign column. While this is not impossible (cf. the same text, § 13 |*zi-la*), it runs counter to the general trend of starting new words at the top of a sign column. Therefore, I exclude it from the present discussion.

by Hawkins 2000 and Yakubovich 2013ff. but a closer inspection of the sign placement on Hawkins' hand-copy suggests otherwise, cf. Figure 2.5.

Figure 2.5: TELL AHMAR 1 § 11 LITUUS+*na-a-tà*; Hawkins 2000 (plate 100).

Admittedly, the order of the signs is quite messy here, with the last <na> of SUB-*na-na* 'under' written under the following LITUUS+*na-*. However, the placement of <a> and <tà> leaves no room for doubt: we should read LITUUS-*na-a-tà* instead. The linguistically real plene spelling -(*n*)*a-a-* finds a sound parallel in its Cuneiform Luwian counterpart *ma-na-a-* 'to see', whose paradigm has lenis endings throughout (Morpurgo Davies 1982/1983: 257). Traditionally, the stem is analysed as /mnā́-/, based on the reconstruction of Starke (1980: 142ff.), who traced it back to PIE *$*mneh$_2$-* (comparing Gr. μιμνήσκω 'to remind [oneself]'). This etymology is followed by Kimball 1999: 264, Kloekhorst 2014: 549 and Melchert 2015b: 161[6]. Yet again, linguistically real plene spelling in Hieroglyphic Luwian corresponds to a long accented vowel.

2.3.5 Denominal verbs: "AUDIRE+*MI*"-*ti-i-* 'to hear' & ("COR")*za*+*ra*/*i-ti-i-* 'to desire'

The verb 'to hear' is spelled with linguistically real plene writing four times in Hawkins 2000: TELL AHMAR 1 § 25 "AUDIRE+*MI*"-*ti-i-tá* (3sg.pret.act.); KARKAMIŠ A6 § 4, § 5, § 6 AUDIRE+*MI-ti-i-ta* (3pl.pret.act.). In addition, there are three non-plene attestations.[11] This verb is commonly interpreted

[11] Scil. BABYLON 2 § 3 AUDIRE-*ti-ta* (3sg.pret.act.), KARKAMIŠ A27*ff* 2 AUDIRE+*MI-ti-t*[*a*...] (3sg./pl.pret.act.) and KARKAMIŠ A31 § 14 AUDIRE+*MI-ti-ti* (3sg.pres.act.).

as a derivation from the word for 'ear', attested in CLuw. as *tumman*(*t*)-, with the PIE thematic verbal suffix *-*ié*/*ó*- Melchert 1993: 6. The same suffix features in the etymology of another denominal verbal stem: (*"*COR*"*)*za+ra*/*i-ti-i-* 'to desire'. This verb is derived from the word for 'heart' (CLuw. *za-a-ar-za* /tsárt=sa/) and attested with linguistically real plene writing in TELL AHMAR 1 § 20 ([*"*]COR[*"*])*z*[*a*]+*ra-ti-i-ta* (3sg.pret.act.). On four occasions, we find this word spelled with non-plene writing in the HLuw. corpus, e.g. KARABURUN § 7 *za+ra*/*i-ti-ti*^{i}.

In both verbs, the spellings of their 3sg.pret.act. ending with the signs <ta> and <tá> betray that the ending contained a fortis dental stop (/-ta/) which did not undergo Proto-Anatolian lenition. This corroborates the commonly reconstructed preform for this ending, PAnat. */-iéto/, where lenition is not expected. The question now is how this Proto-Anatolian */-iéto/ developed into its shape we find in Luwian. It is generally assumed that the **é* was coloured to *i* by the *i* that immediately preceded it (Melchert 1994a: 262). Thus PLuw. */ie/ > */ii/.[12] It is likely that the linguistically real plene in HLuw. represents this original disyllabic sequence: /tummantiíta/. However, we cannot exclude that at some stage in pre-HLuw., this was contracted to /-ī́-/ or perhaps even /-í-/. Thus, in these two verbs, the linguistically real plene spelling may in principle represent disyllabic /-ií-/, long accented /-ī́-/ or short accented /-í-/ (but cf. Section 2.4).[13]

The Cuneiform Luwian attestation 3sg.pret.act. *tu-um-ma-an-te-it-ta* 'to hear', which is commonly taken as the cuneiform counterpart of HLuw. AUDIRE+*MI-ti-i-ta*, may also have contained either a disyllabic sequence /-ií-/ or short accented /-í-/. If the consistent absence of CLuw. plene writing is significant in this suffix, it may suggest that an interpretation /-ī́-/ is unlikely for the Luwian variety found in our cuneiform texts. Note, however, that this

[12] This colouring is also found in the outcome of PIE *$ǵ^{(h)}e$-, which develops into PLuw. **i*- through phonetic *[ji-] < *[je-], cf. HLuw. (MANUS)*i-sà-tara*/*i-*, CLuw. *i-iš-ša-ra*/*i-*, Lyc. *izre*(/*i*)- 'hand' < PIE *$ǵ^{h}és$-*r*-.

[13] It is unclear whether (*"*LONGUS*"*)*ia+ra*/*i-i-* 'to extend' belongs to this class or rather to the '*i-zi-i*-class' (cf. Section 2.5.1), whose strong and weak stems also end in *-i-* and *-ia-*, respectively. Its two linguistically real plene attestations KARKAMIŠ A15*b* § 17 (*"*LONGUS*"*)*ia+ra*/*i-i-ha* (1sg.pret.act.) and TELL TAYINAT l. 2 frag. 1a (*"*LONGUS*"*)*ia+ra*/*i-*⌜*i*⌝*-tá* (3pl.pret.act.) can be explained in both cases.

need not disprove a long accented /-ī́-/ for the Hieroglyphic Luwian corpus.

2.3.6 DELERE-*nu-u-na* 'destroy'

Lastly, we turn to DELERE-*nu-u-na* 'destroy' (BABYLON 1 § 15), an infinitive in /-una/ (Melchert 2003: 194), cf. Figure 2.6.

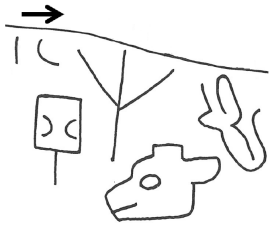

Figure 2.6: BABYLON 1 § 15 DELERE-*nu-u-na*; Hawkins 2000 (plate 210).

Apart from CLuw. *pa-aš-šu-u-na* 'swallow' (attested 1x: KUB 24 7 iii 31), this is the only infinitive spelled with linguistically real plene writing in both Luwian languages. The verbal stem underlying DELERE-*nu-u-na* is probably /marnu-/, a *nu*-causative added to the root **mer-* 'to disappear' (Hawkins 2000: 154, Kloekhorst 2008: s.v. '*mer-*'). When the infinitive ending was added to the bare stem, the result must initially have been /marnuuna/, with a disyllabic sequence. This sequence may have been preserved as such, or it could have been contracted to a long vowel, yielding Luw. /marnūna/. Therefore, in this word too, Hieroglyphic Luwian linguistically real plene writing is used to represent either a disyllabic sequence [uu] or a long vowel [u:]. Unfortunately, it is impossible to recover the place of the accent in this form.

2.4 Setting up a working hypothesis

The examples treated in Section 2.3 show that linguistically real plene writing corresponds to a variety of different vowels. It is important to note that cases such as HLuw. *za-a-sa* 'this', where linguistically real plene writing corresponds to a long accented vowel, do not necessarily imply that linguist-

ically real plene writing marks a combination of *both* vocalic length and the accent. It is also possible that linguistically real plene writing was used to mark either of these features. For instance, the scribe may have wanted to mark only that the /á/ was accented. The fact that it also was long may then simply be coincidental. Therefore, we must allow for two more possible functions of linguistically real plene writing: it may have marked simply an accented vowel /V́/ or a long vowel /V̄/. All possible interpretations of linguistically real plene writing, based on the examples in Section 2.3, are summarised in Table 2.3.

Linguistically real plene spellings	**Possible interpretations**			
	/V̄́/	**/V́/**	**/V̄/**	**/VV/**
za-a-	X	X	X	
ni-i	X	X	X	
pa+ra/i-i	X	X	X	
LITUUS-*na-a*	X	X	X	
AUDIRE+*MI-ti-i-*	X	X	X	X
(“COR”)*za+ra/i-ti-i-*	X	X	X	X
DELERE-*nu-u-na*	?	?	X	X

Table 2.3: Possible interpretations of linguistically real plene spelling

We could take from this list that in all good examples, linguistically real plene writing in Hieroglyphic Luwian corresponds to a long accented vowel /V̄́/, and conclude that its function may well have been to mark a combination of both vocalic length and the accent. However, there are two other pieces of data that allow us to get a more precise picture. The etymological accounts of these examples (Sections 2.4.1 and 2.4.2) are unfortunately relatively uncertain, but nevertheless allow us to draw interesting conclusions about the phonetic interpretation of linguistically real plene writing.

2.4.1 Ablauting verbal suffix *-i-*/*-ai-*

First, there are the verbal stems belonging to the *-i-*/*-ai-*class, cf. CLuw. *du-ú-pí-ti*/*du-pa-in-ti* = Lyc. *tubidi*/*tubeiti* 'to strike'. This class of verbs is easily recognised by the characteristic ablaut in its stem: the weak stem ends in *-ai-*, while the strong stem shows a final *-i-*, which is occasionally spelled with plene writing in Cuneiform Luwian, cf. 3sg.pret. *tar-ši-i-ta* '?', 1sg.pret. *la-ḫu-ni-i-ḫa* 'to wash', cf. Section 5.3. In addition, the strong stem shows lenited verbal endings, which are the result of Proto-Anatolian lenition.[14] There are four HLuw. verbs belonging to the *-i-*/*-ai-* verbal class whose strong stems show linguistically real plene <i>, as presented below.

1. **(*274)*ha-ta-li-i-* 'to speak':**
   KARATEPE 1 Hu. § 28 (*274)*ha-ta-li-i-ha*, MARAŞ 4 § 2 ⌜(*274)⌝[*ha*]-*ta-li-i-ha* (1sg.pret.act.). Attested weak stem forms such as (*274)*ha-ta-la-i-ta* (3pl.pret.act.) confirm that this word belongs to the *-i-*/*-ai-* class;

2. **(LIBARE)*sa*$_5$+*ra*/*i-li-i-* 'to offer':**
   KARKAMIŠ A1*a* § 31 (LIBARE)*sa*$_5$+*ra*/*i-li-i-tú* (3sg.imp.act.). The lenis ending in TELL TAYINAT 1 fr. 2 (LIB]ARE)⌜*sa*$_5$⌝+*ra*/*i-li-tà* (3sg.pret.) and the weak stem in (LIBARE)*sa*$_5$+*ra*/*i-la-i-ti* (3pl.pres.act.) indicate that the stem ends in *-i-*/*-ai-*;

3. **(SA$_4$)*sa-ni-i-* 'to overturn, to remove':**
   ERKİLET 2 § 2 *sa-ni-i-ti* (3sg.pres.act.). For the weak stem, cf. KARKAMIŠ A1a § 4 (SA$_4$)*sá-na-i-ta* and CLuw. *ša-an-na-i-in-du*;

4. **(PES$_2$.PES)*tara*/*i-pi-i-* 'to attack, to plough':**
   KARKAMIŠ A2+3 § 15 ("PES$_2$.PES")*tara*/*i-pi-i-tu* (3pl.imp.). We can distinguish a weak stem with *-ai-* in KARKAMIŠ A16*a* § 7 |PES$_2$.PES-*pa-i-tu*$^{-u}$ (id.).

[14] Lenis stops are written with singleton consonants in the CLuw. corpus: <°V-ti>, not <°V-Vt-ti>, while in Lycian, the difference was represented by using different signs: fortis <t> vs. lenis <d>. In the HLuw. verbal system, lenis stops are only distinguishable in the 3sg. verbal endings. In the preterite, the lenis ending is spelled with the sign <tà> whereas the fortis ending is exclusively spelled using <ta> or <tá> (Rieken 2008). Lenis stops may also appear rhotacised, yielding pres.act. /-ri/, pret.act. /-ra/ etc.

The *-i-*/*-ai-* verbal suffix has been connected to PIE **-eie*/*o-* by Melchert (1997: 134ff.) who proposes that **-eie-* > "**-eyi-*, whence contraction to **-ey-* and then regularly Luvo-Lycian (long) *-ī-*". However, as Melchert himself points out, a preform 3sg. **-eié-ti* would not give the lenited endings we see in Luwian and Lycian. Therefore, he assumes that already in Proto-Anatolian, the accent was analogically retracted from the suffix to the root: **CVC-eiéti* >> **CVC-éieti*. This, in turn, would lead to PLuw. **CVC-ī́di* through regular phonetic development. At the same time, however, Melchert (1997: 134ff.) cites CLuw. *du-ú-pí-ti*/*du-pa-in-ti* whose plene writing compels him to reconstruct root accent: **CV́C-eieti*. Synchronically, we therefore seem to have two accentual patterns for this class of verbs, which, when applied to the four HLuw. verbs treated above, yield the following possible phonological interpretations:

– /h(a)t(a)lī́-/, /sralī́-/, /s(a)nī́-/, /t(a)r(a)pī́-/ (suffixal accent);
– /hát(a)lī-/ or /h(a)tálī-/, /srálī-/, /sánī-/, /t(a)rápī-/ or /tár(a)pī-/ (radical accent).

Both analyses would satisfy the conditions for lenition of the verbal endings. Note, however, that interpretations involving a short accented stem-final vowel (i.e. **/h(a)t(a)lí-/, **/sralí-/, **/s(a)ní-/, **/t(a)r(a)pí-/) run into trouble: a short accented vowel does not trigger lenition. Therefore, the linguistically real plene spellings in the strong stem of these words cannot have been used to denote a short accented vowel /V́/. We may therefore strike this possibility from our list of hypotheses, leaving us with three possible interpretations for HLuw. linguistically real plene writing, cf. Table 2.4.

2.4.2 Enclitic 3sg. *=tu-u*/*=tú-u* (dat.-loc.)

One final refinement can be made by looking at the sentence-initial clitic 3sg.dat.-loc. *=du* 'he/she/it', which is securely spelled with linguistically real plene seven times: <=tu-u> or <=tú-u>. We have already seen one attestation of these spellings in Section 2.1 (cf. Figure 2.4), where we cannot explain the plene vowel in terms of space-filling. A further 25 attestations of <tu-u> or <tú-u> are ambiguous: their plene vowel can be regarded as a space-filler or

Linguistically real plene spellings	**Possible interpretations**		
	/V́/	**/V̄/**	**/VV/**
za-a-	X	X	
ni-i	X	X	
pa+ra/i-i	X	X	
LITUUS-*na-a*	X	X	
AUDIRE+*MI-ti-i-*	X	X	X
(“COR”)*za+ra/i-ti-i-*	X	X	X
DELERE-*nu-u-na*	?	X	X
(*274)*ha-ta-li-i-*	X	X	
(LIBARE)sa_5+*ra/i-li-i-*	X	X	
(SA_4)*sa-ni-i-*	X	X	
(PES_2.PES)*tara/i-pi-i-*	X	X	

Table 2.4: Possible interpretations of linguistically real plene spelling

a linguistically real plene spelling.[15] Lastly, 86 cases are written non-plene <=tu>/<=tú>. HLuw. *=du* should be compared to CLuw. *=du* ‘for him’ (56x)[16] and Pal. *=du* (5x), none of which are attested with plene writing in our text corpora (Carruba 1970: 44).

Melchert (1994a: 37) has argued that “it is also clear from spellings like *-tu-u* for the **enclitic** ‘(to) him’ that ‘scriptio plena’ in hieroglyphic spellings has an aesthetic function and does not mark length or accent” (emphasis in original). Indeed, it is a defining characteristic of clitics that they “are inherently without stress of their own” (Spencer and Luís 2012: 75). This makes

[15] As per Section 1.4, these examples will be interpreted as (potential) space-fillers by default, to avoid falsely interpreting them as linguistically real plene spellings.

[16] This number is based on the attestations listed in Melchert’s *Cuneiform Luwian Lexicon* (1993). Notably, 55 of these are spelled with the sign DU; only 1 is written with TU.

it highly unlikely that =*du* was ever accented.[17] Thus, we should dismiss the possibility that plene writing in these forms marks a long accented vowel (V́). Instead, it is worth considering that the vowel may have been long and *unaccented*: /=θū/. From a typological point of view, long (unaccented) vowels are certainly not barred from appearing in clitics, cf. Gr. πως 'somehow' and the pronominal clitics *mě* (1sg.acc.-gen.), *tě* (2sg.acc.-gen.), *nás* (1pl.acc.-gen.) and *vás* (2pl.acc.-gen.) in Czech.

Crucially, the interpretation of <=tu-u>/<=tú-u> as /=θū/, with a long vowel, finds independent support from inner-Luwian evidence. Its corresponding sentence-initial clitic pronoun of the 1st person, /=mu/ 'me', loses its vowel when followed by clitics starting with a vowel other than *u* (Plöchl 2003: 64). For instance:

1.) **KARKAMIŠ A11*b*+*c* § 11:**
wa/*i-ma-tà*$^{-a}$ |PRAE-*na* (PES$_2$)*hwa*/*i-ia-ta*
'They [the gods] marched before me.' (Hawkins 2000: 103)

In example 1, *wa*/*i-ma-tà*$^{-a}$ should be analysed as *wa*=*m*(*u*)=*ada*, that is, as a combination of =*wa* (quotative particle), =*mu* (1sg.acc.-dat.) and =*ada* (3pl.nom.c.). Notably, 3sg. =*du* behaves differently, cf.:

2.) **ALEPPO 2 § 18:**
('(That) which I shall present to my brother in goodness,')
|*ARHA-pa-wa*/*i-tú-wa*/*i-tà-ta* |*kwa*/*i-sa* |CAPERE-*i*
'whoever shall take it away from him' (Hawkins 2000: 236)

The clitic chain starting after *ARHA* 'away' is =*pa*=*wa*=*du*=*ada*=*ta*, combining =*pa*= 'but' + =*wa*= (quot. ptcl.) + =*du*= (3sg.dat.) + =*ada*= (acc.sg.n.) +

[17] It is true that clitics may become accented in some cases (cf. Spencer and Luís 2012 for examples from Bulgarian [83], Macedonian [89] and Modern Greek [91]), but these result from secondary stress. In these situations, stress is not an inherent feature of the clitic itself, so it is applied indiscriminately to multiple hosts. This is not the situation in HLuw., where we never find linguistically real plene spelling in such highly frequent clitics as =*ha* 'and', =*pa* 'but', etc. Rather, it seems limited to =*du* (3sg.dat.-loc.) and =*du* (2sg.dat.-loc., cf. Section 2.6.7).

=*ta* (locatival particle).[18] The vowel of =*du* is clearly not elided here, as it is kept separate from the following =*ada*= with a glide: <wa/i>. These different behaviours of =*mu* and =*du* are difficult to understand if both end in a short unaccented /u/. By taking the vowel of =*du* as long (and unaccented), we are able to account for this different treatment.[19] Unfortunately, there are no generally accepted reconstructed Proto-Anatolian pre-forms for =*du* we can use to support or refute our hypothesis by tracing the expected phonetic developments.[20]

Returning to our list of possible functions of linguistically real plene writing, we see that =*du* effectively rules out the possibility that the Luwian scribes used plene writing to represent both vocalic length and the accent /V́/. Two options are left, cf. Table 2.5.

As a working hypothesis, I thus conclude that *linguistically real plene writing in Hieroglyphic Luwian was primarily used to mark a long vowel. In addition, it could also mark a disyllabic sequence*.[21] In many words, a long vowel

[18] This interpretation of clitic chain-final /=ata/ as a combination of /=aθa=/ (nom.-acc.sg.n.) and /=ta/ (locatival particle) has been proposed by Rieken (2008: 641).

[19] This situation is reminiscent of Greek verse, where word-final vowels are elided only if they are short (Smyth and Messing 1956: 18). The long vowel of δή, for instance, is never elided in front of vowel-initial words, cf. Hom. *Il.* 4.180 καὶ δὴ ἔβη οἶκον δὲ φίλην ἐς πατρίδα γαῖαν (although it does fall prey to epic correption). The short vowel of δέ, on the other hand, regularly disappears before words starting with a vowel, e.g. three times in Hom. *Il.* 1.199: θάμβησεν δ' Ἀχιλεύς, μετὰ δ' ἐτράπετ', αὐτίκα δ' ἔγνω. By taking the vowel of HLuw. =*du* as long, we can explain the non-elision of its vowel in a similar way.

[20] One anonymous reviewer suggests that we can explain the presence of a long vowel in =*du* 'him' (3sg.dat.-loc.) as the result of analogical processes. To her/his mind, the long vowel in the second-person orthotonic pronoun /tū́/ 'you' (cf. Section 2.5.4) was taken over by its enclitic counterpart and yielded /=θū/ 'you' (dat.-acc.; cf. Section 2.6.7). As described in Yakubovich 2010: 171, this form eventually replaced the inherited third-person clitic, which therefore appears as /=θū/ with a long vowel in our Hieroglyphic texts.

[21] To some, it may seem a little awkward that one graphic device would have been employed to represent two phonetically distinct sequences. In this respect, it is interesting to consider the matter from the viewpoint of moraic phonology. Mora theory assigns weight units ('morae') to syllabic segments, which determine the weight of the syllable. Syllables of a CV structure are assigned one mora and they are taken as light. Syllables with a structure CV̄, on the other hand, are treated as CV-V, with two morae, and are subsequently taken as heavy (Hyman 1985: 9f.). Thus, both open syllables with long vowels (CV̄) and sequences of

Linguistically real plene spellings	**Possible interpretations**	
	/V̄/	/VV/
za-a-	X	
ni-i	X	
pa+*ra*/*i-i*	X	
LITUUS-*na-a*	X	
AUDIRE+*MI-ti-i-*	X	X
(“COR”)*za*+*ra*/*i-ti-i-*	X	X
DELERE-*nu-u-na*	X	X
(*274)*ha-ta-li-i-*	X	
(LIBARE)sa_5+*ra*/*i-li-i-*	X	
(SA_4)*sa-ni-i-*	X	
(PES_2.PES)*tara*/*i-pi-i-*	X	
tu-u/*tú-u*	X	

Table 2.5: Possible interpretations of linguistically real plene spelling

happens to coincide with the word accent, as in *za-a-sa* ‘this’ (nom.sg.c.). However, I would argue that the presence of the accent had no bearing on the scribes’ choice to add a plene vowel.

2.5 Group II: words with less secure etymologies

We now turn to words and morphemes whose synchronic phonological analysis is still under debate. At best, they are compatible with the hypothesis that linguistically real plene writing marks vocalic length, yet they cannot really support it in any definite sense. On the other hand, the examples in

two light syllables (CV-V) are equivalent in the sense that both consist of two morae.

this section are not secure enough to disprove the thesis that linguistically real plene writing marks vocalic length.

2.5.1 *i-zi-i-* 'to do, make'

The common verbal stem *i-zi-*(*i-*) 'to do, make' is securely spelled with linguistically real plene writing 53 times, as opposed to only five non-plene spellings.[22] In addition, there are various derivations from this stem that are also commonly written with linguistically real plene spellings. These are listed below.

1. *i-zi-i-sa-t*(*a*)- 'to honour':
    a KULULU 4 § 12 *i-zi-i-sa-ta-ha* (1sg.pret.act.);
    b KARKAMIŠ A1*a* § 34, A1b § 2f. *i-zi-i-sa-ta-i* (3sg.pres.act.);
    c KARKAMIŠ A17*b* § 3 *i-zi-i-sa-ta-tú*$^{-u}$ (3sg.imp.act.);
    d KARATEPE 1 § 48 Ho. *i-zi-i-sa-tú-na* (inf.; its parallel KARATEPE 1 § 48 Hu. has non-plene *i-zi-sa-tú-na*);
2. KARKAMIŠ A6 § 15 & § 17 *i-zi-i-sa-ta+ra*/*i*(=*wa*/*i*=*ma-za*) 'honour' (2x, abl.-ins.);
3. MALPINAR § 10 *i-zi-i-ia-t*[*i*$^{?}$*-z*]*a*$^{?}$, § 14 *i-z*[*i*]*-i-ti-i-za* 'offering' (nom.-acc.sg.n.);
4. MARAŞ 14 § 7 *i-zi-i-ia-tara*/*i-za*$^{-a}$ 'offering, ritual' (nom.-acc.sg.n.).

The verbal stem *i-zi-i-* is followed by lenited (and rhotacised) verbal endings, e.g. TELL AHMAR 1 § 16 *i-zi-i-tà* (3sg.pret.), KULULU 5 § 4 *i-zi-i-ri+i* (3sg.pres.). For this reason, Rieken (2007: 273) has reconstructed the proto-form of this stem as **Hiǵ-ie-*, with a secondary accent retraction from older **Hiǵ-ié-*. Kloekhorst (2016b) notes that, while PIE **Hiǵ-ie-* would indeed give lenited verbal endings, it leaves the almost consistent plene writing of the

[22] These are: KÖTÜKALE § 6 *i-zi-ti* (3sg.pres.act.), KÖTÜKALE § 3 *i-zi-*[*ha*] (1sg.pret.act.), İSPEKÇÜR § 4 *i-zi-ha* (id.), KARATEPE 1 § 18 Ho. *i-zi-tà* (3sg.pret.act.) and KARATEPE 1 § 67 Hu. *i-zi-lá*/*í* (id.).

strong stem unexplained. He therefore reconstructs the stem as an ablauting *i*-stem, **Hiǵ-éi-/*Hiǵ-i-*, exactly on account of its near-consistent plene writing and its inflectional similarities to CLuw. *ī-/i-* 'to go' (also with lenis endings).[23] However, since this reconstruction is based on the assumption that linguistically real plene writing marks vocalic length, it would be circular to use this verb as an argument in favour of this assumption. Nevertheless, it should be noted that the hypothesis that linguistically real plene spelling marks vocalic length does not create any serious problems for the interpretation of this verb.

2.5.2 *á-wa/i-i-* 'to come'

The HLuw. verbal stem (PES)*á-wa/i-i-* 'to come' is found spelled with linguistically real plene writing on six occasions, while its non-plene variant (PES)*á-wa/i-* occurs 18 times.[24] Both the HLuw. form and its CLuw. counterpart *a-ú-i-* 'id.' show lenis endings, e.g. HLuw. İSKENDERUN § 2 ("PES")*á-wa/i-tà* (3sg.pret.act.; with <tà>) ~ CLuw. *a-ú-i-ta* with single spelling of the *t* (Morpurgo Davies 1982/1983: 257). This verbal stem is usually interpreted as comprising a preverb meaning 'hither' + PIE **h₁éi-/h₁i-* 'to go'. Melchert (1994a: 66) argues that Luwian must have generalised the strong stem **h₁éi-*, which regularly develops into PLuw. */ī́/.[25] If Melchert's interpretation of CLuw. *a-ú-i-* also holds for HLuw. (PES)*á-wa/i-i-*, then the latter's linguistically real plene spelling would reflect a long vowel. This would fit our working hypothesis that linguistically real plene spelling marks vocalic length.

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[23] **Hiǵ-éi-/*Hiǵ-i-* would be an athematic *i*-present, as is known from Skt. *kṣéti/kṣiyánti* < PIE **tḱ-éi-/*tḱ-i-*, cf. Rix et al. 2001: s.v. *'tḱe̯i-'*

[24] The linguistically real plene attestations are KULULU 1 § 13 *á-wa/i-i-tu* (3pl.imp.act.); KARKAMIŠ A1*a* § 17 PES-*wa/i-i-ha-*a* (1sg.pret.), § 21 & § 24 PES-*wa/i-i-ha* (1sg.pret.); KARKAMIŠ A11*b* § 14 PES-*wa/i-i-ha*; TELL AHMAR 2 § 21 PES-*wa/i-i-ti* (3pl.(?)pres.) and GAZİANTEP l. 2 PES-*wa/i-i-ti*$^{-i}$.

[25] Cf. CLuw. 3sg.pres.act. *i-ti* 'goes'. Note that the length of the initial vowel cannot be deduced from the orthography, as word-initial spellings like /V-C°/ are ambiguous with regard to plene writing. However, the lenited verbal ending -ti shows us that the preceding vowel was long and accented: CLuw. /íti/.

2.5.3 (DEUS)TONITRUS-*hu-ti-i* (DN)

The dat.-loc.sg. ending of the Storm-god's name is written twice with linguistically real plene: BABYLON 1 § 9 (DEUS)TONITRUS-*ti-i* (cf. Figure 2.4) and PALANGA § 7 TONITRUS-*hu-ti-i*. In addition, there are eight ambiguous cases ending in *-ti-i*/*-ti*$^{\text{-}i}$, and ten non-plene forms ending in *-ti*. This name is also attested in Lycian, where we find *trqqas* (nom.sg.c.) and *trqqñti* (dat.sg.c.), and in CLuw.: $^{\text{d}}$IŠKUR-*an-za* (voc.sg.c.), $^{\text{d}}$IŠKUR-*un-ti* (dat.sg.c.). Nowadays, the commonly accepted etymology is PIE *trh_2-u-(e)nt- (Kloekhorst 2006: 100; Melchert 2015a: 2). The attested forms in Luwian and Lycian indicate that this word originally must have shown ablaut: CLuw. $^{\text{d}}$IŠKUR-*an-za* and Lyc. *trqqas* (presumably /-H$^{\text{w}}$ants/ and /-k$^{\text{w}}$as/, respectively) both seem to continue a full grade in the suffix: *trh_2-u-ént-s*. In the suffixes of HLuw. TONITRUS-*hu-ti*(-*i*) and Lyc. *trqqñti*, on the other hand, we seem to be dealing with the zero-grade variant *-*nt*-.[26] In these two datives, it is most straightforward to assume that the accent therefore rested on the ending, so that we may explain all forms from an original hysterodynamic paradigm *trh_2-u-ént-s*/*trh_2-u-nt-ós*.[27] For this paradigm, the reconstructed hysterodynamic dative ending is PIE *-*éi*. Now, on the basis of CLuw. *i-ti* 'go' (3sg.pres.act.) < PIE *$h_1$éi-ti* and CLuw. *zi-*(*i-*)*i̯a-ri* 'lie' (3sg.pres.med.-pass.) < PIE *k^{w}éi-o-*(*ri*), we know that PIE **éi* normally gives /ī/ in Luwian (Melchert 1994a: 265)[28] Without any evidence to the contrary, it is safe to assume that HLuw. (DEUS)TONITRUS-*hu-ti-i* is a direct continuation of a PIE hysterodynamic dative *-*nt-éi*, yielding /-nt́ī/. If this is correct, then we see once more that the linguistically real plene spelling in Hieroglyphic Luwian corresponds to a long (accented) vowel.

[26] This is assumed by Melchert (2015a: 2), who cites Lyc. *trqqñt-* as continuing *trh_2-wnt-́*.

[27] Similarly Kloekhorst (2008: 838), who notes that this name looks like the *-*nt*-participle of an old *u*-present *$terh_2$-u-*. In this regard, it is interesting to recall that a hysterodynamic inflection has been reconstructed for athematic *-*nt*-participles on independent grounds by Beekes (1985: 64–77). This is corroborated by examples such as Skt. nom.sg.m. *san* < *h_1s-ént-s*, acc.sg.m. *santam* < *h_1s-ént-m*, gen.sg.m. *sataḥ* < *h_1s-nt-ós*.

[28] Note that the CLuw. initial <i-> in *i-ti* is ambiguous with regard to plene writing and does not tell us anything about the underlying vocalic length. However, the singleton ending <-ti> (instead of **<-it-ti>) shows that lenition has taken place, which means that the preceding vowel *i-* must be long (and accented): /ī́/.

2.5.4 *tu-u* 'you' (dat.-loc.)

In ASSUR letter *f+g* § 16, we find the orthotonic variant of the personal pronoun *tu-u* 'you' (2sg.dat.-loc.), which is securely spelled with linguistically real plene writing. In Hawkins 2000, it is the only attestation of this particular form, while we have cognates in Palaic (acc.-dat. *tu-ú*, Carruba 1970: 44) and Middle/New Hittite (acc.-dat. *tu-uk*, cf. Kloekhorst 2014: 493). Because HLuwian *tu-u* is free-standing (as opposed to enclitic *=du*, on which see Section 2.6.7), it is likely that its *-u* was accented. Still, it is not self-evident whether we should take the underlying vowel as long (/tū́/) or short (/tú/). It is well-known that PIE **é* and **ó* in open syllables yield a long /á́/ in Luwian, cf. CLuw. *na-a-u̯a-* 'not' < **né-*, CLuw. *u̯a-a-šu* 'well' < **uósu-* (Section 5.3 and Melchert 1994a: 263f.). In his *Anatolian Historical Phonology*, Melchert generalises this open-syllable lengthening of accented vowels, arguing that **í* and **ú* also underwent lengthening to Luwian /ī́/ and /ū́/.[29] Accordingly, he surmises that HLuw. *tu-u* is to be analysed as /tu:/, to which he adds: "but not directly provable from spelling!" (1994a: 262). Although it is quite possible that **í* and **ú* are lengthened in the same way as **é* and **ó*, I am not aware of any incontrovertible positive evidence, as all of Melchert's examples require a secondary accent shift (Melchert 1994a: 261f.). For this reason, I am hesitant to take the interpretation of HLuw. *tu-u* as /tū́/ as absolutely secure. On the other hand, such an interpretation would be effortlessly compatible with the hypothesis that linguistically real plene writing marks an underlying long vowel.

2.5.5 *sá-a-* 'to release'

One attestation of the verb *sa-* 'to release' is spelled with linguistically real plene writing: MARAŞ 4 § 10 *sá-a-ha* (1sg.pret.act.). In the rest of Hawkins 2000, this verb is attested 11 times without plene writing. The same verb is found in Cuneiform Luwian and in Lycian. In Cuneiform Luwian, we find a *ḫi*-conjugated stem *ša-*(*a-*): *ša-a-i* (3sg.pres.act.), *ša-*(*a-*)*at-ta* (3sg.pret.act.),

[29] The effects of open syllable lengthening in the Anatolian languages and its interplay with other phonetic developments in the prehistory of the Luwic languages are discussed in more detail in Chapter 5.

ša-(*a-*)*an-du* (3pl.imp.act.). In Lycian, on the other hand, we seem to be dealing with a *mi*-conjugated stem: *hadi* (3sg.pres.act.), *hade* (3sg.pret.act.), *hadu* (3sg.imp.act.). The plene spelling in Cuneiform Luwian suggests a long (accented) vowel /á/. This is also required by the Lycian 3sg. forms: they show the lenited endings *-di*, *-de* and *-du* (instead of their fortis counterparts *-ti*, *-te*, *-tu*), indicating that the vowel preceding them must have been long (and accented): /á/. Within the hypothesis proposed here, we can now explain the unique linguistically real plene spelling of HLuw. <*sa-a-*> as a way of marking the length of the underlying vowel.

2.5.6 Ablative-instrumental ending -C*a-a-ti*/-C*a-a-ri*+*i*

The ablative-instrumental ending is spelled with linguistically real plene <Ca-a> on three occasions: ALEPPO 2 § 24 MALUS-*la*/*i-a-ti* 'malice', BOY-BEYPINARI 1 § 4 *kwa*/*i-a-ti* (Goedegebuure 2010: 9) and the personal name SULTANHAN § 45 *wa*/*i-su-SARMA-ma-sa-a-ri+i*. The effects of rhotacism are visible in the latter example, indicating that the ending contained a lenited dental /θ/. This is corroborated by the cognates of this ending in Cuneiform Luwian and Lycian. In Cuneiform Luwian, we find that the ending is consistently spelled with a singleton, <Ca-(a-)ti>, while in Lycian, the sign <d> is used: <-Vdi>. I follow Kloekhorst (2014: 554f.) by taking the lenition in these endings to have been caused by a preceding long accented vowel (*/-V́ti/ > PAnat. */-V́di/). In Hittite, evidence for this Proto-Anatolian long vowel is found in the archaic ablative ending *-āz*, cf. *ták-na-a-az* /tgnáts/ 'earth' and *ḫa-an-ta-a-az* /Hantáts/ 'forehead'. Also in Cuneiform Luwian, the abl.-ins. ending is found spelled with plene writing, for example *ma-al-li-ta-a-ti* 'honey'. The Proto-Anatolian ancestors of Hittite *-āz*, CLuw. *-ādi* and Lyc. *-edi* have been reconstructed as *-ó́ti and *-ó́di (Kloekhorst 2014: 555). The latter is expected to yield Luwian /-áθi/ with a long vowel, which neatly co-occurs with the three Hieroglyphic Luwian linguistically plene writings under scrutiny here.

At the same time, it should be underlined that the HLuw. corpus has many ablative-instrumental forms which do not show any signs of a long vowel. Only three of the over 200 phonetically spelled abl.-ins. forms attested in the Iron Age corpus are written securely with linguistically real

plene writing. Even though it has been stated in Section 2.2 that linguistically real plene writing never occurs with absolute consistency within one lexical item, its extreme rarity in the case of the abl.-ins. is somewhat disconcerting. Nevertheless, a scarcity of plene spellings in ablative-instrumental forms is not limited to Hieroglyphic Luwian. Our Cuneiform Luwian corpus contains 273 ablative-instrumentals with phonetically spelled-out endings.[30] The vast majority (202; 74%) of these are spelled non-plene as <Ca-ti>; only 56 (26%) attestations are written with plene spelling: <Ca-a-ti>. Naturally, as long as Cuneiform Luwian plene writing of *-a-* lacks a detailed study, any interpretation of these ratios remains necessarily speculative. Assuming, however, that Cuneiform Luwian plene writing marks long vowels (as it does in Hittite), we must account for the relatively frequent occurrence of non-plene <Ca-ti> in one way or another. Kloekhorst 2014: 555 solves the problem by assuming that there were two different abl.-ins. endings in Proto-Anatolian: accented **-ṓdi* and unaccented **-ti*. In the Luwic languages, he argues, the lenited variant was generalised, yielding both accented PLuw. **-ṓdi* and unaccented **-odi*. Through regular development, these turned into Luw. *CVC-ā́di ~ CV́C-adi*.

Admittedly *ad hoc*, but nonetheless possible, is the suggestion that the Iron Age HLuw. ending *-adi* was generalised at the expense of *-ā́di*. MALUS-*la*/*i-a-ti*, *wa*/*i-su-SARMA-ma-sa-a-ri+i*, *kwa*/*i-a-ti* and conceivably also *za-a-ti* (cf. 2.6.6) would thereby represent archaic forms.

2.5.7 *á-pi-i* 'back, afterwards'

The adverb *á-pi*(*-i*) 'back, afterwards' is attested with linguistically real plene writing twice: SULTANHAN § 12 *á-pi-i*; SULTANHAN § 41 *á-pi-i*(*-wa*/*i-tà-a*), alongside two ambiguous plene spellings *á-pi-i* (SULTANHAN § 3, § 45). In addition, Hawkins 2000 lists non-plene *á-pi* 23 times. Notably, all four examples of linguistically real plene *á-pi-i* stem from the SULTANHAN inscription, which raises the possibility that we are dealing with a peculiarity of a certain scribe, rather than a pan-HLuwian linguistic phenomenon. I will leave this question open for now. Nevertheless, the assumption that the lin-

[30] Numbers based on a manual count in Melchert 1993.

guistically real plene writings of *á-pi-i* are *sprachwirklich* does not pose any immediate danger to the hypothesis that linguistically real plene marks vocalic length, as I will argue here.

Since Oshiro 1988: 251f. HLuw. *á-pi*(*-i*) has been connected to HLuw. *á-pa-na* 'behind' and Hitt. *a-ap-pa-an* 'id.', which are further related to Lyc. *epñ* 'afterwards' and *epi* (local adverb) as well as CLuw. (*a-*)*ap-pa-an* 'behind' and *a-ap-pa* 'back, again'.[31] These forms are petrified case-forms of an old nominal paradigm, with HLuw. *á-pi*(*-i*) and Lyc. *epi* both containing an old athematic dative-locative ending (either **-éi* or **-i*). Now, if the final *-i* of *á-pi*(*-i*) truly continued the PIE locative singular ending **-i*, as Hawkins (2000: 555) suggests, then it would be hard to explain why the SULTANHAN scribe wrote a linguistically real plene vowel after *á-pi* in § 12 and § 41. The hysterodynamic dative-locative singular ending **-éi*, on the other hand, would be much less problematic. As we have already seen in Section 2.5.3, a PAnat./PIE diphthong **éi* is expected to yield a long vowel /ī/ in Luwian. The scribe may have wanted to express this using linguistically real plene spelling in HLuw. *á-pi-i* /ʔapī́/.

One could object to this scenario that a desinentially accented protoform **Hp-éi* is difficult to reconcile with Hitt./CLuw. *a-ap-pa*, which is presumed to continue a radically accented allative **Hóp-o*/**Hép-o*. Put differently, we would expect to find Hitt./CLuw. ***ap-pa-a* < **Hp-ó* in that case. However, we must not forget that attested Hitt./CLuw. *a-ap-pa* itself cannot be the regular outcome of PIE **Hópo*, from which we would expect ***a-pa* (with a lenited stop). For this reason, Kloekhorst 2014: 558f. has proposed that Hitt. *a-ap-pa* and all related forms continue an ablauting paradigm with either static inflection (nom. **Hóp-s*, gen. **Hép-*(*o*)*s*, with generalised radical accentuation) or mobile inflection (nom. **Hóp-s*, gen. **Hp-ós*). In addition, it is worth noting that the expected dat.-loc.sg. of the latter paradigm is exactly **Hp-éi*, which would regularly develop into HLuw. *á-pi-i*.

[31] The existence of an enclitic =*appi* in Cuneiform Luwian is not assured (Melchert 1993: s.v. '*appi*').

2.5.8 *ti-i-wa/i-t*° 'Sun-god'

The name of the Sun-god is spelled with linguistically real plene writing twice: in KÜRTÜL § 6 (DEUS)*ti-i-wa/i-ti*-x and as the second part of the composite personal name KARATEPE 1 § 1 Hu. [I](LITUUS)*á-za-ti-i-wa/i-tà-sá*. It is cognate with Hitt. *šḭ̯uatt-* 'day', CLuw. *Tiu̯ad-* 'Sun-god' and Pal. *Tiu̯at-* 'id.'. According to Kloekhorst (2008: s.v. '[(d)]*šīu̯att-*'), these words continue an ablauting paradigm: pre-Proto-Anatolian nom.sg. **diéu-t-s*, acc.sg. **diu-ót-m̥*, gen.sg. **diu-t-ós*. Already in Proto-Anatolian, the full grade of the suffix **-ot-* must have been generalised throughout the paradigm. The Luwian form could either continue PAnat. **díu-od-* (with zero grade in the root; as per Melchert 1994a: 240) or **diéu-od-* (with full grade in the root, cf. Rieken 1999: 105). In both cases, the result would contain a phonetic feature for which Hieroglyphic Luwian plene writing is expected within the hypothesis investigated here. Zero-grade PAnat. **díu-od-* would develop into PLuw. **tíuəd-* through regular lengthening of accented vowels in open syllables before [w], cf. Melchert 1994a: 240 and Section 5.3. Full-grade PAnat. **diéu-od-* would presumably yield raising of PAnat. **e* > **i* under influence of the preceding [j]: PLuw. **tiíu-əd-* (cf. also Section 2.3.5. Subsequently, this disyllabic sequence presumably contracted to HLuw. *tī́uad*. In either scenario, the plene spelling in HLuw. *ti-i-wa/i-*° plausibly represents an accented long vowel *ī́*.

2.6 Group III: word with unclear etymologies

In this section, we turn to morphemes and words that are very difficult to interpret phonologically. They often have neither good cognates nor convincing etymologies. For this reason, they are of limited use for testing our hypothesis.

2.6.1 *a/i*-stem nouns/adjectives

In terms of tokens, the largest group of linguistically real plene spellings consists of direct case endings of nouns and adjectives belonging to the *a/i*-stem class, which is traditionally referred to as the '*i*-mutation' class. A defining

feature of this class is that the stem of its common-gender nouns and adjectives contains *-i-* in the direct cases (nominative and accusative). Words of this class continue original PIE consonant stems, *i*-stems and thematic stems (also including adjectives with the suffix *-ia-*), cf. Norbruis fthc.

In Hawkins' Iron Age corpus (2000), I have counted 189 linguistically real plene writings of <i> in the direct case endings <-Ci-i-s°> (nom.sg.), <-Ci-i-na> (acc.sg.) and <-Ci-i-zi> (nom./acc.pl.). These include the participles in *-mi-*(*i-*), e.g. KULULU 2 B1 *u-wa*/*i-mi-i-sá* 'drinking'; KARKAMIŠ A11*b* § 1 *á-za-mi-i-sa* 'loved'; derivations with the 'ethnic' suffix *-wa*/*i-ni-*(*i-*), e.g. HAMA 8 § 1 *i-ma-tu-wa*/*i-ni-i-sa*(REGIO) 'Hamathite, from Hama'; genitival adjectives in *-a-si-*(*i-*), e.g. BOYBEYPINARI IVD3 *á-pa-si-i-na* 'that'.

Ever since this stem class was first identified in Starke 1982: 408f.[3], scholars have tried to explain the origins of its stem-final *-i-* in various ways (see Rieken 2005: 51f. for a short *Forschungsgeschichte*). Starke himself (l.c.) tried to trace the *-i-* back to the PIE ablauting suffix **-ih_2-*/*-ieh_2-* ('devḯ-suffix'), used to form feminine nouns in various Indo-European languages. This connection was followed by both Oettinger (1987: 42) and Melchert (1994a: 261, 2003: 187 etc.), and the latter analyses the vowel as long (/ī/) on account of plene writing in Cuneiform Luwian. More specifically, "The length of the inserted *-ī-* is assured by plene spellings such as nom.sg. *da-a-u-i-iš* 'eye' (where the accent is surely on the first syllable)" (Melchert 2003: 188). Rieken 2005 rather derives the *i*-mutated forms from an older ablauting *i*-stem paradigm *-i-*/*-oi-*. To account for the length of the mutation *i* in the common gender nominative/accusative singular, she envisages an accent shift from the root to the *-i-*, analogous to the suffixal accentuation in the oblique cases. Subsequently, this accented *-i-* would have been lengthened (Rieken 2005: 67) as follows: pre-Luw. nom.sg.c. **CV́C-is* > **CVC-ís* > **CVC-ī́s*.

However, the length of the mutation-*i* in Cuneiform Luwian is not beyond doubt. Rieken (2017) has recently collected and analysed all Cuneiform Luwian plene spellings of *i*. One of the conclusions she reaches is that "there is no reason to assume that the *i*-mutation vowel was long" (2017: 27). If this conclusion also holds for the *-i-* in Hieroglyphic Luwian *a*/*i*-stem nouns and adjectives, we cannot interpret their frequent plene spellings as markers for underlying vowel length.

One possible reconciliation of both data sets takes the same point of

departure as Rieken 2005, assuming that the Luwian *a*/*i*-stem paradigm originates from inherited *i*-stem paradigms. One could assume that, in time, the inherited *-ei-*/*-i-*ablaut was levelled out by extending the oblique variant *-ei-* to the direct cases of the paradigm. This replaced the original nom.sg.c. **-C-i-s* and acc.sg.c. **-C-i-n* endings by nom.sg.c. **-C-ei-s* and acc.sg.c. **-C-ei-n*, which would develop to **-C-ī-s* and **-C-ī-n* through regular phonetic development.[32]

2.6.2 Pronominal paradigms: *kwa*/*i*-(*i*-)/*kwa*/*i*-(*a*-) 'who, which'; *za*-(*a*-)/*zi*-(*i*-) 'this'

Linguistically real plene writing also features heavily in the paradigms of *kwa*/*i-* 'who, which' and *za*/*i-* 'this'. Their paradigms are given in Table 2.6.

The direct singular cases of *za*-(*a*-) have already been treated in Section 2.3.1, and we will return to the ablative-instrumental *zi-i-na* and the dative-locatives singular *kwa*/*i-a-ti*$^{(-i)}$ and *za-a-ti* in Sections 2.6.3 and 2.7.1, respectively. The other case forms of these two pronominal stems will be treated here.

The direct cases of the HLuw. relative/interrogative pronoun nom.sg.c. *kwa*/*i-i-sa*$_x$, acc.sg.c. *kwa*/*i-i-na*, nom.pl.c. *kwa*/*i-i-zi* and acc.pl.c. *kwa*/*i-i-zi* all show an *-i-* which is lacking in the oblique cases (Melchert 2003: 191). In addition, the *-i-* is often spelled with linguistically real plene writing. This corresponds well to the frequent plene spellings we find in the cuneiform attestations: alongside 34 non-plene CLuw. *ku-iš*, we find five plene *ku-i-iš*, and alongside one non-plene *ku-in*, there are three attestations of *ku-i-in*. Lastly, three counts of non-plene *ku-in-zi* contrast with two plene *ku-i-in-zi*. The plene spellings of Cuneiform Luwian are thus significant and indic-

[32] A different line of development is taken by Norbruis (fthc.), who argues that the plene spellings in *a*/*i*-stem words are simply space-fillers, used in penultimate position. While this explanation avoids the difficulty of having to explain the mismatch between CLuw. non-plene spelling and HLuw. linguistically real plene spelling, it still faces the challenge of accounting for two concurrent space-filling practices. In addition, it should address cases like KARKAMIŠ A11*c* § 25 ("FLUMEN+MINUS")*sà-ku+ra*/*i-wa*/*i-ni-i-zi-ha* 'of Sakura' (nom.pl.), where the plene spelling is not found in penultimate position.

	Linguistically real plene/Non-plene spellings			
	***kwa/i-* 'who, which'**		***za/i-* 'this'**	
nom.sg.c.	*kwa/i-i-sa*$_x^{(-a)}$	34x/85x	*za-a-sa*	8x/14x
acc.sg.c.	*kwa/i-i-na*$^{(-a)}$	1x/5x	*za-a-na*	5x/39x
nom.-acc.sg.n.	*kwa/i-a-za*	5x/5x	*za-a*	7x/59x
dat.-loc.sg.	*kwa/i-a-ti*$^{(-i)}$	4x/4x	*za-a-ti*	11x/25x
nom.pl.c.	*kwa/i-i-zi*	2x/9x	*za-a-zi*	9x/13x
acc.pl.c.	*kwa/i-i-zi*	2x/1x	*za-a-zi*	7x/5x
nom.-acc.pl.n.	*kwa/i-ia*	0x/11x	*za-a-ia*	1x/32x
dat.-loc.pl.	—	n.a.	*za-a-ti-ia-za*	3x/5x
abl.-ins.[1]	*kwa/i-a-ti*	1x/0x	*zi-i-na*	4x/11x

[1] Note that this count does not include KARKAMIŠ A17*c* § 1 *kwa/i-a-ti* and § 2 *kwa/i-a-ti*$^{-i}$, whose interpretation is unsure. Their form suggest that they originally must have been dative-locatives or ablative-instrumentals.

Table 2.6: HLuw. *kwa/i-(i-)/kwa/i-(a-)* 'who, which' and *za-(a-)/zi-(i-)* 'this'

ate that the vowel in the relative/interrogative pronoun was long.[33] If this is true, the CLuw. data may show independent support for length of the *-i-* in HLuw. *kwa/i-(i-)*. The nom.-acc.sg.n. *kwa/i-(a-)za* is usually analysed as /k^{w}antsa/, with the thematic ending /-an/ followed by the particle *=sa/za*, which is commonly attached to singular neuter nom.-acc. forms (Melchert 2003: 191, Yakubovich 2015: 15). To explain the linguistically real plene writ-

[33] One could object to this view that the plene written <i> was used as a glide [wi] here, similarly to plene <i> in CLuw. *da-a-u-i-iš* (Section 2.6.1). Note, however, that the scribes did not deem it necessary to write a glide between a labiovelar and /i/ in the Hittite paradigm of *ku-iš* /k^{w}is/, *ku-in* /k^{w}in/, *ku-it* /k^{w}it/ etc. (We only find one attestation of *ku-i-it* in OS, for which cf. Kloekhorst 2014: 433.) If both the CLuw. form and the Hittite form had the same underlying phonetic structure [k^{w}is], [k^{w}in] etc., then I would expect them both to be written in the same manner. Rather, the fact that the CLuw. forms were written differently from the Hittite forms by the very same scribes suggests to me that they were phonetically distinct.

ing in this form in terms of vocalic length, one could argue that the vowel was analogically lengthened after other case-forms containing a long /ā/, such as *kwa*/*i-a-ti* (dat.-loc.sg., cf. Section 2.7.1) and *kwa*/*i-a-ti* (abl.-ins.).[34]

Lastly, we find linguistically real plene writing of *a* in the oblique and plural cases of *za*-(*a*-) 'this'. Next to the nom./acc.pl.c. HLuw. *za-a-zi*, we find CLuw. *zi*-(*i*-)*in-zi* (nom.pl.c.) and *zi-i-in-za* (acc.pl.c.), containing an *-i-*. At first sight, the distribution of the *-i-* in the CLuw. paradigm may suggest influence from the *i*-mutated paradigms. However, the *-i-* in CLuw. *zi*-(*i*-)*in-zi* and *zi-i-in-za* occasionally shows plene spelling (Rieken 2017: 23). This does not correspond well to the synchronic CLuw. mutation-*i*, which was only spelled with plene writing in specific environments, as has been argued in Section 2.6.1.[35] The CLuw. forms with *i* may therefore be old (at least the nom.pl.c.), meaning that the vocalism of HLuw. *za*-(*a*-)*zi* must be secondary. Analogical replacement of original HLuw. **zi-i-zi* >> *za*-(*a*-)*zi* on the basis of the singular cases *za*-(*a*-)*sa* and *za*-(*a*-)*na* is perfectly understandable, as it would have regularised the paradigm. The long accented vowels of the singular forms *za-a-sa* and *za-a-na* would have been taken over in the plural cases, where they were represented by linguistically real plene writing. A similar analogy must have taken place in the case of dat.-loc.pl. *za*-(*a*-)*ti-ia-za*, which formally looks like the dat.-loc.sg. form *za*-(*a*-)*ti* with the synchronic dat.-loc.pl. ending *-anz*, and possibly also in the case of *za*-(*a*-)*ia*, the nom.-acc.pl.n., whose origins are unclear.

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[34] Phonologically, it is also possible to analyse nom.-acc.sg.n. *kwa*/*i-a-za* as /kwā́t=sa/, showing the expected reflex of PIE pronominal nom.-acc.sg.n. ending **-ód*, which we also find in *za-a* 'this' < PIE */ḱód/, cf. Pal. *ka-a-at*. Note, however, that this leaves unexplained why the element *=za*/*sa* is present in *kwa*/*i-a-za* while it is missing in *za-a*.

[35] Rieken (2017: 3) argues that the length of *zi-i-in-zi*/*zi-i-in-za* was analogically taken over from the case-forms containing *za-a-*. Since we are dealing with two different vowels, however, this solution does not seem attractive. Rather, I follow Melchert (2009: 114), who claims that *zi-i-in-zi* goes back to PIE **ḱoi*, which also yielded Hitt. *ke-e* (Kloekhorst 2012a: 259, cf. also Skt. *te* and Hom. Gr. τοι, both nom.pl.m. < PIE **toi*). The addition of the plural marker *-nzi* (whatever its origins), which is ubiquitous among nouns and adjectives, would be trivial.

2.6.3 Pronominal ablative-instrumental *zi-i-na, á-pi-i-na*

One major innovation found in the hieroglyphic texts (unattested in the CLuw. corpus) is its use of special ablative-instrumental forms in the deictic pronouns (Goedegebuure 2007). For *za-*(*a-*) 'this' we find *zi-i-na* (2x), *zi-i-pa-wa*/*i*$^{(-a)}$ (2x) with linguistically real plene writing. Unsure are MALPINAR § 9 *zi*$^{-i}$*-wa*/*i*[...] and KARKAMIŠ A6 § 4 *zi*$^{-i}$*-na*, as the <i> in these attestations may also be interpreted as a word-internal space-filler, cf. Section 1.5.3. Lastly, Hawkins 2000 contains 11 non-plene occurrences: *zi-na*, of which five occur in the KARATEPE bilingual inscription. For the distal deictic pronoun *á-pa-* 'that', we find linguistically real plene *pi-i-na-*a*, in KARKAMIŠ A11*b* § 14, next to four attestations of non-plene *á-pi-na* and *pi-na-*a*. It is tempting to compare these pronominal adverbs to similar ones in Cuneiform Luwian. There we find one attestation of *a-pa-ti-i-i*[*n*] 'thus' (vs. 3x *a-pa-ti-in*) and two of *ku-u̯a-a-ti-i-in* 'as; how?' (vs. 6x *ku-u̯a-*(*a-*)*ti-in*), whose plene spellings suggest that the *-i-* was long. Unfortunately, however, there is no secure etymology to substantiate this suggestion.

2.6.4 Genitive singular ending *-Ca-si-i*

Another innovation found in Hieroglyphic Luwian is a new genitive singular ending in *-Ca-si*(*-i*). Its word-final *i* is securely spelled with linguistically real plene writing on the following three occasions:

1. KARKAMIŠ A1*a* § 32 (PANIS)*tu+ra*/*i-pa-si-i* 'bread';
2. BABYLON 1 § 7 *"*AEDIFICIUM*"-si-i* 'building'(?);
3. ADIYAMAN 1 § 8 *pa-si-i-*a* 'that'.

According to Melchert (2012a: 279), building on Yakubovich 2008: 211, this ending originates in the PIE gen.sg. ending **-osio*. He argues that unaccented non-high vowels would have developed into [ə] in word-final position: PAnat. *[-osjə]. This [ə] later merged with /i/ after it was coloured to [i] by the preceding glide: *[-osjə] > *[-osji] > Luw. /-as(s)i/.[36] If this scenario is

[36] As a parallel to this development, Melchert (2012a: 279) provides Hittite *takku* 'if' <

true, we would have an unaccented, short vowel in HLuw. *-Ca-si-i*, which is difficult to reconcile with its linguistically real plene spelling. However, we can also imagine that the colouring of [ə] > [i] in word-final **-osio* > **-osiə* > **-osii* happened in the same way as **-ie-* to **-ii-* in "AUDIRE+*MI*"*-ti-i-tá* (cf. Section 2.3.5. In the latter case, we have seen that the plene spelling may represent a disyllabic sequence /ii/ or a long vowel /ī/. The same interpretation is thus applicable to the HLuw. genitives in *-Ca-si-i*: PIE **-osio* > PAnat. **-osiə* > pre-Luw. **-osii* > HLuw. /-asii/ or /-asī/. This all necessarily remains very speculative.

2.6.5 *á-mi-i* 'my' (dat.-loc.sg.)

The dat.-loc.sg. of 'my' is attested 32 times in Hawkins 2000. Six times, we can be sure that its *-i* is spelled with linguistically real plene writing: KARKAMIŠ A6 § 8 *á-mi-i*$^{-a}$; BOROWSKI 3 § 9 *mi-i-*a*; TELL AHMAR 1 § 14 *mi-i-*a*; TELL AHMAR 2 § 13 *mi-i-*a*; TELL AHMAR 1 § 20 *mi-i-ha-wa*/*i-*a*; ALEPPO 2 § 17 *mi-i-pa-wa*/*i-*a* 'my'. 17 cases of *á-mi-i* and *mi-i-a* are ambiguous: their plene vowel signs may or may not have been used as space-fillers. We also find nine non-plene attestations of *á-mi* and *mi-*a*. The HLuw. paradigm of *á-mi-* 'my' is very peculiar. On the one hand, its nom.-acc.sg.n. *á-ma-za* next to nom.sg.c. *á-mi-i-sa* and acc.sg.c. *á-mi-i-na* suggest that the paradigm behaves like an *a*/*i*-stem (cf. Section 2.6.1). On the other hand, the dat.-loc.pl. *á-mi-ia-za* /ʔamiants/ and the abl.-ins. *á-mi-ia-ti* /ʔamiaθi/ rather suggest that the stem was synchronically interpreted as an *-i*(*a*)-stem, and Yakubovich 2013ff. also lists this word as such: "ami(ya)-". The dat.-loc.sg. of *-ia*-stems shows two different endings: *-i* and *-ia* (cf. HLuw. *tadi*(*a/i*)- 'fatherly': dat.-loc.sg.c. *tá-ti*$^{(-i)}$ and *tá-ti-ia*). The ending *-ia* looks very archaic and must be the older of the two, while the ending *-i* could easily have been introduced

**tok*^{w}*e* and *nekku* 'not?' < **nek*^{w}*e* (but cf. Kloekhorst 2008: 97, where a case is made for general loss). Recently, Sideltsev and Yakubovich (2016: 34[32]) have argued that the distribution between *-kki* and *-kka* in Hitt. *kuiški* 'something' may also be explained in this way. According to them, pre-Hitt. **-Cke* > **-Ckə*, after which the shwa was coloured by the vowel in the preceding syllable: if the preceding syllable contained [i(ː)], then the word-final shwa merged with /i/, e.g. nom.sg.c. *kuiški*, nom.-acc.sg.n. *kuitki*, dat.-loc.sg. *kuedanikki*. In all other cases, the new word-final shwa merged with /a/: nom.pl.c. *kuiēšqa*; acc.pl.c. *kuiušga*.

from other stem-classes (e.g. the *a*/*i*-stems), cf. Norbruis in prep.(a). It is clear that *á-mi-i* contains this analogical ending *-i*, but we may ask ourselves how it came to be incorporated in the paradigm of *á-mi-i*(*a*)- 'my'. It is not unthinkable that a pre-Luwic stem */ʔami-/ enlarged by the dat.-loc. ending /-i/ first yielded */-i-i/ in a disyllabic sequence. The linguistically real plene writing in HLuw. *á-mi-i* would then be an attempt by the scribes to render a preserved disyllabic sequence or the result of contraction to /-ī/.

2.6.6 *za-a-ti* 'thus, here'

Hawkins 2000 contains one example of the adverb *za-a-ti* 'thus, here' with linguistically real plene spelling: KARKAMIŠ A19*j* *za-a-ti*. In addition, we find 16 attestations which are spelled non-plene, either with rhotacism (i.e. *za-ri+i*) or without, as in *za-ti*. Goedegebuure (2010) proposes considering the adverb *zati*/*zari* as an old ablative-instrumental form, which was later replaced by *zi-*(*i-*)*na* (cf. Section 2.6.3). This interpretation takes *zati*/*zari* as the regular reflex of Proto-Anatolian *-*ṓdi* (< PIE *-*óti*), which we would expect to yield HLuw. /áθi/, cf. Section 2.5.6.[37] If Goedegebuure's identification of *za-*(*a-*)*ti* as an old ablative-instrumental is correct, then the linguistically real plene spelling would correspond to a long accented /ā́/, supporting our hypothesis. At the same time, the rarity of linguistically real plene writing in *za-a-ti* (only once in 17 attested cases) would correspond neatly to the overall rarity of linguistically real plene spellings in the ablative-instrumental case ending. Alternatively one may also account for the linguistically real plene spelling by virtue of analogy. The long accented /ā́/ present in the direct cases of *za-a-* 'this' could easily have been introduced in its cognate adverb *za-*(*a-*)*ti*.

2.6.7 Miscellanea

Lastly, linguistically real plene writing is found in various uncommon lexical items whose etymology is unknown or still debated. Consequently, these

[37] For the lenition after PIE **ó*, cf. Section 5.2.1, fn. 9).

words cannot be used to support or contradict an interpretation in terms of vocalic length or accent, cf. Table 2.7.

Attestation	**Text**
(*"*OCCIDENS*"*)*á-pa-zi-i-ti* '?'	MARAŞ 7 Side A
HÁ+*LI-i-sa* (PN)	BOYBEYPINARI 2 § 17
(CASTRUM)*ha*+*ra*/*i-ní-i-sà* 'fortress'	KARATEPE 1 § 23 Ho.
(*"*LOQUI*"*)*ha-ti-i-ti* 'to speak, proclaim' (3sg./pl.pres.act.)	ASSUR letter *f*+*g* § 1
kar-ka-mi-i-si-sa$_5$(URBS) 'Carchemishean'	GÜRÜN § 1b
kwa/*i*+*ra*/*i-i* 'since, if' (3x)	KARKAMIŠ A11*c* § 30 & § 31; KARKAMIŠ A13*d* § 5
^{I}*ma-li-i*-TONITRUS-*pa-sá* (PN)	KARKAMIŠ A7 § 7
ma-sa-ha-ni-i-ti 'to make grow' (3sg.pres.act.)	SULTANHAN § 22
SUB-*na-a-na*$^{-a}$ 'under', 'demote' (with *i-zi-i-*) (preverb)	ALEPPO 3 § 4
na-a-pa '?'	ASSUR letter *f*+*g* § 5
OMNIS+*MI-ní-i-ma-za*$_4$ 'all'; *ta-ni-mi-i-*(*ha-a-wa*/*i*)[38] 'every' (dat.-loc.sg.)	KARATEPE 1 § 50 Ho.; KARKAMIŠ A6 § 20
(INFANS)*ni-mu-wa*/*i-i-za-sa* (2x) 'child'; *ni-mu-wa*/*i-i-za-sa* 'child'	TELL AHMAR 1 § 1 & § 19; MARAŞ 4 § 1
CRUS-*nú-wa*/*i-mi-i-na* 'to set up'	SULTANHAN § 3
^{I}*pa-na-mu-wa*/*i-ti-i-sa* (PN)	BOYBEYPINARI 2 § 17

Continued on next page.

[38] But cf. Section 2.7.2.

Attestation	**Text**
(*"*CULTER*"*)*pa*+*ra*/*i-tú-ni-i-tú* 'to sever'(?) (3pl.imp.act.)	KARKAMIŠ A11*c* § 27
pa+*ra*/*i-i*(=*ha*$^{-a}$) 'over'(?)	KARKAMIŠ A1*a* § 10
pi-i-ha-mi-na 'glorified'	KARKAMIŠ A27*o*
SERVUS-*lá*/*í-a-sa* (PN)	BABYLON 2 § 1
SUPER+*ra*/*i-a-wa*/*i-ta* 'high' (Hawkins 2000); 'over' (Yakubovich 2013ff.)	TELL AHMAR 5 § 12
PUGNUS-*ri*+*i-i-ia-ha* 'exalted' (Hawkins 2000); 'solemnly' (Yakubovich 2013ff.)	KARKAMIŠ A15*b* § 2
(MANUS.*273)(-)*su-hi-i-ti-ha* (1sg.pret.act.)	KARKAMIŠ A15*b* § 14
tara/*i-pa-a-ti* 'to trample'(?)	KARAHÖYÜK § 22
tá-ti-i 'father' (dat.-loc.sg.)	MARAŞ 4 § 8
MONS-*ti-i* 'mountain' (dat.-loc.sg.)	ÇALAPVERDİ 1 § 3
=*tu-u* 'you' (2sg.dat.-loc.encl.; 3x)[39]	ASSUR letter *c* § 5; ASSUR letter *a* § 4; ASSUR letter *f* +*g* § 15
"9"-*wa*/*i-i-za*(-*ha-wa*/*i-tú*) 'ninth part' (2x)	KARKAMIŠ A13*d* § 4 & § 7
"(*187)*zú*"-*mi-la-a-na* '?'	ASSUR letter *c* § 8

Table 2.7: Miscellaneous lexical items with linguistically real plene writing

[39] Unlike its third-person counterpart /=θu/, second-person /=θu/ is not attested before a vowel-anlauting clitic. Therefore, we cannot judge whether it would show elision of its vowel or not (cf. Section 2.4.2).

2.7 Difficult cases

In Sections 2.3 to 2.6, we have seen all the data supporting or at least compatible with the hypothesis that linguistically real plene writing marks vocalic length or a disyllabic sequence. In this section, we will consider the evidence which *prima facie* threatens this hypothesis. In most cases, strong etymological considerations seem to preclude the presence of a long (accented) vowel in places where we find linguistically real plene spelling. Closer inspection, however, reveals that almost all of these forms can be explained in alternative ways.

2.7.1 *za-a-ti* and *kwa/i-a-ti* (dat.-loc.sg.)

The dative-locative singular of the paradigm of *za-(a-)* 'this' (cf. Sections 2.3.1 and 2.6.2) is *za-(a-)ti*, which is spelled 11 times as *za-a-ti* with linguistically real plene writing; *za-ti* with non-plene writing is found 25 times in the Iron Age corpus. The dat.-loc.sg. of *kwa/i-(i-)/kwa/i-(a-)* 'who, which' is *kwa/i-a-ti*, found with linguistically real plene spelling four times. Its non-plene variant *kwa/i-ti* is also attested four times.

Goedegebuure 2010: 3–5 has argued that *za-(a-)ti* must contain a fortis dental stop to account for the consistent absence of rhotacism. She also connects dat.-loc.sg. *za-(a-)ti* to its direct cognate in Hittite: *ke-e-ti*. Both HLuw. *za-(a-)ti* and Hitt. *ke-e-ti* can be used to reconstruct the proto-form PIE **ḱéd^{h}i* (Kloekhorst 2012a: 258, further specifying Goedegebuure 2010: 14). This **ḱéd^{h}i* would have undergone Čop's Law in Proto-Luwic and would have eventually yielded */tsáti/ with a fortis dental /t/ and a short /á/. If HLuw. *za-(a-)ti* still represented expected /tsáti/, then its linguistically real plene spelling would correspond to a short accented vowel, counter to our hypothesis. However, given the innerparadigmatic pressure exerted by the long stem-vowel variants *za-a-as* (nom.sg.c.), *za-a-na* (acc.sg.c.), *za-a* (nom.-acc.sg.n.) and *za-a-ti* (adv.), analogical leveling of an older dat.-loc. singular †*za-ti* /tsáti/ >> *za-a-ti* /tsáti/ seems quite trivial.

The linguistically real plene writing of parallel *kwa/i-a-ti* is problematic for the same reasons: by virtue of Čop's Law, we would expect its proto-form **k^{w}éd^{h}i* (cf. Hitt. *ku-e-da-ni* [OS]) to yield HLuw. */k^{w}áti/ with a short

vowel. In this case too, analogy would not be unexpected: the parallel dative-locative singular *za-a-ti* or other forms of the paradigm with a long vowel (such as the abl.-ins. *kwa/i-a-ti*) could have served as models, transforming †*kwa/i-ti* into *kwa/i-a-ti*.

2.7.2 *kwa/i-ti-i=ha, ku*-AVIS-*pa-pa-a=ha*[...] and abl.-ins. °C*a-ti-i=ha*

We now turn to several attested forms which all have in common that they show an unexpected linguistically real plene vowel immediately preceding the enclitic conjunction *=ha* 'and'.

First, there is the HLuw. indefinite pronoun 'anyone, anything', consisting of the relative/interrogative pronoun *kwa/i-* and *=ha* 'and'. The dative-locative singular of this pronoun is attested twice with linguistically real plene writing: KULULU 1 § 14 *kwa/i-ti-i-ha* and KARKAMIŠ A6 § 25 *kwa/i-ti-i-ha* 'someone, anyone'. Two non-plene forms are found: HAMA 4 § 5 *kwa/i-ti-ha* and AKSARAY § 8 *kwa/i-tí-ha*$_x$. In accordance with our hypothesis, we should take the linguistically real plene *i* as representing a long vowel: /kwatī=ha/.[40] However, this is at odds with the spelling of the unextended form of the dat.-loc.sg. relative pronoun *kwa/i-*(*a-*)*ti* (eleven attestations) and dative-locative singular forms of the other pronouns: *za-*(*a-*)*ti*$^{-i}$ 'this' (36x) and (*á-*)*pa-ti*$^{-i}$ 'that' (47x). These forms never show plene spellings of the *i* which cannot be interpreted as space-fillers. In addition, the sparsely attested Cuneiform Luwian cognates of these pronominal datives, viz. *ku-u̯a-at-ti* 'who/which' (four attestations) and *a-pát-ti*/*a-pa-a-at-ti* 'that' (2x) never show plene writing of their final vowel, suggesting that it was short in Cuneiform Luwian.

Next is the name of the god Kubaba, spelled *ku*-AVIS-*pa-pa-* in HLuw. Hawkins 2000 contains 44 phonetic spellings of this name, but only once do we find linguistically real plene spelling: KARKAMIŠ A19*r ku*-AVIS-*pa-pa-a-ha*[...] (acc.sg.c.) with the addition of the enclitic conjunction *=ha*.[41] The

[40] There is no reason to assume that the *-i-* in these forms was disyllabic.

[41] Note, however, that the <a> in KARKAMIŠ A6 § 21 (DEUS)*ku*+AVIS-*pa-pa-a* is ambiguous.

linguistically real plene <a> suggests that the stem-final vowel is long: /ā/. Again, however, there is comparative evidence which renders this implausible. More specifically, the same name is attested in Hittite as ^{d}*Ku-pa-pa*° (38x), $^{d.MUNUS}$*Ku-pa-a-pa*° (2x), ^{d}*Ku-ba-ba* (1x), ^{d}*Ku-ba-pa* (1x) or ^{d}*Ku-pa-u̯a*$_{a}$ (2x) (Van Gessel 1997: 264–266), never with plene word-final *a*.

Lastly, we return to the HLuw. abl.-ins. ending, whose plene spellings of *a* were examined in Section 2.5.6. In this section, we will take a closer look at its other vowel, *i*. It is spelled with linguistically real plene writing on three occasions in the Iron Age corpus:[42]

1. ARSLANTAŞ (Tell Ahmar) § 6 (BOS)*wa*/*i-wa*/*i-ti-i*=*ha* 'cow';
2. KARKAMIŠ A15*b* § 1 (DEUS)SOL-*tà-ti-i*=*ha* (DN);
3. KARATEPE 1 § 49 Hu. *ha-tà*+*ra*/*i-ti-i*=*há* 'life'.

The linguistically real plene writing in these attestations compels us to interpret these ablative-instrumentals as /-ăθī/ with a long final vowel /ī/. However, this is not borne out by the Cuneiform Luwian evidence. Of all CLuw. ablative-instrumentals in Melchert 1993 and Yakubovich 2013ff. (the latter lists 284), not one is spelled with plene spelled word-final i, which rather indicates that the final vowel was a short /-i/.

Comparing these ablatives to the pronominal dat.-loc.sg. *kwa*/*i-ti-i-ha* and the deity name *ku*-AVIS-*pa-pa-a-ha*, a striking similarity emerges: in all cases, the unexpected plene vowel is followed by the clitic =*ha* 'and'. It is highly unlikely that this is a coincidence. The presence of the clitic =*ha* must in some way or another be related to these unexpected linguistically real plene spellings. There are several ways to explain this correlation in terms of a causal connection. A few possible explanations are mentioned here:

1. **Aesthetic reasons.** To the scribe, writing °-*i-ha* may somehow have been more convenient, or otherwise preferable to writing °-*ha*$^{-a}$ (with

[42] At first sight, the final sign of KARKAMIŠ A11*c* § 34 (BONUS)*wa*/*i-sa*$_{5}$+*ra*/*i-ti-i* 'goodness' (abl.-ins.) cannot be explained as a space-filler. However, one can also take it as a space-filler belonging to the following word *pa-ti*$^{-i}$-**a*. The resulting spelling *pa-ti*$^{-i-i}$-**a* with two consecutive identical space-filling vowel signs is rare but certainly not unparalleled, cf. Section 1.5.3.

a filler vowel sign). While this is theoretically possible, we have several examples of *Ci-ha* where space-filling is used by adding an extra word-final <a>, for instance in BULGARMADEN § 6 *á-mi-ia-ti-ha-a* 'my' /ʔamiaθi=ha/. In order to uphold this theory, one would have to account for the distribution of two different space-filling practices.

2. **Phonetic lengthening.** Alternatively, we could set up a general phonetic rule, by which every short vowel is lengthened after the addition of /-h(a)/. This would be a very powerful rule with a large number of counterexamples.

3. **Accent shift.** Another possibility is that the addition of the clitic *=ha* caused a right-ward accent shift. In unextended *kwa/i-*(*a-*)*ti*, *ku-*AVIS-*pa-pa* and *Ca-*(*a-*)*ti*, the accent was originally on the penultimate syllable.[43] It is possible that the addition of *=ha* attracted the accent. Thus pre-HLuw. *[kʷáti=ha] > *[kʷatí=ha]. The resulting form would then be expected to undergo lengthening of short accented vowels in open syllables, yielding [kʷati:=ha].[44] In a way, the situation would be reminiscent of Latin, where the addition of *=que* 'and' causes a similar shift of accent: *bónus* + *=que* > *bonús=que* (Weiss 2009: 111).[45] The largest problems with this hypothesis are that there are no secure clitic-induced accent shifts attested elsewhere in Anatolian, and there are no unequivocal cases of lengthening before *=ha*.[46]

None of these options is without problems, and I will not insist on any of them. I can only emphasise that the linguistically real plene writing in

[43] For Hittite, this is suggested by the plene writing in ^{d}*Ku-pa-a-pa* (2x).

[44] Cf. Section 2.5.4 and Melchert 1994a: 261f.

[45] Cf. also Spencer and Luís 2012: 85–89 for references to similar phenomena in Polish and Macedonian.

[46] David Sasseville kindly brings CLuw. *la-al-pí-i-in=ti-i=t-ta* 'eyelash' /lalpin=ti=tta/ (KUB 32.10+ i? 10; acc.sg.c.) to my attention, where the presence of a pronominal clitic coincides with the plene writing of *i*. This situation stands in contrast to five attestations of non-plene *la-al-pí-in* without any clitic. This correlation between plene spelling and clitics looks similar to the one described for HLuw. here. However, in the absence of a full investigation of CLuw. plene writing, the significance of the presence or absence of plene writing remains unclear.

the three ablative instrumentals in °-*ti-i-ha*, *ku*-AVIS-*pa-pa-a-ha*, *kwa*/*i-ti-i-ha* and possibly also *ta-ni-mi-i-ha*(*-a-wa*/*i*) (cf. Section 2.6.7) must in some way be connected to the presence of *=ha*. Therefore, they do not necessarily damage the overall picture that linguistically real plene writing marks vocalic length or a disyllabic sequence.

2.7.3 1sg. *=mu-u*

The 1sg.dat.-loc. enclitic *=mu* 'me' is written with linguistically real plene spelling only once in Hawkins' (2000) Iron Age corpus, scil. KARKAMIŠ A5*a* § 7 *wa*/*i-mu-u-ta*, cf. Figure 2.7. The same corpus shows are 25 additional ambiguous attestations of <=mu-u>.

Figure 2.7: KARKAMIŠ A5*a* § 7 *wa*/*i-mu-u-ta*; Hawkins 2000 (plate 65).

This single secure linguistically real plene *=mu-u* is opposed to around 140 non-plene attestations of <=mu>. As mentioned in Section 2.4.2, the vowel of *=mu* is frequently elided when it is combined with clitics that start in a vowel, cf. *wa*/*i-ma-sá*, representing *=wa* (quot.ptcl.) + *=mu* 'me' + *=as* 'he/she' (nom.sg.c.). This also suggests (but does not prove) that its vowel was short. Contrary to other personal pronoun clitics we have seen, namely *=tu-u* (2sg.) and *=tu-u* (3sg.), dat.-loc.sg. *=mu*(*-u*) has well-attested cognates in the other Anatolian languages: CLuw. *=mu* (11 attestations) 'for me', Palaic *=mu* and Hittite *=*(*m*)*mu*. Nothing in the spelling of these related forms suggests the presence of a long vowel.

Because there is strong diachronic and synchronic evidence suggesting that the /u/ in HLuw. *=mu*(*-u*) synchronically cannot have been long, I must

leave the linguistically real plene spelling in KARKAMIŠ A5*a* unexplained for now.

2.7.4 Quotative particle =*wa*/*i-a*

According to a count based on Yakubovich 2013ff. the so-called 'quotative particle' /=wa/ is attested over 1450 times in Hawkins 2000. Only once do we find it spelled securely with linguistically real plene writing: ASSUR letter *e* § 2 *sa-pi-su+ra*/*i-wa*/*i-a-ti* 'Peace (be) to you!', cf. Figure 2.8.

Figure 2.8: ASSUR letter *e* § 2 [|]*sa-pi-su+ra*/*i-wa*/*i-a-ti*; Hawkins 2000 (plate 311).

This phrase has to be analysed as /sapisur=wa=θi/, containing *sapisur-* 'peace' and the clitic =*di* 'you' (2sg.dat.-loc.refl.), as indicated by ASSUR letter *f*+*g* § 2 *sa-pi-su+ra*/*i-a-wa*/*i-ma-za* /sapisur=wa=mants/ 'id.', where only =*di* is replaced by =*manz*, the plural form of the same reflexive dat.-loc.pl. pronominal clitic. I have no explanation for this highly unusual and rare spelling.

2.8 Conclusion

We began with the observation that plene spellings in Hieroglyphic Luwian can be divided into those which can be interpreted as space-fillers and those which cannot. It has been the aim of this chapter to account for the presence of the latter group of 517 'linguistically real' or 'linguistic' plene spellings.

Next, we established that linguistically real plene writing is not a random phenomenon: it is only found in some morphemes (e.g. *za-a-*, *i-zi-i-*,

-tu-u/*-tú-u*) while it is completely absent in others (e.g. the *-a-* in *á-pa-* and *tá-ti-* and the *-i-* in CUM-*ni*). This shows that linguistically real plene spelling was deliberately (though inconsistently) used in some words to mark a certain linguistic/phonetic feature. On the basis of *za-a-* 'this', *ni-i* 'not' (proh.), *pa+ra*/*i-i* 'before', LITUUS+*na-a-* 'to see', the verbs in *-i-*/*-ai-* and the clitic *=du* 'him', the hypothesis was formulated that linguistically real plene writing, in principle, marks a long vowel (either accented or unaccented). In addition, the denominal verbs "AUDIRE+*MI*"*-ti-i-* 'to hear' and ("COR")*za+ra*/*i-ti-i-* 'to desire' as well as the infinitive form DELERE+*nu-u-na* seem to indicate that it could also represent a disyllabic sequence.

For the lexemes and morphemes treated in Section 2.5, linguistically real plene writing is found conveniently in places where we would expect the presence of a long vowel or disyllabic sequence according to our current analyses. The items under scrutiny in Section 2.6, on the other hand, do not have secure etymological accounts, but it has been shown that they do not contradict the notion that linguistically real plene writing is primarily a marker of vocalic length.

The few items listed under Section 2.7 at first sight seem to contradict the hypothesis. Fifteen of them (*za-a-ti* [11x] and *kwa*/*i-a-ti* [4x]) can be explained through trivial analogical development, however. Eight true plene writings remain (viz. *kwa*/*i-ti-i-ha* [2x], *ku*-AVIS-*pa-pa-a-ha*, *-Ca-ti-i-ha* [3x, abl.-ins.], *=mu-u* and *=wa*/*i-a*), occurring in places where we do not expect to find a long vowel or a disyllabic sequence.[47]

Still, these are not numerous enough to disprove the hypothesis, which I hereby maintain: linguistically real plene writing in Hieroglyphic Luwian was used to mark long vowels or disyllabic sequences. Incidentally, and for the first time, this conclusion provides evidence for a direct representation of the phonemic opposition between long and short vowels in the Hieroglyphic Luwian writing system.

This conclusion has consequences for future research into the morphemes and lexemes listed in Section 2.6 which do not have a good etymology.

[47] Note that under a wider definition of space-filling, by which also penultimate vowel signs can be space-fillers, these 8 counterexamples could be readily explained. The problems complicating such an account, however, are listed in fn. 2.

The insight that these items may well have contained a long vowel will limit the number of possible historical scenarios, serving as a guide for future etymological endeavours.