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**Indo-European origins of Anatolian morphology and semantics:
innovations and archaisms in Hittite, Luwian and Lycian**

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Nominal Part

CHAPTER 1

The origin and spread of the ‘*i*-mutation’ paradigm and the prehistory of the Luwic nominal stem classes

Abstract: In this chapter it is argued that the Luwic paradigm known as ‘*i*-mutation’ originated in ablauting *i*-stems, which lost the oblique suffix by sound law and spread categorically, through the identity of the oblique cases, initially to the consonant stems, and later to the *o*-stems. The \bar{a} -stems, which are argued to survive as a class not only in Lycian but also in Luwian, escaped the spread because their oblique cases were not identical. The same goes for the *u*-stems, except in those cases where the stem vowel was consonantal.¹

1 Introduction

Proto-Luwic had a common gender nominal paradigm that is continued in its best-attested daughter languages in the following forms:²

	CLuw.		HLuw.		Lyc.	
	sg.	pl.	sg.	pl.	sg.	pl.
nom.	-iš	-inzi	-is	-inzi	-i	-i
acc.	-in	-inz	-in	-inzi	-i	-is
dat.-loc.	-i	-anz	-i	-anz	-i	-e
abl.	-ati		-adi		-edi	
gen.adj.	-ašša/i-		-asa/i-		-ehe/i-	

¹ I would like to thank Alwin Kloekhorst, Craig Melchert, David Sasseville, Xander Vertegaal, Kate Bellamy and the anonymous reviewer for their comments on earlier versions of this paper.

² Here I leave out the more marginal genitive plural, *-on (Lyc. -ē), whose exact locus and status in Proto-Luwic are not securely known. In the present context, it does not make any difference whether or not one reconstructs this ending for this paradigm. The same goes for the gen.sg. *-Vssō (HLuw. -Vsa, Lyc. -Vhe), which was most probably restricted to proper names (see Chapter 2).

In all of these languages this is the most frequent nominal paradigm, both in nouns and in adjectives. For adjectives, the accompanying neuter paradigm is identical to that of the common gender except for the nominative-accusative, which has the ending *-a* in the plural, and comes in two variants in the singular: thematic (nom.-acc.sg. **-on*) and consonantal (nom.-acc.sg. **-∅*). For example, the Lyc. adjective meaning ‘upper’ (nom.-acc.sg.c. *hrzz-i*, etc.) has a thematic neuter counterpart: nom.-acc.sg. *hrzz-ē*. Similarly, the HLuw. word for ‘each, all’ (nom.sg.c. *tanim-is*, etc.) has a nom.-acc.sg.n. *tanim-an-za*.³ Examples of adjectives with a consonantal neuter are CLuw. ‘evil’ (nom.sg.c. *ādduual-iš*, etc., nom.-acc.sg.n. *ādduual*) and Lyc. ‘how(ever) many’ (nom.pl.c. *kṃmēt-i*, nom.-acc.sg.n. *kṃmē*, with loss of final **-t*). Etymologically, most words and suffixes that inflect according to this paradigm continue *o*-stems (e.g. CLuw. *-mma/i-*, participle suffix, ~ Gr. *-μενος* < **-mh₁no-*) and consonant stems⁴ (e.g. CLuw. *īššar-iš* ‘hand’ ~ Hitt. *keššar*, Gr. *χείρ* < **g^hesr-*). So far, no agreement has been reached about the origin of the paradigm and its alternations, and how it came to affect the inflectional classes it affected.

2 Previous analyses

The alternations of the paradigm outlined above, both paradigm-internal and relative to the accompanying neuter, have been interpreted in various ways. When the synchronic details of the paradigm and its alternations had not yet become clear, the type was generally seen as a class of *i*-stems, which had spread to originally non-*i*-stem lexemes.⁵ Two major revising analyses have appeared since then: Starke 1990 and Rieken 2005. In the following I will present and discuss their analyses.

³ HLuw. nom.-acc.sg.n. forms always feature the historically unclear element *=za* (after *l, n*) or *=sa* (elsewhere). In CLuw. this element is not yet found in all instances.

⁴ Hereafter *C*-stems.

⁵ Cf. e.g. Kammenhuber (1969: 281): “Im K.-Luw. greift die *-i*-Deklination ... um sich”.

2.1 Starke 1990

2.1.1 Analysis

The first to study the complex in detail was Starke (1982: 408-409 n. 3; 1990: 59-93), who argued against a designation as *i*-stems, and instead regarded the inflection of the neuter of the adjectives, i.e. thematic and consonantal, as original. This tied in well with the fact that most words with this inflection are etymologically *o*-stems and *C*-stems. The element that needs to be explained in this analysis is the *-i-* found in the direct cases of the common gender. Its apparent position between stem and ending (*ādduḡal-i-š*, *-i-n*, *-i-nzi*, *-i-nz*), in the case of thematic stems with substitution of the original stem vowel, allowed Starke to analyze it as a suffix, which, in view of its restriction to the common gender, he regarded as a common gender marker. This marker was, in his view, restricted to the nominative and accusative because these were the cases designated for expressing gender differences (Starke 1990: 61, further developed by Melchert 1994b).

Analyzing the distribution of the supposed gender suffix in CLuw., Starke concluded that all common gender stem types except “*i/ia*”-stems, namely *C*-stems, *a*-stems and *u*-stems, showed *i*-insertion, but only to some degree. This led him to devise a notation indicating whether or not a specific member of a certain class had received the *-i-* (Starke 1990: 61): the addition of “(*i*)” indicated that it had received it (e.g. *īššar(i)*- ‘hand’), its absence that it had not (e.g. *ᵀtarḡunt-*, the Storm-god). For suffixed *a*-stems, in which the *-i-* replaced the *-a-*, he used “*a(i)*” (e.g. *-mma(i)*-, participle suffix), which in later literature developed into *-a/i-*. Starke (1990: 62-64, 91-93) saw the following distributions in CLuw. All common gender *C*-stems, both nouns and adjectives, received the suffix, except for the two theonyms *ᵀtarḡunt-* and *ᵀtiḡat-*. In *a*- and *u*-stems, only adjectives were affected (e.g. *-mma(i)*-, participle suffix, *ḡaš(u)*- ‘good’), but not all (not those in *-zza-*, e.g. ^{URU}*taurišizza-* ‘of Taurisa’), and *a*- and *u*-stem nouns were in principle not affected, except by analogy to associated *C*-stems. Similar distributions were observed in HLuw. and Lyc. (Starke 1990: 67-70).

Starke (1990: 71-85) tried to find traces of the same phenomenon in Lydian, Palaic, and Hittite.⁶ For Hittite, he adduced the *i*-stem inflection that seemed to have been secondarily attached to what he analyzed as *ua*-stem adjectives, e.g. *dankui-* ‘black, dark’, supposedly < **danku_{ua}*- < **d^heng^w-o-*, which has *i*-less forms in derivations such as *danku-ešš-* and *danku-nu-*, and might correspond to CLuw. *dakku_{ui}*-⁷ ‘?’. He also tried to trace the vowel alternations found in the enclitic possessive pronouns (e.g. nom.sg.c. =šš*iš*, acc.sg.c. =šš*an*, =šš*in*, nom.pl.c. =šš*eš*, =šš*iš*, acc.pl.c. =šš*uš*, gen.sg. =šš*aš*, dat-loc.pl. =šš*aš*) back to the distribution of **i-* and **-o-* found in Luwic.

Starke’s findings led him to posit the following historical scenario (Starke 1990: 86). The *i*-suffixation was initially restricted to *o*-stem adjectives (as was still the case in Hittite, in Starke’s view). It was then extended to *u*-stem adjectives through a reinterpretation of *i*-suffixed *ua*-stems as *i*-suffixed *u*-stems, and even later (on account of Lydian) also extended to *C*-stem adjectives. Eventually, in Proto-Palao-Luwic, it spread to *C*-stem nouns.

Initially, Starke (1982: 408-409 n. 3) sought the origin of the *-i-* in the PIE feminine suffix **-ih₂-*. This suffix is sometimes referred to as a “Motionssuffix”, after the shift to a specific gender that it brings about. This term was carried over to the Luwic *-i-*, with *i*-suffixation being referred to as “*i*-Motion”, and in more recent literature mostly as “*i*-mutation”. Although the identification with PIE **-ih₂-* was taken up quickly and approvingly (e.g. by Oettinger 1987, Melchert 1994b), Starke himself (1990: 86) abandoned the idea because of the supposed origin in the *o*-stem adjectives, whose feminine is formed with the suffix **-eh₂-* rather than with **-ih₂-* in other IE languages. As an alternative, Starke (1990: 88) compared the substitution of **-o-* with **-i-* to a similar substitution of **-o-* with suffixes starting with **-i-* in some PIE derivations, e.g. those of the *vṛkī-* type (Skt. *vṛk-a-* ‘wolf’ → *vṛk-ī-* ‘she-wolf’, *kṛṣṇ-á-*

⁶ Of these, only (pre-)Lydian is now usually accepted to feature the paradigm (cf. most recently Sasseville 2017). Additionally, it has been proposed for (pre-)Carian (cf. Adiego 2007: 346-347). Putative remnants in Pisidian and Sidetic are, like most statements on these languages in their current states of attestation, guesses at best.

⁷ The neuter is not attested, so only the common gender is noted here.

‘black’ → *kr̥ṣṇ-ī-* ‘night’). In Starke’s view (1990: 88-89), some *o*-stem adjectives may similarly have had *i*-stem variants, which were then integrated into the *o*-stem paradigm out of a desire to mark the common gender even more explicitly.

Starke’s 1990 historical interpretation has not received much attention, in part because his putative traces in Hittite and Palaic, and therefore the supposed origin in *o*-stem adjectives, have not found general acceptance. However, his initial reconstruction of **-ih₂-* has spawned quite some scholarly activity, and his interpretation of *-i-* as a suffix marking common gender is still found today. The terms ‘*i*-mutation’ and ‘*i*-mutated’ have made their way into the standard descriptive grammatical terminology of the Luwic languages, as has the notation system Starke designed on the basis of his analysis. The most common accompanying description of ‘*i*-mutation’, to the effect that an *-i-* is “inserted between stem and ending” (a recent example is Melchert 2017: 178), also still reiterates Starke.

2.1.2 Discussion

The main problem with Starke’s account is that the analysis of *-i-* as a meaningful suffix cannot be upheld. First, its supposed original restriction to the direct cases is not expected for a suffix, especially not if these cases already expressed the difference that the added element is supposed to have expressed (*pace* Melchert 1994b). Moreover, synchronically, the *-i-* is certainly not a gender suffix, or any other meaningful derivational element. There is no synchronic process which inserts the *-i-* into an underlyingly different stem type. Rather, the *-i-* is part of an inflectional paradigm.⁸

In Starke’s analysis it also remains unclear why each stem class was only partially affected by the suffix, and in a quite haphazard way. Furthermore, the analysis of most Luwian stem classes as having both mutated and non-mutated members does not work on a synchronic level. There is no association of “*a(/i)*”-stem nouns with *a*-stem nouns, or of

⁸ See also 4.4.2.2, where the *-i-* is analyzed as part of the endings. The idea that *-i-* is “inserted between stem and ending”, apart from falsely describing *i*-mutation as a synchronic process, is also historically inaccurate. For example, *īššariš* ‘hand’, the Luwian equivalent of Hitt. *keššar*, originally did not have an ending, and so the historically added element is *-iš* rather than *-i-*.

“(i)”-stem nouns with *C*-stem nouns. Rather, this notation obscures the fact that there is synchronically no difference between “*a(i)*”-stem and “(i)”-stem nouns, and that both supposed types are actually one and the same. For example, there is no difference in the inflection of *ānna(i)*- ‘mother’ and that of *īššar(i)*- ‘hand’; these notations are based purely on etymological considerations (Hitt. *anna-*, *keššar*). As a consequence, neither Starke’s notation system nor his concept and term *i*-Motion (or *i*-mutation) are of any help in the descriptive grammar of Luwian, but rather have an obscuring effect. I therefore think it is time to change both. See my proposal for alternatives below (in 3).

Admittedly, it did not help that the phenomenon was first analyzed in detail for Luwian, whose vocalic changes had obscured a clearer picture. This picture was however preserved in Lycian (see 4.3.3.1), but the relevant facts, namely distinct Lycian outcomes of PANat. *a*- and *o*-vocalism, were discovered only later (Melchert 1992, Rasmussen 1992). If the first analysis of the phenomenon had instead been on Lycian and after the discovery of these vocalic developments, it would most probably have resulted in a very different account from Starke’s. As it is, Starke carried over his analysis of Luwian to Lycian, and this was taken over by later scholars without due integration of the extra information that Lycian provides – more on this in 4.3.3.

2.2 Rieken 2005

2.2.1 Analysis

A different approach was taken by Rieken (2005), who returned to the old *i*-stem interpretation of the paradigm. This analysis is faced with the opposite task, requiring an explanation of all forms without *-i-*, i.e. the common gender oblique cases and all cases of both accompanying neuter types.

From a list of *i*-mutated suffixes composed by Melchert (1994b: 232-234), most of which are adjectival, Rieken (2005: 51) concludes that the phenomenon originated in the adjectives.

Rieken (2005: 52ff.) identifies the replacement of **-o-* with **-i-* as belonging to the IE morphological complex that has been called the Caland

system. She starts from a PIE derivational process by which an *i*-stem abstract noun could be derived from an *o*-stem adjective (e.g. Gr. ἄκρος ‘topmost’ → ἄκρις ‘mountain top’, supposedly from an older abstract meaning). According to Rieken, the direction of derivation could synchronically also be interpreted the other way around (*i*-stem abstract → *o*-stem adjective). She then proposes that alternative abstract nouns arose due to the substantivization of the neuter nom.-acc.sg. form of the *o*-stem adjective (which would then mean, for example, both “das Große” and “die Größe”), and that new adjectives were derived from these substantivized *o*-stem adjectives by the creation of a mirror image of the reversed interpretation of the previous rule, leading to a derivational possibility *o*-stem abstract → *i*-stem adjective. These would then be the origin of the *i*-stem adjectives continued in the Hitt. *-i/-ai*-ablauting (i.e. proterodynamic, or PD) adjectives, such as *šalli-* ‘big’, and in the Luwic common gender *i*-mutation paradigm. She finds a trace of the *o*-stem base from which these *i*-stems were supposedly originally derived in Hitt. *ḫatuka-*, a variant of *ḫatuki-* ‘terrible’.

A crucial assumption, building on a framework developed by Widmer (2004), is that the neuter counterpart of amphi- and proterodynamic adjectives, including the *i*-stem adjectives that are relevant here, originally differed from the common gender only in ablaut, e.g. Lat. *maiōr, magis* (later >> *maius*) < **-iōs, *-is*. To illustrate this for the proterodynamic adjectives, Rieken (2005: 60-62) adduces **p(e)lh₁-u/-eu-* ‘much, many’ (Goth. *fil-u-*, Gr. πολ-ύ-/πολ-έ-), and assumes that the Greek *o*-vocalism stems from the, in her view, defining acrostatic ablaut of the neuter. Following the demise of ablaut types and internal derivation, the neuter was no longer distinct from the common gender, and had to be characterized in some other way.

Rieken (2005: 62ff.) proposes that Hittite and Luwic solved this problem in different ways. Hittite created a neuter of the *šall-i* type in analogy to the neuter of the *u*-stems (e.g. *āšš-u* ‘good’). Luwic instead integrated into the paradigm the (substantivized) *o*-stem abstracts from which the *i*-stem adjectives were supposedly derived. This created the alternation of *i*-stem forms in the common gender and *o*-stem forms in the neuter gender found in the adjectival *i*-mutation complex. The alternation

then became productive and was transferred to fully thematic adjectives, and from there to thematic nouns. Finally, an analogy created the *i*-mutated *C*-stems: like thematic adjectives, *C*-stem adjectives could also be substantivized into abstract nouns (e.g. *ādduḡal*- ‘evil’ and ‘evilness’), and the pattern of the thematic adjectives (abstract noun = neuter of the adjective; the common counterpart has *-i-* before the endings in the direct cases) was applied here as well, leading to the type c. *ādduḡāl-i-š*, n. *ādduḡal(-za)*.

Rieken (2005: 66) finds a confirmation of the origin of the paradigm in the Caland system in the fact that some primary adjectives of this type have an adjectival meaning (‘big’, ‘shiny’, explicitly mentioned are *dakkuḡa/i-* ‘dark’ and *ala/i-* ‘high’) and that two of them are regarded as originally being part of the system (Rieken mentions HLuw. *ura/i-* ‘big’, CLuw. *šalḡa/i-* ‘big’).

The paradigm-internal alternations of the common gender are analyzed by Rieken (2005: 65, 67) as developed by sound law from originally **-i/-o_i-*ablauting adjectives, with loss of *-i-* between identical vowels and contraction of the surrounding vowels already in PAnat. (on this see 4.2.1.2).

2.2.2 Discussion

Rieken’s scenario in which the Anatolian PD *i*-stems were derived from thematic abstract nouns, which arose due to substantivization of a thematic adjective, cannot be upheld, as there is no evidence to support it. No thematic abstract nouns exist next to *i*-stems in Hittite, or in any other IE language. The proposed connection with the derivation of *i*-stem nouns from *o*-stem adjectives is also too convoluted to be convincing.

Further, the idea that some words displaying this inflection may originally have belonged to the Caland system is not meaningful, because these few adjectives do not have any special status within the class.⁹

⁹ Note, furthermore, that all the words that Rieken mentions are problematic in one way or another. The only attested forms of alleged HLuw. “*ura/i-*”, acc.pl.n. MAGNUS-*i+a*, MAGNUS+*ra/i-ia^a*, cannot belong to a form ***ura/i-* but only to *uriya/i-* (cf. Hawkins 2000: 162; on the notation *-iya/i-* see 4.2.2.1). CLuw. “*šalḡa/i-*” is only attested as the abl. *šalḡāti*, a hapax whose meaning and stem type are not

Rather, the inflection is simply the most basic one, home to the vast majority of the entire lexicon (on the non-special status of adjectives see 4.1).

Moreover, the basic premise for the scenario in which Luwic incorporated a thematic neuter into an *i*-stem paradigm, namely that the *i*-stem adjectives in PIE had a neuter which was distinct from the common gender originally only in ablaut, and later not at all, cannot be correct. Whether or not the neuter of these adjectives had a different ablaut pattern than their common gender counterpart, in PIE the neuter was clearly distinct from the common gender in its endings: the common gender had nom.sg. *-s, acc.sg. *-m, the neuter gender nom.-acc.sg. *-∅, and similarly the plural had *-es, *-ms vs. *-(e)h₂. The Hittite pattern of c. *šall-iš*, *šall-in*, n. *šall-i* can be directly compared with that of *i*-stem adjectives in other IE languages, cf. e.g. Skt. m.f. *bhūr-is*, *bhūr-im*, n. *bhūr-i* ‘much’, Lat. m.f. *dulc-is*, *dulc-em*, n. *dulc-e* ‘sweet’.¹⁰ It also remains puzzling how Hittite could have created the *i*-stem neuter in analogy to the *u*-stems, as these should have had the same problem (the supposed original shape of the neuter is even backed up with the *u*-stem example *πολύς* rather than with an *i*-stem). The *šalli*-type neuter was, then, not a Hittite creation, but inherited from PIE. This deprives Rieken’s scenario of its main explanation for the co-occurrence of common gender *i*-stems and neuter gender *o*-stems in the same lexeme. In addition, the scenario offers no clear motivation for the analogical extension of the adjectival *i*-stem type to other stem types, nor for the lack of extension to the unaffected types.

ascertained. The interpretation of CLuw. *dakku_i*-, again a hapax, is completely dependent on the supposed Hittite equivalent *dankui*- ‘dark’. The meaning and etymology of CLuw. *ala/i*- are likewise debated.

¹⁰ The same pattern is also found in Greek, e.g. m.f. *ἄπολις*, *ἄπολιν*, n. *ἄπολι* ‘without city’. Here, however, the other cases have been reshaped into dental stems, i.c. *ἀπολιδ-* (e.g. nom.pl. *ἀπόλιδες*).

3 Terminology and notation

Before moving to my own analysis, a few words regarding terminology and notation are necessary. For reasons outlined in 2.1.2, I will operate with an alternative to Starke's terminology. Instead of 'i-mutation' stems, I will use the term ***i*-stems**, the designation used before Starke. Accordingly, I cite nouns with *-i-* rather than with *-(i)-* or *-V/i-*, which are needlessly complex. This notation will be used for *all* nouns of this type, whatever their origin (e.g. CLuw. *ānni-* and *īššari-* rather than *ānna/i-* and *īššar(i)-*).¹¹ In the adjectives, a further distinction should be made between *i*-stems with a thematic neuter and *i*-stems with a consonantal neuter. For these I will use *-V/i-* and *-C(i)-*, respectively (e.g. Lyc. *hrzze/i-*, *kṃmēti(i)-*), as is by now customary, but to be understood as a combination of the indicated stem type paradigms (*-V-* + *-i-* and *-C-* + *-i-* (*-Ci-*)).¹² Although

¹¹ Again in accordance with the general practice before Starke, and in some cases later as well (cf. e.g. Hawkins 2000). The lack of an *-i-* in the oblique cases should not lead to any trouble in identifying the type from the name and notation. Compare for instance the main types of Greek *i*-stems (e.g. πόλις, πόλιε- 'city'), *u*-stems (e.g. βαθύς, βαθέ- 'deep') and *s*-stems (e.g. νέφος, νέφε- 'cloud'), whose oblique cases do not contain the stem phoneme either. As I will argue in 4.2.2, in nouns and adjectives there are no other *i*-stems that are more entitled to this designation. The more fully-fledged *i*-stems in proper names may be contrasted with the *i*-stems in nouns and adjectives by referring to them for example as non-ablauting or onomastic *i*-stems. Indeed, a distinction between appellative and onomastic inflection is required for all stem types (see Chapter 2).

Note that I do not wish to claim with the label 'i-stems' that the *-i-* should be analyzed as part of the stem. Rather, I will argue that it can also be, and indeed was, analyzed as part of the endings. It would therefore also be possible to speak of 'C-stems', and to cite them without the *-i-* (e.g. *ānn-*, *īššar-*). However, the morphological status of the *-i-* is in fact ambiguous, and depends on what it is compared with. Paradigm-internally, it can only be seen as part of the endings, but it is also parallel to, for instance, the *-a-* of the *a*-stems. As Luwic defies clear-cut classification in this respect, the choice is somewhat arbitrary, and I choose to speak of 'i-stems' to bring the characteristic *-i-* to mind. It would also be possible to use the term '*a/i*-stems' and to cite all members of the class with *-a/i-*. This would bring out the alternation within the paradigm, and make for a more visual contrast with the non-ablauting *i*-stems. However, this notation is also more complex than necessary, and leads to the suboptimal situation in which the designation of this paradigm coincides with the notation of this paradigm plus the thematic paradigm in the adjectives.

¹² The notation system used here is, then, different from that designed by Yakubovich for the Annotated Corpus of Luwian Texts (ACLT) and the Digital

the following analysis also provides more descriptive possibilities, the terms ‘*i*-mutation’ and ‘*i*-mutated’ could still be appropriately used for referring to the prehistoric conversion of *o*-stems and *C*-stems into *i*-stems.

4 A new account

4.1 The adjectives

The first step forward, in my view, is to move away from the adjectives. Both Starke and Rieken assume an origin of the paradigm in the adjectives, for different reasons. Starke did so because the remnants he saw in the non-Luwic languages, especially Hittite, were restricted to the adjectives. As these supposed remnants are not accepted today, neither are Starke’s arguments for an origin in the adjectives. Rieken bases her assumption of an origin in the adjectives on a list of affected suffixes – leaving the majority of the lexicon out of consideration.

Philological/Etymological Dictionary of the Minor Language Corpora of Ancient Anatolia (eDiAna) (cf. Yakubovich 2015). The system currently used there has several downsides, in my opinion. Most fundamentally, the notation is based on morpheme boundaries that I do not follow. For example, the designation of Luwian “(*i*)-stems” (*i*-stems) results from an analysis of the direct case forms as *-i*- + ending (*-i-s*, *-i-n*, *-i-nzi*), but of the oblique endings as *-adi*, *-anz*, etc. I think this distinction is synchronically unwarranted. Within the paradigm, *-i-* and *-a-* rather have to be analyzed on the same level (see 4.4.2.2 and the previous note). Following the same principle, Yakubovich notes the neuter *a*-stems with *-(a)-* (e.g. *parn(a)-*), taking the *-a-* as part of the stem in the direct cases, but as part of the endings in the oblique cases. At the same time, the *-a-* of the common gender *a*-stems, noted with *-a-* (e.g. *huha-*), is taken as the stem vowel throughout the paradigm. In addition, since no distinction is made between paradigm-internal and intra-paradigmatic alternations, *i*-stem nouns and *i*-stem adjectives with a *C*-stem neuter are both noted with *-(i)-*, whereas *i*-stem adjectives with a thematic neuter do have a separate notation, viz. *-(a/i)-*. In general, the brackets, a device inherited from Starke’s system, make it seem as if the content of these brackets is optional rather than part of a well-defined inflection type, and they mostly create confusion. Such a massive application is therefore not recommendable. Moreover, I do not share the wish to express all alternations in one single notation. One simple notation may imply an alternation. It makes for a much neater system.

In my view, the adjective does not have a special status when it comes to the origin of *i*-mutation.¹³ The two adjectival types can be straightforwardly understood, with Starke, as *o*-stems and *C*-stems whose common gender was *i*-mutated, just like in nouns common gender *o*-stems and *C*-stems were normally *i*-mutated. The question is more general: why were common gender *o*-stems and *C*-stems converted into *i*-stems? I will therefore shift the focus from the adjectival complex to the *i*-stem paradigm in general.

4.2 Identifying the paradigm

4.2.1 Paradigm-internal analysis

4.2.1.1 Morphological clues

In order to identify the *i*-stem paradigm historically, it is most straightforward to start from the paradigm itself, analyzing it internally. In my view, the distribution of the vowels (**-i-* and **-o-*), viz. direct vs. oblique cases, strongly suggests that we should look for an origin in an ablauting paradigm. Moreover, the **-i-* of the direct cases suggests that the stem type we are dealing with is also historically an *i*-stem, as had generally been assumed before Starke. This leads us to ablauting *i*-stems. Specifically, the zero grade **-i-* in the direct cases alternating with a vowel in the oblique cases points to a PD paradigm. I therefore agree with Rieken that the *i*-stems should historically be compared to the PD *i*-stems.¹⁴

¹³ It would be more valid to assume a special role for the adjectives if the PD *i*-stems were predominantly adjectival, as the evidence of Hittite and the remaining scraps of the originally parallel Luwic *u*-stems (cf. 4.4.1 n. 53) might be taken to suggest. However, since eventually all types of *i*-stems in nouns and adjectives end up being inflected as the one type of *i*-stems left (cf. 4.2.3), this distinction was apparently lost at some point.

¹⁴ Starke (1990: 57-58) had already considered this possibility, but rejected it in view of adjectives of the type *parr-aj-a(i)-*, which he regarded as thematicizations of the PD *i*-stems. As will be discussed below (4.2.2.2, and cf. similarly Rieken 2005: 68), this type has to be interpreted in a different way. Furthermore, the idea that *i*-stems had given up their ablaut in CLuw. (Starke 1990: 57) must be rejected, as the *i*-stems in question are rather *ija/i*-stems (see 4.2.2.1).

In the following overview the CLuw. paradigm is placed alongside the Hittite PD *i*-stem paradigm,¹⁵ which has an older and a later variant (cf. Hoffner & Melchert 2008: 91, 94-96; main example Hitt. *šalli*- ‘big’).

	CLuw. <i>i</i> -stems		Hitt. PD <i>i</i> -stems			
	sg.	pl.	older		later	
nom.	-iš	-inzi	sg. -iš	pl. -aeš	sg. -iš	pl. -aeš
acc.	-in	-inz	sg. -in	pl. -auš	sg. -in	pl. -auš
dat.-loc.	-i	-anz	sg. -ai	pl. -aš	sg. -ai/-i	pl. -ajāš
abl.		-ati		-az		-ajāz
gen.(adj.)		-ašša/i-		-aš		-ajāš

The younger Hitt. paradigm shows restoration of the *-i-* in analogy to the parallel *u*-stems, where *-u-* had remained: *-i-*, *-a°* was changed to *-i-*, *-aj-a°* after *-u-*, *-au-a°* (cf. Melchert 1984: 45). In OH, however, we find a paradigm with a distribution of *-i-* and apparently bare endings starting with *-a-* that is very similar to that of the Luwic paradigm. In the case of OH there is no doubt that the *-a-* of the endings is the result of a contraction of two vowels previously surrounding **-i-* (cf. Rieken 2005: 63-64, Hoffner & Melchert 2008: 94).

4.2.1.2 *i*-stem paradigm: fleshing out the details

Trying to formulate a possible scenario, Rieken (2005: 65 n. 19; 67), at least for Luwic, departs from a paradigm in which the nom. and acc. sg. and pl. have **-i-*, and the other cases **-óĭ-*. She argues that the loss of **-i-*, which she assumes to have happened between identical vowels, and the subsequent contraction (**-oi-o-* > **-ō-*) had already happened in Proto-Anatolian (Rieken 2005: 67-71). The resulting long vowel should explain the allegedly relatively frequent plene spellings of the ablative in CLuw. In order to explain some further CLuw. plene spellings in the nom. and acc. sg., Rieken assumes that the original suffixal accent of the oblique cases was carried over to the direct cases, where it caused lengthening. The near-lack of such plene spellings in the acc.pl. and dat.-loc.pl. she ascribes

¹⁵ Showing only the cases and gender relevant for a comparison with Luwic.

to the following cluster **nts* (Rieken 2005: 65 n. 19). To my mind, this scenario needs improvement.

4.2.1.2.1 Ablaut vowel **-e-* and a more general loss of **-ǵ-*

The Luwic languages do not distinguish between original *e-* and *o-* vocalism: in Lycian they both emerge as *e*, and in Luwian the merged vowel further collapsed with *a*. Rieken (2005: 63) reconstructs the ablaut vowel of the *i*-stem suffix as **-o-* on account of Hitt. *-a-*, further comparing the Gothic and Balto-Slavic genitive forms (Goth. *-ais*, Lith. *u*-stem *-aus*). However, Hitt. *-a-* is not conclusive either: it may in principle continue **-e-* or **-o-* (in either case with retraction of the accent to the root). Most of our IE evidence rather points to an ablaut vowel **-e-*, including Greek (e.g. πόλις, πόλε- ‘city’) and Sanskrit (e.g. *agnís*, dat.sg. *agnáye*, nom.pl. *agnáyas* ‘fire’). Even Balto-Slavic and Gothic do not unequivocally point to a variant **-o-*, but also support **-e-*, e.g. Goth. nom.pl. *-eis* < **-ei-es*. In view of the abundant evidence for *e*-vocalism in the other IE languages (cf. further, e.g., Fortson 2010: 125, Beekes 2011: 202-203), Hitt. *-a-* has also generally been reconstructed as **-e-* since Melchert (1994a: 138, calling his earlier attempt to reconstruct **-o-* “ill-advised”), and I will also assume an original paradigm with *e*-vocalism.

One issue with the assumption of *e*-vocalism for the ablaut vowel is that a sound law **-eǵo- > *-o-* would conflict with other proposals regarding outcome of **-eǵo-*. The *parraja/i*-type has been claimed to go back to **-eǵo-*, a thematicized *i*-stem, but this analysis is now outdated (see 4.2.2.2). An idea that is still current, however, is that the verbal suffix continued in Luw. *-ǵ/-ai-*, Lyc. *-i/-ei-* (e.g. Luw. *tupidi*, *tupainti*, Lyc. *tubidi*, *tubeiti* ‘to strike’) goes back to **-eǵe/o-*, with the 3pl. Luw. *-ainti*, Lyc. *-eiti* going back to **-eǵonti* with syncope of the **-o-*, implying that **-eǵo-* gives **-Vi-*. The probative value of this form is reduced, however, by the fact that its exact prehistory is unclear: the reality of the invoked syncope is not beyond doubt, and the suffix has also rather been reconstructed as **-oǵe/o-*, the source of the Hitt. *ḫatrae*-class (e.g. Kimball 1999: 366). Moreover, if we assume for the sake of argument that the reconstruction **-eǵe/o-* is correct, and that the lack of a vowel in the 3pl. ending is indeed due to syncope, the two outcomes of **-eǵo-* can easily be

reconciled by assuming that the syncope was conditioned. This is usually assumed for Luwic syncope in any case (cf. e.g. Melchert 1994a: 275-276). The exact conditions are debated, but it would not *a priori* be strange to find syncope in *CVC-*e*_̄*onti* but not in e.g. *CVC-*e*_̄*jos* or *CVC-*e*_̄*odi*. That the two should indeed be kept separate is clearly suggested by the parallel situation of the lack of *-*o*- in the 3pl. ending Luw. -*inti*, Lyc. -*iti* < *-*i*_̄*onti* next to its preservation in the *i*_̄*o/i*-stems, e.g. Luw. -*i*_̄*anz*, -*i*_̄*adi*, Lyc. -*ije*, -*ijedi* < *-*i*_̄*jos*, *-*i*_̄*odi* (for this type see 4.2.2.1). The 3pl. form Luw. -*ainti*, Lyc. -*eiti* can therefore hardly be considered decisive regarding the regular outcome of *-*e*_̄*jo*- in general. Accordingly, it does not constitute an obstruction to the reconstruction of original *e*-vocalism in the *i*-stems, with a subsequent development *-*e*_̄*jo*- > *-*o*-.

As for the loss of **i*_̄, there is no reason to assume that this occurred only between vowels of the same quality. There are no compelling examples of old intervocalic **i*_̄ surviving as such in Luwic (except, understandably, after **i*).¹⁶ Rieken (2005: 69) uses the distinction to explain the apparent retention of **i*_̄ until the loss of **o* in the 3pl. ending *-*e*_̄*onti* > Luw. -*ainti* discussed above. However, we only have to assume that this form somehow escaped the loss of **i*_̄ if this preceded the loss of **o* (provided that the reconstruction is correct to begin with). Indeed, Rieken assumes that loss of **i*_̄ in the *i*-stems had already happened by Proto-Anatolian. However, since loss of intervocalic *i*_̄ is a typologically very common development (cf. Kümmel 2007: 126-127), we may also separate these developments in Luwic and Hittite (so e.g. Kimball 1999: 366-367), in which case the loss of **i*_̄ could simply postdate the loss of **o* in the 3pl.

¹⁶ Apart from the 3pl. ending -*ainti* discussed in the following, the intervocalic examples given by Melchert (1994a: 260) for Luwian consist of two examples after **i* (*pija*- 'to give' and the *i*_̄*a/i*-suffix) and the outdated example of the adjective *parraja/i*- (see 4.2.2.2).

ending.¹⁷ Regardless of the exact reconstruction of the 3pl. ending,¹⁸ I consider this to be the more likely option. It would remove the awkward assumption of a centuries-long unrestored *i*-stem paradigm in Hittite until right after the beginning of the historical period. Further note the different outcomes of the dative **-eĵi-i*, which develops to *-i* in Luwic, but to *-ai* (*-āi*) in Hittite (see 4.2.1.2.3).¹⁹

Initially, the resulting vowel will have been long, as contracting vowels tend to be. However, since the relevant case endings are usually spelled non-plene in CLuw., I assume that, like in Hittite, they featured a shortened vowel which resulted from a retraction of the accent to the root. This retraction of the accent may have been a Proto-Anatolian innovation. More on accent in the following section (4.2.1.2.2).

The quality of the vowel resulting from contraction cannot be exactly determined, except that we can assume that the contraction of **e* and **o* resulted in a mid-vowel. In any case, if the mid-vowels were at this point still distinct at all, the eventual pre-Proto-Luwic mid-vowel merger removed any distinction between them. Here I use **-o-* to designate the resulting vowel. This is the original (pre-merger) quality of the desinential vowels that do not result from contraction, i.e. those in the oblique case endings of other stems (cf. e.g. Hitt. *-aš*, *-az* < **-os*, **-oti*). Also, if one prefers to assume that the mid-vowels were still distinct at this point, **-o-* (< **-ō-*) rather than **-e-* would be the more likely outcome of the sequence **-eo-* (cf. likewise Hittite *-a-*).

¹⁷ It is possible, however, that the loss of **ĵ* was earlier in the sequence **eĵi*, as per Melchert (1994a: 277). This is based on the 3sg. form of the verbal suffix, **-ī-di*, which may have followed the path **-eĵe-di* > **-eĵi-di* > **-ei-di* > **-ī-di* (Melchert 1994a: 277) rather than **-eĵe-di* > **-ē-di* > **-ī-di* (Rieken 2005: 69). This would then suggest the chronology 1) **eĵi* > **ei* > **ī*, 2) loss of **o* in the 3pl. ending, 3) loss of intervocalic **ĵ*.

¹⁸ Note that Kimball (1999: 366) operates with a preform **-V-ĵenti* which underwent the Luwic sound change **ĵe* > **ĵi*. This requires an earlier replacement of **-iĵonti* with **-iĵenti*.

¹⁹ One might still try to connect the developments by considering the possibility that the loss of intervocalic **ĵ* was an areal feature, but since Luwic must have lost it in pre-Proto-Luwic, and Hittite rather towards the historical period, the time difference seems to be too large for that to work.

4.2.1.2.2 No length in the direct case endings

Second, the assumption of a long $-ī-$ in the direct cases on account of some CLuw. plene spellings does not stand up to scrutiny, nor does, as a consequence, its supposed support for an origin in the suffix $*-ih_2-$ or for Rieken’s accent shift. First, out of hundreds of attestations, only a handful have a plene spelled desinential vowel.²⁰ Moreover, a close look at the attestations with plene spelling reveals that the direct case plene spellings are lexically distributed. Specifically, most of them are not regular *i*-stems, but *ija/i*-stems²¹ (see already Carruba 1982, Melchert 1990: 200-201). For example, the nom.sg.c. *ta-a-ti-i-i[š]*, *ta-ti-i-iš*, nom.pl.c. *da-a-ti-i-in-zi* belong to the adjective *tātiija/i-* ‘paternal’ (see Melchert 1993: s.v. *tāti(ya)-*). This is a derivation with the suffix $-ija/i-$ ($< *-ijo-$) of *tāti-* ‘father’, which itself only shows the desinentially non-plene-spelled forms *ta-a-ti-iš*, *ta-a-ti-in* and *ta-ti-in-zi*. Similarly for AMA, we only find plene spellings in the meaning ‘maternal’ (AMA-*i-iš*, AMA-*i-in*), whereas the meaning ‘mother’ only shows non-plene-spelled direct case endings (an-*ni-iš*, a-an-*ni-iš*, a-an-*ni-eš*, a-an-*ni-in*, AMA-*in*) (see Melchert 1993: s.vv. *ānni(ya)-*, *ānna/i-*). There is, then, a contrast in the direct cases between plene spelled $-i-$ in *ija/i*-stems, and non-plene-spelled $-i-$ in *i*-stems. The handful of plene spellings in actual *i*-stems must be regarded as irregularities, perhaps partially mistakes (cf. Rieken 2017: 25-26). Consequently, the $-i-$ of the *i*-stems must have been short in CLuw. See further 4.2.2.1.

Recently, Vertegaal (2018) has proposed that HLuw. non-column-final plene spelling indicates length or disyllabic sequences. Almost all well-attested *i*-stems have such plene spellings. This could then be taken to indicate that *i*-stems have a long $-ī-$ in HLuw. However, I do not think this is the case.

²⁰ Even counting cases with $-u-i-$ or $-ú-i-$ such as *da-ak-ku-ú-i-iš*, which should not, however, be regarded as equal to spellings of the type $-Ci-i-iC$. Rather, $-ú/u-i-$ can be used to spell *ui*, just like $-ú/u-e-$ and $-i-e-$ can be used to bypass the lack of the signs $**ue$ and $**je$ (Kloekhorst 2014: 134-161, 430-434, Rieken 2017: 26-27). Hence, a spelling *da-ak-ku-ú-i-iš* may just as well stand for *dakkuuiš*. In view of the almost complete lack of plene spellings elsewhere, this is the only realistic option.

²¹ On this notation for what is also often noted as $-i(ja)-$, see 4.2.2.1.

First, it is *a priori* unlikely, as the HLuw. situation would be in conflict with both the CLuw. evidence and the other arguments adduced here in favor of an origin in the PD *i*-stems. As such, if these plene spellings indicated length, this length would surely be secondary.

Second, however, I think the plene spellings are best interpreted in a different way. The *i*-stem direct cases make up the bulk of the word-internal plene spellings. This very skewed distribution would be unlikely to be there if writing length was the primary concern of the stonemasons. In my view, these plene spellings rather constitute another instantiation of the filling practice that is clearly the motivation behind most column-final plene spellings (see Vertegaal 2017). One possible factor in the distribution is the realness of the vowel of the final sign. Note that the nominal paradigms contain the only frequent occurrences of word-final consonants, and that the *i*-stems are the main nominal type. The tendency seems to be to double real vowels rather than empty vowels. For instance, in the entire Iron Age corpus there are only 13 examples of *-na-a* spelling an acc.sg.c., and all of them are found in 8th-century texts.²² The norm is clearly to write *-Ci-i-na* and *-Ca-a-na*, which together occur far more frequently, and in Iron Age inscriptions before c. 800 are indeed the only possible variants. This complementary distribution with word-final plene spelling suggests that they are two sides of the same coin. It seems that the plene spelling of empty vowels was not favored, and the scribes wrote *-CV-V-Ca* rather than *-CV-Ca-a* to spell /^oCVC/ with a filler. Probably there are even more factors at play,²³ but in the *i*-stem paradigm length does not seem to be one of them.

²² KARKAMIŠ A24a2+3 (*a-sú+ra/i*(REGIO)-*ia-na^a*(URBS)), BULGARMADEN (*wa/i+ra/i-pa-la-wa/i-na^a*), KARKAMIŠ A6 ((“MENSA.SOLIUM”)á-*sa-na^a*, “SCALPRUM”-*su-na^a*), KULULU 1 ((DEUS)TONITRUS-*hu-u-za-na^a*), KULULU 4 (*tu-wa/i-mi-na^a*), KARKAMIŠ A15b (REGIO-*ni-si-i-na^a*, *za-ma-ti-i-na^a*), KIRŞEHİR (*tá-mi-na^a*), ASSUR letter f+g (*kwa/i-na^a*, *wa/i-la-mi-na^a*), SULTANHAN ([*mu-w*]a-*i-ta-li-na^a*), ASSUR letter e (*sa-na-wa/i-zi-na^a*). Cf. also *sa-na-wa/i-zi-naⁱ* in ASSUR letter d.

²³ For example, the spelling of the nom.-acc.pl. with *-Ci-i-zi* and *-Ca-a-zi* may be analogical to the nom. and acc. sg. This may in turn have led to a wider application of fillers in penultimate position, including before verbal endings (e.g. *-ti*, *-ta*) and enclitics (e.g. =*ha*).

4.2.1.2.3 Discrepancies between Luwic and Hittite

Finally, the discrepancies between the Luwic and the Hittite paradigms, not mentioned in Rieken (2005), should be accounted for, notably the acc.pl. (CLuw. *-inz*, Hitt. *-auš*) and the dat.-loc.sg. (CLuw. *-i*, Hitt. *-ai*).²⁴

The acc.pl. apparently shows a difference in ablaut: transposed to preforms, the Luwic ending is most straightforwardly reconstructed as **-i-ms* and that of Hittite as **-ei-ms* (**-eĭ-ḡms*) or perhaps **-ei-oms*.²⁵ The PIE paradigm can help determine which of these variants is older. In the other IE languages we find ample evidence for a nom.pl. **-eĭ-es* next to an acc.pl. **-i-ms* (cf. Beekes 2011: 203), e.g. Skt. nom.pl. *agn-áyas*, acc.pl. *agn-ín* ‘fire’, Cret. Gr. nom.pl. *τρ-έες*, acc.pl. *τρι-ις* (for **τρ-ίς*, cf. *πόλ-ις*, *ᾠ-ις*) ‘three’, Lat. nom.pl. *turrēs*, acc.pl. *turrīs* ‘tower’, Goth. nom.pl. *qen-eis*, acc.pl. *qen-ins* ‘wife’, Lith. nom.pl. *pil-ys*, acc.pl. *pil-is* ‘castle’. It therefore seems that Luwic **-i-ms* represents the older variant, and that Hittite *-auš* resulted from a generalization of the full grade of the suffix in the plural.

As Rieken assumes loss of **ĭ* between like vowels only, it is unclear how she derives the Luwic dat.-loc.sg. **-i* from the supposed preform **-oĭ-i*. More probably, PLuw. **-i* and Hitt. *-ai* (*-āi*) represent different outcomes of **-eĭ-i*. Luwic shows an unsurprising development of **eĭi* to **ĩ* (cf. Melchert 1994a: 277),²⁶ while Hittite shows loss of **ĭ* and lengthening of the preceding vowel (cf. Kloekhorst 2008a: 90; 2014: 389-390, 395-398).

Another notable difference between Hittite and Luwic is that Hittite restored the *-ĭ-* soon after the beginning of the historical period, whereas in Luwic no such restoration took place. This can be explained by the (near-)lack of ablauting *u*-stems in Luwic. The PD *u*-stems served as the model for restoration in Hittite (cf. Melchert 1984: 45). In Luwic, however,

²⁴ Since the Luwic nom.pl. was created on the basis of the acc.pl. in post-PAnat., it can be left out of the equation.

²⁵ With some stretch one might also try to trace the PLuw. acc.pl. **-ints* back to **-ei-ms* > **-ī-nts* > **-i-nts*, but this would require an *-* in itself already quite unlikely – monosyllabic syllabification **-ei-ms*, which would then still not be identifiable with the closest option for the Hittite preform, **-eĭ-ḡms*.

²⁶ For the potential parallel in the development **-eĭe- > *eĭi- > *-ĩ-* assumed by Melchert (1994a: 277), cf. 4.2.1.2.1 n. 17.

u-stems had become quite rare, eventually even becoming extinct in Lycian (see 4.3.2), and the surviving lexemes mostly show a non-ablauting paradigm (on the traces of ablaut see 4.4.1 n. 53). There was, then, no clear model for the restoration of **-i-*.

This is a crucial point. Once **-i-* had been lost, there was no way to understand the earlier morphological principle behind the alternation of **-i-* and **-o-*. Rather, the speakers of Luwic must simply have accepted the paradigm as it had come to be. Moreover, at this point the elements **-is*, **-in*, **-intsi*, **-ints* could synchronically within the paradigm only be analyzed as operating on the same level as **-i*, **-os*, **-odi*, **-osso-*. I will return to this point below (4.4.2.2).

4.2.1.2.4 Paradigm-internal analysis: outcome

I thus arrive at the following reconstructions and developments of the paradigm.

	PAnat.		(pre-)PLuw.		CLuw.		OH	
	sg.	pl.	sg.	pl.	sg.	pl.	sg.	pl.
nom.	<i>*-i-s</i>	<i>*-ei-es</i>	<i>*-is</i>	>> <i>*-intsi</i>	<i>-iš</i>	<i>-inzi</i>	<i>-iš</i>	<i>-aeš</i>
acc.	<i>*-i-m</i>	<i>*-i-ms</i>	<i>*-in</i>	<i>*-ints</i>	<i>-in</i>	<i>-inz</i>	<i>-in</i>	>> <i>-auš</i>
d.-l.	<i>*-ei-i</i>	<i>*-ei-os</i>	<i>*-i</i>	<i>-os</i>	<i>-i</i>	<i>-anz</i>	<i>-ai</i>	<i>-aš</i>
abl.	<i>*-ei-odi</i>		<i>*-odi</i>		<i>-ati</i>		<i>-az</i>	
g.(a.)	<i>*-ei-os(io-)</i>		<i>*-osso-</i>		<i>-ašša/i-</i>		<i>-aš</i>	

4.2.2 Other *i*-stems?

The hypothesis that the Luwic *i*-stems originate in the PAnat. PD *i*-stems would not work if this type is more plausibly continued by some other Luwic stem type. One of Starke's arguments to dismiss the *i*-stem interpretation of the paradigm was that he saw continuations of *i*-stems in two other types: "*i/ia*"-stems, now more commonly denoted as *i(ia)*-stems, and *a/i*-stems of the *parraja/i*-type. In the subsections that follow I will determine the place of these two types, as well as of a third stem type containing *-i-* in proper names.

4.2.2.1 Luw. *-i(ja)-*, Lyc. *-i(je)-*

The *i(ja)*-stems have long been analyzed as *i*-stems with alternative endings (acc.sg.c. *-iġan* instead of *-in*, etc.). Carruba (1982) separated them from the *i*-stems and showed that *i(ja)*-stems are rather adjectival formations continuing the appurtenance suffix **-iġo-* (with *-iġan* rather being the nom.-acc.sg.n. form). Although Starke accepted that this suffix was the main origin of the class, he believed that these stems did not normally show *i*-mutation; rather, they were gradually being replaced by the *i*-mutation paradigm (*-iġan* >> *-in*, *-iġati* >> *-ati*, etc.) (Starke 1990: 91, 63-64). Starke’s account does not fully appreciate Carruba’s disentanglement of the two types.

Carruba also noted the frequent plene spellings in the nom. and acc. sg.c. of the *i(ja)*-stems (cf. 4.2.1.2.2), and explained these with reference to the *i*-stem paradigm, specifically that of the genitival adjective, proposing an analogy n. *-ašš-an* : c. *-ašš-iš* = n. *-iġ-an* : c. *X* → *-iġ-iš* (Carruba 1982: 40). This was adapted by Melchert (1990: 200-201), who identified the replacement **-o-* >> **-i-* with Starke’s *i*-mutation phenomenon. This account does not seem to have been generally accepted in more recent literature, in which it is sometimes stated that the *-i-* in this paradigm results from syncope of *-iġa-* (e.g. Yakubovich 2015: § 6.2). There can be no doubt, however, that the paradigm should be interpreted as *-iġ-* + *i*-stem paradigm. This is shown by the morphological distribution of *-i-* (in the direct cases) and *-a-* (in the oblique cases) as established by Carruba, which has in the meantime also come to light for Lycian, confirming the analysis. The CLuw. plene spellings in the nom. and acc. sg.c. also neatly confirm the analysis. Whatever the exact phonetic interpretation,²⁷ these spellings must reflect the double *-i-* that we also expect morphologically, i.e. the *-i-* inherent to the suffix and the *-i-* of the

²⁷ The most logical options are *-ī-* and *-iji-*. In my opinion, *-iji-* is the most plausible option, because such an interpretation also fits forms like *ku-um-ma-i-in-zi* /kummajinzi/, with a glide rather than a long vowel (cf. Melchert 1990: 202, Rieken 2017: 26). Moreover, at least historically we most probably have to reckon with **-iġi-*, i.e. **-iġo-* whose **-o-* was replaced with **-i-*.

i-stem paradigm. We therefore have to reconstruct the Proto-Luwic paradigm as **-ij-* + *i*-stem paradigm. Cf. the following overview:²⁸

	PLuw.		CLuw.		Lyc.	
	sg.	pl.	sg.	pl.	sg.	pl.
nom.c.	*-i \check{y} -is	*-i \check{y} -intsi	°i-i-iš	°i-i-in-zi	-i	-i
acc.c.	*-i \check{y} -in	*-i \check{y} -ints	°i-i-in	°i-i-in-za	-i	-is
nom.-acc.n.	*-i \check{y} -on	*-i \check{y} -a	°i- \check{y} a-an(-za)	°i- \check{y} a	-ijē	-ija
dat.-loc.	*-i \check{y} -i ²⁹	*-i \check{y} -os	°i(-i)	°i- \check{y} a-an-za	-i	-ije
abl.	*-i \check{y} -odi		°i- \check{y} a(-a)-ti		-ijedi	
gen.adj.	*-i \check{y} -osso/i-		°i- \check{y} a-aš-ša/i-		-ijehe/i-	

In order to reflect this analysis in notation, I use **-i \check{y} o/i-* (CLuw. *-i \check{y} a/i-*, HLuw. *-iya/i-*, Lyc. *-ije/i-*) rather than **-i(\check{y} o)-* (CLuw. *-i(\check{y} a)-*, HLuw. *-i(ya)-*, Lyc. *-i(je)-*).³⁰ With the analysis of this type as *i \check{y} o/i*-stems, it is clear that they do not reflect original *i*-stems, but rather *o*-stem adjectives whose common gender was turned into an *i*-stem.

4.2.2.2 Luw. *-aja/i-*, Lyc. *-Vije/i-*

Another type that Starke regarded as a continuation of *i*-stems is the one exemplified by the adjective *parraja/i-* (meaning unclear, traditionally ‘high’), in which he saw a thematicization of the weak stem of a PD *i*-stem:

²⁸ The Lycian paradigm may be illustrated with Lyc. *ehbije/i-* ‘his, her’: sg. c. nom. *ehbi*, acc. *ehbi*, n. nom.-acc.n. *ehbijē*, dat.-loc. *ehbi*, pl. c. nom. *ehbi*, acc. *ehbis*, n. nom.-acc. *ehbija*, dat.-loc. *ehbije*, abl. *ehbijedi*, gen.adj. *ehbijehe/i-*.

²⁹ I regard this as an innovation for **-i \check{y} o* (elaborated upon in Chapter 2). If the scanty evidence for an alternative Luwian ending *-ija* is accepted, it would indicate that **-i \check{y} o* was still part of this paradigm in Proto-Luwic.

³⁰ So now also Rieken 2017. It should be noted, however, that the implied sequence *-iji-* does not occur as such in HLuw. or Lyc. For example, Lyc. *prñneziji-* ‘household member’, which shows the suffix in substantivized form, only shows up as *prñnezi* and *prñnezije-*. This indicates that **-iji-* had been contracted to *-i-*, meaning that for these languages, on a synchronic level, at least for the common gender, the notations *-i(ya)-* and *-i(je)-* are more accurate (technically, the n./c. format would then suggest e.g. *-iya/i(ya)-* and *-ije/i(je)-* for the adjective, but such an elaborate notation is not very useful except perhaps as an analytical tool). In southern HLuw., the *-i-* of the common gender direct cases has subsequently started to replace the sequence *-iya-* found elsewhere in the suffix in analogy to the pattern of the other stems (e.g. dat.pl. *-iyanz* >> *-inz*, nom.-acc.sg.n. *-iyanza* >> *-inza*), effectuating the rebirth of full-blown *i*-stems in appellatives.

**b^hrġ^h-Vġ-* > **parr-aj-* + *-a(/i)-*. This type was more convincingly explained by Melchert (1990: 201-202) as resulting from attachment of the same suffix **-iġo-* discussed in the previous section to vocalic stems, without the original but synchronically unmotivated replacement of the stem vowel of the base, e.g. *ušaġha-* → *ušaġha-ġa/i-*, *kumma-* → *kumma-ġa/i-*.³¹ It appears that *-iġ-* was reduced to *-ġ-* intervocally in Luwian. The sequence is still intact in Lycian, however, e.g. *ade-* → *ada-ije-*, *ebe-* → *ebe-ije/i-*, which, along with the functional identity, confirms the correctness of the interpretation. Again, then, we are not dealing with remnants of *i*-stems, but with *iġo*-stem adjectives.

4.2.2.3 *i*-stems outside nouns and adjectives

There are more genuine *i*-stems to be found in Luwic. Luwian proper names attest a paradigm nom. *-is*, acc. *-in*, dat. *-iġa*, gen. *-issa*, *-issi*, gen.adj. *-issa/i-*. This paradigm is partially innovated, but must also continue an *i*-stem inflection. Given its restriction to proper names, however, the type is in complementary distribution with the ‘*i*-mutation’ stems, which are not normally found in names in Luwian. Indeed, when *i*-mutation stems are used as proper names, they inflect according to this onomastic *i*-stem paradigm. For example, the onomastic equivalent of the HLUw. adjective *ázama/i-* ‘beloved’ is *ázami-* (gen.sg. ¹*á-za-mi-sá*), that of *muwatala/i-* ‘mighty’ is *muwatali-* (gen.sg. ¹*mu-wa/i-ta-li-si*). These types were synchronically linked, and are best also taken together historically, as the remaining descendants of *i*-stems in appellatives and names, which generalized, respectively, the ablauting (PD) and non-ablauting *i*-stem types. In Lycian, the more common ablauting *i*-stem type has been extended to proper names. Some traces of non-ablauting *i*-stem inflection remain, however (e.g. in genitives of the type *tr̃m̃milihe*, *ijãnihe*, *xadawãtihe*).³²

³¹ For *parraġa/i-* itself, however, Melchert (1990: 202 n. 12) still hesitatingly entertained the possibility that it could reflect an *i*-stem. There is, however, no reason to assume that we are not simply dealing with *parra-ġa/i-* in this case as well.

³² For a detailed treatment of Luwic onomastic inflection, see Chapter 2. A similarly grammatically complementary *i*-stem type is found in the pronouns, namely in **k^wi-* ‘who, what, which’, which archaically also features **-i-* in the neuter direct cases (**k^wi*, **k^wiġa* < **k^wid*, **k^wieh₂*), among other peculiarities. Perhaps numerals also had

4.2.2.4 Other *i*-stems: conclusion

From the previous sections it is apparent that there is no category of *i*-stems that would prevent us from identifying the Luwic *i*-stems as found in nouns and adjectives also historically as *i*-stems. Rather, the identification naturally connects two loose ends: the apparent loss of *i*-stems in Luwic appellatives and an appellative stem class that morphologically looks like a type of *i*-stem but has not found any other convincing origin. The complementary distribution with, and linkage to, the onomastic *i*-stems further confirm the identification.

4.2.3 Lexical evidence: the inflection of original *i*-stem lexemes

The idea that the Luwic *i*-stems continue PANat. *i*-stems would only make sense if the PANat. *i*-stem lexemes continued in Luwic in principle (still) inflect according to the *i*-stem paradigm. This is indeed the case. The equivalent of the Hittite suffix *-ili-* (e.g. *karū-ili-* ‘former’) is *-il(i)-* (e.g. CLuw. *ḫant-il(i)-* ‘first’, *puḫatil(i)-* ‘past’, Lyc. *tr̄mil(i)-* ‘Lycian’). CLuw. *dakkuḫi-* is normally seen as the equivalent of Hitt. *dankui-* ‘dark’. The word for ‘sheep’, inherited from PIE **h₃eu-i-* (Gr. ὄ(φ)ίς, Lat. *ovis*, Skt. *ávi-*, PGM. **awi-*, etc., probably also Hitt. UDU-*iš*), shows up in Luwian as *ḫāyi-*.³³ As far as comparison allows us to see, no *i*-stems have

a distinct type of *i*-stem, if Lyc. *kbi-* ‘(an)other’ (< **second*) (n. *kbi(?)*, *kbija*, gen.adj. *kbijehe/i-*) is to be interpreted as such rather than as *kbije/i-*, with a nom.-acc.sg.n. **kbijē*.

³³ Only the direct cases and the dat.sg. are attested unambiguously: CLuw. nom.sg. *ḫa-a-ú-i-iš*, acc.pl. UDU-*in-za*, HLuw. nom.sg. (OVIS.ANIMAL) *ḫá-wá/i-i-sá*, dat.sg. (OVIS.ANIMAL) *ḫa-wa/i-i*. No unambiguous forms with *-a-* have so far been attested, in CLuw. due to the lack of attestations and in HLuw. due to the ambiguity of the script. Kloekhorst (2008a: s.v. *ḫāyi-*) argues that NH *ḫayijašši-* ‘sheep-like’, which is generally regarded as a Luwian loanword because of the inflection of the suffix, shows that we are dealing with a fully-fledged Luwian *i*-stem rather than an *i*-mutation stem. However, since, as was argued in 4.2.2, no such *i*-stem type exists in Luwian nouns, the word can only have inflected according to the regular *i*-stem paradigm. Hitt. *ḫayijašši-* is therefore either a Luwoid coinage in Hittite on the basis of the native Hittite word, or it was adapted after the native word. The Lycian word for ‘sheep’, *xawa-*, is clearly a secondary *a*-stem, showing the effect of the considerable productivity that *a*-stems enjoyed in Lycian – see 4.3.3.4. This transfer can also be understood much more easily starting from an *i*-mutation paradigm, whose

ended up in a different class in Proto-Luwic. Note that these lexemes did not all originally inflect according to the same *i*-stem type. The suffix *-ili-* does not show any ablaut in Hittite, Hitt. *dankui-/dankuūai-* is PD, and whatever the exact ablaut pattern of **h₃eu-i-* was, it was in any case not PD (cf. Skt. gen.sg. *ávyah* < **-i-os*). Apparently, the PD type was at some point in pre-Proto-Luwic generalized among *i*-stem nouns and adjectives.³⁴

4.3 The extent of the spread of the *i*-stem paradigm

If the Luwic *i*-stem paradigm originated in the PAnat. PD *i*-stem paradigm, it clearly spread beyond its original nucleus. As mentioned in 1, most members of this nominal class were originally *C*-stems or *o*-stems. In the sections that follow I will determine the distribution of the paradigm and its relation to other stem classes more precisely. This can then inform a theory regarding a possible scenario for the spread of the paradigm.

4.3.1 *C*-stems

As has already been observed by Starke (1990: 62-64, 91-93), all certain former common gender *C*-stems have been *i*-mutated, the only exceptions being the theonyms Tarhunt (CLuw. ^d*tarhunt-*, HLuw. (DEUS.TONITRUS)*tarhunt-*, Lyc. *trqqñt-*) and Tiwad (CLuw. ^d*tiwat-*).³⁵ If we take into account the observation made in 4.2.2.3, that the domain of the *i*-mutation paradigm is the noun and adjective, whereas all other parts of the nominal system, including proper names, in principle do not feature this type, then there are no exceptions.³⁶

morphemes containing *-i-* can be analyzed as endings (see 4.4.2.2), than from a fully-fledged *i*-stem paradigm.

³⁴ This might have been a first step in their massive expansion, but it is also possible that the generalization happened only after (part of) the spread of the PD type to other stem types, which would have made it the dominant type among the *i*-stems (cf. the spread of the paradigm to proper names in Lycian).

³⁵ In HLuw., the aberrancy of these names led to some restructuring in the direct cases. Instead of the historically expected nom.sg. form **tarhunz*, we normally find the extended form *tarhunzas*, as well as the acc.sg. *tarhunzan*; for the nom.sg. **tiwaz* we find *tiwazas* and *tiwadis*, with the acc.sg. *tiwadin*.

³⁶ On the *C*-stem turned *a*-stem *kbatra-* ‘daughter’, very probably also through an *i*-stem stage, see 4.3.3.4.

4.3.2 *u*-stems

In Luwic appellatives, the *u*-stems have become an infrequent type – in Lycian to the point of extinction – leading to some obscurity regarding the exact shape of the paradigm. Starke (1990: 62) saw a distinction between non-mutated *u*-stem nouns and mutated *u*-stem adjectives, but it is nowadays usually assumed that *u*-stems were in principle not mutated. Indeed, Starke’s adduced examples do not stand up to scrutiny. CLuw. “*āddu(i)-*” is rather *ādduṽa-* ‘evil’ (Melchert 1993: s.v.); *madduṽinzi* ‘of wine’ is better analyzed as a form of *maddu-ija/i-* than of *maddu-* (Melchert 1993: s.v.); “*danku(i)-*”, or rather *dakkuṽi-* ‘?’, is indeed an *i*-stem, but if it is connected with Hitt. *dankui-* ‘dark’ (see Kloekhorst 2008a: s.v.), it is also historically an *i*-stem rather than an *i*-mutated *u*-stem; *ṽāšṽu-* ‘good’ is still a *u*-stem (acc.sg.c. *ṽāšun*, see Melchert 1993: s.v.).

One confusing element, however, is that the regular nom.pl.c. ending has been taken over from the *i*-stems so that, for example, the nom.pl.c. of *ṽāšṽu-* is attested as *ṽāšuenzi*, *ṽāšuienzi*. Similarly, the adjective *kuṽanzu-* ‘heavy, important (?)’ (nom.sg.c. *kuṽanzuš*, nom.-acc.sg.n. *kuṽanzu*) has a nom.pl.c. *kuṽanzuinzi*. The same adjective is probably behind HLuw. *356-*zu-* (acc.sg.c. *356-*zú=ha*), whose nom.pl.c. is attested as *356-*wa/i-zi*. The borrowing of this ending into the *u*-stem paradigm should not be confused with a complete conversion of *u*-stems into *i*-stems, however. The borrowing may be understood in the following way. In the full-grade variant of the suffix as found in ablauting *u*-stems, continuing PANat. **-eṽ-*, the **-ṽ-* is consonantal rather than vocalic. It should therefore come as no surprise if the forms with a full-grade suffix were also treated as consonant stems. The form *mi-i-ja-ṽi5-en-zi* (cf. 4.4.1), although not with certainty identifiable as a *u*-stem, suggests that in ablauting *u*-stems the full-grade suffix was also found in the nom.pl.c. This may well be the reason that, like *C*-stems in general, it obtained the nom.pl. ending **-intsi*.³⁷ In the singular, however, the endings were **-us* and **-un*, with a vocalic *u*, and these were therefore not treated as *C*-stem endings. The non-ablauting *u*-stems show the same distribution, with the prevocalic

³⁷ Note that the taking over of **-intsi* as an ending constitutes further evidence for its analysis as an ending.

variant of the suffix, **-u \bar{u} -*, in all of the plural (**-u \bar{u} -intsi* parallel to **-u \bar{u} -o°*), but the preconsonantal one, **-u-*, in the nom. and acc. sg.

In Luwian, there is only one example of a *u*-stem that was completely converted into an *i*-stem: *u \bar{a} u \bar{i} -* ‘cow’ (CLuw. GUD-*iš*, HLuw. (BOS.ANIMAL)*wa/i-wa/i-sa*). This can be explained using the same formal principle: of the attested original *u*-stems, it is the only one whose **-u-* was always preceded by a vowel, and so, whose **-u-* was consistently consonantal. Accordingly, the entire lexeme was treated as a *C*-stem, and acquired the *i*-stem inflection like all other *C*-stems (see 4.3.1). All other original *u*-stems, however, have not been *i*-mutated, but survive as *u*-stems. This must hold for Proto-Luwic as well.

In Lycian, the outcome of **-u-* is consonantal *-b-* in the oblique cases, most clearly shown by the word for ‘horse’ in abl. *esbedi*, gen.adj. *esbehe/i-*.³⁸ We do not have an attestation of a sg. direct case, but unless this had the extremely archaic shape **esu-* < **h \bar{i} ek \bar{u} -* (HLuw. *ázu-*), the consonantal variant of the stem was probably generalized, leading to a complete conversion into an *i*-stem (**esbi-*).³⁹ As part of a general Lyc. tendency (see 4.3.3.4), some nouns referring to animate beings received an *a*-suffix and thus found their way into the *a*-stem class (e.g. *xahba-* ‘grandchild’).⁴⁰

4.3.3 \bar{a} -stems and *o*-stems

4.3.3.1 Lyc. *a*-stems < \bar{a} -stems

One of the major factors that must have prompted Starke to analyze the *-i-* of the *i*-stem paradigm as an element that intruded into various stem classes

³⁸ For Anatolian, the reconstruction of a *u*-stem **h \bar{i} ek \bar{u} -* ‘horse’ rather than an *o*-stem **h \bar{i} ek \bar{u} o-* is straightforward (Hitt. ANŠE.KUR.RA-*u-*, CLuw. ANŠE.KUR.RA-*u-*, HLuw. (EQUUS.ANIMAL)*ázu-*); see Kloekhorst (2008a: 10 and s.v. **ekku-*).

³⁹ Given the general conversion of common gender *C*-stems and *o*-stems into *i*-stems (see 4.3.1 and 4.3.3.2), the word for ‘horse’ was certainly not a *C*-stem ***esb-* or an *o*-stem (*e*-stem) ***esbe-*.

⁴⁰ It is not completely clear whether *xahba-* ‘grandchild’ is an adapted continuation of an original *u*-stem with (more or less) the same meaning or a derivation from a *u*-stem with a different meaning. The *u*-stems that have been compared (cf. Weitenberg 1984: 159-160, Melchert 2004: s.v.), viz. HLuw. (NEPOS)*hasu-* ‘family, offspring’, Luw. *hamšu-kkalla-* ‘great-grandchild’ (but *hamši-* ‘grandchild’) and Hitt. *haššu-* ‘king’, allow for both options.

but affected only some of their members, is the fact that Luwian has both *a*-stems with *-a-* throughout the paradigm and another class with the same oblique cases, but with *-i-* in the direct cases. The Luwian integral *a*-stems, and similarly the Lycian *a*-stems, had up to Starke's time been universally equated with the Hittite *a*-stems and reconstructed as PANat. *a*-stems < PIE *o*-stems,⁴¹ and Starke's identification of the other class as *a*-stems < *o*-stems with an intrusive *-i-* is therefore understandable, even more so considering their most frequent neuter equivalent in *-an* < **-om*.

This interpretation changed with the discovery that Lycian had distinct outcomes of PLuw. **ǎ* and **ǒ*, in the guise of *a* and *e*, respectively (Melchert 1992, Rasmussen 1992), which led to the realization that Lycian *a*-stems continue *ā*-stems < *eh₂*-stems, whereas *o*-stems are continued as *e*-stems (Melchert 1992: 48, Hajnal 1994: 138-140). Importantly, the Lyc. *a*-stems do not show any *i*-mutation. There are no *i*-stems with *-a-* instead of *-e-* in the oblique cases (e.g. nom.sg. *-i*, abl. *-adi*). Remarkably, this discovery has had no impact on the interpretation of *i*-mutation. Rieken (2005: 49) does mention the lack of *i*-mutation in the *a*-stems, but does not try to explain it. Yet, not only should the lack of *i*-mutation in Lycian *a*-stems be accounted for, it also provides a major clue concerning the nature of the spread of the *i*-stems. This will become clear below (4.4.1).⁴²

4.3.3.2 Lyc. *e*-stems < *o*-stems

It is generally agreed that most PANat. common gender *o*-stems underwent *i*-mutation in Luwic. The *ijo/i*-stems are a case in point (see 4.2.2.1). In looking for a distribution between mutated and non-mutated common gender *o*-stems, we have to consult Lycian, which, in having kept the vowels of the *ā*-stems and *o*-stems apart (unlike Luwian) helps distinguish between *ā*-stems (Lyc. *a*-stems) and *o*-stems without *i*-mutation (Lyc. *e*-stems). In order for a Lycian word to be identified as a common gender *e*-stem, as distinct from an *i*-stem and a neuter *e*-stem, it would have to show one of the following diagnostic endings: nom.sg.c. *-e*, nom.pl.c. *-ēi*, or acc.pl.c. *-es*, from **-os*, **-ontsi* and **-onts*, respectively. When looking for

⁴¹ Cf. e.g. Pedersen (1945: 15-16), Houwink ten Cate (1961: 54).

⁴² On the productivity of the *a*-stems in Lycian see 4.3.3.4 below.

nouns and adjectives that show these endings, it soon becomes apparent that they are extremely rare. Only a handful of lexemes meet this condition. Most secure are *epewētlm̃me-* ‘περίουκος’ (only nom.pl. *epewētlm̃mēi*) and *esedēñnewe-* ‘offspring’ (nom.sg. *esedēñnewe*, acc.sg. *esedēñnewē*, dat.sg. *esedēñnewi*). We further have a nom.sg. apposition to a name, *manaxine*, and possibly *kete* (TL 5, 4) is to be interpreted in the same way. Finally, three forms on the Xanthos stele formally look like acc.pl.: *pzzidezes* (TL 44b, 9) [...]*ewes* (TL 44b, 11) and *xawales* (TL 44b, 17). This very low number of lexemes contrasts sharply with the abundance of attested *a*-stems, *i*-stems, and neuters. There are, then, at most a handful of remaining common gender *e*-stem lexemes in Lycian nouns and adjectives, and one may ask if these words are in fact regular nouns and adjectives, rather than, for example, designations with an onomastic inflection.

In the periphery of the nominal system, outside of nouns and adjectives, we do find more *e*-stems. Among proper names, *e*-stems (nom.sg. *-e*) are frequent. We also find an *e*-stem in the pronoun *ebe-* ‘this’ (nom.sg.c. *ebe*, acc.sg.c. *ebē*, nom.pl.c. *ebēi*), which neatly corresponds to Hitt. *apā-* < **h₁ob^hó-*. Interestingly, this pronoun has variants extended with adjectival suffixes that are normally *i*-stems, but that in this pronominal environment occur as *e*-stems: acc.sg.c. *ebēñnē* (*ebe-* + *-(w)ñne/i-*, see Kloekhorst 2008b: 135-137), next to a few occurrences of the *i*-stem form *ebēñni*; acc.pl.c. *ebeijes* (*ebe-* + *-ije/i-*, cf. 4.2.2.2), beside *ebeis*. We may also regard the enclitic pronoun *=e-* (cf. Kloekhorst 2011) as an *e*-stem (cf. Hitt. *=aš*, *=e* < **=os*, **=oi*). This distribution again matches that found earlier (cf. 4.2.2.3 and 4.3.1): in Proto-Luwic the PD *i*-stems belonged to nouns and adjectives, and were not found in the rest of the nominal system.

4.3.3.3 Luw. *a*-stems

As mentioned above, the Luw. *a*-stems (‘without *i*-mutation’) have traditionally been equated with the Hittite *a*-stems and traced back to PIE *o*-stems. However, the existence of PANat. *ā*-stems < *eh₂*-stems, continued in Lycian, provides a second possible origin for the common gender Luwian *a*-stems, which is still being explored. Hajnal (1994: 166-167) first reasoned that *o*-stems had often been *i*-mutated, and that therefore any non-mutated *a*-stem may at least be suspected to continue an old *ā*-stem. He

mentions some CLuw. words for which he deems this probable, because they also show plene spellings which would indicate a long stem vowel (*gašga-* ‘Kaska’, “*hutarla-*” ‘slave’, “*pāta-*” ‘foot’),⁴³ or have a dat.-loc.sg. in *-a* (*hūmma-* ‘pig-sty’), which may be compared to the Lyc. *a*-stem dat.-loc.sg. ending *-a*. He further equates the suffixes CLuw. *-azza-* and Lyc. *-aza-*, with the possible word equations CLuw. *uashazza-*, a divine epithet, ~ Lyc. *wasaza-*, a kind of priest, HLuw. *kumaza-* ‘priest (?)’ ~ Lyc. *kumaza-* ‘priest’. Recently, Sasseville has made a similar case for the suffix Luw. *-alla-*, Lyc. *-ala-*, distinguishing it from Luw. *-alla/i-*, Lyc. *-ele/i-* (Sasseville 2014/2015: 109f.), as well as for CLuw. *-ašša-*, Lyc. B *-asa-* (Sasseville 2018), and he explicitly regards this as additional support for deriving the Luw. *a*-stems from *eh*₂-stems (Sasseville 2014/2015: 119; 2018: 303, 313). To the lexical equations we can add the *Paradebeispiel* of the category, HLuw. *huha-* ‘grandfather’, which neatly corresponds to Lyc. *xuga-* ‘grandfather’.⁴⁴

Although such word and suffix equations suggest that at least some Luw. *a*-stems go back to *eh*₂-stems, there can in my opinion be no doubt that the complete *type* of the common gender Luw. *a*-stems goes back to *ā*-stems < *eh*₂-stems rather than to *o*-stems, and has to be identified with the Lycian *a*-stems. The first strong indication pointing to this categorical identification is the skewed distribution in Lycian nouns and adjectives between common gender *a*-stems (abundant) and common gender *e*-stems (extremely rare, if existent at all, see 4.3.3.2), which strongly advises us to assume that the main input for the Luw. *a*-stems were likewise *ā*-stems. However, the decisive argument, in my view, is the Luw. dat.-loc.sg. *-a* (cf. also Sasseville 2014/2015: 109). It has by now become clear that the Luw. dat.-loc.sg. ending *-a* is not an alternative to the ending *-i*, but rather

⁴³ None of these examples can be upheld, however. As expected for a former *C*-stem, the word for ‘foot’ rather was an *i*-stem, cf. HLuw. (“PES”) *pa-ti-zi* ‘feet’; the form *patāš* is more probably a dat.-loc.pl. (cf. Norbruis & Sasseville fthc.). The assumption of an *a*-stem *hutarla-* on the basis of the syntactically unclear form *hūtarlān* is also suspect in view of HLuw. *SERVUS-li-*; indeed, according to Melchert (p.c.), the form in *-ān* probably does not exist, and the correct reading is rather *hūtarlānni[š]*. In view of the determinative, the form ^{LÚ.MEŠ}*gašgāš*, again of unclear syntactic status, is also more naturally interpreted as a plural form.

⁴⁴ For *xuga-*, to be extracted as such from the genitival adjectives Lyc. A *xugahi*, Lyc. B *xugasi*, see Chapter 3.

the paradigmatic dat.-loc.sg. ending of the common gender *a*-stems, whereas other stem types, including neuter *a*-stems, have the ending *-i* (e.g. HLuw. *ása-* c. ‘seat’, dat.-loc.sg. *ása*, but *parna-* n. ‘house’, dat.-loc.sg. *parni*).⁴⁵ Not only does this suggest that we should separate the common gender *a*-stems from the neuter *a*-stems – the ending *-a* of the common gender *a*-stems can also be identified specifically with the dat.-loc.sg. *-a* of the Lycian *a*-stems.⁴⁶ This can only mean that the Luwian common gender *a*-stems as a type continue PLuw. *ā*-stems rather than *o*-stems. Moreover, since the neuter *a*-stems, which clearly do continue *o*-stems (with *-an(-za)*, *-a* < **-om*, **-eh₂*), must historically be separated from the common gender *a*-stems, the Luw. common gender *a*-stems do not have a neuter counterpart, exactly like the PIE *eh₂*-stems and their Lyc. descendants (a fact clearly related to the semantic value of the category – cf. the following section). The individual word and suffix equations mentioned above confirm the identification.

4.3.3.4 Mismatches: productivity of the Lyc. *a*-stems

When a lexeme appears as an *a*-stem in one of the two languages, but not in the other, the *a*-stem is always found in Lycian. In the cases that have clear historical interpretations, it is Lycian that innovated: *xawa-* ‘sheep’ continues a PANat. *i*-stem **Houi-*, still preserved as an *i*-stem in Luwian *ḫāui-* ‘sheep’. Lycian must therefore have replaced the *i*-stem inflection with *a*-stem inflection. As we have seen (4.3.1), common gender *C*-stem nouns and adjectives had become *i*-stems in Proto-Luwic; Luwian *uāui-* ‘cow’ therefore shows the expected continuation of PANat. **g^wou-* (see 4.3.2), whereas Lycian *wawa-* instead received an *a*-stem suffix. Similarly, the original *C*-stem meaning ‘daughter’ (PIE **d^hu(e)gh₂ter-*) was extended in Lycian with an *a*-stem suffix: *kbatr-a-*. The spelling of the Luwian cognate is ambiguous (HLuw. acc.sg. (FILIA)*tú-wa/i-tara/i-na*), but in light of the previous examples probably represents the historically

⁴⁵ For earlier claims to this effect see already Werner (1991: 27-28), more recently Yakubovich (2015: § 6.2); for a collection of the evidence see Norbruis & Sasseville (fthc.).

⁴⁶ On the secondary character of the coexisting Lyc. *a*-stem dat.-loc. *-i* and the distributions between the two see Chapter 2.

expected *i*-stem *tuwatri-*. Lyc. *xahba-* ‘grandchild’, whether it is an adaptation or a derivation of its *u*-stem base (see 4.3.2 n. 40), also shows the effects of the apparent productivity of the *a*-stems in Lycian. These cases indicate that in other cases of discrepancy but with no clear etymology to establish the original stem form, we had also best assume that the Lycian *a*-stem is secondary, for example in the cases of Luw. *atli-*, Lyc. *atla-* ‘person, self’ and Luw. *massani-*, Lyc. *mahana-* ‘god’.

We can infer that the *a*-stems enjoyed some productivity in (pre-)Lycian, whereby words from all other stem classes were transferred to the *a*-stems. Because this happened to some, but certainly not all members of each class, the *a*-stems at least to some extent probably had a specific semantic value. Indeed, the words affected (‘sheep’, ‘cow’, ‘daughter’, ‘grandchild’, ‘person, self’, ‘god’) form a clear semantic category: that of animate beings.⁴⁷

At the same time, the *i*-stems apparently did not have such specific semantics, and their inflection could easily be sacrificed. Indeed, the disposal of the *i*-stem morphemes, as opposed to, for example, the *u*-stem morphology on which *xahba-* is based, lends further probability to the synchronic analysis of these stems proposed in 3 n. 11 and 4.2.1.2.3 and further developed in 4.4.2.2, as *C*-stems with alternative endings rather than *i*-stems.⁴⁸ This allows us to analyze the transfer to the *a*-stems as due to suffixation, comparable to that seen in *xahba-*,⁴⁹ rather than as a replacement of *i*-stem inflection with *a*-stem inflection.

⁴⁷ The fact that we only find transfers from *i*-stems to *a*-stems, but not the other way around, shows that, at least for this semantic category, *a*-stems were more productive than the pervasive *i*-stems. Indeed, from the following it will become clear that the reason we have such a large body of *i*-stems is not so much the productivity of the *i*-stems (so e.g. Rieken 2005: 65), as the fact that most lexemes happened to be inflected according to one of the three collapsing stem types. In other words, the *i*-stems took over on the inflectional rather than the lexical level.

⁴⁸ On the choice to nevertheless use the label ‘*i*-stems’ (along with the citation with *-i-*), see 3 n. 11.

⁴⁹ With the difference that *xahba-* ‘grandchild’ may also be a derivation of the *u*-stem base rather than the same lexeme which was suffixed with *-a-* without any semantic shift (see 4.3.2 n. 40).

4.3.3.5 \bar{a} -stems and *o*-stems: conclusion

With the disentanglement of the \bar{a} -stems and the *o*-stems that Lycian allows for, and the following identification of the Luwian *a*-stems with the Lycian *a*-stems, a clear picture emerges: pre-Proto-Luwic had a class of \bar{a} -stems which were never converted into *i*-stems, and a class of *o*-stems which were always, save perhaps a few exceptions (see 4.3.3.2), converted into *i*-stems. This is valid for common gender nouns and adjectives; all other parts of the nominal system did not take part in the conversion.

4.4 A scenario of the spread

4.4.1 A collapse of *i*-stems, *C*-stems and *o*-stems

From the previous analysis it has become clear that in the common gender of nouns and adjectives, all *i*-stems, all *C*-stems, and all (or perhaps virtually all) *o*-stems were turned into *i*-stems, whereas \bar{a} -stems and *u*-stems were not. In other words, the spread of the *i*-stems took place along paradigmatic lines. This suggests that we are dealing with a *paradigmatic collapse* of the three stem types involved.⁵⁰ As these paradigms are formally defined, we should look for formal factors that united these three, but were not present in \bar{a} -stems and *u*-stems.

For this we have to reconstruct the pre-Proto-Luwic paradigms.⁵¹ The \bar{a} -stems can be directly reconstructed on the basis of Luwian and Lycian.⁵² There are slight traces of PD ablaut in some of the few *u*-stems that

⁵⁰ For hints at a roughly similar analysis, cf. the descriptions of ‘*i*-mutation’ by Sasseville (2014/2015: 105) (“*i*-mutation refers to a nominal paradigm which appears to be a syncretism between the *i*-stems and the thematic *o*-stems”) and Yakubovich (2015: § 6.2) (“in practice we are dealing with the effective merger of *a*-stem[s], *i*-stems, and consonantal stems, which led to the complementary distribution of their endings across the paradigm.”).

⁵¹ Note that some words must still have had mobile accent and will have featured long vowels in some endings. However, these must have been exceptions.

⁵² Note that some details may therefore date to Proto-Luwic rather than pre-Proto-Luwic. For example, the reconstructable dat.-loc.sg. * \bar{a} is probably secondary to the morphologically expected form * $\bar{a}i$ (vel sim.), which it may still have been at this stage. Conversely, the length of the stem vowel is based only on etymological considerations, and may also be anachronistic. Its secure, and essential, feature is the *a*-quality.

survived in Luwian,⁵³ and so we may assume the existence of a PD ablauting *u*-stem paradigm, which probably existed next to a type with *-u*-throughout (cf. 4.3.2).⁵⁴ The *i*-stem paradigm is the one reconstructed in 4.2.1.2.4, after the loss of intervocalic **-i-* and contraction of the vowels. The *o*-stems and *C*-stems can be plausibly reconstructed combining the oblique cases, also found in the neuter counterparts, with the direct case endings we expect morphologically and comparatively.⁵⁵

	<i>o</i>		<i>C</i>		<i>i</i>	
	sg.	pl.	sg.	pl.	sg.	pl.
nom.	*-os	*-ontsi	*-s/*-∅	*-ntsi	*-is	*-intsi
acc.	*-on	*-onts	*-n	*-nts	*-in	*-ints
dat.-loc.	*-i	*-os	*-i	*-os	*-i	*-os
abl.	*-odi		*-odi		*-odi	
gen.adj.	*-osso-		*-osso-		*-osso-	

	<i>ā</i>		<i>u</i>	
	sg.	pl.	sg.	pl.
nom.	*-ās	*-āntsi	*-us	*-(V)untsi
acc.	*-ān	*-ānts	*-un	*-(V)unts
dat.-loc.	*-ā(i)	*-ās	*-(V)ui	*-(V)uos
abl.	*-ādi		*-(V)uodi	
gen.adj.	*-āssso-		*-(V)uosso-	

From this overview, a clear formal overlap between the *i*-stems, *C*-stems and *o*-stems that is not shared with the *ā*-stems and *u*-stems presents itself: in *i*-stems, *C*-stems and *o*-stems, the oblique cases are identical; in *ā*-stems

⁵³ A trace of PD inflection is the adjective *mannu-* ‘?’, whose dat.pl. is attested as *ma-an-na-u-ṽa-an-za*. Another trace may be *mi-i-ṽa-ṽi5-en-zi* ‘?’, but as this is the only attested form of this lexeme, the exact stem class cannot be determined.

⁵⁴ As with the *i*-stems, the ablaut vowel will originally have been **-e-*, but it is quite possible that *e-* and *o-*vocalism had already merged at this point, in which case one should read **-o-*, the notation used here for the merged vowel (for more discussion see 4.2.1.2.1). In any case, the quality of this vowel is not relevant for current purposes. Both possibilities are encapsulated in the notation *V*.

⁵⁵ The *o*-stem dative **-i* can be securely reconstructed on the basis of the neuter. One could analyze this as having developed by sound law from **-ōi* < **-o-ei*, but since Hittite has the same ending *-i*, it is more probable that the Luwic ending was inherited as such from PAnat.

and *u*-stems, on the other hand, the oblique cases distinctly feature the respective stem vowels, which sets them firmly apart. The oblique cases are therefore a probable point of departure for the formal collapse of *o*-stems, *C*-stems and *i*-stems. The scenario that emerges is one of analogical generalization of the direct cases of the common gender *i*-stems among all common gender stem types that shared the same oblique cases.

4.4.2 Why *i*-stems? An initial collapse of *i*-stems and *C*-stems

Why would the *i*-stem direct cases have been generalized rather than those of the *o*-stems or *C*-stems? A more fine-grained look at the collapse can shed some light on this matter. There is some evidence to suggest that *i*-stems and *C*-stems were the first to merge.

4.4.2.1 The evidence

First, *C*-stem nouns and adjectives were converted into *i*-stems without exception. The few Lycian common gender *e*-stem nouns may be real exceptions to the conversion; if so, *C*-stems were converted more thoroughly. Second, former *i*-stem adjectives whose neuter is attested – so far only adjectives in *-il(i)-* < **-ili-* – feature a consonantal neuter. For example, *ḥantil(i)-* ‘first’ (nom.sg.c. *ḥa-an-te-li-eš*) has a nom.-acc.sg.n. *ḥantil-za*. Similarly, *puḡatil(i)-* ‘past’ has a neuter *puḡatil(-za)*. Apparently, at least these *i*-stem adjectives replaced their old *i*-stem neuter with a consonantal neuter (**-ili* >> **-il*). This would only make sense if the common gender of these adjectival types was already the same, i.e. if the common gender *C*-stem paradigm had already been transformed into an *i*-stem paradigm. The development would then be understandable as an expansion of the *C*-stem neuter type – probably the most common of the two – at the expense of the original *i*-stem neuter type (the direct counterpart of Hitt. *šalli*) in adjectives with an *i*-stem common gender. In practice, this meant an analogical replacement in the original *i*-stem adjectives of the nom.-acc.sg.n. **-i* with **-∅*. The *o*-stems apparently did not take part in this development. Synchronically in the Luwic languages, however, and so probably also in Proto-Luwic, *V/i*-stem adjectives were by far the most common type. This suggests that at the stage of the spread of *C*-stem neuters at the expense of *i*-stem neuters in adjectives with an *i*-

stem common gender, the *o*-stems were probably still a separate category. As this suggests an earlier merger of common gender *C*-stems and *i*-stems, the implication is that common gender *C*-stems and *i*-stems were the first paradigms to merge.

4.4.2.2 Motivation and scenario

What could be the motivation for the common gender *C*-stems and *i*-stems in particular to merge? I suggest that two factors played a role in this merger.

The first concerns the *C*-stem direct case endings, which probably had the following shapes (cf. the table in 4.4.1): **-s/-∅*, **-n*, **-ntsi*, **-nts*. These endings differ from those of all other stem types in that they do not have a stem vowel before them. This makes the phonological sequences in which they occur structurally quite different: where all other stems have **-Vs*, **-Vn*, **-Vntsi*, **-Vnts*, here we have **-Cs*, **-Cn*, **-Cntsi*, **-Cnts*. Moreover, the direct collision with the stem-final consonant may have been considered inconvenient. In the nom.sg. there was the additional aberrancy of a zero ending. These features increase the likelihood of the endings falling prey to analogical adaptation.⁵⁶

The other factor concerns the nature of the *i*-stem paradigm. As was pointed out in 4.2.1.2.3, it is probable that ablauting *u*-stems had declined to such a degree that they could not provide the analogical force needed to inspire restoration of the suffix in the oblique cases, as did happen in Hittite. Instead, the paradigm that had emerged by sound law was taken at face value: **-is*, **-in*, **-intsi*, **-ints* in the direct cases, **-i*, **-os*, **-odi*, **-osso-* in the oblique cases. With the suffix effectively removed by sound law in the oblique cases, only the endings remained, which were also found as such in most other stem classes, and so **-is*, **-in*, **-intsi*, **-ints* could within the paradigm only be interpreted on the same level, i.e. as endings. In other words, the type could be interpreted as *C*-stems with alternative

⁵⁶ For other IE languages, similar considerations have been put forward to motivate thematization. For analogical adaptation of the nom.sg. zero ending, cf. also Hitt. sigmaticization (e.g. *ḫašterza* ‘star’ < **h₂stēr* + **-s*, *ḫāraš* ‘eagle’ < **h₃er-ōn* + **-s*).

direct case endings.⁵⁷ This contrasts with the *o*-stems, which had **-o-* throughout the paradigm (except in the dat.sg.), still inviting the original analysis as a more separate class of *o*-stems, rather than as *C*-stems with alternative endings.

We arrive at a perfect match: the *C*-stems had aberrant, possibly inconvenient direct case endings, the *i*-stems offered the same paradigm, but with alternative, systematically more compliant direct endings. This may well explain the spread of the direct cases of the *i*-stems to the *C*-stems, effectuating their merger.

Incidentally, this proposed motivation also helps understand the different behavior of the common and neuter genders: the neuter *C*-stem direct case endings were sg. **-∅* and pl. **-a*, neither of which led to inconvenient collisions with stem-final consonants or aberrancies compared to most other stem types. As the inconveniences were restricted to the common gender, it is understandable that the remedy likewise remained restricted to the common gender.

4.4.3 Further spread to the *o*-stems

The spread of the common gender *i*-stems also included the absorption of their *o*-stem counterparts. After the initial incorporation of all common gender *C*-stems, the common gender *i*-stem inflection had become home to a large body of lexemes, quite possibly larger than that of the common gender *o*-stems. It is therefore not surprising that the *i*-stem type was the dominant party in the further collapse with the *o*-stems. Again, the main point of contact that induced the collapse must have been the identical oblique cases, and in this case the direct case endings were also identical except for the occurrence of **-o-* for **-i-*.

⁵⁷ See also the additional arguments for this analysis in 2.1.2 n. 8 (*-iš* as the added element in *īššariš* rather than *-i-*), 4.3.2 n. 37 (the spread of **-intsi* to the *u*-stems) and 4.3.3.4 (the disposal of *i*-stem morphemes when suffixed). Cf. also 3 n. 11.

5 Conclusion

The presented analysis suggests the following scenario.

1. The *i*-stems, which at some point in the process generalized the PD type in nouns and adjectives, effectively lost the oblique suffix **-ei-* by sound law. By this time, ablauting *u*-stems had declined in number to such a degree that they did not provide an incentive for analogical restoration.
2. After this, the *i*-stems became analyzable as *C*-stems with alternative direct case endings. The common gender *C*-stems took over these alternative direct endings, removing their original inconvenient direct case endings, effectively merging the two stem types. (The consonantal part of the *u*-stem paradigm, i.e. the forms with the full grade suffix **-Vu-*, behaved similarly, leading to the adoption of the nom.pl. ending **-intsi*.) The neuter did not have such inconvenient endings and was therefore not affected.
3. The type that resulted from former *C*-stems in adjectives, a combination of an *i*-stem common gender and a *C*-stem neuter, expanded at the expense of the original *i*-stem type, which also had an *i*-stem neuter (concretely an analogical replacement in the neuter of the nom.-acc.sg. **-i* with **-∅*).
4. The now large category of the common gender *i*-stems further collapsed with the common gender *o*-stems, which again had the same oblique cases, and acquired the same direct cases.

The \bar{a} -stems and – apart from the nom.(-acc.)pl. – *u*-stems did not take part in the collapse because their paradigms were formally distinct, featuring the stem vowel throughout. This clearly separated them from the paradigms that did collapse, which instead shared the same oblique cases.

An advantage of this scenario is that all steps are understandable as simplifications. Accordingly, all analogies have clear and simple motivations.

As far as terminology and notation is concerned, I have proposed to abandon the term ‘*i*-mutation’ for synchronic matters. There is no

synchronic process at work which ‘inserts an *-i-* between stem and ending’. Rather, we are simply dealing with an inflectional paradigm. The distinction between former *o*-stems (noted *-V/i-*) and *C*-stems (noted *-(i)-*) in nouns does not make sense synchronically, and should rather be abandoned in favor of a unified designation for the one synchronic type, here termed *i*-stems (noted *-i-*). The adjectives that combine a common gender *i*-stem with a neuter *o*-stem or *C*-stem can still be effectively noted with *-V/i-* and *-C(i)-*, respectively. To the *V/i*-adjectives also belong the *i(iV)*-adjectives, which can therefore more morphologically transparently be denoted as *-i*̄*V/i-*. The term ‘*i*-mutation’ may still conveniently refer to the prehistoric process of the conversion of *C*-stems and *o*-stems into *i*-stems.

As the Luwian common gender ‘non-mutated *a*-stems’ have nothing to do with the *i*-stems, they can simply be termed ‘*a*-stems’. I have argued for their full identification with the Lycian *a*-stems, tracing both back to the Proto-Luwic *ā*-stems.

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