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Lycian Syncope

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Abstract

Syncope, or the dropping of vowels from within a word, is one of the most distinctive features of the Lycian languages within the Anatolian branch. The exact conditions for this syncope have long evaded linguists. This study aims to clarify the rules and restrictions regarding syncope in Lycian. The first chapter will briefly describe the Lycian language, as well as Lycia, the country where it was spoken. The second chapter will define the place of Lycian within the Anatolian branch of the Indo-European language family. Before undertaking the description of a certain feature in a certain language, it is wise to first narrowly define that feature. This will be done in the third chapter. The fourth chapter will first give an overview of the previous scholarship on syncope in Lycian, after which a detailed analysis will be attempted. This analysis will shed light on the stress patterns of Lycian and show that syncope had worked in a specific period in the past of the language, but that it had since ceased to operate. The fifth and last chapter will summarise the conclusions. This study found that verbs were stressed on the root, or on the suffix, and that nouns were stressed penultimately. Both pre- and post-tonic syllables were syncopated if they were short at the time that syncope took place. In many cases syncope was reversed by paradigmatic levelling.

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Glossary

Abbreviations

ABL.	ablative	Luw.	Luwian
ACC.	accusative	Lyc.	Lycian
ACT.	active	MED-PAS.	medio-passive
Arm	Armenian	N	Neumann (1979)
Av	Avestan	N.	neuter gender
BCE	before common era	NOM.	nominative
C.	common gender	OHG	Old High German
CLuv/CLuwian	Cuneiform Luwian	OIr.	Old Irish
DAT.	dative	PA	Proto-Anatolian
GEN.	genitive	PIE	Proto-Indo-European
GEN-ADJ.	genitival adjective		
Hitt.	Hittite	PL.	plural
HLuv/HLuwian	Hieroglyphic Luwian	PRES.	present
IMF.	imperfective	PRET.	preterite
IMPT.	imperative	SG.	singular
INS.	instrumental	Skt.	Sanskrit
Lat.	Latin	TL	Kalinka (1901)
LOC.	locative		

Symols

#	word boundry
*	recnstructed form
**	hypothetical form
<	direct derivation
≪	indirect derivation
>	direct outcome
C	consonant
V	vowel
[ ]	phonetic representation
/ /	phonological representation
<>	orthographic representation
/_	environment in which a certain sound change took place
=	morpheme boundry

1 Lycia and Lycian

Figure 1: Lycian within Asia Minor; purple, bottom-left.

1.1 Country

Lycia is a region in south-western Anatolia, lodged between the Mediterranean sea and the Taurus mountain range. This geological location allowed the Lycians to keeping their independence and create wealth (Houwink Ten Cate, 1961). To the east Lycia bordered Pamphylia and Pisidia, to the north Kabalis, and to the west Caria. Very little is known about Lycia in the pre-classical era. Hittite sources mention a people from *Lukkā*, who fought on their side in the Battle of Qadesh (Popko, 2008). Egyptian sources talk of a seafaring people called *rk*, who may have been pirates and are probably the same people. Egyptian *rk* is a phonetic representation of Hittite *lukkā*, as the Egyptian script does not have vowel signs or a letter <l>. Several Lycian cities are mentioned in Hittite and Hieroglyphic Luwian inscriptions, pointing to settlements in *Lukkā* as early as the

second millennium BCE. From the time between the fall of the Hittite empire (twelfth century BCE (Kammenhuber, 1969)) and the rule of king Croesus in Lydia (sixth century BCE (Almagor, 2012)) there are barely any sources on Lycia or the Lycians. Homer tells of Lycians in the fifth book of his Iliad, but this is a very uncertain source.
According to Herodotus, Lycia and Cilicia, further east along the coast, were the only two countries to remain independent from king Croesus. When Croesus' empire fell to the Persians, Lycia was also annexed, although it appears there were never any Persian troops stationed in Lycia and the country kept much of its autonomy. It was not until Alexander the Great took over Asia Minor (third century BCE (Wiemer, 2012)) that the Lycian language started to fall out of use, and its extinction soon followed.
Our word *Lycia* must, through Greek *λυκία*, stem from the Hittite *Lukkā*. The Lycians called their country *Trm̃mis* and their language *Trm̃mili*, which is also reflected by Herodotus' *Τερμίλαι* and Hecetaeus' *Τρεμίλαι*.

1.2 Language

The Lycian language is attested in about 150 grave inscriptions on elaborate tombs across Lycia. These have been discovered by western explorers in the nineteenth century AD, when they first started visiting the area. The reason for this early discovery is that the graves are above ground and clearly visible. Besides these grave inscriptions, other important texts include the stele of Xanthos and the stele of Letoon, which provide longer multilingual texts. Apart from the longer inscriptions, there are also some 100 coin legends in Lycian. Some of the grave inscriptions also come with Greek translations, which has helped tremendously in their interpretation. There are actually two Lycian languages; Lycian A, and Lycian B. Lycian A is the language of the vast majority of texts and is usually referred to as Lycian. Lycian B is found on two sides of TL44, the stele of Xanthos, and on TL55. This language is also called Milyan, and is considerably less well understood than Lycian proper. In this paper 'Lycian' will be used for Lycian A and 'Milyan' for Lycian B.
Lycian was written in a unique alphabet, that seems to have been based on the Greek alphabet from Rhodes. While some letters have the same value in the Greek and Lycian alphabets, some others were pronounced quite differently, and some letters are completely unique to the Lycian alphabet.

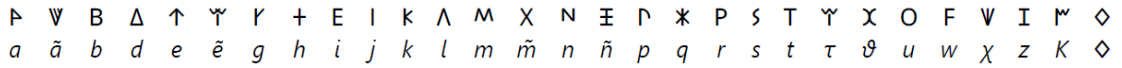


Figure 2: The Lycian alphabet

Figure 2 shows the Lycian alphabet with the most commonly used transcription. As we will see below, this transcription does not always closely match the reconstructed pronunciation. The following paragraphs will discuss the phonology and

morphology of Lycian. They are merely meant to give an overview, and not to contribute to any ongoing discussions.

Phonology Lycian has four oral vowels and two nasal vowels. The pronunciation of these vowels can be reconstructed on the basis of Greek and Persian names written in the Lycian alphabet, and Lycian names written in the Greek alphabet. From these sources, the following values have been determined:

a [ɑ], *e* [æ], *i* [ɪ], *u* [ʊ]
ã [ɑ̃], *ẽ* [æ̃]

There are no nasalised versions of *i* and *u*[1]. The liquids *r* and *l* have vocalic allophones when they occur interconsonantally. In some cases where we would expect the nasal vowel *ã*, we find *u*. Apparently, this sound was raised and denasalised by some Lycian speakers. For example, the accusative singular of *lada* 'wife' is either *ladã* or *ladu*.

The consonants of Lycian are given in table 1, based mainly on Kloekhorst (2013a).

	labial	dental	labio-dental	palatal	velar	labio-velar	glottal
nasal	m [m]	n [n]					
stop	p [p]	t [t]/ϑ [t^{h}][2]	τ [t^{w}]	k [c]	χ [k]	q [k^{w}]	
fricative	b [ɸ]	d [θ]		K [ç]	g [x]		h [h]
sibilant		s [s]					
affricate		z [t͡s]					
liquid		r [r]/l [l]					
semivowel			j [j]			w [w]	

Table 1: Lycian consonant table.

The semivowels *j* and *w* are not actual phonemes, rather just "consonantal allophones of /i/ and /u/" (Kloekhorst, 2013a: p.135). Lycian also has two 'vocallic' nasals, *m̃* and *ñ*, which are mainly used when a nasal stands next to a consonant, e.g. *miñti* 'assembly?', *km̃me* 'all, whole'. They are also used as true vocallic nasals, e.g. *χñtawati* 'he rules'. In consonant clusters the second consonant is often written as a geminate, e.g. *sttati*. The only exceptions to this rule are *-b-* and sometimes *-d-*; since all other consonants are always geminated if they are the second member of a cluster, this gemination is phonologically irrelevant (Kloekhorst, 2010: p.7).

Not all phonetic values are equally assured, especially the interpretation of *K* as [ç] is a very new addition. This letter has previously been transcribed as <β>. The sign ♢ has no commonly accepted transcription and is usually left untransliterated; both these signs are very rare. The sign <τ> represents an intermediate

[1]There are indications that nasalisation might have once existed, but has been lost on these two vowels (Kloekhorst, 2013a: p.134).

[2]<ϑ> is not a separate phoneme, but rather a combination of <d+h> or <t+h>.

stage between /k^{w}/ and /t/, which is why its value is given as /t^{w}/ here. The value is purely based on etymology and cannot be verified.
Lycian had two types of umlaut: a/u-umlaut, which lowered[3] e to a if the following syllable contained a or u; and e/i-umlaut, which raised a to e if the following syllable contained e or i.

Grammar Since most of the Lycian texts are grave inscriptions that are very similar, almost formulaic, many gaps remain in our knowledge of Lycian grammar.

Nouns
Lycian has several noun classes, including the i-mutation stems that it shares with Luwian. Table 2 shows the Lycian noun declension. An empty slot means that the appertaining case does not exist, a – means that it has not been attested. Lycian has two genders, common and neuter. The ablative case does not have different forms for plural and singular. Some words have irregular paradigms, but these

		e-stem	e/i-stem	a-stem	i-stem	C-stem	C/i-stem
SG	NOM.C.	°Ce	°Ci	°Ca	°Ci	°C	°Ci
	ACC.C.	°C$\tilde{e}$	°Ci	°C$\tilde{a}$, °Cu	°Ci	°C$\tilde{n}$	°Ci
	NOM-ACC.N.			°C$\tilde{a}$	°C$ij\tilde{e}$	°C	
	GEN.	°Ce, °Cehe	–	°Ca, °Cahe	°Cihe	–	–
	DAT-LOC.	°Ci	°Ci	°Ci	°Ci	°Ci	°Ci
	GEN.ADJ.	°Cehe/i	°Cehe/i	°Cahe/i	°C$ijehe/i$	–	–
	ABL.	°Cedi	°Cedi	°Cadi	°C$ijedi$	°Cedi	°Cedi
PL	NOM.C.	°C$\tilde{e}i$	°Ci	°C$\tilde{a}i$	°Ci	–	°Ci
	ACC.C.	°Ces	°Cis	°Cas	°Cis	–	°Cis
	NOM-ACC.N.			°Ca	°Cija	–	
	GEN.	–	°C$\tilde{e}$	°C$\tilde{a}i$	–	–	–
	DAT-LOC.	–	°Ce	°Ca, °Ce	°Cije	°Ce	°Ce

Table 2: Lycian declension (Kloekhorst, 2010; Houwink Ten Cate, 1961)

will be discussed in 4.2.

Pronouns
The Lycian demonstrative pronoun and relative pronoun will also be discussed in 4.2. I therefore give only the paradigm of the enclitic anaphoric pronoun in table 3.

Verbs
As said above, there are some gaps in our knowledge of Lycian grammar, and this is especially true for verbs. For example, not a single second person form has been

[3]While lowered and raised are the terms used most often to describe Lycian umlaut, the terms backed and fronted, respectively, are more fitting for the Lycian phenomenon.

	SG	PL
NOM.C.	=*e*	=*e*
ACC.C.	=*ẽ*	=*ede*
NOM-ACC.N.	=*ede*	=*ede*
DAT-LOC.	=*i*	=*ñne*

Table 3: Lycian enclitic pronoun (Kloekhorst, 2010).

found, even though they must have existed. First person forms are very rare, with first person plural forms missing completely and the singular present being found only once or twice. To save space, the overview in table 4 gives only attested forms, leaving no empty space for unattested endings. The singular endings have fortis and lenis variants, e.g. *-ti* and *-di*. In the plural, the endings with *-ñt°* follow a consonant, while those with *-˜t°* follow a vowel. Many endings have a nasalised variant that occurs in clauses containing an enclitic object pronoun. Other forms of the Lycian verb will be discussed in 4.2.

ACT.				MED-PAS.	
SG.	PRES.	PRET.	IMPT.	PRES.	PRET.
1	*-u*	*-χa*/*-χã*, *-ga*/*gã*		*-χani*	*-χagã*
3	*-ti*, *-di*, *-e*[4]	*-te*/*-tẽ*, *-de*/*-dẽ*	*-tu*, *-du*	*-ẽni*	–
PL.					
3	*-˜ti*, *-ñti*	*-˜te*/*-˜tẽ*, *-ñte*/*-ñtẽ*	*-˜tu*	*-˜tẽni*	–

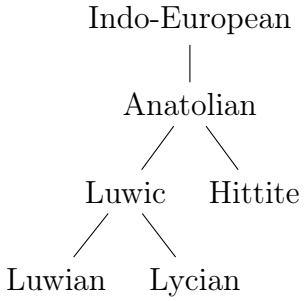
Table 4: Overview of attested Lycian verbal endings (Kloekhorst, 2010).

2 Lycian within Anatolian

It has been mentioned several times before that most of the Lycian texts available to us are grave inscriptions. The graves they were written on were very elaborate buildings in mountain faces, which have always been visible for anyone visiting the area. This means that Lycian was the first of the Anatolian languages to be discovered by western explorers. Some Lycian inscriptions were accompanied by a Greek translation, which aided the decipherment of the script, since words like personal names would be given in both scripts. Despite this fact, early scholars were not yet able to decipher the language. Many linguistic connections had been proposed in those early years of Lycian scholarship, but it was not until the discovery of both Hittite and Luwian that at the end of the first half of the twentieth century Lycian was first correctly identified as an Indo-European language, and more precisely a member of the Anatolian branch. Pedersen (1945) wrote an article about the connection between Lycian and Hittite, and five years later, in 1950,

[4] *-e* is a remnant of the *ḫi*-conjugation.

Tritsch[5] showed an even closer relationship between Lycian and Luwian. This latter finding is now generally accepted. In a simplified schema, the relationship between those languages can be summarised as follows (note that Lycian is a sister, not a daughter, of Luwian):



Of the things that Lycian shares with the other Anatolian languages, the most important ones are the preservation of the laryngeals as consonants (e.g. PIE *h_2 > Hitt. and Luw $ḫ$, Lyc. χ), the lack of a feminine gender, split-ergativity, clause-initial enclitic chains, among many others. Within the Luwic sub-branch, shared features include *i*-mutation in noun declension, the use of a genitival adjective instead of a true genitive, the preservation of a lenis-fortis distinction a verbal conjugation, to name just a few. In the following I will give just a cursory overview of the phonological developments from Proto-Indo-European to Lycian.

vowels Lycian /i/ goes back to Proto-Anatolian */i/ or */ī/. An example of the former is *ti* 'who' < PA *k^wi- < PIE *k^wi, cf. Hitt. *kui*-, CLuw. *kui*- 'id.'. The latter can be found in *si*- 'to lie' < PA *$k\acute{i}$- < PIE *$k\acute{e}i$-, cf. Hitt. $k\breve{i}$-, CLuw. *zi*- 'id.'

Lycian /u/ similarly goes back to PA */u/, */ū/, and */Vu/, as can be seen in *esu* 'to be, 3SG.IMPT.' < PA *?éstu*, cf. CLuw. *aštu*, HLuw. *astu* 'id.', and χ*uge*- 'grandfather' < PA *$hūh$- < PIE *h_2euh_2-, cf. CLuw $ḫūḫa$- 'id.', respectively.

The origins of Lycian /e/ can be traced back to PA */e/, */o/, and */ō/, as well as the reflex of PIE *h_1 before a resonant. Examples include *esu* < PA *?éstu*, see above, *ebe*- 'this' < PA *?obó*-, cf. Hitt. *apā*- and CLuw. *apā*- 'that', and *ẽmu* 'me' < PA *?m:u* < PIE *h_1mn, cf. Hitt. *ammuk*, HLuw. *amu* 'id.'

Finally, Lycian /a/ is derived from PA */a/, */ē/, and */ā/, e.g. -χa (ending 1SG.PRET.ACT. < PA *-*h:a* < PIE *-h_2e, cf. CLuw. -$ḫḫa$, *ta*- 'to place' < PA *$dē$- < PIE *d^heh_1-, cf. Hitt. *tē*- 'to say', and -*a* (ending NOM-ACC.PL.N.) < PA *-$ā$ < *-eh_2, cf. Hitt. -*a* 'id.'

The nasal vowels generally show the same developments, with the exception of /ã/ < PA */en/ /_t, e.g. *qãti* 'to destroy, 3SG.PRES.ACT.' cf. Hitt. *kuenzi*[6] 'id.' Contra Melchert (1994) I find no evidence for PA *$n̥ > ã$.

[5] I have not been able to obtain the original source (Tritsch, 1950), but all scholars on Lycian since then attribute this discovery to Tritsch.

[6] Although the same sound law applied to Hittite, **kuanzi* has been restored analogically to *kuenzi* on the basis of the rest of the paradigm.

consonants Lycian *p* /p/ reflects PA */p/, e.g. *epñ* 'after' < PA **ʔopom* 'id.', while *b* /β/ goes back to PA */b/, e.g. *ebe-* 'this' < PA **ʔobó-*, or /u/ /C_V, e.g. *esbe-* 'horse' < PA **ʔekúo-* 'id.'
The dental *t* /t/ comes from PA */t/, e.g. *-ti* (ending 3SG.PRES.ACT.) < PA **-ti*, whereas its lenis counterpart *d* /ð/ reflects PA */d/, for example in the lenited variant of the same ending *-di*.
The velars are more difficult to determine, due to lack of secure examples; fortis *χ* /k/ and *q* /kʷ/ continue PA */hː/ and */hːu/, respectively. Examples of are *χñnahe/i-* 'of the grandmother (GEN-ADJ.)' < PA **hːanːa-* 'grandmother' and *Trqqñt-* 'Stormgod' < PA **trhːunt-* 'id.'
Palatal *k* /c/ reflects older /k/ before front vowels, but the origins of this /k/ are not always clear. The only good examples are before /e/, although it is assumed /i/ had the same effect. The phoneme /c/ can also be the outcome of /t/ /_uV, e.g. *kbatra-* 'daughter' < PA **dueǵtr-* 'id.'
Lycian *s* /s/ can reflect either PA */ḱ/, e.g. *si-* 'to lie' < PA **kḯ-* 'id.', or PA **st*, e.g. *esu* 'to be, 3SG.IMPT.' < PA *ʔéstu* 'id.'.
The glottal fricative *h* /h/ continues PA */s/, as can be seen in *hri* 'up, on' < PA **srei* 'id.'
The affricate *z* /t͡s/ reflects PA */tˢi/ < PIE **ti* /_V, e.g. *-ze/i-* < PA **-tˢio* in *hrzze/i* 'upper', and *przzi* 'front'.
The resonants *r*, *l*, *m*, and *n* simply continue the same Proto-Anatolian resonants. The semivowels *w* and *j* are merely consonantal allophones of /i/ and /u/. However, /w/ can also reflect PA **gʷ*, e.g. *wawa-* 'cow' < PA **gʷou-* 'id."

Final consonants were generally dropped. Only final nasals left a trace, by nasalising the preceding vowel, e.g. *ebe*, *ebẽ* 'this' < PA **obos*, *obom* 'id.' The only real word final consonant is the /s/ of the ACC.PL.C. < **-ms*. Initial stops are often fortified, e.g. *qã* 'to destroy' < PA **gʷen-* 'id.', *ta-* 'to place' < **dē-* 'id.'

The overview above gives only a glance into the historical phonology of Lycian. Many of the details are still unknown, and an in-depth analysis of all available evidence would be beyond the scope of this thesis. Other aspects of the historical phonology will be presented as they appear in the analysis below, see section 4.2.

3 Typology of syncope

As was briefly mentioned in the previous chapter, one of the things that sets Lycian apart from the other Anatolian languages is the loss of vowels in certain environments, a process called syncope when it occurs between two consonants (C$\not$VC), apocope when it happens at the end of a word (C$\not$V#) and aphaeresis when it is a vowel at the start of a word that is deleted (#$\not$VC). Some studies have been conducted regarding this phenomenon in Lycian by historical linguists (see 4.1), and regarding this phenomenon in general by phonologists and typologists. However, it seems the historical linguists have largely neglected the research from other fields of linguistics. This chapter will first look at syncope from a typological

and phonological point of view, to create a more sound theoretical basis for the treatment of Lycian syncope in chapter 4. First, let us define exactly what we are dealing with: according to Trask and McColl Millar (2007) **syncope** is the "loss of a medial vowel", **aphaeresis** is the "loss of an initial segment", and **apocope** is the "loss of a final segment". Note that in their definition, aphaeresis and apocope can apply to both vowels and consonants. They remark that syncope is the most common type (Trask and McColl Millar, 2007: p.82).
Like all linguistic processes, syncope is governed by rules. The rules that determine which vowel can be syncopated under which circumstances are studied in theoretical phonology. Within the field of phonology, terminology and notational systems used differ sharply from those used in historical linguistics. Explaining in detail all these conventions is well beyond the scope of this paper. I will therefore use the following to give several examples of syncope in different languages, as presented in various scholarly works on the phonology of syncope to illustrate the complexity involved. I will also present some of the conclusions drawn from the research by phonologists in words, rather than in formulae.
A first real stride to a scientific approach of phonology was made by Foley (1977). He gives an interesting account of syncope between Proto-Romance and French [7]. This example is mainly interesting because it clearly shows how complex syncope can be in combination with other sound laws. He starts of by giving the following table, in which the intermediate stage is the result of syncope of post-tonic vowels and diphthongisation of *ɛ* to *yɛ* and *e* to *ey* in open syllables.

Proto-Romance	*Intermediate*	*French*	
sɛkolo	syɛklo	siècle	'century'
netedo	netdo	net	'clean'
tɛnit	tyɛnt	tient	'holds'
kredet	kreydt	croit	'believes'

Table 5: (Foley, 1977: p.83)

In the theory of phonology, quite logically, a certain change can only occur if its conditions are still in place. For example, if the second vowel of *sɛkolo* is syncopated, the *ɛ* is no longer in an open syllable and will, therefore, not be syncopated. If, on the other hand, the second syllable of *netedo* is not syncopated, the *e* remains in an open syllable and should be diphthongised. After trying out several scenarios, he comes to the solution as presented in table 6.
Initially, one might have expected a single instance of diphthongisation and a single instance of syncope, but the situation is more complicated than that. For Foley, the main conclusion is that phonologically weaker elements, in this case proparoxytone vowels, undergo change before phonologically stronger elements.
A second example that is worth noting is syncope in Tonkawa, an extinct language of the United States (Lewis et al. (2015)), which is presented by McFetridge

[7] Foley bases his treatment of French syncope on Brian Newton's 'A note on interdigitation in French phonology'.

sɛkolo	netedo	tɛnit	kredet	
syɛkolo	„	tyɛnit	„	A diphthongisation of ε
syɛklo	netdo	„	„	B proparoxytone syncope
„	„	„	kreydet	C diphthongisation of e
„	„	tyɛnt	kreydt	D paroxytone syncope

Table 6: (Foley, 1977: p.85)

(1989). In Tonkawa, the second vowel is generally syncopated. For example the root *netale* shows the following forms: *netle-n-o?* 'he is licking it', *we-ntale-n-o?* 'he is licking them'[8] and *picna-n-o?* 'he is cutting it', *we-pcena-n-o?* 'he is cutting them' (McFetridge, 1989: p.99). However, a vowel followed by two consonants is not syncopated. For example the root *nepaxke* 'to smoke' becomes *nepaxke-n-o?*. This seems to indicate that "syncope is sensitive to the number of following consonants"(McFetridge, 1989: p.100). Combining this with evidence from old English, McFetridge comes to the conclusion that syncope is especially sensitive to resonancy within consonant clusters. This means in practice that syncope is more likely to occur if the result is, for example, *-rt*, rather than *-tr*.
In her thesis, Taylor (1994) picks up the proposals made by Foley and McFetridge and unifies them in a theory that links syncope to the syllabic level. I will start off by summarising her, for this paper, most important conclusions. After that I will explain them using examples from her thesis as well as the other two works cited above. An important, yet controversial, theory in phonology is the theory of the sonority gradient. This theory states that some sounds are naturally more sonorant than others, and is applicable to both consonants and vowels. Although we will see that this theory works very well in explaining syncope restrictions, a much cited problem is that it is not actually measurable "due to the fact that the various major classes of speech sounds have substantially different properties from nearly every point of view (acoustic, articulatory, auditory, and aerodynamic)" (Taylor, 1994). However, it has proven quite valuable in determining restrictions of syncope. Taylor starts off by looking at syncope, apocope and aphaeresis with respect to vowel quality. Building on Foley and McFetridge, she gives the following restrictions:

- Accented vowels are stronger than unaccented vowels, making them more resilient to elision. In fact, in all the languages of the world, not one has been found to syncopate accented vowels.
- Not all vowels are equal in strength, and weaker vowels are more likely to elide than stronger vowels. Foley gives the following order: i – $\begin{matrix}\text{u}\\\text{e}\end{matrix}$ – o – a, which means that high vowels are weaker than low vowels, and front vowels weaker than back vowels. A language can delete *i* and *u*, or *i* and *e*, or *i*, *u*, *e* and *o*, or all; but never, for example, just *a* and *o*.

[8]The article is not completely clear about the difference in meaning, but it seems that this is what is meant.

- Pre-tonic vowels are stronger than post-tonic vowels. Therefore post-tonic vowels are more likely to be deleted.
- Nasalised vowels are stronger than non-nasalised vowels.

The first restriction is hardly unexpected. Accented syllables are often the most clearly pronounced parts of a word, the very fact that they carry the stress instinctively prohibits them from being deleted. The only account of stressed vowel syncope, in Mussau, an Oceanic language, has been very convincingly refuted by Blevins (2008). The second restriction is perhaps a bit more unexpected, but looking at the break-up of Latin into the various Romance languages, one can only conclude that there must be some truth in this theory. Without repeating all the examples, I will give only processes described (Taylor, 1994: p.18–20). In Macedonian Romanian[9], apocope applies to *i* and *u* (as well as *o* > *u*), but not to *e* and *a*. In Portuguese syncope occurs on *i* and *e*, but not on *u*, *o* and *a*, in Spanish only *a* is saved from syncope, while French syncopates any vowel. Phonetically there is a certain logic to this idea. To produce a low vowel, the mouth needs to open wider, which means that low vowels are naturally a bit longer then closed vowels. The third restriction is also not completely self-evident, but again French can provide an example. While I said in the previous line that French syncopates any vowel, this is in fact only true post-tonically. Pre-tonic *a* does not undergo syncope: Lat. *sécale* > French *seigle* 'rye', but Lat. *arcuballista* > French *arbalète* 'crossbow'. The last restriction is in fact inverted. Nasalised vowels are not inherently stronger, but nasalisation strengthens vowels by lengthening, lowering or diphthongisation (Foley, 1977: p.66)[10].
After these considerations, Taylor looks at the environment of the vowel to be syncopated. The most important conclusion here is that the deletion of a vowel cannot occur if the result would violate the syllabic structure of the language. This conclusion is drawn from the following two restrictions:

- Syncope is more likely if the preceding or following consonant is a sonorant.
- Deletion preferably occurs before and after single consonants rather than clusters.

The first restriction logically follows from a universal preference for non-sonorant + sonorant clusters word-initially, and the other way around word-finally. Languages differ greatly in the consonant clusters they allow. For example, the Roussillonnais dialect of Catalan allows for schwa to be syncopated only before *r*, so Standard Catalan *bəránə* becomes Roussillonnais *bránə* 'banister', but Latin *bilancea* becomes *bəlánsə* 'balance' (Taylor, 1994: p.48–49). The second restriction almost logically follows. Since most languages do not allow for consonant clusters, or only allow for the type mentioned above, it is quite difficult in those languages

[9]Usually called Aromanian.

[10]Foley bases this assumption on French /*en*/ > [ã] and /*in*/ > [ɛ̃], but he seems to conveniently ignore Polish ą and Lycian ã yielding [ɔ] and [ʊ] respectively. On the other hand, these latter two cases might fit in his diphthongisation scheme (Foley, 1977: p.65).

to syncopate a vowel before or after a cluster. The result would inevitably be a triconsonantal cluster. Like all the restrictions given, this one too is very language specific. Old English, for example, has no problem with triconsonantal clusters, as long as they conform to certain restrictions, e.g. *hungran* /huŋgran/ 'to hunger' (McFetridge, 1989: p.100).
All in all, this excursion to phonological theory has shed some light on how syncope operates in languages around the world and on what restrictions there are for applying syncope. There is, however, one more disclaimer that may be necessary. An important guiding principle in historical linguistics is the neo-grammarian principle that sound-change is phonetically motivated. Although this chapter has been looking at syncope from a phonological point of view, I do not believe that any of the presented facts and theories violate that principle.

4 Syncope in Lycian

This thesis is, of course, about syncope in Lycian. As we have just seen, syncope is the loss of an internal vowel in a word. The Lycian phenomenon, however, may also include some cases of the loss of anlaut and auslaut vowels: aphaeresis and apocope respectively. Since these latter two are quite rare, they can be studied as a part of one and the same study.
For anyone with a knowledge of the Anatolian languages, the fact that Lycian has undergone some sort of syncope is clear at first inspection. However, the exact properties of this syncope have not been studied very often. In his early account of Lycian grammar, Neumann was not completely convinced by all cases of what we now interpret as syncope. He does give a couple of examples, such as "lyk. *hri* : luw. *sarri*" (Neumann, 1969: p. 376), but only a couple of pages earlier, he suggested a spelling convention might be the reason for some of the other cases: "[k]urze order stark reduzierte Vokale werden oft überhaupt nicht notiert; so entstehen Konsonantenfolgen wie *hrppi*" (Neumann, 1969: p. 372), a statement that was repeated by Popko (2008). In Pedersen's early works on Lycian he already mentions "Vokalausfall", giving several examples. He does not see the necessity of further researching the phenomenon, saying: "[e]ine genauere Untersuchung dieser Fälle kann hier unterbleiben." (Pedersen, 1945: p.44 §66). Houwink Ten Cate (1961), too, notices this "remarkably recurrent feature in Lycian", being among the first to use the term "syncope" in this context . A particularly interesting article regarding Lycian syncope is the one by Kimball (1986). Although she received a less than favourable review by Melchert, who called her "treatment of Lycian syncope [...] grossly inadequate" (Melchert, 1994), we will see later that there may have been more to the ideas set forward in her article.
Two scholars have tried to make a more detailed description of the mechanics of Lycian syncope. If we are to solve this long standing question, we have to start by examining their proposals and see where they do and do not work in explaining the workings of syncope in Lycian.The works that will be discussed here, are 'Anatolian Historical Phonology', Melchert (1994) and 'Der Lykische Vokalismus', Hajnal (1995).

4.1 Previous scholarship

Working chronologically, I start with Melchert. His book gives a very detailed overview of the development of Proto-Indo-European into Proto-Anatolian into Lycian. In doing so he skips Proto-Luwic, but that stage is quite close to Proto-Anatolian, and any specifically Luwic development can easily be shown by simply comparing Lycian and Luwian. Melchert starts off by saying that nothing is independently known of word stress in Lycian, and by warning that his proposed rules are very tentative. His rules are the following:
"1. A post-tonic penultimate vowel is deleted following a single consonant."
"2. A pre-tonic vowel is deleted in an open syllable."
3.[11] A pre-tonic vowel is syncopated when followed by a sonorant.
The most important arguments for (1.) are found in the 'relational adjectives', such as *laθθe/i-* 'in-law' (lit. 'of the wife') < **lád◌́he/i-*, where "the accent from the base noun was carried over to the adjective" (Melchert, 1994: 12.1.6.3.1 p.??). This last comment is needed to differentiate these words from *χñnahe/i-* < **χ◌́náhe/i-*. He places the "'ethnic" suffix' *-ñn(i)* < **-wẽn(i)*, for example *Xbidẽñni-* 'Xanthian' < **Xbidéw◌́ni*, in the same category. For verbs he adds the third person plural *-eiti* < **-éy◌́ti* < **-éyonti* and the iterative suffix *-s-* < **-ské-*. Here the accent must have been generalised to the root. As we can see, Melchert does need to assume a number of accent shifts in order to explain his theory, but he leaves these unexplained.
Melchert notes that rule (2.) only applies to disyllabic words. Some examples he gives for this development are *θθẽ* 'altar' < **d/tHhẽ*, stems in *-mmó-* and *-mó-* < **-mnó-*, such as *kmme/i* < *k◌́mó/í*, among others. Rule (3.) applies to words of more than two syllables, which Melchert finds more difficult to interpret. He provides these examples: *miñte/i-* 'assembly' < **miy◌́tí-* 'grown, adult', *χñnahe/i-* 'of one's grandmother' < **χ◌́náhe/i-* and *Pillẽñn(i)-* 'from Pinara' < **Pin◌́léw◌́n(i)-*. Further, Melchert proposes a "rightward accent shift in the univerbation of various preverbs with the verb" (Melchert, 1994: p.?): *hri* 'up(on)' < **h◌́rí* + verb (cf. CLuv. *šarri* < **séri*) and *ñte* 'in(to)' < *◌́té* (cf. Hitt. *anda* and CLuv. *ānta* < **éndo*. He assumes similar pre-tonic syncope in *mãhãi* 'gods' < **mah◌́naínhi* (with metathesis of *hn* to *nh*) and *kbatra-* < **duwátra-*. Melchert does not believe that words like *Trqqñt-* and *prñnawa-* prove the continuation of **r̥*, saying that they can also regularly derive from syncopated *◌́r*, which itself is ultimately derived from PA **r̥*. For the syncopated variants of the third person pronoun, Melchert proposes a "relatively weak accent in unemphatic use, perhaps even original enclisis" (Melchert, 1994).

Hajnal (1995) has written a very extensive book on Lycian vocalism, with the entire sixth chapter devoted to "Vokalverlust, Syn- und Apokope". Hajnal starts by chronologically situating syncope as having taken place before the develop-

[11] My number, Melchert only gives numbers 1. and 2.

ment of nasalised vowels and vocalic nasals: **endṓ* > Lyc. *ñte* /*n̥̊té*/. In this analysis Hajnal departs from Melchert who assumed the preservation of the nasal feature after the loss of the vowel, so **ẽte* > *ñte*. The most important instrument for determining the rules of syncope in Lycian, for Hajnal, is the Lycian representation of Iranian names. He finds that, if he is correct in assuming that the Proto-Iranian stress is continued in Lycian, often the last unaccented short vowel of an internal syllable is syncopated. He gives, among others, the following examples: *Humrχχa*(-) < **Hu-margá* and *Kizzaprñna* ~ *Zisaprñna* < **Čiçá-farnā* etc. As can be seen in these two examples, post- or pre-tonic position does not seem to be of any influence. Hajnal tests his hypothesis, which he based on Iranian names, on Lycian words of which the accent can be determined on etymological grounds. Since the rules only apply to internal syllables, he starts off by looking at words with three of more syllables. He starts off with four examples of pre-tonic syncope: *adm̃edi* 'name (abl./ins.sg.)' < **adammédi*[12], *ahñtãi* 'goods (gen.pl.)' < **asantā́* (nom./acc.pl.n.), etc. After that, he looks at post-tonic syncope, giving five examples. Most important among those examples are the iterative formations, which show a retreat of the accent to the stem: *astti* 'he does' < (virtual) PIE **h₁i̯éh₁sk̂eti*. He notes that the iterative usually takes the zero-grade of the stem. Also in this category are two types already discussed by Melchert, namely the *laϑϑe*/*i*-type and *Pillẽñne*/*i*. To prove that this rule only applies on internal syllables, Hajnal then gives a number of trisyllabic words of which the third syllable is accented and, therefore, nothing is syncopated. These will not be given here, and will only be discussed below if they contribute to the current discussion. Hajnal also shows that composits and other secondary formations do no usually undergo syncope, and that paradigms are often levelled to avoid inner-paradigmatic variation.

In the second paragraph of his book, Hajnal looks at syncope of the first or last syllable, stating that "[d]ie Bedingungen für eine solche Synkope in Erst- oder Letztsilben sind dieselben wie in Mittelsilben: Der synkopierte Vokal muss unakzentuiert sein." (Hajnal, 1995: p. 182). This is in direct violation of his previous rule and clearly contrasts with the examples of unsyncopated trisyllabic forms. Among the examples given are many shared with Melchert, such as *kbatra* and *ϑϑẽ*, but he adds the cases of geminate initial consonants, for example due to syncopation of the reduplication vowel in certain reduplicated verbs, such as *ppuweti* 'it is written'. Hajnal draws special attention to the preterite endings in *-tte*, such as *epatte* 'he took'. He suggests that these are derived from older **-tate*, with syncope of the penultimate vowel. Hajnal's proposals, too, will be discussed in more detail in 4.2.

One thing that both accounts have in common, is that they give an overview of the different cases of syncope in Lycian, as well as certain generalisations for each different category proposed, without actually explaining what they set out to explain. Nowhere do we find a reason why in certain words one vowel is syncopated and in other words another. Apart from evaluating the proposals presented above, the following paragraph will attempt to answer just that question.

[12]This interpretation is no longer accepted, the actual meaning of this word is not known.

4.2 Analysis

Both studies mentioned above look at the question from the perspective of accent placement, dividing the words in which syncope occurs according to expected accent and number of syllables. This study will approach the question from a different angle. Since syncope seems to occur in both pre-tonic and post-tonic position, both in disyllabic words and in words of three or more syllables, and both in clitic elements and in stressed words, it seems the answer will not become apparent by looking at these categories again. Instead, we will look at syncope rules for each part of speech, differentiating between verbs, nouns, and so on. Throughout the following paragraphs, I will give reconstructions that must be placed during Proto-Anatolian or Proto-Luwic in PIE terms. I do this because these terms will be familiar to most readers, and because I am tackling only one aspect of the development of Lycian, without wanting to get in the way of ongoing discussions regarding the aforementioned Proto-stages.

Verbs Verbs appear to be the clearest category, and therefore, will be examined fir st. Although much remains unknown about Lycian verbs and many forms are unattested, Lycian seems to have generalised a single stem for each verb and not to have permitted any inner-paradigmatic variation. For most verbs the full-grade of the root was generalised and this full-grade root always carried the accent. Denominal verbs seem to have had the full-grade in and the accent on the denominalising suffix. This static accentuation very often caused syncope of all surrounding syllables. Almost all Lycian verb-stems end in a vowel, the three exceptions end in a resonant. Only in imperfective verbs does the ending attach to a consonant. To get a clearer picture of the situation regarding Lycian verbs, I will first present the active paradigm of some reasonably well-attested root-verbs with the Indo-European form from which they must eventually be derived, and one middle paradigm in table 7. I will then discuss their reconstruction and development, including syncope in several forms, in more detail.
The singular forms *esi*, *esu*, *qãti*, *tadi* and *tade* perfectly mirror their PIE counterparts. The plural forms *tãti*, *tãte* and *tatu* (from older **tãtu*) could reflect several different forms forms. For example, for *tãti* one could reflect **dʰh₁-énti*, **dʰéh₁-nti* or even *dʰéh₁-enti*. Based on the 3PL.PRES.IMF. *tasñti* I assume that all plural vebal forms reflect a zero-grade of the ending, but this cannot be verified. For this thesis, the first interesting form is *qãñti*. The PIE form **gʷʰn-énti* would have regularly yielded *qñãti*, so at some point the vowel and the accent it carried must have gone from the ending to the root. While it is possible to assume a metathesis of *ã* and *ñ*, which might have occurred relatively late, this seems very unlikely. I think it is more likely that the accent and full-grade of the singular were at some

[13]The PIE ending of the 3PL.PRET.ACT. is *-ent*. Yoshida (1991: p.369–371) has argued that the attested Lycian ending *-˜te* (as well as the Luwian endings *-nta* are introduced from the medio-passives because the regular outcome of **ent* > *-an* was not marked enough.

[14]For a reconstruction of these forms see (Kloekhorst, 2008b: p.129–132).

ACTIVE	*e(h)*- 'to be'	*qã* 'to destroy'	*ta*- 'to place'
3SG.PRES.	*esi* < **h*$_1$*és-ti*	*qãti* < **g*^{wh}*én-ti*	*tadi* < **d*^{h}*éh*$_1$*-ti*
3PL.PRES.		*qãñti* ≪ **g*^{wh}*n-énti*	*tãti* ≪ **d*^{h}*h*$_1$*-énti*
3SG.PRES.IMF.		*qastti* ≪ **g*^{wh}*n-sḱé-ti*	
3PL.PRES.IMF.			*tasñti* ≪ **d*^{h}*h*$_1$*-sḱó-nti*
3SG.PRET.			*tade* < **d*^{h}*éh*$_1$*-to*
3PL.PRET.			*tãte* ≪ **d*^{h}*h*$_1$*-énto*[13]
3SG.PRET.IMF.		*qastte* ≪ **g*^{wh}*n-sḱé-to*	
3SG.IMP.	*esu* < **h*$_1$*és-tu*		
3PL.IMP.			*tatu* ≪ **d*^{h}*h*$_1$*-éntu*
3SG.IMP.IMF.		*qasttu* ≪ **g*^{wh}*n-sḱé-tu*	
MIDDLE	*si*- 'to lie'		
3SG.PRES.	*sijẽni* < **ḱéi-o*[14]		
3PL.PRES.	*sitẽni* < **ḱéi-nto*		

Table 7: Verbal paradigm for Lycian root-verbs. The reconstructed ablaut-patterns are based on the second chapter in Kloekhorst (2008a), the middle forms on an article by the same author (Kloekhorst, 2008b: p.129–132).

point generalised throughout the paradigm. [15] The development would then be as follows: *qãñti* < ***g*^{wh}*én-énti* ≪ **g*^{wh}*n-énti*. An important factor in assuming such a development is the imperfective inflection. All Indo-European languages that have verbs with a *-sḱe/o-* suffix, show a zero-grade in the root and an accented vowel in the suffix. For example Skt. *pr̥cchắti* ∼ Av. *pərəsaiti* ∼ Arm. *harcʻi* ∼ Lat. *poscō* ∼ OIr. *arco* ∼ OHG *forscōn* < **prḱ-sḱé/ó* (Kloekhorst, 2008a: p.769). It seems unlikely that Lycian would be the only language showing a consistent use of inherited full-grade root and zero-grade suffix. Much more likely is a scenario in which the paradigm was levelled in Lycian, generalising the full-gade of the stem, after which the vowel of the imperfective suffix was syncopated. Similar to the example above, the development would be as follows: *qastti* < **g*^{wh}*én-sḱé-ti* ≪ **g*^{wh}*n-sḱé-ti*. Schematically then, we can summarise the development of Lycian root-verbs as shown in table 8. The Luwic lenition and fortition must have taken place before these developments, but for the sake of convenience, I give only the endings in *-ti*, implying that these may also represent *-di*. I will return to the question of dating Lycian syncope in 4.2 **Dating**.

From the development of the Lycian verb, it can be deduced that at least a post-tonic vowel in an internal syllable was syncopated. For now we have to assume that a post-tonic vowel in a final syllable was not syncopated, since the *i* of the ending remains. It may of course later turn out that this vowel was restored in this context.

The story is slightly different for the thematicised verbs. There are two clear ex-

[15] Since the only plural form attested is the third person, it is of course possible that the first and second plural retained their original ablaut. In light of what follows, this seems very unlikely.

	PIE	generalisation	syncope
3SG.PRES.	CéC-ti	CéC-ti	CéC-ti
3PL.PRES.	CC-énti	CéC-enti	CéC-nti
3SG.PRES.IMF.	CC-sḱé-ti	CéC-sḱe-ti	CéC-s-ti
3PL.PRES.IMF.	CC-sḱó-nti	CéC-sḱo-nti	CéC-s-nti

Table 8: Schematic overview of the Lycian root-verb. The present is given here, but the other diatheses developed in much the same way.

amples of such verbs in Lycian: *pije-* 'to give' and *tuwe-* 'to place'. These words appear have the accent on the theme vowel instead of their root. If this had not been the case, we would expect the *e* to be syncopated. Although they were originally '*ḫi*'-verbs, they were probably reinterpreted as thematic '*mi*'-verbs at an early stage. I will give only the third singular present active of both verbs, since that form adequately represents the entire pardigm:*pijeti* < **h₁p-ié-ti* and *tuweti* < **dʰh₁-ué-ti*. Other verbs, most notably denominal formations such as *prñnawati* 'he builds', were formed in Lycian by simply adding the ending to the noun. Neither of these types show any syncope (cf. **Nouns** below for the *-r-* in *prñnawa-*). There is an alternative explanation; that *prñnawa-* comes from a factative **prnoweh₂-*. This reconstruction is based on the form *prñnewãtẽ* 'they build', which occurs once. All other forms have a stem *prñnawa-*, which would be caused by umlaut (Lindemam, 1997). The problem with this interpretation is that, if the accent would have been on the factative ending *-éh₂-*, the expected outcome would have been ***prñnawadi* in the 3.PL.PRES.ACT., rather than the attested *prñnawati*. If the accent had shifted backwards to the *-ó-*, we would expect to see the same outcome since lenition also took place between unaccented vowels.

Another interesting feature of Lycian verbs is reduplication. Although the exact function of reduplication is not known, it is interesting because it seems to almost always show syncopation of the reduplication syllable. Reduplication can be seen in the following words: *hha-* 'to release, let go', *pibi-* 'to give', *ppuwe-* 'to write, inscribe', *stta-* 'to stand', *tta-* 'to put, place', *tti-* 'to cause to pay', and *ttli-* 'to pay'. Of these, the ones with the best etymologies are *pibi-*, from *pije-* 'to give' and *tta-*, from *ta-* 'to place'. Besides these two, I tentatively follow Jasanoff (2010) in his analysis of *stta-* 'to stand'. While Kloekhorst (2008a) rejects the etymology of *(p)puwe-* connecting it to Hitt. *pūu̯ae-* 'to pound, to grind' on semantic grounds, I think that there may be a way around these problems. If we take the Lycian to mean 'to chisel', rather than 'to write', a semantic connection with 'to pound' is very likely. This meaning works just as well in all contexts in which the word occurs. I do think the word was remodelled after *tuwe-* and in Lycian reflects **ph₂-ué* rather than **ph₂u-ié*. For *ha-* 'to release, let go' I very tentatively follow Melchert (1989) in reconstructing it as **seh₁-* 'to throw' (and from there in most languages 'to sow'). In table 9 I give an overview of the reduplicated verbal stems in Lycian with their respective etymologies and an indication of where syncope took place.

	syncope	reconstruction
hha-	*hɬha-*	**si-séh₁*
pibi-		*(*h₁*)*pi-h₁p-ié*
ppuwe-	*pɬpuwe-*	**pi-ph₂-ué-*
stta-	*sɬta-*	**sti-*(*s*)*th₂-ói-*
tta-	*tɬta-*	**dʰi-dʰéh₁-*

Table 9: Overview of the development of redupication syllables in Lycian.

It is clear from looking at the table that a pre-tonic vowel, or at least *i*, was syncopated in all but one case. The word *pibi-* 'to give' is the only reduplicated verb that does not undergo syncope. If we look at the reconstruction, there are two things that set this verb apart from the others: it starts with a laryngeal, and instead of the first consonant the second is found in the reduplication syllable. While this latter fact could have come about in several different ways, such as whole stem reduplication or analogical repair of an older ***ibi-*, that is not important for this paper. What is important is that because of these two facts, the vowel of the reduplication syllable stands right in front of a laryngeal. Laryngeals are known to lengthen the vowels they follow, and although there is no evidence for distinctive vowel length in attested Lycian, the result of differences in vowel length at an earlier stage can still be seen in the effect of lenition. Kloekhorst (2014) gives a good overview of fortition and lenition rules in the Anatolian languages. One of those rules is lenition after a long accented vowel. This rule must have applied in Lycian *tadi* < **dʰéh₁-ti*, where *éh₁* became a long *ē* in Proto-Anatolian which lenited the following *t*. Similarly, the reduplication vowel in *pibi-*, must have been lengthened to PA **ī*, protecting it from syncope. It seems likely that at some point after syncope ceased to take place, ***pībi-* was again shortened to *pibi-*, although we must keep the possibility in mind that the Lycian alphabet simply did not have different signs for long and short vowels. The rule, then, must be that short pre-tonic *i* was syncopated in verbs.
As stated above, I believe denominal verbs such as *prñnawa-* and *χñtawa-* were formed in Lycian and would not have been subject to syncopation. The same, however, might not apply to older denominal formations such as *tub*(*e*)*i-* 'to strike', *χba*(*i*)- 'to irrigate[16]' and *χtta*(*i*)- 'to harm'. The latter two verbs have been connected to Hitt. *ḫapa-* 'river' < **h₂ébʰ-o-*, and *ḫatt-* 'to pierce, etc.' < **h₂ét-o-* respectively (cf. Neumann (2007: p.115, 134–135) for an overview of opinions and Kloekhorst (2008a: p.294–295, 330–331) for etymologies). In these words the, originally stressed, first syllable seems to have been syncopated following a shift of the accent to the denominalising suffix. The development of these suffixes is far from self-evident, and warrants detailed treatment.

In order to understand exactly what happened, we must first look at type *tub*(*e*)*i-* 'to strike'. Other verbs that show the same endings are *trbb*(*e*)*i-* 'to stand

[16]Meaning based on etymology, not completely certain.

up against(?)', and *ttl(e)i-* 'to pay'. The attested forms of this verb are the 3SG.PRES.ACT. *tubidi* and the 3PL.PRES.ACT. *tubeiti*. I think there is only one way to regularly arrive at these endings. They are derived from PIE *-*éieti* and *-*éionti* respectively. In both forms the unstressed second vowel of the ending was syncopated. After the syncopation, the singular form had a diphthong **ei* which regularly monophthongised to *i*. The plural had the same diphthong, but followed by an *n*. This *n* nasalised the preceding *i*, protecting it from monophthongisation. I summarise these developments in the table below:

Lycian	monophthongisation	nasalisation	syncope	lenition	PIE
-idi	*-īdi*	*-eidi*	*-eidi*	*-éiedi*	*-éieti*
-eiti	*-eı̃ti*	*-eı̃ti*	*-einti*	*-éionti*	*-éionti*

Table 10: Development of the *i*/*ei*-class of verbs.

Now let us turn to the other two verbs; *χba(i)-* 'to irrigate' and *χtta(i)-* 'to harm'. They followed a similar development. Melchert (1997) treats them as factatives in *éh₂-ie/o-*. The main difference with the *i*/*ei*-class is the outcome of the singular:

Lycian	loss of *i* /V̄_C	nasalisation	syncope	lenition	PIE
-adi	*-ādi*	*-āidi*	*-āidi*	*-ā́iedi*	*-éh₂ieti*
-aiti	*-āı̃ti*	*-āı̃ti*	*-āinti*	*-ā́ionti*	*-éh₂ionti*

Table 11: Development of the *a*/*ai*-class of verbs.

To return to the matter at hand, we have seen that the suffix was accented in *a*/*ai*-class verbs. This means that *χba(i)-* 'to irrigate' and *χtta(i)-* 'to harm' would have undergone the same type of pre-tonic syncope as the reduplicated verbs, as shown in table 12.

Lycian	pre-Lycian
χttadi	**χətā́di*
χttaiti	**χətáiti*
χbade	**χəbā́de*
χbaite	**χəbáite*

Table 12: Development of syncope in denominal verbs.

The verb *tub(e)i-* 'to strike' seems to be an exception to this type of syncope. In table 10 we saw that this type also had the accent on the suffix. However, the verb *tub(e)i-* does not show syncope in the root. This word is related to HLuw. *tup(a)i-* 'to smite' (Payne, 2004) and CLuw. *tūp(a)i-* 'to strike' (Melchert, 2003). Melchert has connected these words to Greek στυφελίζω 'to strike, *etc.*'. Although the etymology of the Greek word is far from secure (Beekes, 2010: p.1418), Melchert's

reconstruction of the Luwic forms *(*s*)*toub*^{h}-*eie*/*o*- (Melchert, 1997: p.135) does provide an explanation for the failure of syncope in the Lycian word *tub*(*e*)*i*-. Hajnal (1995: p.59) has shown that PIE *ou > PA *$\bar{u}$ and Melchert (1994: p.76) has argued that these secondarily formed long vowels were not shortened. It appears that the *u* in *tub*(*e*)*i*- was still long in pre-Lycian. Together with *pibi*- 'to give' (*see above*) this is an indication that pre-tonic long vowels were not syncopated. Apparently we can now extend the rule given earlier beyond just pre-tonic syncope of short *i*, to include all short vowels. This look at Lycian verbs has thus given us two rules:

1. A post-tonic vowel in an internal syllable was syncopated.

2. Short pre-tonic front vowels were syncopated.

There are, however, some seeming exceptions to these rules. Most notably, there are two verbs that seem much longer then any syncopation scheme would have allowed. These two verbs are *alaha*- 'arrange, lay out (in tomb)' and *aladehχχa*- 'prepare for laying out' (Melchert, 2004: p.3). I follow the communis opinio that these verbs are in fact composite verbs, and Hajnal (1995) in his suggestion that composite verbs are exempt from syncopation. They should be analysed as *ala*+*ha*- and *ala*+*de*+*hχχa*- respectively. A third rule, then, is:

3. Composite verbs are not syncopated. This rule only applies to newly formed compounds, the separate members of the compound will have already undergone syncopation.

Let us now take a look at Lycian nouns, to see if the same rules applied.

Nouns The short answer to the question asked in the previous line is simple: 'yes'. However, I will argue that syncope in Lycian nouns was very rare because of a different stress placement. Syncope in words derived from nouns, such as the verbs we have already seen, but also in the formation of some adjectives that I will treat below, was more common. In the following paragraph I will treat several words and endings for which syncope has been proposed, with an alternative explanation.
For the word *kbatra*- 'daughter', both Melchert (1994) and Hajnal (1995) propose a rather complicated derivation. It can be schematised as follows:
kbatra- < *$t\underset{\frown}{u}$*átra*- < *$t\varkappa\underset{\frown}{u}$*átr*-*ā*- < *$tu\underset{\frown}{i}$*átr*-[17] < *$tu\hat{g}$*átr*- < *$d^hu\hat{g}(^h)h_2t\acute{e}r$. I rather follow Kloekhorst, who suggests a nominative singular *$d^hu\acute{e}gh_2tr$ on the basis of both Lycian and Luwian (Kloekhorst, 2008a: p.1042–1044). This attractive solution does not require any syncope. Another noun is a name of a deity, *Trqqñt*-. This word is obviously related to Luwian *Tarḫunt*-, which is why at times syncope has been proposed for the *a* in the first syllable of the Luwian, and the *u* in the second. It has been shown, however, that Lycian *q* is the regular outcome of Proto-Anatolian *$\underset{\frown}{ḫ}u$* (Kloekhorst, 2006), which was probably pronounced /*$\underset{\frown}{ḫ}^w$*/. This proves that the *u* has not been syncopated. The *a* in the Luwian is probably

[17]This step is skipped by Melchert (1994).

a ‘dead’ vowel, meaning that it is only a notation of vocalic /*r*/ in the syllabic writing systems of the language. I therefore agree with Kloekhorst (2008a) that the most likely scenario is the following:

NOM.SG	*Trqqas* < **trH*^{w}*ént-s*
DAT.SG	*Trqqñti* < **trH*^{w}*nt-éi*

A third noun is the word *qla-*. Although many meanings and etymologies have been proposed, the most persistent one for years has been ‘sanctuary, holy district’, which derives *qla-* < **ḫilá* < **ḫilā́* (cf. Hitt. *ḫīla-*) (Melchert, 1994: p.319). As shown above, Lycian *q* is a labio-velar that can only be derived from Proto-Anatolian *ḫu*, which means that this popular etymology has to be abandoned. Kloekhorst has proposed a possible connection to Greek *αὐλή* (Kloekhorst, 2013a: 5.1.0) < **h₂uleh₂-*, which would not require syncope[18].
The appurtenance suffix *-ñne/i* deserves special consideration. It occurs with the following place names: *Pilleñne/i-* ‘of Pinara’, *Pñtreñne/i-* ‘of Pandarios?’, *Tlañna-* ‘of Tlos’ and *Xbidẽñne/i* ‘of Kaunos’. Kloekhorst has argued, quite convincingly, that *ebẽñne/i* ‘this’ must also be included in this list, with an original meaning ‘the appertaining’ (Kloekhorst, 2008b: p.132–137).
It is quite uncontroversial that this suffix is related to Hittite *-umen-*, *-umn-* and Luwian *u̯ann(i)* / *wan(i)*. Kloekhorst (2008a) has connected these endings to Sanskrit *-van-*, *-vn-* and Greek *-āον*, and he reconstructs them as **-h₂uen-*, *-h₂un-*. This connection is especially clear because of the Milyan form *-wñni*, found in *Xbidewñni-* ‘of Kaunos’, which still shows the element *w*. Although we find an accusative singular *ebẽñnẽ*, and a nominative singular *Tlãñna*, these have to be interpreted as secondary, and the original Proto-Luwic form must have had *i*-mutation. Table 13 below will show the inflection of this suffix as found in Hittite, the reconstructed original Hittite paradigm proposed by Oettinger (1982: p.175–177), and the Indo-European reconstruction thereof, followed by the situation found in Hieroglyphic Luwian and Lycian.

	Hittite	Proto-Hitt.	PIE	HLuwian	Lycian
NOM.SG.C.	*-umaš*	*-umaš*	**-Huen-s*	*-wanis*	*-ñni*
ACC.SG.C.	*-umnan*	*-umenan*	**-Huen-om*[19]	*-wanin*	*-ñni*
GEN.SG.	*-umanaš*	*-umnaš*	**-Hun-os*	*-wanas*	*-ñnehi*[20]
DAT.SG.	*-umni*	*-umni*	**-Hun-i*	*-wani*	*-ñni*

Table 13: Paradigm of the Anatolian appurtenance suffix.

[18]Clackson (1994: p.104–105) treats a root **au-* (**h₂ew-*) ‘spend the night’, but on the basis of Hittite *ḫuiš-* ‘to live’ and the Greek aorist *ἄεσα* of *ἰαύω* ‘to spend the night’ he reconstructs a root **h₂wes-* or *h₂ews-* with schwebeablaut. While the root with *s* still fits the Greek *αὐλή*, it does not work for the Lycian word.
[19]With the introduction of *o*; < **Huen-m*.
[20]The Lycian GEN.SG is not attested, given here is the genitival adjective.

It is clear from this table that the original Indo-European ablaut pattern was not preserved in any of the Anatolian languages. While Hittite still shows ablaut within the paradigm, it has altered the original situation. In later Hittite this ablaut is completely abandoned in favour of *-uma-* (Kloekhorst, 2008a). Both Luwian languages, represented here by Hieroglyphic Luwian, seem to have generalised the full-grade of the suffix, assuming that phonetic */-Vwni/* would be spelled *-V-u(n)-ni* and not *-V-wa-ni*. It is often thought that Lycian, like Luwian, generalised the full-grade suffix, after which it lost the vowel through syncope: *-ñni* < **-wni* < **-wɸni* < **Huen-i*[21]*-s* (Melchert, 1994: p.318; Hajnal, 1995: p.177). I think, however, that in Lycian the zero-grade from the oblique stems was generalised, yielding the following paradigm: **-Hun-i-s* > *-ñni*, **-Hun-i-m* < *-ñni*, **Hun-i* > *-ñni*. A possible objection to this proposal could be that in such a situation the *u* might have vocalised, yielding ***-uni*. This objection is easily rejected by looking at Hittite *-umn-*, rather than *-un-*, and Sanskrit *-vn-*, rather than *-un-*. In this scenario it is no longer necessary to assume syncope in the suffix.
With respect to several Lycian words containing vocalic resonants, I have to agree with Kimball (1986). In many cases it is quite clear that there was a vocalic resonant in Proto-Indo-European; I see no reason to insert a vowel which is not clearly reflected in any of the Anatolian languages into Proto-Anatolian, only to then delete it again in Lycian. To illustrate this I will take two examples from Kimball (1986), to which I will add a new one. Kimball argues that the Lycian words *χñtawa-* 'rule' and *prñnawa-* 'mausoleum, (grave) house' are derived from the oblique stems of the Proto-Anatolian paradigm, that were always in the zero-grade. Kloekhorst (2014: p.458) has argued for a static paradigm *pér-r*, *pér-n-*. This does not change anything for the reconstruction of the Lycian form, since the Lycian word has a full-grade suffix which would usually be added to a zero-grade stem.

	Hittite	PIE	Lycian
NOM/ACC.SG	É*er /per/*	**per-r*	
OBLIQUE	*parn-*	**pér-n-*	
SUFFIX		**prn-óu-eh₂-*	*prñn-awa-*

A similar development is highly likely for *χñt-awa-* < **h₂nt-*. Also the old participle form *ahñtãi* 'goods, possessions (GEN.PL.)' most likely contains a vocalic resonant. In Lycian participles were formed with the suffix *-(m̃)me/i-* (Melchert, 1994: p.319), so this form must be inherited. I follow Hajnal (1995: p.176) in assuming that it is an old participle of 'to be' **h₁s-nt-éh₂*, similar to Greek *τὰ ὄντα*. Unlike Hajnal, and Melchert (1994: p.319), I do not think it makes sense to reconstruct an intermediate stage in which the *n* was vocalised to **asantã̆-* (Hajnal) or **áhãtãi* (Melchert), only to then be lost through syncope. In fact, following Hajnal (1995: p.175), I think syncope must have predated nasalisation of vowels; Melcherts scenario would have yielded ***ahtãi* < **ahn̥̆tãi*. This last

[21]The origin of the *i*-mutation is debated, I have just given *i* here, merely to represent the *i* later found in the Luwic languages.

remark has no bearing on the current case, however, since a development *ahñtãi* < **h₁s-nt-éh₂* is much more likely and requires no syncope.
Only in three Lycian nouns must syncope be assumed. The first case is *Pilleñne/i-* 'of Pinara'. In Lycian the name of the town was *Pinala*, although only the DAT-LOC.PL *pinale* is attested. Apparently the second vowel was syncopated with the addition of the appurtenance suffix *-ñne/i*, after which the *n* assimilated to the *l*: *Pilleñni* < **Pinǿleñni*. The second case is *χñnahe/i-* 'of the grandmother (GEN-ADJ.)'. This word is related to Hittite *ḫanna-* 'grandmother', which is reconstructed as **h₂enHo-* (Kloekhorst, 2008a: 285). Since only the genitival adjective is attested, it is hard to say what happened exactly. It is possible that the ending attached to an oblique stem in zero-grade, but such a stem is not found in any of the cognate languages. In this case, as opposed to the previous words with vocalic resonants, I do think the vowel was syncopated. The main difference is, of course, that in this case the vowel is old: (virtual) **h₂ǿenH-eh₂-sio-* > *χñnahe/i*. I think it is likely the nominative singular would be something like ***χãna*, but that cannot be proven at this time.
The most interesting case for syncope in Lycian nouns is the word for 'god' *mahana-*. This is the only word that shows inner-paradigmatic change related to syncope. Of this word, only the nominative and dative plural, and the genitival adjective are attested: NOM.PL. *mãhãi*, *muhãi*; DAT-LOC.PL. *mahãna*; GEN.ADJ. *mahanahe/i*. The syncope must have occurred in the second syllable of the nominative only, in combination with metathesis of the newly formed cluster: **mahanãi* > **mahnãi* ≫ *mãhãi*. A similar process did not take place in the dative *mahãna*, even though the two forms have the same number of syllables in Lycian. However, if we compare the word with its (only) cognate, Luwian *mas(s)ani-*, the difference becomes apparent.

	Lycian	HLuwian[22]	CLuwian[23]
NOM.PL.	*mãhãi*	*masaninzi*	*maššaninzi*
DAT.PL.	*mahãna*	*masananz*	*maššananz*

Table 14: Forms of the Luwic word for 'god'.

In the table above, we can see that the nominative had four syllables in Luwian, while the dative had only three. It must be assumed that this was the original Luwic situation. The Lycian word is an *a*-stem, while the Luwian words are *i*-mutated stems, but the derivation of *-ãi* < **ãhi* < **eh₂msi* is clear and commonly accepted. It is not entirely clear whether *-ãi* and *-ẽi* were still disyllabic in Lycian. In light of this discussion it seems likely that they were. If we assume a penultimate stress pattern, the following development can be reconstructed: NOM.PL *mãhãi* < **mahǿnámsi*; DAT.PL. *mahãna* < **mahánas*. The failure of syncope in the first syllable of the latter form must be due to analogical levelling. In fact, penultimate stress works perfectly for *Pinǿléñni* and *χǿnáhe/i* as well. A word without a good

[22]Kloekhorst (2013b)
[23]Melchert (1993)

etymology that might be explained in the same way is *epewẽtlm̃mẽi* 'people who live around the town[24]'. The complex cluster in the middle points to syncope, and since it comes right before the nominative plural ending *-ẽi* < **-ómsi*, it is exactly where we would expect syncope to take place. Interestingly this word seems to indicated that, like in verbs, preverbs were not part of the syncope process. In this case the preverb *epe-* remains intact. Also a long word like *ese-de-ñnewe/i-* 'consanguineal descendant(s)[25]' shows unsyncopated preverbs. The root of this word too, upon closer scrutiny, was probably syncopated. The geminate *ñn* points to a lost vowel, again in the antepenultimate syllable: *ese-de-n*X́*néwe/i-*. This word is most likely related to *nẽni* 'brother'.
From what we have seen thus far, we can extrapolate the following rules:

1. Verbs had fixed stress, either on their root, or on the theme vowel. Nouns had fixed stress on the penultimate syllable.

2. A post-tonic internal syllable was syncopated. This applies only to verbs, since words with penultimate stress, by definition, do not have a post-tonic internal syllable.

3. A pre-tonic short vowel was syncopated, regardless of its quality.

4. Preverbs were not syncopated.

Restrictions
At the beginning of this section I stated that only three Lycian nouns had undergone syncope. We have since seen that there are some more. However, there are also many nouns were syncope might have been expected, but where it did not happen. One such example is the genitival adjective of *mahane-* 'god': *mahanahi*, or the even longer instrumental thereof: *mahanahidi*. We would expect to find ***mãhahi* and ***mahãhidi* respectively. The fact that these are not the forms we find is not entirely surprising. From the generalisation of the full-grade stems in verbs to the levelling of the appurtenance suffix, we have seen that the Lycians did not like inner-paradigmatic change. It is very likely that syncope that would have almost always occurred in the formation of the genitival adjective was blocked in most cases by the will to keep the paradigm as level as possible. In fact, the only instance of attested inner-paradigmatic change is *mãhãi*, probably a very common word in those days. It is well known that common words are more prone to being irregular.
Another possible restriction applies to nominal compounds. For example, *hlm̃mipijata-* 'income gift (Melchert, 2004: p.24)' is a composition of *hlm̃mi-* 'income' and *pijata-* 'gift'. This restriction is similar to the rule that preverbs are not syncopated, apparently these combinations are newer formations that were formed after

[24]Greek περίοικοι.

[25]Both Melchert (2004: p.18) and Neumann (2007: p.74) give the meaning of this word as something with 'blood' ('consanguineal' and 'Blut-' respectively). They do this based on the assumptioon that *esede-* is related Hittite *ēšḫar* 'blood'. This etymology cannot be correct, since neither **h₁ésh₂-r* nor the oblique stem **h₁sh₂-én-* would ever yield Lycian *esede*, but probably something like ***ehχr*, *ahχẽ*. Both preverbs *ese-* and *-de-* are found on other words.

syncope ceased to operate. This does not just apply to compound words, but to all new formations. For example a word like 'priest' *kumaza* was formed with a suffix *-aza*, also after syncope ceased to operate. This suffix was used for many (religious) titles, such as: *asaχl-aza-*/*haχl-aza-* 'governor', *mar-aza-* 'judge', and the priestly titles *aχãzata-*, *mlatr-aza-*, *mluhid-aza*, *tewin-aza-*, and *was-aza-*. The formation of numerals with the suffix *-nt* (Melchert, 2000: p.60) occurred after Lycian syncopation: *aitãta* 'eight', *nuñtãta* 'nine', and *kbisñtãta* 'twenty'.
In theory the rules above should allow only disyllabic simple nouns in Lycian, yet this is not what we find. There are two groups of nouns that do not have the expected syncope. The first group consists of the following words:

ahata- 'peace, rest', *ahãma* 'occupation?', *aññmãma-* 'fine, penalty', *arawa-* 'freedom', *awah(a)i-* 'burial', and *azzala-* 'decree?'

What these words have in common is their structure. The structure of each of these words is VC(C)VCV. In chapter 3 I have defined syncope as 'loss of a medial vowel' (p. 10). These words show that Lycian syncope is really just syncope. Aphaeresis and apocope did not occur in nouns[26]
The second group presents an interesting case. As I briefly stated in chapter 1, the second member of a consonant cluster is consistently written double. This applies to stops, sibilants and nasals alike. E.g. *sttati* 'he stands', *kññmis* 'all', etc.[27] This last group consists of words that are spelled with a glide: *huwedri-* 'all', *aruwãt(i)-* 'high', *pijata-* 'gift', and *tijala-* 'fine?'. In all these words, the first syllable should in theory be syncopated, but it is not. I think this is because these spellings are the Lycian way of writing 'geminate glides'. Phonologically these words should then be interpreted /*hwwedri*/, /*arwwãti*/, /*pjjata*/, and /*tjjala*/. Such a practice is similar to the use of the vocalic nasal signs *m̃* and *ñ* in the same situation (cf. *kññme*/*i* above). The phonetic reality of these 'geminate glides' was likely closer to the orthography.

Adjectives
In the formation of true adjectives, the accent appears to have shifted backwards. This is mostly visible in genitival adjectives which lost their genitival meaning and became regular adjectives. Well-known examples include *laθθi* 'in-law (originally 'of the wife')' and *teθθi* 'paternal (originally 'of the father')'. These words are derived from ***ladahi* and ***tedehi* respectively. As we have seen in *χñnahe*, the genitival adjective regularly has its stress on the penultimate syllable. In *laθθi* and *teθθi*, however, the meaning has become less genitival and more adjectival. This must have brought a shift in accent to the first (or antepenultimate) syllable, since the penultimate syllable that would have been stressed is syncopated. As we saw in 3, stressed syllable cannot syncopate.
Whether all adjectives were stressed on the same syllable, and whether this stress

[26]There are no assured examples of vocalic apocope in the Lycian corpus, but consonantal apocope is quite standard. Aphaeresis does occur, but the only good examples are personal names.

[27]The only exceptions are *b*, *d*, *l*, and *r*.

laϑϑi	< *lád~~a~~hi*	≪ *ladáhi*
teϑϑi	< *téd~~e~~hi*	≪ *tedéhi*

regularly fell on the first, or on the antepenultimate syllable is not known. Very few adjectives are attested, and even fewer with an assured etymology.

Pronouns The most intriguing case of syncope in Lycian is the paradigm of the deictic and personal pronoun *ebe-*. There are several variations to this word, each of which acquired a different meaning: there is the deictic pronoun *ebe-* 'this', the regular cognate of Hittite *apās* 'this'. Then there is the personal pronoun *eb-*[28] 'he / she / it', which is a syncopated form of the regular deictic pronoun. Derived from the latter, there is a possessive pronoun *ehbi-* 'his (presumably also 'her / its')'. Lastly, and quite uniquely, there is a plural genitival adjective *eb/pttehi-* 'their'. Table 15 gives an overview of all attested forms.

SG.	'this'	'he/she/it'	'his/her/its'	'their'
NOM.C.	*ebe*		*ehbi*	*ebttehi*
ACC.C.	*ebẽ*	*ebñnẽ*	*ehbi*	*ebttehi*
NOM-ACC.N.	*ebẽ*		*ehbijẽ*	
GEN.ADJ.	*ebehi*[29]			
DAT-LOC.	*ebehi*[30]		*ehbi*	*epttehi*
ABL-INS.			*ehbijedi*	
PL.				
NOM.C.	*ebẽi*		*ehbi*	*ebttehi*
ACC.C.	*ebeis/ebeijes*		*ehbi*	*eb]tt[ehis*
NOM-ACC.N.	*ebeija*		*ehbija*	
GEN.	*ebẽhẽ*			
DAT-LOC.	*ebette*	*ebtte*	*ehbije*	*epttehe/eptte*

Table 15: All forms of the Lycian deictic/personal/possessive pronoun.

In its deictic meaning, this pronoun is relatively regular. The ACC.C.PL. and NOM-ACC.N.PL are unexpected, and their interpretation remains difficult (Kloekhorst, 2012). Since they clearly do not show any signs of syncope, I will not discuss them here. The only form of interest for us is the DAT-LOC.PL *ebette/eptte*. This form is cognate to Hittite *apedaš*, and both must be derived from virtual PIE *$h_1 ob^h$-$\acute{e}d^h os$. However, this form would have regularly given ***ebete*. In fact, double *t* does not usually occur intervocalically (Kloekhorst, 2010: p.7), but only post-consonantally. In post-consonantal position, the doubling of stops is automatic. The attested form must probably be explained as being influenced by the DAT-LOC.PL. of the personal pronoun *ebtte* (*see below*: *eb-* 'he'), or the plural

[28] Hypothetical stem based on ACC.SG.C. *eb-ñnẽ* and DAT-LOC.PL. *eb-tte*.

[29] DAT-LOC.SG.

[30] For this usage cf. for example the Lethoon inscription lines 23, 34 and 36.

possessive pronoun *ebttehe/i* 'their' (*see below*: *ebttehe/i* 'their').

eb- 'he'
Of the personal pronoun, only two forms are attested, but both clearly show signs of syncope. At first glace, it might seem that these forms were unaccented variants. While this might work for *ebtte*, it does in no way explain *ebñnẽ*, which is actually longer and more marked, and therefore unlikely to be an unaccented variation of *ebẽ*. An interesting parallel for its formation can be found in the NOM-ACC.N.SG Luwian enclitic pronoun *=ada*[31]. This clitic must be cognate to Hittite *=at*, which has the same function, and both must be derived from PIE **od*. In Luwian, final stops are lost, so **-od* should have yielded ***-a*, but this is not the form we find. What appears to have happened is that at some point the clitic was not deemed differentiated enough, so to strengthen it, it was doubled: *-od-od*. This double clitic regularly gives *-ada*, since the first stop no longer stands in a coda. If we apply a similar scenario to the Lycian form *ebñnẽ*, we get the following development: at an early stage final *-m* changed into *-n*, which is how it survived in both Hittite and Luwian; **obon*. In Lycian, this ending was doubled to give: **ebenen*. I believe that in order to strengthen the personal pronoun, the ending was doubled. If we assume that pronouns, like nouns, had penultimate stress, the deictic pronoun would have been stressed as follows: NOM.SG.C. *ébe*, ACC.SG.C. *ébẽ*. The deictic pronoun kept its penultimate stress throughout the paradigm. This can be seen by the lack of syncope in the GEN-ADJ. *ebéhi* and the DAT-LOC.PL *ebétte*. However, with the introduction of the reinforced accusative ending, it seems the personal pronoun kept the stress on the first syllable: *ebẽ* 'this, ACC.SG.C.' < pre-Lycian **ében*, *ebñnẽ* 'him, ACC.SG.C.' < pre-Lycian **ébenen*. In this scenario the vowel of the middle syllable was very susceptible to syncope according to the same rules we saw in 4.2 **Verbs**. This new stem then formed the basis upon which forms such as DAT.PL. *ebtte* were formed. Apparently, the different accent placement and subsequent syncope were interpreted as defining features of the third person personal pronoun. The DAT-LOC.PL. of the personal pronoun, as opposed to the deictic pronoun *ebétte*, had initial stress, yielding **ébete* > *ébtte*.

ehbi- 'his'
With regard to the singular possessive it is often assumed that these are unaccented. In this case they would be derived from the genitival adjective *ebehi-* (Garrett, 1991). Garrett bases his theory on the opposition between 'short' and 'long' forms of the possessive, *ehbi-* and *ebehi-* respectively. His reasoning is that the 'long' form which he claims was prefixed, was inherently stressed and functioned in the same way as Hitt. *apel* 'his'. The 'short' form would behave more like the Hitt. clitic possessives, being suffixed and unstressed. However, the existence of a 'long' form is far from secured. Garrett has only one example of a possessive use of *ebehi*, which can also be explained DAT-LOC.SG. The example he gives is the following, with two possible translations provided in the same article:

[31] Cluw. *ata*, HLuw. *ata/ara*.

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ebẽnẽ χupu se=i hri ti ñtipa m=e=ti adẽ Uhetẽi ebbehi ñtatã s=ebei[j]es kmmis Itei ladi tideime ehbije ◯

a. 'This tomb and the *ñtipa* which is above it, Uhetẽi made it, (viz.) his μνῆμα and these (others), however many (there are), for (his) wife Itei (and) his ten (?) children.'

b. 'This tomb and the *ñtipa* which is above it, Uhetẽi made it as his μνῆμα, and (he made) these (others), however many (there are), for (his) wife Itei (and) his ten (?) children.'

As is clear from the translations, a lot is still uncertain with regard to this text. Firstly, the text has *ebbehi* instead of *ebehi*, but that is easily explained as an error. More importantly, there is the word *ñtatã*, which Garrett translates with Greek μνῆμα. Melchert (2004: p.45) and Neumann (2007: p.247–248) both translate this as 'burial chamber' ('Grablege'). Lycian tombs were rather elaborate buildings, sometimes containing several rooms[32]. I would therefore like to propose a different translation, interpreting *ebehi* as a locative singular, which it usually is:

c. 'This tomb and the *ñtipa* above it, Uhetẽi made it, the burial chamber therein and these (others), however many (there are), for (his) wife Itei (and) his ten (?) children.'

If *ebehi* in this clause is interpreted as a DAT-LOC.SG. of the deictic pronoun, that takes away any need to assume a 'long' form of the possessive pronoun.
Another problem with Garrett's interpretation is the fact that he assumes an unstressed variant *ehbi-*. In the following I will show that *ehbi-* was not actually unstressed, but rather consistently counted as a separate stress unit by Lycian scribes. Although the exact use and function of the Lycian word separator $< : >$ is not known, context strongly suggests it was used to separate stress units. Typically unstressed words like prepositions and conjunctions almost always appear within one 'unit' of the noun or verb that governs them. For example 'for (his) wife' is consistently written *: hrppi ladi :* and 'and (his) children' *: se tideime :* What is interesting is that *ehbi* is almost always[33] written separately, e.g.: *: hrppi ladi : ehbi : se tideime : ehbije :* 'for his wife and his children'. This may not be proof that *ehbi-* was stressed, but it is certainly a strong indication that it was.
Rather than being a syncopated form of the GEN-ADJ. of the deictic pronoun *ebéhi*, I think it is a regularly syncopated form of the GEN-ADJ. of the personal pronoun *ébehi*. As I have argued above, the accent of the personal pronoun had shifted from penultimate to initial, which makes that syncope of stressed forms is no longer a problem. Semantically, too, it makes sense to derive a third person possessive pronoun from a third person personal pronoun. Another interesting feature of the singular possessive pronoun is that it is declined as a *i*-stem adjective,

[32]Cf. TL57: 'This tomb [...] the lower grave [...] the upper building [...]'

[33]Out of 77 attestations, 65 are spelled between word separators, the other attestations are mostly in texts that do not use word separators, or at the end of a line, where the word separator is not consistently used.

while all other genitival adjectives are declined as *i*-mutated *e*-stems. Apparently, *ehbi-* was for speakers of Lycian no longer recognisable as a genitival adjective.

ebttehe/i 'their'
As for the plural possessive *ep/bttehe/i-*, it is clearly a genitival adjective of *ebtte*. Like *ehbi-*, *ebttehi-* is formed on the basis of the personal pronoun. There are two possible ways this could have happened. Either the form was created before syncope: *ébetehe/i* > *ebttehe/i-*, or it was formed directly on the attested DAT-LOC.PL. *ebtte+ehe/i-*. If the first scenario applied, that means that only the syllable directly following the stress was syncopated, since otherwise the outcome would have been ***épθθe/i-*. I prefer the second scenario, in which the plural possessive pronoun was not created until syncope ceased to operate. In this scenario the regular GEN-ADJ. suffix *ehe/i* was simply added to the DAT-LOC.PL. stem *ebtte*.

ti 'who'
Another pronoun that shows syncope is the dative-locative singular of the relative and indefinite pronoun *ti*: *tdi*. In table 16 I will give some forms of this pronoun in the Luwian languages and Lycian, as well as a reconstruction.

	CLuwian	HLuwian	Lycian	PIE
NOM.SG.	*k^wis*	*k^wis*	*ti*	*$*k^wis$*
ACC.SG.	*k^win*	*k^win*	*ti*	*$*k^wim$*
DAT-LOC.SG.	*k^wati*	*k^wati*	*tdi*	*$*k^wed^hi$*

Table 16: Luwic paradigm of interrogative, relative and indefinite pronouns.

It is clear from the table that there is a discrepancy between the Luwian languages and Lycian. Both Luwian languages show a fortis /t/ in all DAT-LOC.SG. forms. Goedegebuure (2010) has convincingly argued that the lenited forms CLuw. *k^wadi* and HLuw. *k^wari* are consistently used for the adverb 'how, just as', which is derived from the old ABL-INS. She follows the communis opnio that Lycian *tdi* continues *$*teð\acute{i}$*, with a shift of accent from *$*t\acute{e}ði$*, which would be the regular outcome of *$*k^w\acute{e}d^hi$*. A problem with this reconstruction is that it assumes a rather ad hoc accent shift that cannot be verified in any way. I think we must find a different solution. In Greek there is a clear difference between an accented interrogative pronoun *τί* and an unaccented indefinite pronoun *τι*. A similar distinction has been proposed for Hittite by Kloekhorst (2014). He has found a difference in Old Hittite between the interrogative *ku-i-it* 'who?' (NOM-ACC.SG.N., attested once) and the relative *ku-it* '(he) who'. These examples point to an old distinction between an unaccented relative/indefinite pronoun and an accented interrogative pronoun. Since the Lycians did not mark accent in their writing, there can be no direct evidence for such a distinction in their languages. However, as I argued above, it seems the Lycian separated stress units with a :-sign. Looking at the use of *ti* in conjunction with this 'word separator', we find that it is never treated as a separate stress unit, for example:

TL56.3

se tideime : ehbije : se=ije ti edi : tike : mẽtẽ

'... and for his children, and who does any harm to it ...'

Furthermore, all clauses containing *tdi* use it as a relative pronoun. In fact, perhaps unsurprisingly considering the nature of the Lycian text corpus, the interrogative pronoun is completely unattested. It therefore seems very likely that we are dealing with an unaccented form in Lycian. Such an unaccented form would have easily succumb to syncope. The DAT-LOC.SG. *tdi* is attested three times, and each time it directly follows the verb: TL58 [*st*]*tati tdi*, TL75 *: tãti tdi*, N324 *tibe=ti=pe-wẽ=pijeti=tdi:*. Adding the conclusions about verbal stress from 4.2 **Verbs**, these combinations were probably stressed as follows:

sttáti=tdi ≪ **sttáti=tedi*.
táti=tdi ≪ **táti=tedi*
pijéti=tdi ≪ **pijéti=tedi*

The question now remains why the syllable *-te-* underwent syncope, rather than any of the other syllables. I believe the answer is quite simple. The verbal ending was protected from syncope by analogy, because it often occurred without any clitic elements. A second reason might be that it is the syllable that contains the most important grammatical information. The latter might also be the case for the final syllable *-di*, but more importantly it seems that Lycian had a rule against apocope. Final open syllables are never syncopated. This means a new rule can be added to the list:

5. Internal syllables of post-tonic (and therefore also post-fixed) clitics are syncopated.

Prepositions, pre- and adverbs The rule formulated above (5.) seems at odds with the rule in (4.). Preverbs and adverbs are unstressed and are often written as enclitics to the verbs or nouns they belong to, yet many show no sign of syncope. The pre- and adverbs found in Lycian are the following (giving only the ones that are securely attested):

ala, *ala=de*; *epi*, *epñ*; *ese*, *ese=de*, *es(e)=eri*; *ẽti*; *hri*, *hri=de*, *hrppi*; *ñte*, *ñtepi*; *pri*, *pri=de*; *uwe*
(Neumann, 2007; Melchert, 2004)

Although many of these do not have a generally accepted etymology, and often even their exact meaning and function remains unknown, it seems syncope only took place in two words: *epñ* 'after' and *hrppi* 'on, for'. Three other words have often been said to have undergone syncope: *ñte* 'in', *hri* 'up, on', and *pri* 'forth, in front'. However, Kloekhorst has argued that *ñte* derives from **h₁ndo(m)* (2008a: p.185) and that *hri* derives from **sr-éi* (2014: p.572), so that syncope is no longer required to explain them. I assume a reconstruction *pri* < **pr-éi*, similar to *hri*

< *sr-éi*. As for *epñ*, it is related to Hitt. *āppan*, and reconstructed as *$h_2$op-om*. Its attestations can be divided into two groups: stressed and unstressed. Table 17 gives all clear examples, with Lycian stress indicated.

stressed		unstressed	
: épñ : púñte	TL114.2	*: epñ χúpa :*	TL83.12
: [s]e=ij=épñ : t°	TL118.3	*: epñ=ébtte :*	TL107.2
		: epñ tisé=(a)di :	TL118.6

Table 17: Attestations of *epñ* 'afterwards'

Kloekhorst (2014: p.558) has shown that PIE *$h_2$óp-om* was originally accented on the initial syllable. However, stressed *épñ* is not the regular syncopated outcome of *$h_2$óp-om*. If that were the case, all accusatives would end in *-ñ* rather than *-$\tilde{V}$*. We have seen several times that post-tonic final syllables are not syncopated. I think the explanation is found in the second column. Here *epñ* is pre-fixed to a stressed word, which leaves the second syllable in the perfect position for pre-tonic syncope: **epẹ́n='wórd'. This begs the question why in *ala*, *epi*, *ese*, *ẽti*, and *uwe* there is no sign of syncope. The one thing all these examples have in common is their structure: VCV. It seems that the Lycian restriction against aphaeresis and apocope also applied to clitics. This can also be used as an explanation why in *hrppi* not the final, but the internal syllable was syncopated: *hrẹ́pi. Lastly, in *ñtepi* there is no syncope at all, despite its structural similarity to *hrppi*. I simply think that a cluster *ñtp°* was unacceptable, even for the Lycians. As we saw in chapter 3, syncope 'is more likely if the preceding or following consonant is a resonant' (p. 12).
The prepositions *hrppi* 'for', *ẽnẽ* 'under', and *ẽti* 'in, on' perfectly follow suit. It should be noted, however, that the latter two are usually[34] treated as separate stress units, so they might not have been syncopated if they had started or ended with a consonant either. This means that rule (5.) must be revised:

5. Interconsonantal syllables of enclitics that are closest to the main word stress are syncopated.

Dating Having studied in detail the rules and restrictions regarding syncope in Lycian, it is now possible to say something about the dating of this syncope. Several terms have already been defined. Firstly syncope must have taken place after the Anatolian lentition, which can be observed in Luwian and Hittite as well. It must, secondly, also have taken place after Luwic fortition, a development that only affected the Luwic languages. Proof for this latter statement can be found in *ebette* 'this (DAT-LOC.PL.)' from pre-Lycian *ebete < PA *obédos*. If syncope would have already taken place, the condition for fortition would have been lost. Thirdly, syncope must have taken place after the loss of the initial

[34] *ẽnẽ* is attested five times with word separators, twice without; *ẽti* is found nine times with word separators and also twice without.

glottal stop. I have argued that aphaeresis and apocope did not take occur in Lycian, with the exception of some personal names. This means that there was no loss of vowel in words of the type VCV́CV. If the glottal stop would still be there, these words would have started with a consonant and syncope would have taken place: ?✗CV́CV. On the other hand, syncope must have ceased working before the nasalisation of vowels. This can most clearly be seen in the verbal endings of the imperfective: *°C-enti > °C-ñti. If syncope would have taken place after nasalisation, the outcome of these endings would have been **°C-ãti. Syncope had ceased to operate before many Lycian words were formed, as is proven by the fact that newly formed words and compounds were not affected. Lastly, syncope must have operated before distinctive vowel length was lost in Lycian. Long vowels were protected from syncope, and must therefore still have been long when syncope took place. These termini ante quem point to syncope working relatively early in the history of the Lycian language.
Syncope appears to be a typically Lycian phenomenon, when compared to the other major Anatolian languages; Hittite and Luwian. Nevertheless, at least one instance of syncope that seems to have happened identically in both Luwian and Lycian. Syncope in the verbal suffixes *-*éieti*/-*éionti* yielded Lycian -*idi*/-*eiti*, but also Luwian -*iti*/-*ainti*. If this would be a shared development between the two languages, that would mean that the same syncope rule operated twice in Lycian. The rule that operated here is that post-tonic internal syllables are syncopated. This rule caused both *-*é* > -*iti* and *-*skéti* ≪ -*́sti* in Lycian, but only the former development in Luwian. I think this means that we are simply dealing with two similar, but separate, events. In Lycian syncope took place after the accent shifted, and affected both suffixes. In Luwian, there was no accent shift, but that language independently underwent syncope of post-tonic internal syllables. This time line must remain very tentative, since almost nothing is known about accent and syncope in Luwian (Melchert, 1994: p.275–276).

5 Conclusion

From all of the above, the following conclusions can be drawn:
With regard to stress; verbs were stressed on their root or, if thematic, on their theme vowel, nouns were penultimately stressed, and the relative and indefinite pronoun, and pre- and adverbs were unstressed. This findings largely match the conclusion drawn by (Melchert, 1994: §12.2), although many of his arguments have to be revised.
With regard to syncope, the following rules have been determined:

1. A post-tonic internal syllable was syncopated. This applies only to verbs, since words with penultimate stress, by definition, do not have a post-tonic internal syllable.
   (C)V́C✗CV

2. A pre-tonic short vowel was syncopated.

C$\not{\text{V}}$CV̊

3. Interconsonantal syllables of enclitics that are closest to the main word stress are syncopated.
   C$\not{\text{V}}$CV-wórd / wórd-C$\not{\text{V}}$CV
   VC$\not{\text{V}}$C-wórd / wórd-VC$\not{\text{V}}$C

Especially in nouns, the effects of syncope are often stopped or reversed through inner-paradigmatic levelling. Apart from these rules, several restrictions have been found, that prevented syncope from taking place:

1. Proto-Anatolian long vowels are exempt from syncope.
   PA CV̄CÝCV > Lyc. CVCÝCV

2. Newly formed words and compounds formed after syncope ceased to operate do not undergo syncope.

3. Syncope only applies to vowels that stand between two consonants, initial and final vowels are not dropped.
   VCÝCV

These findings perfectly conform to the universals of syncope given in chapter 3, although the Lycian rules appear to be considerably simpler than those needed for some other languages.

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