

class 9: é-nèné	class 10: é-nèné
class 11: ò-lú-nèné	class 10: é-nèné
class 12: à-ká-nèné	class 14: ò-bú-nèné

Adjectives not only take the same noun class prefixes as nouns, but also show the same tone patterns—although certain derived patterns are more likely to show up in adjectives. The following tone patterns have been found, all cited with a class 7 è-cí- augment-prefix sequence:

(47)	L-H-L	è-cí-bì	‘bad’	è-cí-tò	‘young’	(n = 2)
	L-H-H-H	è-cí-káíré	‘old (in age)’	è-cí-tónó	‘small’	(n = 2)
	L-H-L-H	è-cí-nèné	‘big’	è-cí-gàzí	‘wide’	(n = 5)
		è-cí-kàlú	‘dry, empty’	è-cí-yòndhó	‘clean’	
		è-cí-cìdú	‘nude’			
	L-H-H-L	è-cí-yáákà	‘new’	è-cí-dáángà	‘cross-eyed’	(n = 2)
		è-cí-lúúnjì	‘good’			

While the above are some of the basic adjectives, quite a few more are derived from verbs (either now or once in the language). Some of these occur as nouns with special meanings. Those ending in *-e* refer to the object of the corresponding transitive verb. All take the same tone pattern, independent of the tone of the verb:

(48)	ò-kú-síb-á	‘to tie’	→	è-cí-síb-é	‘sth. tied’	ò-mú-síb-é	‘prisoner’
	ò-kú-mánh-á	‘to know’	→	ò-cí-mánh-é	‘sth. known’	ò-lú-mánh-é	‘familiarity’
	ò-kú-zààl-á	‘to give birth’	→	ò-cí-zààl-é	‘sth. born’	ò-bú-zààl-é	‘birth(place)’
	ò-kú-síimb-á	‘to plant’	→	è-cí-siimb-é	‘sth. planted, a plant’		
	ò-kú-zíimb-á	‘to build’	→	è-cí-zìimb-é	‘sth. built, a building’		

As seen, the above derived adjectives and nouns have the same tone pattern with /L/ being assigned to the first mora of the stem. The same tone pattern is observed on adjectives and nouns derived from intransitive verbs with the ending *-u* which, except for *-CVC-* roots, labiodentalizes a preceding non-nasal consonant:

(49)	ò-kú-kàlá	‘to become dry’	→	è-cí-kàl-ú	‘sth. dry, empty’
	ò-kú-lám-á	‘to recover from illness’	→	ò-mú-làm-ú	‘an alive, living person’
	ò-kú-swáál-á	‘to be ashamed’	→	ò-mú-swààv-ú	‘s.o. shameful’
	ò-kú-támíír-á	‘to become drunk’	→	ò-mú-tàmìiv-ú	‘s.o. drunk, a drunkard’
	ò-kú-tàlàìg-á	‘to become rusty’	→	è-cí-tàlàiv-ú	‘sth. rusty’
	ò-kú-dáánkàán-á	‘to become spoiled’	→	è-cí-dàànkààn-ú	‘sth. spoiled’
	ò-kw-îrùgàl-á	‘to become black’	→	è-cí-îrùgàv-ú	‘sth. black’
	ò-kw-èè-tòòlól-á	‘to be round’ ²⁶	→	è-c-èè-tòòlòòv-ú	‘sth. round’

As seen in the following examples deverbal adjectives ending in *-u* show the multiple L tone patterns that were problematic in nouns (§4.5, 4.7) suggesting a multiply linked L tone. A few follow a different tone pattern, ò-kú-ból-á ‘to become wet’ → è-cí-ból-ú ‘sth. wet’.

²⁶ This verb and its derivative have the reflexive prefix /-e-/.

When an adjective follows a noun its H tone(s) potentially spread onto the preceding noun. The following examples show both pre- and post-vowel coalescence tones with the adjectives /-tono/ ‘small’ (underlyingly toneless) and /-nène/ ‘big’:

- (50) a. ò-mú-límí ó-mú-tónó [ò-mú-límí’ óó-mú-tónó] ‘small farmer’
 b. ò-mú-límí ó-mú-nèné [ò-mú-límí’ óó-mú-tónó] ‘big farmer’
 c. ò-mú-kàzì ò-mú-tónó [ò-mú-kàzy’ òò-mú-tónó] ‘small woman’
 d. ò-mú-kàzì ò-mú-nèné [ò-mú-kàzy’ òò-mú-nèné] ‘big woman’

In (50a) the H% boundary tone spreads from the end of the phrase all the way up to the underlyingly toneless noun class prefix /-mu-/ of ‘farmer’. The initial augment is L since one L tone is required at the left edge, the effect of the initial %L boundary tone. In (50b) it is the inserted H preceding /-nène/ ‘big’ that spreads onto the noun. Such spreading is not observed in (50c), where H% reaches only into the toneless adjective ò-mú-tónó, or (50d), where H% links only to the last syllable of the adjective ò-mú-nèné. Similar facts are observed when the augment is not present:

- (51) a. mù-límí mú-tónó ‘he’s a small farmer’
 b. mù-límí mú-nèné ‘he’s a big farmer’
 c. mú-kàzì mù-tónó ‘she’s a small woman’
 d. mú-kàzì mú-nèné ‘she’s a big woman’

In (51a,b) the first syllable of *mù-límí* is L, as is the first syllable of *mù-tónó* in (51c). In (51c,d) -kàzì must remain L-L because of the two L tone requirement. Thus, neither spreading of the H% boundary tone or the H from the next word (51d) can reach the noun. (51c) shows that when it can, it must leave one L tone at the left edge of the word, in this case, the adjective *mù-tónó*. We can see this either as spreading of the final L from the noun onto the adjective, or as a constraint against the right-edge H% ever stopping at the left edge of a word. Other nouns with the same underlying tones show the same final L:

- (52) a. ò-mú-sàghò ò-mú-tónó ‘a small doctor’ cf. ò-mú-sàghó
 ò-mú-sòtà ò-mú-tónó ‘a small snake’ cf. ò-mú-sòtá
 è-cí-bàlì è-cí-tónó ‘a small swamp’ cf. è-cí-bàlì
 b. ò-mú-sàghò ò-mú-nèné ‘a big doctor’
 ò-mú-sòtà ò-mú-nèné ‘a big snake’
 è-cí-bàlì è-cí-nèné ‘a big swamp’

While such nouns are realized with a final H% tone in isolation, their final syllable does not become H by H tone spreading from the following adjective. This can be attributed to the same constraint seen in §2: If a word has a H-L sequence, it cannot receive a H from the next word unless it is preceded by two L tone moras. The following examples show that H tone spreading is observed on longer nouns which have two additional moras following the L-L sequence:

- (53) a. ò-mú-kààkálé ó-mú-tónó ‘a small castor oil plant’ cf. ò-mú-kààkálé
 à-má-lwààlíró á-má-tónó ‘small hospitals’ cf. à-má-lwààlíró
 è-cí-dììngídó é-cí-tónó ‘a small feast’ cf. è-cí-dììngídó

- | | | | | |
|----|---------------|-----------|--------------------------|-------------------|
| | é-n-sàlòòsáló | é-n-tónó | ‘a small boundary’ | cf. é-n-sàlòòsáló |
| b. | ò-mú-kààkálé | ó-mú-nèné | ‘a big castor oil plant’ | |
| | à-má-lwààlíró | á-má-nèné | ‘big hospitals’ | |
| | è-cí-diìngídó | é-cí-nèné | ‘a big feast’ | |

In each of the above examples, the long vowel of the stem-initial syllable satisfies the two L tone mora condition such that successive moras are allowed to become H. The one exception to this concerns noun stems of the shape CVVCV. While these should allow the final vowel to become H, it is instead realized L:

- | | | | | |
|---------|--------------|-----------|-------------------------|-----------------|
| (54) a. | ò-mú-sààdhà | ò-mú-tónó | ‘a small man’ corrected | cf. ò-mú-sààdhá |
| | è-cí-wùùkà | è-cí-tónó | ‘a small insect’ | cf. è-cí-wùùká |
| | è-cí-siìmbè | è-cí-tónó | ‘a small plant’ | cf. è-cí-siìmbé |
| b. | ò-mú-sààdhà | ò-mú-nèné | ‘a big man’ | |
| | è-cí-wùùkà | è-cí-nèné | ‘a big insect’ | |
| | è-cí-siìmb-è | è-cí-nèné | ‘a big plant’ | |

What the above examples seem to suggest is that H tone spreading will not occur if it can only reach the final syllable of the preceding noun. One can predict the pre-adjectival form of the noun in the following way:

- (i) If the isolation form ends in a single H (from H%), it will be realized L:

- | | | | | |
|---------|----------------|-----------|--------------------|--------------------|
| (55) a. | ò-mú-tàmìivù | ò-mú-tónó | ‘a small drunkard’ | cf. ò-mú-tààmìivú |
| | ò-mú-bààndìbwà | ò-mú-tónó | ‘a small debtor’ | cf. ò-mú-bààndìbwá |
| | è-cí-fàànàní | è-cí-tónó | ‘a small picture’ | cf. è-cí-fàànàní |
| | è-cí-tààngààlà | è-cí-tónó | ‘a small light’ | cf. è-cí-tààngààlá |
| b. | ò-mú-tàmìivù | ò-mú-nèné | ‘a big drunkard’ | |
| | ò-mú-bààndìbwà | ò-mú-nèné | ‘a big debtor’ | |
| | è-cí-fàànàní | è-cí-nèné | ‘a big picture’ | |
| | è-cí-tààngààlà | è-cí-nèné | ‘a big light’ | |

(ii) If the isolation form of the noun ends in more than one H, the same sequence of Hs will be observed before an adjective:

- | | | | | |
|---------|-------------------|-----------|----------------------|-----------------------|
| (56) a. | é-m-pwààpúló | é-n-tónó | ‘a small wild fruit’ | cf. é-m-pwààpúló |
| | è-bí-dòòmbóódó | é-bí-tónó | ‘small dregs’ | cf. è-bí-dòòmbóódó |
| | à-ká-wùùndówúúndó | à-ká-tónó | ‘a small bat’ | cf. à-ká-wùùndówúúndó |
| | è-cí-nhòmònhómó | é-cí-tónó | ‘a small sugar ant’ | cf. è-cí-nhòmònhómó |
| b. | é-m-pwààpúló | é-nèné | ‘a big wild fruit’ | |
| | è-bí-dòòmbóódó | é-bí-nèné | ‘big dregs’ | |
| | à-ká-wùùndówúúndó | à-ká-nèné | ‘a big bat’ | |
| | è-cí-nhòmònhómó | é-cí-nèné | ‘a big sugar ant’ | |

One interpretation of the above facts is that a single final H (from H%) is interpreted as if it is derived by replacing a phonological L, while the moras of a post-L sequence of Hs are phonologically toneless (Ø). Be this as it may, adjectives provide one of the most neutral and

transparent environments for tone: the only effect they can have is for their H tone to spread onto available toneless moras on the preceding noun. Most of the remaining modifiers affect the tone of the noun in more significant ways.

5.2. Possessive pronouns

Possessive pronouns agree in noun class with the noun they modify. The independent forms are given below for each class below as they appear without an augment, e.g. *è-cí-kópò cáàngé* ‘the cup is mine’, *ècí-kópò cícò* ‘the cup is yours sg.’ (etc.):

(57)	<i>n.cl.</i>	<i>‘mine’</i>	<i>‘yours sg.’</i>	<i>‘his/hers’</i>	<i>‘ours’</i>	<i>‘yours pl.’</i>	<i>‘theirs’</i>
	1	wáàngé	wùwô	wùwê	wáifé	wáimwé	wáibwé
	2	báàngé	bàbô	bàbê	báifé	báimwé	báibwé
	3	gwáàngé	gùgwô	gùgwê	gwáifé	gwáimwé	gwáibwé
	4	jáàngé	jìjô	jìjê	jáifé	jáimwé	jáibwé
	5	ryáàngé	rìryô	rìryê	ryáifé	ryáimwé	ryáibwé
	6	gáàngé	gàgô	gàgê	gáifé	gáimwé	gáibwé
	7	cáàngé	cícô	cícê	cáifé	cáimwé	cáibwé
	8	byáàngé	bìbyô	bìbyê	byáifé	byáimwé	byáibwé
	9	yáàngé	yìyô	yìyê	yáifé	yáimwé	yáibwé
	10	dháàngé	dhìdhô	dhìdhê	dháifé	dháimwé	dháibwé
	11	lwáàngé	lùlwô	lùlwê	lwáifé	lwáimwé	lwáibwé
	12	káàngé	kàkô	kàkê	káifé	káimwé	káibwé
	13	twáàngé	tùtwô	tùtwê	twáifé	twáimwé	twáibwé
	14	bwáàngé	bùbwô	bùbwê	bwáifé	bwáimwé	bwáibwé
	15	kwáàngé	kùkwô	kùkwê	kwáifé	kwáimwé	kwáibwé
	16	gháàngé	ghàghô	ghàghê	gháifé	gháimwé	gháibwé
	17	kwáàngé	kùkwô	kùkwê	kwáifé	kwáimwé	kwáibwé
	18	mwáàngé	mùmwô	mùmwê	mwáifé	mwáimwé	mwáibwé
	20	gwáàngé	gùgwô	gùgwê	gwáifé	gwáimwé	gwáibwé
	22	gáàngé	gàgô	gàgê	gáifé	gáimwé	gáibwé

As can be seen, the forms for ‘yours sg.’ and ‘his/her’ differ from the others both in morphological structure and tone. One can propose the following abstract (and historical) structures, illustrated with class 3 /gu-/ agreement:

(58) a.	/gu-à-ng-e/	→	gw-á-à-ng-é	‘mine’
	/gu-à-ifu-e/	→	gw-á-if-é	‘ours’
	/gu-à-imu-e/	→	gw-á-imw-é	‘yours pl.’
	/gu-à-ibu-e/	→	gw-á-ibw-é	‘theirs’
b.	/gu-gu-ò/	→	gù-gw-ô	‘yours sg.’ ²⁷
	/gu-gu-è/	→	gù-gw-ê	‘his/hers’

²⁷ Since /a/ drops out before another vowel, it would be equally possible to propose that the connective morpheme is present in the underlying representations: /gu-gu-à-ò/, /gu-gu-à-è/.

In (58a) we observe an overt connective morpheme *-a-* as will also be seen in ‘noun of noun’ constructions, e.g. *mú-tì gw-àà = Jééngà* ‘(it’s) Jenga’s tree’. All of the forms also have a final *-e* suffix.²⁸ In (58b) there is instead a reduplicated prefix, e.g. class 3 *gu-gu-* and no *-e* suffix. In (58a) I have proposed that the connective */-à-/* is underlyingly */L/* so that the prefix *gu-* will receive a H tone. The resulting *gú-à-* sequence is then realized [gwàà] in *gwààngé* ‘mine’, [gwáì] in the other pronouns, where intermediate *gwàì* shortens to become bimoraic. In (58b) the */L/* of */-ò-/* and */-è-/* causes the second *gu-* prefix to become H. Intermediate *gwóò* and *gwèè* become [gwô] and [gwê] by final vowel shortening.

Now consider the same pronouns as they are realized when the augment vowel is present:

(59)	<i>n.cl.</i>	‘mine’	‘yours sg.’	‘his/hers’	‘ours’	‘yours pl.’	‘theirs’
	1	ó-wààngé	ó-wúwô	ó-wúwê	ó-wàìfé	ó-wàìmwé	ó-wàìbwé
	2	á-bààngé	á-bábô	á-bábê	á-bàìfé	á-bàìmwé	á-bàìbwé
	3	ó-gwààngé	ó-gúgwô	ò-gúgwê	ó-gwàìfé	ó-gwàìmwé	ò-gwàìbwé
	4	é-jààngé	é-jíjô	é-jíjê	é-jàìfé	é-jàìmwé	è-jàìbwé
	5	é-ryààngé	é-ríryô	é-ríryê	é-ryàìfé	é-ryàìmwé	é-ryàìbwé
	6	á-gààngé	á-gágô	á-gágê	á-gàìfé	á-gàìmwé	á-gàìbwé
	7	é-cààngé	é-cícô	é-cícê	é-càìfé	é-càìmwé	é-càìbwé
	8	é-byààngé	é-bíbyô	é-bíbyê	é-byàìfé	é-byàìmwé	é-byàìbwé
	9	é-yààngé	é-yíyô	é-yíyê	é-yàìfé	é-yàìmwé	é-yàìbwé
	10	é-dhààngé	é-dhídhô	é-dhídhê	é-dhàìfé	é-dhàìmwé	è-dhàìbwé
	11	ó-lwààngé	ó-lúlwô	ó-lúlwê	é-lwàìfé	ó-lwàìmwé	ó-lwàìbwé
	12	á-kààngé	á-kákô	á-kákê	á-kàìfé	á-kàìmwé	á-kàìbwé
	13	á-twààngé	ó-tútwô	ó-tútwê	ó-twàìfé	ó-twàìmwé	ó-twàìbwé
	14	ó-bwààngé	ó-búbwô	ó-búbwê	ó-bwàìfé	ó-bwàìmwé	ó-bwàìbwé
	15	ó-kwààngé	ó-kúkwô	ó-kúkwê	ò-kwàìfé	ó-kwàìmwé	ó-kwàìbwé
	16	á-ghààngé	á-ghághô	á-ghághê	á-ghàìfé	á-ghàìmwé	á-ghàìbwé
	17	ó-kwààngé	ó-kúkwô	ó-kúkwê	ó-kwàìfé	ó-kwàìmwé	ó-kwàìbwé
	18	ó-mwààngé	ó-múmwô	ó-múmwê	ó-mwàìfé	ó-mwàìmwé	ó-mwàìbwé
	20	ó-gwààngé	ó-gúgwô	ó-gúgwê	ó-gwàìfé	ó-gwàìmwé	ó-gwàìbwé
	22	á-gààngé	á-gágô	á-gágê	á-gàìfé	á-gàìmwé	á-gàìbwé

There are again two tone patterns: (i) the second and third person singular pronouns have the tone pattern H-H-HL, while the tone of the remaining pronouns is H-L-H. These can be accounted for with a single modification. As seen in (60), again illustrated with class 3, when the augment is present the (first) *gu-* prefix has an underlying */L/* tone:

(60) a.	<i>/o-gù-à-ng-e/</i>	→	ó-gw-à-à-ng-é	‘mine’
	<i>/o-gù-à-ifu-e/</i>	→	ó-gw-à-if-é	‘ours’
	<i>/o-gù-à-imu-e/</i>	→	ó-gw-à-ìmw-é	‘yours pl.’
	<i>/o-gù-à-ibu-e/</i>	→	ó-gw-à-ìbw-é	‘theirs’
b.	<i>/o-gù-gu-ò/</i>	→	ó-gú-gw-ô	‘yours sg.’

²⁸ The expected output **gwáìfwé* ‘ours’ is instead realized *gwáìfé*, since [fw] sequences are prohibited. While all cases of [f] are expected to occur in a [fu] sequence, in this case from earlier *-*itu-*, recent borrowings such as *è-cí-fànààní* ‘picture’ upset the pattern. One might therefore instead propose that the root for ‘our’ is */-if-/*.

/o-gù-gu-è/ → ó-gú-gw-ê 'his/hers'

In (60a) the augment receives as H tone since it immediately precedes a /L/ tone. The final H is from H%. In (60b) the augment similarly receives a H tone before the /L/ of the first *gu-* prefix, as does the second *gu-* prefix, since it precedes the /L/ of /-ò/ and /-è/. The intermediate representations ó-gù-gú-ò and ó-gù-gú-è become ó-gú-gú-ò and ó-gú-gú-è by HTP, followed by gliding of the /u/ in the final syllable. In other words, everything follows the general rules of the language once we assume that the (first) *gu-* prefix is /L/.

The tones of possessive pronouns take on a third pattern when modifying a preceding noun, where they all become L (with final H% if there is a second syllable to take it). The following illustrates these tones with class 8 nouns of different tonal shapes:

(61)	/e-bi-tabo/ 'books'	/e-bi-dèe/ 'bells'	/e-bi-siki/ 'logs'	/e-bi-diingido/ 'feasts'
'my'	è-bí-tábó byààngé	è-bí-dè byààngé	è-bí-síkí byààngé	è-bí-diingídó byààngé
'your sg.'	è-bí-tábó = byò	è-bí-déé = byò	è-bí-síkí = byò	è-bí-diingídó byò
'his/her'	è-bí-tábó = byè	è-bí-déé = byè	è-bí-síkí = byè	è-bí-diingídó byè
'our'	è-bí-tábó byàìfé	è-bí-dè byàìfé	è-bí-síkí byàìfé	è-bí-diingídó byàìfé
'your pl.'	è-bí-tábó byàìmwé	è-bí-dè byàìmwé	è-bí-síkí byàìmwé	è-bí-diingídó byàìmwé
'their'	è-bí-tábó byàìbwé	è-bí-dè byàìbwé	è-bí-síkí byàìbwé	è-bí-diingídó byàìbwé

As seen in the first column, toneless nouns become L + all H before all six possessive pronouns. In case the noun has a H-L transition, the realizations depend on the possessive pronoun: In the case of 'your sg.' and 'his/her', which are monosyllabic, the whole noun becomes H except for the augment. If we again assume that the underlying representations of the pronominal roots are /-ò/ and /-è/, we have two choices. One is to propose derivations such as the following (which is presented as a series of steps):

(62) a.	/bi-ò-/	→	bí-ò	→	byóò	→	´byòò	→	´byò
b.	/bi-è-/	→	bí-è	→	byéè	→	´byèè	→	´byè

As indicated, HTI assigns a H to the toneless class 7 prefix /bi-/. This is followed by gliding of the /i/ with compensatory lengthening of the following vowel. At this stage we have the HL tone of the final syllable of the independent pronouns in (57) and (59). The problem with this analysis is the next step where possessive pronouns delink their H tone when modifying a noun, as shown by the unlinked H tone. Final vowel shortening (FVS) will then apply if the possessive pronoun occurs at the right edge of a clitic group. Thus, contrast è-bí-tábó byò 'your sg. books' with bí-tábó 'byóó cì 'which book of yours', where byóó is realized with a long vowel.²⁹

An alternative is to assume as we did with augmented possessive pronouns in (60) that when modifying a noun, the noun class prefix is also L. This would produce derivations such as the following:

²⁹ The downstepped (´) H tone is due to HTI which assigns a H to the syllable that precedes -cì 'which'. In this case it is the pronoun which has its own /L/. Since class 8 byòò 'your sg.' is not part of the lexical word, it does not undergo L tone deletion (LTD), rather simply delinks its L. The sequence of H^L H is realized H-´H.

- (63) a. /e-bi-tabo = bì-ò/ → e-bí-tábó = bì-ò → è-bí-tábó = bì-ò
 /e-bi-tabo = bì-è/ → e-bí-tábó = bì-è → è-bí-tábó = bì-è
 b. /e-bi-dèe = bì-ò/ → e-bí-dèe = bì-ò → è-bí-déé = bì-ò
 /e-bi-dèe = bì-è/ → e-bí-dèe = bì-è → è-bí-déé = bì-è
 c. /e-bi-sìki = bì-ò/ → e-bí-sìkí = bì-ò → è-bí-síkí = bì-ò
 /e-bi-sìki = bì-e/ → e-bi-sìki = bì-e/ → è-bí-síkí = bì-è
 d. /e-bi-dìingido = bì-ò/ → e-bi-dìingido = bì-ò → è-bí-díingídó = bì-ò
 /e-bi-dìingido = bì-è/ → e-bi-dìingido = bì-è → è-bí-díingídó = bì-è

In each case the enclitic /= bì-ò/ or /= bì-è/ triggers HTI on what precedes. In (63a), where the noun is toneless, the H goes on all of the moras except the initial augment. In (63b-d) the H goes on the last syllable of the noun and then triggers LTD and HTP. What is crucial is that the H from HTI can override any Ls on the noun. This is quite different from H tone spreading (HTS) from the next word which, as seen from earlier examples such as (52) vs. (53), can only occur if at least two L tones are left on the targeted noun. This latter pattern is however also seen with the bisyllabic possessive pronouns in (61). The forms in (64) illustrate this with the first person singular pronoun ‘my’:

- (64) a. /e-bi-tabo bì-à-ng-e/ → e-bí-tábó bì-à-ng-e → è-bí-tábó byààngé
 b. /e-bi-dèe bì-à-ng-e/ → e-bí-dèe bì-à-ng-e → è-bí-dè byààngé
 c. /e-bi-sìki bì-à-ng-e/ → e-bí-sìki bì-à-ng-e → è-bí-sìki byààngé
 d. /e-bi-dìingido bì-à-ng-e/ → e-bí-dìingídó bì-à-ng-e → è-bí-dìingídó byààngé

That there is a H preceding *byààngé* is clearly seen in (64a), where it links to all but the augment of the toneless noun /e-bi-tabo/ ‘books’, and (64d), where it links to the last two (toneless) moras of /e-bi-dìingido/ ‘feasts’. In the latter case there is no LTD or HTP vs. the forms in (63b-d). This can be attributed to the fact that the monosyllabic possessive pronouns are enclitics, while the bisyllabic ones are not. One can see this in (61), where the vowel of the stem syllable of /e-bi-dèe/ ‘bells’ shortens before bisyllabic, but not monosyllabic possessive pronouns. The non-clitic status of bisyllabic possessive pronouns is also seen in (64c) where *byààngé* fails to assign a H to /è-bí-sìki/ ‘logs’, since the latter would then not meet the two L tone requirement. We have already seen that the assignment of the H% boundary tone has been able to override this constraint, possibly leaving behind a word that ends with a H-L-H sequence. The monosyllabic possessive enclitics can do likewise. However, unlike phrasal H%, in their case the H assigned by HTI enters onto the word which then cannot tolerate a H-L-H sequence. As a result LTI and HTP apply, as in (63b-d).

5.3. Demonstratives

Lusoga distinguishes three demonstratives indicating ‘this’ (near speaker), ‘that’ (near hearer), and ‘that’ (far from both speaker and hearer). These are fully marked for noun class:

- (65) *n.cl.* ‘this/these’ (n.s.) ‘that/those’ (n.h.) ‘that/those’ (far)
- | | | | |
|---|------|------|------|
| 1 | ònó | òyó | òlé |
| 2 | bàno | àbó | bàlé |
| 3 | gùnó | ògwó | gùlé |

4	jìnó	èjọ́	jìré
5	lìnó	èryó	lìré
6	gàno	àgó	gàlé
7	cìnó	ècọ́	cìré
8	bìnó	èbyó	bìré
9	ènó	èyó	èré
10	dhìnó	èdhó	dhìré
11	lùnó	òlwó	lùlé
12	kàno	àkọ́	kàlé
13	tùnó	òtwó	tùlé
14	bùnó	òbwó	bùlé
15	kùnó	òkwó	kùlé
16	ghàno	àghó	ghàlé
17	kùnó	òkwó	kùlé
18	mùnó	òmwo	mùlé
20	gùnó	ògwó	gùlé
22	gàno	àgó	gàlé

The demonstrative stems in the first and last columns are clearly /-no/ ‘near speaker’ and /-le/ ‘far from speaker and hearer’. The structure of the ‘near hearer’ demonstrative is V-CV-*o*, where the initial vowel is identical to the augment and the CV represents the familiar concord prefixes seen on possessive pronouns, e.g. class 1 *ò-yi-o*, class 2 *à-ba-o*, class 3 *ò-gu-o* etc. Each of the above forms can also occur reduplicated with a more emphatic meaning, e.g. ‘this very one, this particular one’:

(66)	<i>n.cl.</i>	<i>‘this/these’ (n.s.)</i>	<i>‘that/those’ (n.h.)</i>	<i>‘that/those’ (far)</i>
	1	ònóònó	òyóòyó	òlólólé
	2	bànoònó	àbáàbó	bàlébàlé
	3	gùnógùnó	ògwóògwó	gùlégùlé
	4	jìnójìnó	èjéèjọ́	jìréjìré
	5	lìnólinó	èryéèryó	lìrélìré
	6	gànoònó	àgáàgó	gàlégàlé
	7	cìnócìnó	ècécécọ́	cìrécìré
	8	bìnóbìnó	èbyéèbyó	bìrébìré
	9	ènóènó	èyéèyó	èréèré
	10	dhìnódhìnó	èdhéèdhó	dhìrédhìré
	11	lùnólùnó	òlwóòlwó	lùlélùlé
	12	kànoònó	àkáàkọ́	kàlékàlé
	13	tùnótùnó	òtwóòtwó	tùléttùlé
	14	bùnóbùnó	òbwóòbwó	bùlébùlé
	15	kùnókùnó	òkwóòkwó	kùlékùlé
	16	ghànoònó	àgháàghó	ghàléghàlé
	17	kùnókùnó	òkwóòkwó	kùlékùlé
	18	mùnómùnó	òmwoòmwó	mùlémmùlé
	20	gùnógùnó	ògwóògwó	gùlégùlé
	22	gànoònó	àgáàgó	gàlégàlé

As the above demonstrates, the three demonstratives have exactly the same tone. While the final H in both (65) and (66) can be attributed to the H% phrasal tone, the first H in (66) cannot. In fact, it is assigned by the second occurrence of the demonstrative. As seen in (67), these demonstratives regularly assign a H to the preceding noun except when the latter ends in a H-L sequence:

(67)		<i>'this' (n.s.)</i>	<i>'that' (n.h.)</i>	<i>'that' (far)</i>	
a.	H-L	é-m-bwà ènó	é-m-bwà èyó	é-m-bwà èré	'dog'
	L-H-L	ò-mú-tì gùnó	ò-mú-tì ògwó	ò-mú-tì gùlé	'tree'
	L-H-H-L	è-cí-kópò cìnó	è-cí-kópò ècó	è-cí-kópò cìré	'cup'
b.	L-H	è-ì-gé lìnó	è-ì-gé èryó	è-ì-gé lìré	'termite'
	L-H-H	ò-lú-mú lùnó	ò-lú-m.ú òlwó	ò-lú-mú lùlé	'ringworm'
	L-H-H-H	ò-mú-límí ònó	ò-mú-límí òyó	ò-mú-límí òlé	'farmer'
c.	H-L-H	é-n-kòkó ènó	é-n-kòkó èyó	é-n-kòkó èré	'chicken'
	L-H-L-H	ò-mú-kàzì ònó	ò-mú-kàzì òyó	ò-mú-kàzé òlé	'woman'
	L-H-L-L-H	ò-mú-tàmìivú ònó	ò-mú-tàmìivú òyó	ò-mú-tàmìivú òlé	'drunkard'
d.	H-L-H-H	é-í-rwààlíró lìnó	é-í-rwààlíró èryó	é-í-rwààlíró lìré	'hospital'
	L-H-L-H-H	è-cí-diìngídó cìnó	è-cí-diìngídó ècó	è-cí-diìngídó cìré	'feast'

In (67) the noun maintains the same tone before a demonstrative as it has in isolation. In (67a) there is no final H because the noun ends in H-L. The nouns in (67b) maintain their L + Hⁿ pattern, while those in (67c) also occur with one final H. Finally, the nouns in (67d) have a H to L drop, but regain a H on their final two syllables. These facts are strikingly different from those seen in noun + possessive pronoun sequences. Although both demonstratives and bisyllabic pronouns such as 'my' seem to assign a H to the preceding noun, the latter effect is less effective. As the comparison in (68a) shows, bisyllabic possessive pronouns do not assign a H to the preceding noun if it ends in two L tones.

(68) a.	è-bí-sìkì byààngé	'my logs'	è-bí-sìkí bìnó	'these logs'
	é-n-kòkò dhààngé	'my chickens'	é-n-kòkó dhìnó	'these chickens'
b.	à-má-bààlè gààngé	'my stones'	à-má-bààlé gànó	'these stones'
	è-bí-wùùkà byààngé	'my insects'	è-bí-wùùkà bìnó	'these insects'
c.	é-m-pùlùkò yààngé	'my souvenir'	é-m-pùlùkó ènó	'this souvenir'
	è-cí-fàànàní cààngé	'my picture'	è-cí-fàànàní cìnó	'this picture'
	é-m-pòòngòlò yààngé	'my cave'	é-m-pòòngòlò ènó	'this souvenir'
	ò-bw-înògòvù bwààngé	'my coldness'	ò-bw-înògòvù bùnó	'this coldness'
d.	à-má-lwààlíró gààngé	'my hospitals'	à-má-lwààlíró gànó	'these hospitals'
	è-cí-diìngídó cààngé	'my feast'	è-cí-diìngídó cànó	'this feast'

As seen to the right, demonstratives readily violate the constraint. Comparing the forms in (68b,c), the possessive pronoun 'my' (but not the demonstrative 'this') fails to assign a final H to certain nouns which otherwise would satisfy the two L tone constraint. These contrast with the nouns in (68d) which do receive the H from the possessive. There is a strong tendency in Lusoga for shorter noun stems not to accept a single final H syllable before the bisyllabic possessive pronouns (and other contexts we have seen above). As soon as there are more moras, there is a

contrast, as seen in comparing *è-cí-fàà̀nà̀nì* ‘picture’ in (68c) with *à-má-lwà̀lìrò* ‘hospitals’ in (68d). What this means is that some nouns end with L tone, while others end toneless. As was seen in §2, infinitives all end toneless, since they always take a H tone, including from possessives:

(69)	a.	ò-kú-mw-á kwààngé	‘my shaving’	ò-kú-ly-à kwààngé	‘my eating’
		ò-kú-gw-á kwààngé	‘my falling’	ò-kú-ty-à kwààngé	‘my fearing’
	b.	ò-kú-bál-á kwààngé	‘my counting’	ò-kú-bòn-à kwààngé	‘my seeing’
		ò-kú-lím-á kwààngé	‘my cultivating’	ò-kú-tùm-à kwààngé	‘my sending’
	c.	ò-kú-nááb-á kwààngé	‘my bathing’	ò-kú-lèè-á kwààngé	‘my bringing’
		ò-kú-fúúmbá kwààngé	‘my cooking’	ò-kú-tùùk-á kwààngé	‘my arriving’
	d.	ò-kú-lágír-á kwààngé	‘my commanding’	ò-kú-ghùlìr-á kwààngé	‘my hearing’
		ò-kú-sásúl-á kwààngé	‘my feast’	ò-kú-sèkùl-á kwààngé	‘my pounding’
	e.	ò-kú-súmúlúzó kwààngé	‘my untying’	ò-kú-kàlàkátá kwààngé	‘my scraping’
		ò-kú-gézésébwá kwààngé	‘my perspiring’	ò-kú-fùkàmírá kwààngé	‘my kneeling’

The verbs on the left are all toneless and become all H except for the initial augment vowel *ò-*. Those on the right have an underlying /L/ root which requires that the preceding infinitive prefix /-ku-/ become H. The possessive does not assign a H to the /L/ verbs in (69a), since they end H-L. The verbs in (69b) also do not receive a final H, since that would violate the two L tone requirement. The longer verbs in (69c-d) all successfully receive a H from the possessive. To appreciate the difference with non-infinitive nouns, compare the L-H-L-H realization of the infinitives in (69c) with the L-H-L-L realization of the nouns in (68b), e.g. *ò-kú-lèè-á kwààngé* ‘my bringing’ vs. *à-má-bà̀lè̀ gààngé* ‘my stones’. From this we can conclude that the infinitive final vowel /-a/ is toneless, while all of noun stems such as *-baale* end with a L.

Before moving on to numerals, it should be pointed out that all demonstratives can be used without a head noun, e.g. *òró* ‘this one’ (class 1), *èbyó* ‘those (ones)’ (n.h.) (class 7), *lùlè* ‘that one’ (far) (class 11). When they do, they assign their H tone to whatever precedes. Thus, a preceding verb will have exactly the same tone as it has in isolation with the final boundary H% tone. This is illustrated after the infinitive, the present habitual and distant past tenses in (70), where the plural demonstrative ‘these (ones)’ is illustrated in class 2 (*bà̀nó*) and class 7 (*bìnó*). The verb roots on the left are underlyingly toneless, while those on the right have a root-initial /L/:

(70)	INF	ò-kú-mw-á bà̀nó	‘to shave these’	ò-kú-ly-à bìnó	‘to eat these’
		ò-kú-bál-á bìnó	‘to count these’	ò-kú-kùb-á bìnó	‘to beat these’
		ò-kú-lágír-á bà̀nó	‘to command these’	ò-kú-ghùlìrá bà̀nó	‘to hear these’
		ò-kú-súmúlúz-á bìnó	‘to untie these’	ò-kú-kàlàkát-á bìnó	‘to scrape these’
	HAB	à-mw-á bà̀nó	‘he shaves these’	á-ly-à bìnó	‘he eats these’
		à-bál-á bìnó	‘he counts these’	á-kùb-á bìnó	‘he beats these’
		à-lágír-á bà̀nó	‘he commands these’	á-ghùlìr-á bà̀nó	‘he hears these’
		à-súmúlúz-á bìnó	‘he unties these’	á-kàlàkát-á bìnó	‘he scrapes these’
	PAST ₃	y-á-mw-à bà̀nó	‘he shaved these’	y-á-ly-à bìnó	‘he ate these’
		y-á-bà̀l-á bìnó	‘he counted these’	y-á-kùb-á bìnó	‘he beat those’
		y-á-làgìr-á bà̀nó	‘he commanded those’	y-á-ghùlìr-á bà̀nó	‘he heard those’
		y-á-sùmùlùzò bìnó	‘he untied those’	y-á-kàlàkàt-á bìnó	‘he scraped those’

Once again, the demonstrative H assignment works differently from bisyllabic possessive pronouns which fail to assign a H to the preceding noun unless the two L tone constraint is met.

5.4. Numerals

The numerals one through ten are given in (71) as they appear in counting:

(71)	̀n-dá lá	‘one’	mú-kààgá	‘six’
	̀i-bìrì	‘two’	mù-sáánvú	‘seven’
	̀i-sàtú	‘three’	mú-náánà	‘eight’
	̀ì-nâ	‘four’	mw-éèndá	‘nine’
	̀i-tàànú	‘five’	í-kùmí	‘ten’

Although a noun class prefix has been separated by a hyphen in each of the above forms, only the numbers one through five actually agree in noun class.

(72)	n.cl.	‘one’	‘two’	‘three’	‘four’	‘five’
	1	mù-lá lá				
	2		bà-bìrì	bà-sàtú	bà-nâ	bà-tàànú
	3	mù-lá lá				
	4		è-bìrì	è-sàtú	è-nâ	è-tàànú
	5	̀i-lá lá				
	6		à-bìrì	à-sàtú	à-nâ	à-tàànú
	7	cì-lá lá				
	8		bì-bìrì	bì-sàtú	bì-nâ	bì-tàànú
	9	̀n-dá lá				
	10		̀i-bìrì	̀i-sàtú	̀i-nâ	̀i-tàànú
	11	̀lù-lá lá				
	12	kà-lá lá				
	13		tù-bìrì	tù-sàtú	tù-nâ	tù-tàànú
	14	bù-lá lá	bù-bìrì	bù-sàtú	bù-nâ	bù-tàànú

As seen, the numeral ‘1’ occurs only with singular noun classes, while the numerals ‘2-5’ occur only in plural noun classes.

With respect to tone, the numerals show the following patterns:

(73)	‘farmer(s)’	‘tree(s)’	‘woman/women’	‘feast(s)’
1	ò-mú-límí mú-lá lá	ò-mú-tì mù-lá lá	ò-mú-kàzì mù-lá lá	è-cí-diìngídó cí-lá lá
2	à-bá-límí bà-bìrì	è-mí-tì è-bìrì	à-bá-kàzì bà-bìrì	è-bí-diìngídó bì-bìrì
3	à-bá-límí bà-sàtú	è-mí-tì è-sàtú	à-bá-kàzì bà-sàtú	è-bí-diìngídó bì-sàtú
4	à-bá-límí bá-nâ	è-mí-tì è-nâ	à-bá-kàzì bà-nâ	è-bí-diìngídó bí-nâ
5	à-bá-límí bà-tàànú	è-mí-tì è-tàànú	à-bá-kàzì bà-tàànú	è-bí-diìngídó bì-tàànú
6	à-bá-límí mú-kààgá	è-mí-tì mú-kààgá	à-bá-kàzì mú-kààgá	è-bí-diìngídó mú-kààgá

7	à-bá-límí	mú-sáánvú	è-mí-tì	mù-sáánvú	à-bá-kàzì	mù-sáánvú	è-bí-diìngídó	mú-sáánvú
8	à-bá-límí	mú-náánà	è-mí-tì	mú-náánà	à-bá-kàzì	mú-náánà	è-bí-diìngídó	mú-náánà
9	à-bá-límí	mw-éèndá	è-mí-tì	mw-éèndá	à-bá-kàzì	mw-éèndá	è-bí-diìngídó	mw-éèndá
10	à-bá-límí	í-kùmí	è-mí-tì	í-kùmí	à-bá-kàzì	í-kùmí	è-bí-diìngídó	í-kùmí

As seen in these forms, ‘tree(s)’ and ‘woman/women’ always end L before a numeral: H cannot be anticipated onto ‘tree(s)’ since it ends H-L, nor onto ‘woman/women’, since this would violate the two L tone requirement. On the other hand, toneless nouns such as ‘farmer(s)’ are realized with L on their augment, followed by all H tone, exactly as in citation form. In the case of the numerals 6 and 8-10, the Hs are likely from H tone anticipation, as these numerals have a phonological /L/ which triggers H tone insertion: /mu-kàaga/ ‘6’, /mu-naana/ ‘8’, /i-kùmí/ ‘10’. The numeral ‘7’ is itself toneless, so the H% can spread through it onto ‘farmers’. This leaves the numerals 1-5 which all start L. The numeral ‘1’ is underlyingly toneless. The numerals 2, 3 and 5 have an initial /L/ which is required to double: /bà-bìli/, /bà-sàtu/, /bà-tàanu/. As seen from ‘four farmers’ and ‘four feasts’, the numeral 4 appears to be toneless, i.e. /ba-naà/, since the H can originate from the stem. This contrasts with its apparent /L/ in (74).

While numerals generally lack an augment in normal attributive (post-nominal) position, when they do take an augment, adding a meaning of definiteness, the tones are as follows:

(74)	ò-mú-lálá	‘one, the one’	ò-mú-kààgá	‘the six’
	á-bà-bìrì	‘the two’	ò-mú-sáánvú	‘the seven’
	á-bà-sàtú	‘the three’	ò-mú-náánà	‘the eight’
	á-bá-nâ	‘the four’	ò-mw-éèndá	‘the nine’
	á-bà-tàànú	‘the five’	é-í-kùmí	‘the ten’

As seen, the toneless augment is realized L on the numerals ‘1’ and ‘6-9’. It also would have been realized H on the numeral ‘10’ except that it becomes H to avoid a rising tone on *è-í. While the prefix on ‘4’ was said to be toneless in (73), *á-bá-nâ* appears to require the prefix to be /L/. Thus, /a-bà-naà/ first becomes *á-bà-nâá* by HTI, and then *á-bá-nâ* by HTP (and final vowel shortening).

Of interest is how higher numbers are formed. As seen in (75), the noun class often changes, but without any modification of the tones:

(75)	ì-bìrì	‘2’	à-bìrì	‘20’	bí-kùmí	bì-bìrì	‘200’	ń-kùmì	ì-bìrì	‘2000’
	ì-sàtú	‘3’	à-sàtú	‘30’	bí-kùmí	bì-sàtú	‘300’	ń-kùmì	ì-sàtú	‘3000’
	ì-nâ	‘4’	à-nâ	‘40’	bí-kùmí	bì-nâ	‘400’	ń-kùmì	ì-nâ	‘4000’
	ì-tàànú	‘5’	à-tàànú	‘50’	bí-kùmí	bì-tàànú	‘500’	ń-kùmì	ì-tàànú	‘5000’
	mú-kààgá	‘6’	ń-kààgá	‘60’	lú-kààgá		‘600’	ká-kààgá		‘6000’
	mù-sáánvú	‘7’	ń-sáánvú	‘70’	lù-sáánvú		‘700’	kà-sáánvú		‘7000’
	mú-náánà	‘8’	cí-náánà	‘80’	lú-náánà		‘800’	ká-náánà		‘8000’
	mw-éèndá	‘9’	c-éèndá	‘90’	lw-éèndá		‘900’	k-éèndá		‘9000’
	í-kùmí	‘10’	cí-kùmí	‘100’	lú-kùmí		‘1000’	mú-twààló ³⁰		‘10000’

³⁰ Unlike Luganda, Lusoga does not use the expected form *ká-kùmí*. 100,000 is expressed as *mí-twààlò íkùmí* (lit. ten ten-thousands). Higher numbers include *kà-kátré* ‘1,000,000’ (cf. *bù-kátré* *bù-bìrì* ‘2,000,000’) and *ká-sìrìvù* ‘billion’ (cf. *bù-sìrìvù* *bù-bìrì* ‘two billion’).

What the above shows is that the words formed with the stems ‘2-5’ are numerals potentially agreeing with the head noun, which can be the base-10 word, e.g. 20 = ‘two tens’ (from *má-kùmì à-bìrì*, class 6, where *má-kùmì* ‘tens’ is optional), 200 = ‘two hundreds’ (class 8), 2000 = ‘two thousands’ (class 10). On the other hand, words formed with the stems ‘6-10’ are nouns which do not agree, but do change their noun class to form different powers of ten. Other numbers are formed by concatenation, without any remarkable tonal changes, e.g. *í-kùmì nà ñ-dálá* ‘11’, *í-kùmì nà ì-bìrì* ‘12’ etc. (The prefix of *ì-nâ* ‘4’ and *à-nâ* ‘forty’ is exceptionally long.)

5.5. Other quantifiers and determiners

In this brief section I consider a few other nominal modifiers. The first of these, *bùlì* ‘every, each’, precedes the noun:

- (76) a. *bùlì mù-límí* ‘every farmer’
bùlì mú-kàzí ‘every woman’
bùlì cí-kópò ‘every cup’
 b. *bùlì bà-límí* ‘each group of farmers’
bùlì bá-kàzí ‘each group of women’
bùlì bí-kópò ‘each set of cups’

Used with a singular noun, the meaning is ‘every’ or ‘each’. When used with a plural or a mass or liquid noun, the meaning is ‘each group’ or ‘each type’ (cf. class 6 *bùlì má-àdhí* ‘every type of water’). As seen, the following noun occurs with its citation tones, but without its augment. If the noun begins with a H tone prefix, this H does not spread onto *bùlì*. However, *bùlì* assigns a H tone to the preceding word exactly like a demonstrative:

- (77) a. *ò-kú-mw-á* *bùlì mù-límí* ‘to shave every farmer’
ò-kú-bál-á *bùlì mù-límí* ‘to count every farmer’
ò-kú-lágír-á *bùlì mù-límí* ‘to command every farmer’
ò-kú-súmúlú-á *bùlì mù-límí* ‘to untie every farmer’
 b. *ò-kú-ty-à* *bùlì mù-límí* ‘to fear every farmer’
ò-kú-bòn-á *bùlì mù-límí* ‘to see every farmer’
ò-kú-ghùlìr-á *bùlì mù-límí* ‘to hear every farmer’
ò-kú-kàlàkát-á *bùlì mù-límí* ‘to scrape every farmer’

In (77a) the toneless infinitives have a L followed by all H tone. In (77b) only the monosyllabic /L/ verb stem doesn’t receive a H tone (cf. *ò-mú-tì gùnó* ‘this tree’). As in the case of demonstratives, *ò-kú-bòn-á* *bùlì mù-límí* receives a H in violation of the two L tone constraint (cf. *ò-mú-sòtá gùnó* ‘this snake’).

The other modifiers follow the noun. These include the modifiers ‘only’ and ‘all/whole’, which can combine with personal persons and occur in all noun classes, as in (78).

- (78) n.cl. ‘only’ ‘all/whole’ ‘many’ independent pronouns
 1 *zèènkâ* *zénázénà* 1sg. *ññzé* ‘me’
wèènkâ *wénáwénà* 2sg. *ìwé* ‘you sg’

stem, the noun becomes all H except for the initial syllable: mù-límí =cì ‘which farmer?’. When the preceding noun has an underlying /L/, the following outputs are observed:

(80)	σ	/L/	:	mú-tì	→	mú- ⁴ tí =cì	‘which tree?’
	σ-σ	/L-∅/	:	mú-kàzì	→	mú-kàzí =cì	‘which woman?’
		/∅-L/	:	bí-kópò	→	bí-kó ⁴ pó =cì	‘which cups?’
	σ:-σ	/L∅-∅/	:	cí-wùùka	→	cí-wùùká =cì	‘which insect?’
		/∅L-∅/	:	ká-sáàlè	→	ká-sáàlé =cì	‘which arrow?’
		/∅∅-L/	:	cí-déédè/	→	cí-déé ⁴ dé =cì	‘which grasshopper?’
	σ-σ-σ	/L-∅-∅/	:	bú-thùpùzi	→	bú-thùpùzí =cì	‘which corruption?’
		/∅-L-∅/	:	mú-pákàsì	→	mú-pákàsí =cì	‘which porter?’
		/∅-∅-L/	:	bú-vúbúkà/	→	bú-vúbú ⁴ ká =cì	‘which adolescence?’

As can be seen, =cì assigns a H tone to the preceding noun in all cases. When the noun ends H-L, the result is a downstepped H (from the H-LH sequence); in other cases the nouns end H. As also seen, =cì does not condition HTP the way that monosyllabic possessive enclitics do (cf. (61) above). As seen in (81), enclitics potentially produce multiple downsteps in sequence:

(81)	a-ta-a	=muu	=kuu	=cii	buli	lunaku	→	á-tá-á	= ⁴ múú	= ⁴ kúú	= ⁴ cí	bùli	lúnàkú
	⊥	⊥	⊥	⊥	⊥	⊥							
	H L	H L	H L	H L	H L	H L		H L	H %				
	s/he-puts	in	a.little	what	every	day							
	‘what does s/he put a little of in every day?’												

In (81) only HTI from the first enclitic /=mùu/ ‘in’ conditions HTP with its lexical host, while the the HTI triggered by /=kù/ ‘a little’, /=cii/ ‘which’ and /bùli/ ‘every’ produces a downstep with the preceding /L/. (81) also shows that each monosyllabic enclitic is underlyingly bimoraic, just like other monosyllabic stems (e.g. nouns, adjectives).

This completes the survey of noun modifiers.

6. Summary and conclusion

In the preceding sections the various tonal properties of nouns and noun modifiers were examined. While the above survey is certainly not complete (we have not considered ‘noun of noun’ constructions marked by the connective /-a/, for instance), it is representative of what is found in the language. Specifically, it has been firmly established that an analysis with a privative /L/ vs. ∅ contrast is not only viable, but preferable to a synchronic analysis that takes an underlying /H/ through the diachronic stages that have produced current Lusoga. As seen in many of the above examples, a L (or sequence of Ls) triggers H tone insertion (HTI) within words, clitic groups and phrases. Of particular interest is the rather impressive range of conditions on HTI placed by different constructions. There are at least four distinct cases affecting head nouns:

- (82) a. HTI on all nouns with HTP: H enclitics ‘your sg.’, ‘his/her’ (61)
- b. HTI on all nouns without HTP: enclitic /=cì/ ‘which’ (81)
- c. HTI on nouns only if at least one L still precedes: /-ìno/ ‘this, these’ etc. (67)

- d. HTI on nouns only if they end in Ø: ‘my’ + noun (61), 68)

Although beyond the scope of this study, there are similar distinctions involving verbs and other constituents in full sentences (cf. Hyman 2016). A full study of the verb tones has also been untaken and will be reported on soon. The various parts of the verbal paradigm provide both confirmation of the general approach taken to noun phrase tonology, but also some additional issues. Since I began with the affirmative infinitive tones, let me conclude by briefly considering the corresponding negative forms.

As is common in Eastern Bantu, the negative infinitive is not marked by class 15 *ku-*, but rather by class 14 *bu-*, which is immediately followed by the negative prefix *-ta-*:

(83)	*L root		*H root	
1σ	ó-bú-tá-gw-â	‘to not fall’	ó-bù-tà-ty-á	‘to not fear’
	ó-bú-tá-mw-â	‘to not shave’	ó-bù-tà-ly-á	‘to not eat’
2σ	ó-bú-tá-bál-à	‘to not count’	ó-bù-tà-bòn-á	‘to not see’
	ó-bú-tá-lím-à	‘to not cultivate’	ó-bù-tà-kùb-á	‘to not beat’
3σ	ó-bú-tá-lágìr-á	‘to not command’	ó-bù-tà-ghùlìr-á	‘to not hear’
	ó-bú-tá-lúmùk-á	‘to not run away’	ó-bù-tà-sèkùl-á	‘to not pound’
	ó-bú-tá-súmùlùl-á	‘to not untie’	ó-bù-tà-kàlàkàt-á	‘to not scrape’
	ó-bú-tá-kálìrìr-á	‘to not grill’	ó-bù-tà-fùkàmìr-á	‘to not kneel’
5σ	ó-bú-tá-lágìr-àgàn-á	‘to not command e.o.’	ó-bù-tà-ghùlìr-àgàn-á	‘to not hear each other’
	ó-bú-tá-súmùlùl-ìr-á	‘to not untie for (s.o.)’	ó-bù-tà-kàlàkàt-ìr-á	‘to not scrape for (s.o.)’
	STEM = HL ⁿ H		STEM = L ⁿ H	

In order to produce the observed tone patterns, we need the L tones to be distributed as follows (to which the H% boundary tone will later link to the final vowel):

(84) a.	ó-bù-tà-súmùlùl-à	‘to not untie’	ó-bù-tà-kàlàkàt-à	‘to not scrape’
	$\begin{array}{c} \quad \quad \diagdown \\ \text{L} \quad \text{L} \quad \text{L}^* \end{array}$		$\begin{array}{c} \quad \quad \quad \diagdown \\ \text{L} \quad \text{L} \quad \text{L} \quad \text{L}^* \end{array}$	
b.	ó-bù-tà-súmùlùl-à	‘to not untie’	ó-bù-tà-kàlàkàt-à	‘to not scrape’
	$\begin{array}{c} \vdots \quad \quad \quad \vdots \quad \diagdown \\ \text{H} \quad \text{L} \quad \text{L} \quad \text{H} \quad \text{L}^* \end{array}$		$\begin{array}{c} \vdots \quad \quad \quad \quad \diagdown \\ \text{H} \quad \text{L} \quad \text{L} \quad \text{L} \quad \text{L}^* \end{array}$	
c.	ó-bú-tá-súmùlùl-à	‘to not untie’	ó-bù-tà-kàlàkàt-à	‘to not scrape’
	$\begin{array}{c} \quad \quad \quad \quad \diagdown \quad \vdots \\ \text{H} \quad \text{L} \quad \text{L} \quad \text{H} \quad \text{L}^* \quad \text{H}\% \end{array}$		$\begin{array}{c} \quad \quad \quad \quad \diagdown \quad \vdots \\ \text{H} \quad \text{L} \quad \text{L} \quad \text{L} \quad \text{L}^* \quad \text{H}\% \end{array}$	
	$\begin{array}{c} \downarrow \quad \downarrow \\ \emptyset \quad \emptyset \end{array}$			

In both forms in (84a) the prefix *bù-* is L, despite noun prefixes being toneless in general. This is required to get the augment to be H tone [ó-] by HTI. The negative prefix is also /L/. This is best seen in the form on the right: If /-tà-/ had been toneless, the /L/ verb /-kàlakat-/ would have assigned a H to it by HTI. Finally, there is a need for a suffixal or “melodic” L tone marked as L*. As indicated, the suffixal L links from the second mora to the final vowel of the verb stem. In (84b), HTI inserts a H onto the augment, due to the L of /bù-/. In the form in the

left, HTI also inserts a H tone onto the toneless initial mora of /-sumulul-/. The fact that this form now has two inserted H tones leads to the deletion of the intervening Ls and HTP in (84c), where the final H% boundary tone also delinks the final L on both forms. Other verb forms show a wide range of tonal interactions between the prefixal, root, and suffixal tones assigned by various combinations of tense, aspect, mood, polarity and clause type—as elsewhere in Bantu (see the Bickmore & Odden 2014 and the references cited therein). While this raises further interesting issues and requires a few tweaks here and there, the above /L/ vs. Ø analysis can be shown to handle all of the facts as well or better than alternative interpretations of the Lusoga tone system. Herewith a promissory note to provide such a demonstration in the (hopefully) near future.

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