

## Tone, Syntax, and Prosodic Domains in Luganda: A Tutorial

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*The documentation of... descriptive generalizations is sometimes clearer and more accessible when expressed in terms of a detailed formal reconstruction, but only in the rare and happy case that the formalism fits the data so well that the resulting account is clearer and easier to understand than the list of categories of facts that it encodes.... [If not], subsequent scholars must often struggle to decode a description in an out-of-date formal framework so as to work back to... the facts.... which they can re-formalize in a new way. Having experienced this struggle often ourselves, we have decided to accommodate our successors by providing them directly with a plainer account. (Akinlabi & Liberman 2000:24)*

- (1) The goals of this talk are to present
  - a. an overview of the syntax-phonology interface in Luganda, synthesizing from our previous work
  - b. an account of prosodic domain formation and other effects, especially as concerns subordinate clauses:
    - i. internally: how the prosodic domains within them compare to those in main clauses
    - ii. externally: how they form prosodic domains with the constituents in a main clause
  
- (2) Some general preliminaries concerning Luganda and the current study
  - a. Luganda is one of the best studied Bantu languages, which should, in principle, be an advantage
  - b. however, its prosodic phonology is among the most intricate and complex of any language
    - i. the most “well-behaved” Bantu languages focus attention primarily on a single prosodic domain, typically the phonological phrase, which is reasonably straightforwardly defined and often biuniquely marked, e.g. by penultimate lengthening and/or the formation of tonal contours
    - ii. in Luganda, by contrast, quite complex and elusive (morpho)syntactic conditions define several non-biuniquely marked prosodic domains, which potentially intersect and recycle
  - c. in addition, if not as a result, there have been important questions concerning the very nature of the tone system and how to analyze it (e.g. whether it is “accentual”, the “globality problem”, etc.)
  - d. this raises the important issue of the relation between theory and description (cf. the above quote)
  
- (3) Outline of the talk
  - a. the lexical tone system
  - b. the prosodic domains
    - i. the tone group (TG): defined by L tone deletion (LTD)
    - ii. the clitic group (CG): defined by final vowel shortening (FVS)
    - iii. the tonal phrase (TP): defined by H tone anticipation (HTA)
  - c. subordinate clauses
    - i. subject- and object relative clauses (SRC, ORC)
    - ii. subject- and object clefts (S-cleft, O-cleft)
    - iii. temporal clauses
    - iv. complement clauses (indicative, subjunctive)

} sometimes marked by H tone reduction (HTR)
  
- (4) The basic elements of the tone system (to be illustrated and subject to discussion), a 2-3-2 system,  $\mu = \text{TBU}$ 

<i>level of representation</i>	<i>tonal contrasts</i>	<i>description</i>
a. underlying input	/H, Ø/	privative
b. intermediate	H, L, Ø	ternary
c. surface output	H, L	binary (+ HL, ↓H, with restricted distributions)

NB. The “intermediate” level refers roughly to the output of the lexical phonology, hence the three levels might be identified as morphophonemic, phonemic, and (systematic) phonetic. NB. \*LH (rising tone)

- (5) Luganda words with an underlying /H/ obligatorily have a H to L pitch-drop: (ˊ) = H, (ˋ) = L, ( ) = Ø

# syllables	underlying	intermediate	output with %L ... H% boundary tones	
a. monosyllabic	/ki-bé/	ki-bê	ki-bê	‘jackal’ (ˋ) = HL falling
b. bisyllabic	/ki-kópo/	ki-kópò	ki-kópò	‘cup’
	/ki-síkí/	ki-sikî	ki-sikî	‘log’
c. trisyllabic	/ki-sásilo/	ki-sásilo	ki-sásilò	‘rubbish’
	/ki-yulífu/	ki-yulífù	ki-yùlífù	‘torn’ (cl. 7)
d. quadrisyllabic	/ki-bónelezo/	ki-bónèlezo	ki-bónèlézó	‘punishment’
	/ki-begábega/	ki-begábèga	ki-bègábègá	‘shoulder’

- (6) Luganda words which lack an underlying /H/ acquire their LH<sup>n</sup> output tones at the phrase level

# syllables	underlying	intermediate	output: %L ... H%	alternative
a. monosyllabic	/ki-de/	ki-de	ki-dé	‘bell’ * [ μ >> LINK(%H)
b. bisyllabic	/ki-tabo/	ki-tabo	ki-tábó	‘book’ H
c. trisyllabic	/ki-lagilo/	ki-lagilo	ki-lágíló	‘command’ + default L
quadrisyllabic	/ki-sanilizo/	ki-sanilizo	ki-sánílízó	‘comb’

- (7) Linking of the %L ... H% boundary tones to moras: NB. pre-pausal H% is “optional”, indicates ‘finality’

- %L links L→R on all the toneless moras until it meets a /H/; if there is no /H/, it goes on the first mora
- H% links R→L on all the toneless moras until it meets a L; if the word ends H-L, H% doesn’t link
- toneless words (in fact, phrases) thereby acquire a L-H<sup>n</sup> pattern; maybe %L is restricted to first mora

- (8) Verb paradigm: toneless verb root -sib- ‘tie’ with subject marker (SM) and object marker (OM)

	underlying	intermediate	output: %L ... H%	
a. SM = Ø	/a-sib-a/	a-sib-a	à-síb-á	‘s/he ties’
b. + OM = Ø	/a-ki-sib-a/	a-ki-sib-a	à-kí-síb-á	‘s/he ties it’
c. SM = /H/	/bá-sib-a/	bá-sib-a	bá-síb-á	‘they tie’
d. + OM = Ø	/bá-ki-sib-a/	bá-ki-sib-a	bá-ki-síb-á	‘they tie it’

- (9) Verb paradigm: /H/ verb root -láb- ‘see’ with subject marker (SM) and object marker (OM)

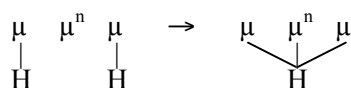
	underlying	intermediate	output: %L ... H%	
a. SM = Ø	/a-láb-a/	a-láb-à	à-láb-à	‘s/he sees’
b. + OM = Ø	/a-ki-láb-a/	a-ki-láb-à	à-ki-láb-à	‘s/he sees it’
c. SM = /H/	/bá-láb-a/	bá-láb-a	bá-láb-á	‘they see’
d. + OM = Ø	/bá-ki-láb-a/	bá-ki-láb-à	bá-ki-láb-à	‘they see it’

= H tone plateauing (10a) + L tone insertion (11a)

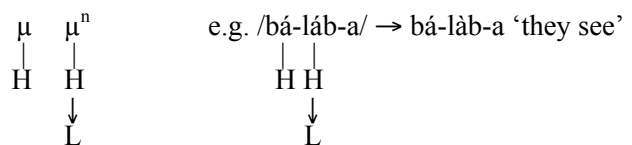
- (10) The following is seen from the verb paradigm in (9)

- when there is a /H-Ø-H/ sequence, a H tone plateau is formed to derive H-H-H, as in (11a)
- when there is a /H-H/ sequence, this becomes H-L by Meeussen’s Rule (H → L, not Ø), as in (11b)

- (11) a. H tone plateauing (HTP)



- b. Meeussen’s Rule (MR)



- c. L tone insertion (LTI): If after the application of HTP and MR there is no L, insert a L after the last H, /a-láb-a/ → a-láb-à ‘s/he sees’, /ki-bónelezo/ → ki-bónèlezo ‘punishment’

- (12) MR creates all of the intermediate Ls and the “globality problem”: the L from MR remains distinct from  $\emptyset$

<i>underlying</i>	<i>intermediate</i>	<i>output</i>	
/a-bá-tá-lí-láb-ilil-a/	a-bá-tà-li-làb-ilil-a	à-bá-tà-li-làb-ilil-á	‘they who will not look after’ (F <sub>2</sub> )
$\begin{array}{cccc}   &   &   &   \\ H & H & H & H \end{array}$	$\begin{array}{cccc}   &   &   &   \\ H & L & L & L \end{array}$	$\begin{array}{ccccccc}   &   &   &   &   &   &   \\ \%L & H & L & L & L & & H\% \end{array}$	(cf. à-bá-tà-li-làb-ilil-à w/o H%)

- (13) A fuller derivational account showing interaction of MR, LTD, and HTP (suffixal /H/ links from V<sub>2</sub> to FV)

<i>underlying</i>	<i>intermediate</i>	<i>output</i>	
/a-bá-náa-láb-ilil-á/	a-bá-náa-láb-ilil-à	à-bá-náa-láb-ilil-á	‘they who will look after’ (F <sub>1</sub> )
$\begin{array}{cccc}   &   &   &   \\ H & H & H & H \\ & & & \swarrow \\ & & & L \\ & & & \downarrow \\ & & & \emptyset \end{array}$	$\begin{array}{cc} \swarrow & \swarrow \\ H & L \end{array}$	$\begin{array}{ccccccc}   &   &   &   &   &   &   \\ \%L & H & & L & & H\% \end{array}$	(or à-bá-náa-láb-ilil-à w/o H%)

- (14) L tone deletion (LTD) :  $L \rightarrow \emptyset / H \_ H$  (followed by H tone plateauing (HTP))

- (15) This account of the lexical tonology predicts that the “intermediate” representation of a word cannot have:

- a H without a following L : not surface-true, e.g. /a-sib-a/ → à-sib-á ‘s/he ties’ (with H%)
- a L without a preceding H : not surface-true, e.g. /a-sib-a/ → à-sib-à (without H%)
- a H-L-H sequence : not surface-true, e.g. /bá-sib-a/ → bá-sib-á ‘they tie’ (with H%)
- a L before a H : not surface-true, e.g. /?/ → bà-àkà-sibá ‘they have just tied’
- exactly two H moras in seq. : not surface-true, e.g. /?/ → mù-wálábù ‘an Arab’
- an all H word : not surface-true, e.g. / $\mu$  wa-ngo/ → Wángó ‘Mr. Leopard’

- (16) LTD and HTP also apply postlexically: Sometimes when two words with a H to L pitch drop are concatenated, the first loses its L(s) and there is a H plateau through the two-word sequence (tone group)

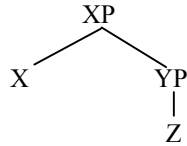
- báálàbà + kibê → báálábá kíbê ‘they saw *a jackal*’ (P<sub>2</sub>) (with post-verbal focus)
  - báálàbà + kikópò → báálábá kíkópò ‘they saw *a cup*’
  - báálàbà + kisikî → báálábá kísikî ‘they saw *a log*’
  - báálàbà + kisásilo → báálábá kísásiló ‘they saw *rubbish*’
- $\begin{array}{ccc} H H H & H & \\ \downarrow \downarrow & \downarrow & \\ L L & L & \\ \downarrow \downarrow & & \\ \emptyset \emptyset & & \end{array}$
- $\begin{array}{ccc} \swarrow & \swarrow & \swarrow \\ H & L & H\% \end{array}$

- (17) LTD can apply between the verb and any kind of complement within the same clause ( $\emptyset$  = deleted L)

- tw-áá-génd-á tútùtú ‘we went slowly’ (P<sub>2</sub>)  
H  $\emptyset$   $\emptyset$  H L H%
  - tw-áá-génd-á lúfí ‘we went the day before yesterday’  
H  $\emptyset$   $\emptyset$  HL
  - tw-áá-génd-á ná= wálúsimbí ‘we went with Walusimbi’  
H  $\emptyset$   $\emptyset$  HL H%
  - tw-áá-láb-w-á wálúsimbí ‘we were seen by Walusimbi’  
H  $\emptyset$   $\emptyset$  HL H%
- vs.
- tw-áá-mù-làb-à wálúsimbí ‘we saw him, Walusimbi’ (\*tw-áá-mù-láb-á wálúsimbí)  
H L L L HL H% H  $\emptyset$   $\emptyset$   $\emptyset$  HL H%

- (18) The domain of postlexical LTD has parallels in related Bantu languages, e.g. tone reduction in Haya, and is reminiscent of “conjunct” verb forms in others (Cibemba, Citonga, Kirundi/Kinyarwanda etc.).

(19) Definition of the tone group (TG): [X+Z]



where: (i) X ≠ [+FOCUS]  
(ii) Z ≠ [+AUGMENT]

(Z = roughly a phonological word (PW))

(20) Most affirmative TAMs are [-F] and form a TG with what follows; negatives are [+F], do not form a TG

a.	PRES	tú-láb-á wálúsimbí H Ø HL H%	tè-tú-làb-à wálúsimbí %L H L L HL H%	‘we (don’t) see Walusimbi’
b.	PERF	tú-láb-yé wálúsimbí H Ø Ø HL H%	tè-tú-láb-yé wálúsimbí %L H Ø HL HL H%	‘we have(n’t) seen Walusimbi’ (-ye < PB *-id-ε)
c.	P <sub>1</sub>	tw-áá-láb-yé wálúsimbí H Ø Ø HØ HL H%	tè-twáá-làb-yè wálúsimbí %L H L L HL H%	‘we saw/didn’t see Walusimbi’
d.	P <sub>2</sub>	tw-áá-láb-á wálúsimbí H Ø Ø HL H%	tè-twáá-làb-à wálúsimbí %L H L L HL H%	‘we saw/didn’t see Walusimbi’
e.	F <sub>1</sub>	tú-náá-láb-á wálúsimbí H Ø H Ø HL H%	tè-tú-ú-láb-è wálúsimbí %L H H L HL H%	‘we will/won’t see Walusimbi’
f.	F <sub>2</sub>	tú-lí-láb-á wálúsimbí H Ø Ø HL H%	tè-tú-li-làb-á wálúsimbí %L H L L HL H%	‘we will/won’t see Walusimbi’
g.	NARR	ne tú-láb-á wálúsimbí %L H Ø Ø HL H%	nè tú-tà-làb-à wálúsimbí %L H L L L HL H%	‘and we saw/didn’t see W.’
h.	HORT	tù-làb-é wálúsimbí %L HØ HL H%	[no negative; use -lém- ‘fail to’]	‘let’s see Walusimbi’
i.	COND	twándí-láb-yé wálúsimbí H Ø Ø HØ HL H%	tè-tw-ándi-làb-yè wálúsimbí %L H L L L HL H%	‘we would(n’t) have seen W.’

(Negative F<sub>2</sub> shows H tone anticipation from Wálúsimbí onto the verb—see (44) below.)

(21) Some affirmative TAMs are [+F], “inherently focused”, and do not form a TG with what follows

a.	IMPER	lab-ílil-à wálúsimbí HL L HL H%	t-ó-làb-ilil-à wálúsimbí H L L L L HL H%	‘(don’t) look after Walusimbi’
b.	PERS	tú-kyáá-láb-à wálúsimbí H Ø H L HL H%	tè-tú-kyáá-láb-à wálúsimbí %L H Ø H L HL H%	‘we still/no longer see W.’
c.	INCEP	tw-aaka-láb-à wálúsimbí H L HL H%	tè-tú-nná-láb-à wálúsimbí %L H H L HL H%	‘we have(n’t) just seen W.’
d.	INF	o-ku-láb-à wálúsimbí H Ø HL H%	o-bu-tá-làb-à wálúsimbí %L H L L HL H%	‘to (not) see Walusimbi’

(22) [±F] minimal pair between homophonous [+F] plural imperative vs. [-F] hortative, both from /mu-lab-é/

a.	/mu-lab-é/ → mu-lab-ê H HL	‘see (pl.)!’ (L from LTI)
b.	mu-lab-é wálúsimbí HL HL H%	‘see (pl.) Walusimbi!’
c.	(yàgàlà) mù-làb-é wálúsimbí HØ HL H%	‘(he wanted) you (pl.) to see Walusimbi’

(23) A TG is not formed if Z is [+A], e.g. begins with the “initial vowel” (IV) augment (preprefix)

a.	bá-làb-á é-bí-kópò	‘they see cups’	bá-láb-á bí-kópò	‘they see <i>cups</i> ’
b.	bá-làb-á ó-bú-sáàlé	‘they see arrows’	bá-láb-á bú-sáàlé	‘they see <i>arrows</i> ’
c.	bá-làb-á á-bá-sáwò	‘they see doctors’	bá-láb-á bá-sáwò	‘they see <i>doctors</i> ’
	H L HL		H Ø H L	
	(“disjoint” / “even focus”)		(“conjoint” / “postverbal focus”)	

- (24) Although [-A] often correlates with post-verbal focus in the affirmative, negatives also require [-A]

	Z = [-A] after a negative verb (2 TGs, no LTD)	Z ≠ [+A] after a negative verb	
a.	tè-bá-làb-à bi-kópò ‘they don’t see the cups’	*tè-bá-làb-à è-bi-kópò	[class. 8]
b.	tè-bá-làb-à bù-sáàlé ‘they don’t see the arrows’	*tè-bá-làb-à ò-bù-sáàlé	[class 14]
c.	tè-bá-làb-à bà-sáwò ‘they don’t see the doctors’	*tè-bá-làb-à à-bà-sáwò	[class 2]
	H L L H L		

- (25) Summary of [±A] and [±LTD]: 3 out of 4 possibilities (‘they (do not) see cups’)

	Z = [-A]	Z = [+A]	
[-LTD]	tè-bá-làb-à bi-kópò	bá-làb-a e-bi-kópò	= 2 TGs
[+LTD]	bá-láb-á bí-kópò	*	= 1 TG

- (26) Conditions on [±A]: [-A] needs special licensing, hence having an IV is more common than not

- There are two [-A] licensers in Luganda: NEG (negation) and FOC (focus)
- NEG and FOC have scope only over what follows the verb
- [-A] is well-formed only if it is licensed by NEG or FOC
- [+A] is well-formed only if it is not so licensed

- (27) In isolation nouns are [+A] unless there is a (possibly Ø) copula

	<i>isolation noun</i>	‘they are ___’	‘they were ___’	‘the ones which were ___’	
a.	e-bi-kópò	bi-kópò	by-áá-lí bí-kópò	e-by-áá-li è-bi-kópò	‘cups’
b.	o-bu-sáàle	bu-sáàlé	bw-áá-lí bú-sáàlé	o-bw-áá-li ò-bù-sáàlé	‘arrows’
c.	a-ba-sáwò	ba-sáwò	b-áá-lí bá-sáwò	a-b-áá-li à-bà-sáwò	‘doctors’
			H Ø H L	H L H L	

- (28) Some additional points about the TG

- [±A] does not mean the same thing as presence vs. absence of the initial vowel (IV)
  - some IVs are not [+A]
  - some [+A]’s have no IV
- [+LTD] does not imply [-FOCUS]

- (29) Various word classes, e.g. names, show that it is the IV that blocks LTD, not “even focus”

- no LTD in a main clause negative (MCN) or relative clause negative (RCN), which are [+F]
 

te-bá-á-làb-à + walúsimbi → tè-bá-á-làb-à wálúsimbí ‘they did not see Walusimbi’ (P<sub>2</sub>)

a-bá-tá-á-làb-à + walúsimbi → a-bá-tá-á-làb-à wálúsimbí ‘they who did not see Walusimbi’
- LTD in a main clause affirmative (MCA) verb, whether even or post-verbal focus
 

bá-á-làb-à + wálúsimbi → bá-á-láb-á wálúsimbí ‘they saw Walusimbi/Walusimbi’
- LTD after a relative clause affirmative (RCA) verb where post-verbal focus is not possible
 

a-bá-á-làb-à + walúsimbi → à-bá-á-láb-á wálúsimbí ‘they who saw Walusimbi’ (\*Walusimbi)

- (30) Similarly LTD variation is seen with /na/ ~ /né/ ‘with’ + NP, independent of focus

- no LTD in a main clause negative (MCN) or relative clause negative (RCN)
 

te-bá-á-gènd-à + na mu-kázi → tè-bá-á-gènd-à nà mù-kázi ‘they did not go with a woman’

a-bá-tá-á-gènd-à + na mu-kázi → à-bá-tá-á-gènd-à nà mù-kázi ‘they who did not go with a woman’
- LTD in a main clause affirmative (MCA) verb, whether even or post-verbal focus
 

bá-á-gènd-à + né o-mu-kázi → bá-á-gènd-á né ó-mú-kázi ‘they went with a woman’ (even focus)

bá-á-gènd-à + na mu-kázi → bá-á-gènd-á ná mú-kázi ‘they went with a woman’ (post-v. focus)
- LTD after a relative clause affirmative (RCA) verb where post-verbal focus is not possible
 

a-bá-á-gènd-à + né o-mu-kázi → à-bá-á-gènd-á né ó-mú-kázi ‘they who went with a woman’











- b. mùg<sup>é</sup>nzí - tázzê ‘a delinquent debtor’ (1 TP, hence with HTP)  
 %L H HL

(60) Phrasal words with two TGs may become one TG when possessed (recall: N + Poss/Genitive = 1 TG)

- a. kyaa= kulábira =kô : kyàà= kùlábirá =kó kyê ~ kyàà= kulábirá =kó kyê ‘his/her example’  
 HL HL %L H L HØ HL %L H Ø HØ HL
- b. mwáámi-àkóóyè : mwáámi-àkóóyé yáá= múkàsà ~ mwáámi-àkóóyé yáá= kínénè ‘Kinene’s  
 H L H L H L H Ø H L H Ø H L easy-chair’

(61) Issues concerning relative (and other non-main) clauses: cleft, temporal and complement clauses

- a. what is their relation to the TG?  
 i. internally: do their constituents divide up into X and Z as in main clauses? (Answer: yes)  
 ii. externally: does their first PW function as Z after a main clause V? (Answer: yes and no)
- b. what is their relation to the TP?  
 i. internally: do their pre-verbal constituents group into separate TPs? (Answer: no)  
 ii. externally: do they group into the same TP as the preceding main clause? (Answer: yes and no)

(62) As in main clauses, [+A] and [+F] block LTD within a relative clause, e.g. subject relative clause (SRC)

- a. à-bà-kázi à-b-áá-làb-à è-bi-kópò ‘the women who saw the cups [+A]’  
 %L H L H L L H L (NB. subject relative verbs can take an IV, here a-)
- b. a-ba-kázi à-bá-tá-á-làb-à bì-kópò ‘the women who didn’t [+F] see the cups’  
 %L H L H H L L H L
- c. t-á-mányí bà-kázi b-áá-láb-á bí-kópò ‘he doesn’t know the women [-A] who saw the cups [-A]’  
 H HL HL H Ø Ø H L ([±A] augment agreement)
- d. à-mányí bá-kázi b-áá-láb-á bí-kópò ‘he knows *the women who saw the cups*’ [post-verbal focus]  
 HØ HL H Ø Ø H L ([±A] augment agreement; (62a,b) can also occur after à-mányí)

(63) Object relative clauses (ORC) require an -e complementizer immediately before the verb (= syntactic clitic)

- a. tw-áá-gùz-à è-bi-kópò wálúsìmbi byè y-à-léetà ‘we sold the cups that Walusimbi brought’  
 H L L HL HL L HL H% (class 8 /bi-e/ agreeing with e-bi-kópò ‘cups’)
- b. tw-áá-gùz-á bí-kópò wálúsìmbi byè y-à-léetà ‘we sold *the cups that Walusimbi brought*’  
 H Ø Ø H L HL L HL H%

NB. The vowel of [byè] is short, hence the ORC complementizer -e is not a phonological proclitic.

(64) Another rule, H tone reduction (HTR), (optionally) targets a SRC verb whose head is [-A]

- a. tú-làb-á á-bá-kázi à-bá-zìn-á ‘we see the women [+A] who are dancing’ (\*à-bà-zìn-â)  
 H L H L H L H%
- b. tè-tú-làb-à bà-kázi bá-zìn-á ‘we don’t see the women [-A] who are dancing’  
 %L H L L HL H L H%
- c. tè-tú-làb-à bà-kázi bà-zìn-â ‘we don’t see the women [-A] who are dancing’  
 %L H L L HL L L HL

(65) Analysis of the different realizations: bá-zìn-à vs. bà-zìn-â (NB. =H is a clitic-like suffixal tone)

- a. normal realization [bá-zìn-à]  
 /ba-zin-a/  
 | |  
 H H =H  
 ↓ ↓  
 L L (MR)  
 ( → bá-zìn-á with H%)
- b. realization with HTR [bà-zìn-â]  
 /ba-zin-a/  
 | |  
 H H =H  
 ↓ ↓ ↓  
 L L L (HTR, LTI)

(66) H tone reduction (HTR), also (optionally) targets an ORC verb whose head is [-A]

- a. tú-gùl-á é-bí-kópò byè tú-làb-á ‘we buy the cups [+A] that we see’ (\*tù-làb-â)  
 H L H L H L H%

- b. tè-tú-gúl-á bì-kópò byè tú-làb-á ‘we don’t buy the cups [-A] that we see’ (from tú-làb-à + H%)  
 %L H HL H L H L H L H%
- c. tè-tú-gúl-á bì-kópò byè tù-làb-â ‘we don’t buy the cups [-A] that we see’  
 %L H HL H L L L HL

(67) The same HTR variations are observed on a headless SRC verb

- a. tú-làb-á á-bá-zìn-á ‘we see the ones [+A] who are dancing’ (\*à-bà-zìn-â)  
 H L H L H L H%
- b. tè-tú-làb-à bá-zìn-á ‘we don’t see the ones [-A] who are dancing’ (from bá-zìn-à + H%)  
 %L H L L H L H%
- c. tè-tú-làb-à bà-zìn-â ‘we don’t see the ones [-A] who are dancing’  
 %L H L L L L HL

(68) The same HTR variations are observed on a headless ORC verb

- a. tú-gùl-á byè tú-làb-á ‘we buy the ones [+A] that we see’ (\*tù-làb-â)  
 H L H L H L H%
- b. tè-tú-gùl-á byè tú-làb-á ‘we don’t buy the ones [-A] that we see’ (from tú-làb-à + H%)  
 %L H HL H L H%
- c. tè-tú-gùl-á byè tù-làb-â ‘we don’t buy the ones [-A] that we see’  
 %L H HL L L HL

(69) LTD can take place between the main verb, the -e complementizer, and the relative verb

- a. tú-gùl-á byè tú-làb-á ‘we buy the ones that we see [+A]’ = even focus (with HTA)  
 H L H L H L H%
- b. tú-gùl-á byè tú-làb-á ‘we buy *the ones that we see* [-A]’ = post-verbal focus (with LTD, HTP)  
 H Ø H L H L H%
- c. tú-gùl-á byè tú-láb-â ‘we buy *the ones that we see* [-A]’ (< tù-làb-â via HTR, LTD, HTP)  
 H Ø Ø HL L L HL

(70) -e is used for any non-subject relative clauses (NSRC), including the temporal built on lu-nákù ‘day’ (cl. 11)

- a. tw-áá-bùúz-á lwè y-à-gwâ ‘we asked (on) the day he fell’ (floating H, hence L on lwè)  
 H L L H L HL
- b. tw-áá-búúz-á lwè y-à-gwâ ‘we asked *when* (they day) he fell’  
 H Ø Ø H L HL
- c. tw-áá-búúz-á lwé y-á-gwâ ‘we asked *for the day he fell*’  
 H Ø Ø H Ø HL

(71) A number of grammatical morphemes have a pre-floating H, e.g. ‘near speaker’ demonstrative /’-nò/ ‘these’ (cf. na + ’ bì-nò → nà bí-nò ‘with these’); Q: Which markers have floating H? Considerable variation!

- a. no LTD after a negative verb  
 te-b-áá-làb-à + ’ bì-nò → tè-b-áá-làb-á bì-nó ‘they did not see these’ (P<sub>2</sub>)  
 H L L H L L %L H L H L H%
- b. LTD after an affirmative verb with either even or post-verbal focus  
 b-áá-làb-à + ’ bì-nò → b-áá-láb-á bì-nó ‘they did not see these/*these*’  
 H L L H L L H Ø H L H%
- c. LTD after an affirmative relative clause verb where post-verbal focus is not possible  
 a-b-áá-làb-à + ’ bì-nò → à-b-áá-làb-á bì-nó ‘they who saw these’  
 H L L H L L %L H L H L H%

(72) LTD is possible between the subject of an ORC (NSRC) and the main verb

- a. y-à-génd-à wálúsimbì lwè y-á-jj-à ‘he left the day Walusimbi came’  
 %L H L HL L H L

- b. y-à-génd-á wálúsìmbì lwè y-á-jj-à ‘he left *the day Walusimbi came*’  
 %L H Ø HL L H L

(73) The same is seen with the complementizer bwè ‘when, how’ built on bû-ddè ‘time’ (cl. 14)

- a. tw-áá-sèk-à wálúsìmbì bwè y-à-zín-à ‘we laughed when Walusimbi danced’  
 H L L HL L H L
- b. tw-áá-sék-á wálúsìmbì bwè y-á-zín-à ‘we laughed *only when/at the way Walusimbi danced*’  
 H Ø Ø HL L H L

(74) LTD potentially distinguishes between direct and indirect questions

- a. y-à-búúz-à àní gwè w-à-láb-à ‘he asked who you saw’  
 %L HL L HL H L
- b. y-à-búúz-á àní gwè w-à-láb-à ‘who did he ask that you saw?’ / ‘he asked *who you saw*’  
 %L HØ Ø HL H L

(75) Note LTD before a temporal adverb which clearly belongs to the lower clause but cannot occur after -e

- a. à-láb-à è-bì-kópò jjô byè tw-áá-gùl-á ‘s/he sees the cups that yesterday we bought’ (\*byè jjô)  
 %L H L HL HL H L H%
- b. à-láb-á jjô byè tw-áá-gùl-á ‘s/he sees what *yesterday* we bought’ (\*byè jjô)  
 %L H Ø HL H L H% (à-láb-à is also ok)

(76) Conclusion: Raised elements from a relative clause can serve as Z in TG formation.

(77) Unlike main clauses, HTA applies from the verb onto the subject of a SRC

- a. à-bà-lìmi b-áá-zín-á ‘the farmers danced’ (= 2 TPs)  
 %L H L H%
- b. à-bá-límí á-b-áá-zín-á ‘the farmers who danced’ (= 1 TP)  
 %L H L H%

(78) Similarly, HTA applies through the -e complementizer onto the relativized noun of an ORC/NSRC

- a. à-bá-límí bé tw-áá-làb-á ‘the farmers that we saw’  
 %L HL H%
- b. à-bá-límí wálúsìmbì bè y-a-láb-à ‘the farmers that Walusimbi saw’  
 %L HL HL

(79) HTA revised: the H is anticipated onto preceding toneless moras in the TP, even through L tones from HTR

- a. te-bá-bál-á bì-kópò byè tù-láb-â ‘they don’t count the cups that we see’  
 %L H HL H L HH =HL  
 ↓ ↓  
 L L (NB. Not clear if byè is toneless or has a L tone)
- b. te-bá-bál-á bì-tábó byé tú-láb-â ‘they don’t count the books that we see’  
 %L H HL LL =HL

(80) Except for WH-clefts, non-subject (e.g. object-) clefts require HTR, constituting two TPs, hence no HTA

- a. àní gwè bá-láb-á ‘who do they see?’ cf. bá-láb-á àní ‘who do they see?’  
 %L H L L (no HTR, no H%) H Ø H
- b. mù-lìmi gwè bà-láb-â ‘it’s a farmer that they see’ cf. ò-mú-límí gwé bá-láb-á  
 %L HH =HL %L H L H%  
 ↓ ↓  
 L L ‘the farmer that they see’

- c. wàno wè bà-mù-láb-à ‘it’s here that they see him’ cf. wàno wè tú-bí-láb-à [ wàlúngì  
 %L L H H L %L L H H L %L H L  
 ↓  
 L  
 ‘here where we see them is nice’
- d. gwè bá-làb-á gwè b-ààgál-à ‘it’s the one they see that they want’ (\*bà-làb-à)  
 %L H L HL H H L  
 ↓  
 L

(81) Subject-clefts do not undergo HTR: their complementizer is a phonological proclitic, keeping its length

- a. bà-lìmi bèè= bá-zìn-á ‘it’s the farmers who are dancing’ (\*bèè= bà-zìn-à)  
 %L H L H% L L HL
- b. bì-kópò byèè= bí-náá-gw-â ‘it’s cups that will fall’ (\*bèè= bì-nàà-gw-â)  
 %L H Ø HL L L HL

(82) Subject may precede or follow /‘ngà/ ‘while’, whose floating H may condition LTD, as appropriate

- a. tw-áá-tùúk-á ngà à-bà-lìmi bá-yìmb-á ‘we arrived while the farmers were singing’  
 H L H L H L H% (the floating H delinks the L of -à)
- b. tw-áá-tùúk-à à-bà-lìmi ngà bá-yìmb-á (= same)  
 H L L H L H L H%
- c. tw-áá-tùúk-á ngà à-bà-lìmi bá-yìmb-á ‘we arrived *while the farmers were singing*’  
 H Ø ØH L H L H%
- d. tw-áá-tùúk-à à-bà-lìmi ngà bá-yìmb-á (= same)  
 H Ø ØHL H L H L H%
- e. tw-áá-tùúk-á à-bà-lìmi bá-yìmb-á (= (82c) with deletion of ngà, but not the H tone)  
 H Ø ØHL H L H%

(83) Several grammatical morphemes are [L] with a preceding floating H which can “travel”, e.g. /‘bùli/ ‘every’

- a. tè-y-à-tùúk-à → tè-yà-tùúk-á bùli lùnákù ‘he didn’t arrive every day’  
 %L HL L %L HL H L H L (floating H delinks L of -à; no HTA onto prenominal bùli)
- b. tè-y-à-tùúk-à nà= mù-lìmi ‘he didn’t arrive with a farmer’  
 %L HL L H% (no HTA onto preposed modifier)
- c. tè-y-à-tùúk-à nà= byàà= mù-lìmi ‘he didn’t arrive with those of the farmer’  
 %L HL L H% (no HTA onto preposed modifier)
- d. tè-y-à-tùúk-á nà= byàà= bùli mù-lìmi ‘he didn’t arrive with those of every farmer’  
 %L HL H L H% (no HTA onto prenominal bùli)

(84) There may be HTA from the subjunctive verb onto what precedes

- a. y-à-yágàl-à tù-làb-é mùlón dó ‘he wanted us to see Mulondo’ (‘that we see Mulondo’)  
 %L H L L L L HL H% (the subjunctive verb paradigm has initial HTR)
- b. à-yágàl-á tú-làb-é mùlón dó ‘he wanted us to see Mulondo’ (‘that we see Mulondo’)  
 %L L L HL H%  
 ↓ ↓  
 Ø Ø

(85) Some speakers allow the subject of a subjunctive clause to condition LTD, as appropriate

- a. y-a-yágàl-à wálúsìmbì à-jj-ê ‘he wanted Walusimbi to come’ (‘that W. come’)  
 %L H L L H L L HL
- b. y-a-yágàl-á wálúsìmbì à-jj-ê ‘he wanted *Walusimbi* to come’ (recall (29b))  
 %L H Ø Ø H L L HL

(86) Complement clauses introduced by /‘nti/ ‘that’ act as main clauses (including reported speech)

- a. y-à-gâmb-á nti à-bà-lìmi b-áá-gùl-à è-bí-tábó ‘he said that the farmers bought books’  
 %L HL H L H L H%
- b. t-á-kkírìz-à lù-gâmbó nti à-bà-lìmi b-áá-f-à ‘he doesn’t believe the rumor that the farmers died’  
 H HL L H L H L (lu-gambo/ ‘rumor’ = toneless)

(87) Variation between /nti/ vs. /'nti/, the latter potentially conditioning LTD, as appropriate)

- |    |            |     |           |                                  |                    |
|----|------------|-----|-----------|----------------------------------|--------------------|
| a. | y-à-gâmb-à | ntì | b-áá-gw-à | 'he said that they fell'         | (no floating H)    |
|    | %L HL L    |     | H L       |                                  |                    |
| b. | y-à-gâmb-á | ntì | b-áá-gw-à | (=same)                          | (floating H)       |
|    | %L HL H L  |     | H L       |                                  |                    |
| c. | y-à-gámb-á | ntì | b-áá-gw-à | 'he said <i>that they fell</i> ' | (floating H + LTD) |
|    | %L HØ H L  |     | H L       |                                  |                    |

(88) Summary, conclusions, and outstanding problems

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